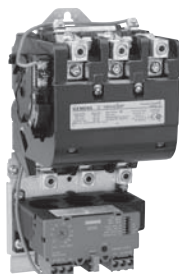


Class 14



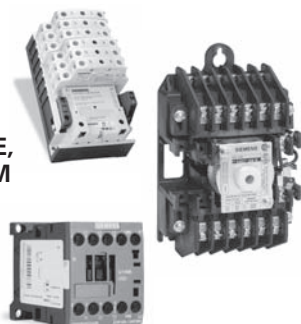
Class 17, 18



Class 82, 83,  
84, 87, 88



Class LE,  
LC, CLM



## contents

|                                                                           |               |
|---------------------------------------------------------------------------|---------------|
| Product Overview                                                          | 9/3           |
| <b>Manual Control</b>                                                     |               |
| Fractional HP Starters, Class SMF                                         | 9/4 - 9/5     |
| Switches, Class MMS and MRS                                               | 9/6 - 9/7     |
| Starters and Switches, Class 11 - 3RV                                     | 9/8 - 9/9     |
| <b>NEMA Control</b>                                                       |               |
| Catalog Numbering System                                                  | 9/10          |
| Non-Combination Starters Features and Benefits                            | 9/11 - 9/12   |
| Non-Reversing Starters, Class 14                                          | 9/13 - 9/15   |
| Combination Starters Features and Benefits                                | 9/16          |
| Combination Starters, Class 17 and 18                                     | 9/17 - 9/25   |
| Reversing Starters, Class 22                                              | 9/26 - 9/27   |
| Combination Reversing Starters, Class 25 and 26                           | 9/28 - 9/29   |
| Two Speed Starters Features and Benefits                                  | 9/30          |
| Two Speed Starters, Class 30                                              | 9/31 - 9/34   |
| Combination Two Speed Starters, Class 32                                  | 9/35 - 9/42   |
| <b>Reduced Voltage Control</b>                                            |               |
| Reduced Voltage Features and Benefits                                     | 9/43          |
| Auto Transformer Starters, Class 36 and 37                                | 9/44 - 9/47   |
| Part Winding Starters, Class 36 and 37                                    | 9/48 - 9/51   |
| Wye Delta Open Transition, Class 36 and 37                                | 9/52 - 9/55   |
| Wye Delta Closed Transition, Class 36 and 37                              | 9/56 - 9/59   |
| <b>Heavy Duty Contactors</b>                                              |               |
| Non-Reversing Contactors, Class 40                                        | 9/60 - 9/61   |
| Vacuum Contactors,                                                        | 9/60          |
| Reversing Contactors, Class 43                                            | 9/62          |
| <b>Overload Relays</b>                                                    |               |
| Class 3UB8, 48, 958 and 3RB20                                             | 9/64 - 9/67   |
| <b>Duplex Controllers</b>                                                 |               |
| Features and Benefits                                                     | 9/72          |
| Non Combination, Class 83                                                 | 9/73          |
| Combination, Class 84                                                     | 9/74 - 9/75   |
| <b>Pump Control Panels</b>                                                |               |
| Slim Line NEMA Pump Controller for the<br>Agricultural industry, Class 82 | 9/68 - 9/71   |
| Class 87 and 88 Features and Benefits                                     | 9/76 - 9/77   |
| Full-Voltage Type, Class 87                                               | 9/78 - 9/79   |
| Vacuum Starter Type, Class 87                                             | 9/80          |
| Reduced-Voltage Type, Class 88                                            | 9/81 - 9/82   |
| <b>Lighting Control</b>                                                   |               |
| Electrically Held Contactors, Class LE                                    | 9/83 - 9/88   |
| Electrically Held Contactors, Class LC                                    | 9/89 - 9/93   |
| Mechanically Held Contactors, Class CLM                                   | 9/94 - 9/96   |
| <b>Control Power Transformers</b>                                         |               |
| Domestic and International (UL, CSA, CE) Class MT, MTG                    | 9/97 - 9/101  |
| <b>Modifications and Drawings</b>                                         |               |
| Field Modification Kits                                                   | 9/102 - 9/112 |
| Enclosure Kits                                                            | 9/113 - 9/118 |
| Factory Modifications                                                     | 9/119 - 9/123 |
| Dimensions                                                                | 9/137 - 9/171 |
| Wiring Diagrams                                                           | 9/172 - 9/193 |
| <b>Heater Tables and Replacement Parts</b>                                |               |
| Overload Relay Heater Tables                                              | 9/124 - 9/130 |
| NEMA Coils and Contact Kits                                               | 9/131 - 9/132 |
| Coil VA Ratings and Overload Relays                                       | 9/133         |
| Lighting Contactor Parts and Kits                                         | 9/134         |

# NEMA & General Purpose Controls

## Controls Express

### Starters at the speed you need

Siemens NEMA starters, pump panels and lighting contactors are known for their dependability and ruggedness, and now they are delivered faster than ever before through Controls Express.

Controls Express puts our most popular products in your hands faster, because we stock more products across our entire product line. Our Class 14 NEMA starters, Class 87 pump panels, and LC & LE lighting contactors are now available in stock for immediate or next day shipping. In addition, thousands of our open and enclosed starters can now be built-to-order and shipped in 1-3 days through Controls Express.

Siemens is committed to making your job easier by stocking more products, offering more configurations, expediting factory modifications, and delivering industry leading turnaround times on our most requested control products.

To quickly identify products that are part of Controls Express and therefore available in 3 days or less, applicable catalog numbers have a light blue background. See the appropriate selection pages listed below.

**Class 14 NEMA Starters** see pages 9/13 & 9/15

**Class 17 NEMA Combination Starters** see pages 9/17 to 9/22. For quick ship versions with factory modifications see on-line at [www.usa.siemens.com/controls-express](http://www.usa.siemens.com/controls-express)

**Class 18 NEMA Combination Starters** see pages 9/23 & 9/25.

**Class 40 NEMA Contactors** see page 9/60

**Class 87 Pump Panels** see pages 9/78 & 9/79

**LE Lighting Contactors** see page 9/85

**LC Lighting Contactors** see page 9/91 & 9/92

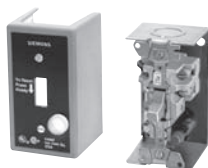


Controls Express lead times apply to orders of up to 6 units of the Class 14, Class 87, LC, or LE. Please contact customer service at 1-866-663-7324 for lead times of larger order volumes.

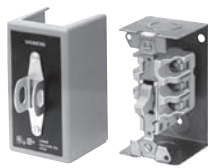
For more information on Controls Express and a complete list of available products, please visit our website at [www.usa.siemens.com/controls-express](http://www.usa.siemens.com/controls-express)

## NEMA &amp; General Purpose Controls

## Product Overview



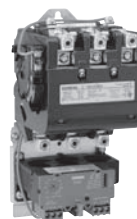
**Class SMF**  
Fractional Horsepower  
Manual Starters  
Page 9/4



**Class MMS & MRS**  
Fractional Horsepower  
Manual Switches  
Page 9/6



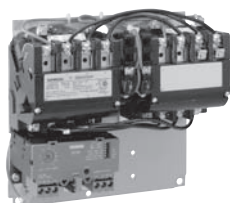
**Class 11**  
Manual Starters and  
Switches  
Page 9/8



**Class 14**  
NEMA Starters  
Page 9/13



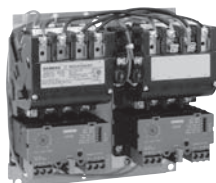
**Class 17, 18**  
NEMA Combination  
Starters  
Page 9/17



**Class 22**  
NEMA Reversing  
Starters  
Page 9/26



**Class 25, 26**  
NEMA Combination  
Reversing Starters  
Page 9/28



**Class 30**  
NEMA Multi-Speed  
Starters  
Page 9/31



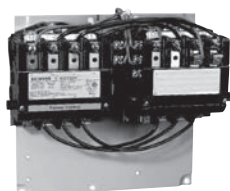
**Class 32**  
NEMA Combination  
Multi-Speed Starters  
Page 9/35



**Class 36, 37**  
Reduced Voltage  
Electromechanical  
Starters  
Page 9/43



**Class 40**  
NEMA Contactors  
and Vacuum Contactors  
Page 9/60



**Class 43**  
NEMA Reversing  
Contactors  
Page 9/62



**Class 48, 958, 3RB20**  
Overload Relays  
Page 9/63



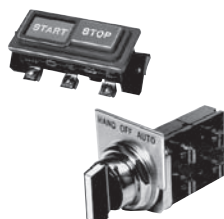
**Class 82, 83, 84,  
87, 88**  
Pump Controls  
Page 9/68



**Class LE, LC, CLM**  
Lighting Contactors  
Page 9/83



**Class MT, MTG**  
Control Power  
Transformers  
Page 9/97



Modifications and  
Drawings  
Page 9/102



Heater Tables and  
Replacement Parts  
Page 9/124

# Fractional HP Starters, Class SMF

## General

### Class SMF

Class SMF fractional horsepower starters provide overload protection as well as manual on-off control for small horsepower motors in a variety of industrial and commercial applications. Available in one or two pole versions, these devices are suitable for use with AC single phase motors up to 1 HP. Two pole starters can also be used with DC motors up to  $\frac{3}{4}$  HP. Typical applications include fans, conveyors, pumps, and small machine tools.

#### Continuous Current Rating

16 amperes.

#### Overload Trip Assembly

Motor protection is provided by a Class SMFH heater element which must be installed before the starter will operate.

#### Two Speed Starters

Two speed manual starters are designed for control of small single phase AC motors having separate windings for high and low speed operation. Two toggle operated starters are used, with overload protection included for each motor winding. Surface mounting devices, and those with a gray flush plate, utilize a mechanical interlock which allows direct control of the motor by means of the toggle operators.

### Enclosures

Class SMF, NEMA Type 1 surface mounting enclosures are sheet steel with a thermo-plastic wrap-around cover for convenience in wiring. The NEMA Type 1 enclosure is also available in an oversized version which allows more wiring space. A zinc alloy die casting is used for NEMA Type 4 enclosures.

#### Pilot Lights

Red or green neon pilot light units are available for flush mounting plates, NEMA Type 1 enclosures, and NEMA Type 4 enclosures. Pilot lights may be either factory or field installed. (For starters that contain a pilot light, a Red light is standard. For a Green pilot light add "G" to the end of the catalog number.)

#### Terminals

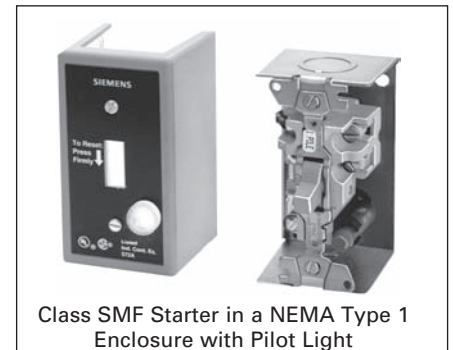
Binding head screw type terminals are suitable for #10 or smaller copper wire, and are accessible from the front. All terminals are clearly marked.

#### Mounting

Open types without a pilot light fit standard single gang switch boxes, and can be used with any cover plate having a standard toggle cutout. Single-unit flush mounting types, including those with pilot lights, are suitable for wall mounting in a standard switch box or for machine cavity mounting without a box.

#### Operation

Available with toggle handle or with removable key type operator to discourage unauthorized operation.



Class SMF Starter in a NEMA Type 1 Enclosure with Pilot Light

### Emergency Off Actuator

A toggle operator extender is available for Class SMF, NEMA Type 1 surface mounted units. The extender has a red vinyl button that provides a fast and easy method for locating and switching the device's toggle operator into the OFF position. The Emergency Off Actuator is available in kit form only for field installation.

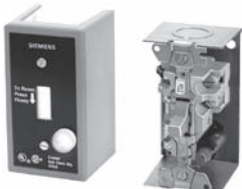
### Handle Guard/Lock-Off

An optional handle guard on Class SMF, NEMA Type 1 enclosed starters prevents accidental operation of the toggle operator and also allows the toggle operator to be padlocked in either the "ON" or "OFF" position. This handle guard can be factory installed on NEMA Type 1 enclosed starters and is also available in kit form for field installation on NEMA Type 1 surface and flush mounting enclosures. Standard NEMA Type 4 metallic enclosures include provisions for padlocking the device in the OFF position.



# Fractional HP Starters with Melting Alloy Overload, Class SMF

## Selection

|  <p>Class SMF Starter in a NEMA Type 1 Enclosure with Pilot Light</p> | Ordering Information                                                                                                                                |  |  |  | Horsepower Ratings |                    |        |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--------------------|--------------------|--------|--------|
|                                                                                                                                                        | ► Heater Elements see page 9/124.<br>► Field Modification Kits see page 9/102.<br>► Dimensions see page 9/137.<br>► Wiring Diagrams see page 9/172. |  |  |  | Volts              | Maximum Horsepower |        |        |
|                                                                                                                                                        |                                                                                                                                                     |  |  |  |                    | AC Single Phase    |        | DC     |
|                                                                                                                                                        |                                                                                                                                                     |  |  |  |                    | 1-Pole             | 2-Pole | 2-Pole |
|                                                                                                                                                        |                                                                                                                                                     |  |  |  | 115–230            | 1                  | 1      | ¾      |
|                                                                                                                                                        |                                                                                                                                                     |  |  |  | 277                | 1                  | 1      | —      |

### Starter—Class SMF, Single Phase<sup>①</sup>

| Type of Operator | No. of Poles | Starter Features <sup>⑤</sup> | General Purpose Flush Mounting Open Starter with Flush Plate (No Enclosure Provided) |               |                  |               |                                      |               | NEMA Type 1 General Purpose Enclosure, Surface Mounting |               |                |               | NEMA Type 3R, 4 & 12 Watertight, Dust-tight Metallic Enclosure with Clear Cover |               | NEMA Type 4 Watertight, Dust-tight Metallic Enclosure |               | NEMA Type 3R, 7 & 9 Div 1 and Div 2 Class I Groups B, C, D & Class II Groups E, F, G Enclosures |               |
|------------------|--------------|-------------------------------|--------------------------------------------------------------------------------------|---------------|------------------|---------------|--------------------------------------|---------------|---------------------------------------------------------|---------------|----------------|---------------|---------------------------------------------------------------------------------|---------------|-------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------|---------------|
|                  |              |                               | Open Type                                                                            |               | Gray Flush Plate |               | Standard Stainless Steel Flush Plate |               | Jumbo Stainless Steel Flush Plate                       |               | Standard       |               | Oversized                                                                       |               |                                                       |               |                                                                                                 |               |
|                  |              |                               | Catalog Number                                                                       | List Price \$ | Catalog Number   | List Price \$ | Catalog Number                       | List Price \$ | Catalog Number                                          | List Price \$ | Catalog Number | List Price \$ | Catalog Number                                                                  | List Price \$ | Catalog Number                                        | List Price \$ | Catalog Number                                                                                  | List Price \$ |
| Toggle           | 1            | Standard                      | SMFF01                                                                               | —             | SMFFF1           | —             | SMFFS1                               | —             | —                                                       | —             | SMFFG1         | —             | SMFFGJ1                                                                         | —             | SMFFWN1                                               | —             | —                                                                                               | —             |
|                  |              | Red Pilot Light               | SMFF01P                                                                              | —             | SMFFF1P          | —             | SMFFS1P                              | —             | SMFFSJ1P                                                | —             | SMFFG1P        | —             | SMFFGJ1P                                                                        | —             | —                                                     | —             | —                                                                                               | —             |
|                  | 2            | Standard                      | SMFF02                                                                               | —             | SMFFF2           | —             | SMFFS2                               | —             | —                                                       | —             | SMFFG2         | —             | SMFFGJ2                                                                         | —             | SMFFWN2                                               | —             | —                                                                                               | —             |
|                  |              | Red Pilot Light               | SMFF02P                                                                              | —             | SMFFF2P          | —             | SMFFS2P                              | —             | SMFFSJ2P                                                | —             | SMFFG2P        | —             | SMFFGJ2P                                                                        | —             | —                                                     | —             | —                                                                                               | —             |
| Key              | 1            | Standard                      | SMFF03                                                                               | —             | SMFFF3           | —             | SMFFS3                               | —             | —                                                       | —             | SMFFG3         | —             | SMFFGJ3                                                                         | —             | SMFFWN3                                               | —             | —                                                                                               | —             |
|                  |              | Red Pilot Light               | SMFF03P                                                                              | —             | SMFFF3P          | —             | SMFFS3P                              | —             | SMFFSJ3P                                                | —             | SMFFG3P        | —             | SMFFGJ3P                                                                        | —             | —                                                     | —             | —                                                                                               | —             |
|                  | 2            | Standard                      | SMFF04                                                                               | —             | SMFFF4           | —             | SMFFS4                               | —             | —                                                       | —             | SMFFG4         | —             | SMFFGJ4                                                                         | —             | SMFFWN4                                               | —             | —                                                                                               | —             |
|                  |              | Red Pilot Light               | SMFF04P                                                                              | —             | SMFFF4P          | —             | SMFFS4P                              | —             | SMFFSJ4P                                                | —             | SMFFG4P        | —             | SMFFGJ4P                                                                        | —             | —                                                     | —             | —                                                                                               | —             |

### Starter With Handle Guard/Lock-Off—Class SMF, Single Phase<sup>①</sup>

|        |   |                                        |   |   |   |   |   |   |   |   |         |   |          |   |   |   |                      |   |                      |   |
|--------|---|----------------------------------------|---|---|---|---|---|---|---|---|---------|---|----------|---|---|---|----------------------|---|----------------------|---|
| Toggle | 1 | Standard                               | — | — | ④ | — | ④ | — | ④ | — | SMFFG5  | — | SMFFGJ5  | — | — | — | SMFFW1 <sup>②</sup>  | — | SMFFR1 <sup>②</sup>  | — |
|        |   | Red Pilot Light                        | — | — | ④ | — | ④ | — | ④ | — | SMFFG5P | — | SMFFGJ5P | — | — | — | SMFFW1P <sup>②</sup> | — | SMFFR1P <sup>②</sup> | — |
|        |   | (2) ¼" NPT Outlets                     | — | — | ④ | — | ④ | — | ④ | — | —       | — | —        | — | — | — | SMFFW1H              | — | SMFFR1H              | — |
|        |   | (2) ¾" NPT Outlets and Red Pilot Light | — | — | ④ | — | ④ | — | ④ | — | —       | — | —        | — | — | — | SMFFW1PH             | — | —                    | — |
|        | 2 | Standard                               | — | — | ④ | — | ④ | — | ④ | — | SMFFG6  | — | SMFFGJ6  | — | — | — | SMFFW2 <sup>②</sup>  | — | SMFFR2 <sup>②</sup>  | — |
|        |   | Red Pilot Light                        | — | — | ④ | — | ④ | — | ④ | — | SMFFG6P | — | SMFFGJ6P | — | — | — | SMFFW2P <sup>②</sup> | — | —                    | — |
|        |   | (2) ¼" NPT Outlets                     | — | — | ④ | — | ④ | — | ④ | — | —       | — | —        | — | — | — | SMFFW2H              | — | SMFFR2H              | — |
|        |   | (2) ¾" NPT Outlets and Red Pilot Light | — | — | ④ | — | ④ | — | ④ | — | —       | — | —        | — | — | — | SMFFW2PH             | — | —                    | — |

### One Starter in Duplex Enclosure—Class SMF, Single Phase<sup>①</sup>

| Type of Operator | Number of Poles | Starter Features <sup>⑤</sup> | General Purpose Flush Mounting Open Starter with Flush Plate - (No Enclosure Provided) |               |                                                         |               | NEMA Type 1 General Purpose Enclosure Surface Mounting |               | Replacement Starters |               |
|------------------|-----------------|-------------------------------|----------------------------------------------------------------------------------------|---------------|---------------------------------------------------------|---------------|--------------------------------------------------------|---------------|----------------------|---------------|
|                  |                 |                               | Gray Flush Plate For Wall or Cavity Mounting                                           |               | Stainless Steel Flush Plate for Wall or Cavity Mounting |               |                                                        |               |                      |               |
|                  |                 |                               | Catalog Number                                                                         | List Price \$ | Catalog Number                                          | List Price \$ | Catalog Number                                         | List Price \$ | Catalog Number       | List Price \$ |
| Toggle           | 2               | Standard                      | —                                                                                      | —             | —                                                       | —             | SMFFG02                                                | —             | —                    | —             |
|                  |                 | Red Pilot Light               | —                                                                                      | —             | —                                                       | —             | SMFFG02P                                               | —             | —                    | —             |
| Key              | 2               | Red Pilot Light               | —                                                                                      | —             | —                                                       | —             | SMFFG04P                                               | —             | —                    | —             |

### Two Starters In Duplex Enclosure—Class SMF, Single Phase<sup>①</sup>

|        |               |                                 |           |   |   |          |           |   |   |   |
|--------|---------------|---------------------------------|-----------|---|---|----------|-----------|---|---|---|
| Toggle | 2 Per Starter | Standard                        | SMFFF222  | — | — | —        | SMFFG222  | — | — | — |
|        |               | Red Pilot Light on Each Starter | SMFFF222P | — | — | SMFFS22P | SMFFG222P | — | — | — |
| Key    | 2 Per Starter | Red Pilot Light on Each Starter | SMFFF44P  | — | — | SMFFS44P | SMFFG44P  | — | — | — |

### Starter And "Auto-Off-Hand" SPDT Selector Switch (AC Only)—Class SMF, Single Phase<sup>①</sup>

|        |   |                 |          |   |   |          |          |   |   |   |
|--------|---|-----------------|----------|---|---|----------|----------|---|---|---|
| Toggle | 1 | Standard        | SMFFF71  | — | — | —        | SMFFG71  | — | — | — |
|        |   | Red Pilot Light | SMFFF71P | — | — | SMFFS71P | SMFFG71P | — | — | — |
|        | 2 | Standard        | SMFFF72  | — | — | —        | SMFFG72  | — | — | — |
|        |   | Red Pilot Light | SMFFF72P | — | — | SMFFS72P | SMFFG72P | — | — | — |
| Key    | 2 | Red Pilot Light | SMFFF74P | — | — | SMFFS74P | SMFFG74P | — | — | — |

### Two Speed Starters (AC Only)—Class SMF, Single Phase<sup>③</sup>

|        |   |                                                                             |          |   |           |   |          |          |          |   |
|--------|---|-----------------------------------------------------------------------------|----------|---|-----------|---|----------|----------|----------|---|
| Toggle | 1 | Mechanical Interlock                                                        | SMFFF11  | — | —         | — | SMFFG11  | —        | SMFF01T  | — |
|        |   | Mechanical Interlock and (2) Red Pilot Lights                               | SMFFF11P | — | —         | — | SMFFG11P | —        | SMFF01PT | — |
|        |   | Mechanical Interlock, HIGH-OFF-LOW Selector Switch and (2) Red Pilot Lights | —        | — | SMFFS101P | — | —        | SMFF01PT | —        | — |
|        | 2 | Mechanical Interlock                                                        | SMFFF22  | — | —         | — | SMFFG22  | —        | SMFF02T  | — |
|        |   | Mechanical Interlock and (2) Red Pilot Lights                               | SMFFF22P | — | —         | — | SMFFG22P | —        | SMFF02PT | — |
|        |   | Mechanical Interlock, HIGH-OFF-LOW Selector Switch and (2) Red Pilot Lights | —        | — | SMFFS202P | — | —        | SMFF02PT | —        | — |

<sup>①</sup> One heater element required.

<sup>②</sup> Furnished with (1) ¾" NPT Outlet in bottom (reversible for top feed).

<sup>③</sup> Two heater elements required.

<sup>④</sup> Order Open Type starter plus separate handle guard kit.

<sup>⑤</sup> For starters that contain a pilot light, a Red light is standard. For a Green pilot light add "G" to the end of the catalog number.

# Fractional HP Switches, Class MMS, MRS

## General

### Class MMS, MRS

Class MMS and MRS motor starting switches provide manual "ON-OFF" control of single or three phase AC motors where overload protection is not required or is provided separately. Compact construction and a 600 volt rating make these switches suitable for a wide range of industrial and commercial uses. Typical applications include small machine tools, pumps, fans, conveyors and many other types of electrical machinery. They can also be used on non-motor loads such as resistance heating applications.

#### Continuous Current Rating

**MMS & MRS:** 30 amperes at 250 volts max, 26.4 amperes at 277 volts, 20 amperes at 600 volts max, 30 amperes resistive at 600 volts max.

#### Two Speed—Class MRS

Two speed manual switches may be used with separate winding three phase or single phase AC motors where overload protection is not required or is provided separately. Two switches are employed to give "ON-OFF" control in each speed.

#### Reversing—Class MRS

Reversing manual switches provide a compact means of starting, stopping and reversing AC motors where overload protection is not required or is provided separately. They are suitable for use with three phase squirrel cage motors and for single phase motors which can be reversed by reconnecting motor leads. Two switches are used, one to connect the motor forward rotation and one for reverse.

### Enclosures

Class MMS, MRS, NEMA Type 1 surface mounting enclosures are sheet steel with a thermo-plastic wrap-around cover for convenience in wiring. The NEMA Type 1 enclosure is also available in an oversized version which allows more wiring space. A zinc alloy die casting is used for NEMA Type 4 enclosures.

#### Pilot Lights

Red or green neon pilot light units are available for flush mounting plates, NEMA Type 1 enclosures, and NEMA Type 4 enclosures. Pilot lights may be either factory or field installed. (For switches that contain a pilot light, a Red light is standard. For a Green pilot light add "G" to the end of the catalog number.)

#### Terminals

Binding head screw type terminals are suitable for #10 or smaller copper wire, and are accessible from the front. All terminals are clearly marked.

#### Mounting

Open types without a pilot light fit standard single gang switch boxes, and can be used with any cover plate having a standard toggle cutout. Single-unit flush mounting types, including those with pilot lights, are suitable for wall mounting in a standard switch box or for machine cavity mounting without a box.

#### Operation

Available with toggle handle or with removable key type operator to discourage unauthorized operation.



Class MMS Switch in a NEMA Type 1 Enclosure

### Emergency Off Actuator

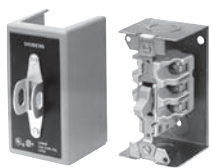
A toggle operator extender is available for Class MMS, MRS, NEMA Type 1 surface mounted units. The extender has a red vinyl button that provides a fast and easy method for locating and switching the device's toggle operator into the OFF position. The Emergency Off Actuator is available in kit form only for field installation.

#### Handle Guard/Lock-Off

An optional handle guard on Class MMS, MRS, NEMA Type 1 enclosed switches prevents accidental operation of the toggle operator and also allows the toggle operator to be padlocked in either the "ON" or "OFF" position. This handle guard is available in kit form for field installation on NEMA Type 1 surface and flush mounting enclosures. Standard NEMA Type 4 metallic enclosures include provisions for padlocking the device in the OFF position.

Switches<sup>①</sup>, Class MMS, MRS

## Selection

| <br>Class MMS Switch in a<br>NEMA Type 1 Enclosure | Ordering Information                                                                                                                                                                                             |           | Horsepower Ratings                   |               |            |      |          |            |      |      |  |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------|---------------|------------|------|----------|------------|------|------|--|
|                                                                                                                                     | <ul style="list-style-type: none"><li>▶ Heater Elements not Required.</li><li>▶ Field Modification Kits see page 9/102.</li><li>▶ Dimensions see page 9/137.</li><li>▶ Wiring Diagrams see page 9/172.</li></ul> | Device    | No of Poles                          | Motor Type AC | Maximum HP |      |          | DC Ratings |      |      |  |
|                                                                                                                                     |                                                                                                                                                                                                                  |           |                                      |               | 115V       | 230V | 450–575V | 90V        | 115V | 230V |  |
|                                                                                                                                     |                                                                                                                                                                                                                  | Class MMS | 2                                    | Single Phase  | 2          | 2    | 3        | 1          | 2    | 1½   |  |
|                                                                                                                                     |                                                                                                                                                                                                                  |           | 3                                    | 3-Phase       | 2          | 7½   | 10       | 1          | 2    | 1½   |  |
|                                                                                                                                     | Class MRS Reversing                                                                                                                                                                                              | 2         | Single Phase                         | 2             | 2          | 3    | 1        | 2          | 1½   |      |  |
|                                                                                                                                     |                                                                                                                                                                                                                  | 3         | 3-Phase                              | 2             | 7½         | 10   | 1        | 2          | 1½   |      |  |
|                                                                                                                                     | Class MMS Two Speed                                                                                                                                                                                              | 2         | Single Phase                         | 2             | 2          | 3    | 1        | 2          | 1½   |      |  |
|                                                                                                                                     |                                                                                                                                                                                                                  | 3         | 3-Phase, Constant or Variable Torque | 2             | 7½         | 10   | 1        | 2          | 1½   |      |  |
|                                                                                                                                     |                                                                                                                                                                                                                  | 3         | 3-Phase, Constant Horsepower         | 2             | 7½         | 10   | 1        | 2          | 1½   |      |  |

## Switch—Class MMS, Single Phase and 3-Phase

| Type of Operator | No of Poles | Switch Features <sup>④</sup> | Open Type            |              | General Purpose Flush Mounting<br>Open Switch with Flush Plate<br>(No Enclosure Provided) |              |                                      |              |                                   |              | NEMA Type 1 General Purpose<br>Enclosure Surface Mounting |              |                |              | NEMA Type 3R, 4 & 12<br>Watertight,<br>Dust-tight<br>Metallic Enclosure<br>with Clear Cover |              | NEMA Type 4 <sup>⑤</sup><br>Watertight,<br>Dust-tight<br>Metallic Enclosure |              | NEMA Type 7 & 9 <sup>⑥</sup><br>Class I Groups<br>B, C & D &<br>Class II Groups<br>E, F, G<br>Enclosures |              |                |              |
|------------------|-------------|------------------------------|----------------------|--------------|-------------------------------------------------------------------------------------------|--------------|--------------------------------------|--------------|-----------------------------------|--------------|-----------------------------------------------------------|--------------|----------------|--------------|---------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------|--------------|----------------|--------------|
|                  |             |                              |                      |              | Gray Flush Plate                                                                          |              | Standard Stainless Steel Flush Plate |              | Jumbo Stainless Steel Flush Plate |              | Standard                                                  |              | Oversized      |              |                                                                                             |              |                                                                             |              |                                                                                                          |              |                |              |
|                  |             |                              | Catalog Number       | List Price\$ | Catalog Number                                                                            | List Price\$ | Catalog Number                       | List Price\$ | Catalog Number                    | List Price\$ | Catalog Number                                            | List Price\$ | Catalog Number | List Price\$ | Catalog Number                                                                              | List Price\$ | Catalog Number                                                              | List Price\$ | Catalog Number                                                                                           | List Price\$ | Catalog Number | List Price\$ |
| Toggle           | 2           | Standard                     | MMSK01               |              | MMSKF1                                                                                    |              | MMSKS1                               |              | —                                 | —            | MMSKG1                                                    |              | MMSKGJ1        |              | MMSKWN1                                                                                     |              | MMSKW1                                                                      |              | MMSKR1                                                                                                   |              |                |              |
|                  |             | Red Pilot Light 115V AC      | MMSK01A <sup>③</sup> |              | MMSKF1A                                                                                   |              | MMSKS1A                              |              | MMSKSJ1A                          |              | MMSKG1A                                                   |              | MMSKGJ1A       |              |                                                                                             |              | MMSKW1A                                                                     |              | —                                                                                                        | —            |                |              |
|                  |             | Red Pilot Light 230V AC      | MMSK01B <sup>③</sup> |              | MMSKF1B                                                                                   |              | MMSKS1B                              |              | MMSKSJ1B                          |              | MMSKG1B                                                   |              | MMSKGJ1B       |              |                                                                                             |              | MMSKW1B                                                                     |              | —                                                                                                        | —            |                |              |
|                  | 3           | Standard                     | MMSK02               |              | MMSKF2                                                                                    |              | MMSKS2                               |              | —                                 | —            | MMSKG2                                                    |              | MMSKGJ2        |              | MMSKWN2                                                                                     |              | MMSKW2                                                                      |              | MMSKR2                                                                                                   |              |                |              |
|                  |             | Red Pilot Light 208-240V AC  | MMSK02B <sup>③</sup> |              | MMSKF2B                                                                                   |              | MMSKS2B                              |              | MMSKSJ2B                          |              | MMSKG2B                                                   |              | MMSKGJ2B       |              |                                                                                             |              | MMSKW2B                                                                     |              | —                                                                                                        | —            |                |              |
|                  |             | Red Pilot Light 440-600V AC  | MMSK02C <sup>③</sup> |              | MMSKF2C                                                                                   |              | MMSKS2C                              |              | MMSKSJ2C                          |              | MMSKG2C                                                   |              | MMSKGJ2C       |              |                                                                                             |              | MMSKW2C                                                                     |              | —                                                                                                        | —            |                |              |
| Key              | 2           | Standard                     | MMSK03               |              | MMSKF3                                                                                    |              | MMSKS3                               |              | —                                 | —            | MMSKG3                                                    |              | MMSKGJ3        |              | MMSKWN3                                                                                     |              | —                                                                           | —            | —                                                                                                        | —            |                |              |
|                  |             | Red Pilot Light 115V AC      | MMSK03A              |              | MMSKF3A                                                                                   |              | MMSKS3A                              |              | MMSKSJ3A                          |              | MMSKG3A                                                   |              | MMSKGJ3A       |              |                                                                                             |              | —                                                                           | —            | —                                                                                                        | —            |                |              |
|                  |             | Red Pilot Light 230V AC      | MMSK03B              |              | MMSKF3B                                                                                   |              | MMSKS3B                              |              | MMSKSJ3B                          |              | MMSKG3B                                                   |              | MMSKGJ3B       |              |                                                                                             |              | —                                                                           | —            | —                                                                                                        | —            |                |              |
|                  | 3           | Standard                     | MMSK04               |              | MMSKF4                                                                                    |              | MMSKS4                               |              | —                                 | —            | MMSKG4                                                    |              | MMSKGJ4        |              | MMSKWN4                                                                                     |              | —                                                                           | —            | —                                                                                                        | —            |                |              |
|                  |             | Red Pilot Light 208–240V AC  | MMSK04B              |              | MMSKF4B                                                                                   |              | MMSKS4B                              |              | MMSKSJ4B                          |              | MMSKG4B                                                   |              | MMSKGJ4B       |              |                                                                                             |              | —                                                                           | —            | —                                                                                                        | —            |                |              |
|                  |             | Red Pilot Light 440–600V AC  | MMSK04C              | —            | MMSKF4C                                                                                   | —            | MMSKS4C                              | —            | MMSKSJ4C                          | —            | MMSKG4C                                                   | —            | MMSKGJ4C       | —            |                                                                                             |              | —                                                                           | —            | —                                                                                                        | —            |                |              |

## Reversing Switch—Class MRS, Single Phase and 3-Phase

| Type of Operator | Number of Poles | Suitable Motor Types                                                             | Switch Features <sup>④</sup> (Including Mechanical Interlock) | General Purpose Flush Mounting Open Switch with Flush Plate (No Enclosure Provided) |               | NEMA Type 1 General Purpose Enclosure Surface Mounting |               | Replacement Switch Class MRS |               |
|------------------|-----------------|----------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------|--------------------------------------------------------|---------------|------------------------------|---------------|
|                  |                 |                                                                                  |                                                               | Catalog Number                                                                      | List Price \$ | Catalog Number                                         | List Price \$ | Catalog Number               | List Price \$ |
| Toggle           | 2               | Single Phase 3-Lead Repulsion-Induction                                          | Standard                                                      | MRSKF11                                                                             |               | MRSKG11                                                |               | MRSK01T                      |               |
|                  |                 |                                                                                  | Red Pilot Device—115V AC                                      | MRSKF11A                                                                            |               | MRSKG11A                                               |               | MRSK01AT                     |               |
|                  |                 |                                                                                  | Red Pilot Device—230V AC                                      | MRSKF11B                                                                            |               | MRSKG11B                                               |               | MRSK01BT                     |               |
|                  | 3               | 3-Phase; Also Single Phase Capacitor, Split Phase, or 4-Lead Repulsion-Induction | Standard                                                      | MRSKF22                                                                             |               | MRSKG22                                                |               | MRSK02T                      |               |
|                  |                 |                                                                                  | Red Pilot Light—110–120V AC                                   | MRSKF22A                                                                            |               | MRSKG22A                                               |               | MRSK02AT                     |               |
|                  |                 |                                                                                  | Red Pilot Light—208–220V AC                                   | MRSKF22B                                                                            |               | MRSKG22B                                               |               | MRSK02BT                     |               |
|                  |                 |                                                                                  | Red Pilot Light—440–600V AC                                   | MRSKF22C                                                                            |               | MRSKG22C                                               |               | MRSK02CT                     |               |

## Two Speed Switch—Class MMS, Single Phase and 3-Phase

| Type of Operator | Number of Poles | Suitable Motor Types                     | Switch Features <sup>④</sup> (Including Mechanical Interlock) | General Purpose Flush Mounting Open Switch with Flush Plate (No Enclosure Provided) |               | NEMA Type 1 General Purpose Enclosure Surface Mounting |               | Replacement Switch Class MRS |               |
|------------------|-----------------|------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------|--------------------------------------------------------|---------------|------------------------------|---------------|
|                  |                 |                                          |                                                               | Catalog Number                                                                      | List Price \$ | Catalog Number                                         | List Price \$ | Catalog Number               | List Price \$ |
| Toggle           | 2               | Single Phase Two Winding (3-Lead)        | Standard                                                      | MMSKF11                                                                             |               | MMSKG11                                                |               | MRSK01T                      |               |
|                  |                 |                                          | (2) Red Pilot Devices—115V AC                                 | MMSKF11A                                                                            |               | MMSKG11A                                               |               | MRSK01AT                     |               |
|                  |                 |                                          | (2) Red Pilot Devices—230V AC                                 | MMSKF11B                                                                            |               | MMSKG11B                                               |               | MRSK01BT                     |               |
|                  | 3               | 3-Phase Separate Winding (Wye-Connected) | Standard                                                      | MMSKF22                                                                             |               | MMSKG22                                                |               | MRSK02T                      |               |
|                  |                 |                                          | (2) Red Pilot Lights—208–240V AC                              | MMSKF22B                                                                            |               | MMSKG22B                                               |               | MRSK02BT                     |               |
|                  |                 |                                          | (2) Red Pilot Lights—440–600V AC                              | MMSKF22C                                                                            |               | MMSKG22C                                               |               | MRSK02CT                     |               |

① Manual switches do not include overloads.

② Furnished with (1) 3/4" NPT outlet in bottom (reversible for top feed). In order to obtain a 3/4" NPT outlet in top and bottom, add suffix letter "H" to type number with List Price adder.

③ Do not use as replacement interiors for NEMA Type 4 metallic enclosures. For replacement unit, order Type MMSK01 or MMSK02 and separate pilot light kit.

④ For switches that contain a pilot light, a Red light is standard. For a Green pilot light add "G" to the end of the catalog number.

## Starters and Switches, Class 11 - 3RV

## General

## Now Available with the New 3RV2 Innovations MSP

## Class 11 - 3RV

Class 11 across the line manual starters and switches provide control for machinery where remote start stop control is not required.

**Class 11 - 3RV** manual starters are used for single and poly-phase motors up to 20HP @ 575V. Starters have bimetallic heater elements to provide class 10 overcurrent protection. Each starter has a fourth bimetallic strip that reacts only to the ambient temperature inside the control panel. This ambient compensation helps prevent the starter from nuisance tripping when the panel temperature is higher than the ambient temperature of the motor.

A built-in differential trip bar causes the starter to trip faster on a phase loss condition to help reduce motor damage.

Magnetic trip elements in each starter take the device off line when it senses current of 13 times the maximum FLA dial setting.

**Class 11 - 3RV** switches provide control for inherently protected motors. Typical applications include metal and woodworking machinery, grinders, power saws, conveyors, fans, pumps, blowers, textile and packaging machinery, and paper cutters.

Each switch is provided with magnetic trip elements which take the device off line when it senses current of 13 times the maximum switch rating.

**Class 11 - 3RV** manual starters can be used as Type E self-protected manual combination starters (up to 22 amps) per UL508 or as components in Group Installation per NEC 430.53. When using the Class 11 - 3RV as a manual combination starter upstream protection is not required.

**Class 11 - 3RV** controllers are available with low voltage protection which will automatically open the power poles when the voltage drops or the power is interrupted.

Controllers with the LVP option provide the OSHA requirements for protecting personnel from potential injury caused by the automatic start-up of machinery following a voltage drop or power interruption when low voltage protection is specified.

**Class 11 - 3RV** is available as Open style, or in NEMA 1, NEMA 7 & 9 or NEMA 7 & 9 / 3 & 4 enclosures.

## Standard Features include:

- ON/OFF rotary handle with lockout and visible trip indication
- Adjustment dial for setting to motor FLA (Starters only)
- Low Voltage Protection (LVP) Option
- Short Circuit trip at 13 times the maximum setting of the FLA dial or rated current
- Ambient compensated up to 140°F
- Phase loss sensitivity
- Test trip function
- LVP Option Meets OSHA Requirements
- UL Listed
- CSA Certified



OPEN TYPE  
Starter



NEMA 1  
General Purpose



NEMA 7 & 9  
Div 1 & Div 2  
Class I Group C & D  
Class II Group E, F & G



NEMA 3 & 4, NEMA 7 & 9  
Div 1 & Div 2  
Class I Group C & D  
Class II Group E, F & G



## Starters and Switches, Class 11 - 3RV

## Selection



Class 11 Manual Motor Starter

## Ordering Information

- ▶ No heaters required.
- ▶ Field Modification Kits see page 9/102.
- ▶ Dimensions see page 9/139.
- ▶ Wiring Diagrams see page 9/172.
- ▶ For applications requiring a low voltage protection coil see table at right.

## Low Voltage Protection Coil Table

| 60 Hz Voltage | Letter |
|---------------|--------|
| 120V          | *F     |
| 208V          | *D     |
| 240V          | *G     |
| 460V          | *H     |

\*Add corresponding letter to end of base Class 11 catalog number for low voltage protection coil with List Price adder.

Note: The LVP option for Open type 3RV is available from the factory, please order separately from the field modification kits on page 9/103.

The coil voltage should correspond with the line voltage.

## Manual Starter—Class 11 - 3RV

| FLA Adjustment Range <sup>①</sup> | Max HP                  |                |                    |                  |                 |                 | Enclosure                  |               | NEMA 1          |               | NEMA 7 & 9                                       |               | NEMA 3 & 4, NEMA 7 & 9                                         |               |
|-----------------------------------|-------------------------|----------------|--------------------|------------------|-----------------|-----------------|----------------------------|---------------|-----------------|---------------|--------------------------------------------------|---------------|----------------------------------------------------------------|---------------|
|                                   | Single Phase HP Ratings |                | 3-Phase HP Ratings |                  |                 |                 | Open Type                  |               | General Purpose |               | Class I Groups C & D<br>Class II Groups E, F & G |               | Watertight<br>Class I Groups C & D<br>Class II Groups E, F & G |               |
|                                   | 115V                    | 230V           | 200V               | 230V             | 460V            | 575V            | Catalog No.                | List Price \$ | Catalog No.     | List Price \$ | Catalog No.                                      | List Price \$ | Catalog No.                                                    | List Price \$ |
| 0.11-0.16                         | —                       | —              | —                  | —                | —               | —               | 3RV2011-0AA10 <sup>②</sup> |               | 11AD3B          |               | 11AD3H                                           |               | 11AD3W                                                         |               |
| 0.14-0.2                          | —                       | —              | —                  | —                | —               | —               | 3RV2011-0BA10 <sup>②</sup> |               | 11BD3B          |               | 11BD3H                                           |               | 11BD3W                                                         |               |
| 0.18-0.25                         | —                       | —              | —                  | —                | —               | —               | 3RV2011-0CA10 <sup>②</sup> |               | 11CD3B          |               | 11CD3H                                           |               | 11CD3W                                                         |               |
| 0.22-0.32                         | —                       | —              | —                  | —                | —               | —               | 3RV2011-0DA10 <sup>②</sup> |               | 11DD3B          |               | 11DD3H                                           |               | 11DD3W                                                         |               |
| 0.28-0.4                          | —                       | —              | —                  | —                | —               | —               | 3RV2011-0EA10 <sup>②</sup> |               | 11ED3B          |               | 11ED3H                                           |               | 11ED3W                                                         |               |
| 0.35-0.5                          | —                       | —              | —                  | —                | —               | —               | 3RV2011-0FA10 <sup>②</sup> |               | 11FD3B          |               | 11FD3H                                           |               | 11FD3W                                                         |               |
| 0.45-0.63                         | —                       | —              | —                  | —                | —               | —               | 3RV2021-0GA10 <sup>②</sup> |               | 11GD3B          |               | 11GD3H                                           |               | 11GD3W                                                         |               |
| 0.55-0.8                          | —                       | —              | —                  | —                | —               | ½               | 3RV2021-0HA10 <sup>②</sup> |               | 11HD3B          |               | 11HD3H                                           |               | 11HD3W                                                         |               |
| 0.7-1                             | —                       | —              | —                  | —                | ½               | ½               | 3RV2021-0JA10 <sup>②</sup> |               | 11JD3B          |               | 11JD3H                                           |               | 11JD3W                                                         |               |
| 0.9-1.25                          | —                       | —              | —                  | —                | ¾               | ¾               | 3RV2021-0KA10 <sup>②</sup> |               | 11KD3B          |               | 11KD3H                                           |               | 11KD3W                                                         |               |
| 1.1-1.6                           | —                       | ⅓              | —                  | —                | ¾               | 1               | 3RV2021-1AA10 <sup>②</sup> |               | 11LD3B          |               | 11LD3H                                           |               | 11LD3W                                                         |               |
| 1.4-2                             | —                       | ⅓              | —                  | —                | 1               | 1 ½             | 3RV2021-1BA10 <sup>②</sup> |               | 11MD3B          |               | 11MD3H                                           |               | 11MD3W                                                         |               |
| 1.8-2.5                           | —                       | ⅓              | ½                  | ½                | 1 ½             | 1 ½             | 3RV2021-1CA10 <sup>②</sup> |               | 11ND3B          |               | 11ND3H                                           |               | 11ND3W                                                         |               |
| 2.2-3.2                           | ⅓                       | ⅓              | ¾                  | ¾                | 1 ½             | 2               | 3RV2021-1DA10 <sup>②</sup> |               | 11PD3B          |               | 11PD3H                                           |               | 11PD3W                                                         |               |
| 2.8-4                             | ⅓                       | ⅓              | ¾                  | 1                | 2               | 3               | 3RV2021-1EA10 <sup>②</sup> |               | 11QD3B          |               | 11QD3H                                           |               | 11QD3W                                                         |               |
| 3.5-5                             | ⅓                       | ½              | 1                  | 1                | 3               | 3               | 3RV2021-1FA10 <sup>②</sup> |               | 11RD3B          |               | 11RD3H                                           |               | 11RD3W                                                         |               |
| 4.5-6.3                           | ⅓                       | ¾              | 1 ½                | 1 ½              | 5               | 5               | 3RV2021-1GA10 <sup>②</sup> |               | 11SD3B          |               | 11SD3H                                           |               | 11SD3W                                                         |               |
| 5.5-8                             | ⅓                       | 1              | 2                  | 2                | 5               | 5               | 3RV2021-1HA10 <sup>②</sup> |               | 11TD3B          |               | 11TD3H                                           |               | 11TD3W                                                         |               |
| 7-10                              | ½                       | 1 ½            | 3                  | 3                | 7 ½             | 10              | 3RV2021-1JA10 <sup>②</sup> |               | 11UD3B          |               | 11UD3H                                           |               | 11UD3W                                                         |               |
| 9-12.5                            | ½                       | 2              | 3                  | 3                | 7 ½             | 10              | 3RV2021-1KA10 <sup>②</sup> |               | 11VD3B          |               | 11VD3H                                           |               | 11VD3W                                                         |               |
| 11-16                             | 1                       | 3              | 5                  | 5                | 10              | 15 <sup>③</sup> | 3RV2021-4AA10 <sup>②</sup> |               | 11WD3B          |               | 11WD3H                                           |               | 11WD3W                                                         |               |
| 14-20                             | 1 ½                     | 3              | 5                  | 7 ½              | 15              | 20 <sup>③</sup> | 3RV2021-4BA10 <sup>②</sup> |               | 11XD3B          |               | 11XD3H                                           |               | 11XD3W                                                         |               |
| 17-22                             | 2                       | 3              | 7 ½                | 7 ½              | 15              | 20 <sup>③</sup> | 3RV2021-4CA10 <sup>②</sup> |               | 11YD3B          |               | 11YD3H                                           |               | 11YD3W                                                         |               |
| 20-25                             | 2 <sup>③</sup>          | 5 <sup>③</sup> | 7 ½ <sup>③</sup>   | 7 ½ <sup>③</sup> | 15 <sup>③</sup> | 20 <sup>③</sup> | 3RV2021-4DA10 <sup>②</sup> |               | 11ZD3B          |               | 11ZD3H                                           |               | 11ZD3W                                                         |               |

## Manual Switch—Class 11 - 3RV

| Rated Current <sup>①</sup> | Max HP                  |                  |                    |                  |                  |                 | Enclosure                  |               | NEMA 1          |               | NEMA 7 & 9                                       |               | NEMA 3 & 4, NEMA 7 & 9                                         |               |
|----------------------------|-------------------------|------------------|--------------------|------------------|------------------|-----------------|----------------------------|---------------|-----------------|---------------|--------------------------------------------------|---------------|----------------------------------------------------------------|---------------|
|                            | Single Phase HP Ratings |                  | 3-Phase HP Ratings |                  |                  |                 | Open Type                  |               | General Purpose |               | Class I Groups C & D<br>Class II Groups E, F & G |               | Watertight<br>Class I Groups C & D<br>Class II Groups E, F & G |               |
|                            | 115V                    | 230V             | 200V               | 230V             | 460V             | 575V            | Catalog No.                | List Price \$ | Catalog No.     | List Price \$ | Catalog No.                                      | List Price \$ | Catalog No.                                                    | List Price \$ |
| 1                          | —                       | —                | —                  | —                | ¼ <sup>③</sup>   | ½ <sup>③</sup>  | 3RV2321-0JC10 <sup>②</sup> |               | 111D3B          |               | 111D3H                                           |               | 111D3W                                                         |               |
| 5                          | ⅓ <sup>③</sup>          | ⅓ <sup>③</sup>   | 1 <sup>③</sup>     | 1 <sup>③</sup>   | 3 <sup>③</sup>   | 3 <sup>③</sup>  | 3RV2321-1FC10 <sup>②</sup> |               | 112D3B          |               | 112D3H                                           |               | 112D3W                                                         |               |
| 10                         | ½ <sup>③</sup>          | 1 ½ <sup>③</sup> | 3 <sup>③</sup>     | 3 <sup>③</sup>   | 7 ½ <sup>③</sup> | 10 <sup>③</sup> | 3RV2321-1JC10 <sup>②</sup> |               | 113D3B          |               | 113D3H                                           |               | 113D3W                                                         |               |
| 20                         | 1 ½ <sup>③</sup>        | 3 <sup>③</sup>   | 5 <sup>③</sup>     | 7 ½ <sup>③</sup> | 15 <sup>③</sup>  | 20 <sup>③</sup> | 3RV2321-4BC10 <sup>②</sup> |               | 114D3B          |               | 114D3H                                           |               | 114D3W                                                         |               |
| 25                         | 2 <sup>③</sup>          | 5 <sup>③</sup>   | 7 ½ <sup>③</sup>   | 7 ½ <sup>③</sup> | 15 <sup>③</sup>  | 20 <sup>③</sup> | 3RV2321-4DC10 <sup>②</sup> |               | 115D3B          |               | 115D3H                                           |               | 115D3W                                                         |               |

<sup>①</sup> Instantaneous Magnetic Trip will occur at 13 times the maximum FLA dial setting or rated switch current.

<sup>②</sup> Product Category: IEC

<sup>③</sup> Shaded Ratings apply for Manual Motor Controllers Only! These Ratings do not apply as UL Listed Manual Combination Starters.

<sup>④</sup> Add 1 to the end of the catalog number for 1/2 inch drain hole with plug and list price adder. Drain fitting not supplied, order separately XDB-2.

## Catalog Numbering System

## General

| Class                                                     | Size      | Model                                            | Enclosure Size      | Enclosure Type                                | Solid-state OLR Current Range <sup>③</sup>                                                                                                                                                                                                    | Breaker HP Code <sup>②</sup><br>Horsepower Rating<br>200, 230, 460, 575                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------|-----------|--------------------------------------------------|---------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17 — Combination Starter (Non Fusible, Fusible)           | B — 00    | U — Solid-state OLR size 0-4 & size 7 & 8        | 92 — Standard Width | B — NEMA 1                                    | Three Phase<br>A — 0.25-1<br>B — 0.75-3.4<br>C — 3-12<br>D — 5.5-22<br>E — 10-40<br>F — 13-52<br>G — 25-100<br>H — 50-200<br>J — 100-300 w/ CT's<br>K — 133-400 w/ CT's<br>L — 200-600 w/ CT's<br>M — 250-750 w/ CT's<br>N — 400-1200 w/ CT's | A — 1/2, 1/2, 1, 1<br>B — 1, 1, 3, 3<br>C — 3, 3, 5, 5<br>D — 3, 3, 7 1/2, 7 1/2<br>E — 7 1/2, 7 1/2, 10, 10<br>F — —, —, 15, 15<br>G — 10, 10, —, —<br>H — 7 1/2, 10, 20, 20<br>J <sup>②</sup> — 10, 15, 25, 25<br>K — —, —, 30, 30<br>L — 15, 20, —, —<br>M — —, —, 30, 30<br>N — 25, 30, 50, 50<br>P — 30, 40, 75, 75<br>R — 40, 50, 100, 100 |
| 18 — Combination Starter (Circuit Breaker)                | C — 0     | P — Thermal size 0-3 1/2, Solid state size 5 & 6 | 82 — Extra Wide     | F — NEMA 4X Fiberglass                        |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
| 25 — Reversing Combination Starter (Non Fusible, Fusible) | D — 1     |                                                  |                     | H — NEMA 7/9/3/4, Bolted (Class 18 & 26 only) |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
| 26 — Reversing Combination Starter (Circuit Breaker)      | E — 1 1/4 |                                                  |                     | N — NEMA 12 (Field convertible to 3/3R/4)     |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
|                                                           | F — 2     |                                                  |                     | W — NEMA 4/4X 304 Stainless Steel             |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
|                                                           | G — 2 1/2 |                                                  |                     |                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
|                                                           | H — 3     |                                                  |                     |                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
|                                                           | I — 3 1/2 |                                                  |                     |                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
|                                                           | J — 4     |                                                  |                     |                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
|                                                           | L — 5     |                                                  |                     |                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
|                                                           | M — 6     |                                                  |                     |                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
|                                                           | N — 7     |                                                  |                     |                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |
|                                                           | P — 8     |                                                  |                     |                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                  |

| Class                                        | Size      | Model                                          | Enclosure Size                                   | Enclosure Type                                | Solid-state OLR Current Range <sup>③</sup>                                                                                                                                                                                                    | Pilot Control Circuit                                   | Coil                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------|-----------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14 — Across the Line NEMA Motor Starter      | B — 00    | U — Solid-state OLR size 00-4, Size 7 & 8      | 1 — 2 power poles, 1-phase                       | A — Open                                      | Three Phase<br>A — 0.25-1<br>B — 0.75-3.4<br>C — 3-12<br>D — 5.5-22<br>E — 10-40<br>F — 13-52<br>G — 25-100<br>H — 50-200<br>J — 100-300 w/ CT's<br>K — 133-400 w/ CT's<br>L — 200-600 w/ CT's<br>M — 250-750 w/ CT's<br>N — 400-1200 w/ CT's | 2 — suitable for 3-wire control (NO aux. contact incl.) | A <sup>③</sup> — 110-120V/220-240V@60Hz<br>110V/190-220V@50Hz<br>C <sup>③</sup> — 220-240V/440-480V@60Hz<br>190-220V/380-440V@50Hz<br>D — 200-208V@60Hz<br>E — 550-600V@60Hz<br>550V@50Hz<br>F — 120V@60Hz<br>110V@50Hz<br>G — 220-240V@60Hz<br>190-220V@50Hz<br>H — 440-480V@60Hz<br>380-440V@50Hz<br>J <sup>②</sup> — 24V@60Hz<br>24V@50Hz<br>L — 277V@60Hz<br>240V@50Hz |
| 22 — Reversing NEMA Motor Starter            | C — 0     | P — Thermal size 00-4, Solid state sizes 5 & 6 | 3 — 3 power poles, 3-phase                       | B — NEMA 1                                    | Single Phase <sup>①</sup><br>A — 0.25-1<br>B — 0.75-3.4<br>C — 3-12<br>D — 5.5-22                                                                                                                                                             |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
| 40 — Across the Line NEMA Magnetic Contactor | D — 1     |                                                | 8 — 3 power poles, 3-phase, extra wide enclosure | F — NEMA 4X Fiberglass                        |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
| 43 — Reversing NEMA Magnetic Contactor       | E — 1 1/4 |                                                |                                                  | H — NEMA 7/9/3/4, Bolted (Class 18 & 26 only) |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | F — 2     |                                                |                                                  | O — NEMA 12 (Field convertible to 3/3R/4)     |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | G — 2 1/2 |                                                |                                                  | W — NEMA 4/4X 304 Stainless Steel             |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | H — 3     |                                                |                                                  |                                               |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | I — 3 1/2 |                                                |                                                  |                                               |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | J — 4     |                                                |                                                  |                                               |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | L — 5     |                                                |                                                  |                                               |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | M — 6     |                                                |                                                  |                                               |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | N — 7     |                                                |                                                  |                                               |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | P — 8     |                                                |                                                  |                                               |                                                                                                                                                                                                                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                            |

| Class                                        | Size      | Model                                            | Solid-state OLR Current Range <sup>③</sup> | Type                        | Line Volts  | Enclosure Type                | Coil          | Disconnect Type <sup>④</sup> |
|----------------------------------------------|-----------|--------------------------------------------------|--------------------------------------------|-----------------------------|-------------|-------------------------------|---------------|------------------------------|
| 36 — Non Combination Reduced Voltage Starter | C — 0     | U — Solid-state OLR size 0-4 & size 7 & 8        |                                            | T — Auto XFMR               | 2 — 230     | A — Open                      | D — 24V@60Hz  | D — Non Fused Disc.          |
|                                              | D — 1     | P — Thermal size 0-3 1/2, Solid state size 5 & 6 |                                            | P — Part Wind.              | 3 — 380     | B — NEMA 1                    | E — 24V@50Hz  | F — Fusible Disc.            |
|                                              | E — 1 1/4 |                                                  |                                            | O — Wye Delta Open Trans.   | 4 — 460     | W — NEMA 4/4X Stainless Steel | F — 277V@60Hz | P — MCP                      |
|                                              | F — 2     |                                                  |                                            | C — Wye Delta Closed Trans. | 5 — 575     |                               | G — 24V@60Hz  |                              |
| 37 — Combination Reduced Voltage Starter     | G — 2 1/2 |                                                  |                                            |                             | 6 — 200/208 | O — NEMA 12                   | H — 24V@50Hz  |                              |
|                                              | H — 3     |                                                  |                                            |                             |             |                               | L — 24V@50Hz  |                              |
|                                              | I — 3 1/2 |                                                  |                                            |                             |             |                               |               |                              |
|                                              | J — 4     |                                                  |                                            |                             |             |                               |               |                              |
|                                              | L — 5     |                                                  |                                            |                             |             |                               |               |                              |
|                                              | M — 6     |                                                  |                                            |                             |             |                               |               |                              |
|                                              | N — 7     |                                                  |                                            |                             |             |                               |               |                              |
|                                              | P — 8     |                                                  |                                            |                             |             |                               |               |                              |

① Single phase solid-state OLR available on Class 14 Starters only.

② Not used on Class 17, 25 or with solid-state OLR versions.

③ Not available on sizes 5-8.

④ For Class 37 only.

⑤ Position used for solid-state OLR only.

⑥ Not available on sizes 7 and 8.

## Features and Benefit

## General



Solid State Starter Class 14

## Standard Features

Size 00–4 magnetic starters include the following standard features:

- Rugged Industrial Design
- Half Sizes for Cost and Space Savings
- Dual Voltage, Dual Frequency Coils
- Solid State or Ambient Compensated Bimetal Overload Protection
- Wide Range of Accessories
- Easy Coil Access
- Overload Test Feature
- Straight Thru Wiring
- Gravity Dropout
- Large Silver Cadmium Contacts
- UL listed file #E14900 (class 14, 22, 30, 40 & 43)
- CSA certified file #LR 6535 (class 14, 22, 30, 40 & 43)

## Application

Heavy Duty starters are designed for across the line starting of single phase and polyphase motors.

These controls are available in NEMA Sizes 00 through 8. In addition to the usual NEMA Starter Sizes, Siemens offers three exclusive Half Sizes; 1¾, 2½ and 3½. These integral sizes offer the same rugged, industrial construction as our NEMA Sizes and ensure efficient operating performance. Half Sizes provide a real cost savings by cutting down on over capacity when NEMA Sizes exceed the motor ratings. All Siemens Heavy Duty controls, including our popular Half Sizes comply with applicable NEMA and UL tests.

All starters are supplied with a NO holding interlock that in conjunction with an appropriate pilot device will provide low voltage protection or release.

NEMA starters are ideal for applications requiring dependability and durability. Typical applications include use with machine tools, air conditioning equipment, material handling equipment, compressors, hoists and various production and industrial equipment as well as in demanding automotive applications.

Starters are available as an open type or in NEMA 1, 12/3/3R, 4 (painted), 4/4X (stainless), 4X (fiberglass), and 7 & 9 enclosures.

**Gravity Dropout**

For added reliability, the gravity dropout of the armature and contacts is assisted by stainless steel springs which help provide quick, precise opening of the contacts.

**45 Degree, Wedge Action Contacts**

The 45 degree, wedge action contacts reduce tracking and provide faster arc quenching. The resulting self-cleaning and reduced contact bounce mean cooler operation and longer life for the large silver cadmium oxide contacts.

**Terminal Design**

Control terminals are self-rising pressure type.

**Molded Coil**

Magnetic coils are carefully wound and then sealed in epoxy. Encapsulation helps seal out moisture, promotes heat transfer and resists electrical, mechanical and thermal stresses.

**Dual Voltage/Frequency Coil**

Starters are available with dual voltage, dual frequency coils. They are designed to operate on either 50 or 60 Hertz.

**Molded Stationary Contact Block**

Thermoset materials resist arc tracking and the stresses of heat and severe impact.

**Field Modification Kits**

All starters can be modified in the field with a complete range of accessories. These include pushbuttons, selector switches, pilot lights, auxiliary contacts and surge suppressors.

**Auxiliary Equipment**

- NEMA starters are available with built-in START-STOP push buttons for 3-wire control or a HAND-OFF-AUTO selector switch for 2-wire control
- Field modifications such as auxiliary contacts, pilot lights, push buttons, selector switches, and fuse blocks are available to meet particular application requirements
- Normally opened or normally closed auxiliary power pole kits are available for Sizes 00 through 1¾
- Transformers can be ordered as either factory or field modifications. In some cases these may require a larger enclosure
- A full line of replacement parts are available including contact kits, coils, and overload relays

**Size 5 & 6 Starters  
Additional Features**

- Solid State Overload (3RB type) Standard
- Latest technology in arc quenching to extend contactor life
- Wide variety of enclosures in all starter configurations

**Size 7 & 8 Starters  
Additional Features**

- New Compact Design
- Can be mounted in any position
- Same coil voltage is AC or DC

## Features and Benefits

## Selection



ESP200™ Solid State Starter

ESP200™ starters combine the rugged NEMA contactors with a state of the art solid state overload that provides phase loss, phase unbalance ground fault protection. It offers the user greater motor protection and extended life in heavy duty applications. The ESP200™ ultimately results in a cost savings to the user.

**ESP200™ Solid State Overload Relays**

Standard features provide Improved Starter Performance:

- True phase loss protection; trips within 3 seconds
- Phase unbalanced prevents motor running inefficiently
- Ground fault trip when selected
- Selectable trip class 5, 10, 20 or 30
- Reset trip can be selected Auto/ Manual restart
- Easy to select and use, Dip Switch selectable
- Overload is self powered, no need for external power source

**Half Size Starters**

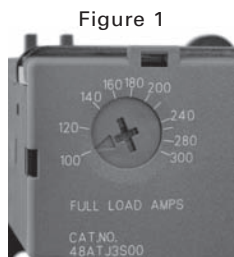
Half-Size starters feature all the rugged performance characteristics of our NEMA rated starter sizes, but are fractionally sized to more closely match your exact motor rating. As a result, significant economic savings are made possible without sacrificing the reliability you expect from a heavy duty starter.

These additional starter sizes have the reserve capacity to handle occasional plugging and jogging applications without derating. Superior operating performance in heavy duty applications is assured by the large current carrying parts, not by derating the device.

Exclusive “half-sizes” save potentially hundreds, even thousands of dollars per project.

Using the table below, simply match the specific size starter to the horsepower rating of your motor. Every half-size starter saves you money—up to 31%.

All “half-sizes” comply to applicable NEMA and UL standards.

**ESP200® FLA Adjustment Dial—Set the adjustment dial on the overload to the FLA of the motor.**

Typical Solid-State Overload Adjustment Dial Markings

Each overload is precisely calibrated and labels are laser printed.

**DIP Switch Settings**

Adjust DIP switch settings to the Trip Class desired 5, 10, 20, or 30.

- Set Phase Unbalance ON or OFF
- Set Phase Loss ON or OFF
- Set Reset to Manual or Automatic
- Set Ground Fault ON or OFF

**Savings for Siemens “Half-Size” Starters in NEMA 1 Enclosures, FVNR**

| Motor Size |      | Starter Size | Half Size | List Price \$ | “Half-Size” Savings Over Next Full Size |
|------------|------|--------------|-----------|---------------|-----------------------------------------|
| 230V       | 460V |              |           |               |                                         |
| 7½         | 10   | 1            | —         |               | —                                       |
| 10         | 15   | —            | 1¾        |               | 31%                                     |
| 15         | 25   | 2            | —         |               | —                                       |
| 20         | 30   | —            | 2½        |               | 20%                                     |
| 30         | 50   | 3            | —         |               | —                                       |
| 40         | 75   | —            | 3½        |               | 13%                                     |
| 50         | 100  | 4            | —         |               | —                                       |

| Standard Auxiliary Contacts    |                      |               |                     |
|--------------------------------|----------------------|---------------|---------------------|
| Type                           | Size (3rd Character) | Configuration | Internal / External |
| All FVNR Starters & Contactors | B Thru E             | 1N.O.         | Internal            |
|                                | F Thru J             | 1N.O.         | External            |
|                                | L Thru M             | 2N.O., 2N.C.  | External            |
|                                | N Thru P             | 1N.O., 1N.C.  | External            |

## Solid State Overload with Auto/Manual Reset, Class 14

## Selection



## Ordering Information

- Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 9/104.
- Factory Modifications see page 9/119.
- Dimensions see pages 9/140 open and 9/157 enclosed.
- Wiring Diagrams see page 9/173.
- Replacement Parts see page 9/131.

## Coil Table

| 60Hz Voltage                 | Letter |
|------------------------------|--------|
| 24                           | J      |
| 120                          | F      |
| 110–120/220–240 <sup>①</sup> | A      |
| 200–208                      | D      |
| 220–240                      | G      |
| 277                          | L      |
| 220–240/440–480 <sup>①</sup> | C      |
| 440–480                      | H      |
| 575–600                      | E      |

For other voltages and frequencies, see Factory Modifications page 9/119.

## Open Type &amp; Standard Width Enclosure, 3-Phase, 3-Pole

| Max Hp         |               |                |               | NEMA Size      | Half Size     | Overload       |               | Enclosure                                                |               |                           |               |                                                                                                                                                      |               |                                                                        |               |                                                                                                                                                           |               |
|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------------------------------------------------|---------------|---------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts      | 230 Volts     | 460 Volts      | 575 Volts     |                |               | Amp Range      | Frame Size    | Open Type<br>Standard Auxiliary<br>Contacts <sup>②</sup> |               | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>③</sup><br>Watertight, Dust-tight,<br>Corrosion Resistant<br>② = W for 304 Stainless Steel<br>② = X for 316 Stainless Steel |               | NEMA 4X<br>Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 7 & 9<br>NEMA 3 & 4<br>Div. 1 and Div. 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |               |
| Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number                                           | List Price \$ | Catalog Number            | List Price \$ | Catalog Number                                                                                                                                       | List Price \$ | Catalog Number                                                         | List Price \$ | Catalog Number                                                                                                                                            | List Price \$ |
| 14BUA32A*      | —             | 14BUB32A*      | —             | 14BUC32A*      | —             | 14CUA32A*      | —             | 14CUB32A*                                                | —             | 14CUC32A*                 | —             | 14CUD32A*                                                                                                                                            | —             | 14DUA32A*                                                              | —             | 14DUB32A*                                                                                                                                                 | —             |
| 14BUB32B*      | —             | 14BUC32B*      | —             | 14CUA32B*      | —             | 14CUB32B*      | —             | 14CUC32B*                                                | —             | 14CUD32B*                 | —             | 14DUA32B*                                                                                                                                            | —             | 14DUB32B*                                                              | —             | 14DUC32A*                                                                                                                                                 | —             |
| 14BUC32A*      | —             | 14CUA32A*      | —             | 14CUB32A*      | —             | 14CUC32A*      | —             | 14CUD32A*                                                | —             | 14DUA32A*                 | —             | 14DUB32A*                                                                                                                                            | —             | 14DUC32A*                                                              | —             | 14DUD32A*                                                                                                                                                 | —             |
| 14CUA32B*      | —             | 14CUB32B*      | —             | 14CUC32B*      | —             | 14CUD32B*      | —             | 14DUA32B*                                                | —             | 14DUB32B*                 | —             | 14DUC32A*                                                                                                                                            | —             | 14DUD32A*                                                              | —             | 14DUE32A*                                                                                                                                                 | —             |
| 14CUB32B*      | —             | 14CUC32B*      | —             | 14CUD32B*      | —             | 14DUA32B*      | —             | 14DUB32B*                                                | —             | 14DUC32A*                 | —             | 14DUD32A*                                                                                                                                            | —             | 14DUE32A*                                                              | —             | 14EUE32A*                                                                                                                                                 | —             |
| 14CUC32B*      | —             | 14CUD32B*      | —             | 14DUA32B*      | —             | 14DUB32B*      | —             | 14DUC32A*                                                | —             | 14DUD32A*                 | —             | 14DUE32A*                                                                                                                                            | —             | 14EUE32A*                                                              | —             | 14FUF32A*                                                                                                                                                 | —             |
| 14CUD32B*      | —             | 14DUA32B*      | —             | 14DUB32B*      | —             | 14DUC32A*      | —             | 14DUD32A*                                                | —             | 14DUE32A*                 | —             | 14EUE32A*                                                                                                                                            | —             | 14FUF32A*                                                              | —             | 14GUG32A*                                                                                                                                                 | —             |
| 14DUA32B*      | —             | 14DUB32B*      | —             | 14DUC32A*      | —             | 14DUD32A*      | —             | 14DUE32A*                                                | —             | 14EUE32A*                 | —             | 14FUF32A*                                                                                                                                            | —             | 14GUG32A*                                                              | —             | 14HUG32A*                                                                                                                                                 | —             |
| 14DUB32B*      | —             | 14DUC32A*      | —             | 14DUD32A*      | —             | 14DUE32A*      | —             | 14EUE32A*                                                | —             | 14FUF32A*                 | —             | 14GUG32A*                                                                                                                                            | —             | 14HUG32A*                                                              | —             | 14IUH32A*                                                                                                                                                 | —             |
| 14DUC32A*      | —             | 14DUD32A*      | —             | 14DUE32A*      | —             | 14EUE32A*      | —             | 14FUF32A*                                                | —             | 14GUG32A*                 | —             | 14HUG32A*                                                                                                                                            | —             | 14IUH32A*                                                              | —             | 14JUH32A*                                                                                                                                                 | —             |
| 14DUD32A*      | —             | 14DUE32A*      | —             | 14EUE32A*      | —             | 14FUF32A*      | —             | 14GUG32A*                                                | —             | 14HUG32A*                 | —             | 14IUH32A*                                                                                                                                            | —             | 14JUH32A*                                                              | —             | 14LPU32A*                                                                                                                                                 | —             |
| 14DUE32A*      | —             | 14EUE32A*      | —             | 14FUF32A*      | —             | 14GUG32A*      | —             | 14HUG32A*                                                | —             | 14IUH32A*                 | —             | 14JUH32A*                                                                                                                                            | —             | 14LPU32A*                                                              | —             | 14MPX32A*                                                                                                                                                 | —             |
| 14EUE32A*      | —             | 14FUF32A*      | —             | 14GUG32A*      | —             | 14HUG32A*      | —             | 14IUH32A*                                                | —             | 14JUH32A*                 | —             | 14LPU32A*                                                                                                                                            | —             | 14MPX32A*                                                              | —             | 14NUN32A*                                                                                                                                                 | —             |
| 14FUF32A*      | —             | 14GUG32A*      | —             | 14HUG32A*      | —             | 14IUH32A*      | —             | 14JUH32A*                                                | —             | 14LPU32A*                 | —             | 14MPX32A*                                                                                                                                            | —             | 14NUN32A*                                                              | —             | 14PUN32A*                                                                                                                                                 | —             |
| 14GUG32A*      | —             | 14HUG32A*      | —             | 14IUH32A*      | —             | 14JUH32A*      | —             | 14LPU32A*                                                | —             | 14MPX32A*                 | —             | 14NUN32A*                                                                                                                                            | —             | 14PUN32A*                                                              | —             | 14NUN32B*                                                                                                                                                 | —             |
| 14HUG32A*      | —             | 14IUH32A*      | —             | 14JUH32A*      | —             | 14LPU32A*      | —             | 14MPX32A*                                                | —             | 14NUN32A*                 | —             | 14PUN32A*                                                                                                                                            | —             | 14NUN32B*                                                              | —             | 14PUN32B*                                                                                                                                                 | —             |
| 14IUH32A*      | —             | 14JUH32A*      | —             | 14LPU32A*      | —             | 14MPX32A*      | —             | 14NUN32A*                                                | —             | 14PUN32A*                 | —             | 14NUN32B*                                                                                                                                            | —             | 14PUN32B*                                                              | —             | 14NUN32E*                                                                                                                                                 | —             |
| 14JUH32A*      | —             | 14LPU32A*      | —             | 14MPX32A*      | —             | 14NUN32A*      | —             | 14PUN32A*                                                | —             | 14NUN32E*                 | —             | 14PUN32B*                                                                                                                                            | —             | 14NUN32E*                                                              | —             | 14PUN32E*                                                                                                                                                 | —             |
| 14LPU32A*      | —             | 14MPX32A*      | —             | 14NUN32A*      | —             | 14PUN32A*      | —             | 14NUN32E*                                                | —             | 14PUN32B*                 | —             | 14NUN32E*                                                                                                                                            | —             | 14PUN32E*                                                              | —             | 14NUN32F*                                                                                                                                                 | —             |
| 14MPX32A*      | —             | 14NUN32A*      | —             | 14PUN32A*      | —             | 14NUN32E*      | —             | 14PUN32B*                                                | —             | 14NUN32F*                 | —             | 14PUN32E*                                                                                                                                            | —             | 14NUN32F*                                                              | —             | 14PUN32F*                                                                                                                                                 | —             |
| 14NUN32A*      | —             | 14PUN32A*      | —             | 14NUN32E*      | —             | 14PUN32B*      | —             | 14NUN32F*                                                | —             | 14PUN32E*                 | —             | 14NUN32F*                                                                                                                                            | —             | 14PUN32F*                                                              | —             | 14NUN32G*                                                                                                                                                 | —             |
| 14PUN32A*      | —             | 14NUN32E*      | —             | 14PUN32B*      | —             | 14NUN32F*      | —             | 14PUN32E*                                                | —             | 14NUN32G*                 | —             | 14PUN32F*                                                                                                                                            | —             | 14NUN32G*                                                              | —             | 14PUN32G*                                                                                                                                                 | —             |
| 14NUN32B*      | —             | 14PUN32B*      | —             | 14NUN32E*      | —             | 14PUN32E*      | —             | 14NUN32F*                                                | —             | 14PUN32F*                 | —             | 14NUN32G*                                                                                                                                            | —             | 14PUN32G*                                                              | —             | 14NUN32H*                                                                                                                                                 | —             |
| 14NUN32E*      | —             | 14PUN32E*      | —             | 14NUN32F*      | —             | 14PUN32F*      | —             | 14NUN32G*                                                | —             | 14PUN32G*                 | —             | 14NUN32H*                                                                                                                                            | —             | 14PUN32H*                                                              | —             | 14NUN32I*                                                                                                                                                 | —             |
| 14NUN32F*      | —             | 14PUN32F*      | —             | 14NUN32G*      | —             | 14PUN32G*      | —             | 14NUN32H*                                                | —             | 14PUN32H*                 | —             | 14NUN32I*                                                                                                                                            | —             | 14PUN32I*                                                              | —             | 14NUN32J*                                                                                                                                                 | —             |
| 14NUN32G*      | —             | 14PUN32G*      | —             | 14NUN32H*      | —             | 14PUN32H*      | —             | 14NUN32I*                                                | —             | 14PUN32I*                 | —             | 14NUN32J*                                                                                                                                            | —             | 14PUN32J*                                                              | —             | 14NUN32K*                                                                                                                                                 | —             |
| 14NUN32H*      | —             | 14PUN32H*      | —             | 14NUN32I*      | —             | 14PUN32I*      | —             | 14NUN32J*                                                | —             | 14PUN32J*                 | —             | 14NUN32K*                                                                                                                                            | —             | 14PUN32K*                                                              | —             | 14NUN32L*                                                                                                                                                 | —             |
| 14NUN32I*      | —             | 14PUN32I*      | —             | 14NUN32J*      | —             | 14PUN32J*      | —             | 14NUN32K*                                                | —             | 14PUN32K*                 | —             | 14NUN32L*                                                                                                                                            | —             | 14PUN32L*                                                              | —             | 14NUN32M*                                                                                                                                                 | —             |
| 14NUN32J*      | —             | 14PUN32J*      | —             | 14NUN32K*      | —             | 14PUN32K*      | —             | 14NUN32L*                                                | —             | 14PUN32L*                 | —             | 14NUN32M*                                                                                                                                            | —             | 14PUN32M*                                                              | —             | 14NUN32N*                                                                                                                                                 | —             |
| 14NUN32K*      | —             | 14PUN32K*      | —             | 14NUN32L*      | —             | 14PUN32L*      | —             | 14NUN32M*                                                | —             | 14PUN32M*                 | —             | 14NUN32N*                                                                                                                                            | —             | 14PUN32N*                                                              | —             | 14NUN32O*                                                                                                                                                 | —             |
| 14NUN32L*      | —             | 14PUN32L*      | —             | 14NUN32M*      | —             | 14PUN32M*      | —             | 14NUN32O*                                                | —             | 14PUN32O*                 | —             | 14NUN32P*                                                                                                                                            | —             | 14PUN32P*                                                              | —             | 14NUN32Q*                                                                                                                                                 | —             |
| 14NUN32M*      | —             | 14PUN32M*      | —             | 14NUN32O*      | —             | 14PUN32O*      | —             | 14NUN32P*                                                | —             | 14PUN32P*                 | —             | 14NUN32Q*                                                                                                                                            | —             | 14PUN32Q*                                                              | —             | 14NUN32R*                                                                                                                                                 | —             |
| 14NUN32N*      | —             | 14PUN32N*      | —             | 14NUN32O*      | —             | 14PUN32O*      | —             | 14NUN32P*                                                | —             | 14PUN32P*                 | —             | 14NUN32Q*                                                                                                                                            | —             | 14PUN32Q*                                                              | —             | 14NUN32S*                                                                                                                                                 | —             |
| 14NUN32O*      | —             | 14PUN32O*      | —             | 14NUN32P*      | —             | 14PUN32P*      | —             | 14NUN32Q*                                                | —             | 14PUN32Q*                 | —             | 14NUN32R*                                                                                                                                            | —             | 14PUN32R*                                                              | —             | 14NUN32T*                                                                                                                                                 | —             |
| 14NUN32P*      | —             | 14PUN32P*      | —             | 14NUN32Q*      | —             | 14PUN32Q*      | —             | 14NUN32R*                                                | —             | 14PUN32R*                 | —             | 14NUN32S*                                                                                                                                            | —             | 14PUN32S*                                                              | —             | 14NUN32U*                                                                                                                                                 | —             |
| 14NUN32Q*      | —             | 14PUN32Q*      | —             | 14NUN32R*      | —             | 14PUN32R*      | —             | 14NUN32S*                                                | —             | 14PUN32S*                 | —             | 14NUN32T*                                                                                                                                            | —             | 14PUN32T*                                                              | —             | 14NUN32V*                                                                                                                                                 | —             |
| 14NUN32R*      | —             | 14PUN32R*      | —             | 14NUN32S*      | —             | 14PUN32S*      | —             | 14NUN32T*                                                | —             | 14PUN32T*                 | —             | 14NUN32U*                                                                                                                                            | —             | 14PUN32U*                                                              | —             | 14NUN32W*                                                                                                                                                 | —             |
| 14NUN32S*      | —             | 14PUN32S*      | —             | 14NUN32T*      | —             | 14PUN32T*      | —             | 14NUN32U*                                                | —             | 14PUN32U*                 | —             | 14NUN32V*                                                                                                                                            | —             | 14PUN32V*                                                              | —             | 14NUN32X*                                                                                                                                                 | —             |
| 14NUN32T*      | —             | 14PUN32T*      | —             | 14NUN32U*      | —             | 14PUN32U*      | —             | 14NUN32V*                                                | —             | 14PUN32V*                 | —             | 14NUN32W*                                                                                                                                            | —             | 14PUN32W*                                                              | —             | 14NUN32Y*                                                                                                                                                 | —             |
| 14NUN32U*      | —             | 14PUN32U*      | —             | 14NUN32V*      | —             | 14PUN32V*      | —             | 14NUN32W*                                                | —             | 14PUN32W*                 | —             | 14NUN32X*                                                                                                                                            | —             | 14PUN32X*                                                              | —             | 14NUN32Z*                                                                                                                                                 | —             |
| 14NUN32V*      | —             | 14PUN32V*      | —             | 14NUN32W*      | —             | 14PUN32W*      | —             | 14NUN32X*                                                | —             | 14PUN32X*                 | —             | 14NUN32Y*                                                                                                                                            | —             | 14PUN32Y*                                                              | —             | 14NUN32AA*                                                                                                                                                | —             |
| 14NUN32W*      | —             | 14PUN32W*      | —             | 14NUN32X*      | —             | 14PUN32X*      | —             | 14NUN32Y*                                                | —             | 14PUN32Y*                 | —             | 14NUN32Z*                                                                                                                                            | —             | 14PUN32Z*                                                              | —             | 14NUN32AB*                                                                                                                                                | —             |
| 14NUN32X*      | —             | 14PUN32X*      | —             | 14NUN32Y*      | —             | 14PUN32Y*      | —             | 14NUN32Z*                                                | —             | 14PUN32Z*                 | —             | 14NUN32AA*                                                                                                                                           | —             | 14PUN32AA*                                                             | —             | 14NUN32AC*                                                                                                                                                | —             |
| 14NUN32Y*      | —             | 14PUN32Y*      | —             | 14NUN32Z*      | —             | 14PUN32Z*      | —             | 14NUN32AA*                                               | —             | 14PUN32AA*                | —             | 14NUN32AB*                                                                                                                                           | —             | 14PUN32AB*                                                             | —             | 14NUN32AD*                                                                                                                                                | —             |
| 14NUN32Z*      | —             | 14PUN32Z*      | —             | 14NUN32AA*     | —             | 14PUN32AA*     | —             | 14NUN32AB*                                               | —             | 14PUN32AB*                | —             | 14NUN32AC*                                                                                                                                           | —             | 14PUN32AC*                                                             | —             | 14NUN32AE*                                                                                                                                                | —             |
| 14NUN32AA*     | —             | 14PUN32AA*     | —             | 14NUN32AB*     | —             | 14PUN32AB*     | —             | 14NUN32AC*                                               | —             | 14PUN32AC*                | —             | 14NUN32AD*                                                                                                                                           | —             | 14PUN32AD*                                                             | —             | 14NUN32AF*                                                                                                                                                | —             |
| 14NUN32AB*     | —             | 14PUN32AB*     | —             | 14NUN32AC*     | —             | 14PUN32AC*     | —             | 14NUN32AD*                                               | —             | 14PUN32AD*                | —             | 14NUN32AE*                                                                                                                                           | —             | 14PUN32AE*                                                             | —             | 14NUN32AG*                                                                                                                                                | —             |
| 14NUN32AC*     | —             | 14PUN32AC*     | —             | 14NUN32AD*     | —             | 14PUN32AD*     | —             | 14NUN32AE*                                               | —             | 14PUN32AE*                | —             | 14NUN32AF*                                                                                                                                           | —             | 14PUN32AF*                                                             | —             | 14NUN32AH*                                                                                                                                                | —             |
| 14NUN32AD*     | —             | 14PUN32AD*     | —             | 14NUN32AE*     | —             | 14PUN32AE*     | —             | 14NUN32AF*                                               | —             | 14PUN32AF*                | —             | 14NUN32AG*                                                                                                                                           | —             | 14PUN32AG*                                                             | —             | 14NUN32AI*                                                                                                                                                | —             |
| 14NUN32AE*     | —             | 14PUN32AE*     | —             | 14NUN32AF*     | —             | 14PUN32AF*     | —             | 14NUN32AG*                                               | —             | 14PUN32AG*                | —             | 14NUN32AH*                                                                                                                                           | —             | 14PUN32AH*                                                             | —             | 14NUN32AJ*                                                                                                                                                | —             |
| 14NUN32AF*     | —             | 14PUN32AF*     | —             | 14NUN32AG*     | —             | 14PUN32AG*     | —             | 14NUN32AH*                                               | —             | 14PUN32AH*                | —             | 14NUN32AJ*                                                                                                                                           | —             | 14PUN32AJ*                                                             | —             | 14NUN32AK*                                                                                                                                                | —             |
| 14NUN32AG*     | —             | 14PUN32AG*     | —             | 14NUN32AH*     | —             | 14PUN32AH*     | —             | 14NUN32AJ*                                               | —             | 14PUN32AJ*                | —             | 14NUN32AK*                                                                                                                                           | —             | 14PUN32AK*                                                             | —             | 14NUN32AL*                                                                                                                                                | —             |
| 14NUN32AH*     | —             | 14PUN32AH*     | —             | 14NUN32AJ*     | —             | 14PUN32AJ*     | —             | 14NUN32AK*                                               | —             | 14PUN32AK*                | —             | 14NUN32AL*                                                                                                                                           | —             | 14PUN32AL*                                                             | —             | 14NUN32AM*                                                                                                                                                | —             |
| 14NUN32AJ*     | —             | 14PUN32AJ*     | —             | 14NUN32AK*     | —             | 14PUN32AK*     | —             | 14NUN32AL*                                               | —             | 14PUN32AL*                | —             | 14NUN32AM*                                                                                                                                           | —             | 14PUN32AM*                                                             | —             | 14NUN32AN*                                                                                                                                                | —             |
| 14NUN32AK*     | —             | 14PUN32AK*     | —             | 14NUN32AL*     | —             | 14PUN32AL*     | —             | 14NUN32AM*                                               | —             | 14PUN32AM*                | —             | 14NUN32AN*                                                                                                                                           | —             | 14PUN32AN*                                                             | —             | 14NUN32AO*                                                                                                                                                | —             |
| 14NUN32AL*     | —             | 14PUN32AL*     | —             | 14NUN32AM*     | —             | 14PUN32AM*     | —             | 14NUN32AN*                                               | —             | 14PUN32AN*                | —             | 14NUN32AO*                                                                                                                                           | —             | 14PUN32AO*                                                             | —             | 14NUN32AP*                                                                                                                                                | —             |
| 14NUN32AM*     | —             | 14PUN32AM*     | —             | 14NUN32AN*     | —             | 14PUN32AN*     | —             | 14NUN32AO*                                               | —             | 14PUN32AO*                | —             | 14NUN32AP*                                                                                                                                           | —             | 14PUN32AP*                                                             | —             | 14NUN32AQ*                                                                                                                                                | —             |
| 14NUN32AN*     | —             | 14PUN32AN*     | —             | 14NUN32AO*     | —             | 14PUN32AO*     | —             | 14NUN32AP*                                               | —             | 14PUN32AP*                | —             | 14NUN32AQ*                                                                                                                                           | —             | 14PUN32AQ*                                                             | —             | 14NUN32AR*                                                                                                                                                | —             |
| 14NUN32AO*     | —             | 14PUN32AO*     | —             | 14NUN32AP*     | —             | 14PUN32AP*     | —             | 14NUN32AQ*                                               | —             | 14PUN32AQ*                | —             | 14NUN32AR*                                                                                                                                           | —             | 14PUN32AR*                                                             | —             | 14NUN32AS*                                                                                                                                                | —             |
| 14NUN32AP*     | —             | 14PUN32AP*     | —             | 14NUN32AQ*     | —             | 14PUN32AQ*     | —             | 14NUN32AR*                                               | —             | 14PUN32AR*                | —             | 14NUN32AS*                                                                                                                                           | —             | 14PUN32AS*                                                             | —             | 14NUN32AT*                                                                                                                                                | —             |
| 14NUN32AQ*     | —             | 14PUN32AQ*     | —             | 14NUN32AR*     | —             | 14PUN32AR*     | —             | 14NUN32AS*                                               | —             | 14PUN32AS*                | —             | 14NUN32AT*                                                                                                                                           | —             | 14PUN32AT*                                                             | —             | 14NUN32AU*                                                                                                                                                | —             |
| 14NUN32AR*     | —             | 14PUN32AR*     | —             | 14NUN32AS*     | —             | 14PUN32AS*     | —             | 14NUN32AT*                                               | —             | 14PUN32AT*                | —             | 14NUN32AU*                                                                                                                                           | —             | 14PUN32AU*                                                             | —             | 14NUN32AV*                                                                                                                                                | —             |
| 14NUN32AS*     | —             | 14PUN32AS*     | —             | 14NUN32AT*     | —             | 14PUN32AT*     | —             | 14NUN32AU*                                               | —             | 14PUN32AU*                | —             | 14NUN32AV*                                                                                                                                           | —             | 14PUN32AV*                                                             | —             | 14NUN32AW*                                                                                                                                                | —             |
| 14NUN32AT*     | —             | 14PUN32AT*     | —             | 14NUN32AU*     | —             | 14PUN32AU*     | —             | 14NUN32AV*                                               | —             | 14PUN32AV*                | —             | 14NUN32AW*                                                                                                                                           | —             | 14PUN32AW*                                                             | —             | 14NUN32AX*                                                                                                                                                | —             |
| 14NUN32AU*     | —             | 14PUN32AU*     | —             | 14NUN32AV*     | —             | 14PUN32AV*     | —             | 14NUN32AW*                                               | —             | 14PUN32AW*                | —             | 14NUN32AX*                                                                                                                                           | —             | 14PUN32AX*                                                             | —             | 14NUN32AY*                                                                                                                                                | —             |
| 14NUN32AV*     | —             | 14PUN32AV*     | —             | 14NUN32AW*     | —             | 14PUN32AW*     | —             | 14NUN32AX*                                               | —             | 14PUN32AX*                | —             | 14NUN32AY*                                                                                                                                           | —             | 14PUN32AY*                                                             | —             | 14NUN32AZ*                                                                                                                                                | —             |
| 14NUN32AW*     | —             | 14PUN32AW*     | —             | 14NUN32AX*     | —             | 14PUN32AX*     | —             | 14NUN32AY*                                               | —             | 14PUN32AY*                | —             | 14NUN32AZ*                                                                                                                                           | —             | 14PUN32AZ*                                                             | —             | 14NUN32BA*                                                                                                                                                | —             |
| 14NUN32AX*     | —             | 14PUN32AX*     | —             | 14NUN32AY*     | —             | 14PUN32AY*     | —             | 14NUN32AZ*                                               | —             | 14PUN32AZ*                | —             | 14NUN32BA*                                                                                                                                           | —             | 14PUN32BA*                                                             | —             | 14NUN32BB*                                                                                                                                                | —             |
| 14NUN32AY*     | —             | 14PUN32AY*     | —             | 14NUN32AZ*     | —             | 14PUN32AZ*     | —             | 14NUN32BA*                                               | —             | 14PUN32BA*                | —             | 14NUN32BB*                                                                                                                                           | —             | 14PUN32BB*                                                             | —             | 14NUN32BC*                                                                                                                                                | —             |
| 14NUN32AZ*     | —             | 14PUN32AZ*     | —             | 14NUN32BA*     | —             | 14PUN32BA*     | —             | 14NUN32BB*                                               | —             | 14PUN32BB*                | —             | 14NUN32BC*                                                                                                                                           | —             | 14PUN32BC*                                                             | —             | 14NUN32BD*                                                                                                                                                | —             |
| 14NUN32BA*     | —             | 14PUN32BA*     | —             | 14NUN32BB*     | —             | 14PUN32BB*     | —             | 14NUN32BC*                                               | —             | 14PUN32BC*                | —             | 14NUN32BD*                                                                                                                                           | —             | 14PUN32BD*                                                             | —             | 14NUN32BE*                                                                                                                                                | —             |
| 14NUN32BB*     | —             | 14PUN32BB*     | —             | 14NUN32BC*     | —             | 14PUN32BC*     | —             | 14NUN32                                                  |               |                           |               |                                                                                                                                                      |               |                                                                        |               |                                                                                                                                                           |               |

Open Type & Standard Width Enclosure, Single Phase, 2-Pole<sup>③</sup>

| Max Hp       |                      |              | Overload     |               | Enclosure                                   |                  |                           |                  |                                                                                                                                          |                  |                                                                     |                  |                                                                                                                                                           |                  |                                                                                        |                  |
|--------------|----------------------|--------------|--------------|---------------|---------------------------------------------|------------------|---------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------|------------------|
|              |                      |              |              |               | Open Type<br>Standard Auxiliary<br>Contacts |                  | NEMA 1<br>General Purpose |                  | NEMA 4/4X Stainless®<br>Watertight, Dust-tight,<br>Corrosion Resistant<br>@ = W for 304 Stainless Steel<br>@ = X for 316 Stainless Steel |                  | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |                  | NEMA 7 & 9<br>NEMA 3 & 4<br>Div. 1 and Div. 2 Class I<br>Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |                  | NEMA 12<br>NEMA 3/3R®<br>Industrial Use<br>Weatherproof<br>(Field Convertible to 3/3R) |                  |
| 115<br>Volts | 208/<br>230<br>Volts | NEMA<br>Size | Amp<br>Range | Frame<br>Size | Catalog<br>Number                           | List<br>Price \$ | Catalog<br>Number         | List<br>Price \$ | Catalog<br>Number                                                                                                                        | List<br>Price \$ | Catalog<br>Number                                                   | List<br>Price \$ | Catalog<br>Number                                                                                                                                         | List<br>Price \$ | Catalog<br>Number                                                                      | List<br>Price \$ |
| 1/4          | 1/4                  | 0            | 0.75–3.4     | A             | 14CUB12A*                                   |                  | 14CUB12B*                 |                  | 14CUB12@*                                                                                                                                |                  | 14CUB12F*                                                           |                  | 14CUB12H*                                                                                                                                                 |                  | 14CUB120*                                                                              |                  |
| 1/4          | 1/4                  | 0            | 3–12         | A1            | 14CUC12A*                                   |                  | 14CUC12B*                 |                  | 14CUC12@*                                                                                                                                |                  | 14CUC12F*                                                           |                  | 14CUC12H*                                                                                                                                                 |                  | 14CUC120*                                                                              |                  |
| 1            | 2                    | 0            | 5.5–22       | A1            | 14CUD12A*                                   |                  | 14CUD12B*                 |                  | 14CUD12@*                                                                                                                                |                  | 14CUD12F*                                                           |                  | 14CUD12H*                                                                                                                                                 |                  | 14CUD120*                                                                              |                  |
| 1/4          | 1/4                  | 1            | 0.75–3.4     | A             | 14DUB12A*                                   |                  | 14DUB12B*                 |                  | 14DUB12@*                                                                                                                                |                  | 14DUB12F*                                                           |                  | 14DUB12H*                                                                                                                                                 |                  | 14DUB120*                                                                              |                  |
| 1/4          | 1/4                  | 1            | 3–12         | A1            | 14DUC12A*                                   |                  | 14DUC12B*                 |                  | 14DUC12@*                                                                                                                                |                  | 14DUC12F*                                                           |                  | 14DUC12H*                                                                                                                                                 |                  | 14DUC120*                                                                              |                  |
| 1            | 2                    | 1            | 5.5–22       | A1            | 14DUD12A*                                   |                  | 14DUD12B*                 |                  | 14DUD12@*                                                                                                                                |                  | 14DUD12F*                                                           |                  | 14DUD12H*                                                                                                                                                 |                  | 14DUD120*                                                                              |                  |
| 3            | 7 1/2                | 2            | 25–100       | B             | 14FUG12A*                                   |                  | 14FUG12B*                 |                  | 14FUG12@*                                                                                                                                |                  | 14FUG12F*                                                           |                  | 14FUG12H*                                                                                                                                                 |                  | 14FUG120*                                                                              |                  |
| 7 1/2        | 15                   | 3            | 25–100       | B             | 14HUG12A*                                   |                  | 14HUG12B*                 |                  | 14HUG12@*                                                                                                                                |                  | 14HUG12F*                                                           |                  | 14HUG12H*                                                                                                                                                 |                  | 14HUG120*                                                                              |                  |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in size 5–8 starters.

② For conduit hubs and conversion instructions, see page 9/110.

③ Coils D, F, or G will be wired for incoming voltage. J coil will be wired for separate source. Coils E, H, and L do not apply to single phase starters.

④ Enclosure is NEMA Type 4 (painted steel).

⑤ F coil 100–250V AC 50/60Hz, or DC, H coil 150–500V AC 50/60Hz, or DC

⑥ Only available F coil 100–250V AC 50/60Hz, or DC



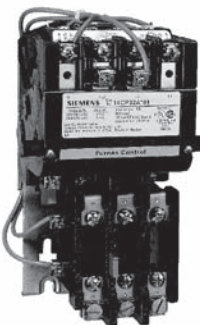
|  <p>NEMA 1</p> | <p><b>Ordering Information</b></p> <ul style="list-style-type: none"> <li>▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li> <li>▶ Field Modification Kits see page 9/104.</li> <li>▶ Factory Modifications see page 9/119.</li> <li>▶ Dimensions see page 9/157.</li> <li>▶ Wiring Diagrams see page 9/173.</li> <li>▶ Replacement Parts see page 9/131.</li> </ul> | <p><b>Coil Table</b></p> <table> <tr> <th>60Hz Voltage</th><th>Letter</th></tr> <tr><td>24</td><td>J</td></tr> <tr><td>120</td><td>F</td></tr> <tr><td>110–120/220–240</td><td>A</td></tr> <tr><td>200–208</td><td>D</td></tr> <tr><td>220–240</td><td>G</td></tr> <tr><td>277</td><td>L</td></tr> <tr><td>220–240/440–480</td><td>C</td></tr> <tr><td>440–480</td><td>H</td></tr> <tr><td>575–600</td><td>E</td></tr> </table> <p>For other voltages and frequencies, see Factory Modifications page 9/119.</p> | 60Hz Voltage | Letter | 24 | J | 120 | F | 110–120/220–240 | A | 200–208 | D | 220–240 | G | 277 | L | 220–240/440–480 | C | 440–480 | H | 575–600 | E |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|----|---|-----|---|-----------------|---|---------|---|---------|---|-----|---|-----------------|---|---------|---|---------|---|
| 60Hz Voltage                                                                                    | Letter                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 24                                                                                              | J                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 120                                                                                             | F                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 110–120/220–240                                                                                 | A                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 200–208                                                                                         | D                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 220–240                                                                                         | G                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 277                                                                                             | L                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 220–240/440–480                                                                                 | C                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 440–480                                                                                         | H                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 575–600                                                                                         | E                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |

| Max Hp    |           |           |           | NEMA Size | Half Size | Overload  |            | Enclosure                 |               |                                                                                                                                                      |               |                                                                                                                                                           |               |                                                                                                    |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|---------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------|---------------|
|           |           |           |           |           |           | Amp Range | Frame Size | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight,<br>Corrosion Resistant<br>Ⓐ = W for 304 Stainless Steel<br>Ⓑ = X for 316 Stainless Steel |               | NEMA 7 & 9<br>NEMA 3 & 4<br>Div. 1 and Div. 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |               | NEMA 12<br>NEMA 3/3R <sup>②</sup><br>Industrial Use<br>Weatherproof<br>(Field Convertible to 3/3R) |               |
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |           |            | Catalog Number            | List Price \$ | Catalog Number                                                                                                                                       | List Price \$ | Catalog Number                                                                                                                                            | List Price \$ | Catalog Number                                                                                     | List Price \$ |
| ¼         | ¼         | ¼         | ¼         | 00        | —         | 0.25–1    | A          | 14BUA82B*                 |               | Use Size 0                                                                                                                                           | —             | Use Size 0                                                                                                                                                | —             | Use Size 0                                                                                         | —             |
| ½         | ¾         | 1½        | 2         | 00        | —         | 0.75–3.4  | A          | 14BUB82B*                 |               | Use Size 0                                                                                                                                           | —             | Use Size 0                                                                                                                                                | —             | Use Size 0                                                                                         | —             |
| 1½        | 1½        | 2         | —         | 00        | —         | 3–12      | A1         | 14BUC82B*                 |               | Use Size 0                                                                                                                                           | —             | Use Size 0                                                                                                                                                | —             | Use Size 0                                                                                         | —             |
| ¼         | ¼         | ¼         | ¼         | 0         | —         | 0.25–1    | A          | 14CUA82B*                 |               | 14CUA82@*                                                                                                                                            |               | 14CUA82H*                                                                                                                                                 |               | 14CUA820*                                                                                          |               |
| ½         | ¾         | 1½        | 2         | 0         | —         | 0.75–3.4  | A          | 14CUB82B*                 |               | 14CUB82@*                                                                                                                                            |               | 14CUB82H*                                                                                                                                                 |               | 14CUB820*                                                                                          |               |
| 2         | 2         | 5         | 5         | 0         | —         | 3–12      | A1         | 14CUC82B*                 |               | 14CUC82@*                                                                                                                                            |               | 14CUC82H*                                                                                                                                                 |               | 14CUC820*                                                                                          |               |
| 3         | 3         | —         | —         | 0         | —         | 5.5–22    | A1         | 14CUD82B*                 |               | 14CUD82@*                                                                                                                                            |               | 14CUD82H*                                                                                                                                                 |               | 14CUD820*                                                                                          |               |
| ¼         | ¼         | ¼         | ¼         | 1         | —         | 0.25–1    | A          | 14DUA82B*                 |               | 14DUA82@*                                                                                                                                            |               | 14DUA82H*                                                                                                                                                 |               | 14DUA820*                                                                                          |               |
| ½         | ¾         | 1½        | 2         | 1         | —         | 0.75–3.4  | A          | 14DUB82B*                 |               | 14DUB82@*                                                                                                                                            |               | 14DUB82H*                                                                                                                                                 |               | 14DUB820*                                                                                          |               |
| 2         | 2         | 5         | 5         | 1         | —         | 3–12      | A1         | 14DUC82B*                 |               | 14DUC82@*                                                                                                                                            |               | 14DUC82H*                                                                                                                                                 |               | 14DUC820*                                                                                          |               |
| 3         | 3         | 10        | 10        | 1         | —         | 5.5–22    | A1         | 14DUD82B*                 |               | 14DUD82@*                                                                                                                                            |               | 14DUD82H*                                                                                                                                                 |               | 14DUD820*                                                                                          |               |
| 7½        | 7½        | —         | —         | 1         | —         | 10–40     | A1         | 14DUE82B*                 |               | 14DUE82@*                                                                                                                                            |               | 14DUE82H*                                                                                                                                                 |               | 14DUE820*                                                                                          |               |
| 10        | 10        | 15        | 15        | —         | 1½        | 10–40     | A1         | 14EUE82B*                 |               | 14EUE82@*                                                                                                                                            |               | 14EUE82H*                                                                                                                                                 |               | 14EUE820*                                                                                          |               |
| 10        | 15        | 25        | 25        | 2         | —         | 13–52     | B          | 14FUF82B*                 |               | 14FUF82@*                                                                                                                                            |               | 14FUF82H*                                                                                                                                                 |               | 14FUF820*                                                                                          |               |
| 15        | 20        | 30        | 30        | —         | 2½        | 25–100    | B          | 14GUG82B*                 |               | 14GUG82@*                                                                                                                                            |               | 14GUG82H*                                                                                                                                                 |               | 14GUG820*                                                                                          |               |
| 25        | 30        | 50        | 50        | 3         | —         | 25–100    | B          | 14HUG82B*                 |               | 14HUG82@*                                                                                                                                            |               | 14HUG82H*                                                                                                                                                 |               | 14HUG820*                                                                                          |               |
| 30        | 40        | 75        | 75        | —         | 3½        | 50–200    | B          | 14IUH82B*                 |               | 14IUH82@*                                                                                                                                            |               | 14IUH82H*                                                                                                                                                 |               | 14IUH820*                                                                                          |               |

**Product Category: NEMA**

## Ambient Compensated Bimetal Overload with Manual and Auto Reset, Class 14

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Coil Table                                                                                                                                                                                                                                                                                                                                                                                 |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|----|---|-----|---|-----------------|---|---------|---|---------|---|-----|---|-----------------|---|---------|---|---------|---|
|                                                                                   | <ul style="list-style-type: none"><li>▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>▶ Heater elements see page 9/124. Single phase starters require 1 heater element. 3-phase starters require 3 heater elements.</li><li>▶ Field Modification Kits page 9/104.</li><li>▶ Factory Modifications page 9/119.</li><li>▶ Dimensions see page 9/140 open and 9/157 enclosed.</li><li>▶ Wiring Diagrams see page 9/173.</li><li>▶ Replacement Parts see page 9/131.</li><li>▶ For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact.</li></ul> | <table><tr><th>60Hz Voltage</th><th>Letter</th></tr><tr><td>24</td><td>J</td></tr><tr><td>120</td><td>F</td></tr><tr><td>110–120/220–240</td><td>A</td></tr><tr><td>200–208</td><td>D</td></tr><tr><td>220–240</td><td>G</td></tr><tr><td>277</td><td>L</td></tr><tr><td>220–240/440–480</td><td>C</td></tr><tr><td>440–480</td><td>H</td></tr><tr><td>575–600</td><td>E</td></tr></table> | 60Hz Voltage | Letter | 24 | J | 120 | F | 110–120/220–240 | A | 200–208 | D | 220–240 | G | 277 | L | 220–240/440–480 | C | 440–480 | H | 575–600 | E |
|                                                                                   | 60Hz Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Letter                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
|                                                                                   | 24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | J                                                                                                                                                                                                                                                                                                                                                                                          |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 120                                                                               | F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 110–120/220–240                                                                   | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 200–208                                                                           | D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 220–240                                                                           | G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 277                                                                               | L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 220–240/440–480                                                                   | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 440–480                                                                           | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 575–600                                                                           | E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| For other voltages and frequencies, see Factory Modifications page 9/119.         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |

## Open Type &amp; Standard Width Enclosure, 3-Phase, 3-Pole

| Max Hp     |            |            |            | Contactor Amp Rating | NEMA Size | Half Size | Enclosure                                          |    |                        |    |                                                                                                                                         |    |                                                               |    |                                                                                                                    |    |                                                            |    |
|------------|------------|------------|------------|----------------------|-----------|-----------|----------------------------------------------------|----|------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------|----|
| 200 Volts  | 230 Volts  | 460 Volts  | 575 Volts  |                      |           |           | Open Type Standard Auxiliary Contacts <sup>④</sup> |    | NEMA 1 General Purpose |    | NEMA 4/4X Stainless <sup>②</sup> Watertight, Dust-tight Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel |    | NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant |    | NEMA 7 & 9 NEMA 3 & 4 Class I Groups C & D Class II Groups E, F & G Class III Bolted Enclosures Indoor/Outdoor Use |    | NEMA 12 NEMA 3/3R <sup>③</sup> Industrial Use Weatherproof |    |
| Catalog No | Catalog No | Catalog No | Catalog No |                      |           |           | Catalog No                                         | \$ | Catalog No             | \$ | Catalog No                                                                                                                              | \$ | Catalog No                                                    | \$ | Catalog No                                                                                                         | \$ | Catalog No                                                 | \$ |
| 1½         | 1½         | 2          | 2          | 9                    | 00        | —         | 14BP32A*81                                         |    | 14BP32B*81             |    | Use Size 0                                                                                                                              | —  | Use Size 0                                                    | —  | Use Size 0                                                                                                         | —  | Use Size 0                                                 | —  |
| 3          | 3          | 5          | 5          | 18                   | 0         | —         | 14CP32A*81                                         |    | 14CP32B*81             |    | 14CP32@*81                                                                                                                              |    | 14CP32F*81                                                    |    | 14CP32H*81                                                                                                         |    | 14CP320*81                                                 |    |
| 7½         | 7½         | 10         | 10         | 27                   | 1         | —         | 14DP32A*81                                         |    | 14DP32B*81             |    | 14DP32@*81                                                                                                                              |    | 14DP32F*81                                                    |    | 14DP32H*81                                                                                                         |    | 14DP320*81                                                 |    |
| 10         | 10         | 15         | 15         | 40                   | —         | 1¼        | 14EP32A*81                                         |    | 14EP32B*81             |    | 14EP32@*81                                                                                                                              |    | 14EP32F*81                                                    |    | 14EP32H*81                                                                                                         |    | 14EP320*81                                                 |    |
| 10         | 15         | 25         | 25         | 45                   | 2         | —         | 14FP32A*81                                         |    | 14FP32B*81             |    | 14FP32@*81                                                                                                                              |    | 14FP32F*81                                                    |    | 14FP32H*81                                                                                                         |    | 14FP320*81                                                 |    |
| 15         | 20         | 30         | 30         | 60                   | —         | 2½        | 14GP32A*81                                         |    | 14GP32B*81             |    | 14GP32@*81                                                                                                                              |    | 14GP32F*81                                                    |    | 14GP32H*81                                                                                                         |    | 14GP320*81                                                 |    |
| 25         | 30         | 50         | 50         | 90                   | 3         | —         | 14HP32A*81                                         |    | 14HP32B*81             |    | 14HP32@*81                                                                                                                              |    | 14HP32F*81                                                    |    | 14HP32H*81                                                                                                         |    | 14HP320*81                                                 |    |
| 30         | 40         | 75         | 75         | 115                  | —         | 3½        | 14IP32A*81                                         |    | 14IP32B*81             |    | 14IP32@*81                                                                                                                              |    | 14IP32F*81                                                    |    | 14IP32H*81                                                                                                         |    | 14IP320*81                                                 |    |
| 40         | 50         | 100        | 100        | 135                  | 4         | —         | 14JG32A*81                                         |    | 14JG32B*81             |    | 14JG32@*81                                                                                                                              |    | 14JG32F*81                                                    |    | 14JG32H*81                                                                                                         |    | 14JG320*81                                                 |    |

Open Type & Standard Width Enclosure, Single Phase, 2-Pole<sup>③</sup>

| Max Hp     |               | Contactor Amp Rating | NEMA Size | Half Size | Enclosure  |    |                        |    |                                                                                                                                         |    |                                                                                                  |    |                                                                              |    |                                                            |    |
|------------|---------------|----------------------|-----------|-----------|------------|----|------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------|----|------------------------------------------------------------|----|
| 115 Volts  | 208/230 Volts |                      |           |           | Open Type  |    | NEMA 1 General Purpose |    | NEMA 4/4X Stainless <sup>②</sup> Watertight, Dust-tight Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel |    | NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant Class II Groups E, F & G Class III |    | NEMA 7 & 9 NEMA 3 & 4 Div 1 and Div 2 Class I Groups C & D Bolted Enclosures |    | NEMA 12 NEMA 3/3R <sup>③</sup> Industrial Use Weatherproof |    |
| Catalog No | Catalog No    |                      |           |           | Catalog No | \$ | Catalog No             | \$ | Catalog No                                                                                                                              | \$ | Catalog No                                                                                       | \$ | Catalog No                                                                   | \$ | Catalog No                                                 | \$ |
| ½          | 1             | 9                    | 00        | —         | 14BP12A*81 |    | 14BP12B*81             |    | Use Size 0                                                                                                                              | —  | Use Size 0                                                                                       | —  | Use Size 0                                                                   | —  | Use Size 0                                                 | —  |
| 1          | 2             | 18                   | 0         | —         | 14CP12A*81 |    | 14CP12B*81             |    | 14CP12@*81                                                                                                                              |    | 14CP12F*81                                                                                       |    | 14CP12H*81                                                                   |    | 14CP120*81                                                 |    |
| 2          | 3             | 27                   | 1         | —         | 14DP12A*81 |    | 14DP12B*81             |    | 14DP12@*81                                                                                                                              |    | 14DP12F*81                                                                                       |    | 14DP12H*81                                                                   |    | 14DP120*81                                                 |    |
| 3          | 5             | 35                   | 1P        | —         | 14EP12A*81 |    | 14EP12B*81             |    | 14EP12@*81                                                                                                                              |    | 14EP12F*81                                                                                       |    | 14EP12H*81                                                                   |    | 14EP120*81                                                 |    |
| 3          | 7½            | 45                   | 2         | —         | 14FP12A*81 |    | 14FP12B*81             |    | 14FP12@*81                                                                                                                              |    | 14FP12F*81                                                                                       |    | 14FP12H*81                                                                   |    | 14FP120*81                                                 |    |
| 5          | 10            | 60                   | —         | 2½        | 14GP12A*81 |    | 14GP12B*81             |    | 14GP12@*81                                                                                                                              |    | 14GP12F*81                                                                                       |    | 14GP12H*81                                                                   |    | 14GP120*81                                                 |    |

Extra Wide Enclosure, 3-Phase, 3-Pole<sup>③</sup>

| Max Hp     |            |            |            | Contactor Amp Rating | NEMA Size | Half Size | Enclosure              |          |                                                                                                                                         |          |                                                                                   |          |                                                                       |          |
|------------|------------|------------|------------|----------------------|-----------|-----------|------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------|----------|
| 200 Volts  | 230 Volts  | 460 Volts  | 575 Volts  |                      |           |           | NEMA 1 General Purpose |          | NEMA 4/4X Stainless <sup>②</sup> Watertight, Dust-tight Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel |          | NEMA 7 & 9. NEMA 3 & 4 Div 1 and Div 2 Class II Groups E, F & G Bolted Enclosures |          | NEMA 12. NEMA 3/3R <sup>③</sup> Industrial Use Weatherproof Class III |          |
| Catalog No | Catalog No | Catalog No | Catalog No |                      |           |           | Catalog No             | Price \$ | Catalog No                                                                                                                              | Price \$ | Catalog No                                                                        | Price \$ | Catalog No                                                            | Price \$ |
| 1½         | 1½         | 2          | 2          | 9                    | 00        | —         | 14BP82B*81             |          | Use Size 0                                                                                                                              | —        | Use Size 0                                                                        | —        | Use Size 0                                                            | —        |
| 3          | 3          | 5          | 5          | 18                   | 0         | —         | 14CP82B*81             |          | 14CP82@*81                                                                                                                              |          | 14CP82H*81                                                                        |          | 14CP820*81                                                            |          |
| 7½         | 7½         | 10         | 10         | 27                   | 1         | —         | 14DP82B*81             |          | 14DP82@*81                                                                                                                              |          | 14DP82H*81                                                                        |          | 14DP820*81                                                            |          |
| 10         | 10         | 15         | 15         | 40                   | —         | 1¾        | 14EP82B*81             |          | 14EP82@*81                                                                                                                              |          | 14EP82H*81                                                                        |          | 14EP820*81                                                            |          |
| 10         | 15         | 25         | 25         | 45                   | 2         | —         | 14FP82B*81             |          | 14FP82@*81                                                                                                                              |          | 14FP82H*81                                                                        |          | 14FP820*81                                                            |          |
| 15         | 20         | 30         | 30         | 60                   | —         | 2½        | 14GP82B*81             |          | 14GP82@*81                                                                                                                              |          | 14GP82H*81                                                                        |          | 14GP820*81                                                            |          |
| 25         | 30         | 50         | 50         | 90                   | 3         | —         | 14HP82B*81             |          | 14HP82@*81                                                                                                                              |          | 14HP82H*81                                                                        |          | 14HP820*81                                                            |          |
| 30         | 40         | 75         | 75         | 115                  | —         | 3½        | 14IP82B*81             |          | 14IP82@*81                                                                                                                              |          | 14IP82H*81                                                                        |          | 14IP820*81                                                            |          |

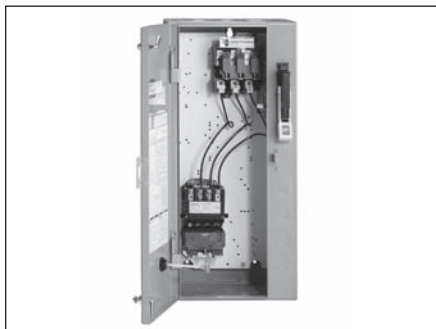
**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All Starter Sizes carry one maximum Hp rating. For higher Hp single phase motors, use 3-phase starters, wire and set per diagram on page 9/173.

- ① To receive a single phase starter in an extra wide enclosure, order the enclosure kit from pg 16-91 and the open style starter from pg 16-14 or 16-16 as separate items.  
 ② For conduit hubs and conversion instructions, see page 9/110.

- ③ Coils D, F, or G will be wired for incoming voltage. J coil will be wired for separate source. Coils E, H, and L do not apply to single phase starters.  
 ④ Standard Auxiliary Contacts, Same as Contactors, refer to page 9/60.

# Features and Benefits

## General



## Combination Starter Features

Combination starters include the following features:

- Manufactured with Cold Forming "TOX" Process
- Solid State Overloads Standard on Sizes 5-8
- Easy to Install
- Wide Range of Enclosure Types Available
- Heavy Duty Quarter Turns
- 100kA Short Circuit Current Rating when Protected with Class R Fuses to 600V or MCP to 480V
- Visible Blade Disconnect
- Industrial Type Disconnect Handle
- UL listed file #E185287 (class 17, 18, 25, 26 & 32)
- CSA certified file #LR 6535 (class 17, 18, 25, 26 & 32)

## Application

A combination starter meets National Electrical Code requirements for:

1. A means of providing short circuit motor protection with fused or breaker disconnection of line voltage.
2. A means of safeguarding personnel from contact with live parts and from accidental starting of machinery by disconnecting the motor and the controller.
3. A motor controller with overload protection.

Prewired combination starters eliminate the cost of wiring between separate disconnect and starter. Factory testing assures field performance. Combination starters also provide a more compact and attractive installation than separate units.

## Enclosure Types

Combination starters are available in NEMA 1, 12/3/3R/4 (painted), 4/4X

(stainless), 4X fiberglass and 7 & 9 enclosures. Enclosures protect personnel from contact with live parts and depending upon the construction, protect the control in varying degrees from physical damage and harmful atmospheres. All enclosures are supplied with corrosion resistant finishes.

## Heavy Duty Disconnect Switches

The disconnect switch that goes the distance in durability, performance and reliability has the following advantages:

- Visible blades for the highest level of safety
- Double break switching action to reduce arcing, increase lifetime and eliminate the "electric hinge"
- More rugged positive action switch
- Oversized lugs are standard
- Line side shield to help guard personnel from contact with live parts
- Higher horsepower rating for design E high efficiency motors
- UL listed for IlSCO, Burndy and T&B crimp type lugs
- The 200A switch accepts up to 300 MCM versus 250 MCM wire size

Its rugged construction - with a high fault withstand rating of 100kA at 600 VAC when fused with class R rated fuses - meets the most stringent industry standards set forth by the automotive, petro-chemical, and pulp and paper industries. UL recognized and CSA certified, our disconnect switches are available either non-fusible or fusible with class R and class J fuse clips.



## Enclosure Kits for NEMA Combination Starters Description

You can assemble a non-stocked combination starter per your unanticipated needs in minutes. Say, for example, your customer needs a fusible combination starter that you don't have in stock. You need in now, but don't sweat it.

Simply start with the enclosure kit which has the handle preinstalled. You install the required starter and fusible disconnect, connect the power wire and you are finished. Within minutes, you have the required combination starter in your hands. No more waiting on the factory. You need it, you got it!

## What Is In It For You!

- **Reduce Lead-time** - What used to take days to get now takes minutes
- **Reduced Inventory** - Instead of stocking scores of various combination starters, simply stock a few enclosure kits, disconnect kits, circuit breaker kits and open starters. With these basic "building blocks" you virtually have hundreds of products on-hand
- **Quality** - The same high level of quality you have been accustomed to with our products will also be found in these new enclosure kits
- **UL Listed** - By correctly following the instructions included with the kits, the product you build is UL/CSA Listed

Refer to page 9/115 for more details.

## Siemens ETI Circuit Breaker

The ETI circuit breaker is a device designed specifically for application in motor circuits. The ETI is a magnetic only protective device designed to provide protection against short circuit current.

The instantaneous-only type ETI circuit breaker employs adjustable magnetic trip settings to allow broader application ranges and a higher degree of motor short circuit protection.



## Heavy Duty Starters

These combination starters use the same starters described in the heavy duty starter section of this catalog.

## Non-Fusible with Solid State Overload, Class 17

## Selection

A photograph of a Siemens heavy-duty starter enclosure. The enclosure is a light gray metal cabinet with its door open to the left. Inside, there is a complex arrangement of electrical components, including a large terminal block at the top with several wires connected, and a main contactor assembly at the bottom. The interior of the door has a white label with technical specifications and wiring diagrams. The background is a plain, light-colored surface.

## Ordering Information

- Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- For Fusible Styles see page 9/20.
- Field Modification Kits see page 9/104.
- Factory Modifications see page 9/119.
- Dimensions see page 9/159.
- Wiring Diagrams see page 9/174.
- Replacement Parts see page 9/131.

## Coil Table

| 60Hz Voltage                 | Letter |
|------------------------------|--------|
| 24                           | J      |
| 120                          | F      |
| 110–120/220–240 <sup>①</sup> | A      |
| 200–208                      | D      |
| 220–240                      | G      |
| 277                          | L      |
| 220–240/440–480 <sup>①</sup> | C      |
| 440–480                      | H      |
| 575–600                      | E      |

For other voltages and frequencies, see Factory Modifications page 9/119.

## Standard Width Enclosure, 3 Phase, 3-Pole

| Max Hp          |                 |           |           | NEMA Size      | Half Size | Overload  |            | Disc. Amp Range  | Enclosure              |                                                                                                                                                |                        |               | NEMA 4X Fiberglass                         |               | NEMA 12, NEMA 3/3R <sup>②</sup> , NEMA 4 Painted (thru size 4) |               |
|-----------------|-----------------|-----------|-----------|----------------|-----------|-----------|------------|------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------|--------------------------------------------|---------------|----------------------------------------------------------------|---------------|
| 200 Volts       | 230 Volts       | 460 Volts | 575 Volts |                |           | Amp Range | Frame Size |                  | NEMA 1 General Purpose | NEMA 4/4X Stainless <sup>②</sup> Watertight, Dust-tight, Corrosion Resistant<br>④ = W for 304 Stainless Steel<br>⑤ = X for 316 Stainless Steel |                        |               | Watertight, Dust-tight Corrosion Resistant |               | Industrial Use Weatherproof Watertight, Dust-tight             |               |
|                 |                 |           |           |                |           |           |            |                  | Catalog Number         | List Price \$                                                                                                                                  | Catalog Number         | List Price \$ | Catalog Number                             | List Price \$ | Catalog Number                                                 | List Price \$ |
| 1/8             | 1/8             | 1/8       | 1/8       | 0              | —         | 0.25–1    | A          | 30               | 17CUA92B*              |                                                                                                                                                | 17CUA92@*              |               | 17CUA92F*                                  |               | 17CUA92N*                                                      |               |
| 1/8             | 3/8             | 1 1/2     | 2         | 0              | —         | 0.75–3.4  | A          | 30               | 17CUB92B*              |                                                                                                                                                | 17CUB92@*              |               | 17CUB92F*                                  |               | 17CUB92N*                                                      |               |
| 2               | 2               | 5         | 5         | 0              | —         | 3–12      | A1         | 30               | 17CUC92B*              |                                                                                                                                                | 17CUC92@*              |               | 17CUC92F*                                  |               | 17CUC92N*                                                      |               |
| 3               | 3               | —         | —         | 0              | —         | 5.5–22    | A1         | 30               | 17CUD92B*              |                                                                                                                                                | 17CUD92@*              |               | 17CUD92F*                                  |               | 17CUD92N*                                                      |               |
| 1/8             | 1/8             | 1/8       | 1/8       | 1              | —         | 0.25–1    | A          | 30               | 17DUA92B*              |                                                                                                                                                | 17DUA92@*              |               | 17DUA92F*                                  |               | 17DUA92N*                                                      |               |
| 1/8             | 3/8             | 1 1/2     | 2         | 1              | —         | 0.75–3.4  | A          | 30               | 17DUB92B*              |                                                                                                                                                | 17DUB92@*              |               | 17DUB92F*                                  |               | 17DUB92N*                                                      |               |
| 2               | 2               | 5         | 5         | 1              | —         | 3–12      | A1         | 30               | 17DUC92B*              |                                                                                                                                                | 17DUC92@*              |               | 17DUC92F*                                  |               | 17DUC92N*                                                      |               |
| 3               | 3               | 10        | 10        | 1              | —         | 5.5–22    | A1         | 30               | 17DUD92B*              |                                                                                                                                                | 17DUD92@*              |               | 17DUD92F*                                  |               | 17DUD92N*                                                      |               |
| 7 1/2           | 7 1/2           | —         | —         | 1              | —         | 10–40     | A1         | 60               | 17DUE92B*              |                                                                                                                                                | 17DUE92@*              |               | 17DUE92F*                                  |               | 17DUE92N*                                                      |               |
| 10              | 10              | 15        | 15        | —              | 1 1/2     | 10–40     | A1         | 60               | 17EUE92B*              |                                                                                                                                                | 17EUE92@*              |               | 17EUE92F*                                  |               | 17EUE92N*                                                      |               |
| 10              | 15              | 25        | 25        | 2              | —         | 13–52     | B          | 60               | 17FUF92B*              |                                                                                                                                                | 17FUF92@*              |               | 17FUF92F*                                  |               | 17FUF92N*                                                      |               |
| 15              | 20              | 30        | 30        | —              | 2 1/2     | 25–100    | B          | 100 <sup>③</sup> | 17GUG92B*              |                                                                                                                                                | 17GUG92@*              |               | 17GUG92F*                                  |               | 17GUG92N*                                                      |               |
| 20 <sup>④</sup> | 25 <sup>⑤</sup> | 50        | 50        | 3              | —         | 25–100    | B          | 100              | 17HUG92B*              |                                                                                                                                                | 17HUG92@*              |               | 17HUG92F*                                  |               | 17HUG92N*                                                      |               |
| 30              | 40              | 75        | 75        | —              | 3 1/2     | 50–200    | B          | 200              | 17IUH92B*              |                                                                                                                                                | 17IUH92@*              |               | 17IUH92F*                                  |               | 17IUH92N*                                                      |               |
| 40              | 50              | 100       | 100       | 4              | —         | 50–200    | B          | 200              | 17JUH92B*              |                                                                                                                                                | 17JUH92@*              |               | 17JUH92F*                                  |               | 17JUH92N*                                                      |               |
| 75              | 100             | 200       | 200       | 5              | —         | 55–250    | —          | 400 <sup>⑥</sup> | 17LPU92B*              |                                                                                                                                                | 17LPU92E* <sup>⑦</sup> |               | —                                          | —             | 17LPU92N*                                                      |               |
| 150             | 200             | 400       | 400       | 6              | —         | 160–630   | —          | 600              | 17MPX92B*              |                                                                                                                                                | 17MPX92E* <sup>⑦</sup> |               | —                                          | —             | 17MPX92N*                                                      |               |
| —               | 300             | 600       | 600       | 7 <sup>⑧</sup> | —         | 400–1220  | A1+CT      | 1200             | 17NUN92B*              |                                                                                                                                                | —                      | —             | —                                          | —             | 17NUN92N*                                                      |               |
| —               | 450             | 900       | 900       | 8 <sup>⑧</sup> | —         | 400–1220  | A1+CT      | 1600             | 17PUN92B*              |                                                                                                                                                | —                      | —             | —                                          | —             | 17PUN92N*                                                      |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in starter sizes 5–8.

② For conduit hubs and conversion instructions, see page 9/110.

③ For 60A disconnect, order fusible cat. no. page 9/20.

④ For 25 HP and 200A disconnect, order fusible cat. no. page 9/20.

⑤ For 30HP and 200A disconnect, order fusible cat. no. page 9/20.

⑥ For 600A disconnect, order fusible cat. no. page 9/20.

⑦ Enclosure is NEMA Type 4 (painted steel).

⑧ F coil 100–250V AC 50/60Hz, or DC, H coil 150–500V AC 50/60Hz, or DC

⑨ Only available

F coil 100–250V AC 50/60Hz, or DC

## Non-Fusible with Solid State Overload, Class 17

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                  | Coil Table                                                                |        |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------|
|                                                                                   | <ul style="list-style-type: none"><li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>► For Fusible Styles see page 9/21.</li><li>► Field Modification Kits see page 9/104.</li><li>► Factory Modifications see page 9/119.</li><li>► Dimensions see page 9/159.</li><li>► Wiring Diagrams see page 9/174.</li><li>► Replacement Parts see page 9/131.</li></ul> | 60Hz Voltage                                                              | Letter |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 24                                                                        | J      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 120                                                                       | F      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 110–120/220–240 <sup>②</sup>                                              | A      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 200–208                                                                   | D      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 220–240                                                                   | G      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 277                                                                       | L      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 220–240/440–480 <sup>②</sup>                                              | C      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 440–480                                                                   | H      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 575–600                                                                   | E      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | For other voltages and frequencies, see Factory Modifications page 9/119. |        |

## Extra Wide Enclosure, 3-Phase, 3-Pole

| Hp              |                 |           |           | NEMA Size | Half Size | Overload  |            | Disc. Amp Range  | Enclosure              |               |                                                                                                                                                   |               |                                                                                                                 |               |
|-----------------|-----------------|-----------|-----------|-----------|-----------|-----------|------------|------------------|------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts       | 230 Volts       | 460 Volts | 575 Volts |           |           | Amp Range | Frame Size |                  | NEMA 1 General Purpose |               | NEMA 4/4X Stainless <sup>③</sup><br>Watertight, Dust-tight, Corrosion Resistant<br>③ = W for 304 Stainless Steel<br>③ = X for 316 Stainless Steel |               | NEMA 12, NEMA 3/3R <sup>③</sup> ,<br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
| 200 Volts       | 230 Volts       | 460 Volts | 575 Volts |           |           | Amp Range | Frame Size |                  | Catalog Number         | List Price \$ | Catalog Number                                                                                                                                    | List Price \$ | Catalog Number                                                                                                  | List Price \$ |
| 1/4             | 1/4             | 1/4       | 1/4       | 0         | —         | 0.25–1    | A          | 30               | 17CUA82B*              |               | 17CUA82@*                                                                                                                                         |               | 17CUA82N*                                                                                                       |               |
| 1/2             | 1/2             | 1 1/2     | 2         | 0         | —         | 0.75–3.4  | A          | 30               | 17CUB82B*              |               | 17CUB82@*                                                                                                                                         |               | 17CUB82N*                                                                                                       |               |
| 2               | 2               | 5         | 5         | 0         | —         | 3–12      | A1         | 30               | 17CUC82B*              |               | 17CUC82@*                                                                                                                                         |               | 17CUC82N*                                                                                                       |               |
| 3               | 3               | —         | —         | 0         | —         | 5.5–22    | A1         | 30               | 17CUD82B*              |               | 17CUD82@*                                                                                                                                         |               | 17CUD82N*                                                                                                       |               |
| 1/4             | 1/4             | 1/4       | 1/4       | 1         | —         | 0.25–1    | A          | 30               | 17DUA82B*              |               | 17DUA82@*                                                                                                                                         |               | 17DUA82N*                                                                                                       |               |
| 1/2             | 1/2             | 1 1/2     | 2         | 1         | —         | 0.75–3.4  | A          | 30               | 17DUB82B*              |               | 17DUB82@*                                                                                                                                         |               | 17DUB82N*                                                                                                       |               |
| 2               | 2               | 5         | 5         | 1         | —         | 3–12      | A1         | 30               | 17DUC82B*              |               | 17DUC82@*                                                                                                                                         |               | 17DUC82N*                                                                                                       |               |
| 3               | 3               | 10        | 10        | 1         | —         | 5.5–22    | A1         | 30               | 17DUD82B*              |               | 17DUD82@*                                                                                                                                         |               | 17DUD82N*                                                                                                       |               |
| 7 1/2           | 7 1/2           | —         | —         | 1         | —         | 10–40     | A1         | 60               | 17DUE82B*              |               | 17DUE82@*                                                                                                                                         |               | 17DUE82N*                                                                                                       |               |
| 10              | 10              | 15        | 15        | —         | 1 1/4     | 10–40     | A1         | 60               | 17EUE82B*              |               | 17EUE82@*                                                                                                                                         |               | 17EUE82N*                                                                                                       |               |
| 10              | 15              | 25        | 25        | 2         | —         | 13–52     | B          | 60               | 17FUF82B*              |               | 17FUF82@*                                                                                                                                         |               | 17FUF82N*                                                                                                       |               |
| 15              | 20              | 30        | 30        | —         | 2 1/2     | 25–100    | B          | 100 <sup>③</sup> | 17GUG82B*              |               | 17GUG82@*                                                                                                                                         |               | 17GUG82N*                                                                                                       |               |
| 20 <sup>④</sup> | 25 <sup>④</sup> | 50        | 50        | 3         | —         | 25–100    | B          | 100              | 17HUG82B*              |               | 17HUG82@*                                                                                                                                         |               | 17HUG82N*                                                                                                       |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① For conduit hubs and conversion instructions, see page 9/110.

② For 60A disconnect, order fusible cat. no. page 9/21.

③ For 25 HP and 200A disconnect, order fusible cat. no. page 9/21.

④ For 30HP and 200A disconnect, order fusible cat. no. page 9/21.



## Non-Fusible with Ambient Compensated Bimetal Overload, Class 17

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | Coil Table                                                                |        |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------|--------|
|                                                                                   | <ul style="list-style-type: none"> <li>Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li> <li>Heater elements see page 9/124. (3 required)</li> <li>Field Modification Kits see page 9/104.</li> <li>Factory Modifications see page 9/119.</li> <li>Dimensions see page 9/159.</li> <li>Wiring Diagrams see page 9/174.</li> <li>Replacement Parts see page 9/131.</li> <li>For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact.</li> </ul> |  | 60Hz Voltage                                                              | Letter |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 24                                                                        | J      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 120                                                                       | F      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 110–120/220–240 <sup>①</sup>                                              | A      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 200–208                                                                   | D      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 220–240                                                                   | G      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 277                                                                       | L      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 220–240/440–480 <sup>①</sup>                                              | C      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 440–480                                                                   | H      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 575–600                                                                   | E      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | For other voltages and frequencies, see Factory Modifications page 9/119. |        |

## Standard Width Enclosure, 3-Phase, 3-Pole

| Max Hp          |                 |           |           | NEMA Size | Half Size | Disc Amp Rating | Enclosure                 |              |                                                                                                                                                     |              |                                                                                     |              |                                                                                                |              |
|-----------------|-----------------|-----------|-----------|-----------|-----------|-----------------|---------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------|--------------|
| 200 Volts       | 230 Volts       | 460 Volts | 575 Volts |           |           |                 | NEMA 1<br>General Purpose |              | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>@ = W for 304 Stainless Steel<br>@ = X for 316 Stainless Steel |              | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant<br>Weatherproof |              | NEMA 12, NEMA 3/3R, <sup>①</sup><br>NEMA 4 Painted<br>Industrial Use<br>Watertight, Dust-tight |              |
|                 |                 |           |           |           |           |                 | Catalog Number            | List Price\$ | Catalog Number                                                                                                                                      | List Price\$ | Catalog Number                                                                      | List Price\$ | Catalog Number                                                                                 | List Price\$ |
|                 |                 |           |           |           |           |                 |                           |              |                                                                                                                                                     |              |                                                                                     |              |                                                                                                |              |
| 3               | 3               | 5         | 5         | 0         | —         | 30              | 17CP92B*81                |              | 17CP92@*81                                                                                                                                          |              | 17CP92F*81                                                                          |              | 17CP92N*81                                                                                     |              |
| 7½ <sup>③</sup> | 7½ <sup>③</sup> | 10        | 10        | 1         | —         | 30              | 17DP92B*81                |              | 17DP92@*81                                                                                                                                          |              | 17DP92F*81                                                                          |              | 17DP92N*81                                                                                     |              |
| 10              | 10              | 15        | 15        | —         | 1¼        | 60              | 17EP92B*81                |              | 17EP92@*81                                                                                                                                          |              | 17EP92F*81                                                                          |              | 17EP92N*81                                                                                     |              |
| 10              | 15              | 25        | 25        | 2         | —         | 60              | 17FP92B*81                |              | 17FP92@*81                                                                                                                                          |              | 17FP92F*81                                                                          |              | 17FP92N*81                                                                                     |              |
| 15              | 20              | 30        | 30        | —         | 2½        | 100             | 17GP92B*81                |              | 17GP92@*81                                                                                                                                          |              | 17GP92F*81                                                                          |              | 17GP92N*81                                                                                     |              |
| 25 <sup>④</sup> | 30 <sup>④</sup> | 50        | 50        | 3         | —         | 100             | 17HP92B*81                |              | 17HP92@*81                                                                                                                                          |              | 17HP92F*81                                                                          |              | 17HP92N*81                                                                                     |              |
| 30              | 40              | 75        | 75        | —         | 3½        | 200             | 17IP92B*81                |              | 17IP92@*81                                                                                                                                          |              | 17IP92F*81                                                                          |              | 17IP92N*81                                                                                     |              |
| 40              | 50              | 100       | 100       | 4         | —         | 200             | 17JP92B*81                |              | 17JP92@*81                                                                                                                                          |              | 17JP92F*81                                                                          |              | 17JP92N*81                                                                                     |              |

## Extra Wide Enclosure, 3-Phase, 3-Pole

| Max Hp          |                 |              |              | NEMA<br>Size | Half<br>Size | Disc<br>Amp<br>Rating | Enclosure                 |                                                                                                                                                     |               |                                                                                                                |               |                |
|-----------------|-----------------|--------------|--------------|--------------|--------------|-----------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------|---------------|----------------|
| 200<br>Volts    | 230<br>Volts    | 460<br>Volts | 575<br>Volts |              |              |                       | NEMA 1<br>General Purpose | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>@ = W for 304 Stainless Steel<br>@ = X for 316 Stainless Steel |               | NEMA 12, NEMA 3/3R, <sup>①</sup><br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |                |
|                 |                 |              |              |              |              |                       |                           | Catalog Number                                                                                                                                      | List Price \$ | Catalog Number                                                                                                 | List Price \$ | Catalog Number |
| 3               | 3               | 5            | 5            | 0            | —            | 30                    | 17CP82B*81                |                                                                                                                                                     | 17CP82@*81    |                                                                                                                | 17CP82N*81    |                |
| 7½ <sup>③</sup> | 7½ <sup>③</sup> | 10           | 10           | 1            | —            | 30                    | 17DP82B*81                |                                                                                                                                                     | 17DP82@*81    |                                                                                                                | 17DP82N*81    |                |
| 10              | 10              | 15           | 15           | —            | 1¼           | 60                    | 17EP82B*81                |                                                                                                                                                     | 17EP82@*81    |                                                                                                                | 17EP82N*81    |                |
| 10              | 15              | 25           | 25           | 2            | —            | 60                    | 17FP82B*81                |                                                                                                                                                     | 17FP82@*81    |                                                                                                                | 17FP82N*81    |                |
| 15              | 20              | 30           | 30           | —            | 2½           | 100                   | 17GP82B*81                |                                                                                                                                                     | 17GP82@*81    |                                                                                                                | 17GP82N*81    |                |
| 25 <sup>④</sup> | 30 <sup>④</sup> | 50           | 50           | 3            | —            | 100                   | 17HP82B*81                |                                                                                                                                                     | 17HP82@*81    |                                                                                                                | 17HP82N*81    |                |

## Standard Width Enclosure, Single Phase, (Catalog Numbers are three phase, wire for single phase in the field)

| Max Hp    |               | NEMA Size | Half Size | Disc Amp Rating | Enclosure                 |                                                                                                                                                     |               |                                                                     |               |                                                                                                                |               |                |
|-----------|---------------|-----------|-----------|-----------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------|---------------|----------------|
| 115 Volts | 208/230 Volts |           |           |                 | NEMA 1<br>General Purpose | NEMA 4/4X Stainless <sup>③</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>@ = W for 304 Stainless Steel<br>@ = X for 316 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 12, NEMA 3/3R, <sup>③</sup><br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |                |
|           |               |           |           |                 |                           | Catalog Number                                                                                                                                      | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                                                                                 | List Price \$ | Catalog Number |
| 1         | 2             | 0         | —         | 30              | 17CP92B*81                |                                                                                                                                                     | 17CP92@*81    |                                                                     | 17CP92F*81    |                                                                                                                | 17CP92N*81    |                |
| 2         | 3             | 1         | —         | 30              | 17DP92B*81                |                                                                                                                                                     | 17DP92@*81    |                                                                     | 17DP92F*81    |                                                                                                                | 17DP92N*81    |                |
| 3         | 5             | 1P        | —         | 60              | 17EP92B*81                |                                                                                                                                                     | 17EP92@*81    |                                                                     | 17EP92F*81    |                                                                                                                | 17EP92N*81    |                |
| 3         | 7½            | 2         | —         | 60              | 17FP92B*81                |                                                                                                                                                     | 17FP92@*81    |                                                                     | 17FP92F*81    |                                                                                                                | 17FP92N*81    |                |
| 5         | 10            | —         | 2½        | 100             | 17GP92B*81                |                                                                                                                                                     | 17GP92@*81    |                                                                     | 17GP92F*81    |                                                                                                                | 17GP92N*81    |                |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

<sup>①</sup> For conduit hubs and conversion instructions, see page 9/110.

<sup>②</sup> For 60A disc, order fusible cat. no. page 9/22.

<sup>③</sup> For 200A disc, order fusible cat. no. page 9/22.

## Fusible with Solid State Overload, Class 17

## Selection



## Ordering Information

- Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 9/104.
- Factory Modifications see page 9/119.
- Dimensions see page 9/159.
- Wiring Diagrams see page 9/174.
- Replacement Parts see page 9/131.

## Coil Table

| 60Hz Voltage                 | Letter |
|------------------------------|--------|
| 24                           | J      |
| 120                          | F      |
| 110–120/220–240 <sup>⑦</sup> | A      |
| 200–208                      | D      |
| 220–240                      | G      |
| 277                          | L      |
| 220–240/440–480 <sup>⑦</sup> | C      |
| 440–480                      | H      |
| 575–600                      | E      |

For other voltages and frequencies, see Factory Modifications page 9/119.

Standard Width Enclosure, 3-Phase, 3-Pole<sup>⑤</sup>

| Max Hp         |               |                |               | NEMA Size      | Half Size     | Overload       |               | Disc. Amp Range | Fuse Clip Amp/Volts    | Enclosure                |                                                                                                                                          |                                                               |                                                                                                                   |
|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|-----------------|------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 200 Volts      | 230 Volts     | 460 Volts      | 575 Volts     |                |               | Amp Range      | Frame Size    |                 |                        | NEMA 1 General Purpose   | NEMA 4/4X Stainless <sup>②</sup> Watertight, Dust-tight, Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel | NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant | NEMA 12, NEMA 3/3R <sup>②</sup> , NEMA 4 Painted (thru size 4) Industrial Use Weatherproof Watertight, Dust-tight |
| Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number  | List Price \$          | Catalog Number           | List Price \$                                                                                                                            | Catalog Number                                                | List Price \$                                                                                                     |
| 1/2            | 1/2           | —              | —             | 0              | —             | 0.25–1         | A             | 30              | 30A/250V               | 17CUA92B*10              | 17CUA92@*10                                                                                                                              | 17CUA92F*10                                                   | 17CUA92N*10                                                                                                       |
| —              | —             | 1/2            | 1/2           | 0              | —             | 0.25–1         | A             | 30              | 30A/600V               | 17CUA92B*11              | 17CUA92@*11                                                                                                                              | 17CUA92F*11                                                   | 17CUA92N*11                                                                                                       |
| 1/2            | 3/4           | —              | —             | 0              | —             | 0.75–3.4       | A             | 30              | 30A/250V               | 17CUB92B*10              | 17CUB92@*10                                                                                                                              | 17CUB92F*10                                                   | 17CUB92N*10                                                                                                       |
| —              | —             | 1 1/2          | 2             | 0              | —             | 0.75–3.4       | A             | 30              | 30A/600V               | 17CUB92B*11              | 17CUB92@*11                                                                                                                              | 17CUB92F*11                                                   | 17CUB92N*11                                                                                                       |
| 2              | 2             | —              | —             | 0              | —             | 3–12           | A1            | 30              | 30A/250V               | 17CUC92B*10              | 17CUC92@*10                                                                                                                              | 17CUC92F*10                                                   | 17CUC92N*10                                                                                                       |
| —              | —             | 5              | 5             | 0              | —             | 3–12           | A1            | 30              | 30A/600V               | 17CUC92B*11              | 17CUC92@*11                                                                                                                              | 17CUC92F*11                                                   | 17CUC92N*11                                                                                                       |
| 3              | 3             | —              | —             | 0              | —             | 5.5–22         | A1            | 30              | 30A/250V               | 17CUD92B*10              | 17CUD92@*10                                                                                                                              | 17CUD92F*10                                                   | 17CUD92N*10                                                                                                       |
| 1/2            | 1/2           | —              | —             | 1              | —             | 0.25–1         | A             | 30              | 30A/250V               | 17DUA92B*10              | 17DUA92@*10                                                                                                                              | 17DUA92F*10                                                   | 17DUA92N*10                                                                                                       |
| —              | —             | 1/2            | 1/2           | 1              | —             | 0.25–1         | A             | 30              | 30A/600V               | 17DUA92B*11              | 17DUA92@*11                                                                                                                              | 17DUA92F*11                                                   | 17DUA92N*11                                                                                                       |
| 1/2            | 3/4           | —              | —             | 1              | —             | 0.75–3.4       | A             | 30              | 30A/250V               | 17DUB92B*10              | 17DUB92@*10                                                                                                                              | 17DUB92F*10                                                   | 17DUB92N*10                                                                                                       |
| —              | —             | 1 1/2          | 2             | 1              | —             | 0.75–3.4       | A             | 30              | 30A/600V               | 17DUB92B*11              | 17DUB92@*11                                                                                                                              | 17DUB92F*11                                                   | 17DUB92N*11                                                                                                       |
| 2              | 2             | —              | —             | 1              | —             | 3–12           | A1            | 30              | 30A/250V               | 17DUC92B*10              | 17DUC92@*10                                                                                                                              | 17DUC92F*10                                                   | 17DUC92N*10                                                                                                       |
| —              | —             | 5              | 5             | 1              | —             | 3–12           | A1            | 30              | 30A/600V               | 17DUC92B*11              | 17DUC92@*11                                                                                                                              | 17DUC92F*11                                                   | 17DUC92N*11                                                                                                       |
| 3              | 3             | —              | —             | 1              | —             | 5.5–22         | A1            | 30              | 30A/250V               | 17DUD92B*10              | 17DUD92@*10                                                                                                                              | 17DUD92F*10                                                   | 17DUD92N*10                                                                                                       |
| —              | —             | 10             | 10            | 1              | —             | 5.5–22         | A1            | 30              | 30A/600V               | 17DUD92B*11              | 17DUD92@*11                                                                                                                              | 17DUD92F*11                                                   | 17DUD92N*11                                                                                                       |
| 7 1/2          | 7 1/2         | —              | —             | 1              | —             | 10–40          | A1            | 30              | 30A/250V               | 17DUE92B*10              | 17DUE92@*10                                                                                                                              | 17DUE92F*10                                                   | 17DUE92N*10                                                                                                       |
| 7 1/2          | 7 1/2         | —              | —             | 1              | —             | 10–40          | A1            | 60              | 60A/250V               | 17DUE92B*12              | 17DUE92@*12                                                                                                                              | 17DUE92F*12                                                   | 17DUE92N*12                                                                                                       |
| —              | —             | 15             | 15            | —              | 1 1/2         | 10–40          | A1            | 60              | 60A/600V               | 17EUE92B*13              | 17EUE92@*13                                                                                                                              | 17EUE92F*13                                                   | 17EUE92N*13                                                                                                       |
| 10             | 10            | —              | —             | —              | 1 1/2         | 10–40          | A1            | 60              | 60A/250V               | 17EUE92B*12              | 17EUE92@*12                                                                                                                              | 17EUE92F*12                                                   | 17EUE92N*12                                                                                                       |
| 10             | 15            | —              | —             | 2              | —             | 13–52          | B             | 60              | 60A/250V               | 17FUF92B*12              | 17FUF92@*12                                                                                                                              | 17FUF92F*12                                                   | 17FUF92N*12                                                                                                       |
| —              | —             | 25             | 25            | 2              | —             | 13–52          | B             | 60              | 60A/600V               | 17FUF92B*13              | 17FUF92@*13                                                                                                                              | 17FUF92F*13                                                   | 17FUF92N*13                                                                                                       |
| —              | —             | —              | 30            | —              | 2 1/2         | 25–100         | B             | 60              | 60A/600V               | 17GUG92B*13              | 17GUG92@*13                                                                                                                              | 17GUG92F*13                                                   | 17GUG92N*13                                                                                                       |
| —              | —             | 30             | —             | —              | 2 1/2         | 25–100         | B             | 100             | 100A/600V              | 17GUG92B*15              | 17GUG92@*15                                                                                                                              | 17GUG92F*15                                                   | 17GUG92N*15                                                                                                       |
| 15             | 20            | —              | —             | —              | 2 1/2         | 25–100         | B             | 100             | 100A/250V              | 17GUG92B*14              | 17GUG92@*14                                                                                                                              | 17GUG92F*14                                                   | 17GUG92N*14                                                                                                       |
| 20             | 25            | —              | —             | 3              | —             | 25–100         | B             | 100             | 100A/250V              | 17HUG92B*14              | 17HUG92@*14                                                                                                                              | 17HUG92F*14                                                   | 17HUG92N*14                                                                                                       |
| —              | —             | 50             | 50            | 3              | —             | 25–100         | B             | 100             | 100A/600V              | 17HUG92B*15              | 17HUG92@*15                                                                                                                              | 17HUG92F*15                                                   | 17HUG92N*15                                                                                                       |
| 25             | 30            | —              | —             | 3              | —             | 25–100         | B             | 200             | 200A/250V              | 17HUG92B*16              | 17HUG92@*16                                                                                                                              | 17HUG92F*16                                                   | 17HUG92N*16                                                                                                       |
| 30             | 40            | —              | —             | —              | 3 1/2         | 50–200         | B             | 200             | 200A/250V              | 17IUH92B*16              | 17IUH92@*16                                                                                                                              | 17IUH92F*16                                                   | 17IUH92N*16                                                                                                       |
| —              | —             | 75             | 75            | —              | 3 1/2         | 50–200         | B             | 200             | 200A/600V              | 17IUH92B*17              | 17IUH92@*17                                                                                                                              | 17IUH92F*17                                                   | 17IUH92N*17                                                                                                       |
| 40             | 50            | —              | —             | 4              | —             | 50–200         | B             | 200             | 200A/250V              | 17JUH92B*16              | 17JUH92@*16                                                                                                                              | 17JUH92F*16                                                   | 17JUH92N*16                                                                                                       |
| —              | —             | 100            | 100           | 4              | —             | 50–200         | B             | 200             | 200A/600V              | 17JUH92B*17              | 17JUH92@*17                                                                                                                              | 17JUH92F*17                                                   | 17JUH92N*17                                                                                                       |
| 75             | 100           | —              | —             | 5              | —             | 55–250         | —             | 400             | 400A/250V              | 17LPU92E*18 <sup>④</sup> | —                                                                                                                                        | —                                                             | 17LPU92N*18                                                                                                       |
| —              | 100           | —              | —             | 5              | —             | 55–250         | —             | 600             | 600A/250V <sup>③</sup> | 17LPU92E*20 <sup>④</sup> | —                                                                                                                                        | —                                                             | 17LPU92N*20                                                                                                       |
| —              | —             | —              | 125           | 5              | —             | 55–250         | —             | 200             | 200A/600V              | 17LPU92E*17 <sup>④</sup> | —                                                                                                                                        | —                                                             | 17LPU92N*17                                                                                                       |
| —              | —             | 200            | 200           | 5              | —             | 55–250         | —             | 400             | 400A/600V              | 17LPU92E*19 <sup>④</sup> | —                                                                                                                                        | —                                                             | 17LPU92N*19                                                                                                       |
| —              | —             | 200            | —             | 5              | —             | 55–250         | —             | 600             | 600A/600V <sup>③</sup> | 17LPU92E*21 <sup>④</sup> | —                                                                                                                                        | —                                                             | 17LPU92N*21                                                                                                       |
| 150            | 200           | —              | —             | 6              | —             | 160–630        | —             | 600             | 600A/250V              | 17MPX92B*20              | 17MPX92E*20 <sup>④</sup>                                                                                                                 | —                                                             | 17MPX92N*20                                                                                                       |
| —              | —             | 400            | 400           | 6              | —             | 160–630        | —             | 600             | 600A/600V              | 17MPX92B*21              | 17MPX92E*21 <sup>④</sup>                                                                                                                 | —                                                             | 17MPX92N*21                                                                                                       |
| —              | —             | 400            | 400           | 6              | —             | 160–630        | —             | 800             | 800A/600V              | 17MPX92B*23              | 17MPX92E*23 <sup>④</sup>                                                                                                                 | —                                                             | 17MPX92N*23                                                                                                       |
| —              | —             | 600            | 600           | 7 <sup>⑥</sup> | —             | 400–1220       | A1+CT         | 1200            | 1200A/600V             | 17NUN92B*24              | —                                                                                                                                        | —                                                             | 17NUN92N*24                                                                                                       |
| —              | —             | 900            | 900           | 8 <sup>⑦</sup> | —             | 400–1220       | A1+CT         | 1600            | 1600A/600V             | 17PUN92B*25              | —                                                                                                                                        | —                                                             | 17PUN92N*25                                                                                                       |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in starter sizes 5–8.

② For conduit hubs and conversion instructions, see page 9/110.

③ Use Class J fuses only.

④ Enclosure is NEMA Type 4 (painted steel).

⑤ Single phase wiring page 9/173.

⑥ F coil 100–250V AC 50/60Hz, or DC, H coil 150–500V AC 50/60Hz, or DC

⑦ Only available

F coil 100–250V AC 50/60Hz, or DC

## Fusible with Solid State Overload, Class 17

## Selection

|                                                                                   | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                             | Coil Table                                                                |        |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------|
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  | 60Hz Voltage                                                              | Letter |
|  | <ul style="list-style-type: none"> <li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/159.</li> <li>► Wiring Diagrams see page 9/174.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | 24                                                                        | J      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  | 120                                                                       | F      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  | 110–120/220–240                                                           | A      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  | 200–208                                                                   | D      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  | 220–240                                                                   | G      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  | 277                                                                       | L      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  | 220–240/440–480                                                           | C      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  | 440–480                                                                   | H      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  | 575–600                                                                   | E      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  | For other voltages and frequencies, see Factory Modifications page 9/119. |        |

## Extra Wide Enclosure, 3-Phase, 3-Pole

| Max Hp    |           |           |           | NEMA Size | Half Size | Overload  |            | Disc. Amp Range | Fuse Clip Amp/Volts | Enclosure              |               |                                                                                                                               |               |                                                                                                                 |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------------|---------------------|------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           | Amp Range | Frame Size |                 |                     | NEMA 1 General Purpose |               | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight,<br>@ = W for 304 Stainless Steel<br>@ = X for 316 Stainless Steel |               | NEMA 12, NEMA 3/3R <sup>①</sup> ,<br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
|           |           |           |           |           |           |           |            |                 |                     | Catalog Number         | List Price \$ | Catalog Number                                                                                                                | List Price \$ | Catalog Number                                                                                                  | List Price \$ |
| 1/2       | 1/2       | —         | —         | 0         | —         | 0.25–1    | A          | 30              | 30A/250V            | 17CUA82B*10            |               | 17CUA82@*10                                                                                                                   |               | 17CUA82N*10                                                                                                     |               |
| —         | —         | 1/2       | 1/2       | 0         | —         | 0.25–1    | A          | 30              | 30A/600V            | 17CUA82B*11            |               | 17CUA82@*11                                                                                                                   |               | 17CUA82N*11                                                                                                     |               |
| 1/2       | 3/4       | —         | —         | 0         | —         | 0.75–3.4  | A          | 30              | 30A/250V            | 17CUB82B*10            |               | 17CUB82@*10                                                                                                                   |               | 17CUB82N*10                                                                                                     |               |
| —         | —         | 1 1/2     | 2         | 0         | —         | 0.75–3.4  | A          | 30              | 30A/600V            | 17CUB82B*11            |               | 17CUB82@*11                                                                                                                   |               | 17CUB82N*11                                                                                                     |               |
| 2         | 2         | —         | —         | 0         | —         | 3–12      | A1         | 30              | 30A/250V            | 17CUC82B*10            |               | 17CUC82@*10                                                                                                                   |               | 17CUC82N*10                                                                                                     |               |
| —         | —         | 5         | 5         | 0         | —         | 3–12      | A1         | 30              | 30A/600V            | 17CUC82B*11            |               | 17CUC82@*11                                                                                                                   |               | 17CUC82N*11                                                                                                     |               |
| 3         | 3         | —         | —         | 0         | —         | 5.5–22    | A1         | 30              | 30A/250V            | 17CUD82B*10            |               | 17CUD82@*10                                                                                                                   |               | 17CUD82N*10                                                                                                     |               |
| 1/2       | 3/4       | —         | —         | 1         | —         | 0.25–1    | A          | 30              | 30A/250V            | 17DUA82B*10            |               | 17DUA82@*10                                                                                                                   |               | 17DUA82N*10                                                                                                     |               |
| —         | —         | 1/2       | 1/2       | 1         | —         | 0.25–1    | A          | 30              | 30A/600V            | 17DUA82B*11            |               | 17DUA82@*11                                                                                                                   |               | 17DUA82N*11                                                                                                     |               |
| 1/2       | 3/4       | —         | —         | 1         | —         | 0.75–3.4  | A          | 30              | 30A/250V            | 17DUB82B*10            |               | 17DUB82@*10                                                                                                                   |               | 17DUB82N*10                                                                                                     |               |
| —         | —         | 1 1/2     | 2         | 1         | —         | 0.75–3.4  | A          | 30              | 30A/600V            | 17DUB82B*11            |               | 17DUB82@*11                                                                                                                   |               | 17DUB82N*11                                                                                                     |               |
| 2         | 2         | —         | —         | 1         | —         | 3–12      | A1         | 30              | 30A/250V            | 17DUC82B*10            |               | 17DUC82@*10                                                                                                                   |               | 17DUC82N*10                                                                                                     |               |
| —         | —         | 5         | 5         | 1         | —         | 3–12      | A1         | 30              | 30A/600V            | 17DUC82B*11            |               | 17DUC82@*11                                                                                                                   |               | 17DUC82N*11                                                                                                     |               |
| 3         | 3         | —         | —         | 1         | —         | 5.5–22    | A1         | 30              | 30A/250V            | 17DUD82B*10            |               | 17DUD82@*10                                                                                                                   |               | 17DUD82N*10                                                                                                     |               |
| —         | —         | 10        | 10        | 1         | —         | 5.5–22    | A1         | 30              | 30A/600V            | 17DUD82B*11            |               | 17DUD82@*11                                                                                                                   |               | 17DUD82N*11                                                                                                     |               |
| 5         | 5         | —         | —         | 1         | —         | 10–40     | A1         | 30              | 30A/250V            | 17DUE82B*10            |               | 17DUE82@*10                                                                                                                   |               | 17DUE82N*10                                                                                                     |               |
| 7 1/2     | 7 1/2     | —         | —         | 1         | —         | 10–40     | A1         | 60              | 60A/250V            | 17DUE82B*12            |               | 17DUE82@*12                                                                                                                   |               | 17DUE82N*12                                                                                                     |               |
| —         | —         | 15        | 15        | —         | 1 1/2     | 10–40     | A1         | 60              | 60A/600V            | 17EUE82B*13            |               | 17EUE82@*13                                                                                                                   |               | 17EUE82N*13                                                                                                     |               |
| 10        | 10        | —         | —         | —         | 1 1/2     | 10–40     | A1         | 60              | 60A/250V            | 17EUE82B*12            |               | 17EUE82@*12                                                                                                                   |               | 17EUE82N*12                                                                                                     |               |
| 10        | 15        | —         | —         | 2         | —         | 13–52     | B          | 60              | 60A/250V            | 17FUF82B*12            |               | 17FUF82@*12                                                                                                                   |               | 17FUF82N*12                                                                                                     |               |
| —         | —         | 25        | 25        | 2         | —         | 13–52     | B          | 60              | 60A/600V            | 17FUF82B*13            |               | 17FUF82@*13                                                                                                                   |               | 17FUF82N*13                                                                                                     |               |
| —         | —         | —         | 30        | —         | 2 1/2     | 25–100    | B          | 60              | 60A/600V            | 17GUG82B*13            |               | 17GUG82@*13                                                                                                                   |               | 17GUG82N*13                                                                                                     |               |
| —         | —         | 30        | —         | —         | 2 1/2     | 25–100    | B          | 100             | 100A/600V           | 17GUG82B*15            |               | 17GUG82@*15                                                                                                                   |               | 17GUG82N*15                                                                                                     |               |
| 15        | 20        | —         | —         | —         | 2 1/2     | 25–100    | B          | 100             | 100A/250V           | 17GUG82B*14            |               | 17GUG82@*14                                                                                                                   |               | 17GUG82N*14                                                                                                     |               |
| 20        | 25        | —         | —         | 3         | —         | 25–100    | B          | 100             | 100A/250V           | 17HUG82B*14            |               | 17HUG82@*14                                                                                                                   |               | 17HUG82N*14                                                                                                     |               |
| —         | —         | 50        | 50        | 3         | —         | 25–100    | B          | 100             | 100A/600V           | 17HUG82B*15            |               | 17HUG82@*15                                                                                                                   |               | 17HUG82N*15                                                                                                     |               |
| 25        | 30        | —         | —         | 3         | —         | 25–100    | B          | 200             | 200A/250V           | 17HUG82B*16            |               | 17HUG82@*16                                                                                                                   |               | 17HUG82N*16                                                                                                     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

<sup>①</sup> For conduit hubs and conversion instructions, see page 9/110.

## Fusible with Ambient Compensated Bimetal Overload, Class 17

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Coil Table                                                                                                                                                                                                                                                                                                                                                                                 |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|----|---|-----|---|-----------------|---|---------|---|---------|---|-----|---|-----------------|---|---------|---|---------|---|
|                                                                                   | <ul style="list-style-type: none"><li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>► Heater elements see page 9/124. (3 required)</li><li>► Field Modification Kits see page 9/104.</li><li>► Factory Modifications see page 9/119.</li><li>► Dimensions see page 9/159.</li><li>► Wiring Diagrams see page 9/174.</li><li>► Replacement Parts see page 9/131.</li><li>► For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact.</li></ul> | <table><tr><th>60Hz Voltage</th><th>Letter</th></tr><tr><td>24</td><td>J</td></tr><tr><td>120</td><td>F</td></tr><tr><td>110–120/220–240</td><td>A</td></tr><tr><td>200–208</td><td>D</td></tr><tr><td>220–240</td><td>G</td></tr><tr><td>277</td><td>L</td></tr><tr><td>220–240/440–480</td><td>C</td></tr><tr><td>440–480</td><td>H</td></tr><tr><td>575–600</td><td>E</td></tr></table> | 60Hz Voltage | Letter | 24 | J | 120 | F | 110–120/220–240 | A | 200–208 | D | 220–240 | G | 277 | L | 220–240/440–480 | C | 440–480 | H | 575–600 | E |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 60Hz Voltage                                                                                                                                                                                                                                                                                                                                                                               | Letter       |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 24                                                                                                                                                                                                                                                                                                                                                                                         | J            |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 120                                                                               | F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 110–120/220–240                                                                   | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 200–208                                                                           | D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 220–240                                                                           | G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 277                                                                               | L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 220–240/440–480                                                                   | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 440–480                                                                           | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 575–600                                                                           | E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| For other voltages and frequencies, see Factory Modifications page 9/119.         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |

Standard Width Enclosure, 3-Phase, 3-Pole<sup>②</sup>

| Max Hp         |                |                |                | NEMA Size | Half Size | Disc Amp Rating | Fuse Clip Size Amps/Volts | Enclosure              |               |                                                                                                                                         |               |                                                               |               |                                                                                                    |               |
|----------------|----------------|----------------|----------------|-----------|-----------|-----------------|---------------------------|------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------|---------------|
| 200 Volts      | 230 Volts      | 460 Volts      | 575 Volts      |           |           |                 |                           | NEMA 1 General Purpose |               | NEMA 4/4X Stainless <sup>①</sup> Watertight, Dust-tight Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel |               | NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant |               | NEMA 12, NEMA 3/3R, <sup>①</sup> NEMA 4 Painted Industrial Use Weatherproof Watertight, Dust-tight |               |
| Catalog Number | Catalog Number | Catalog Number | Catalog Number |           |           |                 |                           | Catalog Number         | List Price \$ | Catalog Number                                                                                                                          | List Price \$ | Catalog Number                                                | List Price \$ | Catalog Number                                                                                     | List Price \$ |
| 3              | 3              | —              | —              | 0         | —         | 30              | 30A/250V                  | 17CP92B*1081           |               | 17CP92@*1081                                                                                                                            |               | 17CP92F*1081                                                  |               | 17CP92N*1081                                                                                       |               |
| —              | —              | 5              | 5              | 0         | —         | 30              | 30A/600V                  | 17CP92B*1181           |               | 17CP92@*1181                                                                                                                            |               | 17CP92F*1181                                                  |               | 17CP92N*1181                                                                                       |               |
| 5              | 5              | —              | —              | 1         | —         | 30              | 30A/250V                  | 17DP92B*1081           |               | 17DP92@*1081                                                                                                                            |               | 17DP92F*1081                                                  |               | 17DP92N*1081                                                                                       |               |
| —              | —              | 10             | 10             | 1         | —         | 30              | 30A/600V                  | 17DP92B*1181           |               | 17DP92@*1181                                                                                                                            |               | 17DP92F*1181                                                  |               | 17DP92N*1181                                                                                       |               |
| 7½             | 7½             | —              | —              | 1         | —         | 60              | 60A/250V                  | 17DP92B*1281           |               | 17DP92@*1281                                                                                                                            |               | 17DP92F*1281                                                  |               | 17DP92N*1281                                                                                       |               |
| 10             | 10             | —              | —              | —         | 1¼        | 60              | 60A/250V                  | 17EP92B*1281           |               | 17EP92@*1281                                                                                                                            |               | 17EP92F*1281                                                  |               | 17EP92N*1281                                                                                       |               |
| —              | —              | 15             | 15             | —         | 1¼        | 60              | 60A/600V                  | 17EP92B*1381           |               | 17EP92@*1381                                                                                                                            |               | 17EP92F*1381                                                  |               | 17EP92N*1381                                                                                       |               |
| 10             | 15             | —              | —              | 2         | —         | 60              | 60A/250V                  | 17FP92B*1281           |               | 17FP92@*1281                                                                                                                            |               | 17FP92F*1281                                                  |               | 17FP92N*1281                                                                                       |               |
| —              | —              | 25             | 25             | 2         | —         | 60              | 60A/600V                  | 17FP92B*1381           |               | 17FP92@*1381                                                                                                                            |               | 17FP92F*1381                                                  |               | 17FP92N*1381                                                                                       |               |
| —              | —              | 30             | —              | —         | 2½        | 60              | 60A/600V                  | 17GP92B*1381           |               | 17GP92@*1381                                                                                                                            |               | 17GP92F*1381                                                  |               | 17GP92N*1381                                                                                       |               |
| —              | —              | 30             | —              | —         | 2½        | 100             | 100A/600V                 | 17GP92B*1581           |               | 17GP92@*1581                                                                                                                            |               | 17GP92F*1581                                                  |               | 17GP92N*1581                                                                                       |               |
| 15             | 20             | —              | —              | —         | 2½        | 100             | 100A/250V                 | 17GP92B*1481           |               | 17GP92@*1481                                                                                                                            |               | 17GP92F*1481                                                  |               | 17GP92N*1481                                                                                       |               |
| 20             | 25             | —              | —              | 3         | —         | 100             | 100A/250V                 | 17HP92B*1481           |               | 17HP92@*1481                                                                                                                            |               | 17HP92F*1481                                                  |               | 17HP92N*1481                                                                                       |               |
| —              | —              | 50             | 50             | 3         | —         | 100             | 100A/600V                 | 17HP92B*1581           |               | 17HP92@*1581                                                                                                                            |               | 17HP92F*1581                                                  |               | 17HP92N*1581                                                                                       |               |
| 25             | 30             | —              | —              | 3         | —         | 200             | 200A/250V                 | 17HP92B*1681           |               | 17HP92@*1681                                                                                                                            |               | 17HP92F*1681                                                  |               | 17HP92N*1681                                                                                       |               |
| 30             | 40             | —              | —              | —         | 3½        | 200             | 200A/250V                 | 17IP92B*1681           |               | 17IP92@*1681                                                                                                                            |               | 17IP92F*1681                                                  |               | 17IP92N*1681                                                                                       |               |
| —              | —              | 75             | 75             | —         | 3½        | 200             | 200A/600V                 | 17IP92B*1781           |               | 17IP92@*1781                                                                                                                            |               | 17IP92F*1781                                                  |               | 17IP92N*1781                                                                                       |               |
| 40             | 50             | —              | —              | 4         | —         | 200             | 200A/250V                 | 17JP92B*1681           |               | 17JP92@*1681                                                                                                                            |               | 17JP92F*1681                                                  |               | 17JP92N*1681                                                                                       |               |
| —              | —              | 100            | 100            | 4         | —         | 200             | 200A/600V                 | 17JP92B*1781           |               | 17JP92@*1781                                                                                                                            |               | 17JP92F*1781                                                  |               | 17JP92N*1781                                                                                       |               |

## Extra Wide Enclosure, 3-Phase, 3-Pole

| Max Hp         |                |                |                | NEMA Size | Half Size | Disc Amp Rating | Fuse Clip Size Amps/Volts | Enclosure              |               |                                                                                                                                                 |               |                                                                                                    |               |                |               |
|----------------|----------------|----------------|----------------|-----------|-----------|-----------------|---------------------------|------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------|---------------|----------------|---------------|
| 200 Volts      | 230 Volts      | 460 Volts      | 575 Volts      |           |           |                 |                           | NEMA 1 General Purpose |               | NEMA 4/4X Stainless <sup>①</sup> Watertight, Dust-tight Industrial Use Weatherproof @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel |               | NEMA 12, NEMA 3/3R, <sup>①</sup> NEMA 4 Painted Industrial Use Weatherproof Watertight, Dust-tight |               |                |               |
| Catalog Number | Catalog Number | Catalog Number | Catalog Number |           |           |                 |                           | Catalog Number         | List Price \$ | Catalog Number                                                                                                                                  | List Price \$ | Catalog Number                                                                                     | List Price \$ | Catalog Number | List Price \$ |
| 3              | 3              | —              | —              | 0         | —         | 30              | 30A/250V                  | 17CP82B*1081           |               | 17CP82@*1081                                                                                                                                    |               | 17CP82N*1081                                                                                       |               |                |               |
| —              | —              | 5              | 5              | 0         | —         | 30              | 30A/600V                  | 17CP82B*1181           |               | 17CP82@*1181                                                                                                                                    |               | 17CP82N*1181                                                                                       |               |                |               |
| 5              | 5              | —              | —              | 1         | —         | 30              | 30A/250V                  | 17DP82B*1081           |               | 17DP82@*1081                                                                                                                                    |               | 17DP82N*1081                                                                                       |               |                |               |
| —              | —              | 10             | 10             | 1         | —         | 30              | 30A/600V                  | 17DP82B*1181           |               | 17DP82@*1181                                                                                                                                    |               | 17DP82N*1181                                                                                       |               |                |               |
| 7½             | 7½             | —              | —              | 1         | —         | 60              | 60A/250V                  | 17DP82B*1281           |               | 17DP82@*1281                                                                                                                                    |               | 17DP82N*1281                                                                                       |               |                |               |
| 10             | 10             | —              | —              | —         | 1¼        | 60              | 60A/250V                  | 17EP82B*1281           |               | 17EP82@*1281                                                                                                                                    |               | 17EP82N*1281                                                                                       |               |                |               |
| —              | —              | 15             | 15             | —         | 1¼        | 60              | 60A/600V                  | 17EP82B*1381           |               | 17EP82@*1381                                                                                                                                    |               | 17EP82N*1381                                                                                       |               |                |               |
| 10             | 15             | —              | —              | 2         | —         | 60              | 60A/250V                  | 17FP82B*1281           |               | 17FP82@*1281                                                                                                                                    |               | 17FP82N*1281                                                                                       |               |                |               |
| —              | —              | 25             | 25             | 2         | —         | 60              | 60A/600V                  | 17FP82B*1381           |               | 17FP82@*1381                                                                                                                                    |               | 17FP82N*1381                                                                                       |               |                |               |
| —              | —              | 30             | —              | —         | 2½        | 60              | 60A/600V                  | 17GP82B*1381           |               | 17GP82@*1381                                                                                                                                    |               | 17GP82N*1381                                                                                       |               |                |               |
| —              | —              | 30             | —              | —         | 2½        | 100             | 100A/600V                 | 17GP82B*1581           |               | 17GP82@*1581                                                                                                                                    |               | 17GP82N*1581                                                                                       |               |                |               |
| 15             | 20             | —              | —              | —         | 2½        | 100             | 100A/250V                 | 17GP82B*1481           |               | 17GP82@*1481                                                                                                                                    |               | 17GP82N*1481                                                                                       |               |                |               |
| 20             | 25             | —              | —              | 3         | —         | 100             | 100A/250V                 | 17HP82B*1481           |               | 17HP82@*1481                                                                                                                                    |               | 17HP82N*1481                                                                                       |               |                |               |
| —              | —              | 50             | 50             | 3         | —         | 100             | 100A/600V                 | 17HP82B*1581           |               | 17HP82@*1581                                                                                                                                    |               | 17HP82N*1581                                                                                       |               |                |               |
| 25             | 30             | —              | —              | 3         | —         | 200             | 200A/250V                 | 17HP82B*1681           |               | 17HP82@*1681                                                                                                                                    |               | 17HP82N*1681                                                                                       |               |                |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① For conduit hubs and conversion instructions, see page 9/110.

② Single phase wiring page 9/173.

## MCP Type with Solid State Overload, Class 18

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                      | Coil Table                                                                                                                                                                                                                                                                                                                                                                                                         |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|----|---|-----|---|------------------------------|---|---------|---|---------|---|-----|---|------------------------------|---|---------|---|---------|---|
|                                                                                   | <ul style="list-style-type: none"><li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>► Field Modification Kits see page 9/104.</li><li>► Factory Modifications see page 9/119.</li><li>► Dimensions see page 9/159.</li><li>► Wiring Diagrams see page 9/174.</li><li>► Replacement Parts see page 9/131.</li></ul> | <table><tr><th>60Hz Voltage</th><th>Letter</th></tr><tr><td>24</td><td>J</td></tr><tr><td>120</td><td>F</td></tr><tr><td>110–120/220–240<sup>①</sup></td><td>A</td></tr><tr><td>200–208</td><td>D</td></tr><tr><td>220–240</td><td>G</td></tr><tr><td>277</td><td>L</td></tr><tr><td>220–240/440–480<sup>①</sup></td><td>C</td></tr><tr><td>440–480</td><td>H</td></tr><tr><td>575–600</td><td>E</td></tr></table> | 60Hz Voltage | Letter | 24 | J | 120 | F | 110–120/220–240 <sup>①</sup> | A | 200–208 | D | 220–240 | G | 277 | L | 220–240/440–480 <sup>①</sup> | C | 440–480 | H | 575–600 | E |
|                                                                                   | 60Hz Voltage                                                                                                                                                                                                                                                                                                                                                                                              | Letter                                                                                                                                                                                                                                                                                                                                                                                                             |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
| 24                                                                                | J                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
| 120                                                                               | F                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
| 110–120/220–240 <sup>①</sup>                                                      | A                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
| 200–208                                                                           | D                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
| 220–240                                                                           | G                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
| 277                                                                               | L                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
| 220–240/440–480 <sup>①</sup>                                                      | C                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
| 440–480                                                                           | H                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
| 575–600                                                                           | E                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |
| For other voltages and frequencies, see Factory Modifications page 9/119.         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |

## Standard Width Enclosure, 3-Phase, 3-Pole

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Overload  |            | Enclosure                 |               |                                                                                                                                          |               |                                                                        |               |                                                                                                                                                           |               |                                                                                                               |               |
|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|-----------|------------|---------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                                    | Amp Range | Frame Size | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless®<br>Watertight, Dust-tight,<br>Corrosion Resistant<br>® = W for 304 Stainless Steel<br>® = X for 316 Stainless Steel |               | NEMA 4X<br>Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 7 & 9<br>NEMA 3 & 4<br>Div. 1 and Div. 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |               | NEMA 12, NEMA 3/3R®, NEMA 4 Painted (thru size 4)<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
|           |           |           |           |           |           |                                    |           |            | Catalog Number            | List Price \$ | Catalog Number                                                                                                                           | List Price \$ | Catalog Number                                                         | List Price \$ | Catalog Number                                                                                                                                            | List Price \$ | Catalog Number                                                                                                | List Price \$ |
| ½         | ½         | 1         | 1         | 0         | —         | 3                                  | 0.75–3.4  | A          | 18CUB92B*                 |               | 18CUB92®*                                                                                                                                |               | 18CUB92F*                                                              |               | 18CUB92H*                                                                                                                                                 |               | 18CUB92N*                                                                                                     |               |
| 2         | 2         | 5         | 5         | 0         | —         | 10                                 | 3–12      | A1         | 18CUC92B*                 |               | 18CUC92®*                                                                                                                                |               | 18CUC92F*                                                              |               | 18CUC92H*                                                                                                                                                 |               | 18CUC92N*                                                                                                     |               |
| 3         | 3         | —         | —         | 0         | —         | 25                                 | 5.5–22    | A1         | 18CUD92B*                 |               | 18CUD92®*                                                                                                                                |               | 18CUD92F*                                                              |               | 18CUD92H*                                                                                                                                                 |               | 18CUD92N*                                                                                                     |               |
| ½         | ½         | 1         | 1         | 1         | —         | 3                                  | 0.75–3.4  | A          | 18DUB92B*                 |               | 18DUB92®*                                                                                                                                |               | 18DUB92F*                                                              |               | 18DUB92H*                                                                                                                                                 |               | 18DUB92N*                                                                                                     |               |
| 2         | 2         | 5         | 5         | 1         | —         | 10                                 | 3–12      | A1         | 18DUC92B*                 |               | 18DUC92®*                                                                                                                                |               | 18DUC92F*                                                              |               | 18DUC92H*                                                                                                                                                 |               | 18DUC92N*                                                                                                     |               |
| 3         | 3         | 7 ½       | 10        | 1         | —         | 25                                 | 5.5–22    | A1         | 18DUD92B*                 |               | 18DUD92®*                                                                                                                                |               | 18DUD92F*                                                              |               | 18DUD92H*                                                                                                                                                 |               | 18DUD92N*                                                                                                     |               |
| 7 ½       | 7 ½       | 10        | —         | 1         | —         | 30                                 | 10–40     | A1         | 18DUE92B*                 |               | 18DUE92®*                                                                                                                                |               | 18DUE92F*                                                              |               | 18DUE92H*                                                                                                                                                 |               | 18DUE92N*                                                                                                     |               |
| —         | —         | 15        | 15        | —         | 1 ¼       | 40                                 | 10–40     | A1         | 18EUE92B*                 |               | 18EUE92®*                                                                                                                                |               | 18EUE92F*                                                              |               | 18EUE92H*                                                                                                                                                 |               | 18EUE92N*                                                                                                     |               |
| 10        | 15        | 25        | 25        | 2         | —         | 50                                 | 13–52     | B          | 18FUF92B*                 |               | 18FUF92®*                                                                                                                                |               | 18FUF92F*                                                              |               | 18FUF92H*                                                                                                                                                 |               | 18FUF92N*                                                                                                     |               |
| 15        | 20        | 30        | 30        | —         | 2 ½       | 100                                | 25–100    | B          | 18GUG92B*                 |               | 18GUG92®*                                                                                                                                |               | 18GUG92F*                                                              |               | 18GUG92H*                                                                                                                                                 |               | 18GUG92N*                                                                                                     |               |
| 25        | 30        | 50        | 50        | 3         | —         | 125                                | 25–100    | B          | 18HUG92B*                 |               | 18HUG92®*                                                                                                                                |               | 18HUG92F*                                                              |               | 18HUG92H*                                                                                                                                                 |               | 18HUG92N*                                                                                                     |               |
| 30        | 40        | 75        | 75        | —         | 3 ½       | 125                                | 50–200    | B          | 18IUH92B*                 |               | 18IUH92®*                                                                                                                                |               | 18IUH92F*                                                              |               | 18IUH92H*                                                                                                                                                 |               | 18IUH92N*                                                                                                     |               |
| 40        | 50        | 100       | 100       | 4         | —         | 150                                | 50–200    | B          | 18JUH92B*                 |               | 18JUH92®*                                                                                                                                |               | 18JUH92F*                                                              |               | 18JUH92H*                                                                                                                                                 |               | 18JUH92N*                                                                                                     |               |
| 50        | 75        | 150       | 200       | 5         | —         | 250                                | 55–250    | —          | 18LPT92B*                 |               | 18LPT92E®③                                                                                                                               |               | —                                                                      | —             | 18LPT92H*                                                                                                                                                 |               | 18LPT92N*                                                                                                     |               |
| 75        | 100       | 200       | —         | 5         | —         | 400                                | 55–250    | —          | 18LPW92B*                 |               | 18LPW92E®③                                                                                                                               |               | —                                                                      | —             | —                                                                                                                                                         | —             | 18LPW92N*                                                                                                     |               |
| 100       | 125       | 250       | 300       | 6         | —         | 400                                | 160–630   | —          | 18MPW92B*                 |               | 18MPW92E®③                                                                                                                               |               | —                                                                      | —             | —                                                                                                                                                         | —             | 18MPW92N*                                                                                                     |               |
| 150       | 200       | 400       | 400       | 6         | —         | 600                                | 160–630   | —          | 18MPX92B*                 |               | 18MPX92E®③                                                                                                                               |               | —                                                                      | —             | —                                                                                                                                                         | —             | 18MPX92N*                                                                                                     |               |
| —         | 250       | 500       | 500       | 7④        | —         | 800                                | 400–1220  | A1+CT      | 18NUV92B*                 |               | —                                                                                                                                        | —             | —                                                                      | —             | —                                                                                                                                                         | —             | 18NUV92N*                                                                                                     |               |
| —         | 300       | 600       | 600       | 7④        | —         | 1000                               | 400–1220  | A1+CT      | 18NUY92B*                 |               | —                                                                                                                                        | —             | —                                                                      | —             | —                                                                                                                                                         | —             | 18NUY92N*                                                                                                     |               |
| —         | 400       | 800       | 800       | 8⑤        | —         | 1200                               | 400–1220  | A1+CT      | 18PUW92B*                 |               | —                                                                                                                                        | —             | —                                                                      | —             | —                                                                                                                                                         | —             | 18PUW92N*                                                                                                     |               |
| —         | 450       | 900       | 900       | 8⑤        | —         | 1600                               | 400–1220  | A1+CT      | 18PUZ92B*                 |               | —                                                                                                                                        | —             | —                                                                      | —             | —                                                                                                                                                         | —             | 18PUZ92N*                                                                                                     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in starter sizes 5–8.

② For conduit hubs and conversion instructions, see page 9/110.

③ Enclosure is NEMA Type 4 (painted steel).

④ F coil 100–250V AC 50/60Hz, or DC, H coil 150–500V AC 50/60Hz, or DC

⑤ Only available

F coil 100–250V AC 50/60Hz, or DC



## MCP Type with Solid State Overload, Class 18

## Selection

A photograph of a heavy-duty electrical starter unit, likely for a motor. The unit is a grey metal enclosure with its door open to the left. Inside, there is a large terminal block on the left with several wires connected to it. To the right of the terminal block is a control assembly, possibly a relay or a small motor, with more wiring. The interior of the door has a perforated metal pattern. The unit is mounted on a light-colored surface.

## Ordering Information

- Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 9/104.
- Factory Modifications see page 9/119.
- Dimensions see page 9/159.
- Wiring Diagrams see page 9/174.
- Replacement Parts see page 9/131.

## Coil Table

| 60Hz Voltage    | Letter |
|-----------------|--------|
| 24              | J      |
| 120             | F      |
| 110–120/220–240 | A      |
| 200–208         | D      |
| 220–240         | G      |
| 277             | L      |
| 220–240/440–480 | C      |
| 440–480         | H      |
| 575–600         | E      |

For other voltages and frequencies, see Factory Modifications page 9/119.

## Extra Wide Enclosure, 3-Phase, 3-Pole

| Max Hp       |              |              |              |              |              | Motor<br>Circuit<br>Interrupter<br>ETI Amps | Overload     |               | Enclosure                 |                  |                                                                                                                                                      |                  |                                                                                                                 |                  |
|--------------|--------------|--------------|--------------|--------------|--------------|---------------------------------------------|--------------|---------------|---------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------|------------------|
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts |              |              |                                             | Amp<br>Range | Frame<br>Size | NEMA 1<br>General Purpose |                  | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight,<br>Corrosion Resistant<br>Ⓢ = W for 304 Stainless Steel<br>Ⓢ = X for 316 Stainless Steel |                  | NEMA 12, NEMA 3/3R <sup>①</sup> ,<br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |                  |
|              |              |              |              | NEMA<br>Size | Half<br>Size |                                             |              |               | Catalog<br>Number         | List<br>Price \$ | Catalog<br>Number                                                                                                                                    | List<br>Price \$ | Catalog<br>Number                                                                                               | List<br>Price \$ |
| 1/2          | 1/2          | 1            | 1            | 0            | —            | 3                                           | 0.75–3.4     | A             | 18CUB82B*                 |                  | 18CUB82@*                                                                                                                                            |                  | 18CUB82N*                                                                                                       |                  |
| 2            | 2            | 5            | 5            | 0            | —            | 10                                          | 3–12         | A1            | 18CUC82B*                 |                  | 18CUC82@*                                                                                                                                            |                  | 18CUC82N*                                                                                                       |                  |
| 3            | 3            | —            | —            | 0            | —            | 25                                          | 5.5–22       | A1            | 18CUD82B*                 |                  | 18CUD82@*                                                                                                                                            |                  | 18CUD82N*                                                                                                       |                  |
| 1/2          | 1/2          | 1            | 1            | 1            | —            | 3                                           | 0.75–3.4     | A             | 18DUB82B*                 |                  | 18DUB82@*                                                                                                                                            |                  | 18DUB82N*                                                                                                       |                  |
| 2            | 2            | 5            | 5            | 1            | —            | 10                                          | 3–12         | A1            | 18DUC82B*                 |                  | 18DUC82@*                                                                                                                                            |                  | 18DUC82N*                                                                                                       |                  |
| 3            | 3            | 7 1/2        | 10           | 1            | —            | 25                                          | 5.5–22       | A1            | 18DUD82B*                 |                  | 18DUD82@*                                                                                                                                            |                  | 18DUD82N*                                                                                                       |                  |
| 7 1/2        | 7 1/2        | 10           | —            | 1            | —            | 30                                          | 10–40        | A1            | 18DUE82B*                 |                  | 18DUE82@*                                                                                                                                            |                  | 18DUE82N*                                                                                                       |                  |
| —            | —            | 15           | 15           | —            | 1 1/2        | 40                                          | 10–40        | A1            | 18EUE82B*                 |                  | 18EUE82@*                                                                                                                                            |                  | 18EUE82N*                                                                                                       |                  |
| 10           | 15           | 25           | 25           | 2            | —            | 50                                          | 13–52        | B             | 18FUF82B*                 |                  | 18FUF82@*                                                                                                                                            |                  | 18FUF82N*                                                                                                       |                  |
| 15           | 20           | 30           | 30           | —            | 2 1/2        | 100                                         | 25–100       | B             | 18GUG82B*                 |                  | 18GUG82@*                                                                                                                                            |                  | 18GUG82N*                                                                                                       |                  |
| 25           | 30           | 50           | 50           | 3            | —            | 125                                         | 25–100       | B             | 18HUG82B*                 |                  | 18HUG82@*                                                                                                                                            |                  | 18HUG82N*                                                                                                       |                  |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

<sup>①</sup> For conduit hubs and conversion instructions, see page 9/110.

## MCP Type with Ambient Compensated Bimetal Overload, Class 18

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Coil Table                                                                                                                                                                                                                                                                                                                                                                                 |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|----|---|-----|---|-----------------|---|---------|---|---------|---|-----|---|-----------------|---|---------|---|---------|---|
|                                                                                   | <ul style="list-style-type: none"><li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>► Heater elements see page 9/124. (3 required)</li><li>► Field Modification Kits see page 9/104.</li><li>► Factory Modifications see page 9/119.</li><li>► Dimensions see page 9/159.</li><li>► Wiring Diagrams see page 9/174.</li><li>► Replacement Parts see page 9/131.</li><li>► For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact.</li></ul> | <table><tr><th>60Hz Voltage</th><th>Letter</th></tr><tr><td>24</td><td>J</td></tr><tr><td>120</td><td>F</td></tr><tr><td>110–120/220–240</td><td>A</td></tr><tr><td>200–208</td><td>D</td></tr><tr><td>220–240</td><td>G</td></tr><tr><td>277</td><td>L</td></tr><tr><td>220–240/440–480</td><td>C</td></tr><tr><td>440–480</td><td>H</td></tr><tr><td>575–600</td><td>E</td></tr></table> | 60Hz Voltage | Letter | 24 | J | 120 | F | 110–120/220–240 | A | 200–208 | D | 220–240 | G | 277 | L | 220–240/440–480 | C | 440–480 | H | 575–600 | E |
|                                                                                   | 60Hz Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Letter                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 24                                                                                | J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 120                                                                               | F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 110–120/220–240                                                                   | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 200–208                                                                           | D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 220–240                                                                           | G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 277                                                                               | L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 220–240/440–480                                                                   | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 440–480                                                                           | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| 575–600                                                                           | E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |
| For other voltages and frequencies, see Factory Modifications page 9/119.         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |

## Standard Width Enclosure, 3-Phase, 3-Pole

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Enclosure                                           |               |                                                                                                                                                           |               |                                                                                                             |               |                                                                                                                                 |               |                                                                     |               |
|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|-----------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                                    | NEMA 1<br>General Purpose<br>Watertight, Dust-tight |               | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>@ = W for 304<br>Stainless Steel<br>@ = X for 316 Stainless<br>Steel |               | NEMA 4X Fiberglass<br>NEMA 3 & 4<br>Corrosion Resistant<br>Class I Groups C & D<br>Class II Groups E, F & G |               | NEMA 7 & 9<br>Div 1 and Div 2<br>Weatherproof<br>Watertight, Dust-tight<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |               | NEMA 12,NEMA 3/3R, <sup>①</sup><br>NEMA 4 Painted<br>Industrial Use |               |
|           |           |           |           |           |           |                                    | Catalog Number                                      | List Price \$ | Catalog Number                                                                                                                                            | List Price \$ | Catalog Number                                                                                              | List Price \$ | Catalog Number                                                                                                                  | List Price \$ | Catalog Number                                                      | List Price \$ |
| ½         | ½         | 1         | 1         | 0         | —         | 3                                  | 18CP92BA*81                                         |               | 18CP92@A*81                                                                                                                                               |               | 18CP92FA*81                                                                                                 |               | 18CP92HA*81                                                                                                                     |               | 18CP92NA*81                                                         |               |
| 1         | 1         | 3         | 3         | 0         | —         | 10                                 | 18CP92BB*81                                         |               | 18CP92@B*81                                                                                                                                               |               | 18CP92FB*81                                                                                                 |               | 18CP92HB*81                                                                                                                     |               | 18CP92NB*81                                                         |               |
| 3         | 3         | 5         | 5         | 0         | —         | 25                                 | 18CP92BC*81                                         |               | 18CP92@C*81                                                                                                                                               |               | 18CP92FC*81                                                                                                 |               | 18CP92HC*81                                                                                                                     |               | 18CP92NC*81                                                         |               |
| ½         | ½         | 1         | 1         | 1         | —         | 3                                  | 18DP92BA*81                                         |               | 18DP92@A*81                                                                                                                                               |               | 18DP92FA*81                                                                                                 |               | 18DP92HA*81                                                                                                                     |               | 18DP92NA*81                                                         |               |
| 1         | 1         | 3         | 3         | 1         | —         | 10                                 | 18DP92BB*81                                         |               | 18DP92@B*81                                                                                                                                               |               | 18DP92FB*81                                                                                                 |               | 18DP92HB*81                                                                                                                     |               | 18DP92NB*81                                                         |               |
| 3         | 3         | 7½        | 7½        | 1         | —         | 25                                 | 18DP92BD*81                                         |               | 18DP92@D*81                                                                                                                                               |               | 18DP92FD*81                                                                                                 |               | 18DP92HD*81                                                                                                                     |               | 18DP92ND*81                                                         |               |
| 7½        | 7½        | 10        | 10        | 1         | —         | 30                                 | 18DP92BE*81                                         |               | 18DP92@E*81                                                                                                                                               |               | 18DP92FE*81                                                                                                 |               | 18DP92HE*81                                                                                                                     |               | 18DP92NE*81                                                         |               |
| —         | —         | 15        | 15        | —         | 1¼        | 40                                 | 18EP92BF*81                                         |               | 18EP92@F*81                                                                                                                                               |               | 18EP92FF*81                                                                                                 |               | 18EP92HF*81                                                                                                                     |               | 18EP92NF*81                                                         |               |
| 10        | 10        | —         | —         | —         | 1½        | 50                                 | 18EP92BG*81                                         |               | 18EP92@G*81                                                                                                                                               |               | 18EP92FG*81                                                                                                 |               | 18EP92HG*81                                                                                                                     |               | 18EP92NG*81                                                         |               |
| —         | —         | 20        | 20        | 2         | —         | 40                                 | 18FP92BH*81                                         |               | 18FP92@H*81                                                                                                                                               |               | 18FP92FH*81                                                                                                 |               | 18FP92HH*81                                                                                                                     |               | 18FP92NH*81                                                         |               |
| 10        | 15        | 25        | 25        | 2         | —         | 50                                 | 18FP92BJ*81                                         |               | 18FP92@J*81                                                                                                                                               |               | 18FP92FJ*81                                                                                                 |               | 18FP92HJ*81                                                                                                                     |               | 18FP92NJ*81                                                         |               |
| 10        | 15        | 30        | 30        | —         | 2½        | 50                                 | 18GP92BK*81                                         |               | 18GP92@K*81                                                                                                                                               |               | 18GP92FK*81                                                                                                 |               | 18GP92HK*81                                                                                                                     |               | 18GP92NK*81                                                         |               |
| 15        | 20        | —         | —         | —         | 2½        | 100                                | 18GP92BL*81                                         |               | 18GP92@L*81                                                                                                                                               |               | 18GP92FL*81                                                                                                 |               | 18GP92HL*81                                                                                                                     |               | 18GP92NL*81                                                         |               |
| —         | —         | 30        | 30        | 3         | —         | 50                                 | 18HP92BM*81                                         |               | 18HP92@M*81                                                                                                                                               |               | 18HP92FM*81                                                                                                 |               | 18HP92HM*81                                                                                                                     |               | 18HP92NM*81                                                         |               |
| 25        | 30        | 50        | 50        | 3         | —         | 125                                | 18HP92BN*81                                         |               | 18HP92@N*81                                                                                                                                               |               | 18HP92FN*81                                                                                                 |               | 18HP92HN*81                                                                                                                     |               | 18HP92NN*81                                                         |               |
| 30        | 40        | 75        | 75        | —         | 3½        | 125                                | 18IP92BP*81                                         |               | 18IP92@P*81                                                                                                                                               |               | 18IP92FP*81                                                                                                 |               | 18IP92HP*81                                                                                                                     |               | 18IP92NP*81                                                         |               |
| 40        | 50        | 100       | 100       | 4         | —         | 150                                | 18JP92BR*81                                         |               | 18JP92@R*81                                                                                                                                               |               | 18JP92FR*81                                                                                                 |               | 18JP92HR*81                                                                                                                     |               | 18JP92NR*81                                                         |               |

## Extra Wide Enclosure, 3-Phase, 3-Pole

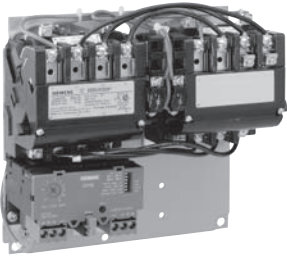
| Max Hp         |                |                |                | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Enclosure                 |               |                                                                                                                                                 |               |                                                                                                                |               |
|----------------|----------------|----------------|----------------|-----------|-----------|------------------------------------|---------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts      | 230 Volts      | 460 Volts      | 575 Volts      |           |           |                                    | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>@=W for 304 Stainless Steel<br>@=X for 316 Stainless Steel |               | NEMA 12, NEMA 3/3R, <sup>①</sup><br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
| Catalog Number | Catalog Number | Catalog Number | Catalog Number |           |           |                                    | Catalog Number            | List Price \$ | Catalog Number                                                                                                                                  | List Price \$ | Catalog Number                                                                                                 | List Price \$ |
| 1/2            | 1/2            | 1              | 1              | 0         | —         | 3                                  | 18CP82BA*81               |               | 18CP82@A*81                                                                                                                                     |               | 18CP82NA*81                                                                                                    |               |
| 1              | 1              | 3              | 3              | 0         | —         | 10                                 | 18CP82BB*81               |               | 18CP82@B*81                                                                                                                                     |               | 18CP82NB*81                                                                                                    |               |
| 3              | 3              | 5              | 5              | 0         | —         | 25                                 | 18CP82BC*81               |               | 18CP82@C*81                                                                                                                                     |               | 18CP82NC*81                                                                                                    |               |
| 1/2            | 1/2            | 1              | 1              | 1         | —         | 3                                  | 18DP82BA*81               |               | 18DP82@A*81                                                                                                                                     |               | 18DP82NA*81                                                                                                    |               |
| 1              | 1              | 3              | 3              | 1         | —         | 10                                 | 18DP82BB*81               |               | 18DP82@B*81                                                                                                                                     |               | 18DP82NB*81                                                                                                    |               |
| 3              | 3              | 7 1/2          | 7 1/2          | 1         | —         | 25                                 | 18DP82BD*81               |               | 18DP82@D*81                                                                                                                                     |               | 18DP82ND*81                                                                                                    |               |
| 7 1/2          | 7 1/2          | 10             | 10             | 1         | —         | 30                                 | 18DP82BE*81               |               | 18DP82@E*81                                                                                                                                     |               | 18DP82NE*81                                                                                                    |               |
| —              | —              | 15             | 15             | —         | 1 1/4     | 40                                 | 18EP82BF*81               |               | 18EP82@F*81                                                                                                                                     |               | 18EP82NF*81                                                                                                    |               |
| 10             | 10             | —              | —              | —         | 1 1/4     | 50                                 | 18EP82BG*81               |               | 18EP82@G*81                                                                                                                                     |               | 18EP82NG*81                                                                                                    |               |
| —              | —              | 20             | 20             | 2         | —         | 40                                 | 18FP82BH*81               |               | 18FP82@H*81                                                                                                                                     |               | 18FP82NH*81                                                                                                    |               |
| 10             | 15             | 25             | 25             | 2         | —         | 50                                 | 18FP82BJ*81               |               | 18FP82@J*81                                                                                                                                     |               | 18FP82NJ*81                                                                                                    |               |
| 10             | 15             | 30             | 30             | —         | 2 1/2     | 50                                 | 18GP82BK*81               |               | 18GP82@K*81                                                                                                                                     |               | 18GP82NK*81                                                                                                    |               |
| 15             | 20             | —              | —              | —         | 2 1/2     | 100                                | 18GP82BL*81               |               | 18GP82@L*81                                                                                                                                     |               | 18GP82NL*81                                                                                                    |               |
| —              | —              | 30             | 30             | 3         | —         | 50                                 | 18HP82BM*81               |               | 18HP82@M*81                                                                                                                                     |               | 18HP82NM*81                                                                                                    |               |
| 25             | 30             | 50             | 50             | 3         | —         | 125                                | 18HP82BN*81               |               | 18HP82@N*81                                                                                                                                     |               | 18HP82NN*81                                                                                                    |               |

Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① For conduit hubs and conversion instructions, see page 9/110.

## Solid State Overload, Class 22

## Selection



## Ordering Information

- Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 9/104.
- Factory Modifications see page 9/119.
- Dimensions see page 9/142 open and 9/162 enclosed.
- Wiring Diagrams see page 9/176.

## Coil Table

| 60Hz Voltage                                                              | Letter |
|---------------------------------------------------------------------------|--------|
| 24                                                                        | J      |
| 120                                                                       | F      |
| 110–120/220–240 <sup>①</sup>                                              | A      |
| 200–208                                                                   | D      |
| 220–240                                                                   | G      |
| 277                                                                       | L      |
| 220–240/440–480 <sup>①</sup>                                              | C      |
| 440–480                                                                   | H      |
| 575–600                                                                   | E      |
| For other voltages and frequencies, see Factory Modifications page 9/119. |        |

## Open Type &amp; Standard Width Enclosure, 3-Phase, 3-Pole

| Max Hp         |               |                |               | NEMA Size      | Half Size     | Overload       |               | Enclosure                                             |                           |                                                                                                     |                                                                     |                                                                                                                                            |                                                                                              |                |               |                |               |
|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|-------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------|---------------|----------------|---------------|
| 200 Volts      | 230 Volts     | 460 Volts      | 575 Volts     |                |               | Amp Range      | Frame Size    | Open Type<br>Standard Auxiliary Contacts <sup>④</sup> | NEMA 1<br>General Purpose | NEMA 4/4X Stainless <sup>⑤</sup><br>Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel | NEMA 4X<br>Fiberglass<br>Watertight, Dust-tight Corrosion Resistant | NEMA 7 & 9<br>NEMA 3 & 4<br>Div. 1 and Div. 2 Class I Groups C & D Class II Groups E, F & G Class III Bolted Enclosures Indoor/Outdoor Use | NEMA 12<br>NEMA 3/3R <sup>②</sup><br>Industrial Use Weatherproof (Field Convertible to 3/3R) |                |               |                |               |
| Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number                                        | List Price \$             | Catalog Number                                                                                      | List Price \$                                                       | Catalog Number                                                                                                                             | List Price \$                                                                                | Catalog Number | List Price \$ | Catalog Number | List Price \$ |
| 1/4            | 1/4           | 1/4            | 1/4           | 00             | —             | 0.25–1         | A             | 22BUA32A*                                             | 22BUA32B*                 | Use Size 0                                                                                          | —                                                                   | Use Size 0                                                                                                                                 | —                                                                                            | Use Size 0     | —             | Use Size 0     | —             |
| 1/2            | 1/2           | 1 1/2          | 2             | 00             | —             | 0.75–3.4       | A             | 22BUB32A*                                             | 22BUB32B*                 | Use Size 0                                                                                          | —                                                                   | Use Size 0                                                                                                                                 | —                                                                                            | Use Size 0     | —             | Use Size 0     | —             |
| 1 1/2          | 1 1/2         | 2              | —             | 00             | —             | 3–12           | A1            | 22BUC32A*                                             | 22BUC32B*                 | Use Size 0                                                                                          | —                                                                   | Use Size 0                                                                                                                                 | —                                                                                            | Use Size 0     | —             | Use Size 0     | —             |
| 1/4            | 1/4           | 1/4            | 1/2           | 0              | —             | 0.25–1         | A             | 22CUA32A*                                             | 22CUA32B*                 | 22CUA32W*                                                                                           | 22CUA32F*                                                           | 22CUA32H*                                                                                                                                  | 22CUA320*                                                                                    |                |               |                |               |
| 1/2            | 1/2           | 1 1/2          | 2             | 0              | —             | 0.75–3.4       | A             | 22CUB32A*                                             | 22CUB32B*                 | 22CUB32W*                                                                                           | 22CUB32F*                                                           | 22CUB32H*                                                                                                                                  | 22CUB320*                                                                                    |                |               |                |               |
| 2              | 2             | 5              | 5             | 0              | —             | 3–12           | A1            | 22CUC32A*                                             | 22CUC32B*                 | 22CUC32W*                                                                                           | 22CUC32F*                                                           | 22CUC32H*                                                                                                                                  | 22CUC320*                                                                                    |                |               |                |               |
| 3              | 3             | —              | —             | 0              | —             | 5.5–22         | A1            | 22CUD32A*                                             | 22CUD32B*                 | 22CUD32W*                                                                                           | 22CUD32F*                                                           | 22CUD32H*                                                                                                                                  | 22CUD320*                                                                                    |                |               |                |               |
| 1/4            | 1/4           | 1/4            | 1/2           | 1              | —             | 0.25–1         | A             | 22DUA32A*                                             | 22DUA32B*                 | 22DUA32W*                                                                                           | 22DUA32F*                                                           | 22DUA32H*                                                                                                                                  | 22DUA320*                                                                                    |                |               |                |               |
| 1/2            | 1/2           | 1 1/2          | 2             | 1              | —             | 0.75–3.4       | A             | 22DUB32A*                                             | 22DUB32B*                 | 22DUB32W*                                                                                           | 22DUB32F*                                                           | 22DUB32H*                                                                                                                                  | 22DUB320*                                                                                    |                |               |                |               |
| 2              | 2             | 5              | 5             | 1              | —             | 3–12           | A1            | 22DUC32A*                                             | 22DUC32B*                 | 22DUC32W*                                                                                           | 22DUC32F*                                                           | 22DUC32H*                                                                                                                                  | 22DUC320*                                                                                    |                |               |                |               |
| 3              | 3             | 10             | 10            | 1              | —             | 5.5–22         | A1            | 22DUD32A*                                             | 22DUD32B*                 | 22DUD32W*                                                                                           | 22DUD32F*                                                           | 22DUD32H*                                                                                                                                  | 22DUD320*                                                                                    |                |               |                |               |
| 7 1/2          | 7 1/2         | —              | —             | 1              | —             | 10–40          | A1            | 22DUE32A*                                             | 22DUE32B*                 | 22DUE32W*                                                                                           | 22DUE32F*                                                           | 22DUE32H*                                                                                                                                  | 22DUE320*                                                                                    |                |               |                |               |
| 10             | 10            | 15             | 15            | —              | 1 1/4         | 10–40          | A1            | 22EUE32A*                                             | 22EUE32B*                 | 22EUE32W*                                                                                           | 22EUE32F*                                                           | 22EUE32H*                                                                                                                                  | 22EUE320*                                                                                    |                |               |                |               |
| 10             | 15            | 25             | 25            | 2              | —             | 13–52          | B             | 22FUF32A*                                             | 22FUF32B*                 | 22FUF32W*                                                                                           | 22FUF32F*                                                           | 22FUF32H*                                                                                                                                  | 22FUF320*                                                                                    |                |               |                |               |
| 15             | 20            | 30             | 30            | —              | 2 1/2         | 25–100         | B             | 22GUG32A*                                             | 22GUG32B*                 | 22GUG32W*                                                                                           | 22GUG32F*                                                           | 22GUG32H*                                                                                                                                  | 22GUG320*                                                                                    |                |               |                |               |
| 25             | 30            | 50             | 50            | 3              | —             | 25–100         | B             | 22HUG32A*                                             | 22HUG32B*                 | 22HUG32W*                                                                                           | 22HUG32F*                                                           | 22HUG32H*                                                                                                                                  | 22HUG320*                                                                                    |                |               |                |               |
| 30             | 40            | 75             | 75            | —              | 3 1/2         | 50–200         | B             | 22IUH32A*                                             | 22IUH32B*                 | 22IUH32W*                                                                                           | 22IUH32F*                                                           | 22IUH32H*                                                                                                                                  | 22IUH320*                                                                                    |                |               |                |               |
| 40             | 50            | 100            | 100           | 4              | —             | 50–200         | B             | 22JUH32A*                                             | 22JUH32B*                 | 22JUH32W*                                                                                           | 22JUH32F*                                                           | 22JUH32H*                                                                                                                                  | 22JUH320*                                                                                    |                |               |                |               |
| 75             | 100           | 200            | 200           | 5              | —             | 55–250         | —             | 22LPU32A*                                             | 22LPU32B*                 | 22LPU32E* <sup>③</sup>                                                                              | —                                                                   | —                                                                                                                                          | —                                                                                            | 22LPU320*      |               |                |               |
| 150            | 200           | 400            | 400           | 6              | —             | 160–630        | —             | 22MPX32A*                                             | 22MPX32B*                 | 22MPX32E* <sup>③</sup>                                                                              | —                                                                   | —                                                                                                                                          | —                                                                                            | 22MPX320*      |               |                |               |
| —              | 300           | 600            | 600           | 7 <sup>④</sup> | —             | 400–1220       | A1+CT         | 22NUN32A*                                             | 22NUN32B*                 | —                                                                                                   | —                                                                   | —                                                                                                                                          | —                                                                                            | 22NUN320*      |               |                |               |
| —              | 450           | 900            | 900           | 8 <sup>⑤</sup> | —             | 400–1220       | A1+CT         | 22PUN32A*                                             | 22PUN32B*                 | —                                                                                                   | —                                                                   | —                                                                                                                                          | —                                                                                            | 22PUN320*      |               |                |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in size 5–8 starters.

② For conduit hubs and conversion instructions, see page 9/110.

③ Enclosure is rated only NEMA 4 (painted steel).

④ Only available

F coil 100–250V AC 50/60Hz, or DC

H coil 150–500V AC 50/60Hz, or DC

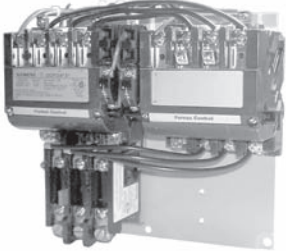
⑤ Only available

F coil 100–250V AC 50/60Hz, or DC

⑥ Auxiliary contacts  
22B–22E 4th pole built-in  
22F–22J 2 NO & 2 NC

## Ambient Compensated Bimetal Overload with Manual and Auto Reset, Class 22

## Selection

|                                                                                   | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Coil Table                                                                |        |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------|
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 60Hz Voltage                                                              | Letter |
|  | <ul style="list-style-type: none"> <li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li> <li>► Heater elements see page 9/124. Single phase starters require 1 heater element. 3-phase starters require 3 heater elements.</li> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see pages 9/142 open and 9/162 enclosed.</li> <li>► Wiring Diagrams see page 9/175.</li> <li>► Replacement Parts see page 9/131.</li> <li>► For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact.</li> </ul> | 24                                                                        | J      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 120                                                                       | F      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 110–120/220–240                                                           | A      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 200–208                                                                   | D      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 220–240                                                                   | G      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 277                                                                       | L      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 220–240/440–480                                                           | C      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 440–480                                                                   | H      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 575–600                                                                   | E      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | For other voltages and frequencies, see Factory Modifications page 9/119. |        |

## Open Type &amp; Standard Width Enclosure, 3-Phase, 3-Pole

| Max Hp       |              |              |              | Cont-<br>actor<br>Amp<br>Rating | NEMA<br>Size | Half<br>Size | Enclosure              |                  |                           |                  |                                                                                                          |                  |                                                                                           |                  |                                                                                                                                   |                  |                                                                     |                  |
|--------------|--------------|--------------|--------------|---------------------------------|--------------|--------------|------------------------|------------------|---------------------------|------------------|----------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------|------------------|
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts |                                 |              |              | Open Type <sup>③</sup> |                  | NEMA 1<br>General Purpose |                  | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |                  | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant<br>Indoor/Outdoor Use |                  | NEMA 7 & 9<br>NEMA 3 & 4<br>Div 1 and Div 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures |                  | NEMA 12 <sup>②</sup><br>NEMA 3/3R<br>Industrial Use<br>Weatherproof |                  |
|              |              |              |              |                                 |              |              | Catalog<br>Number      | List<br>Price \$ | Catalog<br>Number         | List<br>Price \$ | Catalog<br>Number                                                                                        | List<br>Price \$ | Catalog<br>Number                                                                         | List<br>Price \$ | Catalog<br>Number                                                                                                                 | List<br>Price \$ | Catalog<br>Number                                                   | List<br>Price \$ |
| 1½           | 1½           | 2            | 2            | 9                               | 00           | —            | 22BP32A*81             |                  | 22BP32B*81                |                  | Use Size 0                                                                                               | —                | Use Size 0                                                                                | —                | Use Size 0                                                                                                                        | —                | Use Size 0                                                          | —                |
| 3            | 3            | 5            | 5            | 18                              | 0            | —            | 22CP32A*81             |                  | 22CP32B*81                |                  | 22CP32W*81                                                                                               |                  | 22CP32F*81                                                                                |                  | 22CP32H*81                                                                                                                        |                  | 22CP320*81                                                          |                  |
| 7½           | 7½           | 10           | 10           | 27                              | 1            | —            | 22DP32A*81             |                  | 22DP32B*81                |                  | 22DP32W*81                                                                                               |                  | 22DP32F*81                                                                                |                  | 22DP32H*81                                                                                                                        |                  | 22DP320*81                                                          |                  |
| 10           | 10           | 15           | 15           | 40                              | —            | 1½           | 22EP32A*81             |                  | 22EP32B*81                |                  | 22EP32W*81                                                                                               |                  | 22EP32F*81                                                                                |                  | 22EP32H*81                                                                                                                        |                  | 22EP320*81                                                          |                  |
| 10           | 15           | 25           | 25           | 45                              | 2            | —            | 22FP32A*81             |                  | 22FP32B*81                |                  | 22FP32W*81                                                                                               |                  | 22FP32F*81                                                                                |                  | 22FP32H*81                                                                                                                        |                  | 22FP320*81                                                          |                  |
| 15           | 20           | 30           | 30           | 60                              | —            | 2½           | 22GP32A*81             |                  | 22GP32B*81                |                  | 22GP32W*81                                                                                               |                  | 22GP32F*81                                                                                |                  | 22GP32H*81                                                                                                                        |                  | 22GP320*81                                                          |                  |
| 25           | 30           | 50           | 50           | 90                              | 3            | —            | 22HP32A*81             |                  | 22HP32B*81                |                  | 22HP32W*81                                                                                               |                  | 22HP32F*81                                                                                |                  | 22HP32H*81                                                                                                                        |                  | 22HP320*81                                                          |                  |
| 30           | 40           | 75           | 75           | 115                             | —            | 3½           | 22IP32A*81             |                  | 22IP32B*81                |                  | 22IP32W*81                                                                                               |                  | 22IP32F*81                                                                                |                  | 22IP32H*81                                                                                                                        |                  | 22IP320*81                                                          |                  |
| 40           | 50           | 100          | 100          | 135                             | 4            | —            | 22JG32A*81             |                  | 22JG32B*81                |                  | 22JG32W*81                                                                                               |                  | 22JG32F*81                                                                                |                  | 22JG32H*81                                                                                                                        |                  | 22JG320*81                                                          |                  |

Open Type & Standard Width Enclosure, Single Phase, 3-Wire, 2-Pole<sup>②</sup>

| Max Hp    |               |                      |           | Enclosure      |               |                           |               |                                                                                                          |               |                                                                     |               |                                                                                                                                                         |               |                                                                     |               |
|-----------|---------------|----------------------|-----------|----------------|---------------|---------------------------|---------------|----------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|
| 115 Volts | 208/230 Volts | Contactor Amp Rating | NEMA Size | Open Type      |               | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 7 & 9<br>NEMA 3 & 4<br>Div 1 and Div 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |               | NEMA 12 <sup>①</sup><br>NEMA 3/3R<br>Industrial Use<br>Weatherproof |               |
|           |               |                      |           | Catalog Number | List Price \$ | Catalog Number            | List Price \$ | Catalog Number                                                                                           | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                                                                                                                          | List Price \$ | Catalog Number                                                      | List Price \$ |
| ½         | 1             | 9                    | 00        | 22BP12A*81     |               | 22BP12B*81                |               | Use Size 0                                                                                               | —             | Use Size 0                                                          | —             | Use Size 0                                                                                                                                              | —             | Use Size 0                                                          | —             |
| 1         | 2             | 18                   | 0         | 22CP12A*81     |               | 22CP12B*81                |               | 22CP12W*81                                                                                               |               | 22CP12F*81                                                          |               | 22CP12H*81                                                                                                                                              |               | 22CP120*81                                                          |               |
| 2         | 3             | 27                   | 1         | 22DP12A*81     |               | 22DP12B*81                |               | 22DP12W*81                                                                                               |               | 22DP12F*81                                                          |               | 22DP12H*81                                                                                                                                              |               | 22DP120*81                                                          |               |
| 3         | 5             | 35                   | 1P        | 22EP12A*81     |               | 22EP12B*81                |               | 22EP12W*81                                                                                               |               | 22EP12F*81                                                          |               | 22EP12H*81                                                                                                                                              |               | 22EP120*81                                                          |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All Starter Sizes carry one maximum Hp rating.

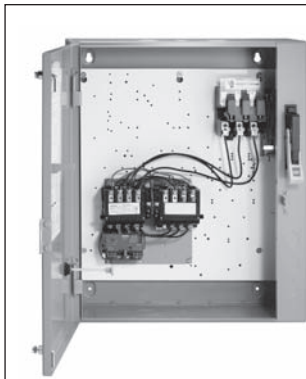
① For conduit hubs and conversion instructions, see page 9/110.

② Coil D, F, or G will be wired for Incoming Voltage. J coil will be wired for 24V separate source. Coils E, H, and L do not apply to single phase starters.

③ Auxiliary contacts  
22B-22E 4th pole built-in  
22F-22J 2 NO & 2 NC

## Non-Fusible, Class 25

## Selection



## Ordering Information

- Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Heater elements see page 9/124.
- Fuse clips see page 9/120.
- Field Modification Kits see page 9/104.
- Factory Modifications see page 9/119.
- Dimensions see page 9/164.
- Wiring Diagrams see page 9/177.
- Replacement Parts see page 9/131.
- For NO/NC SPDT contact on overload, replace "81" with "91". "81" indicates one NC contact.

## Coil Table

| 60Hz Voltage                 | Letter |
|------------------------------|--------|
| 24                           | J      |
| 120                          | F      |
| 110–120/220–240 <sup>①</sup> | A      |
| 200–208                      | D      |
| 220–240                      | G      |
| 277                          | L      |
| 220–240/440–480 <sup>①</sup> | C      |
| 440–480                      | H      |
| 575–600                      | E      |

For other voltages and frequencies, see Factory Modifications page 9/119.

## Standard Width Enclosure with Solid State Overload, 3-Phase, 3-Pole

| Max Hp    |           |           |           | NEMA Size      | Half Size | Overload  |            | Disc. Amp Rating | Enclosure                 |                                                                                                           |                                                                     |               |                                                                                                                               |               |                |               |
|-----------|-----------|-----------|-----------|----------------|-----------|-----------|------------|------------------|---------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |                |           | Amp Range | Frame Size |                  | NEMA 1<br>General Purpose | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight,<br>Corrosion Resistant<br>304 Stainless Steel | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 12, NEMA 3/3R <sup>③</sup> ,<br>NEMA 4 Painted (thru size 4)<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |                |               |
|           |           |           |           |                |           |           |            |                  |                           |                                                                                                           | Catalog Number                                                      | List Price \$ | Catalog Number                                                                                                                | List Price \$ | Catalog Number | List Price \$ |
| ⅓         | ⅓         | ⅓         | ⅓         | 0              | —         | 0.25–1    | A          | 30               | 25CUA92B*                 |                                                                                                           | 25CUA92W*                                                           |               | 25CUA92F*                                                                                                                     |               | 25CUA92N*      |               |
| ½         | ½         | 1½        | 2         | 0              | —         | 0.75–3.4  | A          | 30               | 25CUB92B*                 |                                                                                                           | 25CUB92W*                                                           |               | 25CUB92F*                                                                                                                     |               | 25CUB92N*      |               |
| 2         | 2         | 5         | 5         | 0              | —         | 3–12      | A1         | 30               | 25CUC92B*                 |                                                                                                           | 25CUC92W*                                                           |               | 25CUC92F*                                                                                                                     |               | 25CUC92N*      |               |
| 3         | 3         | —         | —         | 0              | —         | 5.5–22    | A1         | 30               | 25CUD92B*                 |                                                                                                           | 25CUD92W*                                                           |               | 25CUD92F*                                                                                                                     |               | 25CUD92N*      |               |
| ⅓         | ⅓         | ⅓         | ⅓         | 1              | —         | 0.25–1    | A          | 30               | 25DUA92B*                 |                                                                                                           | 25DUA92W*                                                           |               | 25DUA92F*                                                                                                                     |               | 25DUA92N*      |               |
| ½         | ¾         | 1½        | 2         | 1              | —         | 0.75–3.4  | A          | 30               | 25DUB92B*                 |                                                                                                           | 25DUB92W*                                                           |               | 25DUB92F*                                                                                                                     |               | 25DUB92N*      |               |
| 2         | 2         | 5         | 5         | 1              | —         | 3–12      | A1         | 30               | 25DUC92B*                 |                                                                                                           | 25DUC92W*                                                           |               | 25DUC92F*                                                                                                                     |               | 25DUC92N*      |               |
| 3         | 3         | 10        | 10        | 1              | —         | 5.5–22    | A1         | 30               | 25DUD92B*                 |                                                                                                           | 25DUD92W*                                                           |               | 25DUD92F*                                                                                                                     |               | 25DUD92N*      |               |
| 7½        | 7½        | —         | —         | 1              | —         | 10–40     | A1         | 60               | 25DUE92B*                 |                                                                                                           | 25DUE92W*                                                           |               | 25DUE92F*                                                                                                                     |               | 25DUE92N*      |               |
| 10        | 10        | 15        | 15        | —              | 1½        | 10–40     | A1         | 60               | 25EUE92B*                 |                                                                                                           | 25EUE92W*                                                           |               | 25EUE92F*                                                                                                                     |               | 25EUE92N*      |               |
| 10        | 15        | 25        | 25        | 2              | —         | 13–52     | B          | 60               | 25FUF92B*                 |                                                                                                           | 25FUF92W*                                                           |               | 25FUF92F*                                                                                                                     |               | 25FUF92N*      |               |
| 15        | 20        | 30        | 30        | —              | 2½        | 25–100    | B          | 100              | 25GUG92B*                 |                                                                                                           | 25GUG92W*                                                           |               | 25GUG92F*                                                                                                                     |               | 25GUG92N*      |               |
| 20        | 25        | 50        | 50        | 3              | —         | 25–100    | B          | 100              | 25HUG92B*                 |                                                                                                           | 25HUG92W*                                                           |               | 25HUG92F*                                                                                                                     |               | 25HUG92N*      |               |
| 30        | 40        | 75        | 75        | —              | 3½        | 50–200    | B          | 200              | 25IUH92B*                 |                                                                                                           | 25IUH92W*                                                           |               | 25IUH92F*                                                                                                                     |               | 25IUH92N*      |               |
| 40        | 50        | 100       | 100       | 4              | —         | 50–200    | B          | 200              | 25JUH92B*                 |                                                                                                           | 25JUH92W*                                                           |               | 25JUH92F*                                                                                                                     |               | 25JUH92N*      |               |
| 75        | 100       | 200       | 200       | 5              | —         | 55–250    | —          | 400              | 25LPU92B*                 |                                                                                                           | 25LPU92E* <sup>③</sup>                                              |               | —                                                                                                                             | —             | 25LPU92N*      |               |
| 150       | 200       | 400       | 400       | 6              | —         | 160–630   | —          | 600              | 25MPX92B*                 |                                                                                                           | 25MPX92E* <sup>③</sup>                                              |               | —                                                                                                                             | —             | 25MPX92N*      |               |
| —         | 300       | 600       | 600       | 7 <sup>④</sup> | —         | 400–1220  | A1+CT      | 1200             | 25NUN92B*                 |                                                                                                           | —                                                                   | —             | —                                                                                                                             | —             | 25NUN92N*      |               |
| —         | 450       | 900       | 900       | 8 <sup>⑤</sup> | —         | 400–1220  | A1+CT      | 1600             | 25PUN92B*                 |                                                                                                           | —                                                                   | —             | —                                                                                                                             | —             | 25PUN92N*      |               |

## Standard Width Enclosure with Ambient Compensated Bimetal Overload, 3-Phase, 3-Pole

| Max Hp    |           |           |           | NEMA Size | Half Size | Disc Amp Rating | Enclosure                 |               |                                                                                                          |               |                                                                     |               |                                                                                                                 |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------------|---------------------------|---------------|----------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------|---------------|
|           |           |           |           |           |           |                 | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>®</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 12 <sup>®</sup><br>NEMA 3/3R<br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                 | Catalog Number            | List Price \$ | Catalog Number                                                                                           | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                                                                                  | List Price \$ |
| 3         | 3         | 5         | 5         | 0         | —         | 30              | 25CP92B*81                |               | 25CP92W*81                                                                                               |               | 25CP92F*81                                                          |               | 25CP92N*81                                                                                                      |               |
| 7½        | 7½        | 10        | 10        | 1         | —         | 30              | 25DP92B*81                |               | 25DP92W*81                                                                                               |               | 25DP92F*81                                                          |               | 25DP92N*81                                                                                                      |               |
| 10        | 10        | 15        | 15        | —         | 1¼        | 60              | 25EP92B*81                |               | 25EP92W*81                                                                                               |               | 25EP92F*81                                                          |               | 25EP92N*81                                                                                                      |               |
| 10        | 15        | 25        | 25        | 2         | —         | 60              | 25FP92B*81                |               | 25FP92W*81                                                                                               |               | 25FP92F*81                                                          |               | 25FP92N*81                                                                                                      |               |
| 15        | 20        | 30        | 30        | —         | 2½        | 100             | 25GP92B*81                |               | 25GP92W*81                                                                                               |               | 25GP92F*81                                                          |               | 25GP92N*81                                                                                                      |               |
| 25        | 30        | 50        | 50        | 3         | —         | 100             | 25HP92B*81                |               | 25HP92W*81                                                                                               |               | 25HP92F*81                                                          |               | 25HP92N*81                                                                                                      |               |
| 30        | 40        | 75        | 75        | —         | 3½        | 200             | 25IP92B*81                |               | 25IP92W*81                                                                                               |               | 25IP92F*81                                                          |               | 25IP92N*81                                                                                                      |               |
| 40        | 50        | 100       | 100       | 4         | —         | 200             | 25JP92B*81                |               | 25JP92W*81                                                                                               |               | 25JP92F*81                                                          |               | 25JP92N*81                                                                                                      |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in starter sizes 5–8.

② For conduit hubs and conversion instructions, see page 9/110.

③ Enclosure is NEMA Type 4 (painted steel).

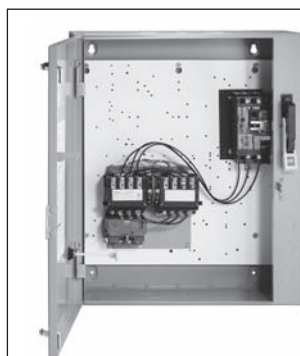
④ F coil 100–250V AC 50/60Hz, or DC, H coil 150–500V AC 50/60Hz, or DC

⑤ Only available F coil 100–250V AC 50/60Hz, or DC



## MCP Type, Class 26

## Selection



## Ordering Information

- Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 9/104.
- Factory Modifications see page 9/119.
- Dimensions see page 9/164.
- Wiring Diagrams see page 9/177.
- Replacement Parts see page 9/131.
- For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact.

## Coil Table

| 60Hz Voltage                 | Letter |
|------------------------------|--------|
| 24                           | J      |
| 120                          | F      |
| 110–120/220–240 <sup>①</sup> | A      |
| 200–208                      | D      |
| 220–240                      | G      |
| 277                          | L      |
| 220–240/440–480 <sup>①</sup> | C      |
| 440–480                      | H      |
| 575–600                      | E      |

For other voltages and frequencies, see Factory Modifications page 9/119.

## Standard Width Enclosure with Solid State Overload, 3-Phase, 3-Pole

| Max Hp         |                |                |                | NEMA Size       | Half Size | Motor Circuit Interrupter ETI Amps | Overload      |               | Enclosure                 |               |                                                                                                     |               |                                                                  |               |                                                                                                                                                           |               |                                                                                                                                  |               |
|----------------|----------------|----------------|----------------|-----------------|-----------|------------------------------------|---------------|---------------|---------------------------|---------------|-----------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts      | 230 Volts      | 460 Volts      | 575 Volts      |                 |           |                                    | Amp Range     | Frame Size    | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight Corrosion Resistant |               | NEMA 7 & 9<br>NEMA 3 & 4<br>Div. 1 and Div. 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |               | NEMA 12,<br>NEMA 3/3R <sup>③</sup> , NEMA 4<br>Painted (thru size 4)<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
| Catalog Number | Catalog Number | Catalog Number | Catalog Number |                 |           |                                    | List Price \$ | List Price \$ | Catalog Number            | List Price \$ | Catalog Number                                                                                      | List Price \$ | Catalog Number                                                   | List Price \$ | Catalog Number                                                                                                                                            | List Price \$ | Catalog Number                                                                                                                   | List Price \$ |
| 1/2            | 1/2            | 1              | 1              | 0               | —         | 3                                  | 0.75–3.4      | A             | 26CUB92B*                 |               | 26CUB92W*                                                                                           |               | 26CUB92F*                                                        |               | 26CUB92H*                                                                                                                                                 |               | 26CUB92N*                                                                                                                        |               |
| 2              | 2              | 5              | 5              | 0               | —         | 10                                 | 3–12          | A1            | 26CUC92B*                 |               | 26CUC92W*                                                                                           |               | 26CUC92F*                                                        |               | 26CUC92H*                                                                                                                                                 |               | 26CUC92N*                                                                                                                        |               |
| 3              | 3              | —              | —              | 0               | —         | 25                                 | 5.5–22        | A1            | 26CUD92B*                 |               | 26CUD92W*                                                                                           |               | 26CUD92F*                                                        |               | 26CUD92H*                                                                                                                                                 |               | 26CUD92N*                                                                                                                        |               |
| 1/2            | 1/2            | 1              | 1              | 1               | —         | 3                                  | 0.75–3.4      | A             | 26DUB92B*                 |               | 26DUB92W*                                                                                           |               | 26DUB92F*                                                        |               | 26DUB92H*                                                                                                                                                 |               | 26DUB92N*                                                                                                                        |               |
| 2              | 2              | 5              | 5              | 1               | —         | 10                                 | 3–12          | A1            | 26DUC92B*                 |               | 26DUC92W*                                                                                           |               | 26DUC92F*                                                        |               | 26DUC92H*                                                                                                                                                 |               | 26DUC92N*                                                                                                                        |               |
| 3              | 3              | 7 1/2          | 10             | 1               | —         | 25                                 | 5.5–22        | A1            | 26DUD92B*                 |               | 26DUD92W*                                                                                           |               | 26DUD92F*                                                        |               | 26DUD92H*                                                                                                                                                 |               | 26DUD92N*                                                                                                                        |               |
| 7 1/2          | 7 1/2          | 10             | —              | 1               | —         | 30                                 | 10–40         | A1            | 26DUE92B*                 |               | 26DUE92W*                                                                                           |               | 26DUE92F*                                                        |               | 26DUE92H*                                                                                                                                                 |               | 26DUE92N*                                                                                                                        |               |
| —              | —              | 15             | 15             | —               | 1 1/4     | 40                                 | 10–40         | A1            | 26EUE92B*                 |               | 26EUE92W*                                                                                           |               | 26EUE92F*                                                        |               | 26EUE92H*                                                                                                                                                 |               | 26EUE92N*                                                                                                                        |               |
| 10             | 15             | 25             | 25             | 2               | —         | 50                                 | 13–52         | B             | 26FUF92B*                 |               | 26FUF92W*                                                                                           |               | 26FUF92F*                                                        |               | 26FUF92H*                                                                                                                                                 |               | 26FUF92N*                                                                                                                        |               |
| 15             | 20             | 30             | 30             | —               | 2 1/2     | 100                                | 25–100        | B             | 26GUG92B*                 |               | 26GUG92W*                                                                                           |               | 26GUG92F*                                                        |               | 26GUG92H*                                                                                                                                                 |               | 26GUG92N*                                                                                                                        |               |
| 25             | 30             | 50             | 50             | 3               | —         | 125                                | 25–100        | B             | 26HUG92B*                 |               | 26HUG92W*                                                                                           |               | 26HUG92F*                                                        |               | 26HUG92H*                                                                                                                                                 |               | 26HUG92N*                                                                                                                        |               |
| 30             | 40             | 75             | 75             | —               | 3 1/2     | 125                                | 50–200        | B             | 26IUH92B*                 |               | 26IUH92W*                                                                                           |               | 26IUH92F*                                                        |               | 26IUH92H*                                                                                                                                                 |               | 26IUH92N*                                                                                                                        |               |
| 40             | 50             | 100            | 100            | 4               | —         | 150                                | 50–200        | B             | 26JUH92B*                 |               | 26JUH92W*                                                                                           |               | 26JUH92F*                                                        |               | 26JUH92H*                                                                                                                                                 |               | 26JUH92N*                                                                                                                        |               |
| 50             | 75             | 150            | 200            | 5               | —         | 250                                | 55–250        | —             | 26LPT92B*                 |               | 26LPT92E* <sup>③</sup>                                                                              |               | —                                                                | —             | —                                                                                                                                                         | —             | 26LPT92N*                                                                                                                        |               |
| 75             | 100            | 200            | —              | 5               | —         | 400                                | 55–250        | —             | 26LP92B*                  |               | 26LP92E* <sup>③</sup>                                                                               |               | —                                                                | —             | —                                                                                                                                                         | —             | 26LP92N*                                                                                                                         |               |
| 100            | 125            | 250            | 300            | 6               | —         | 400                                | 160–630       | —             | 26MPW92B*                 |               | 26MPW92E* <sup>③</sup>                                                                              |               | —                                                                | —             | —                                                                                                                                                         | —             | 26MPW92N*                                                                                                                        |               |
| 150            | 200            | 400            | 400            | 6               | —         | 600                                | 160–630       | —             | 26MPX92B*                 |               | 26MPX92E* <sup>③</sup>                                                                              |               | —                                                                | —             | —                                                                                                                                                         | —             | 26MPX92N*                                                                                                                        |               |
| —              | 250            | 500            | 500            | 7* <sup>④</sup> | —         | 800                                | 400–1220      | A1+CT         | 26NUV92B*                 |               | —                                                                                                   | —             | —                                                                | —             | —                                                                                                                                                         | —             | 26NUV92N*                                                                                                                        |               |
| —              | 300            | 600            | 600            | 7* <sup>④</sup> | —         | 1000                               | 400–1220      | A1+CT         | 26NUY92B*                 |               | —                                                                                                   | —             | —                                                                | —             | —                                                                                                                                                         | —             | 26NUY92N*                                                                                                                        |               |
| —              | 400            | 800            | 800            | 8 <sup>⑤</sup>  | —         | 1200                               | 400–1220      | A1+CT         | 26PUW92B*                 |               | —                                                                                                   | —             | —                                                                | —             | —                                                                                                                                                         | —             | 26PUW92N*                                                                                                                        |               |
| —              | 450            | 900            | 900            | 8 <sup>⑤</sup>  | —         | 1600                               | 400–1220      | A1+CT         | 26PUZ92B*                 |               | —                                                                                                   | —             | —                                                                | —             | —                                                                                                                                                         | —             | 26PUZ92N*                                                                                                                        |               |

## Standard Width Enclosure with Ambient Compensated Bimetal Overload, 3-Phase, 3-Pole

|       |       |       |       |   |       |     |  |  |             |             |             |             |             |
|-------|-------|-------|-------|---|-------|-----|--|--|-------------|-------------|-------------|-------------|-------------|
| 1/2   | 1/2   | 1     | 1     | 0 | —     | 3   |  |  | 26CP92BA*81 | 26CP92WA*81 | 26CP92FA*81 | 26CP92HA*81 | 26CP92NA*81 |
| 1     | 1     | 3     | 3     | 0 | —     | 10  |  |  | 26CP92BB*81 | 26CP92WB*81 | 26CP92FB*81 | 26CP92HB*81 | 26CP92NB*81 |
| 3     | 3     | 5     | 5     | 0 | —     | 25  |  |  | 26CP92BC*81 | 26CP92WC*81 | 26CP92FC*81 | 26CP92HC*81 | 26CP92NC*81 |
| 1/2   | 1/2   | 1     | 1     | 1 | —     | 3   |  |  | 26DP92BA*81 | 26DP92WA*81 | 26DP92FA*81 | 26DP92HA*81 | 26DP92NA*81 |
| 1     | 1     | 3     | 3     | 1 | —     | 10  |  |  | 26DP92BB*81 | 26DP92WB*81 | 26DP92FB*81 | 26DP92HB*81 | 26DP92NB*81 |
| 3     | 3     | 7 1/2 | 7 1/2 | 1 | —     | 25  |  |  | 26DP92BD*81 | 26DP92WD*81 | 26DP92FD*81 | 26DP92HD*81 | 26DP92ND*81 |
| 7 1/2 | 7 1/2 | 10    | 10    | 1 | —     | 30  |  |  | 26DP92BE*81 | 26DP92WE*81 | 26DP92FE*81 | 26DP92HE*81 | 26DP92NE*81 |
| —     | —     | 15    | 15    | — | 1 1/4 | 40  |  |  | 26EP92BF*81 | 26EP92WF*81 | 26EP92FF*81 | 26EP92HF*81 | 26EP92NF*81 |
| 10    | 10    | —     | —     | — | 1 1/4 | 50  |  |  | 26EP92BG*81 | 26EP92WG*81 | 26EP92FG*81 | 26EP92HG*81 | 26EP92NG*81 |
| —     | —     | 20    | 20    | 2 | —     | 40  |  |  | 26FP92BH*81 | 26FP92WH*81 | 26FP92FH*81 | 26FP92HH*81 | 26FP92NH*81 |
| 10    | 15    | 25    | 25    | 2 | —     | 50  |  |  | 26FP92BJ*81 | 26FP92WJ*81 | 26FP92FJ*81 | 26FP92HJ*81 | 26FP92NJ*81 |
| 10    | 15    | 30    | 30    | — | 2 1/2 | 50  |  |  | 26GP92BK*81 | 26GP92WK*81 | 26GP92FK*81 | 26GP92HK*81 | 26GP92NK*81 |
| 15    | 20    | —     | —     | — | 2 1/2 | 100 |  |  | 26GP92BL*81 | 26GP92WL*81 | 26GP92FL*81 | 26GP92HL*81 | 26GP92NL*81 |
| —     | —     | 30    | 30    | 3 | —     | 50  |  |  | 26HP92BM*81 | 26HP92WM*81 | 26HP92FM*81 | 26HP92HM*81 | 26HP92NM*81 |
| 25    | 30    | 50    | 50    | 3 | —     | 125 |  |  | 26HP92BN*81 | 26HP92WN*81 | 26HP92FN*81 | 26HP92HN*81 | 26HP92NN*81 |
| 30    | 40    | 75    | 75    | — | 3 1/2 | 125 |  |  | 26IP92BP*81 | 26IP92WP*81 | 26IP92FP*81 | 26IP92HP*81 | 26IP92NP*81 |
| 40    | 50    | 100   | 100   | 4 | —     | 150 |  |  | 26JP92BR*81 | 26JP92WR*81 | 26JP92FR*81 | 26JP92HR*81 | 26JP92NR*81 |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in starter sizes 5–8.

② For conduit hubs and conversion instructions, see page 9/110.

③ Enclosure is NEMA Type 4 (painted steel).

④ F coil 100–250V AC 50/60Hz, or DC,  
H coil 150–500V AC 50/60Hz, or DC

⑤ Only available

F coil 100–250V AC 50/60Hz, or DC

## Features and Benefits

## General

## Features

- Rugged Industrial Design
- Dual Voltage, Dual Frequency Coils
- Compact Design
- Snap-On Front Removable Auxiliary Contacts
- Electrical and Mechanical Interlocks
- Half Sizes — Space and Cost Savings
- Industrial Type Disconnect Operating Handle
- Visible Blade Disconnect Thru Size 4
- Adjustable Motor Circuit Protector
- 100,000 Amp Fault Protection with MCP or Class R Fuses
- Pilot Device Locations identified on All Enclosures
- UL Listed File #E14900
- CSA Certified File #LR6535

## Applications

Multi-speed magnetic starters automatically reconnect multi-speed motor windings for the desired speed in response to a signal received from push button stations or other pilot devices.

These starters are available for two speed motors.

**Consequent Pole** multi-speed motors having two speeds on a single winding (consequent pole) require a starter which reconnects the motor leads to half the number of effective motor poles at the high speed point. In this type of motor, **the low speed is one half the high speed.**

**Separate Windings** motors having separate windings for each speed provide more varied speed combinations in that the low speed need not be one half the high speed.

**Starters for separate winding motors consist of a starter unit for each speed.**

Multi-speed motor starters are available for constant torque, variable torque and constant horsepower motors.

**Constant Torque** motors maintain constant torque at all speeds. Horsepower varies directly with speed. This type of motor is applicable to conveyors, mills and similar applications.

**Variable Torque** motors produce a torque characteristic which varies as the square of the speed. This type of

motor is applicable to fans, blowers and centrifugal pumps.

**Constant Horsepower** motors maintain constant horsepower at all speeds and therefore torque varies inversely with speed. This type of motor is applicable where the same horsepower is required at all speeds. **The higher current required at low speed requires derating on starters for constant horsepower applications.** This type of motor is applicable to metal working machines such as drills, lathes, mills, bending machines, punch presses, and power wrenches.

## Operation

Magnetic starters for multi-speed applications select the desired speed in accordance with the pilot control.

The shock to machinery upon the reduction of speed is greater than when the speed is increased. Therefore, the pilot control should be wired so that the stop button must be depressed before dropping to a lower speed or time delays should be used for applications requiring full automatic operations. The multi-speed controls are available with the necessary interlocks or relays to provide this type of operation.

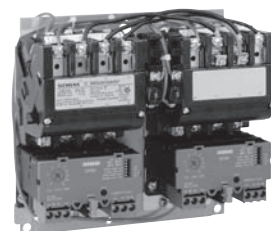
These controls may be modified for compelling or acceleration pilot control.

**Selective Control** permits the operator to start the motor at any speed and to change to a higher speed by merely pushing a button. To change to a lower speed it is necessary to first depress the stop button and to then press the proper speed button. Selective control is a function of the pilot control selected and requires no starter modifications.

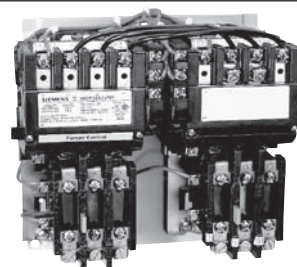
**Compelling Control** requires that the motor always be started at the lower speed and that the push buttons be operated in speed sequence to go to the next higher speed. To change to a lower speed, the stop button must be depressed and then the push buttons operated in speed sequence until the desired speed is reached. Compelling control can be added from the factory modification section page 9/122.

**Acceleration Control** provides that the motor be accelerated automatically with timers by progressively energizing the controls from the push button station from the lowest to highest speed. To change to a lower speed the stop button is depressed and then it is necessary to proceed as if starting from rest. Acceleration control can be added from the factory modification section page 9/122.

**Deceleration Control** provides that the motor be decelerated automatically with a timer when going from high speed to low speed. The timer allows the motor to decelerate from high speed to a lower speed before automatically restarting the motor in low speed. Deceleration control can be added from the factory modification section page 9/122.



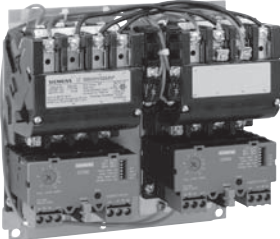
Open Style Two Speed Starter  
(ESP100 Overload)



Open Style Two Speed Starter  
(Ambient Compensated Overload)

## Constant or Variable Torque with Solid Overload, Class 30

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Coil Table      |        | Low Speed FLA Table              |          |                   |   |  |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------|----------------------------------|----------|-------------------|---|--|
|                                                                                   | <ul style="list-style-type: none"><li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>► Replace the (†) with the letter that corresponds to the correct low speed FLA in the FLA table.®</li><li>► Field Modification Kits see page 9/104.</li><li>► Factory Modifications see page 9/119.</li><li>► Dimensions see page 9/150.</li><li>► Wiring Diagrams see page 9/178.</li><li>► Replacement Parts see page 9/131.</li></ul> | 60Hz Voltage    | Letter | Size                             | FLA      | OLR<br>Frame Size | † |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 24              | J      | 0,1                              | 0.25–1   | A                 | A |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 120             | F      | 0,1                              | 0.75–3.4 | A                 | B |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 110–120/220–240 | A      | 0,1                              | 3–12     | A1                | C |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 200–208         | D      | 0,1                              | 5.5–22   | A1                | D |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 220–240         | G      | 0-1 <sup>3</sup> / <sub>4</sub>  | 10–40    | A1                | E |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 277             | L      | 2-3                              | 13–52    | B                 | F |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 220–240/440–480 | C      | 2-3                              | 25–100   | B                 | G |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 440–480         | H      | 3 <sup>1</sup> / <sub>2</sub> -4 | 50–200   | B                 | H |  |
| 575–600                                                                           | E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |        |                                  |          |                   |   |  |
|                                                                                   | For other voltages and frequencies, see Factory Modifications page 9/119.                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |        |                                  |          |                   |   |  |

## One Winding Consequent Pole, 3-Phase (Constant or Variable Torque)

| Max Hp    |           |           |           |           |           | Overload  |            | Enclosure                                                          |               | NEMA 1          |               | NEMA 4/4X Stainless <sup>①</sup>                                      |               | NEMA 4X Fiberglass                            |               | NEMA 12                                                       |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|--------------------------------------------------------------------|---------------|-----------------|---------------|-----------------------------------------------------------------------|---------------|-----------------------------------------------|---------------|---------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts | NEMA Size | Half Size | Amp Range | Frame Size | Open Type <sup>③</sup><br>Standard Auxiliary Contacts <sup>③</sup> | List Price \$ | General Purpose | List Price \$ | Watertight, Dust-tight,<br>Corrosion Resistant<br>304 Stainless Steel | List Price \$ | Watertight, Dust-tight<br>Corrosion Resistant | List Price \$ | Industrial Use<br>Weatherproof<br>(Field Convertible to 3/3R) | List Price \$ |
| 1/2       | 3/4       | 1 1/2     | 2         | 0         | —         | 0.75–3.4  | A          | 30CUB132A2V*                                                       |               | 30CUB132B2V*    |               | 30CUB132W2V*                                                          |               | 30CUB132F2V*                                  |               | 30CUB13202V*                                                  |               |
| 2         | 2         | 5         | 5         | 0         | —         | 3–12      | A1         | 30CUC132A2V*                                                       |               | 30CUC132B2V*    |               | 30CUC132W2V*                                                          |               | 30CUC132F2V*                                  |               | 30CUC13202V*                                                  |               |
| 3         | 3         | —         | —         | 0         | —         | 5.5–22    | A1         | 30CUD132A2V*                                                       |               | 30CUD132B2V*    |               | 30CUD132W2V*                                                          |               | 30CUD132F2V*                                  |               | 30CUD13202V*                                                  |               |
| 1/2       | 3/4       | 1 1/2     | 1 1/2     | 1         | —         | 0.75–3.4  | A          | 30DUB132A2V*                                                       |               | 30DUB132B2V*    |               | 30DUB132W2V*                                                          |               | 30DUB132F2V*                                  |               | 30DUB13202V*                                                  |               |
| 2         | 2         | 5         | 5         | 1         | —         | 3–12      | A1         | 30DUC132A2V*                                                       |               | 30DUC132B2V*    |               | 30DUC132W2V*                                                          |               | 30DUC132F2V*                                  |               | 30DUC13202V*                                                  |               |
| 3         | 3         | 10        | 10        | 1         | —         | 5.5–22    | A1         | 30DUD132A2V*                                                       |               | 30DUD132B2V*    |               | 30DUD132W2V*                                                          |               | 30DUD132F2V*                                  |               | 30DUD13202V*                                                  |               |
| 7 1/2     | 7 1/2     | —         | —         | 1         | —         | 10–40     | A1         | 30DUE132A2V*                                                       |               | 30DUE132B2V*    |               | 30DUE132W2V*                                                          |               | 30DUE132F2V*                                  |               | 30DUE13202V*                                                  |               |
| 10        | 10        | 15        | 15        | —         | 1 1/2     | 10–40     | A1         | 30EUE132A2V*                                                       |               | 30EUE132B2V*    |               | 30EUE132W2V*                                                          |               | 30EUE132F2V*                                  |               | 30EUE13202V*                                                  |               |
| 10        | 15        | 25        | 25        | 2         | —         | 13–52     | B          | 30FUF132A2V*                                                       |               | 30FUF132B2V*    |               | 30FUF132W2V*                                                          |               | 30FUF132F2V*                                  |               | 30FUF13202V*                                                  |               |
| 15        | 20        | 30        | 30        | —         | 2 1/2     | 25–100    | B          | 30GUG132A2V*                                                       |               | 30GUG132B2V*    |               | 30GUG132W2V*                                                          |               | 30GUG132F2V*                                  |               | 30GUG13202V*                                                  |               |
| 25        | 30        | 50        | 50        | 3         | —         | 25–100    | B          | 30HUG132A2V*                                                       |               | 30HUG132B2V*    |               | 30HUG132W2V*                                                          |               | 30HUG132F2V*                                  |               | 30HUG13202V*                                                  |               |
| 30        | 40        | 75        | 75        | —         | 3 1/2     | 50–200    | B          | 30IUH132A2V*                                                       |               | 30IUH132B2V*    |               | 30IUH132W2V*                                                          |               | 30IUH132F2V*                                  |               | 30IUH13202V*                                                  |               |
| 40        | 50        | 100       | 100       | 4         | —         | 50–200    | B          | 30JUH132A2V*                                                       |               | 30JUH132B2V*    |               | 30JUH132W2V*                                                          |               | 30JUH132F2V*                                  |               | 30JUH13202V*                                                  |               |

## Two Separate Windings, 3-Phase (Constant or Variable Torque)

| Max Hp    |           |           |           |           |           | Overload  |            | Enclosure                                             |               | NEMA 1          |               | NEMA 4/4X Stainless <sup>①</sup>                                      |               | NEMA 4X Fiberglass                            |               | NEMA 12                                                       |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-------------------------------------------------------|---------------|-----------------|---------------|-----------------------------------------------------------------------|---------------|-----------------------------------------------|---------------|---------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts | NEMA Size | Half Size | Amp Range | Frame Size | Open Type <sup>③</sup><br>Standard Auxiliary Contacts | List Price \$ | General Purpose | List Price \$ | Watertight, Dust-tight,<br>Corrosion Resistant<br>304 Stainless Steel | List Price \$ | Watertight, Dust-tight<br>Corrosion Resistant | List Price \$ | Industrial Use<br>Weatherproof<br>(Field Convertible to 3/3R) | List Price \$ |
| 1/2       | 3/4       | 1 1/2     | 2         | 0         | —         | 0.75–3.4  | A          | 30CUB132A1V*                                          |               | 30CUB132B1V*    |               | 30CUB132W1V*                                                          |               | 30CUB132F1V*                                  |               | 30CUB13201V*                                                  |               |
| 2         | 2         | 5         | 5         | 0         | —         | 3–12      | A1         | 30CUC132A1V*                                          |               | 30CUC132B1V*    |               | 30CUC132W1V*                                                          |               | 30CUC132F1V*                                  |               | 30CUC13201V*                                                  |               |
| 3         | 3         | —         | —         | 0         | —         | 5.5–22    | A1         | 30CUD132A1V*                                          |               | 30CUD132B1V*    |               | 30CUD132W1V*                                                          |               | 30CUD132F1V*                                  |               | 30CUD13201V*                                                  |               |
| 1/2       | 3/4       | 1 1/2     | 1 1/2     | 1         | —         | 0.75–3.4  | A          | 30DUB132A1V*                                          |               | 30DUB132B1V*    |               | 30DUB132W1V*                                                          |               | 30DUB132F1V*                                  |               | 30DUB13201V*                                                  |               |
| 2         | 2         | 5         | 5         | 1         | —         | 3–12      | A1         | 30DUC132A1V*                                          |               | 30DUC132B1V*    |               | 30DUC132W1V*                                                          |               | 30DUC132F1V*                                  |               | 30DUC13201V*                                                  |               |
| 3         | 3         | 10        | 10        | 1         | —         | 5.5–22    | A1         | 30DUD132A1V*                                          |               | 30DUD132B1V*    |               | 30DUD132W1V*                                                          |               | 30DUD132F1V*                                  |               | 30DUD13201V*                                                  |               |
| 7 1/2     | 7 1/2     | —         | —         | 1         | —         | 10–40     | A1         | 30DUE132A1V*                                          |               | 30DUE132B1V*    |               | 30DUE132W1V*                                                          |               | 30DUE132F1V*                                  |               | 30DUE13201V*                                                  |               |
| 10        | 10        | 15        | 15        | —         | 1 1/2     | 10–40     | A1         | 30EUE132A1V*                                          |               | 30EUE132B1V*    |               | 30EUE132W1V*                                                          |               | 30EUE132F1V*                                  |               | 30EUE13201V*                                                  |               |
| 10        | 15        | 25        | 25        | 2         | —         | 13–52     | B          | 30FUF132A1V*                                          |               | 30FUF132B1V*    |               | 30FUF132W1V*                                                          |               | 30FUF132F1V*                                  |               | 30FUF13201V*                                                  |               |
| 15        | 20        | 30        | 30        | —         | 2 1/2     | 25–100    | B          | 30GUG132A1V*                                          |               | 30GUG132B1V*    |               | 30GUG132W1V*                                                          |               | 30GUG132F1V*                                  |               | 30GUG13201V*                                                  |               |
| 25        | 30        | 50        | 50        | 3         | —         | 25–100    | B          | 30HUG132A1V*                                          |               | 30HUG132B1V*    |               | 30HUG132W1V*                                                          |               | 30HUG132F1V*                                  |               | 30HUG13201V*                                                  |               |
| 30        | 40        | 75        | 75        | —         | 3 1/2     | 50–200    | B          | 30IUH132A1V*                                          |               | 30IUH132B1V*    |               | 30IUH132W1V*                                                          |               | 30IUH132F1V*                                  |               | 30IUH13201V*                                                  |               |
| 40        | 50        | 100       | 100       | 4         | —         | 50–200    | B          | 30JUH132A1V*                                          |               | 30JUH132B1V*    |               | 30JUH132W1V*                                                          |               | 30JUH132F1V*                                  |               | 30JUH13201V*                                                  |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① For conduit hubs and conversion instructions, see page 9/110.

② If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

③ Auxiliary contacts 30C-30E 4th pole built-in 30F-30J 2 NO & 2 NC

## Constant HP with Solid Overload, Class 30

## Selection

| 2S2W Starter<br>(ESP200 Overload)                                                | <b>Ordering Information</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Coil Table</b>                                                                                                                                                                                                                                                                                                                                                                                                        | <b>High/Low Speed FLA Table®</b> |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------|----|---|-----|---|-----------------|---|---------|---|---------|---|-----|---|-----------------|---|---------|---|---------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|----------------|---|-----|--------|---|---|-----|----------|---|---|-----|------|----|---|-----|--------|----|---|---------------------------------|-------|----|---|-----|-------|---|---|-----|--------|---|---|----------------------------------|--------|---|---|
|                                                                                  | <ul style="list-style-type: none"><li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>► Replace the (t) with the letter that corresponds to the correct FLA in High/Low Speed FLA Table.®</li><li>► Field Modification Kits see page 9/104.</li><li>► Factory Modifications see page 9/119.</li><li>► Dimensions see page 9/150.</li><li>► Wiring Diagrams see page 9/178.</li><li>► Replacement Parts see page 9/131.</li></ul> | <table><thead><tr><th>60Hz Voltage</th><th>Letter</th></tr></thead><tbody><tr><td>24</td><td>J</td></tr><tr><td>120</td><td>F</td></tr><tr><td>110–120/220–240</td><td>A</td></tr><tr><td>200–208</td><td>D</td></tr><tr><td>220–240</td><td>G</td></tr><tr><td>277</td><td>L</td></tr><tr><td>220–240/440–480</td><td>C</td></tr><tr><td>440–480</td><td>H</td></tr><tr><td>575–600</td><td>E</td></tr></tbody></table> | 60Hz Voltage                     | Letter | 24 | J | 120 | F | 110–120/220–240 | A | 200–208 | D | 220–240 | G | 277 | L | 220–240/440–480 | C | 440–480 | H | 575–600 | E | <table><thead><tr><th>Size</th><th>FLA</th><th>OLR Frame Size</th><th>†</th></tr></thead><tbody><tr><td>0,1</td><td>0.25–1</td><td>A</td><td>A</td></tr><tr><td>0,1</td><td>0.75–3.4</td><td>A</td><td>B</td></tr><tr><td>0,1</td><td>3–12</td><td>A1</td><td>C</td></tr><tr><td>0,1</td><td>5.5–22</td><td>A1</td><td>D</td></tr><tr><td>0-1<sup>3</sup>/<sub>4</sub></td><td>10–40</td><td>A1</td><td>E</td></tr><tr><td>2-3</td><td>13–52</td><td>B</td><td>F</td></tr><tr><td>2-3</td><td>25–100</td><td>B</td><td>G</td></tr><tr><td>3<sup>1</sup>/<sub>2</sub>-4</td><td>50–200</td><td>B</td><td>H</td></tr></tbody></table> | Size | FLA | OLR Frame Size | † | 0,1 | 0.25–1 | A | A | 0,1 | 0.75–3.4 | A | B | 0,1 | 3–12 | A1 | C | 0,1 | 5.5–22 | A1 | D | 0-1 <sup>3</sup> / <sub>4</sub> | 10–40 | A1 | E | 2-3 | 13–52 | B | F | 2-3 | 25–100 | B | G | 3 <sup>1</sup> / <sub>2</sub> -4 | 50–200 | B | H |
|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 60Hz Voltage                                                                                                                                                                                                                                                                                                                                                                                                             | Letter                           |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 24                                                                               | J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 120                                                                              | F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 110–120/220–240                                                                  | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 200–208                                                                          | D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 220–240                                                                          | G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 277                                                                              | L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 220–240/440–480                                                                  | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 440–480                                                                          | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 575–600                                                                          | E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| Size                                                                             | FLA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | OLR Frame Size                                                                                                                                                                                                                                                                                                                                                                                                           | †                                |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 0,1                                                                              | 0.25–1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | A                                                                                                                                                                                                                                                                                                                                                                                                                        | A                                |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 0,1                                                                              | 0.75–3.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | A                                                                                                                                                                                                                                                                                                                                                                                                                        | B                                |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 0,1                                                                              | 3–12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | A1                                                                                                                                                                                                                                                                                                                                                                                                                       | C                                |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 0,1                                                                              | 5.5–22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | A1                                                                                                                                                                                                                                                                                                                                                                                                                       | D                                |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 0-1 <sup>3</sup> / <sub>4</sub>                                                  | 10–40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | A1                                                                                                                                                                                                                                                                                                                                                                                                                       | E                                |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 2-3                                                                              | 13–52                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | B                                                                                                                                                                                                                                                                                                                                                                                                                        | F                                |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 2-3                                                                              | 25–100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | B                                                                                                                                                                                                                                                                                                                                                                                                                        | G                                |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| 3 <sup>1</sup> / <sub>2</sub> -4                                                 | 50–200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | B                                                                                                                                                                                                                                                                                                                                                                                                                        | H                                |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |
| <p>For other voltages and frequencies, see Factory Modifications page 9/119.</p> | <p>* First (t) for high speed, second (†) for low speed. Use motor nameplate to select FLA. If motor FLA are unknown, select overload on the bases that the low speed FLA will be no greater than 50 % of high speed FLA.</p>                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |        |    |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |     |                |   |     |        |   |   |     |          |   |   |     |      |    |   |     |        |    |   |                                 |       |    |   |     |       |   |   |     |        |   |   |                                  |        |   |   |

## One Winding Consequent Pole, 3-Phase (Constant Horsepower)

| Max Hp       |              |              |              |              |              | Enclosure                                             |                  |                           |                  |                                                                                                           |                  |                                                                     |                  |                                                                                                    |                  |
|--------------|--------------|--------------|--------------|--------------|--------------|-------------------------------------------------------|------------------|---------------------------|------------------|-----------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------|------------------|
|              |              |              |              |              |              | Open Type<br>Standard Auxiliary Contacts <sup>③</sup> |                  | NEMA 1<br>General Purpose |                  | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight,<br>Corrosion Resistant<br>304 Stainless Steel |                  | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |                  | NEMA 12<br>NEMA 3/3R <sup>②</sup><br>Industrial Use<br>Weatherproof<br>(Field Convertible to 3/3R) |                  |
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts | NEMA<br>Size | Half<br>Size | Catalog<br>Number                                     | List<br>Price \$ | Catalog<br>Number         | List<br>Price \$ | Catalog<br>Number                                                                                         | List<br>Price \$ | Catalog<br>Number                                                   | List<br>Price \$ | Catalog<br>Number                                                                                  | List<br>Price \$ |
| 2            | 2            | 3            | 3            | 0            | —            | 30CU††32A2H*                                          |                  | 30CU††32B2H*              |                  | 30CU††32W2H*                                                                                              |                  | 30CU††32F2H*                                                        |                  | 30CU††32O2H*                                                                                       |                  |
| 5            | 5            | 7½           | 7½           | 1            | —            | 30DU††32A2H*                                          |                  | 30DU††32B2H*              |                  | 30DU††32W2H*                                                                                              |                  | 30DU††32F2H*                                                        |                  | 30DU††32O2H*                                                                                       |                  |
| 7½           | 7½           | 10           | 10           | —            | 1½           | 30EU††32A2H*                                          |                  | 30EU††32B2H*              |                  | 30EU††32W2H*                                                                                              |                  | 30EU††32F2H*                                                        |                  | 30EU††32O2H*                                                                                       |                  |
| 7½           | 10           | 20           | 20           | 2            | —            | 30FU††32A2H*                                          |                  | 30FU††32B2H*              |                  | 30FU††32W2H*                                                                                              |                  | 30FU††32F2H*                                                        |                  | 30FU††32O2H*                                                                                       |                  |
| 10           | 15           | 25           | 25           | —            | 2½           | 30GU††32A2H*                                          |                  | 30GU††32B2H*              |                  | 30GU††32W2H*                                                                                              |                  | 30GU††32F2H*                                                        |                  | 30GU††32O2H*                                                                                       |                  |
| 20           | 25           | 40           | 40           | 3            | —            | 30HU††32A2H*                                          |                  | 30HU††32B2H*              |                  | 30HU††32W2H*                                                                                              |                  | 30HU††32F2H*                                                        |                  | 30HU††32O2H*                                                                                       |                  |
| 25           | 30           | 50           | 50           | —            | 3½           | 30IU††32A2H*                                          |                  | 30IU††32B2H*              |                  | 30IU††32W2H*                                                                                              |                  | 30IU††32F2H*                                                        |                  | 30IU††32O2H*                                                                                       |                  |
| 30           | 40           | 75           | 75           | 4            | —            | 30JU††32A2H*                                          |                  | 30JU††32B2H*              |                  | 30JU††32W2H*                                                                                              |                  | 30JU††32F2H*                                                        |                  | 30JU††32O2H*                                                                                       |                  |

## Two Separate Windings, 3-Phase (Constant Horsepower)

| Max Hp       |              |              |              |              |              | Enclosure                                             |                  |                           |                  |                                                                                                           |                  |                                                                     |                  |                                                                                                    |                  |
|--------------|--------------|--------------|--------------|--------------|--------------|-------------------------------------------------------|------------------|---------------------------|------------------|-----------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------|------------------|
|              |              |              |              |              |              | Open Type<br>Standard Auxiliary Contacts <sup>③</sup> |                  | NEMA 1<br>General Purpose |                  | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight,<br>Corrosion Resistant<br>304 Stainless Steel |                  | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |                  | NEMA 12<br>NEMA 3/3R <sup>②</sup><br>Industrial Use<br>Weatherproof<br>(Field Convertible to 3/3R) |                  |
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts | NEMA<br>Size | Half<br>Size | Catalog<br>Number                                     | List<br>Price \$ | Catalog<br>Number         | List<br>Price \$ | Catalog<br>Number                                                                                         | List<br>Price \$ | Catalog<br>Number                                                   | List<br>Price \$ | Catalog<br>Number                                                                                  | List<br>Price \$ |
| 2            | 2            | 3            | 3            | 0            | —            | 30CU††32A1H*                                          |                  | 30CU††32B1H*              |                  | 30CU††32W1H*                                                                                              |                  | 30CU††32F1H*                                                        |                  | 30CU††32O1H*                                                                                       |                  |
| 5            | 5            | 7½           | 7½           | 1            | —            | 30DU††32A1H*                                          |                  | 30DU††32B1H*              |                  | 30DU††32W1H*                                                                                              |                  | 30DU††32F1H*                                                        |                  | 30DU††32O1H*                                                                                       |                  |
| 7½           | 7½           | 10           | 10           | —            | 1¾           | 30EU††32A1H*                                          |                  | 30EU††32B1H*              |                  | 30EU††32W1H*                                                                                              |                  | 30EU††32F1H*                                                        |                  | 30EU††32O1H*                                                                                       |                  |
| 7½           | 10           | 20           | 20           | 2            | —            | 30FU††32A1H*                                          |                  | 30FU††32B1H*              |                  | 30FU††32W1H*                                                                                              |                  | 30FU††32F1H*                                                        |                  | 30FU††32O1H*                                                                                       |                  |
| 10           | 15           | 25           | 25           | —            | 2½           | 30GU††32A1H*                                          |                  | 30GU††32B1H*              |                  | 30GU††32W1H*                                                                                              |                  | 30GU††32F1H*                                                        |                  | 30GU††32O1H*                                                                                       |                  |
| 20           | 25           | 40           | 40           | 3            | —            | 30HU††32A1H*                                          |                  | 30HU††32B1H*              |                  | 30HU††32W1H*                                                                                              |                  | 30HU††32F1H*                                                        |                  | 30HU††32O1H*                                                                                       |                  |
| 25           | 30           | 50           | 50           | —            | 3½           | 30IU††32A1H*                                          |                  | 30IU††32B1H*              |                  | 30IU††32W1H*                                                                                              |                  | 30IU††32F1H*                                                        |                  | 30IU††32O1H*                                                                                       |                  |
| 30           | 40           | 75           | 75           | 4            | —            | 30JU††32A1H*                                          |                  | 30JU††32B1H*              |                  | 30JU††32W1H*                                                                                              |                  | 30JU††32F1H*                                                        |                  | 30JU††32O1H*                                                                                       |                  |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

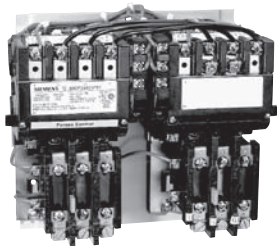
① For conduit hubs and conversion instructions, see page 9/110.

② First (t) for high speed, second (†) for low speed. Use motor nameplate information to select FLA. If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

③ Auxiliary contacts  
30C-30E 4th pole built-in  
30F-30J 2 NO & 2 NC

## Constant or Variable Torque with Ambient Compensated Bimetal Overload, Class 30

## Selection



2S2W starter  
(Amb. Comp. Bimetal OL)

## Ordering Information

- Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Heater elements see page 9/124 (6 required)<sup>②</sup>
- Field Modification Kits see page 9/104.
- Factory Modifications see page 9/119.
- Dimensions see pages 9/143 open and 9/150 enclosed.
- Wiring Diagrams see page 9/178.
- Replacement Parts see page 9/131.
- For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact.

## Coil Table

60Hz Voltage  
Letter

|                 |   |
|-----------------|---|
| 24              | J |
| 120             | F |
| 110–120/220–240 | A |
| 200–208         | D |
| 220–240         | G |
| 277             | L |
| 220–240/440–480 | C |
| 440–480         | H |
| 575–600         | E |

For other voltages and frequencies, see Factory Modifications page 9/119.

## One Winding Consequent Pole, 3 Phase (Constant or Variable Torque)

| Max Hp       |              |              |              | Cont-actor<br>Amp<br>Rating | NEMA<br>Size | Half<br>Size | Enclosure              |              |                           |              |                                                                                                          |              |                                                                     |              |                                                                     |              |
|--------------|--------------|--------------|--------------|-----------------------------|--------------|--------------|------------------------|--------------|---------------------------|--------------|----------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------|--------------|---------------------------------------------------------------------|--------------|
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts |                             |              |              | Open Type <sup>③</sup> |              | NEMA 1<br>General Purpose |              | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |              | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |              | NEMA 12 <sup>①</sup><br>NEMA 3/3R<br>Industrial Use<br>Weatherproof |              |
|              |              |              |              |                             |              |              | Catalog Number         | List Price\$ | Catalog Number            | List Price\$ | Catalog Number                                                                                           | List Price\$ | Catalog Number                                                      | List Price\$ | Catalog Number                                                      | List Price\$ |
| 3            | 3            | 5            | 5            | 18                          | 0            | —            | 30CP32A2V*81           |              | 30CP32B2V*81              |              | 30CP32W2V*81                                                                                             |              | 30CP32F2V*81                                                        |              | 30CP32O2V*81                                                        |              |
| 7½           | 7½           | 10           | 10           | 27                          | 1            | —            | 30DP32A2V*81           |              | 30DP32B2V*81              |              | 30DP32W2V*81                                                                                             |              | 30DP32F2V*81                                                        |              | 30DP32O2V*81                                                        |              |
| 10           | 10           | 15           | 15           | 40                          | —            | 1¾           | 30EP32A2V*81           |              | 30EP32B2V*81              |              | 30EP32W2V*81                                                                                             |              | 30EP32F2V*81                                                        |              | 30EP32O2V*81                                                        |              |
| 10           | 15           | 25           | 25           | 45                          | 2            | —            | 30FP32A2V*81           |              | 30FP32B2V*81              |              | 30FP32W2V*81                                                                                             |              | 30FP32F2V*81                                                        |              | 30FP32O2V*81                                                        |              |
| 15           | 20           | 30           | 30           | 60                          | —            | 2½           | 30GP32A2V*81           |              | 30GP32B2V*81              |              | 30GP32W2V*81                                                                                             |              | 30GP32F2V*81                                                        |              | 30GP32O2V*81                                                        |              |
| 25           | 30           | 50           | 50           | 90                          | 3            | —            | 30HP32A2V*81           |              | 30HP32B2V*81              |              | 30HP32W2V*81                                                                                             |              | 30HP32F2V*81                                                        |              | 30HP32O2V*81                                                        |              |
| 30           | 40           | 75           | 75           | 115                         | —            | 3½           | 30IP32A2V*81           |              | 30IP32B2V*81              |              | 30IP32W2V*81                                                                                             |              | 30IP32F2V*81                                                        |              | 30IP32O2V*81                                                        |              |
| 40           | 50           | 100          | 100          | 135                         | 4            | —            | 30JG32A2V*81           |              | 30JG32B2V*81              |              | 30JG32W2V*81                                                                                             |              | 30JG32F2V*81                                                        |              | 30JG32O2V*81                                                        |              |

## Two Separate Windings, 3-Phase (Constant or Variable Torque)

| Max Hp       |              |              |              | Con-<br>tactor<br>Amp<br>Rating | NEMA<br>Size | Half<br>Size | Enclosure              |              |                           |              |                                                                                                          |              |                                                                     |              |                                                                     |              |
|--------------|--------------|--------------|--------------|---------------------------------|--------------|--------------|------------------------|--------------|---------------------------|--------------|----------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------|--------------|---------------------------------------------------------------------|--------------|
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts |                                 |              |              | Open Type <sup>③</sup> |              | NEMA 1<br>General Purpose |              | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |              | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |              | NEMA 12 <sup>①</sup><br>NEMA 3/3R<br>Industrial Use<br>Weatherproof |              |
|              |              |              |              |                                 |              |              | Catalog Number         | List Price\$ | Catalog Number            | List Price\$ | Catalog Number                                                                                           | List Price\$ | Catalog Number                                                      | List Price\$ | Catalog Number                                                      | List Price\$ |
| 3            | 3            | 5            | 5            | 18                              | 0            | —            | 30CP32A1V*81           |              | 30CP32B1V*81              |              | 30CP32W1V*81                                                                                             |              | 30CP32F1V*81                                                        |              | 30CP32O1V*81                                                        |              |
| 7½           | 7½           | 10           | 10           | 27                              | 1            | —            | 30DP32A1V*81           |              | 30DP32B1V*81              |              | 30DP32W1V*81                                                                                             |              | 30DP32F1V*81                                                        |              | 30DP32O1V*81                                                        |              |
| 10           | 10           | 15           | 15           | 40                              | —            | 1¾           | 30EP32A1V*81           |              | 30EP32B1V*81              |              | 30EP32W1V*81                                                                                             |              | 30EP32F1V*81                                                        |              | 30EP32O1V*81                                                        |              |
| 10           | 15           | 25           | 25           | 45                              | 2            | —            | 30FP32A1V*81           |              | 30FP32B1V*81              |              | 30FP32W1V*81                                                                                             |              | 30FP32F1V*81                                                        |              | 30FP32O1V*81                                                        |              |
| 15           | 20           | 30           | 30           | 60                              | —            | 2½           | 30GP32A1V*81           |              | 30GP32B1V*81              |              | 30GP32W1V*81                                                                                             |              | 30GP32F1V*81                                                        |              | 30GP32O1V*81                                                        |              |
| 25           | 30           | 50           | 50           | 90                              | 3            | —            | 30HP32A1V*81           |              | 30HP32B1V*81              |              | 30HP32W1V*81                                                                                             |              | 30HP32F1V*81                                                        |              | 30HP32O1V*81                                                        |              |
| 30           | 40           | 75           | 75           | 115                             | —            | 3½           | 30IP32A1V*81           |              | 30IP32B1V*81              |              | 30IP32W1V*81                                                                                             |              | 30IP32F1V*81                                                        |              | 30IP32O1V*81                                                        |              |
| 40           | 50           | 100          | 100          | 135                             | 4            | —            | 30JG32A1V*81           |              | 30JG32B1V*81              |              | 30JG32W1V*81                                                                                             |              | 30JG32F1V*81                                                        |              | 30JG32O1V*81                                                        |              |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

<sup>①</sup> For conduit hubs and conversion instructions, see page 9/110.

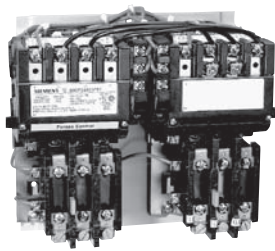
<sup>②</sup> If motor FLA are unknown, select heater elements on the basis that low speed FLA will be no greater than 50% of high speed FLA.

<sup>③</sup> Auxiliary contacts  
30C-30E 4th pole built-in  
30F-30J 2 NO & 2 NC



## Constant HP with Ambient Compensated Bimetal Overload, Class 30

## Selection

| <br><b>2S2W starter</b><br>(Amb. Comp. Bimetal OL) | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Coil Table                                                                                                                                                                                                                                                                                                                                                                                                                     |        |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---|-----|---|-----------------|---|---------|---|---------|---|-----|---|-----------------|---|---------|---|---------|
|                                                                                                                                     | <ul style="list-style-type: none"><li>▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>▶ Heater elements see page 9/124 (6 required)②</li><li>▶ Field Modification Kits see page 9/104.</li><li>▶ Factory Modifications see page 9/119.</li><li>▶ Dimensions see pages 9/143 open and 9/150 enclosed.</li><li>▶ Wiring Diagrams see page 9/178.</li><li>▶ Replacement Parts see page 9/131.</li><li>▶ For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact.</li></ul> | 60Hz Voltage                                                                                                                                                                                                                                                                                                                                                                                                                   | Letter |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |
|                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <table><tr><td>24</td><td>J</td></tr><tr><td>120</td><td>F</td></tr><tr><td>110–120/220–240</td><td>A</td></tr><tr><td>200–208</td><td>D</td></tr><tr><td>220–240</td><td>G</td></tr><tr><td>277</td><td>L</td></tr><tr><td>220–240/440–480</td><td>C</td></tr><tr><td>440–480</td><td>H</td></tr><tr><td>575–600</td><td>E</td></tr></table> <p>For other voltages and frequencies, see Factory Modifications page 9/119.</p> | 24     | J | 120 | F | 110–120/220–240 | A | 200–208 | D | 220–240 | G | 277 | L | 220–240/440–480 | C | 440–480 | H | 575–600 |
| 24                                                                                                                                  | J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |        |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |
| 120                                                                                                                                 | F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |        |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |
| 110–120/220–240                                                                                                                     | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |        |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |
| 200–208                                                                                                                             | D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |        |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |
| 220–240                                                                                                                             | G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |        |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |
| 277                                                                                                                                 | L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |        |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |
| 220–240/440–480                                                                                                                     | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |        |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |
| 440–480                                                                                                                             | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |        |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |
| 575–600                                                                                                                             | E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |        |   |     |   |                 |   |         |   |         |   |     |   |                 |   |         |   |         |

## One Winding Consequent Pole, 3-Phase (Constant Horsepower)

| Max Hp       |              |              |              | Contact<br>Amp<br>Rating | NEMA<br>Size | Half<br>Size | Enclosure      |               |                           |               |                                                                                              |               |                                                                     |               |                                                         |               |
|--------------|--------------|--------------|--------------|--------------------------|--------------|--------------|----------------|---------------|---------------------------|---------------|----------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|---------------------------------------------------------|---------------|
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts |                          |              |              | Open Type®     |               | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless①<br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 12②<br>NEMA 3/3R<br>Industrial Use<br>Weatherproof |               |
|              |              |              |              |                          |              |              | Catalog Number | List Price \$ | Catalog Number            | List Price \$ | Catalog Number                                                                               | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                          | List Price \$ |
| 2            | 2            | 3            | 3            | 18                       | 0            | —            | 30CP32A2H*81   |               | 30CP32B2H*81              |               | 30CP32W2H*81                                                                                 |               | 30CP32F2H*81                                                        |               | 30CP3202H*81                                            |               |
| 5            | 5            | 7½           | 7½           | 27                       | 1            | —            | 30DP32A2H*81   |               | 30DP32B2H*81              |               | 30DP32W2H*81                                                                                 |               | 30DP32F2H*81                                                        |               | 30DP3202H*81                                            |               |
| 7½           | 7½           | 10           | 10           | 40                       | —            | 1¼           | 30EP32A2H*81   |               | 30EP32B2H*81              |               | 30EP32W2H*81                                                                                 |               | 30EP32F2H*81                                                        |               | 30EP3202H*81                                            |               |
| 7½           | 10           | 20           | 20           | 45                       | 2            | —            | 30FP32A2H*81   |               | 30FP32B2H*81              |               | 30FP32W2H*81                                                                                 |               | 30FP32F2H*81                                                        |               | 30FP3202H*81                                            |               |
| 10           | 15           | 25           | 25           | 60                       | —            | 2½           | 30GP32A2H*81   |               | 30GP32B2H*81              |               | 30GP32W2H*81                                                                                 |               | 30GP32F2H*81                                                        |               | 30GP3202H*81                                            |               |
| 20           | 25           | 40           | 40           | 90                       | 3            | —            | 30HP32A2H*81   |               | 30HP32B2H*81              |               | 30HP32W2H*81                                                                                 |               | 30HP32F2H*81                                                        |               | 30HP3202H*81                                            |               |
| 25           | 30           | 50           | 50           | 115                      | —            | 3½           | 30IP32A2H*81   |               | 30IP32B2H*81              |               | 30IP32W2H*81                                                                                 |               | 30IP32F2H*81                                                        |               | 30IP3202H*81                                            |               |
| 30           | 40           | 75           | 75           | 135                      | 4            | —            | 30JG32A2H*81   |               | 30JG32B2H*81              |               | 30JG32W2H*81                                                                                 |               | 30JG32F2H*81                                                        |               | 30JG3202H*81                                            |               |

## Two Separate Windings, 3-Phase (Constant Horsepower)

| Max Hp       |              |              |              | Contact-<br>actor<br>Amp<br>Rating | NEMA<br>Size | Half<br>Size | Enclosure      |               |                           |               |                                                                                              |               |                                                                     |               |                                                         |               |
|--------------|--------------|--------------|--------------|------------------------------------|--------------|--------------|----------------|---------------|---------------------------|---------------|----------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|---------------------------------------------------------|---------------|
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts |                                    |              |              | Open Type®     |               | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless®<br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 12®<br>NEMA 3/3R<br>Industrial Use<br>Weatherproof |               |
|              |              |              |              |                                    |              |              | Catalog Number | List Price \$ | Catalog Number            | List Price \$ | Catalog Number                                                                               | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                          | List Price \$ |
| 2            | 2            | 3            | 3            | 18                                 | 0            | —            | 30CP32A1H*81   |               | 30CP32B1H*81              |               | 30CP32W1H*81                                                                                 |               | 30CP32F1H*81                                                        |               | 30CP3201H*81                                            |               |
| 5            | 5            | 7½           | 7½           | 27                                 | 1            | —            | 30DP32A1H*81   |               | 30DP32B1H*81              |               | 30DP32W1H*81                                                                                 |               | 30DP32F1H*81                                                        |               | 30DP3201H*81                                            |               |
| 7½           | 7½           | 10           | 10           | 40                                 | —            | 1¼           | 30EP32A1H*81   |               | 30EP32B1H*81              |               | 30EP32W1H*81                                                                                 |               | 30EP32F1H*81                                                        |               | 30EP3201H*81                                            |               |
| 7½           | 10           | 20           | 20           | 45                                 | 2            | —            | 30FP32A1H*81   |               | 30FP32B1H*81              |               | 30FP32W1H*81                                                                                 |               | 30FP32F1H*81                                                        |               | 30FP3201H*81                                            |               |
| 10           | 15           | 25           | 25           | 60                                 | —            | 2½           | 30GP32A1H*81   |               | 30GP32B1H*81              |               | 30GP32W1H*81                                                                                 |               | 30GP32F1H*81                                                        |               | 30GP3201H*81                                            |               |
| 20           | 25           | 40           | 40           | 90                                 | 3            | —            | 30HP32A1H*81   |               | 30HP32B1H*81              |               | 30HP32W1H*81                                                                                 |               | 30HP32F1H*81                                                        |               | 30HP3201H*81                                            |               |
| 25           | 30           | 50           | 50           | 115                                | —            | 3½           | 30IP32A1H*81   |               | 30IP32B1H*81              |               | 30IP32W1H*81                                                                                 |               | 30IP32F1H*81                                                        |               | 30IP3201H*81                                            |               |
| 30           | 40           | 75           | 75           | 135                                | 4            | —            | 30JG32A1H*81   |               | 30JG32B1H*81              |               | 30JG32W1H*81                                                                                 |               | 30JG32F1H*81                                                        |               | 30JG3201H*81                                            |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

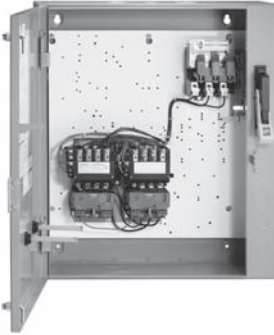
① For conduit hubs and conversion instructions, see page 9/110.

② If motor FLA are unknown, select heater element on the basis that low speed FLA will be no greater than 50% of high speed FLA.

③ Auxiliary contacts  
30C-30E 4th pole built-in  
30F-30J 2 NO & 2 NC

## Non-Fusible, Constant or Variable Torque with Solid Overload, Class 32

## Selection

|                                                                                   | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Coil Table                                                                |        | Low Speed FLA Table |          |                |   |  |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------|---------------------|----------|----------------|---|--|
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 60Hz Voltage                                                              | Letter | Size                | FLA      | OLR Frame Size | † |  |
|  | <ul style="list-style-type: none"> <li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li> <li>► Replace the (†) with the letter that corresponds to the correct low speed FLA in the FLA table.®</li> <li>► Fuse clips see page 9/120.</li> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/166.</li> <li>► Wiring Diagrams see page 9/178.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | 24                                                                        | J      | 0,1                 | 0.25–1   | A              | A |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 120                                                                       | F      | 0,1                 | 0.75–3.4 | A              | B |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 110–120/220–240 <sup>①</sup>                                              | A      | 0,1                 | 3–12     | A1             | C |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 200–208                                                                   | D      | 0,1                 | 5.5–22   | A1             | D |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 220–240                                                                   | G      | 0-1 <sup>3/4</sup>  | 10–40    | A1             | E |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 277                                                                       | L      | 2-3                 | 13–52    | B              | F |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 220–240/440–480 <sup>①</sup>                                              | C      | 2-3                 | 25–100   | B              | G |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 440–480                                                                   | H      | 3 <sup>1/2</sup> -4 | 50–200   | B              | H |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 575–600                                                                   | E      |                     |          |                |   |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | For other voltages and frequencies, see Factory Modifications page 9/119. |        |                     |          |                |   |  |

## One Winding Consequent Pole, 3-Phase (Constant or Variable Torque)

| Max Hp         |               |                |               | NEMA Size      | Half Size     | Overload       |               | Disc. Amp Range | Enclosure                 |                                                                                               |                                                                     |                                                                                                    |               |  |               |  |
|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|-----------------|---------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------|--|---------------|--|
| 200 Volts      | 230 Volts     | 460 Volts      | 575 Volts     |                |               | Amp Range      | Frame Size    |                 | NEMA 1<br>General Purpose | NEMA 4/4X Stainless®<br>Watertight, Dust-tight,<br>Corrosion Resistant<br>304 Stainless Steel | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant | NEMA 12, NEMA 3/3R®,<br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |  |               |  |
|                |               |                |               |                |               |                |               |                 |                           |                                                                                               |                                                                     |                                                                                                    |               |  |               |  |
| Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number  | List Price \$             | Catalog Number                                                                                | List Price \$                                                       | Catalog Number                                                                                     | List Price \$ |  |               |  |
| 1/2            | 3/4           | 1 1/2          | 2             | 0              | —             | 0.75–3.4       | A             | 30              | 32CUB†92B2V2*             |                                                                                               | 32CUB†92W2V2*                                                       |                                                                                                    | 32CUB†92F2V2* |  | 32CUB†92N2V2* |  |
| 2              | 2             | 5              | 5             | 0              | —             | 3–12           | A1            | 30              | 32CUC†92B2V2*             |                                                                                               | 32CUC†92W2V2*                                                       |                                                                                                    | 32CUC†92F2V2* |  | 32CUC†92N2V2* |  |
| 3              | 3             | —              | —             | 0              | —             | 5.5–22         | A1            | 30              | 32CUD†92B2V2*             |                                                                                               | 32CUD†92W2V2*                                                       |                                                                                                    | 32CUD†92F2V2* |  | 32CUD†92N2V2* |  |
| 1/2            | 3/4           | 1 1/2          | 1 1/2         | 1              | —             | 0.75–3.4       | A             | 30              | 32DUB†92B2V2*             |                                                                                               | 32DUB†92W2V2*                                                       |                                                                                                    | 32DUB†92F2V2* |  | 32DUB†92N2V2* |  |
| 2              | 2             | 5              | 5             | 1              | —             | 3–12           | A1            | 30              | 32DUC†92B2V2*             |                                                                                               | 32DUC†92W2V2*                                                       |                                                                                                    | 32DUC†92F2V2* |  | 32DUC†92N2V2* |  |
| 3              | 3             | 10             | 10            | 1              | —             | 5.5–22         | A1            | 30              | 32DUD†92B2V2*             |                                                                                               | 32DUD†92W2V2*                                                       |                                                                                                    | 32DUD†92F2V2* |  | 32DUD†92N2V2* |  |
| 7 1/2          | 7 1/2         | —              | —             | 1              | —             | 10–40          | A1            | 60              | 32DUE†92B2V2*             |                                                                                               | 32DUE†92W2V2*                                                       |                                                                                                    | 32DUE†92F2V2* |  | 32DUE†92N2V2* |  |
| 10             | 10            | 15             | 15            | —              | 1 1/2         | 10–40          | A1            | 60              | 32EUE†92B2V2*             |                                                                                               | 32EUE†92W2V2*                                                       |                                                                                                    | 32EUE†92F2V2* |  | 32EUE†92N2V2* |  |
| 10             | 15            | 25             | 25            | 2              | —             | 13–52          | B             | 60              | 32FUF†92B2V2*             |                                                                                               | 32FUF†92W2V2*                                                       |                                                                                                    | 32FUF†92F2V2* |  | 32FUF†92N2V2* |  |
| 15             | 20            | 30             | 30            | —              | 2 1/2         | 25–100         | B             | 100             | 32GUG†92B2V2*             |                                                                                               | 32GUG†92W2V2*                                                       |                                                                                                    | 32GUG†92F2V2* |  | 32GUG†92N2V2* |  |
| 20             | 25            | 50             | 50            | 3              | —             | 25–100         | B             | 100             | 32HUG†92B2V2*             |                                                                                               | 32HUG†92W2V2*                                                       |                                                                                                    | 32HUG†92F2V2* |  | 32HUG†92N2V2* |  |
| 30             | 40            | 75             | 75            | —              | 3 1/2         | 50–200         | B             | 200             | 32IUH†92B2V2*             |                                                                                               | 32IUH†92W2V2*                                                       |                                                                                                    | 32IUH†92F2V2* |  | 32IUH†92N2V2* |  |
| 40             | 50            | 100            | 100           | 4              | —             | 50–200         | B             | 200             | 32JUH†92B2V2*             |                                                                                               | 32JUH†92W2V2*                                                       |                                                                                                    | 32JUH†92F2V2* |  | 32JUH†92N2V2* |  |

## Two Separate Windings, 3-Phase (Constant or Variable Torque)

| Max Hp    |           |           |           | NEMA Size | Half Size | Overload  |            | Disc. Amp Range | Enclosure                 |                                                                                                           |                |                                                                     |                |                                                                                                                 |                |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------------|---------------------------|-----------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------|----------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           | Amp Range | Frame Size |                 | NEMA 1<br>General Purpose | NEMA 4/4X Stainless <sup>®</sup><br>Watertight, Dust-tight,<br>Corrosion Resistant<br>304 Stainless Steel |                | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |                | NEMA 12, NEMA 3/3R <sup>®</sup> ,<br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |                |               |
|           |           |           |           |           |           |           |            |                 | Catalog Number            | List Price \$                                                                                             | Catalog Number | List Price \$                                                       | Catalog Number | List Price \$                                                                                                   | Catalog Number | List Price \$ |
| 1/2       | 3/4       | 1 1/2     | 2         | 0         | —         | 0.75–3.4  | A          | 30              | 32CUB†92B1V2*             |                                                                                                           | 32CUB†92W1V2*  |                                                                     | 32CUB†92F1V2*  |                                                                                                                 | 32CUB†92N1V2*  |               |
| 2         | 2         | 5         | 5         | 0         | —         | 3–12      | A1         | 30              | 32CUC†92B1V2*             |                                                                                                           | 32CUC†92W1V2*  |                                                                     | 32CUC†92F1V2*  |                                                                                                                 | 32CUC†92N1V2*  |               |
| 3         | 3         | —         | —         | 0         | —         | 5.5–22    | A1         | 30              | 32CUD†92B1V2*             |                                                                                                           | 32CUD†92W1V2*  |                                                                     | 32CUD†92F1V2*  |                                                                                                                 | 32CUD†92N1V2*  |               |
| 1/2       | 3/4       | 1 1/2     | 1 1/2     | 1         | —         | 0.75–3.4  | A          | 30              | 32DUB†92B1V2*             |                                                                                                           | 32DUB†92W1V2*  |                                                                     | 32DUB†92F1V2*  |                                                                                                                 | 32DUB†92N1V2*  |               |
| 2         | 2         | 5         | 5         | 1         | —         | 3–12      | A1         | 30              | 32DUC†92B1V2*             |                                                                                                           | 32DUC†92W1V2*  |                                                                     | 32DUC†92F1V2*  |                                                                                                                 | 32DUC†92N1V2*  |               |
| 3         | 3         | 10        | 10        | 1         | —         | 5.5–22    | A1         | 30              | 32DUD†92B1V2*             |                                                                                                           | 32DUD†92W1V2*  |                                                                     | 32DUD†92F1V2*  |                                                                                                                 | 32DUD†92N1V2*  |               |
| 7 1/2     | 7 1/2     | —         | —         | 1         | —         | 10–40     | A1         | 60              | 32DUE†92B1V2*             |                                                                                                           | 32DUE†92W1V2*  |                                                                     | 32DUE†92F1V2*  |                                                                                                                 | 32DUE†92N1V2*  |               |
| 10        | 10        | 15        | 15        | —         | 1 1/2     | 10–40     | A1         | 60              | 32EUE†92B1V2*             |                                                                                                           | 32EUE†92W1V2*  |                                                                     | 32EUE†92F1V2*  |                                                                                                                 | 32EUE†92N1V2*  |               |
| 10        | 15        | 25        | 25        | 2         | —         | 13–52     | B          | 60              | 32FUF†92B1V2*             |                                                                                                           | 32FUF†92W1V2*  |                                                                     | 32FUF†92F1V2*  |                                                                                                                 | 32FUF†92N1V2*  |               |
| 15        | 20        | 30        | 30        | —         | 2 1/2     | 25–100    | B          | 100             | 32GUG†92B1V2*             |                                                                                                           | 32GUG†92W1V2*  |                                                                     | 32GUG†92F1V2*  |                                                                                                                 | 32GUG†92N1V2*  |               |
| 20        | 25        | 50        | 50        | 3         | —         | 25–100    | B          | 100             | 32HUG†92B1V2*             |                                                                                                           | 32HUG†92W1V2*  |                                                                     | 32HUG†92F1V2*  |                                                                                                                 | 32HUG†92N1V2*  |               |
| 30        | 40        | 75        | 75        | —         | 3 1/2     | 50–200    | B          | 200             | 32IUH†92B1V2*             |                                                                                                           | 32IUH†92W1V2*  |                                                                     | 32IUH†92F1V2*  |                                                                                                                 | 32IUH†92N1V2*  |               |
| 40        | 50        | 100       | 100       | 4         | —         | 50–200    | B          | 200             | 32JUH†92B1V2*             |                                                                                                           | 32JUH†92W1V2*  |                                                                     | 32JUH†92F1V2*  |                                                                                                                 | 32JUH†92N1V2*  |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in modified starters.

② For conduit hubs and conversion instructions, see page 9/110.

③ If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

## Non-Fusible, Constant Horsepower with Solid State Overload, Class 32

## Selection

## Ordering Information

- ▶ Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- ▶ Replace the (t) with the letter that corresponds to the correct FLA in the High/Low Speed FLA Table.<sup>®</sup>
- ▶ Fuse clips see page 9/120.
- ▶ Field Modification Kits see page 9/104.
- ▶ Factory Modifications see page 9/119.
- ▶ Dimensions see page 9/166.
- ▶ Wiring Diagrams see page 9/178.
- ▶ Replacement Parts see page 9/131.

## Coil Table

### 60Hz Voltage

### Letter

|                              |   |
|------------------------------|---|
| 24                           | J |
| 120                          | F |
| 110–120/220–240 <sup>®</sup> | A |
| 200–208                      | D |
| 220–240                      | G |
| 277                          | L |
| 220–240/440–480 <sup>®</sup> | C |
| 440–480                      | H |
| 575–600                      | E |

For other voltages and frequencies see Factory Modifications page 9/119.

## High/Low Speed FLA Table<sup>®</sup>

| Size                | FLA      | OLR Frame Size | † |
|---------------------|----------|----------------|---|
| 0,1                 | 0.25–1   | A              | A |
| 0,1                 | 0.75–3.4 | A              | B |
| 0,1                 | 3–12     | A1             | C |
| 0,1                 | 5.5–22   | A1             | D |
| 0-1 <sup>3/4</sup>  | 10–40    | A1             | E |
| 2-3                 | 13–52    | B              | F |
| 2-3                 | 25–100   | B              | G |
| 3 <sup>1/2</sup> -4 | 50–200   | B              | H |

\* First (t) for high speed, second (t) for low speed. Use motor nameplate to select FLA. If motor FLA are unknown, select overload on the bases that the low speed FLA will be no greater than 50 % of high speed FLA.

## One Winding Consequent Pole, 3-Phase (Constant Horsepower)

| Max Hp    |           |           |           | NEMA Size | Half Size | Overload  |            | Disc. Amp Range | Enclosure                 |               |                                                                                                           |               |                                                                     |               |                                                                                                                 |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------------|---------------------------|---------------|-----------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           | Amp Range | Frame Size |                 | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>®</sup><br>Watertight, Dust-tight,<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 12, NEMA 3/3R <sup>®</sup> ,<br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
|           |           |           |           |           |           |           |            |                 | Catalog Number            | List Price \$ | Catalog Number                                                                                            | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                                                                                  | List Price \$ |
| 2         | 2         | 3         | 3         | 0         | —         | —         | —          | 30              | 32CU††92B2H2*             |               | 32CU††92W2H2*                                                                                             | 4054.00       | 32CU††92F2H2*                                                       |               | 32CU††92N2H2*                                                                                                   |               |
| 5         | 5         | 7½        | 7½        | 1         | —         | —         | —          | 30              | 32DU††92B2H2*             |               | 32DU††92W2H2*                                                                                             | 4173.00       | 32DU††92F2H2*                                                       |               | 32DU††92N2H2*                                                                                                   |               |
| 7½        | 7½        | 10        | 10        | —         | 1½        | —         | —          | 60              | 32EU††92B2H2*             |               | 32EU††92W2H2*                                                                                             | 4873.00       | 32EU††92F2H2*                                                       |               | 32EU††92N2H2*                                                                                                   |               |
| 7½        | 10        | 20        | 20        | 2         | —         | —         | —          | 60              | 32FU††92B2H2*             |               | 32FU††92W2H2*                                                                                             | 6146.00       | 32FU††92F2H2*                                                       |               | 32FU††92N2H2*                                                                                                   |               |
| 10        | 15        | 25        | 25        | —         | 2½        | —         | —          | 100             | 32GU††92B2H2*             |               | 32GU††92W2H2*                                                                                             | 7219.00       | 32GU††92F2H2*                                                       |               | 32GU††92N2H2*                                                                                                   |               |
| 20        | 25        | 40        | 40        | 3         | —         | —         | —          | 100             | 32HU††92B2H2*             |               | 32HU††92W2H2*                                                                                             | 9321.00       | 32HU††92F2H2*                                                       |               | 32HU††92N2H2*                                                                                                   |               |
| 25        | 30        | 50        | 50        | —         | 3½        | —         | —          | 200             | 32IU††92B2H2*             |               | 32IU††92W2H2*                                                                                             | 18079.00      | 32IU††92F2H2*                                                       |               | 32IU††92N2H2*                                                                                                   |               |
| 30        | 40        | 75        | 75        | 4         | —         | —         | —          | 200             | 32JU††92B2H2*             |               | 32JU††92W2H2*                                                                                             | 19263.00      | 32JU††92F2H2*                                                       |               | 32JU††92N2H2*                                                                                                   |               |

## Two Separate Windings, 3-Phase (Constant Horsepower)

| Max Hp    |           |           |           | NEMA Size | Half Size | Overload  |            | Disc. Amp Range | Enclosure                 |                                                                                                           |                                                                     |                                                                                                                 |                |               |                |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------------|---------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------|---------------|----------------|---------------|
|           |           |           |           |           |           | Amp Range | Frame Size |                 | NEMA 1<br>General Purpose | NEMA 4/4X Stainless <sup>®</sup><br>Watertight, Dust-tight,<br>Corrosion Resistant<br>304 Stainless Steel | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant | NEMA 12, NEMA 3/3R <sup>®</sup> ,<br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |                |               |                |               |
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |           |            |                 | Catalog Number            | List Price \$                                                                                             | Catalog Number                                                      | List Price \$                                                                                                   | Catalog Number | List Price \$ | Catalog Number | List Price \$ |
| 2         | 2         | 3         | 3         | 0         | —         | —         | —          | 30              | 32CU††92B1H2*             |                                                                                                           | 32CU††92W1H2*                                                       |                                                                                                                 | 32CU††92F1H2*  |               | 32CU††92N1H2*  |               |
| 5         | 5         | 7½        | 7½        | 1         | —         | —         | —          | 30              | 32DU††92B1H2*             |                                                                                                           | 32DU††92W1H2*                                                       |                                                                                                                 | 32DU††92F1H2*  |               | 32DU††92N1H2*  |               |
| 7½        | 7½        | 10        | 10        | —         | 1½        | —         | —          | 60              | 32EU††92B1H2*             |                                                                                                           | 32EU††92W1H2*                                                       |                                                                                                                 | 32EU††92F1H2*  |               | 32EU††92N1H2*  |               |
| 7½        | 10        | 20        | 20        | 2         | —         | —         | —          | 60              | 32FU††92B1H2*             |                                                                                                           | 32FU††92W1H2*                                                       |                                                                                                                 | 32FU††92F1H2*  |               | 32FU††92N1H2*  |               |
| 10        | 15        | 25        | 25        | —         | 2½        | —         | —          | 100             | 32GU††92B1H2*             |                                                                                                           | 32GU††92W1H2*                                                       |                                                                                                                 | 32GU††92F1H2*  |               | 32GU††92N1H2*  |               |
| 20        | 25        | 40        | 40        | 3         | —         | —         | —          | 100             | 32HU††92B1H2*             |                                                                                                           | 32HU††92W1H2*                                                       |                                                                                                                 | 32HU††92F1H2*  |               | 32HU††92N1H2*  |               |
| 25        | 30        | 50        | 50        | —         | 3½        | —         | —          | 200             | 32IU††92B1H2*             |                                                                                                           | 32IU††92W1H2*                                                       |                                                                                                                 | 32IU††92F1H2*  |               | 32IU††92N1H2*  |               |
| 30        | 40        | 75        | 75        | 4         | —         | —         | —          | 200             | 32JU††92B1H2*             |                                                                                                           | 32JU††92W1H2*                                                       |                                                                                                                 | 32JU††92F1H2*  |               | 32JU††92N1H2*  |               |

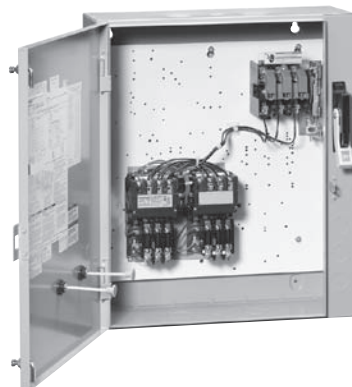
**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in modified starters.

② For conduit hubs and conversion instructions, see page 9/110.

③ First † for high speed, second † for low speed. Use motor nameplate information to select FLA. If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Coil Table                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|----|---|-----|---|------------------------------|---|---------|---|---------|---|-----|---|------------------------------|---|---------|---|---------|
|                                                                                   | <ul style="list-style-type: none"><li>▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>▶ Heater elements see page 9/124. (6 required)</li><li>▶ Fuse clips see page 9/120.</li><li>▶ Field Modification Kits see page 9/104.</li><li>▶ Factory Modifications see page 9/119.</li><li>▶ Dimensions see page 9/166.</li><li>▶ Wiring Diagrams see page 9/178.</li><li>▶ Replacement Parts see page 9/131.</li><li>▶ For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact.</li></ul> | <table><tr><th>60Hz Voltage</th><th>Letter</th></tr><tr><td>24</td><td>J</td></tr><tr><td>120</td><td>F</td></tr><tr><td>110–120/220–240<sup>①</sup></td><td>A</td></tr><tr><td>200–208</td><td>D</td></tr><tr><td>220–240</td><td>G</td></tr><tr><td>277</td><td>L</td></tr><tr><td>220–240/440–480<sup>①</sup></td><td>C</td></tr><tr><td>440–480</td><td>H</td></tr><tr><td>575–600</td><td>E</td></tr></table> <p>For other voltages and frequencies, see Factory Modifications page 9/119.</p> | 60Hz Voltage | Letter | 24 | J | 120 | F | 110–120/220–240 <sup>①</sup> | A | 200–208 | D | 220–240 | G | 277 | L | 220–240/440–480 <sup>①</sup> | C | 440–480 | H | 575–600 |
| 60Hz Voltage                                                                      | Letter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |
| 24                                                                                | J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |
| 120                                                                               | F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |
| 110–120/220–240 <sup>①</sup>                                                      | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |
| 200–208                                                                           | D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |
| 220–240                                                                           | G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |
| 277                                                                               | L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |
| 220–240/440–480 <sup>①</sup>                                                      | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |
| 440–480                                                                           | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |
| 575–600                                                                           | E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |

## One Winding Consequent Pole, 3-Phase (Constant or Variable Torque)

| Max Hp         |                |                |                | NEMA Size | Disc Half Size | Amp Rating | Enclosure                 |               |                                                                                                          |               |                                                                     |               |                                                                                                               |               |
|----------------|----------------|----------------|----------------|-----------|----------------|------------|---------------------------|---------------|----------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts      | 230 Volts      | 460 Volts      | 575 Volts      |           |                |            | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 12, NEMA 3/3R <sup>②</sup><br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
| Catalog Number | Catalog Number | Catalog Number | Catalog Number |           |                |            | Catalog Number            | List Price \$ | Catalog Number                                                                                           | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                                                                                | List Price \$ |
| 3              | 3              | 5              | 5              | 0         | —              | 30         | 32CP92B2V2*81             |               | 32CP92W2V2*81                                                                                            |               | 32CP92F2V2*81                                                       |               | 32CP92N2V2*81                                                                                                 |               |
| 7½             | 7½             | 10             | 10             | 1         | —              | 30         | 32DP92B2V2*81             |               | 32DP92W2V2*81                                                                                            |               | 32DP92F2V2*81                                                       |               | 32DP92N2V2*81                                                                                                 |               |
| 10             | 10             | 15             | 15             | —         | 1¼             | 60         | 32EP92B2V2*81             |               | 32EP92W2V2*81                                                                                            |               | 32EP92F2V2*81                                                       |               | 32EP92N2V2*81                                                                                                 |               |
| 10             | 15             | 25             | 25             | 2         | —              | 60         | 32FP92B2V2*81             |               | 32FP92W2V2*81                                                                                            |               | 32FP92F2V2*81                                                       |               | 32FP92N2V2*81                                                                                                 |               |
| 15             | 20             | 30             | 30             | —         | 2½             | 100        | 32GP92B2V2*81             |               | 32GP92W2V2*81                                                                                            |               | 32GP92F2V2*81                                                       |               | 32GP92N2V2*81                                                                                                 |               |
| 20             | 25             | 50             | 50             | 3         | —              | 100        | 32HP92B2V2*81             |               | 32HP92W2V2*81                                                                                            |               | 32HP92F2V2*81                                                       |               | 32HP92N2V2*81                                                                                                 |               |
| 30             | 40             | 75             | 75             | —         | 3½             | 200        | 32IP92B2V2*81             |               | 32IP92W2V2*81                                                                                            |               | 32IP92F2V2*81                                                       |               | 32IP92N2V2*81                                                                                                 |               |
| 40             | 50             | 100            | 100            | 4         | —              | 200        | 32JP92B2V2*81             |               | 32JP92W2V2*81                                                                                            |               | 32JP92F2V2*81                                                       |               | 32JP92N2V2*81                                                                                                 |               |

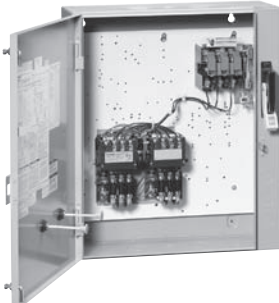
## Two Separate Windings, 3-Phase (Constant or Variable Torque)

| Max Hp         |                |                |                | NEMA Size | Disc Half Size | Amp Rating | Enclosure                 |               |                                                                                                          |               |                                                                     |               |                                                                                                               |               |
|----------------|----------------|----------------|----------------|-----------|----------------|------------|---------------------------|---------------|----------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts      | 230 Volts      | 460 Volts      | 575 Volts      |           |                |            | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 12, NEMA 3/3R <sup>②</sup><br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
| Catalog Number | Catalog Number | Catalog Number | Catalog Number |           |                |            | Catalog Number            | List Price \$ | Catalog Number                                                                                           | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                                                                                | List Price \$ |
| 3              | 3              | 5              | 5              | 0         | —              | 30         | 32CP92B1V2*81             |               | 32CP92W1V2*81                                                                                            |               | 32CP92F1V2*81                                                       |               | 32CP92N1V2*81                                                                                                 |               |
| 7½             | 7½             | 10             | 10             | 1         | —              | 30         | 32DP92B1V2*81             |               | 32DP92W1V2*81                                                                                            |               | 32DP92F1V2*81                                                       |               | 32DP92N1V2*81                                                                                                 |               |
| 10             | 10             | 15             | 15             | —         | 1¼             | 60         | 32EP92B1V2*81             |               | 32EP92W1V2*81                                                                                            |               | 32EP92F1V2*81                                                       |               | 32EP92N1V2*81                                                                                                 |               |
| 10             | 15             | 25             | 25             | 2         | —              | 60         | 32FP92B1V2*81             |               | 32FP92W1V2*81                                                                                            |               | 32FP92F1V2*81                                                       |               | 32FP92N1V2*81                                                                                                 |               |
| 15             | 20             | 30             | 30             | —         | 2½             | 100        | 32GP92B1V2*81             |               | 32GP92W1V2*81                                                                                            |               | 32GP92F1V2*81                                                       |               | 32GP92N1V2*81                                                                                                 |               |
| 20             | 25             | 50             | 50             | 3         | —              | 100        | 32HP92B1V2*81             |               | 32HP92W1V2*81                                                                                            |               | 32HP92F1V2*81                                                       |               | 32HP92N1V2*81                                                                                                 |               |
| 30             | 40             | 75             | 75             | —         | 3½             | 200        | 32IP92B1V2*81             |               | 32IP92W1V2*81                                                                                            |               | 32IP92F1V2*81                                                       |               | 32IP92N1V2*81                                                                                                 |               |
| 40             | 50             | 100            | 100            | 4         | —              | 200        | 32JP92B1V2*81             |               | 32JP92W1V2*81                                                                                            |               | 32JP92F1V2*81                                                       |               | 32JP92N1V2*81                                                                                                 |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Dual voltage coils not available in modified starters.  
② For conduit hubs and conversion instructions, see page 9/110.

## Selection

|                                                                                   | Ordering Information                                                                                                         | Coil Table                                                                |        |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------|
|                                                                                   |                                                                                                                              | 60Hz Voltage                                                              | Letter |
|  | ► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. | 24                                                                        | J      |
|                                                                                   | ► Heater elements see page 9/124. (6 Required)                                                                               | 120                                                                       | F      |
|                                                                                   | ► Fuse clips see page 9/120.                                                                                                 | 110–120/220–240 <sup>①</sup>                                              | A      |
|                                                                                   | ► Field Modification Kits see page 9/104.                                                                                    | 200–208                                                                   | D      |
|                                                                                   | ► Factory Modifications see page 9/119.                                                                                      | 220–240                                                                   | G      |
|                                                                                   | ► Dimensions see page 9/166.                                                                                                 | 277                                                                       | L      |
|                                                                                   | ► Wiring Diagrams see page 9/178.                                                                                            | 220–240/440–480 <sup>①</sup>                                              | C      |
|                                                                                   | ► Replacement Parts see page 9/131.                                                                                          | 440–480                                                                   | H      |
|                                                                                   | ► For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact..                          | 575–600                                                                   | E      |
|                                                                                   |                                                                                                                              | For other voltages and frequencies, see Factory Modifications page 9/119. |        |

## One Winding Consequent Pole, 3-Phase (Constant Horsepower)

| Max Hp    |           |           |           | NEMA Size | Disc Half Size | Amp Rating | Enclosure                 |               |                                                                                                          |               |                                                                     |               |                                                                                                               |               |
|-----------|-----------|-----------|-----------|-----------|----------------|------------|---------------------------|---------------|----------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |                |            | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 12, NEMA 3/3R <sup>②</sup><br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
|           |           |           |           |           |                |            | Catalog Number            | List Price \$ | Catalog Number                                                                                           | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                                                                                | List Price \$ |
| 2         | 2         | 3         | 3         | 0         | —              | 30         | 32CP92B2H2*81             |               | 32CP92W2H2*81                                                                                            |               | 32CP92F2H2*81                                                       |               | 32CP92N2H2*81                                                                                                 |               |
| 5         | 5         | 7½        | 7½        | 1         | —              | 30         | 32DP92B2H2*81             |               | 32DP92W2H2*81                                                                                            |               | 32DP92F2H2*81                                                       |               | 32DP92N2H2*81                                                                                                 |               |
| 7½        | 7½        | 10        | 10        | —         | 1¼             | 60         | 32EP92B2H2*81             |               | 32EP92W2H2*81                                                                                            |               | 32EP92F2H2*81                                                       |               | 32EP92N2H2*81                                                                                                 |               |
| 7½        | 10        | 20        | 20        | 2         | —              | 60         | 32FP92B2H2*81             |               | 32FP92W2H2*81                                                                                            |               | 32FP92F2H2*81                                                       |               | 32FP92N2H2*81                                                                                                 |               |
| 10        | 15        | 25        | 25        | —         | 2½             | 100        | 32GP92B2H2*81             |               | 32GP92W2H2*81                                                                                            |               | 32GP92F2H2*81                                                       |               | 32GP92N2H2*81                                                                                                 |               |
| 20        | 25        | 40        | 40        | 3         | —              | 100        | 32HP92B2H2*81             |               | 32HP92W2H2*81                                                                                            |               | 32HP92F2H2*81                                                       |               | 32HP92N2H2*81                                                                                                 |               |
| 25        | 30        | 50        | 50        | —         | 3½             | 200        | 32IP92B2H2*81             |               | 32IP92W2H2*81                                                                                            |               | 32IP92F2H2*81                                                       |               | 32IP92N2H2*81                                                                                                 |               |
| 30        | 40        | 75        | 75        | 4         | —              | 200        | 32JP92B2H2*81             |               | 32JP92W2H2*81                                                                                            |               | 32JP92F2H2*81                                                       |               | 32JP92N2H2*81                                                                                                 |               |

## Two Separate Windings, 3-Phase (Constant Horsepower)

| Max Hp    |           |           |           | NEMA Size | Half Size | Disc Amp Rating | Enclosure                 |               |                                                                                                          |               |                                                                     |               |                                                                                                               |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------------|---------------------------|---------------|----------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                 | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 12, NEMA 3/3R <sup>②</sup><br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |               |
|           |           |           |           |           |           |                 | Catalog Number            | List Price \$ | Catalog Number                                                                                           | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                                                                                | List Price \$ |
| 2         | 2         | 3         | 3         | 0         | —         | 30              | 32CP92B1H2*81             |               | 32CP92W1H2*81                                                                                            |               | 32CP92F1H2*81                                                       |               | 32CP92N1H2*81                                                                                                 |               |
| 5         | 5         | 7½        | 7½        | 1         | —         | 30              | 32DP92B1H2*81             |               | 32DP92W1H2*81                                                                                            |               | 32DP92F1H2*81                                                       |               | 32DP92N1H2*81                                                                                                 |               |
| 7½        | 7½        | 10        | 10        | —         | 1¼        | 60              | 32EP92B1H2*81             |               | 32EP92W1H2*81                                                                                            |               | 32EP92F1H2*81                                                       |               | 32EP92N1H2*81                                                                                                 |               |
| 7½        | 10        | 20        | 20        | 2         | —         | 60              | 32FP92B1H2*81             |               | 32FP92W1H2*81                                                                                            |               | 32FP92F1H2*81                                                       |               | 32FP92N1H2*81                                                                                                 |               |
| 10        | 15        | 25        | 25        | —         | 2½        | 100             | 32GP92B1H2*81             |               | 32GP92W1H2*81                                                                                            |               | 32GP92F1H2*81                                                       |               | 32GP92N1H2*81                                                                                                 |               |
| 20        | 25        | 40        | 40        | 3         | —         | 100             | 32HP92B1H2*81             |               | 32HP92W1H2*81                                                                                            |               | 32HP92F1H2*81                                                       |               | 32HP92N1H2*81                                                                                                 |               |
| 25        | 30        | 50        | 50        | —         | 3½        | 200             | 32IP92B1H2*81             |               | 32IP92W1H2*81                                                                                            |               | 32IP92F1H2*81                                                       |               | 32IP92N1H2*81                                                                                                 |               |
| 30        | 40        | 75        | 75        | 4         | —         | 200             | 32JP92B1H2*81             |               | 32JP92W1H2*81                                                                                            |               | 32JP92F1H2*81                                                       |               | 32JP92N1H2*81                                                                                                 |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Dual voltage coils not available in modified starters.

② For conduit hubs and conversion instructions, see page 9/110.



## MCP Type, Constant or Variable Torque with Solid State Overload, Class 32

## Selection

|                                                                                   | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Coil Table                                                                |        | Low Speed FLA Table              |          |                |   |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------|--------|----------------------------------|----------|----------------|---|
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 60Hz Voltage                                                              | Letter | Size                             | FLA      | OLR Frame Size | † |
|  | <ul style="list-style-type: none"> <li>Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li> <li>Replace the (†) with the letter that corresponds to the correct low speed FLA in the FLA table.®</li> <li>Field Modification Kits see page 9/104.</li> <li>Factory Modifications see page 9/119.</li> <li>Dimensions see page 9/166.</li> <li>Wiring Diagrams see page 9/178.</li> <li>Replacement Parts see page 9/131.</li> </ul> |  | 24                                                                        | J      | 0,1                              | 0.25–1   | A              | A |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 120                                                                       | F      | 0,1                              | 0.75–3.4 | A              | B |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 110–120/220–240 <sup>①</sup>                                              | A      | 0,1                              | 3–12     | A1             | C |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 200–208                                                                   | D      | 0,1                              | 5.5–22   | A1             | D |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 220–240                                                                   | G      | 0-1 <sup>3</sup> / <sub>4</sub>  | 10–40    | A1             | E |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 277                                                                       | L      | 2-3                              | 13–52    | B              | F |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 220–240/440–480 <sup>①</sup>                                              | C      | 2-3                              | 25–100   | B              | G |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 440–480                                                                   | H      | 3 <sup>1</sup> / <sub>2</sub> -4 | 50–200   | B              | H |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 575–600                                                                   | E      |                                  |          |                |   |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | For other voltages and frequencies, see Factory Modifications page 9/119. |        |                                  |          |                |   |

## One Winding Consequent Pole, 3-Phase (Constant or Variable Torque)

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Overload  |            | Enclosure              |               |                                                                                                  |               |                                                               |               |                                                                                                     |               |
|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|-----------|------------|------------------------|---------------|--------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                                    | Amp Range | Frame Size | NEMA 1 General Purpose |               | NEMA 4/4X Stainless <sup>②</sup> Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel |               | NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant |               | NEMA 12, NEMA 3/3R <sup>③</sup> , NEMA 4 Painted Industrial Use Weatherproof Watertight, Dust-tight |               |
|           |           |           |           |           |           |                                    |           |            | Catalog Number         | List Price \$ | Catalog Number                                                                                   | List Price \$ | Catalog Number                                                | List Price \$ | Catalog Number                                                                                      | List Price \$ |
| 1/2       | 3/4       | 1 1/2     | 2         | 0         | —         | 3                                  | 0.75–3.4  | A          | 32CUB†92B2V*           |               | 32CUB†92W2V*                                                                                     |               | 32CUB†92F2V*                                                  |               | 32CUB†92N2V*                                                                                        |               |
| 2         | 2         | 5         | 5         | 0         | —         | 10                                 | 3–12      | A1         | 32CUC†92B2V*           |               | 32CUC†92W2V*                                                                                     |               | 32CUC†92F2V*                                                  |               | 32CUC†92N2V*                                                                                        |               |
| 3         | 3         | —         | —         | 0         | —         | 25                                 | 5.5–22    | A1         | 32CUD†92B2V*           |               | 32CUD†92W2V*                                                                                     |               | 32CUD†92F2V*                                                  |               | 32CUD†92N2V*                                                                                        |               |
| 1/2       | 3/4       | 1 1/2     | 1 1/2     | 1         | —         | 3                                  | 0.75–3.4  | A          | 32DUB†92B2V*           |               | 32DUB†92W2V*                                                                                     |               | 32DUB†92F2V*                                                  |               | 32DUB†92N2V*                                                                                        |               |
| 2         | 2         | 5         | 5         | 1         | —         | 10                                 | 3–12      | A1         | 32DUC†92B2V*           |               | 32DUC†92W2V*                                                                                     |               | 32DUC†92F2V*                                                  |               | 32DUC†92N2V*                                                                                        |               |
| 3         | 3         | 10        | 10        | 1         | —         | 25                                 | 5.5–22    | A1         | 32DUD†92B2V*           |               | 32DUD†92W2V*                                                                                     |               | 32DUD†92F2V*                                                  |               | 32DUD†92N2V*                                                                                        |               |
| 7 1/2     | 7 1/2     | —         | —         | 1         | —         | 30                                 | 10–40     | A1         | 32DUE†92B2V*           |               | 32DUE†92W2V*                                                                                     |               | 32DUE†92F2V*                                                  |               | 32DUE†92N2V*                                                                                        |               |
| —         | —         | 15        | 15        | —         | 1 1/2     | 40                                 | 10–40     | A1         | 32EUE†92B2V*           |               | 32EUE†92W2V*                                                                                     |               | 32EUE†92F2V*                                                  |               | 32EUE†92N2V*                                                                                        |               |
| 10        | 15        | 25        | 25        | 2         | —         | 50                                 | 13–52     | B          | 32FUF†92B2V*           |               | 32FUF†92W2V*                                                                                     |               | 32FUF†92F2V*                                                  |               | 32FUF†92N2V*                                                                                        |               |
| 15        | 20        | 30        | 30        | —         | 2 1/2     | 100                                | 25–100    | B          | 32GUG†92B2V*           |               | 32GUG†92W2V*                                                                                     |               | 32GUG†92F2V*                                                  |               | 32GUG†92N2V*                                                                                        |               |
| 25        | 30        | 50        | 50        | 3         | —         | 125                                | 25–100    | B          | 32HUG†92B2V*           |               | 32HUG†92W2V*                                                                                     |               | 32HUG†92F2V*                                                  |               | 32HUG†92N2V*                                                                                        |               |
| 30        | 40        | 75        | 75        | —         | 3 1/2     | 125                                | 50–200    | B          | 32IUH†92B2V*           |               | 32IUH†92W2V*                                                                                     |               | 32IUH†92F2V*                                                  |               | 32IUH†92N2V*                                                                                        |               |
| 40        | 50        | 100       | 100       | 4         | —         | 150                                | 50–200    | B          | 32JUH†92B2V*           |               | 32JUH†92W2V*                                                                                     |               | 32JUH†92F2V*                                                  |               | 32JUH†92N2V*                                                                                        |               |

## Two Separate Windings, 3-Phase (Constant or Variable Torque)

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Overload  |            | Enclosure              |               |                                                                                                  |               |                                                               |               |                                                                                                     |               |
|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|-----------|------------|------------------------|---------------|--------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                                    | Amp Range | Frame Size | NEMA 1 General Purpose |               | NEMA 4/4X Stainless <sup>②</sup> Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel |               | NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant |               | NEMA 12, NEMA 3/3R <sup>③</sup> , NEMA 4 Painted Industrial Use Weatherproof Watertight, Dust-tight |               |
|           |           |           |           |           |           |                                    |           |            | Catalog Number         | List Price \$ | Catalog Number                                                                                   | List Price \$ | Catalog Number                                                | List Price \$ | Catalog Number                                                                                      | List Price \$ |
| 1/2       | 3/4       | 1 1/2     | 2         | 0         | —         | 3                                  | 0.75–3.4  | A          | 32CUB†92B1V*           |               | 32CUB†92W1V*                                                                                     |               | 32CUB†92F1V*                                                  |               | 32CUB†92N1V*                                                                                        |               |
| 2         | 2         | 5         | 5         | 0         | —         | 10                                 | 3–12      | A1         | 32CUC†92B1V*           |               | 32CUC†92W1V*                                                                                     |               | 32CUC†92F1V*                                                  |               | 32CUC†92N1V*                                                                                        |               |
| 3         | 3         | —         | —         | 0         | —         | 25                                 | 5.5–22    | A1         | 32CUD†92B1V*           |               | 32CUD†92W1V*                                                                                     |               | 32CUD†92F1V*                                                  |               | 32CUD†92N1V*                                                                                        |               |
| 1/2       | 3/4       | 1 1/2     | 1 1/2     | 1         | —         | 3                                  | 0.75–3.4  | A          | 32DUB†92B1V*           |               | 32DUB†92W1V*                                                                                     |               | 32DUB†92F1V*                                                  |               | 32DUB†92N1V*                                                                                        |               |
| 2         | 2         | 5         | 5         | 1         | —         | 10                                 | 3–12      | A1         | 32DUC†92B1V*           |               | 32DUC†92W1V*                                                                                     |               | 32DUC†92F1V*                                                  |               | 32DUC†92N1V*                                                                                        |               |
| 3         | 3         | 10        | 10        | 1         | —         | 25                                 | 5.5–22    | A1         | 32DUD†92B1V*           |               | 32DUD†92W1V*                                                                                     |               | 32DUD†92F1V*                                                  |               | 32DUD†92N1V*                                                                                        |               |
| 7 1/2     | 7 1/2     | —         | —         | 1         | —         | 30                                 | 10–40     | A1         | 32DUE†92B1V*           |               | 32DUE†92W1V*                                                                                     |               | 32DUE†92F1V*                                                  |               | 32DUE†92N1V*                                                                                        |               |
| —         | —         | 15        | 15        | —         | 1 1/2     | 40                                 | 10–40     | A1         | 32EUE†92B1V*           |               | 32EUE†92W1V*                                                                                     |               | 32EUE†92F1V*                                                  |               | 32EUE†92N1V*                                                                                        |               |
| 10        | 15        | 25        | 25        | 2         | —         | 50                                 | 13–52     | B          | 32FUF†92B1V*           |               | 32FUF†92W1V*                                                                                     |               | 32FUF†92F1V*                                                  |               | 32FUF†92N1V*                                                                                        |               |
| 15        | 20        | 30        | 30        | —         | 2 1/2     | 100                                | 25–100    | B          | 32GUG†92B1V*           |               | 32GUG†92W1V*                                                                                     |               | 32GUG†92F1V*                                                  |               | 32GUG†92N1V*                                                                                        |               |
| 25        | 30        | 50        | 50        | 3         | —         | 125                                | 25–100    | B          | 32HUG†92B1V*           |               | 32HUG†92W1V*                                                                                     |               | 32HUG†92F1V*                                                  |               | 32HUG†92N1V*                                                                                        |               |
| 30        | 40        | 75        | 75        | —         | 3 1/2     | 125                                | 50–200    | B          | 32IUH†92B1V*           |               | 32IUH†92W1V*                                                                                     |               | 32IUH†92F1V*                                                  |               | 32IUH†92N1V*                                                                                        |               |
| 40        | 50        | 100       | 100       | 4         | —         | 150                                | 50–200    | B          | 32JUH†92B1V*           |               | 32JUH†92W1V*                                                                                     |               | 32JUH†92F1V*                                                  |               | 32JUH†92N1V*                                                                                        |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

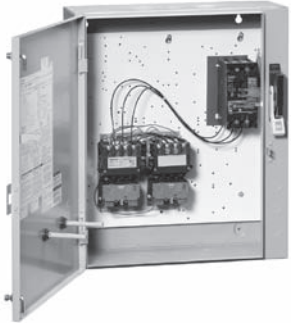
① Dual voltage coils not available in modified starters.

② For conduit hubs and conversion instructions, see page 9/110.

③ If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

## MCP Type, Constant Horsepower with Solid State Overload, Class 32

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Coil Table   | High/Low Speed FLA Table <sup>®</sup> |      |        |                |   |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------|------|--------|----------------|---|
|                                                                                   | <ul style="list-style-type: none"> <li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li> <li>► Replace the (†) with the letter that corresponds to the correct FLA in the High/Low Speed FLA table.<sup>®</sup></li> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/166.</li> <li>► Wiring Diagrams see page 9/178.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | 60Hz Voltage | Letter                                | Size | FLA    | OLR Frame Size | † |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 24           | J                                     | 0,1  | 0.25–1 | A              | A |

|                              |   |                     |          |    |   |
|------------------------------|---|---------------------|----------|----|---|
| 120                          | F | 0,1                 | 0.75–3.4 | A  | B |
| 110–120/220–240 <sup>①</sup> | A | 0,1                 | 3–12     | A1 | C |
| 200–208                      | D | 0,1                 | 5.5–22   | A1 | D |
| 220–240                      | G | 0-1 <sup>3/4</sup>  | 10–40    | A1 | E |
| 277                          | L | 2-3                 | 13–52    | B  | F |
| 220–240/440–480 <sup>①</sup> | C | 2-3                 | 25–100   | B  | G |
| 440–480                      | H | 3 <sup>1/2</sup> -4 | 50–200   | B  | H |
| 575–600                      | E |                     |          |    |   |

|                                                                          |  |                                                                                                                                                                                                                        |  |  |  |  |
|--------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| For other voltages and frequencies see Factory Modifications page 9/119. |  | * First (†) for high speed, second (†) for low speed. Use motor nameplate to select FLA. If motor FLA are unknown, select overload on the bases that the low speed FLA will be no greater than 50 % of high speed FLA. |  |  |  |  |
|--------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

## One Winding Consequent Pole, 3-Phase (Constant Horsepower)

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Overload  |            | Enclosure              |               |                                                                                                  |               |                                                               |               |                                                                                                     |               |
|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|-----------|------------|------------------------|---------------|--------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                                    | Amp Range | Frame Size | NEMA 1 General Purpose |               | NEMA 4/4X Stainless <sup>®</sup> Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel |               | NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant |               | NEMA 12, NEMA 3/3R <sup>®</sup> , NEMA 4 Painted Industrial Use Weatherproof Watertight, Dust-tight |               |
|           |           |           |           |           |           |                                    |           |            | Catalog Number         | List Price \$ | Catalog Number                                                                                   | List Price \$ | Catalog Number                                                | List Price \$ | Catalog Number                                                                                      | List Price \$ |
| 2         | 2         | 3         | 3         | 0         | —         | 10                                 | —         | A or A1    | 32CU††92B2H*           |               | 32CU††92W2H*                                                                                     |               | 32CU††92F2H*                                                  |               | 32CU††92N2H*                                                                                        |               |
| 5         | 5         | 7½        | 7½        | 1         | —         | 25                                 | —         | A or A1    | 32DU††92B2H*           |               | 32DU††92W2H*                                                                                     |               | 32DU††92F2H*                                                  |               | 32DU††92N2H*                                                                                        |               |
| 7½        | 7½        | 10        | 10        | —         | 1½        | 40                                 | —         | A1         | 32EU††92B2H*           |               | 32EU††92W2H*                                                                                     |               | 32EU††92F2H*                                                  |               | 32EU††92N2H*                                                                                        |               |
| 7½        | 10        | 20        | 20        | 2         | —         | 50                                 | —         | B          | 32FU††92B2H*           |               | 32FU††92W2H*                                                                                     |               | 32FU††92F2H*                                                  |               | 32FU††92N2H*                                                                                        |               |
| 10        | 15        | 25        | 25        | —         | 2½        | 100                                | —         | B          | 32GU††92B2H*           |               | 32GU††92W2H*                                                                                     |               | 32GU††92F2H*                                                  |               | 32GU††92N2H*                                                                                        |               |
| 20        | 25        | 40        | 40        | 3         | —         | 100                                | —         | B          | 32HU††92B2H*           |               | 32HU††92W2H*                                                                                     |               | 32HU††92F2H*                                                  |               | 32HU††92N2H*                                                                                        |               |
| 25        | 30        | 50        | 50        | —         | 3½        | 125                                | —         | B          | 32IU††92B2H*           |               | 32IU††92W2H*                                                                                     |               | 32IU††92F2H*                                                  |               | 32IU††92N2H*                                                                                        |               |
| 30        | 40        | 75        | 75        | 4         | —         | 150                                | —         | B          | 32JU††92B2H*           |               | 32JU††92W2H*                                                                                     |               | 32JU††92F2H*                                                  |               | 32JU††92N2H*                                                                                        |               |

## Two Separate Windings, 3-Phase (Constant Horsepower)

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Overload  |            | Enclosure              |               |                                                                                                  |               |                                                               |               |                                                                                                     |               |
|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|-----------|------------|------------------------|---------------|--------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                                    | Amp Range | Frame Size | NEMA 1 General Purpose |               | NEMA 4/4X Stainless <sup>®</sup> Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel |               | NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant |               | NEMA 12, NEMA 3/3R <sup>®</sup> , NEMA 4 Painted Industrial Use Weatherproof Watertight, Dust-tight |               |
|           |           |           |           |           |           |                                    |           |            | Catalog Number         | List Price \$ | Catalog Number                                                                                   | List Price \$ | Catalog Number                                                | List Price \$ | Catalog Number                                                                                      | List Price \$ |
| 2         | 2         | 3         | 3         | 0         | —         | 10                                 | —         | A or A1    | 32CU††92B1H*           |               | 32CU††92W1H*                                                                                     |               | 32CU††92F1H*                                                  |               | 32CU††92N1H*                                                                                        |               |
| 5         | 5         | 7½        | 7½        | 1         | —         | 25                                 | —         | A or A1    | 32DU††92B1H*           |               | 32DU††92W1H*                                                                                     |               | 32DU††92F1H*                                                  |               | 32DU††92N1H*                                                                                        |               |
| 7½        | 7½        | 10        | 10        | —         | 1½        | 40                                 | —         | A1         | 32EU††92B1H*           |               | 32EU††92W1H*                                                                                     |               | 32EU††92F1H*                                                  |               | 32EU††92N1H*                                                                                        |               |
| 7½        | 10        | 20        | 20        | 2         | —         | 50                                 | —         | B          | 32FU††92B1H*           |               | 32FU††92W1H*                                                                                     |               | 32FU††92F1H*                                                  |               | 32FU††92N1H*                                                                                        |               |
| 10        | 15        | 25        | 25        | —         | 2½        | 100                                | —         | B          | 32GU††92B1H*           |               | 32GU††92W1H*                                                                                     |               | 32GU††92F1H*                                                  |               | 32GU††92N1H*                                                                                        |               |
| 20        | 25        | 40        | 40        | 3         | —         | 100                                | —         | B          | 32HU††92B1H*           |               | 32HU††92W1H*                                                                                     |               | 32HU††92F1H*                                                  |               | 32HU††92N1H*                                                                                        |               |
| 25        | 30        | 50        | 50        | —         | 3½        | 125                                | —         | B          | 32IU††92B1H*           |               | 32IU††92W1H*                                                                                     |               | 32IU††92F1H*                                                  |               | 32IU††92N1H*                                                                                        |               |
| 30        | 40        | 75        | 75        | 4         | —         | 150                                | —         | B          | 32JU††92B1H*           |               | 32JU††92W1H*                                                                                     |               | 32JU††92F1H*                                                  |               | 32JU††92N1H*                                                                                        |               |

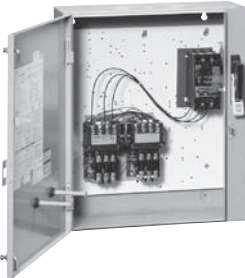
**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in modified starters.

② For conduit hubs and conversion instructions, see page 9/110.

③ First † for high speed, second † for low speed. Use motor nameplate information to select FLA. If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Coil Table                                                                                                                   |                                           |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
|                                                                                   | <ul style="list-style-type: none"><li>▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>▶ Heater elements see page 9/124. (6 Required)</li><li>▶ Field Modification Kits see page 9/104.</li><li>▶ Factory Modifications see page 9/119.</li><li>▶ Dimensions see page 9/166.</li><li>▶ Wiring Diagrams see page 9/178.</li><li>▶ Replacement Parts see page 9/131.</li><li>▶ For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact..</li></ul> | 60Hz Voltage                                                                                                                 | Letter                                    |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 24<br>120<br>110–120/220–240 <sup>①</sup><br>200–208<br>220–240<br>277<br>220–240/440–480 <sup>①</sup><br>440–480<br>575–600 | J<br>F<br>A<br>D<br>G<br>L<br>C<br>H<br>E |
| For other voltages and frequencies, see Factory Modifications page 9/119.         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                              |                                           |

## One Winding Consequent Pole, 3-Phase (Constant or Variable Torque)

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Enclosure                 |              |                                                                                                          |              |                                                                     |              |                                                                                                               |              |
|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|---------------------------|--------------|----------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------|--------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                                    | NEMA 1<br>General Purpose |              | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |              | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |              | NEMA 12, NEMA 3/3R <sup>②</sup><br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |              |
|           |           |           |           |           |           |                                    | Catalog Number            | List Price\$ | Catalog Number                                                                                           | List Price\$ | Catalog Number                                                      | List Price\$ | Catalog Number                                                                                                | List Price\$ |
| 1/2       | 1/2       | 1         | 1         | 0         | —         | 3                                  | 32CP92B2VA*81             |              | 32CP92W2VA*81                                                                                            |              | 32CP92F2VA*81                                                       |              | 32CP92N2VA*81                                                                                                 |              |
| 1         | 1         | 3         | 3         | 0         | —         | 10                                 | 32CP92B2VB*81             |              | 32CP92W2VB*81                                                                                            |              | 32CP92F2VB*81                                                       |              | 32CP92N2VB*81                                                                                                 |              |
| 3         | 3         | 5         | 5         | 0         | —         | 25                                 | 32CP92B2VC*81             |              | 32CP92W2VC*81                                                                                            |              | 32CP92F2VC*81                                                       |              | 32CP92N2VC*81                                                                                                 |              |
| 1 1/2     | 1 1/2     | 1         | 1         | 1         | —         | 3                                  | 32DP92B2VA*81             |              | 32DP92W2VA*81                                                                                            |              | 32DP92F2VA*81                                                       |              | 32DP92N2VA*81                                                                                                 |              |
| 1         | 1         | 3         | 3         | 1         | —         | 10                                 | 32DP92B2VB*81             |              | 32DP92W2VB*81                                                                                            |              | 32DP92F2VB*81                                                       |              | 32DP92N2VB*81                                                                                                 |              |
| 3         | 3         | 7 1/2     | 7 1/2     | 1         | —         | 25                                 | 32DP92B2VD*81             |              | 32DP92W2VD*81                                                                                            |              | 32DP92F2VD*81                                                       |              | 32DP92N2VD*81                                                                                                 |              |
| 7 1/2     | 7 1/2     | 10        | 10        | 1         | —         | 30                                 | 32DP92B2VE*81             |              | 32DP92W2VE*81                                                                                            |              | 32DP92F2VE*81                                                       |              | 32DP92N2VE*81                                                                                                 |              |
| —         | —         | 15        | 15        | —         | 1 1/4     | 40                                 | 32EP92B2VF*81             |              | 32EP92W2VF*81                                                                                            |              | 32EP92F2VF*81                                                       |              | 32EP92N2VF*81                                                                                                 |              |
| 10        | 10        | —         | —         | —         | 1 1/4     | 50                                 | 32EP92B2VG*81             |              | 32EP92W2VG*81                                                                                            |              | 32EP92F2VG*81                                                       |              | 32EP92N2VG*81                                                                                                 |              |
| —         | —         | 20        | 20        | 2         | —         | 40                                 | 32FP92B2VH*81             |              | 32FP92W2VH*81                                                                                            |              | 32FP92F2VH*81                                                       |              | 32FP92N2VH*81                                                                                                 |              |
| 10        | 15        | 25        | 25        | 2         | —         | 50                                 | 32FP92B2VJ*81             |              | 32FP92W2VJ*81                                                                                            |              | 32FP92F2VJ*81                                                       |              | 32FP92N2VJ*81                                                                                                 |              |
| 10        | 15        | 30        | 30        | —         | 2 1/2     | 50                                 | 32GP92B2VK*81             |              | 32GP92W2VK*81                                                                                            |              | 32GP92F2VK*81                                                       |              | 32GP92N2VK*81                                                                                                 |              |
| 15        | 20        | —         | —         | —         | 2 1/2     | 100                                | 32GP92B2VL*81             |              | 32GP92W2VL*81                                                                                            |              | 32GP92F2VL*81                                                       |              | 32GP92N2VL*81                                                                                                 |              |
| —         | —         | 30        | 30        | 3         | —         | 50                                 | 32HP92B2VM*81             |              | 32HP92W2VM*81                                                                                            |              | 32HP92F2VM*81                                                       |              | 32HP92N2VM*81                                                                                                 |              |
| 25        | 30        | 50        | 50        | 3         | —         | 125                                | 32HP92B2VN*81             |              | 32HP92W2VN*81                                                                                            |              | 32HP92F2VN*81                                                       |              | 32HP92N2VN*81                                                                                                 |              |
| 30        | 40        | 75        | 75        | —         | 3 1/2     | 125                                | 32IP92B2VP*81             |              | 32IP92W2VP*81                                                                                            |              | 32IP92F2VP*81                                                       |              | 32IP92N2VP*81                                                                                                 |              |
| 40        | 50        | 100       | 100       | 4         | —         | 150                                | 32JP92B2VR*81             |              | 32JP92W2VR*81                                                                                            |              | 32JP92F2VR*81                                                       |              | 32JP92N2VR*81                                                                                                 |              |

## Two Separate Windings, 3-Phase (Constant or Variable Torque)

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Enclosure                 |              |                                                                                                          |              |                                                                     |              |                                                                                                               |              |
|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|---------------------------|--------------|----------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------|--------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                                    | NEMA 1<br>General Purpose |              | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |              | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |              | NEMA 12, NEMA 3/3R <sup>②</sup><br>NEMA 4 Painted<br>Industrial Use<br>Weatherproof<br>Watertight, Dust-tight |              |
|           |           |           |           |           |           |                                    | Catalog Number            | List Price\$ | Catalog Number                                                                                           | List Price\$ | Catalog Number                                                      | List Price\$ | Catalog Number                                                                                                | List Price\$ |
| 1/2       | 1/2       | 1         | 1         | 0         | —         | 3                                  | 32CP92B1VA*81             |              | 32CP92W1VA*81                                                                                            |              | 32CP92F1VA*81                                                       |              | 32CP92N1VA*81                                                                                                 |              |
| 1         | 1         | 3         | 3         | 0         | —         | 10                                 | 32CP92B1VB*81             |              | 32CP92W1VB*81                                                                                            |              | 32CP92F1VB*81                                                       |              | 32CP92N1VB*81                                                                                                 |              |
| 3         | 3         | 5         | 5         | 0         | —         | 25                                 | 32CP92B1VC*81             |              | 32CP92W1VC*81                                                                                            |              | 32CP92F1VC*81                                                       |              | 32CP92N1VC*81                                                                                                 |              |
| 1/2       | 1/2       | 1         | 1         | 1         | —         | 3                                  | 32DP92B1VA*81             |              | 32DP92W1VA*81                                                                                            |              | 32DP92F1VA*81                                                       |              | 32DP92N1VA*81                                                                                                 |              |
| 1         | 1         | 3         | 3         | 1         | —         | 10                                 | 32DP92B1VB*81             |              | 32DP92W1VB*81                                                                                            |              | 32DP92F1VB*81                                                       |              | 32DP92N1VB*81                                                                                                 |              |
| 3         | 3         | 7 1/2     | 7 1/2     | 1         | —         | 25                                 | 32DP92B1VD*81             |              | 32DP92W1VD*81                                                                                            |              | 32DP92F1VD*81                                                       |              | 32DP92N1VD*81                                                                                                 |              |
| 7 1/2     | 7 1/2     | 10        | 10        | 1         | —         | 30                                 | 32DP92B1VE*81             |              | 32DP92W1VE*81                                                                                            |              | 32DP92F1VE*81                                                       |              | 32DP92N1VE*81                                                                                                 |              |
| —         | —         | 15        | 15        | —         | 1 1/4     | 40                                 | 32EP92B1VF*81             |              | 32EP92W1VF*81                                                                                            |              | 32EP92F1VF*81                                                       |              | 32EP92N1VF*81                                                                                                 |              |
| 10        | 10        | —         | —         | —         | 1 1/4     | 50                                 | 32EP92B1VG*81             |              | 32EP92W1VG*81                                                                                            |              | 32EP92F1VG*81                                                       |              | 32EP92N1VG*81                                                                                                 |              |
| —         | —         | 20        | 20        | 2         | —         | 40                                 | 32FP92B1VH*81             |              | 32FP92W1VH*81                                                                                            |              | 32FP92F1VH*81                                                       |              | 32FP92N1VH*81                                                                                                 |              |
| 10        | 15        | 25        | 25        | 2         | —         | 50                                 | 32FP92B1VJ*81             |              | 32FP92W1VJ*81                                                                                            |              | 32FP92F1VJ*81                                                       |              | 32FP92N1VJ*81                                                                                                 |              |
| 10        | 15        | 30        | 30        | —         | 2 1/2     | 50                                 | 32GP92B1VK*81             |              | 32GP92W1VK*81                                                                                            |              | 32GP92F1VK*81                                                       |              | 32GP92N1VK*81                                                                                                 |              |
| 15        | 20        | —         | —         | —         | 2 1/2     | 100                                | 32GP92B1VL*81             |              | 32GP92W1VL*81                                                                                            |              | 32GP92F1VL*81                                                       |              | 32GP92N1VL*81                                                                                                 |              |
| —         | —         | 30        | 30        | 3         | —         | 50                                 | 32HP92B1VM*81             |              | 32HP92W1VM*81                                                                                            |              | 32HP92F1VM*81                                                       |              | 32HP92N1VM*81                                                                                                 |              |
| 25        | 30        | 50        | 50        | 3         | —         | 125                                | 32HP92B1VN*81             |              | 32HP92W1VN*81                                                                                            |              | 32HP92F1VN*81                                                       |              | 32HP92N1VN*81                                                                                                 |              |
| 30        | 40        | 75        | 75        | —         | 3 1/2     | 125                                | 32IP92B1VP*81             |              | 32IP92W1VP*81                                                                                            |              | 32IP92F1VP*81                                                       |              | 32IP92N1VP*81                                                                                                 |              |
| 40        | 50        | 100       | 100       | 4         | —         | 150                                | 32JP92B1VR*81             |              | 32JP92W1VR*81                                                                                            |              | 32JP92F1VR*81                                                       |              | 32JP92N1VR*81                                                                                                 |              |

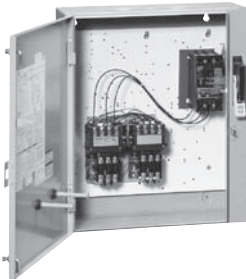
Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Dual voltage coils not available in modified starters.

② For conduit hubs and conversion instructions, see page 9/110.

## MCP, Constant Horsepower w/ Ambient Compensated Bimetal Overload, Class 32

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Coil Table   |        |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|-----|---|------------------------------|---|---------|---|---------|---|-----|---|------------------------------|---|---------|---|---------|---|--|
|                                                                                   | <ul style="list-style-type: none"><li>► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>► Heater elements see page 9/124. (6 Required)</li><li>► Field Modification Kits see page 9/104.</li><li>► Factory Modifications see page 9/119.</li><li>► Dimensions see page 9/166.</li><li>► Wiring Diagrams see page 9/178.</li><li>► Replacement Parts see page 9/131.</li><li>► For NO/NC SPDT contact on overload relay, replace "81" with "91". "81" indicates one NC contact..</li></ul> | 60Hz Voltage | Letter |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |
|                                                                                   | <table><tr><td>24</td><td>J</td></tr><tr><td>120</td><td>F</td></tr><tr><td>110–120/220–240<sup>①</sup></td><td>A</td></tr><tr><td>200–208</td><td>D</td></tr><tr><td>220–240</td><td>G</td></tr><tr><td>277</td><td>L</td></tr><tr><td>220–240/440–480<sup>①</sup></td><td>C</td></tr><tr><td>440–480</td><td>H</td></tr><tr><td>575–600</td><td>E</td></tr></table> <p>For other voltages and frequencies, see Factory Modifications page 9/119.</p>                                                                                                                       | 24           | J      | 120 | F | 110–120/220–240 <sup>①</sup> | A | 200–208 | D | 220–240 | G | 277 | L | 220–240/440–480 <sup>①</sup> | C | 440–480 | H | 575–600 | E |  |
| 24                                                                                | J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |        |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |
| 120                                                                               | F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |        |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |
| 110–120/220–240 <sup>①</sup>                                                      | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |        |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |
| 200–208                                                                           | D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |        |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |
| 220–240                                                                           | G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |        |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |
| 277                                                                               | L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |        |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |
| 220–240/440–480 <sup>①</sup>                                                      | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |        |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |
| 440–480                                                                           | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |        |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |
| 575–600                                                                           | E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |        |     |   |                              |   |         |   |         |   |     |   |                              |   |         |   |         |   |  |

## One Winding Consequent Pole, 3-Phase (Constant Horsepower)

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Enclosure                 |              |                                                                                                          |              |                |                                                                     |                |              |
|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|---------------------------|--------------|----------------------------------------------------------------------------------------------------------|--------------|----------------|---------------------------------------------------------------------|----------------|--------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                                    | NEMA 1<br>General Purpose |              | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |              |                | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |                |              |
|           |           |           |           |           |           |                                    | Catalog Number            | List Price\$ | Catalog Number                                                                                           | List Price\$ | Catalog Number | List Price\$                                                        | Catalog Number | List Price\$ |
| 1/2       | 1/2       | 1         | 1         | 0         | —         | 3                                  | 32CP92B2HA*81             |              | 32CP92W2HA*81                                                                                            |              | 32CP92F2HA*81  |                                                                     | 32CP92N2HA*81  |              |
| 1 1/2     | 1 1/2     | 3         | 3         | 0         | —         | 10                                 | 32CP92B2HB*81             |              | 32CP92W2HB*81                                                                                            |              | 32CP92F2HB*81  |                                                                     | 32CP92N2HB*81  |              |
| 2         | 2         | —         | —         | 0         | —         | 25                                 | 32CP92B2HC*81             |              | 32CP92W2HC*81                                                                                            |              | 32CP92F2HC*81  |                                                                     | 32CP92N2HC*81  |              |
| 1/2       | 1/2       | 1         | 1         | 1         | —         | 3                                  | 32DP92B2HA*81             |              | 32DP92W2HA*81                                                                                            |              | 32DP92F2HA*81  |                                                                     | 32DP92N2HA*81  |              |
| 1 1/2     | 1 1/2     | 3         | 3         | 1         | —         | 10                                 | 32DP92B2HB*81             |              | 32DP92W2HB*81                                                                                            |              | 32DP92F2HB*81  |                                                                     | 32DP92N2HB*81  |              |
| 3         | 3         | 7 1/2     | 7 1/2     | 1         | —         | 25                                 | 32DP92B2HD*81             |              | 32DP92W2HD*81                                                                                            |              | 32DP92F2HD*81  |                                                                     | 32DP92N2HD*81  |              |
| 5         | 5         | —         | —         | 1         | —         | 30                                 | 32DP92B2HE*81             |              | 32DP92W2HE*81                                                                                            |              | 32DP92F2HE*81  |                                                                     | 32DP92N2HE*81  |              |
| —         | —         | 10        | 10        | —         | 1 3/4     | 40                                 | 32EP92B2HF*81             |              | 32EP92W2HF*81                                                                                            |              | 32EP92F2HF*81  |                                                                     | 32EP92N2HF*81  |              |
| 7 1/2     | 7 1/2     | —         | —         | —         | 1 3/4     | 50                                 | 32EP92B2HG*81             |              | 32EP92W2HG*81                                                                                            |              | 32EP92F2HG*81  |                                                                     | 32EP92N2HG*81  |              |
| —         | 7 1/2     | 15        | 20        | 2         | —         | 40                                 | 32FP92B2HH*81             |              | 32FP92W2HH*81                                                                                            |              | 32FP92F2HH*81  |                                                                     | 32FP92N2HH*81  |              |
| 7 1/2     | 10        | 20        | —         | 2         | —         | 50                                 | 32FP92B2HJ*81             |              | 32FP92W2HJ*81                                                                                            |              | 32FP92F2HJ*81  |                                                                     | 32FP92N2HJ*81  |              |
| —         | —         | 30        | 30        | —         | 2 1/2     | 50                                 | 32GP92B2HK*81             |              | 32GP92W2HK*81                                                                                            |              | 32GP92F2HK*81  |                                                                     | 32GP92N2HK*81  |              |
| 10        | 15        | 30        | 40        | 3         | —         | 50                                 | 32HP92B2HM*81             |              | 32HP92W2HM*81                                                                                            |              | 32HP92F2HM*81  |                                                                     | 32HP92N2HM*81  |              |
| 20        | 25        | 40        | —         | 3         | —         | 100                                | 32HP92B2HN*81             |              | 32HP92W2HN*81                                                                                            |              | 32HP92F2HN*81  |                                                                     | 32HP92N2HN*81  |              |
| 25        | 30        | 50        | 50        | —         | 3 1/2     | 125                                | 32IP92B2HP*81             |              | 32IP92W2HP*81                                                                                            |              | 32IP92F2HP*81  |                                                                     | 32IP92N2HP*81  |              |
| 30        | 40        | 75        | 75        | 4         | —         | 150                                | 32JP92B2HR*81             |              | 32JP92W2HR*81                                                                                            |              | 32JP92F2HR*81  |                                                                     | 32JP92N2HR*81  |              |

## Two Separate Windings, 3-Phase (Constant Horsepower)

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI Amps | Enclosure                 |              |                                                                                                          |              |                |                                                                     |                |              |
|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|---------------------------|--------------|----------------------------------------------------------------------------------------------------------|--------------|----------------|---------------------------------------------------------------------|----------------|--------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                                    | NEMA 1<br>General Purpose |              | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |              |                | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |                |              |
|           |           |           |           |           |           |                                    | Catalog Number            | List Price\$ | Catalog Number                                                                                           | List Price\$ | Catalog Number | List Price\$                                                        | Catalog Number | List Price\$ |
| 1/2       | 1/2       | 1         | 1         | 0         | —         | 3                                  | 32CP92B1HA*81             |              | 32CP92W1HA*81                                                                                            |              | 32CP92F1HA*81  |                                                                     | 32CP92N1HA*81  |              |
| 1 1/2     | 1 1/2     | 3         | 3         | 0         | —         | 10                                 | 32CP92B1HB*81             |              | 32CP92W1HB*81                                                                                            |              | 32CP92F1HB*81  |                                                                     | 32CP92N1HB*81  |              |
| 2         | 2         | —         | —         | 0         | —         | 25                                 | 32CP92B1HC*81             |              | 32CP92W1HC*81                                                                                            |              | 32CP92F1HC*81  |                                                                     | 32CP92N1HC*81  |              |
| 1/2       | 1/2       | 1         | 1         | 1         | —         | 3                                  | 32DP92B1HA*81             |              | 32DP92W1HA*81                                                                                            |              | 32DP92F1HA*81  |                                                                     | 32DP92N1HA*81  |              |
| 1 1/2     | 1 1/2     | 3         | 3         | 1         | —         | 10                                 | 32DP92B1HB*81             |              | 32DP92W1HB*81                                                                                            |              | 32DP92F1HB*81  |                                                                     | 32DP92N1HB*81  |              |
| 3         | 3         | 7 1/2     | 7 1/2     | 1         | —         | 25                                 | 32DP92B1HD*81             |              | 32DP92W1HD*81                                                                                            |              | 32DP92F1HD*81  |                                                                     | 32DP92N1HD*81  |              |
| 5         | 5         | —         | —         | 1         | —         | 30                                 | 32DP92B1HE*81             |              | 32DP92W1HE*81                                                                                            |              | 32DP92F1HE*81  |                                                                     | 32DP92N1HE*81  |              |
| —         | —         | 10        | 10        | —         | 1 3/4     | 40                                 | 32EP92B1HF*81             |              | 32EP92W1HF*81                                                                                            |              | 32EP92F1HF*81  |                                                                     | 32EP92N1HF*81  |              |
| 7 1/2     | 7 1/2     | —         | —         | —         | 1 3/4     | 50                                 | 32EP92B1HG*81             |              | 32EP92W1HG*81                                                                                            |              | 32EP92F1HG*81  |                                                                     | 32EP92N1HG*81  |              |
| —         | 7 1/2     | 15        | 20        | 2         | —         | 40                                 | 32FP92B1HH*81             |              | 32FP92W1HH*81                                                                                            |              | 32FP92F1HH*81  |                                                                     | 32FP92N1HH*81  |              |
| 7 1/2     | 10        | 20        | —         | 2         | —         | 50                                 | 32FP92B1HJ*81             |              | 32FP92W1HJ*81                                                                                            |              | 32FP92F1HJ*81  |                                                                     | 32FP92N1HJ*81  |              |
| —         | —         | 30        | 30        | —         | 2 1/2     | 50                                 | 32GP92B1HK*81             |              | 32GP92W1HK*81                                                                                            |              | 32GP92F1HK*81  |                                                                     | 32GP92N1HK*81  |              |
| 10        | 15        | 30        | 40        | 3         | —         | 50                                 | 32HP92B1HM*81             |              | 32HP92W1HM*81                                                                                            |              | 32HP92F1HM*81  |                                                                     | 32HP92N1HM*81  |              |
| 20        | 25        | 40        | —         | 3         | —         | 100                                | 32HP92B1HN*81             |              | 32HP92W1HN*81                                                                                            |              | 32HP92F1HN*81  |                                                                     | 32HP92N1HN*81  |              |
| 25        | 30        | 50        | 50        | —         | 3 1/2     | 125                                | 32IP92B1HP*81             |              | 32IP92W1HP*81                                                                                            |              | 32IP92F1HP*81  |                                                                     | 32IP92N1HP*81  |              |
| 30        | 40        | 75        | 75        | 4         | —         | 150                                | 32JP92B1HR*81             |              | 32JP92W1HR*81                                                                                            |              | 32JP92F1HR*81  |                                                                     | 32JP92N1HR*81  |              |

Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Dual voltage coils not available in modified starters.

② For conduit hubs and conversion instructions, see page 9/110.

# Features and Benefits

## General

Siemens manufactures the three commonly used electromechanical reduced voltage starters. Each one is designed for specific application requirements and consists of auto transformer, wye-delta and partwinding starters.

The reduced voltage starter:

- Reduces inrush current
- Provides smoother acceleration of the load
- Reduces starting torque
- Reduces stresses on mechanical linkages

Combination and non-combination reduced voltage starter sizes range from 0 to 6 including Siemens exclusive motormatched half-sizes. Enclosure types include 1, 3R/12, 4 painted and 4/4X stainless steel. UL listed file #E14900 (class 36); file #E185287 (class 37). CSA certified file #LR 6535 (class 36 & 37).



### Auto Transformer Starter

- Maximum torque per amp
- Three coil auto transformer for balanced starting currents
- 50, 65 and 80% voltage taps
- Closed circuit transition
- Adjustable starting time
- Solid-state OLR overload as standard
- CPT supplied as standard
- Wide range of factory modifications



### Wye-Delta Starter

- Lowest starting torque
- Closed or open circuit transition
- Adjustable starting time
- Solid-state OLR overload as standard
- CPT supplied as standard
- Wide range of factory modifications



### Part-Winding Starter

- Simplest design – most economical
- Adjustable starting time
- Solid-state OLR overload as standard
- CPT supplied as standard
- Wide range of factory modifications

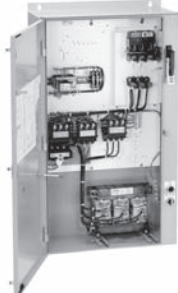
## Various Methods of Electro-Mechanical Reduced Voltage Motor Starting —A General Comparison

| Characteristic                                                                                | Autotransformer                                                                        |         |         | Part-Winding                           | Wye-Delta                            |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------|---------|----------------------------------------|--------------------------------------|
|                                                                                               | 50% Tap                                                                                | 65% Tap | 80% Tap | 2 step                                 |                                      |
| Starting current drawn from line as % of that which would be drawn upon full voltage starting | 25%                                                                                    | 42%     | 64%     | 65%                                    | 33%                                  |
| Starting current drawn by the motor                                                           | 50%                                                                                    | 65%     | 80%     | 65%                                    | 58%                                  |
| Starting torque developed as % of that which would be developed on full voltage starting      | 25%                                                                                    | 42%     | 64%     | 40%                                    | 33%                                  |
| Smoothness of acceleration                                                                    | First in order of Smoothness                                                           |         |         | Third in order of Smoothness           | Second in order of Smoothness        |
| Allowable accelerating times (typical)                                                        | 15 seconds at 200HP max. or 30 seconds on 200HP based on NEMA medium duty transformers |         |         | 5 seconds max. Limited by motor design | 5-60 seconds Limited by motor design |
| Starting current and torque and adjustments                                                   | Adjustable within limits of various taps                                               |         |         | Fixed                                  | Fixed                                |



## Auto Transformer with Solid State Overload, Class 36 &amp; 37

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                       | Coil and Control Voltage                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                   | <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/181.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J". |

## NEMA 1 General Purpose Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | (1¼)                 | 10–40          | A1         | 36EUT6BD        |               | 60                                 | 37EUT6BDD      |               | 60A/250V                       | 37EUT6BDF      |               | 50                          | 37EUT6BDP      |               |
|               | 10     | 2                    | 13–52          | B          | 36FUT6BD        |               | 60                                 | 37FUT6BDD      |               | 60A/250V                       | 37FUT6BDF      |               | 50                          | 37FUT6BDP      |               |
|               | 15     | (2½)                 | 25–100         | B          | 36GUGT6BD       |               | 100                                | 37GUGT6BDD     |               | 100A/250V                      | 37GUGT6BDF     |               | 100                         | 37GUGT6BDP     |               |
|               | 25     | 3                    | 25–100         | B          | 36HUGT6BD       |               | 100                                | 37HUGT6BDD     |               | 100A/250V                      | 37HUGT6BDF     |               | 100                         | 37HUGT6BDP     |               |
|               | 30     | (3½)                 | 50–200         | B          | 36IULT6BD       |               | 200                                | 37IULT6BDD     |               | 200A/250V                      | 37IULT6BDF     |               | 125                         | 37IULT6BDP     |               |
|               | 40     | 4                    | 50–200         | B          | 36JULT6BD       |               | 200                                | 37JULT6BDD     |               | 200A/250V                      | 37JULT6BDF     |               | 150                         | 37JULT6BDP     |               |
|               | 50     | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                         | 37LPST6BDP     |               |
|               | 75     | 5                    | 55–250         | —          | 36LPUT6BD       |               | 400                                | 37LPUT6BDD     |               | 400A/250V                      | 37LPUT6BDF     |               | 400                         | 37LPUT6BDP     |               |
| 230           | 150    | 6                    | 160–630        | —          | 36MPXT6BD       |               | 600                                | 37MPXT6BDD     |               | 600A/250V                      | 37MPXT6BDF     |               | 600                         | 37MPXT6BDP     |               |
|               | 10     | (1¼)                 | 10–40          | A1         | 36EUT2BG        |               | 60                                 | 37EUT2BGD      |               | 60A/250V                       | 37EUT2BGF      |               | 50                          | 37EUT2BGP      |               |
|               | 15     | 2                    | 13–52          | B          | 36FUT2BG        |               | 60                                 | 37FUT2BGD      |               | 60A/250V                       | 37FUT2BGF      |               | 50                          | 37FUT2BGP      |               |
|               | 20     | (2½)                 | 25–100         | B          | 36GUGT2BG       |               | 100                                | 37GUGT2BGD     |               | 100A/250V                      | 37GUGT2BGF     |               | 100                         | 37GUGT2BGP     |               |
|               | 30     | 3                    | 25–100         | B          | 36HUGT2BG       |               | 100                                | 37HUGT2BGD     |               | 100A/250V                      | 37HUGT2BGF     |               | 100                         | 37HUGT2BGP     |               |
|               | 40     | (3½)                 | 50–200         | B          | 36IULT2BG       |               | 200                                | 37IULT2BGD     |               | 200A/250V                      | 37IULT2BGF     |               | 125                         | 37IULT2BGP     |               |
|               | 50     | 4                    | 50–200         | B          | 36JULT2BG       |               | 200                                | 37JULT2BGD     |               | 200A/250V                      | 37JULT2BGF     |               | 150                         | 37JULT2BGP     |               |
|               | 75     | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                         | 37LPST2BGP     |               |
| 460           | 100    | 5                    | 55–250         | —          | 36LPUT2BG       |               | 400                                | 37LPUT2BGD     |               | 400A/250V                      | 37LPUT2BGF     |               | 400                         | 37LPUT2BGP     |               |
|               | 200    | 6                    | 160–630        | —          | 36MPXT2BG       |               | 600                                | 37MPXT2BGD     |               | 600A/250V                      | 37MPXT2BGF     |               | 600                         | 37MPXT2BGP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUT4BH        |               | 60                                 | 37EUT4BHD      |               | 60A/600V                       | 37EUT4BHF      |               | 50                          | 37EUT4BHP      |               |
|               | 25     | 2                    | 13–52          | B          | 36FUT4BH        |               | 60                                 | 37FUT4BHD      |               | 60A/600V                       | 37FUT4BHF      |               | 50                          | 37FUT4BHP      |               |
|               | 30     | (2½)                 | 13–52          | B          | 36GUGT4BH       |               | 100                                | 37GUGT4BHD     |               | 100A/600V                      | 37GUGT4BHF     |               | 100                         | 37GUGT4BHP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGT4BH       |               | 100                                | 37HUGT4BHD     |               | 100A/600V                      | 37HUGT4BHF     |               | 100                         | 37HUGT4BHP     |               |
|               | 75     | (3½)                 | 50–200         | B          | 36IULT4BH       |               | 200                                | 37IULT4BHD     |               | 200A/600V                      | 37IULT4BHF     |               | 125                         | 37IULT4BHP     |               |
|               | 100    | 4                    | 50–200         | B          | 36JULT4BH       |               | 200                                | 37JULT4BHD     |               | 200A/600V                      | 37JULT4BHF     |               | 150                         | 37JULT4BHP     |               |
| 575           | 150    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                         | 37LPST4BHP     |               |
|               | 200    | 5                    | 55–250         | —          | 36LPUT4BH       |               | 400                                | 37LPUT4BHD     |               | 400A/600V                      | 37LPUT4BHF     |               | 400                         | 37LPUT4BHP     |               |
|               | 400    | 6                    | 160–630        | —          | 36MPXT4BH       |               | 600                                | 37MPXT4BHD     |               | 600A/600V                      | 37MPXT4BHF     |               | 600                         | 37MPXT4BHP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUT5BE        |               | 60                                 | 37EUT5BED      |               | 60A/600V                       | 37EUT5BEF      |               | 50                          | 37EUT5BEP      |               |
|               | 25     | 2                    | 13–52          | B          | 36FUT5BE        |               | 60                                 | 37FUT5BED      |               | 60A/600V                       | 37FUT5BEF      |               | 50                          | 37FUT5BEP      |               |
|               | 30     | (2½)                 | 13–52          | B          | 36GUGT5BE       |               | 100                                | 37GUGT5BED     |               | 100A/600V                      | 37GUGT5BEF     |               | 100                         | 37GUGT5BEP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGT5BE       |               | 100                                | 37HUGT5BED     |               | 100A/600V                      | 37HUGT5BEF     |               | 100                         | 37HUGT5BEP     |               |
|               | 75     | (3½)                 | 50–200         | B          | 36IULT5BE       |               | 200                                | 37IULT5BED     |               | 200A/600V                      | 37IULT5BEF     |               | 125                         | 37IULT5BEP     |               |
|               | 100    | 4                    | 50–200         | B          | 36JULT5BE       |               | 200                                | 37JULT5BED     |               | 200A/600V                      | 37JULT5BEF     |               | 150                         | 37JULT5BEP     |               |
|               | 150    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                         | 37LPST5BEP     |               |
|               | 200    | 5                    | 55–250         | —          | 36LPUT5BE       |               | 400                                | 37LPUT5BED     |               | 400A/600V                      | 37LPUT5BEF     |               | 400                         | 37LPUT5BEP     |               |
|               | 400    | 6                    | 160–630        | —          | 36MPXT5BE       |               | 600                                | 37MPXT5BED     |               | 600A/600V                      | 37MPXT5BEF     |               | 600                         | 37MPXT5BEP     |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

## Auto Transformer with Solid State Overload, Class 36 &amp; 37

## Selection

|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/181.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

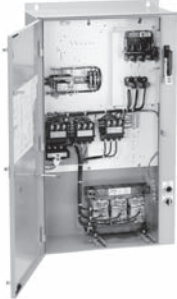
## NEMA 4 Painted Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps       | Catalog Number | List Price \$ |
| 200           | 10     | (1¼)                 | 10–40          | A1         | 36EUT6ED        |               | 60                                 | 37EUT6EDD      |               | 60A/250V                       | 37EUT6EDF      |               | 50                         | 37EUT6EDP      |               |
|               | 10     | 2                    | 13–52          | B          | 36FUT6ED        |               | 60                                 | 37FUT6EDD      |               | 60A/250V                       | 37FUT6EDF      |               | 50                         | 37FUT6EDP      |               |
|               | 15     | (2½)                 | 25–100         | B          | 36GUGT6ED       |               | 100                                | 37GUGT6EDD     |               | 100A/250V                      | 37GUGT6EDF     |               | 100                        | 37GUGT6EDP     |               |
|               | 25     | 3                    | 25–100         | B          | 36HUGT6ED       |               | 100                                | 37HUGT6EDD     |               | 100A/250V                      | 37HUGT6EDF     |               | 100                        | 37HUGT6EDP     |               |
|               | 30     | (3½)                 | 50–200         | B          | 36IUNT6ED       |               | 200                                | 37IUNT6EDD     |               | 200A/250V                      | 37IUNT6EDF     |               | 125                        | 37IUNT6EDP     |               |
|               | 40     | 4                    | 50–200         | B          | 36JUHT6ED       |               | 200                                | 37JUHT6EDD     |               | 200A/250V                      | 37JUHT6EDF     |               | 150                        | 37JUHT6EDP     |               |
|               | 50     | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                        | 37LPST6EDP     |               |
|               | 75     | 5                    | 55–250         | —          | 36LPUT6ED       |               | 400                                | 37LPUT6EDD     |               | 400A/250V                      | 37LPUT6EDF     |               | 400                        | 37LPUT6EDP     |               |
| 150           | 6      | 160–630              | —              | 36MPXT6ED  |                 | 600           | 37MPXT6EDD                         |                | 600A/250V     | 37MPXT6EDF                     |                | 600           | 37MPXT6EDP                 |                |               |
| 230           | 10     | (1¼)                 | 10–40          | A1         | 36EUT2EG        |               | 60                                 | 37EUT2EGD      |               | 60A/250V                       | 37EUT2EGF      |               | 50                         | 37EUT2EGP      |               |
|               | 15     | 2                    | 13–52          | B          | 36FUT2EG        |               | 60                                 | 37FUT2EGD      |               | 60A/250V                       | 37FUT2EGF      |               | 50                         | 37FUT2EGP      |               |
|               | 20     | (2½)                 | 25–100         | B          | 36GUGT2EG       |               | 100                                | 37GUGT2EGD     |               | 100A/250V                      | 37GUGT2EGF     |               | 100                        | 37GUGT2EGP     |               |
|               | 30     | 3                    | 25–100         | B          | 36HUGT2EG       |               | 100                                | 37HUGT2EGD     |               | 100A/250V                      | 37HUGT2EGF     |               | 100                        | 37HUGT2EGP     |               |
|               | 40     | (3½)                 | 50–200         | B          | 36IUNT2EG       |               | 200                                | 37IUNT2EGD     |               | 200A/250V                      | 37IUNT2EGF     |               | 125                        | 37IUNT2EGP     |               |
|               | 50     | 4                    | 50–200         | B          | 36JUHT2EG       |               | 200                                | 37JUHT2EGD     |               | 200A/250V                      | 37JUHT2EGF     |               | 150                        | 37JUHT2EGP     |               |
|               | 75     | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                        | 37LPST2EGP     |               |
|               | 100    | 5                    | 55–250         | —          | 36LPUT2EG       |               | 400                                | 37LPUT2EGD     |               | 400A/250V                      | 37LPUT2EGF     |               | 400                        | 37LPUT2EGP     |               |
| 200           | 6      | 160–630              | —              | 36MPXT2EG  |                 | 600           | 37MPXT2EGD                         |                | 600A/250V     | 37MPXT2EGF                     |                | 600           | 37MPXT2EGP                 |                |               |
| 460           | 15     | (1¼)                 | 10–40          | A1         | 36EUT4EH        |               | 60                                 | 37EUT4EHD      |               | 60A/600V                       | 37EUT4EHF      |               | 50                         | 37EUT4EHP      |               |
|               | 25     | 2                    | 13–52          | B          | 36FUT4EH        |               | 60                                 | 37FUT4EHD      |               | 60A/600V                       | 37FUT4EHF      |               | 50                         | 37FUT4EHP      |               |
|               | 30     | (2½)                 | 13–52          | B          | 36GUGT4EH       |               | 100                                | 37GUGT4EHD     |               | 100A/600V                      | 37GUGT4EHF     |               | 100                        | 37GUGT4EHP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGT4EH       |               | 100                                | 37HUGT4EHD     |               | 100A/600V                      | 37HUGT4EHF     |               | 100                        | 37HUGT4EHP     |               |
|               | 75     | (3½)                 | 50–200         | B          | 36IUNT4EH       |               | 200                                | 37IUNT4EHD     |               | 200A/600V                      | 37IUNT4EHF     |               | 125                        | 37IUNT4EHP     |               |
|               | 100    | 4                    | 50–200         | B          | 36JUHT4EH       |               | 200                                | 37JUHT4EHD     |               | 200A/600V                      | 37JUHT4EHF     |               | 150                        | 37JUHT4EHP     |               |
|               | 150    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                        | 37LPST4EHP     |               |
|               | 200    | 5                    | 55–250         | —          | 36LPUT4EH       |               | 400                                | 37LPUT4EHD     |               | 400A/600V                      | 37LPUT4EHF     |               | 400                        | 37LPUT4EHP     |               |
| 400           | 6      | 160–630              | —              | 36MPXT4EH  |                 | 600           | 37MPXT4EHD                         |                | 600A/600V     | 37MPXT4EHF                     |                | 600           | 37MPXT4EHP                 |                |               |
| 575           | 15     | (1¼)                 | 10–40          | A1         | 36EUT5EE        |               | 60                                 | 37EUT5EED      |               | 60A/600V                       | 37EUT5EEF      |               | 50                         | 37EUT5EEP      |               |
|               | 25     | 2                    | 13–52          | B          | 36FUT5EE        |               | 60                                 | 37FUT5EED      |               | 60A/600V                       | 37FUT5EEF      |               | 50                         | 37FUT5EEP      |               |
|               | 30     | (2½)                 | 13–52          | B          | 36GUGT5EE       |               | 100                                | 37GUGT5EED     |               | 100A/600V                      | 37GUGT5EEF     |               | 100                        | 37GUGT5EEP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGT5EE       |               | 100                                | 37HUGT5EED     |               | 100A/600V                      | 37HUGT5EEF     |               | 100                        | 37HUGT5EEP     |               |
|               | 75     | (3½)                 | 50–200         | B          | 36IUNT5EE       |               | 200                                | 37IUNT5EED     |               | 200A/600V                      | 37IUNT5EEF     |               | 125                        | 37IUNT5EEP     |               |
|               | 100    | 4                    | 50–200         | B          | 36JUHT5EE       |               | 200                                | 37JUHT5EED     |               | 200A/600V                      | 37JUHT5EEF     |               | 150                        | 37JUHT5EEP     |               |
|               | 150    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                        | 37LPST5EEP     |               |
|               | 200    | 5                    | 55–250         | —          | 36LPUT5EE       |               | 400                                | 37LPUT5EED     |               | 400A/600V                      | 37LPUT5EEF     |               | 400                        | 37LPUT5EEP     |               |
| 400           | 6      | 160–630              | —              | 36MPXT5EE  |                 | 600           | 37MPXT5EED                         |                | 600A/600V     | 37MPXT5EEF                     |                | 600           | 37MPXT5EEP                 |                |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

## Auto Transformer with Solid State Overload, Class 36 &amp; 37

## Selection

|                                                                                   |                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/181.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
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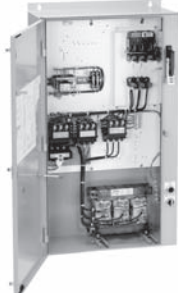
## NEMA 4/4X Stainless Steel Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | (1¼)                 | 10–40          | A1         | 36EUT6WD        |               | 60                                 | 37EUT6WDD      |               | 60A/250V                       | 37EUT6WDF      |               | 50                          | 37EUT6WDP      |               |
|               | 10     | 2                    | 13–52          | B          | 36FUT6WD        |               | 60                                 | 37FUT6WDD      |               | 60A/250V                       | 37FUT6WDF      |               | 50                          | 37FUT6WDP      |               |
|               | 15     | (2½)                 | 25–100         | B          | 36GUGT6WD       |               | 100                                | 37GUGT6WDD     |               | 100A/250V                      | 37GUGT6WDF     |               | 100                         | 37GUGT6WDP     |               |
|               | 25     | 3                    | 25–100         | B          | 36HUGT6WD       |               | 100                                | 37HUGT6WDD     |               | 100A/250V                      | 37HUGT6WDF     |               | 100                         | 37HUGT6WDP     |               |
|               | 30     | (3½)                 | 50–200         | B          | 36IULT6WD       |               | 200                                | 37IULT6WDD     |               | 200A/250V                      | 37IULT6WDF     |               | 125                         | 37IULT6WDP     |               |
|               | 40     | 4                    | 50–200         | B          | 36JUHT6WD       |               | 200                                | 37JUHT6WDD     |               | 200A/250V                      | 37JUHT6WDF     |               | 150                         | 37JUHT6WDP     |               |
| 230           | 10     | (1¼)                 | 10–40          | A1         | 36EUT2WG        |               | 60                                 | 37EUT2WGD      |               | 60A/250V                       | 37EUT2WGF      |               | 50                          | 37EUT2WGP      |               |
|               | 15     | 2                    | 13–52          | B          | 36FUT2WG        |               | 60                                 | 37FUT2WGD      |               | 60A/250V                       | 37FUT2WGF      |               | 50                          | 37FUT2WGP      |               |
|               | 20     | (2½)                 | 25–100         | B          | 36GUGT2WG       |               | 100                                | 37GUGT2WGD     |               | 100A/250V                      | 37GUGT2WGF     |               | 100                         | 37GUGT2WGP     |               |
|               | 30     | 3                    | 25–100         | B          | 36HUGT2WG       |               | 100                                | 37HUGT2WGD     |               | 100A/250V                      | 37HUGT2WGF     |               | 100                         | 37HUGT2WGP     |               |
|               | 40     | (3½)                 | 50–200         | B          | 36IULT2WG       |               | 200                                | 37IULT2WGD     |               | 200A/250V                      | 37IULT2WGF     |               | 125                         | 37IULT2WGP     |               |
|               | 50     | 4                    | 50–200         | B          | 36JUHT2WG       |               | 200                                | 37JUHT2WGD     |               | 200A/250V                      | 37JUHT2WGF     |               | 150                         | 37JUHT2WGP     |               |
| 460           | 15     | (1¼)                 | 10–40          | A1         | 36EUT4WH        |               | 60                                 | 37EUT4WHD      |               | 60A/600V                       | 37EUT4WHF      |               | 50                          | 37EUT4WHP      |               |
|               | 25     | 2                    | 13–52          | B          | 36FUT4WH        |               | 60                                 | 37FUT4WHD      |               | 60A/600V                       | 37FUT4WHF      |               | 50                          | 37FUT4WHP      |               |
|               | 30     | (2½)                 | 13–52          | B          | 36GUGT4WH       |               | 100                                | 37GUGT4WHD     |               | 100A/600V                      | 37GUGT4WHF     |               | 100                         | 37GUGT4WHP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGT4WH       |               | 100                                | 37HUGT4WHD     |               | 100A/600V                      | 37HUGT4WHF     |               | 100                         | 37HUGT4WHP     |               |
|               | 75     | (3½)                 | 50–200         | B          | 36IULT4WH       |               | 200                                | 37IULT4WHD     |               | 200A/600V                      | 37IULT4WHF     |               | 125                         | 37IULT4WHP     |               |
|               | 100    | 4                    | 50–200         | B          | 36JUHT4WH       |               | 200                                | 37JUHT4WHD     |               | 200A/600V                      | 37JUHT4WHF     |               | 150                         | 37JUHT4WHP     |               |
| 575           | 15     | (1¼)                 | 10–40          | A1         | 36EUT5WE        |               | 60                                 | 37EUT5WED      |               | 60A/600V                       | 37EUT5WEF      |               | 50                          | 37EUT5WEP      |               |
|               | 25     | 2                    | 13–52          | B          | 36FUT5WE        |               | 60                                 | 37FUT5WED      |               | 60A/600V                       | 37FUT5WEF      |               | 50                          | 37FUT5WEP      |               |
|               | 30     | (2½)                 | 13–52          | B          | 36GUGT5WE       |               | 100                                | 37GUGT5WED     |               | 100A/600V                      | 37GUGT5WEF     |               | 100                         | 37GUGT5WEP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGT5WE       |               | 100                                | 37HUGT5WED     |               | 100A/600V                      | 37HUGT5WEF     |               | 100                         | 37HUGT5WEP     |               |
|               | 75     | (3½)                 | 50–200         | B          | 36IULT5WE       |               | 200                                | 37IULT5WED     |               | 200A/600V                      | 37IULT5WEF     |               | 125                         | 37IULT5WEP     |               |
|               | 100    | 4                    | 50–200         | B          | 36JUHT5WE       |               | 200                                | 37JUHT5WED     |               | 200A/600V                      | 37JUHT5WEF     |               | 150                         | 37JUHT5WEP     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

## Auto Transformer with Solid State Overload, Class 36 &amp; 37

## Selection

|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/181.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
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NEMA 12 Enclosures (Supplied as NEMA 12, field convertible to 3/3R)<sup>①</sup>

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | (1¼)                 | 10–40          | A1         | 36EUT6ND        |               | 60                                 | 37EUT6NDD      |               | 60A/250V                       | 37EUT6NDF      |               | 50                          | 37EUT6NDP      |               |
|               | 10     | 2                    | 13–52          | B          | 36FUT6ND        |               | 60                                 | 37FUT6NDD      |               | 60A/250V                       | 37FUT6NDF      |               | 50                          | 37FUT6NDP      |               |
|               | 15     | (2½)                 | 25–100         | B          | 36GUGT6ND       |               | 100                                | 37GUGT6NDD     |               | 100A/250V                      | 37GUGT6NDF     |               | 100                         | 37GUGT6NDP     |               |
|               | 25     | 3                    | 25–100         | B          | 36HUGT6ND       |               | 100                                | 37HUGT6NDD     |               | 100A/250V                      | 37HUGT6NDF     |               | 100                         | 37HUGT6NDP     |               |
|               | 30     | (3½)                 | 50–200         | B          | 36IULT6ND       |               | 200                                | 37IULT6NDD     |               | 200A/250V                      | 37IULT6NDF     |               | 125                         | 37IULT6NDP     |               |
|               | 40     | 4                    | 50–200         | B          | 36JULT6ND       |               | 200                                | 37JULT6NDD     |               | 200A/250V                      | 37JULT6NDF     |               | 150                         | 37JULT6NDP     |               |
|               | 50     | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                         | 37LPST6NDP     |               |
|               | 75     | 5                    | 55–250         | —          | 36LPUT6ND       |               | 400                                | 37LPUT6NDD     |               | 400A/250V                      | 37LPUT6NDF     |               | 400                         | 37LPUT6NDP     |               |
| 230           | 150    | 6                    | 160–630        | —          | 36MPXT6ND       |               | 600                                | 37MPXT6NDD     |               | 600A/250V                      | 37MPXT6NDF     |               | 600                         | 37MPXT6NDP     |               |
|               | 10     | (1¼)                 | 10–40          | A1         | 36EUT2NG        |               | 60                                 | 37EUT2NGD      |               | 60A/250V                       | 37EUT2NGF      |               | 50                          | 37EUT2NGP      |               |
|               | 15     | 2                    | 13–52          | B          | 36FUT2NG        |               | 60                                 | 37FUT2NGD      |               | 60A/250V                       | 37FUT2NGF      |               | 50                          | 37FUT2NGP      |               |
|               | 20     | (2½)                 | 25–100         | B          | 36GUGT2NG       |               | 100                                | 37GUGT2NGD     |               | 100A/250V                      | 37GUGT2NGF     |               | 100                         | 37GUGT2NGP     |               |
|               | 30     | 3                    | 25–100         | B          | 36HUGT2NG       |               | 100                                | 37HUGT2NGD     |               | 100A/250V                      | 37HUGT2NGF     |               | 100                         | 37HUGT2NGP     |               |
|               | 40     | (3½)                 | 50–200         | B          | 36IULT2NG       |               | 200                                | 37IULT2NGD     |               | 200A/250V                      | 37IULT2NGF     |               | 125                         | 37IULT2NGP     |               |
|               | 50     | 4                    | 50–200         | B          | 36JULT2NG       |               | 200                                | 37JULT2NGD     |               | 200A/250V                      | 37JULT2NGF     |               | 150                         | 37JULT2NGP     |               |
|               | 75     | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                         | 37LPST2NGP     |               |
| 460           | 100    | 5                    | 55–250         | —          | 36LPUT2NG       |               | 400                                | 37LPUT2NGD     |               | 400A/250V                      | 37LPUT2NGF     |               | 400                         | 37LPUT2NGP     |               |
|               | 200    | 6                    | 160–630        | —          | 36MPXT2NG       |               | 600                                | 37MPXT2NGD     |               | 600A/250V                      | 37MPXT2NGF     |               | 600                         | 37MPXT2NGP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUT4NH        |               | 60                                 | 37EUT4NHD      |               | 60A/600V                       | 37EUT4NHF      |               | 50                          | 37EUT4NHP      |               |
|               | 25     | 2                    | 13–52          | B          | 36FUT4NH        |               | 60                                 | 37FUT4NHD      |               | 60A/600V                       | 37FUT4NHF      |               | 50                          | 37FUT4NHP      |               |
|               | 30     | (2½)                 | 13–52          | B          | 36GUGT4NH       |               | 100                                | 37GUGT4NHD     |               | 100A/600V                      | 37GUGT4NHF     |               | 100                         | 37GUGT4NHP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGT4NH       |               | 100                                | 37HUGT4NHD     |               | 100A/600V                      | 37HUGT4NHF     |               | 100                         | 37HUGT4NHP     |               |
|               | 75     | (3½)                 | 50–200         | B          | 36IULT4NH       |               | 200                                | 37IULT4NHD     |               | 200A/600V                      | 37IULT4NHF     |               | 125                         | 37IULT4NHP     |               |
|               | 100    | 4                    | 50–200         | B          | 36JULT4NH       |               | 200                                | 37JULT4NHD     |               | 200A/600V                      | 37JULT4NHF     |               | 150                         | 37JULT4NHP     |               |
| 575           | 150    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                         | 37LPST4NHP     |               |
|               | 200    | 5                    | 55–250         | —          | 36LPUT4NH       |               | 400                                | 37LPUT4NHD     |               | 400A/600V                      | 37LPUT4NHF     |               | 400                         | 37LPUT4NHP     |               |
|               | 400    | 6                    | 160–630        | —          | 36MPXT4NH       |               | 600                                | 37MPXT4NHD     |               | 600A/600V                      | 37MPXT4NHF     |               | 600                         | 37MPXT4NHP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUT5NE        |               | 60                                 | 37EUT5NED      |               | 60A/600V                       | 37EUT5NEF      |               | 50                          | 37EUT5NEP      |               |
|               | 25     | 2                    | 13–52          | B          | 36FUT5NE        |               | 60                                 | 37FUT5NED      |               | 60A/600V                       | 37FUT5NEF      |               | 50                          | 37FUT5NEP      |               |
|               | 30     | (2½)                 | 13–52          | B          | 36GUGT5NE       |               | 100                                | 37GUGT5NED     |               | 100A/600V                      | 37GUGT5NEF     |               | 100                         | 37GUGT5NEP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGT5NE       |               | 100                                | 37HUGT5NED     |               | 100A/600V                      | 37HUGT5NEF     |               | 100                         | 37HUGT5NEP     |               |
|               | 75     | (3½)                 | 50–200         | B          | 36IULT5NE       |               | 200                                | 37IULT5NED     |               | 200A/600V                      | 37IULT5NEF     |               | 125                         | 37IULT5NEP     |               |
|               | 100    | 4                    | 50–200         | B          | 36JULT5NE       |               | 200                                | 37JULT5NED     |               | 200A/600V                      | 37JULT5NEF     |               | 150                         | 37JULT5NEP     |               |
|               | 150    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 250                         | 37LPST5NEP     |               |
|               | 200    | 5                    | 55–250         | —          | 36LPUT5NE       |               | 400                                | 37LPUT5NED     |               | 400A/600V                      | 37LPUT5NEF     |               | 400                         | 37LPUT5NEP     |               |
|               | 400    | 6                    | 160–630        | —          | 36MPXT5NE       |               | 600                                | 37MPXT5NED     |               | 600A/600V                      | 37MPXT5NEF     |               | 600                         | 37MPXT5NEP     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

<sup>①</sup> See page 9/110 for conduit hubs and conversion instructions.

## 2 Step Part Winding with Solid State Overload, Class 36 &amp; 37

## Selection

|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/180.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
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## NEMA 1 General Purpose Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 7½     | 0                    | 5.5–22         | A1         | 36CUDP6BD       |               | 60                                 | 37CUDP6BDD     |               | 60A/250V                       | 37CUDP6BDF     |               | 30                          | 37CUDP6BDP     |               |
|               | 10     | 1                    | 5.5–22         | A1         | 36DUDP6BD       |               | 60                                 | 37DUDP6BDD     |               | 60A/250V                       | 37DUDP6BDF     |               | 50                          | 37DUDP6BDP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUEP6BD       |               | 100                                | 37EUEP6BDD     |               | 100A/250V                      | 37EUEP6BDF     |               | 100                         | 37EUEP6BDP     |               |
|               | 20     | 2                    | 13–52          | B          | 36FUF6BD        |               | 100                                | 37FUF6BDD      |               | 100A/250V                      | 37FUF6BDF      |               | 100                         | 37FUF6BDP      |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGP6BD       |               | 200                                | 37GUGP6BDD     |               | 200A/250V                      | 37GUGP6BDF     |               | 125                         | 37GUGP6BDP     |               |
|               | 40     | 3                    | 25–100         | B          | 36HUGP6BD       |               | 200                                | 37HUGP6BDD     |               | 200A/250V                      | 37HUGP6BDF     |               | 150                         | 37HUGP6BDP     |               |
|               | 50     | (3½)                 | 50–200         | B          | 36IUHP6BD       |               | 200                                | 37IUHP6BDD     |               | 200A/250V                      | 37IUHP6BDF     |               | 250                         | 37IUHP6BDP     |               |
|               | 75     | 4                    | 50–200         | B          | 36JUHP6BD       |               | 400                                | 37JUHP6BDD     |               | 400A/250V                      | 37JUHP6BDF     |               | 400                         | 37JUHP6BDP     |               |
| 100           | 5      | 55–250               | —              | —          |                 | —             | —                                  |                | —             | —                              |                | 600           | 37LSP6BDP                   |                |               |
| 150           | 5      | 55–250               | —              | —          | 36LPUP6BD       |               | 600                                | 37LPUP6BDD     |               | 600A/250V                      | 37LPUP6BDF     |               | 600                         | 37LPUP6BDP     |               |
| 230           | 7½     | 0                    | 5.5–22         | A1         | 36CUDP2BG       |               | 60                                 | 37CUDP2BGD     |               | 60A/250V                       | 37CUDP2BGF     |               | 30                          | 37CUDP2BGP     |               |
|               | 10     | 1                    | 5.5–22         | A1         | 36DUDP2BG       |               | 60                                 | 37DUDP2BGD     |               | 60A/250V                       | 37DUDP2BGF     |               | 50                          | 37DUDP2BGP     |               |
|               | 20     | (1½)                 | 10–40          | A1         | 36EUEP2BG       |               | 100                                | 37EUEP2BGD     |               | 100A/250V                      | 37EUEP2BGF     |               | 100                         | 37EUEP2BGP     |               |
|               | 25     | 2                    | 13–52          | B          | 36FUF2BG        |               | 100                                | 37FUF2BGD      |               | 100A/250V                      | 37FUF2BGF      |               | 100                         | 37FUF2BGP      |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGP2BG       |               | 200                                | 37GUGP2BGD     |               | 200A/250V                      | 37GUGP2BGF     |               | 100                         | 37GUGP2BGP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGP2BG       |               | 200                                | 37HUGP2BGD     |               | 200A/250V                      | 37HUGP2BGF     |               | 150                         | 37HUGP2BGP     |               |
|               | 60     | (3½)                 | 50–200         | B          | 36IUHP2BG       |               | 200                                | 37IUHP2BGD     |               | 200A/250V                      | 37IUHP2BGF     |               | 250                         | 37IUHP2BGP     |               |
|               | 75     | 4                    | 50–200         | B          | 36JUHP2BG       |               | 400                                | 37JUHP2BGD     |               | 400A/250V                      | 37JUHP2BGF     |               | 250                         | 37JUHP2BGP     |               |
| 125           | 5      | 55–250               | —              | —          |                 | —             | —                                  |                | —             | —                              |                | 400           | 37LSP2BGP                   |                |               |
| 150           | 5      | 55–250               | —              | —          | 36LPUP2BG       |               | 600                                | 37LPUP2BGD     |               | 600A/250V                      | 37LPUP2BGF     |               | 600                         | 37LPUP2BGP     |               |
| 300           | 6      | 160–630              | —              | —          | 36MPXP2BG       |               | 1200                               | 37MPXP2BGD     |               | 1200A/250V                     | 37MPXP2BGF     |               | 1200                        | 37MPXP2BGP     |               |
| 460           | 10     | 0                    | 5.5–22         | A1         | 36CUDP4BH       |               | 30                                 | 37CUDP4BHD     |               | 30A/600V                       | 37CUDP4BHF     |               | 30                          | 37CUDP4BHP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDP4BH       |               | 60                                 | 37DUDP4BHD     |               | 60A/600V                       | 37DUDP4BHF     |               | 30                          | 37DUDP4BHP     |               |
|               | 30     | (1¼)                 | 10–40          | A1         | 36EUEP4BH       |               | 60                                 | 37EUEP4BHD     |               | 60A/600V                       | 37EUEP4BHF     |               | 50                          | 37EUEP4BHP     |               |
|               | 40     | 2                    | 13–52          | B          | 36FUF4BH        |               | 100                                | 37FUF4BHD      |               | 100A/600V                      | 37FUF4BHF      |               | 100                         | 37FUF4BHP      |               |
|               | 60     | (2½)                 | 25–100         | B          | 36GUGP4BH       |               | 200                                | 37GUGP4BHD     |               | 200A/600V                      | 37GUGP4BHF     |               | 100                         | 37GUGP4BHP     |               |
|               | 75     | 3                    | 25–100         | B          | 36HUGP4BH       |               | 200                                | 37HUGP4BHD     |               | 200A/600V                      | 37HUGP4BHF     |               | 125                         | 37HUGP4BHP     |               |
|               | 100    | (3½)                 | 50–200         | B          | 36IUHP4BH       |               | 200                                | 37IUHP4BHD     |               | 200A/600V                      | 37IUHP4BHF     |               | 150                         | 37IUHP4BHP     |               |
|               | 150    | 4                    | 50–200         | B          | 36JUHP4BH       |               | 400                                | 37JUHP4BHD     |               | 400A/600V                      | 37JUHP4BHF     |               | 250                         | 37JUHP4BHP     |               |
| 250           | 5      | 55–250               | —              | —          |                 | —             | —                                  |                | —             | —                              |                | 400           | 37LSP4BHP                   |                |               |
| 350           | 5      | 55–250               | —              | —          | 36LPUP4BH       |               | 600                                | 37LPUP4BHD     |               | 600A/600V                      | 37LPUP4BHF     |               | 600                         | 37LPUP4BHP     |               |
| 600           | 6      | 160–630              | —              | —          | 36MPXP4BH       |               | 1200                               | 37MPXP4BHD     |               | 1200A/600V                     | 37MPXP4BHF     |               | 1200                        | 37MPXP4BHP     |               |
| 575           | 10     | 0                    | 5.5–22         | A1         | 36CUDP5BE       |               | 30                                 | 37CUDP5BED     |               | 30A/600V                       | 37CUDP5BEF     |               | 30                          | 37CUDP5BEP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDP5BE       |               | 60                                 | 37DUDP5BED     |               | 60A/600V                       | 37DUDP5BEF     |               | 30                          | 37DUDP5BEP     |               |
|               | 30     | (1¼)                 | 10–40          | A1         | 36EUEP5BE       |               | 60                                 | 37EUEP5BED     |               | 60A/600V                       | 37EUEP5BEF     |               | 50                          | 37EUEP5BEP     |               |
|               | 40     | 2                    | 13–52          | B          | 36FUF5BE        |               | 60                                 | 37FUF5BED      |               | 60A/600V                       | 37FUF5BEF      |               | 50                          | 37FUF5BEP      |               |
|               | 60     | (2½)                 | 25–100         | B          | 36GUGP5BE       |               | 100                                | 37GUGP5BED     |               | 100A/600V                      | 37GUGP5BEF     |               | 100                         | 37GUGP5BEP     |               |
|               | 75     | 3                    | 25–100         | B          | 36HUGP5BE       |               | 200                                | 37HUGP5BED     |               | 200A/600V                      | 37HUGP5BEF     |               | 125                         | 37HUGP5BEP     |               |
|               | 100    | (3½)                 | 50–200         | B          | 36IUHP5BE       |               | 400                                | 37IUHP5BED     |               | 400A/600V                      | 37IUHP5BEF     |               | 150                         | 37IUHP5BEP     |               |
|               | 150    | 4                    | 50–200         | B          | 36JUHP5BE       |               | 400                                | 37JUHP5BED     |               | 400A/600V                      | 37JUHP5BEF     |               | 250                         | 37JUHP5BEP     |               |
| 250           | 5      | 55–250               | —              | —          |                 | —             | —                                  |                | 400A/600V     | 37LSP5BEF                      |                | —             | —                           |                |               |
| 350           | 5      | 55–250               | —              | —          | 36LPUP5BE       |               | 600                                | 37LPUP5BED     |               | 600A/600V                      | 37LPUP5BEF     |               | 400                         | 37LPUP5BEP     |               |
| 600           | 6      | 160–630              | —              | —          | 36MPXP5BE       |               | 1200                               | 37MPXP5BED     |               | 1200A/600V                     | 37MPXP5BEF     |               | 1200                        | 37MPXP5BEP     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).



## 2 Step Part Winding with Solid State Overload, Class 36 &amp; 37

## Selection

|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/180.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
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## NEMA 4 Painted Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 7½     | 0                    | 5.5–22         | A1         | 36CUDP6ED       |               | 60                                 | 37CUDP6EDD     |               | 60A/250V                       | 37CUDP6EDF     |               | 30                          | 37CUDP6EDP     |               |
|               | 10     | 1                    | 5.5–22         | A1         | 36DUDP6ED       |               | 60                                 | 37DUDP6EDD     |               | 60A/250V                       | 37DUDP6EDF     |               | 50                          | 37DUDP6EDP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUEP6ED       |               | 100                                | 37EUEP6EDD     |               | 100A/250V                      | 37EUEP6EDF     |               | 100                         | 37EUEP6EDP     |               |
|               | 20     | 2                    | 13–52          | B          | 36FUFFP6ED      |               | 100                                | 37FUFFP6EDD    |               | 100A/250V                      | 37FUFFP6EDF    |               | 100                         | 37FUFFP6EDP    |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGP6ED       |               | 200                                | 37GUGP6EDD     |               | 200A/250V                      | 37GUGP6EDF     |               | 125                         | 37GUGP6EDP     |               |
|               | 40     | 3                    | 25–100         | B          | 36HUGP6ED       |               | 200                                | 37HUGP6EDD     |               | 200A/250V                      | 37HUGP6EDF     |               | 150                         | 37HUGP6EDP     |               |
|               | 50     | (3½)                 | 50–200         | B          | 36IUHP6ED       |               | 200                                | 37IUHP6EDD     |               | 200A/250V                      | 37IUHP6EDF     |               | 250                         | 37IUHP6EDP     |               |
|               | 75     | 4                    | 50–200         | B          | 36JUHP6ED       |               | 400                                | 37JUHP6EDD     |               | 400A/250V                      | 37JUHP6EDF     |               | 400                         | 37JUHP6EDP     |               |
|               | 100    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 600                         | 37LSP6EDP      |               |
| 150           | 5      | 55–250               | —              | 36LPUP6ED  |                 | 600           | 37LPUP6EDD                         |                | 600A/250V     | 37LPUP6EDF                     |                | 600           | 37LPUP6EDP                  |                |               |
| 230           | 7½     | 0                    | 5.5–22         | A1         | 36CUDP2EG       |               | 60                                 | 37CUDP2EGD     |               | 60A/250V                       | 37CUDP2EGF     |               | 30                          | 37CUDP2EGP     |               |
|               | 10     | 1                    | 5.5–22         | A1         | 36DUDP2EG       |               | 60                                 | 37DUDP2EGD     |               | 60A/250V                       | 37DUDP2EGF     |               | 50                          | 37DUDP2EGP     |               |
|               | 20     | (1½)                 | 10–40          | A1         | 36EUEP2EG       |               | 100                                | 37EUEP2EGD     |               | 100A/250V                      | 37EUEP2EGF     |               | 100                         | 37EUEP2EGP     |               |
|               | 25     | 2                    | 13–52          | B          | 36FUFFP2EG      |               | 100                                | 37FUFFP2EGD    |               | 100A/250V                      | 37FUFFP2EGF    |               | 100                         | 37FUFFP2EGP    |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGP2EG       |               | 200                                | 37GUGP2EGD     |               | 200A/250V                      | 37GUGP2EGF     |               | 100                         | 37GUGP2EGP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGP2EG       |               | 200                                | 37HUGP2EGD     |               | 200A/250V                      | 37HUGP2EGF     |               | 150                         | 37HUGP2EGP     |               |
|               | 60     | (3½)                 | 50–200         | B          | 36IUHP2EG       |               | 200                                | 37IUHP2EGD     |               | 200A/250V                      | 37IUHP2EGF     |               | 250                         | 37IUHP2EGP     |               |
|               | 75     | 4                    | 50–200         | B          | 36JUHP2EG       |               | 400                                | 37JUHP2EGD     |               | 400A/250V                      | 37JUHP2EGF     |               | 250                         | 37JUHP2EGP     |               |
|               | 125    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 400                         | 37LSP2EGP      |               |
| 150           | 5      | 55–250               | —              | 36LPUP2EG  |                 | 600           | 37LPUP2EGD                         |                | 600A/250V     | 37LPUP2EGF                     |                | 600           | 37LPUP2EGP                  |                |               |
| 300           | 6      | 160–630              | —              | 36MPXP2EG  |                 | 1200          | 37MPXP2EGD                         |                | 1200A/250V    | 37MPXP2EGF                     |                | 1200          | 37MPXP2EGP                  |                |               |
| 460           | 10     | 0                    | 5.5–22         | A1         | 36CUDP4EH       |               | 30                                 | 37CUDP4EHD     |               | 30A/600V                       | 37CUDP4EHF     |               | 30                          | 37CUDP4EHP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDP4EH       |               | 60                                 | 37DUDP4EHD     |               | 60A/600V                       | 37DUDP4EHF     |               | 30                          | 37DUDP4EHP     |               |
|               | 30     | (1¼)                 | 10–40          | A1         | 36EUEP4EH       |               | 60                                 | 37EUEP4EHD     |               | 60A/600V                       | 37EUEP4EHF     |               | 50                          | 37EUEP4EHP     |               |
|               | 40     | 2                    | 13–52          | B          | 36FUFFP4EH      |               | 100                                | 37FUFFP4EHD    |               | 100A/600V                      | 37FUFFP4EHF    |               | 100                         | 37FUFFP4EHP    |               |
|               | 60     | (2½)                 | 25–100         | B          | 36GUGP4EH       |               | 200                                | 37GUGP4EHD     |               | 200A/600V                      | 37GUGP4EHF     |               | 100                         | 37GUGP4EHP     |               |
|               | 75     | 3                    | 25–100         | B          | 36HUGP4EH       |               | 200                                | 37HUGP4EHD     |               | 200A/600V                      | 37HUGP4EHF     |               | 125                         | 37HUGP4EHP     |               |
|               | 100    | (3½)                 | 50–200         | B          | 36IUHP4EH       |               | 200                                | 37IUHP4EHD     |               | 200A/600V                      | 37IUHP4EHF     |               | 150                         | 37IUHP4EHP     |               |
|               | 150    | 4                    | 50–200         | B          | 36JUHP4EH       |               | 400                                | 37JUHP4EHD     |               | 400A/600V                      | 37JUHP4EHF     |               | 250                         | 37JUHP4EHP     |               |
|               | 250    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                              | —              |               | 400                         | 37LSP4EHP      |               |
| 350           | 5      | 55–250               | —              | 36LPUP4EH  |                 | 600           | 37LPUP4EHD                         |                | 600A/600V     | 37LPUP4EHF                     |                | 600           | 37LPUP4EHP                  |                |               |
| 600           | 6      | 160–630              | —              | 36MPXP4EH  |                 | 1200          | 37MPXP4EHD                         |                | 1200A/600V    | 37MPXP4EHF                     |                | 1200          | 37MPXP4EHP                  |                |               |
| 575           | 10     | 0                    | 5.5–22         | A1         | 36CUDP5EE       |               | 30                                 | 37CUDP5EED     |               | 30A/600V                       | 37CUDP5EEF     |               | 30                          | 37CUDP5EEP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDP5EE       |               | 60                                 | 37DUDP5EED     |               | 60A/600V                       | 37DUDP5EEF     |               | 30                          | 37DUDP5EEP     |               |
|               | 30     | (1¼)                 | 10–40          | A1         | 36EUEP5EE       |               | 60                                 | 37EUEP5EED     |               | 60A/600V                       | 37EUEP5EEF     |               | 50                          | 37EUEP5EEP     |               |
|               | 40     | 2                    | 13–52          | B          | 36FUFFP5EE      |               | 60                                 | 37FUFFP5EED    |               | 60A/600V                       | 37FUFFP5EEF    |               | 50                          | 37FUFFP5EEP    |               |
|               | 60     | (2½)                 | 25–100         | B          | 36GUGP5EE       |               | 100                                | 37GUGP5EED     |               | 100A/600V                      | 37GUGP5EEF     |               | 100                         | 37GUGP5EEP     |               |
|               | 75     | 3                    | 25–100         | B          | 36HUGP5EE       |               | 200                                | 37HUGP5EED     |               | 200A/600V                      | 37HUGP5EEF     |               | 125                         | 37HUGP5EEP     |               |
|               | 100    | (3½)                 | 50–200         | B          | 36IUHP5EE       |               | 400                                | 37IUHP5EED     |               | 400A/600V                      | 37IUHP5EEF     |               | 150                         | 37IUHP5EEP     |               |
|               | 150    | 4                    | 50–200         | B          | 36JUHP5EE       |               | 400                                | 37JUHP5EED     |               | 400A/600V                      | 37JUHP5EEF     |               | 250                         | 37JUHP5EEP     |               |
|               | 250    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | 400A/600V                      | 37LSP5EEF      |               | —                           | —              |               |
| 350           | 5      | 55–250               | —              | 36LPUP5EE  |                 | 600           | 37LPUP5EED                         |                | 600A/600V     | 37LPUP5EEF                     |                | 400           | 37LPUP5EEP                  |                |               |
| 600           | 6      | 160–630              | —              | 36MPXP5EE  |                 | 1200          | 37MPXP5EED                         |                | 1200A/600V    | 37MPXP5EEF                     |                | 1200          | 37MPXP5EEP                  |                |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

## 2 Step Part Winding with Solid State Overload, Class 36 &amp; 37

## Selection

|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/180.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
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## NEMA 4/4X Stainless Steel Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 7½     | 0                    | 5.5–22         | A1         | 36CUDP6WDD      |               | 60                                 | 37CUDP6WDD     |               | 60A/250V                       | 37CUDP6WDF     | 30                          | 37CUDP6WDP     |               |
|               | 10     | 1                    | 5.5–22         | A1         | 36DUDP6WDD      |               | 60                                 | 37DUDP6WDD     |               | 60A/250V                       | 37DUDP6WDF     | 50                          | 37DUDP6WDP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUEP6WDD      |               | 100                                | 37EUEP6WDD     |               | 100A/250V                      | 37EUEP6WDF     | 100                         | 37EUEP6WDP     |               |
|               | 20     | 2                    | 13–52          | B          | 36FUEP6WDD      |               | 100                                | 37FUEP6WDD     |               | 100A/250V                      | 37FUEP6WDF     | 100                         | 37FUEP6WDP     |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGP6WDD      |               | 200                                | 37GUGP6WDD     |               | 200A/250V                      | 37GUGP6WDF     | 125                         | 37GUGP6WDP     |               |
|               | 40     | 3                    | 25–100         | B          | 36HUGP6WDD      |               | 200                                | 37HUGP6WDD     |               | 200A/250V                      | 37HUGP6WDF     | 150                         | 37HUGP6WDP     |               |
|               | 50     | (3½)                 | 50–200         | B          | 36IUHP6WDD      |               | 200                                | 37IUHP6WDD     |               | 200A/250V                      | 37IUHP6WDF     | 250                         | 37IUHP6WDP     |               |
| 230           | 7½     | 0                    | 5.5–22         | A1         | 36CUDP2WGD      |               | 60                                 | 37CUDP2WGD     |               | 60A/250V                       | 37CUDP2WGF     | 30                          | 37CUDP2WGP     |               |
|               | 10     | 1                    | 5.5–22         | A1         | 36DUDP2WGD      |               | 60                                 | 37DUDP2WGD     |               | 60A/250V                       | 37DUDP2WGF     | 50                          | 37DUDP2WGP     |               |
|               | 20     | (1½)                 | 10–40          | A1         | 36EUEP2WGD      |               | 100                                | 37EUEP2WGD     |               | 100A/250V                      | 37EUEP2WGF     | 100                         | 37EUEP2WGP     |               |
|               | 25     | 2                    | 13–52          | B          | 36FUEP2WGD      |               | 100                                | 37FUEP2WGD     |               | 100A/250V                      | 37FUEP2WGF     | 100                         | 37FUEP2WGP     |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGP2WGD      |               | 200                                | 37GUGP2WGD     |               | 200A/250V                      | 37GUGP2WGF     | 100                         | 37GUGP2WGP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGP2WGD      |               | 200                                | 37HUGP2WGD     |               | 200A/250V                      | 37HUGP2WGF     | 150                         | 37HUGP2WGP     |               |
|               | 60     | (3½)                 | 50–200         | B          | 36IUHP2WGD      |               | 200                                | 37IUHP2WGD     |               | 200A/250V                      | 37IUHP2WGF     | 250                         | 37IUHP2WGP     |               |
| 460           | 7½     | 0                    | 5.5–22         | A1         | 36CUDP4WHD      |               | 30                                 | 37CUDP4WHD     |               | 30A/600V                       | 37CUDP4WHF     | 30                          | 37CUDP4WHP     |               |
|               | 10     | 1                    | 5.5–22         | A1         | 36DUDP4WHD      |               | 60                                 | 37DUDP4WHD     |               | 60A/600V                       | 37DUDP4WHF     | 30                          | 37DUDP4WHP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUEP4WHD      |               | 60                                 | 37EUEP4WHD     |               | 60A/600V                       | 37EUEP4WHF     | 50                          | 37EUEP4WHP     |               |
|               | 20     | 2                    | 13–52          | B          | 36FUEP4WHD      |               | 100                                | 37FUEP4WHD     |               | 100A/600V                      | 37FUEP4WHF     | 100                         | 37FUEP4WHP     |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGP4WHD      |               | 200                                | 37GUGP4WHD     |               | 200A/600V                      | 37GUGP4WHF     | 100                         | 37GUGP4WHP     |               |
|               | 40     | 3                    | 25–100         | B          | 36HUGP4WHD      |               | 200                                | 37HUGP4WHD     |               | 200A/600V                      | 37HUGP4WHF     | 125                         | 37HUGP4WHP     |               |
|               | 50     | (3½)                 | 50–200         | B          | 36IUHP4WHD      |               | 200                                | 37IUHP4WHD     |               | 200A/600V                      | 37IUHP4WHF     | 150                         | 37IUHP4WHP     |               |
| 575           | 10     | 0                    | 5.5–22         | A1         | 36CUDP5WED      |               | 30                                 | 37CUDP5WED     |               | 30A/600V                       | 37CUDP5WEF     | 30                          | 37CUDP5WEP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDP5WED      |               | 60                                 | 37DUDP5WED     |               | 60A/600V                       | 37DUDP5WEF     | 30                          | 37DUDP5WEP     |               |
|               | 20     | (1¼)                 | 10–40          | A1         | 36EUEP5WED      |               | 60                                 | 37EUEP5WED     |               | 60A/600V                       | 37EUEP5WEF     | 50                          | 37EUEP5WEP     |               |
|               | 30     | 2                    | 13–52          | B          | 36FUEP5WED      |               | 60                                 | 37FUEP5WED     |               | 60A/600V                       | 37FUEP5WEF     | 50                          | 37FUEP5WEP     |               |
|               | 40     | (2½)                 | 25–100         | B          | 36GUGP5WED      |               | 100                                | 37GUGP5WED     |               | 100A/600V                      | 37GUGP5WEF     | 100                         | 37GUGP5WEP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGP5WED      |               | 200                                | 37HUGP5WED     |               | 200A/600V                      | 37HUGP5WEF     | 125                         | 37HUGP5WEP     |               |
|               | 60     | (3½)                 | 50–200         | B          | 36IUHP5WED      |               | 400                                | 37IUHP5WED     |               | 400A/600V                      | 37IUHP5WEF     | 150                         | 37IUHP5WEP     |               |
| 575           | 100    | 4                    | 50–200         | B          | 36JUHP5WED      |               | 400                                | 37JUHP5WED     |               | 400A/600V                      | 37JUHP5WEF     | 250                         | 37JUHP5WEP     |               |
|               | 150    | 4                    | 50–200         | B          | 36JUHP5WE       |               | 400                                | 37JUHP5WE      |               | 400A/600V                      | 37JUHP5WEF     | 250                         | 37JUHP5WEP     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

## 2 Step Part Winding with Solid State Overload, Class 36 &amp; 37

## Selection

|                                                                                   |                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/180.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
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NEMA 12 Enclosures (Supplied as NEMA 12, field convertible to 3/3R)<sup>①</sup>

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Call Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|-------------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating           | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 7½     | 0                    | 5.5–22         | A1         | 36CUDP6ND       |               | 60                                 | 37CUDP6NDD     |               | 60A/250V                            | 37CUDP6NDF     |               | 30                          | 37CUDP6NDP     |               |
|               | 10     | 1                    | 5.5–22         | A1         | 36DUDP6ND       |               | 60                                 | 37DUDP6NDD     |               | 60A/250V                            | 37DUDP6NDF     |               | 50                          | 37DUDP6NDP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUEP6ND       |               | 100                                | 37EUEP6NDD     |               | 100A/250V                           | 37EUEP6NDF     |               | 100                         | 37EUEP6NDP     |               |
|               | 20     | 2                    | 13–52          | B          | 36FUEP6ND       |               | 100                                | 37FUEP6NDD     |               | 100A/250V                           | 37FUEP6NDF     |               | 100                         | 37FUEP6NDP     |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGP6ND       |               | 200                                | 37GUGP6NDD     |               | 200A/250V                           | 37GUGP6NDF     |               | 125                         | 37GUGP6NDP     |               |
|               | 40     | 3                    | 25–100         | B          | 36HUGP6ND       |               | 200                                | 37HUGP6NDD     |               | 200A/250V                           | 37HUGP6NDF     |               | 150                         | 37HUGP6NDP     |               |
|               | 50     | (3½)                 | 50–200         | B          | 36IUHP6ND       |               | 200                                | 37IUHP6NDD     |               | 200A/250V                           | 37IUHP6NDF     |               | 250                         | 37IUHP6NDP     |               |
|               | 75     | 4                    | 50–200         | B          | 36JUHP6ND       |               | 400                                | 37JUHP6NDD     |               | 400A/250V                           | 37JUHP6NDF     |               | 400                         | 37JUHP6NDP     |               |
| 230           | 100    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                                   | —              |               | 600                         | 37LSP6NDP      |               |
|               | 150    | 5                    | 55–250         | —          | 36LPUP6ND       |               | 600                                | 37LPUP6NDD     |               | 600A/250V                           | 37LPUP6NDF     |               | 600                         | 37LPUP6NDP     |               |
|               | 7½     | 0                    | 5.5–22         | A1         | 36CUDP2NG       |               | 60                                 | 37CUDP2NGD     |               | 60A/250V                            | 37CUDP2NGF     |               | 30                          | 37CUDP2NGP     |               |
|               | 10     | 1                    | 5.5–22         | A1         | 36DUDP2NG       |               | 60                                 | 37DUDP2NGD     |               | 60A/250V                            | 37DUDP2NGF     |               | 50                          | 37DUDP2NGP     |               |
|               | 20     | (1½)                 | 10–40          | A1         | 36EUEP2NG       |               | 100                                | 37EUEP2NGD     |               | 100A/250V                           | 37EUEP2NGF     |               | 100                         | 37EUEP2NGP     |               |
|               | 25     | 2                    | 13–52          | B          | 36FUEP2NG       |               | 100                                | 37FUEP2NGD     |               | 100A/250V                           | 37FUEP2NGF     |               | 100                         | 37FUEP2NGP     |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGP2NG       |               | 200                                | 37GUGP2NGD     |               | 200A/250V                           | 37GUGP2NGF     |               | 100                         | 37GUGP2NGP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGP2NG       |               | 200                                | 37HUGP2NGD     |               | 200A/250V                           | 37HUGP2NGF     |               | 150                         | 37HUGP2NGP     |               |
| 460           | 60     | (3½)                 | 50–200         | B          | 36IUHP2NG       |               | 200                                | 37IUHP2NGD     |               | 200A/250V                           | 37IUHP2NGF     |               | 250                         | 37IUHP2NGP     |               |
|               | 75     | 4                    | 50–200         | B          | 36JUHP2NG       |               | 400                                | 37JUHP2NGD     |               | 400A/250V                           | 37JUHP2NGF     |               | 250                         | 37JUHP2NGP     |               |
|               | 125    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                                   | —              |               | 400                         | 37LSP2NGP      |               |
|               | 150    | 5                    | 55–250         | —          | 36LPUP2NG       |               | 600                                | 37LPUP2NGD     |               | 600A/250V                           | 37LPUP2NGF     |               | 600                         | 37LPUP2NGP     |               |
|               | 300    | 6                    | 160–630        | —          | 36MPXP2NG       |               | 1200                               | 37MPXP2NGD     |               | 1200A/250V                          | 37MPXP2NGF     |               | 1200                        | 37MPXP2NGP     |               |
|               | 10     | 0                    | 5.5–22         | A1         | 36CUDP4NH       |               | 30                                 | 37CUDP4NHD     |               | 30A/600V                            | 37CUDP4NHF     |               | 30                          | 37CUDP4NHP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDP4NH       |               | 60                                 | 37DUDP4NHD     |               | 60A/600V                            | 37DUDP4NHF     |               | 30                          | 37DUDP4NHP     |               |
|               | 30     | (1¼)                 | 10–40          | A1         | 36EUEP4NH       |               | 60                                 | 37EUEP4NHD     |               | 60A/600V                            | 37EUEP4NHF     |               | 50                          | 37EUEP4NHP     |               |
| 575           | 40     | 2                    | 13–52          | B          | 36FUEP4NH       |               | 100                                | 37FUEP4NHD     |               | 100A/600V                           | 37FUEP4NHF     |               | 100                         | 37FUEP4NHP     |               |
|               | 60     | (2½)                 | 25–100         | B          | 36GUGP4NH       |               | 200                                | 37GUGP4NHD     |               | 200A/600V                           | 37GUGP4NHF     |               | 100                         | 37GUGP4NHP     |               |
|               | 75     | 3                    | 25–100         | B          | 36HUGP4NH       |               | 200                                | 37HUGP4NHD     |               | 200A/600V                           | 37HUGP4NHF     |               | 125                         | 37HUGP4NHP     |               |
|               | 100    | (3½)                 | 50–200         | B          | 36IUHP4NH       |               | 200                                | 37IUHP4NHD     |               | 200A/600V                           | 37IUHP4NHF     |               | 150                         | 37IUHP4NHP     |               |
|               | 150    | 4                    | 50–200         | B          | 36JUHP4NH       |               | 400                                | 37JUHP4NHD     |               | 400A/600V                           | 37JUHP4NHF     |               | 250                         | 37JUHP4NHP     |               |
|               | 250    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | —                                   | —              |               | 400                         | 37LSP4NHP      |               |
|               | 350    | 5                    | 55–250         | —          | 36LPUP4NH       |               | 600                                | 37LPUP4NHD     |               | 600A/600V                           | 37LPUP4NHF     |               | 600                         | 37LPUP4NHP     |               |
|               | 600    | 6                    | 160–630        | —          | 36MPXP4NH       |               | 1200                               | 37MPXP4NHD     |               | 1200A/600V                          | 37MPXP4NHF     |               | 1200                        | 37MPXP4NHP     |               |
| 575           | 10     | 0                    | 5.5–22         | A1         | 36CUDP5NE       |               | 30                                 | 37CUDP5NED     |               | 30A/600V                            | 37CUDP5NEF     |               | 30                          | 37CUDP5NEP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDP5NE       |               | 60                                 | 37DUDP5NED     |               | 60A/600V                            | 37DUDP5NEF     |               | 30                          | 37DUDP5NEP     |               |
|               | 30     | (1¼)                 | 10–40          | A1         | 36EUEP5NE       |               | 60                                 | 37EUEP5NED     |               | 60A/600V                            | 37EUEP5NEF     |               | 50                          | 37EUEP5NEP     |               |
|               | 40     | 2                    | 13–52          | B          | 36FUEP5NE       |               | 60                                 | 37FUEP5NED     |               | 60A/600V                            | 37FUEP5NEF     |               | 50                          | 37FUEP5NEP     |               |
|               | 60     | (2½)                 | 25–100         | B          | 36GUGP5NE       |               | 100                                | 37GUGP5NED     |               | 100A/600V                           | 37GUGP5NEF     |               | 100                         | 37GUGP5NEP     |               |
|               | 75     | 3                    | 25–100         | B          | 36HUGP5NE       |               | 200                                | 37HUGP5NED     |               | 200A/600V                           | 37HUGP5NEF     |               | 125                         | 37HUGP5NEP     |               |
|               | 100    | (3½)                 | 50–200         | B          | 36IUHP5NE       |               | 400                                | 37IUHP5NED     |               | 400A/600V                           | 37IUHP5NEF     |               | 150                         | 37IUHP5NEP     |               |
|               | 150    | 4                    | 50–200         | B          | 36JUHP5NE       |               | 400                                | 37JUHP5NED     |               | 400A/600V                           | 37JUHP5NEF     |               | 250                         | 37JUHP5NEP     |               |
| 575           | 250    | 5                    | 55–250         | —          | —               |               | —                                  | —              |               | 400A/600V                           | 37LSP5NEF      |               | —                           | —              |               |
|               | 350    | 5                    | 55–250         | —          | 36LPUP5NE       |               | 600                                | 37LPUP5NED     |               | 600A/600V                           | 37LPUP5NEF     |               | 400                         | 37LPUP5NEP     |               |
|               | 600    | 6                    | 160–630        | —          | 36MPXP5NE       |               | 1200                               | 37MPXP5NED     |               | 1200A/600V                          | 37MPXP5NEF     |               | 1200                        | 37MPXP5NEP     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

<sup>①</sup> See page 9/110 for conduit hubs and conversion instructions.

## Wye Delta, Open Transition with Solid State Overload, Class 36 &amp; 37

## Selection

|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/182.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
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## NEMA 1 General Purpose Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | 1                    | 10-40          | A1         | 36DUE06BD       |               | 60                                 | 37DUE06BDD     |               | 60A/250V                       | 37DUE06BDF     |               | 50                          | 37DUE06BDP     |               |
|               | 15     | (1¼)                 | 10-40          | A1         | 36EUE06BD       |               | 100                                | 37EUE06BDD     |               | 100A/250V                      | 37EUE06BDF     |               | 100                         | 37EUE06BDP     |               |
|               | 20     | 2                    | 13-52          | B          | 36FUF06BD       |               | 100                                | 37FUF06BDD     |               | 100A/250V                      | 37FUF06BDF     |               | 100                         | 37FUF06BDP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUG06BD       |               | 200                                | 37GUG06BDD     |               | 200A/250V                      | 37GUG06BDF     |               | 125                         | 37GUG06BDP     |               |
|               | 40     | 3                    | 25-100         | B          | 36HUG06BD       |               | 200                                | 37HUG06BDD     |               | 200A/250V                      | 37HUG06BDF     |               | 150                         | 37HUG06BDP     |               |
|               | 50     | (3½)                 | 50-200         | B          | 36IUH06BD       |               | 200                                | 37IUH06BDD     |               | 200A/250V                      | 37IUH06BDF     |               | 250                         | 37IUH06BDP     |               |
|               | 60     | 4                    | 50-200         | B          | 36JUH06BD       |               | 400                                | 37JUH06BDD     |               | 400A/250V                      | 37JUH06BDF     |               | 250                         | 37JUH06BDP     |               |
|               | 75     | 5                    | 55-250         | —          | 36LPS06BD       |               | 400                                | 37LPS06BDD     |               | 400A/250V                      | 37LPS06BDF     |               | 400                         | 37LPS06BDP     |               |
| 230           | 150    | 5                    | 55-250         | —          | 36LPU06BD       |               | 600                                | 37LPU06BDD     |               | 600A/250V                      | 37LPU06BDF     |               | 600                         | 37LPU06BDP     |               |
|               | 300    | 6                    | 160-630        | —          | 36MPX06BD       |               | 1200                               | 37MPX06BDD     |               | 1200A/250V                     | 37MPX06BDF     |               | 1200                        | 37MPX06BDP     |               |
| 230           | 10     | 1                    | 10-40          | A1         | 36DUE02BG       |               | 60                                 | 37DUE02BGD     |               | 60A/250V                       | 37DUE02BGF     |               | 50                          | 37DUE02BGP     |               |
|               | 15     | (1¼)                 | 10-40          | A1         | 36EUE02BG       |               | 60                                 | 37EUE02BGD     |               | 60A/250V                       | 37EUE02BGF     |               | 50                          | 37EUE02BGP     |               |
|               | 25     | 2                    | 13-52          | B          | 36FUF02BG       |               | 100                                | 37FUF02BGD     |               | 100A/250V                      | 37FUF02BGF     |               | 100                         | 37FUF02BGP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUG02BG       |               | 200                                | 37GUG02BGD     |               | 200A/250V                      | 37GUG02BGF     |               | 100                         | 37GUG02BGP     |               |
|               | 50     | 3                    | 25-100         | B          | 36HUG02BG       |               | 200                                | 37HUG02BGD     |               | 200A/250V                      | 37HUG02BGF     |               | 150                         | 37HUG02BGP     |               |
|               | 60     | (3½)                 | 50-200         | B          | 36IUH02BG       |               | 200                                | 37IUH02BGD     |               | 200A/250V                      | 37IUH02BGF     |               | 250                         | 37IUH02BGP     |               |
|               | 75     | 4                    | 50-200         | B          | 36JUH02BG       |               | 400                                | 37JUH02BGD     |               | 400A/250V                      | 37JUH02BGF     |               | 250                         | 37JUH02BGP     |               |
|               | 100    | 5                    | 55-250         | —          | 36LPS02BG       |               | 400                                | 37LPS02BGD     |               | 400A/250V                      | 37LPS02BGF     |               | 400                         | 37LPS02BGP     |               |
| 460           | 150    | 5                    | 55-250         | —          | 36LPU02BG       |               | 600                                | 37LPU02BGD     |               | 600A/250V                      | 37LPU02BGF     |               | 600                         | 37LPU02BGP     |               |
|               | 350    | 6                    | 160-630        | —          | 36MPX02BG       |               | 1200                               | 37MPX02BGD     |               | 1200A/250V                     | 37MPX02BGF     |               | 1200                        | 37MPX02BGP     |               |
| 460           | 15     | 1                    | 5.5-22         | A1         | 36DUD04BH       |               | 30                                 | 37DUD04BHD     |               | 30A/600V                       | 37DUD04BHF     |               | 30                          | 37DUD04BHP     |               |
|               | 30     | (1¼)                 | 10-40          | A1         | 36EUE04BH       |               | 60                                 | 37EUE04BHD     |               | 60A/600V                       | 37EUE04BHF     |               | 50                          | 37EUE04BHP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUF04BH       |               | 100                                | 37FUF04BHD     |               | 100A/600V                      | 37FUF04BHF     |               | 100                         | 37FUF04BHP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUG04BH       |               | 200                                | 37GUG04BHD     |               | 200A/600V                      | 37GUG04BHF     |               | 100                         | 37GUG04BHP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUG04BH       |               | 200                                | 37HUG04BHD     |               | 200A/600V                      | 37HUG04BHF     |               | 125                         | 37HUG04BHP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUH04BH       |               | 200                                | 37IUH04BHD     |               | 200A/600V                      | 37IUH04BHF     |               | 150                         | 37IUH04BHP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUH04BH       |               | 400                                | 37JUH04BHD     |               | 400A/600V                      | 37JUH04BHF     |               | 250                         | 37JUH04BHP     |               |
|               | 200    | 5                    | 55-250         | —          | 36LPS04BH       |               | 400                                | 37LPS04BHD     |               | 400A/600V                      | 37LPS04BHF     |               | 400                         | 37LPS04BHP     |               |
| 575           | 300    | 5                    | 55-250         | —          | 36LPU04BH       |               | 600                                | 37LPU04BHD     |               | 600A/600V                      | 37LPU04BHF     |               | 600                         | 37LPU04BHP     |               |
|               | 700    | 6                    | 160-630        | —          | 36MPX04BH       |               | 1600                               | 37MPX04BHD     |               | 1600A/600V                     | 37MPX04BHF     |               | 1200                        | 37MPX04BHP     |               |
| 575           | 15     | 1                    | 5.5-22         | A1         | 36DUD05BE       |               | 30                                 | 37DUD05BED     |               | 30A/600V                       | 37DUD05BEF     |               | 30                          | 37DUD05BEP     |               |
|               | 30     | (1¼)                 | 10-40          | A1         | 36EUE05BE       |               | 60                                 | 37EUE05BED     |               | 60A/600V                       | 37EUE05BEF     |               | 50                          | 37EUE05BEP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUF05BE       |               | 100                                | 37FUF05BED     |               | 100A/600V                      | 37FUF05BEF     |               | 50                          | 37FUF05BEP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUG05BE       |               | 100                                | 37GUG05BED     |               | 100A/600V                      | 37GUG05BEF     |               | 100                         | 37GUG05BEP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUG05BE       |               | 200                                | 37HUG05BED     |               | 200A/600V                      | 37HUG05BEF     |               | 125                         | 37HUG05BEP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUH05BE       |               | 200                                | 37IUH05BED     |               | 200A/600V                      | 37IUH05BEF     |               | 150                         | 37IUH05BEP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUH05BE       |               | 400                                | 37JUH05BED     |               | 400A/600V                      | 37JUH05BEF     |               | 250                         | 37JUH05BEP     |               |
|               | 200    | 5                    | 55-250         | —          | 36LPS05BE       |               | 400                                | 37LPS05BED     |               | 400A/600V                      | 37LPS05BEF     |               | 250                         | 37LPS05BEP     |               |
| 575           | 300    | 5                    | 55-250         | —          | 36LPU05BE       |               | 600                                | 37LPU05BED     |               | 600A/600V                      | 37LPU05BEF     |               | 400                         | 37LPU05BEP     |               |
|               | 700    | 6                    | 160-630        | —          | 36MPX05BE       |               | 1600                               | 37MPX05BED     |               | 1600A/600V                     | 37MPX05BEF     |               | 1600                        | 37MPX05BEP     |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

## Wye Delta, Open Transition with Solid State Overload, Class 36 &amp; 37

## Selection

|                                                                                   |                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/182.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
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## NEMA 4 Painted Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | 1                    | 10-40          | A1         | 36DUE06ED       |               | 60                                 | 37DUE06EDD     |               | 60A/250V                       | 37DUE06EDF     |               | 50                          | 37DUE06EDP     |               |
|               | 15     | (1¾)                 | 10-40          | A1         | 36EUE06ED       |               | 100                                | 37EUE06EDD     |               | 100A/250V                      | 37EUE06EDF     |               | 100                         | 37EUE06EDP     |               |
|               | 20     | 2                    | 13-52          | B          | 36FUF06ED       |               | 100                                | 37FUF06EDD     |               | 100A/250V                      | 37FUF06EDF     |               | 100                         | 37FUF06EDP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUG06ED       |               | 200                                | 37GUG06EDD     |               | 200A/250V                      | 37GUG06EDF     |               | 125                         | 37GUG06EDP     |               |
|               | 40     | 3                    | 25-100         | B          | 36HUG06ED       |               | 200                                | 37HUG06EDD     |               | 200A/250V                      | 37HUG06EDF     |               | 150                         | 37HUG06EDP     |               |
|               | 50     | (3½)                 | 50-200         | B          | 36IUH06ED       |               | 200                                | 37IUH06EDD     |               | 200A/250V                      | 37IUH06EDF     |               | 250                         | 37IUH06EDP     |               |
|               | 60     | 4                    | 50-200         | B          | 36JUH06ED       |               | 400                                | 37JUH06EDD     |               | 400A/250V                      | 37JUH06EDF     |               | 250                         | 37JUH06EDP     |               |
|               | 75     | 5                    | 55-250         | —          | 36LPS06ED       |               | 400                                | 37LPS06EDD     |               | 400A/250V                      | 37LPS06EDF     |               | 400                         | 37LPS06EDP     |               |
| 230           | 150    | 5                    | 55-250         | —          | 36LPU06ED       |               | 600                                | 37LPU06EDD     |               | 600A/250V                      | 37LPU06EDF     |               | 600                         | 37LPU06EDP     |               |
|               | 300    | 6                    | 160-630        | —          | 36MPX06ED       |               | 1200                               | 37MPX06EDD     |               | 1200A/250V                     | 37MPX06EDF     |               | 1200                        | 37MPX06EDP     |               |
| 460           | 10     | 1                    | 10-40          | A1         | 36DUE02EG       |               | 60                                 | 37DUE02EGD     |               | 60A/250V                       | 37DUE02EGF     |               | 50                          | 37DUE02EGP     |               |
|               | 15     | (1¾)                 | 10-40          | A1         | 36EUE02EG       |               | 60                                 | 37EUE02EGD     |               | 60A/250V                       | 37EUE02EGF     |               | 50                          | 37EUE02EGP     |               |
|               | 25     | 2                    | 13-52          | B          | 36FUF02EG       |               | 100                                | 37FUF02EGD     |               | 100A/250V                      | 37FUF02EGF     |               | 100                         | 37FUF02EGP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUG02EG       |               | 200                                | 37GUG02EGD     |               | 200A/250V                      | 37GUG02EGF     |               | 100                         | 37GUG02EGP     |               |
|               | 50     | 3                    | 25-100         | B          | 36HUG02EG       |               | 200                                | 37HUG02EGD     |               | 200A/250V                      | 37HUG02EGF     |               | 150                         | 37HUG02EGP     |               |
|               | 60     | (3½)                 | 50-200         | B          | 36IUH02EG       |               | 200                                | 37IUH02EGD     |               | 200A/250V                      | 37IUH02EGF     |               | 250                         | 37IUH02EGP     |               |
|               | 75     | 4                    | 50-200         | B          | 36JUH02EG       |               | 400                                | 37JUH02EGD     |               | 400A/250V                      | 37JUH02EGF     |               | 250                         | 37JUH02EGP     |               |
|               | 100    | 5                    | 55-250         | —          | 36LPS02EG       |               | 400                                | 37LPS02EGD     |               | 400A/250V                      | 37LPS02EGF     |               | 400                         | 37LPS02EGP     |               |
| 575           | 150    | 5                    | 55-250         | —          | 36LPU02EG       |               | 600                                | 37LPU02EGD     |               | 600A/250V                      | 37LPU02EGF     |               | 600                         | 37LPU02EGP     |               |
|               | 350    | 6                    | 160-630        | —          | 36MPX02EG       |               | 1200                               | 37MPX02EGD     |               | 1200A/250V                     | 37MPX02EGF     |               | 1200                        | 37MPX02EGP     |               |
| 460           | 15     | 1                    | 5.5-22         | A1         | 36DUD04EH       |               | 30                                 | 37DUD04EHD     |               | 30A/600V                       | 37DUD04EHF     |               | 30                          | 37DUD04EHP     |               |
|               | 30     | (1¾)                 | 10-40          | A1         | 36EUE04EH       |               | 60                                 | 37EUE04EHD     |               | 60A/600V                       | 37EUE04EHF     |               | 50                          | 37EUE04EHP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUF04EH       |               | 100                                | 37FUF04EHD     |               | 100A/600V                      | 37FUF04EHF     |               | 100                         | 37FUF04EHP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUG04EH       |               | 200                                | 37GUG04EHD     |               | 200A/600V                      | 37GUG04EHF     |               | 100                         | 37GUG04EHP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUG04EH       |               | 200                                | 37HUG04EHD     |               | 200A/600V                      | 37HUG04EHF     |               | 125                         | 37HUG04EHP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUH04EH       |               | 200                                | 37IUH04EHD     |               | 200A/600V                      | 37IUH04EHF     |               | 150                         | 37IUH04EHP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUH04EH       |               | 400                                | 37JUH04EHD     |               | 400A/600V                      | 37JUH04EHF     |               | 250                         | 37JUH04EHP     |               |
|               | 200    | 5                    | 55-250         | —          | 36LPS04EH       |               | 400                                | 37LPS04EHD     |               | 400A/600V                      | 37LPS04EHF     |               | 400                         | 37LPS04EHP     |               |
| 575           | 300    | 5                    | 55-250         | —          | 36LPU04EH       |               | 600                                | 37LPU04EHD     |               | 600A/600V                      | 37LPU04EHF     |               | 600                         | 37LPU04EHP     |               |
|               | 700    | 6                    | 160-630        | —          | 36MPX04EH       |               | 1600                               | 37MPX04EHD     |               | 1600A/600V                     | 37MPX04EHF     |               | 1200                        | 37MPX04EHP     |               |
| 575           | 15     | 1                    | 5.5-22         | A1         | 36DUD05EE       |               | 30                                 | 37DUD05EED     |               | 30A/600V                       | 37DUD05EEF     |               | 30                          | 37DUD05EEP     |               |
|               | 30     | (1¾)                 | 10-40          | A1         | 36EUE05EE       |               | 60                                 | 37EUE05EED     |               | 60A/600V                       | 37EUE05EEF     |               | 50                          | 37EUE05EEP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUF05EE       |               | 100                                | 37FUF05EED     |               | 100A/600V                      | 37FUF05EEF     |               | 50                          | 37FUF05EEP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUG05EE       |               | 100                                | 37GUG05EED     |               | 100A/600V                      | 37GUG05EEF     |               | 100                         | 37GUG05EEP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUG05EE       |               | 200                                | 37HUG05EED     |               | 200A/600V                      | 37HUG05EEF     |               | 125                         | 37HUG05EEP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUH05EE       |               | 200                                | 37IUH05EED     |               | 200A/600V                      | 37IUH05EEF     |               | 150                         | 37IUH05EEP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUH05EE       |               | 400                                | 37JUH05EED     |               | 400A/600V                      | 37JUH05EEF     |               | 250                         | 37JUH05EEP     |               |
|               | 200    | 5                    | 55-250         | —          | 36LPS05EE       |               | 400                                | 37LPS05EED     |               | 400A/600V                      | 37LPS05EEF     |               | 250                         | 37LPS05EEP     |               |
| 575           | 300    | 5                    | 55-250         | —          | 36LPU05EE       |               | 600                                | 37LPU05EED     |               | 600A/600V                      | 37LPU05EEF     |               | 400                         | 37LPU05EEP     |               |
|               | 700    | 6                    | 160-630        | —          | 37MPX05EF       |               | 1600                               | 37MPX05EED     |               | 1600A/600V                     | 37MPX05EEF     |               | 1600                        | 37MPX05EEP     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).



## Wye Delta, Open Transition with Solid State Overload, Class 36 &amp; 37

## Selection

|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/182.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
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## NEMA 4/4X Stainless Steel Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | 1                    | 10-40          | A1         | 36DUE06WD       |               | 60                                 | 37DUE06WDD     |               | 60A/250V                       | 37DUE06WDF     |               | 50                          | 37DUE06WDP     |               |
|               | 15     | (1¼)                 | 10-40          | A1         | 36EUE06WD       |               | 100                                | 37EUE06WDD     |               | 100A/250V                      | 37EUE06WDF     |               | 100                         | 37EUE06WDP     |               |
|               | 20     | 2                    | 13-52          | B          | 36FUF06WD       |               | 100                                | 37FUF06WDD     |               | 100A/250V                      | 37FUF06WDF     |               | 100                         | 37FUF06WDP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUG06WD       |               | 200                                | 37GUG06WDD     |               | 200A/250V                      | 37GUG06WDF     |               | 125                         | 37GUG06WDP     |               |
|               | 40     | 3                    | 25-100         | B          | 36HUG06WD       |               | 200                                | 37HUG06WDD     |               | 200A/250V                      | 37HUG06WDF     |               | 150                         | 37HUG06WDP     |               |
|               | 50     | (3½)                 | 50-200         | B          | 36IUH06WD       |               | 200                                | 37IUH06WDD     |               | 200A/250V                      | 37IUH06WDF     |               | 250                         | 37IUH06WDP     |               |
|               | 60     | 4                    | 50-200         | B          | 36JUH06WD       |               | 400                                | 37JUH06WDD     |               | 400A/250V                      | 37JUH06WDF     |               | 250                         | 37JUH06WDP     |               |
| 230           | 10     | 1                    | 10-40          | A1         | 36DUE02WG       |               | 60                                 | 37DUE02WGD     |               | 60A/250V                       | 37DUE02WGF     |               | 50                          | 37DUE02WGP     |               |
|               | 15     | (1¼)                 | 10-40          | A1         | 36EUE02WG       |               | 60                                 | 37EUE02WGD     |               | 60A/250V                       | 37EUE02WGF     |               | 50                          | 37EUE02WGP     |               |
|               | 25     | 2                    | 13-52          | B          | 36FUF02WG       |               | 100                                | 37FUF02WGD     |               | 100A/250V                      | 37FUF02WGF     |               | 100                         | 37FUF02WGP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUG02WG       |               | 200                                | 37GUG02WGD     |               | 200A/250V                      | 37GUG02WGF     |               | 100                         | 37GUG02WGP     |               |
|               | 50     | 3                    | 25-100         | B          | 36HUG02WG       |               | 200                                | 37HUG02WGD     |               | 200A/250V                      | 37HUG02WGF     |               | 150                         | 37HUG02WGP     |               |
|               | 60     | (3½)                 | 50-200         | B          | 36IUH02WG       |               | 200                                | 37IUH02WGD     |               | 200A/250V                      | 37IUH02WGF     |               | 250                         | 37IUH02WGP     |               |
|               | 75     | 4                    | 50-200         | B          | 36JUH02WG       |               | 400                                | 37JUH02WGD     |               | 400A/250V                      | 37JUH02WGF     |               | 250                         | 37JUH02WGP     |               |
| 460           | 15     | 1                    | 5.5-22         | A1         | 36DUD04WH       |               | 30                                 | 37DUD04WHD     |               | 30A/600V                       | 37DUD04WHF     |               | 30                          | 37DUD04WHP     |               |
|               | 30     | (1¼)                 | 10-40          | A1         | 36EUE04WH       |               | 60                                 | 37EUE04WHD     |               | 60A/600V                       | 37EUE04WHF     |               | 50                          | 37EUE04WHP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUF04WH       |               | 100                                | 37FUF04WHD     |               | 100A/600V                      | 37FUF04WHF     |               | 100                         | 37FUF04WHP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUG04WH       |               | 200                                | 37GUG04WHD     |               | 200A/600V                      | 37GUG04WHF     |               | 100                         | 37GUG04WHP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUG04WH       |               | 200                                | 37HUG04WHD     |               | 200A/600V                      | 37HUG04WHF     |               | 125                         | 37HUG04WHP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUH04WH       |               | 200                                | 37IUH04WHD     |               | 200A/600V                      | 37IUH04WHF     |               | 150                         | 37IUH04WHP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUH04WH       |               | 400                                | 37JUH04WHD     |               | 400A/600V                      | 37JUH04WHF     |               | 250                         | 37JUH04WHP     |               |
| 575           | 15     | 1                    | 5.5-22         | A1         | 36DUD05WE       |               | 30                                 | 37DUD05WED     |               | 30A/600V                       | 37DUD05WEF     |               | 30                          | 37DUD05WEP     |               |
|               | 30     | (1¼)                 | 10-40          | A1         | 36EUE05WE       |               | 60                                 | 37EUE05WED     |               | 60A/600V                       | 37EUE05WEF     |               | 50                          | 37EUE05WEP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUF05WE       |               | 100                                | 37FUF05WED     |               | 100A/600V                      | 37FUF05WEF     |               | 50                          | 37FUF05WEP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUG05WE       |               | 100                                | 37GUG05WED     |               | 100A/600V                      | 37GUG05WEF     |               | 100                         | 37GUG05WEP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUG05WE       |               | 200                                | 37HUG05WED     |               | 200A/600V                      | 37HUG05WEF     |               | 125                         | 37HUG05WEP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUH05WE       |               | 200                                | 37IUH05WED     |               | 200A/600V                      | 37IUH05WEF     |               | 150                         | 37IUH05WEP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUH05WE       |               | 400                                | 37JUH05WED     |               | 400A/600V                      | 37JUH05WEF     |               | 250                         | 37JUH05WEP     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

## Wye Delta, Open Transition with Solid State Overload, Class 36 &amp; 37

## Selection

|                                                                                   |                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                  |
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|  | <b>Ordering Information</b> <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/182.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <b>Coil and Control Voltage</b> <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |
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NEMA 12 Enclosures (Supplied as NEMA 12, field convertible to 3/3R)<sup>①</sup>

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | 1                    | 10-40          | A1         | 36DUE06ND       |               | 60                                 | 37DUE06NDD     |               | 60A/250V                       | 37DUE06NDF     |               | 50                          | 37DUE06NDP     |               |
|               | 15     | (1¾)                 | 10-40          | A1         | 36EUE06ND       |               | 100                                | 37EUE06NDD     |               | 100A/250V                      | 37EUE06NDF     |               | 100                         | 37EUE06NDP     |               |
|               | 20     | 2                    | 13-52          | B          | 36FUF06ND       |               | 100                                | 37FUF06NDD     |               | 100A/250V                      | 37FUF06NDF     |               | 100                         | 37FUF06NDP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUG06ND       |               | 200                                | 37GUG06NDD     |               | 200A/250V                      | 37GUG06NDF     |               | 125                         | 37GUG06NDP     |               |
|               | 40     | 3                    | 25-100         | B          | 36HUG06ND       |               | 200                                | 37HUG06NDD     |               | 200A/250V                      | 37HUG06NDF     |               | 150                         | 37HUG06NDP     |               |
|               | 50     | (3½)                 | 50-200         | B          | 36IUH06ND       |               | 200                                | 37IUH06NDD     |               | 200A/250V                      | 37IUH06NDF     |               | 250                         | 37IUH06NDP     |               |
|               | 60     | 4                    | 50-200         | B          | 36JUH06ND       |               | 400                                | 37JUH06NDD     |               | 400A/250V                      | 37JUH06NDF     |               | 250                         | 37JUH06NDP     |               |
|               | 75     | 5                    | 55-250         | —          | 36LPS06ND       |               | 400                                | 37LPS06NDD     |               | 400A/250V                      | 37LPS06NDF     |               | 400                         | 37LPS06NDP     |               |
| 230           | 150    | 5                    | 55-250         | —          | 36LPU06ND       |               | 600                                | 37LPU06NDD     |               | 600A/250V                      | 37LPU06NDF     |               | 600                         | 37LPU06NDP     |               |
|               | 300    | 6                    | 160-630        | —          | 36MPX06ND       |               | 1200                               | 37MPX06NDD     |               | 1200A/250V                     | 37MPX06NDF     |               | 1200                        | 37MPX06NDP     |               |
| 230           | 10     | 1                    | 10-40          | A1         | 36DUE02NG       |               | 60                                 | 37DUE02NGD     |               | 60A/250V                       | 37DUE02NGF     |               | 50                          | 37DUE02NGP     |               |
|               | 15     | (1¾)                 | 10-40          | A1         | 36EUE02NG       |               | 60                                 | 37EUE02NGD     |               | 60A/250V                       | 37EUE02NGF     |               | 50                          | 37EUE02NGP     |               |
|               | 25     | 2                    | 13-52          | B          | 36FUF02NG       |               | 100                                | 37FUF02NGD     |               | 100A/250V                      | 37FUF02NGF     |               | 100                         | 37FUF02NGP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUG02NG       |               | 200                                | 37GUG02NGD     |               | 200A/250V                      | 37GUG02NGF     |               | 100                         | 37GUG02NGP     |               |
|               | 50     | 3                    | 25-100         | B          | 36HUG02NG       |               | 200                                | 37HUG02NGD     |               | 200A/250V                      | 37HUG02NGF     |               | 150                         | 37HUG02NGP     |               |
|               | 60     | (3½)                 | 50-200         | B          | 36IUH02NG       |               | 200                                | 37IUH02NGD     |               | 200A/250V                      | 37IUH02NGF     |               | 250                         | 37IUH02NGP     |               |
|               | 75     | 4                    | 50-200         | B          | 36JUH02NG       |               | 400                                | 37JUH02NGD     |               | 400A/250V                      | 37JUH02NGF     |               | 250                         | 37JUH02NGP     |               |
|               | 100    | 5                    | 55-250         | —          | 36LPS02NG       |               | 400                                | 37LPS02NGD     |               | 400A/250V                      | 37LPS02NGF     |               | 400                         | 37LPS02NGP     |               |
| 460           | 150    | 5                    | 55-250         | —          | 36LPU02NG       |               | 600                                | 37LPU02NGD     |               | 600A/250V                      | 37LPU02NGF     |               | 600                         | 37LPU02NGP     |               |
|               | 350    | 6                    | 160-630        | —          | 36MPX02NG       |               | 1200                               | 37MPX02NGD     |               | 1200A/250V                     | 37MPX02NGF     |               | 1200                        | 37MPX02NGP     |               |
| 460           | 15     | 1                    | 5.5-22         | A1         | 36DUD04NH       |               | 30                                 | 37DUD04NHD     |               | 30A/600V                       | 37DUD04NHF     |               | 30                          | 37DUD04NHP     |               |
|               | 30     | (1¾)                 | 10-40          | A1         | 36EUE04NH       |               | 60                                 | 37EUE04NHD     |               | 60A/600V                       | 37EUE04NHF     |               | 50                          | 37EUE04NHP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUF04NH       |               | 100                                | 37FUF04NHD     |               | 100A/600V                      | 37FUF04NHF     |               | 100                         | 37FUF04NHP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUG04NH       |               | 200                                | 37GUG04NHD     |               | 200A/600V                      | 37GUG04NHF     |               | 100                         | 37GUG04NHP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUG04NH       |               | 200                                | 37HUG04NHD     |               | 200A/600V                      | 37HUG04NHF     |               | 125                         | 37HUG04NHP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUH04NH       |               | 200                                | 37IUH04NHD     |               | 200A/600V                      | 37IUH04NHF     |               | 150                         | 37IUH04NHP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUH04NH       |               | 400                                | 37JUH04NHD     |               | 400A/600V                      | 37JUH04NHF     |               | 250                         | 37JUH04NHP     |               |
|               | 200    | 5                    | 55-250         | —          | 36LPS04NH       |               | 400                                | 37LPS04NHD     |               | 400A/600V                      | 37LPS04NHF     |               | 400                         | 37LPS04NHP     |               |
| 575           | 300    | 5                    | 55-250         | —          | 36LPU04NH       |               | 600                                | 37LPU04NHD     |               | 600A/600V                      | 37LPU04NHF     |               | 600                         | 37LPU04NHP     |               |
|               | 700    | 6                    | 160-630        | —          | 36MPX04NH       |               | 1600                               | 37MPX04NHD     |               | 1600A/600V                     | 37MPX04NHF     |               | 1200                        | 37MPX04NHP     |               |
| 575           | 15     | 1                    | 5.5-22         | A1         | 36DUD05NE       |               | 30                                 | 37DUD05NED     |               | 30A/600V                       | 37DUD05NEF     |               | 30                          | 37DUD05NEP     |               |
|               | 30     | (1¾)                 | 10-40          | A1         | 36EUE05NE       |               | 60                                 | 37EUE05NED     |               | 60A/600V                       | 37EUE05NEF     |               | 50                          | 37EUE05NEP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUF05NE       |               | 100                                | 37FUF05NED     |               | 100A/600V                      | 37FUF05NEF     |               | 50                          | 37FUF05NEP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUG05NE       |               | 100                                | 37GUG05NED     |               | 100A/600V                      | 37GUG05NEF     |               | 100                         | 37GUG05NEP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUG05NE       |               | 200                                | 37HUG05NED     |               | 200A/600V                      | 37HUG05NEF     |               | 125                         | 37HUG05NEP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUH05NE       |               | 200                                | 37IUH05NED     |               | 200A/600V                      | 37IUH05NEF     |               | 150                         | 37IUH05NEP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUH05NE       |               | 400                                | 37JUH05NED     |               | 400A/600V                      | 37JUH05NEF     |               | 250                         | 37JUH05NEP     |               |
|               | 200    | 5                    | 55-250         | —          | 36LPS05NE       |               | 400                                | 37LPS05NED     |               | 400A/600V                      | 37LPS05NEF     |               | 250                         | 37LPS05NEP     |               |
| 575           | 300    | 5                    | 55-250         | —          | 36LPU05NE       |               | 600                                | 37LPU05NED     |               | 600A/600V                      | 37LPU05NEF     |               | 400                         | 37LPU05NEP     |               |
|               | 700    | 6                    | 160-630        | —          | 37MPX05NE       |               | 1600                               | 37MPX05NED     |               | 1600A/600V                     | 37MPX05NEF     |               | 1600                        | 37MPX05NEP     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

<sup>①</sup> See page 9/110 for conduit hubs and conversion instructions.

## Wye Delta, Closed Transition with Solid State Overload, Class 36 &amp; 37

## Selection

| Ordering Information                                                                                                                                                                                                                                                       | Coil and Control Voltage                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/183.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |

## NEMA 1 General Purpose Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | 1                    | 10-40          | A1         | 36DUEC6BD       |               | 60                                 | 37DUEC6BDD     |               | 60A/250V                       | 37DUEC6BDF     |               | 50                          | 37DUEC6BDP     |               |
|               | 15     | (1¾)                 | 10-40          | A1         | 36EUEC6BD       |               | 100                                | 37EUEC6BDD     |               | 100A/250V                      | 37EUEC6BDF     |               | 100                         | 37EUEC6BDP     |               |
|               | 20     | 2                    | 13-52          | B          | 36FUTC6BD       |               | 100                                | 37FUTC6BDD     |               | 100A/250V                      | 37FUTC6BDF     |               | 100                         | 37FUTC6BDP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUGC6BD       |               | 200                                | 37GUGC6BDD     |               | 200A/250V                      | 37GUGC6BDF     |               | 125                         | 37GUGC6BDP     |               |
|               | 40     | 3                    | 25-100         | B          | 36HUGC6BD       |               | 200                                | 37HUGC6BDD     |               | 200A/250V                      | 37HUGC6BDF     |               | 150                         | 37HUGC6BDP     |               |
|               | 50     | (3½)                 | 50-200         | B          | 36IUHC6BD       |               | 200                                | 37IUHC6BDD     |               | 200A/250V                      | 37IUHC6BDF     |               | 250                         | 37IUHC6BDP     |               |
|               | 60     | 4                    | 50-200         | B          | 36JUHC6BD       |               | 400                                | 37JUHC6BDD     |               | 400A/250V                      | 37JUHC6BDF     |               | 250                         | 37JUHC6BDP     |               |
|               | 75     | 5                    | 55-250         | —          | 36LPSC6BD       |               | 400                                | 37LPSC6BDD     |               | 400A/250V                      | 37LPSC6BDF     |               | 400                         | 37LPSC6BDP     |               |
|               | 150    | 5                    | 55-250         | —          | 36LPUC6BD       |               | 600                                | 37LPUC6BDD     |               | 600A/250V                      | 37LPUC6BDF     |               | 600                         | 37LPUC6BDP     |               |
| 230           | 300    | 6                    | 160-630        | —          | 36MPXC6BD       |               | 1200                               | 37MPXC6BDD     |               | 1200A/250V                     | 37MPXC6BDF     |               | 1200                        | 37MPXC6BDP     |               |
|               | 10     | 1                    | 10-40          | A1         | 36DUEC2BG       |               | 60                                 | 37DUEC2BGD     |               | 60A/250V                       | 37DUEC2BGF     |               | 50                          | 37DUEC2BGP     |               |
|               | 15     | (1¾)                 | 10-40          | A1         | 36EUEC2BG       |               | 60                                 | 37EUEC2BGD     |               | 60A/250V                       | 37EUEC2BGF     |               | 50                          | 37EUEC2BGP     |               |
|               | 25     | 2                    | 13-52          | B          | 36FUTC2BG       |               | 100                                | 37FUTC2BGD     |               | 100A/250V                      | 37FUTC2BGF     |               | 100                         | 37FUTC2BGP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUGC2BG       |               | 200                                | 37GUGC2BGD     |               | 200A/250V                      | 37GUGC2BGF     |               | 100                         | 37GUGC2BGP     |               |
|               | 50     | 3                    | 25-100         | B          | 36HUGC2BG       |               | 200                                | 37HUGC2BGD     |               | 200A/250V                      | 37HUGC2BGF     |               | 150                         | 37HUGC2BGP     |               |
|               | 60     | (3½)                 | 50-200         | B          | 36IUHC2BG       |               | 200                                | 37IUHC2BGD     |               | 200A/250V                      | 37IUHC2BGF     |               | 250                         | 37IUHC2BGP     |               |
|               | 75     | 4                    | 50-200         | B          | 36JUHC2BG       |               | 400                                | 37JUHC2BGD     |               | 400A/250V                      | 37JUHC2BGF     |               | 250                         | 37JUHC2BGP     |               |
|               | 100    | 5                    | 55-250         | —          | 36LPSC2BG       |               | 400                                | 37LPSC2BGD     |               | 400A/250V                      | 37LPSC2BGF     |               | 400                         | 37LPSC2BGP     |               |
| 460           | 150    | 5                    | 55-250         | —          | 36LPUC2BG       |               | 600                                | 37LPUC2BGD     |               | 600A/250V                      | 37LPUC2BGF     |               | 600                         | 37LPUC2BGP     |               |
|               | 350    | 6                    | 160-630        | —          | 36MPXC2BG       |               | 1200                               | 37MPXC2BGD     |               | 1200A/250V                     | 37MPXC2BGF     |               | 1200                        | 37MPXC2BGP     |               |
|               | 15     | 1                    | 5.5-22         | A1         | 36DUDC4BH       |               | 30                                 | 37DUDC4BHD     |               | 30A/600V                       | 37DUDC4BHF     |               | 30                          | 37DUDC4BHP     |               |
|               | 30     | (1¾)                 | 10-40          | A1         | 36EUEC4BH       |               | 60                                 | 37EUEC4BHD     |               | 60A/600V                       | 37EUEC4BHF     |               | 50                          | 37EUEC4BHP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUTC4BH       |               | 100                                | 37FUTC4BHD     |               | 100A/600V                      | 37FUTC4BHF     |               | 100                         | 37FUTC4BHP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUGC4BH       |               | 200                                | 37GUGC4BHD     |               | 200A/600V                      | 37GUGC4BHF     |               | 100                         | 37GUGC4BHP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUGC4BH       |               | 200                                | 37HUGC4BHD     |               | 200A/600V                      | 37HUGC4BHF     |               | 125                         | 37HUGC4BHP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUHC4BH       |               | 200                                | 37IUHC4BHD     |               | 200A/600V                      | 37IUHC4BHF     |               | 150                         | 37IUHC4BHP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUHC4BH       |               | 400                                | 37JUHC4BHD     |               | 400A/600V                      | 37JUHC4BHF     |               | 250                         | 37JUHC4BHP     |               |
| 575           | 200    | 5                    | 55-250         | —          | 36LPSC4BH       |               | 400                                | 37LPSC4BHD     |               | 400A/600V                      | 37LPSC4BHF     |               | 400                         | 37LPSC4BHP     |               |
|               | 300    | 5                    | 55-250         | —          | 36LPUC4BH       |               | 600                                | 37LPUC4BHD     |               | 600A/600V                      | 37LPUC4BHF     |               | 600                         | 37LPUC4BHP     |               |
|               | 700    | 6                    | 160-630        | —          | 36MPXC4BH       |               | 1600                               | 37MPXC4BHD     |               | 1600A/600V                     | 37MPXC4BHF     |               | 1200                        | 37MPXC4BHP     |               |
|               | 15     | 1                    | 5.5-22         | A1         | 36DUDC5BE       |               | 30                                 | 37DUDC5BED     |               | 30A/600V                       | 37DUDC5BEF     |               | 30                          | 37DUDC5BEP     |               |
|               | 30     | (1¾)                 | 10-40          | A1         | 36EUEC5BE       |               | 60                                 | 37EUEC5BED     |               | 60A/600V                       | 37EUEC5BEF     |               | 50                          | 37EUEC5BEP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUTC5BE       |               | 100                                | 37FUTC5BED     |               | 100A/600V                      | 37FUTC5BEF     |               | 50                          | 37FUTC5BEP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUGC5BE       |               | 100                                | 37GUGC5BED     |               | 100A/600V                      | 37GUGC5BEF     |               | 100                         | 37GUGC5BEP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUGC5BE       |               | 200                                | 37HUGC5BED     |               | 200A/600V                      | 37HUGC5BEF     |               | 125                         | 37HUGC5BEP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUHC5BE       |               | 200                                | 37IUHC5BED     |               | 200A/600V                      | 37IUHC5BEF     |               | 150                         | 37IUHC5BEP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUHC5BE       |               | 400                                | 37JUHC5BED     |               | 400A/600V                      | 37JUHC5BEF     |               | 250                         | 37JUHC5BEP     |               |
|               | 200    | 5                    | 55-250         | —          | 36LPSC5BE       |               | 400                                | 37LPSC5BED     |               | 400A/600V                      | 37LPSC5BEF     |               | 250                         | 37LPSC5BEP     |               |
|               | 300    | 5                    | 55-250         | —          | 36LPUC5BE       |               | 600                                | 37LPUC5BED     |               | 600A/600V                      | 37LPUC5BEF     |               | 400                         | 37LPUC5BEP     |               |
|               | 700    | 6                    | 160-630        | —          | 37MPXC5BF       |               | 1600                               | 37MPXC5BED     |               | 1600A/600V                     | 37MPXC5BEF     |               | 1600                        | 37MPXC5BEP     |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

## Wye Delta, Closed Transition with Solid State Overload, Class 36 &amp; 37

## Selection

| Ordering Information                                                                                                                                                                                                                                                       | Coil and Control Voltage                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/183.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |

## NEMA 4 Painted Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | 1                    | 10–40          | A1         | 36DUEC6ED       |               | 60                                 | 37DUEC6EDD     |               | 60A/250V                       | 37DUEC6EDF     |               | 50                          | 37DUEC6EDP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUEC6ED       |               | 100                                | 37EUEC6EDD     |               | 100A/250V                      | 37EUEC6EDF     |               | 100                         | 37EUEC6EDP     |               |
|               | 20     | 2                    | 13–52          | B          | 36FUTC6ED       |               | 100                                | 37FUTC6EDD     |               | 100A/250V                      | 37FUTC6EDF     |               | 100                         | 37FUTC6EDP     |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGC6ED       |               | 200                                | 37GUGC6EDD     |               | 200A/250V                      | 37GUGC6EDF     |               | 125                         | 37GUGC6EDP     |               |
|               | 40     | 3                    | 25–100         | B          | 36HUGC6ED       |               | 200                                | 37HUGC6EDD     |               | 200A/250V                      | 37HUGC6EDF     |               | 150                         | 37HUGC6EDP     |               |
|               | 50     | (3½)                 | 50–200         | B          | 36IUHC6ED       |               | 200                                | 37IUHC6EDD     |               | 200A/250V                      | 37IUHC6EDF     |               | 250                         | 37IUHC6EDP     |               |
|               | 60     | 4                    | 50–200         | B          | 36JUHC6ED       |               | 400                                | 37JUHC6EDD     |               | 400A/250V                      | 37JUHC6EDF     |               | 250                         | 37JUHC6EDP     |               |
|               | 75     | 5                    | 55–250         | —          | 36LPSC6ED       |               | 400                                | 37LPSC6EDD     |               | 400A/250V                      | 37LPSC6EDF     |               | 400                         | 37LPSC6EDP     |               |
|               | 150    | 5                    | 55–250         | —          | 36LPUC6ED       |               | 600                                | 37LPUC6EDD     |               | 600A/250V                      | 37LPUC6EDF     |               | 600                         | 37LPUC6EDP     |               |
| 230           | 300    | 6                    | 160–630        | —          | 36MPXC6ED       |               | 1200                               | 37MPXC6EDD     |               | 1200A/250V                     | 37MPXC6EDF     |               | 1200                        | 37MPXC6EDP     |               |
|               | 10     | 1                    | 10–40          | A1         | 36DUEC2EG       |               | 60                                 | 37DUEC2EGD     |               | 60A/250V                       | 37DUEC2EGF     |               | 50                          | 37DUEC2EGP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUEC2EG       |               | 60                                 | 37EUEC2EGD     |               | 60A/250V                       | 37EUEC2EGF     |               | 50                          | 37EUEC2EGP     |               |
|               | 25     | 2                    | 13–52          | B          | 36FUTC2EG       |               | 100                                | 37FUTC2EGD     |               | 100A/250V                      | 37FUTC2EGF     |               | 100                         | 37FUTC2EGP     |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGC2EG       |               | 200                                | 37GUGC2EGD     |               | 200A/250V                      | 37GUGC2EGF     |               | 100                         | 37GUGC2EGP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGC2EG       |               | 200                                | 37HUGC2EGD     |               | 200A/250V                      | 37HUGC2EGF     |               | 150                         | 37HUGC2EGP     |               |
|               | 60     | (3½)                 | 50–200         | B          | 36IUHC2EG       |               | 200                                | 37IUHC2EGD     |               | 200A/250V                      | 37IUHC2EGF     |               | 250                         | 37IUHC2EGP     |               |
|               | 75     | 4                    | 50–200         | B          | 36JUHC2EG       |               | 400                                | 37JUHC2EGD     |               | 400A/250V                      | 37JUHC2EGF     |               | 250                         | 37JUHC2EGP     |               |
|               | 100    | 5                    | 55–250         | —          | 36LPSC2EG       |               | 400                                | 37LPSC2EGD     |               | 400A/250V                      | 37LPSC2EGF     |               | 400                         | 37LPSC2EGP     |               |
| 460           | 150    | 5                    | 55–250         | —          | 36LPUC2EG       |               | 600                                | 37LPUC2EGD     |               | 600A/250V                      | 37LPUC2EGF     |               | 600                         | 37LPUC2EGP     |               |
|               | 350    | 6                    | 160–630        | —          | 36MPXC2EG       |               | 1200                               | 37MPXC2EGD     |               | 1200A/250V                     | 37MPXC2EGF     |               | 1200                        | 37MPXC2EGP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDC4EH       |               | 30                                 | 37DUDC4EHD     |               | 30A/600V                       | 37DUDC4EHF     |               | 30                          | 37DUDC4EHP     |               |
|               | 30     | (1¼)                 | 10–40          | A1         | 36EUEC4EH       |               | 60                                 | 37EUEC4EHD     |               | 60A/600V                       | 37EUEC4EHF     |               | 50                          | 37EUEC4EHP     |               |
|               | 40     | 2                    | 13–52          | B          | 36FUTC4EH       |               | 100                                | 37FUTC4EHD     |               | 100A/600V                      | 37FUTC4EHF     |               | 100                         | 37FUTC4EHP     |               |
|               | 60     | (2½)                 | 25–100         | B          | 36GUGC4EH       |               | 200                                | 37GUGC4EHD     |               | 200A/600V                      | 37GUGC4EHF     |               | 100                         | 37GUGC4EHP     |               |
|               | 75     | 3                    | 25–100         | B          | 36HUGC4EH       |               | 200                                | 37HUGC4EHD     |               | 200A/600V                      | 37HUGC4EHF     |               | 125                         | 37HUGC4EHP     |               |
|               | 100    | (3½)                 | 50–200         | B          | 36IUHC4EH       |               | 200                                | 37IUHC4EHD     |               | 200A/600V                      | 37IUHC4EHF     |               | 150                         | 37IUHC4EHP     |               |
|               | 150    | 4                    | 50–200         | B          | 36JUHC4EH       |               | 400                                | 37JUHC4EHD     |               | 400A/600V                      | 37JUHC4EHF     |               | 250                         | 37JUHC4EHP     |               |
| 575           | 200    | 5                    | 55–250         | —          | 36LPSC4EH       |               | 400                                | 37LPSC4EHD     |               | 400A/600V                      | 37LPSC4EHF     |               | 400                         | 37LPSC4EHP     |               |
|               | 300    | 5                    | 55–250         | —          | 36LPUC4EH       |               | 600                                | 37LPUC4EHD     |               | 600A/600V                      | 37LPUC4EHF     |               | 600                         | 37LPUC4EHP     |               |
|               | 700    | 6                    | 160–630        | —          | 36MPXC4EH       |               | 1600                               | 37MPXC4EHD     |               | 1600A/600V                     | 37MPXC4EHF     |               | 1200                        | 37MPXC4EHP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDC5EE       |               | 30                                 | 37DUDC5EED     |               | 30A/600V                       | 37DUDC5EEF     |               | 30                          | 37DUDC5EEP     |               |
|               | 30     | (1¼)                 | 10–40          | A1         | 36EUEC5EE       |               | 60                                 | 37EUEC5EED     |               | 60A/600V                       | 37EUEC5EEF     |               | 50                          | 37EUEC5EEP     |               |
|               | 40     | 2                    | 13–52          | B          | 36FUTC5EE       |               | 100                                | 37FUTC5EED     |               | 100A/600V                      | 37FUTC5EEF     |               | 50                          | 37FUTC5EEP     |               |
|               | 60     | (2½)                 | 25–100         | B          | 36GUGC5EE       |               | 100                                | 37GUGC5EED     |               | 100A/600V                      | 37GUGC5EEF     |               | 100                         | 37GUGC5EEP     |               |
|               | 75     | 3                    | 25–100         | B          | 36HUGC5EE       |               | 200                                | 37HUGC5EED     |               | 200A/600V                      | 37HUGC5EEF     |               | 125                         | 37HUGC5EEP     |               |
|               | 100    | (3½)                 | 50–200         | B          | 36IUHC5EE       |               | 200                                | 37IUHC5EED     |               | 200A/600V                      | 37IUHC5EEF     |               | 150                         | 37IUHC5EEP     |               |
| 575           | 150    | 4                    | 50–200         | B          | 36JUHC5EE       |               | 400                                | 37JUHC5EED     |               | 400A/600V                      | 37JUHC5EEF     |               | 250                         | 37JUHC5EEP     |               |
|               | 200    | 5                    | 55–250         | —          | 36LPSC5EE       |               | 400                                | 37LPSC5EED     |               | 400A/600V                      | 37LPSC5EEF     |               | 250                         | 37LPSC5EEP     |               |
|               | 300    | 5                    | 55–250         | —          | 36LPUC5EE       |               | 600                                | 37LPUC5EED     |               | 600A/600V                      | 37LPUC5EEF     |               | 400                         | 37LPUC5EEP     |               |
|               | 700    | 6                    | 160–630        | —          | 37MPXC5EF       |               | 1600                               | 37MPXC5EED     |               | 1600A/600V                     | 37MPXC5EEF     |               | 1600                        | 37MPXC5EEP     |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

## Wye Delta, Closed Transition with Solid State Overload, Class 36 &amp; 37

## Selection

| Ordering Information                                                                                                                                                                                                                                                       | Coil and Control Voltage                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/183.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |

## NEMA 4/4X Stainless Steel Enclosures

| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | 1                    | 10-40          | A1         | 36DUEC6WD       |               | 60                                 | 37DUEC6WDD     |               | 60A/250V                       | 37DUEC6WDF     |               | 50                          | 37DUEC6WDP     |               |
|               | 15     | (1¼)                 | 10-40          | A1         | 36EUEC6WD       |               | 100                                | 37EUEC6WDD     |               | 100A/250V                      | 37EUEC6WDF     |               | 100                         | 37EUEC6WDP     |               |
|               | 20     | 2                    | 13-52          | B          | 36FUEC6WD       |               | 100                                | 37FUEC6WDD     |               | 100A/250V                      | 37FUEC6WDF     |               | 100                         | 37FUEC6WDP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUGC6WD       |               | 200                                | 37GUGC6WDD     |               | 200A/250V                      | 37GUGC6WDF     |               | 125                         | 37GUGC6WDP     |               |
|               | 40     | 3                    | 25-100         | B          | 36HUGC6WD       |               | 200                                | 37HUGC6WDD     |               | 200A/250V                      | 37HUGC6WDF     |               | 150                         | 37HUGC6WDP     |               |
|               | 50     | (3½)                 | 50-200         | B          | 36IUHC6WD       |               | 200                                | 37IUHC6WDD     |               | 200A/250V                      | 37IUHC6WDF     |               | 250                         | 37IUHC6WDP     |               |
| 230           | 60     | 4                    | 50-200         | B          | 36JUHC6WD       |               | 400                                | 37JUHC6WDD     |               | 400A/250V                      | 37JUHC6WDF     |               | 250                         | 37JUHC6WDP     |               |
|               | 10     | 1                    | 10-40          | A1         | 36DUEC2WG       |               | 60                                 | 37DUEC2WGD     |               | 60A/250V                       | 37DUEC2WGF     |               | 50                          | 37DUEC2WGP     |               |
|               | 15     | (1¼)                 | 10-40          | A1         | 36EUEC2WG       |               | 60                                 | 37EUEC2WGD     |               | 60A/250V                       | 37EUEC2WGF     |               | 50                          | 37EUEC2WGP     |               |
|               | 25     | 2                    | 13-52          | B          | 36FUEC2WG       |               | 100                                | 37FUEC2WGD     |               | 100A/250V                      | 37FUEC2WGF     |               | 100                         | 37FUEC2WGP     |               |
|               | 30     | (2½)                 | 25-100         | B          | 36GUGC2WG       |               | 200                                | 37GUGC2WGD     |               | 200A/250V                      | 37GUGC2WGF     |               | 100                         | 37GUGC2WGP     |               |
|               | 50     | 3                    | 25-100         | B          | 36HUGC2WG       |               | 200                                | 37HUGC2WGD     |               | 200A/250V                      | 37HUGC2WGF     |               | 150                         | 37HUGC2WGP     |               |
| 460           | 60     | (3½)                 | 50-200         | B          | 36IUHC2WG       |               | 200                                | 37IUHC2WGD     |               | 200A/250V                      | 37IUHC2WGF     |               | 250                         | 37IUHC2WGP     |               |
|               | 75     | 4                    | 50-200         | B          | 36JUHC2WG       |               | 400                                | 37JUHC2WGD     |               | 400A/250V                      | 37JUHC2WGF     |               | 250                         | 37JUHC2WGP     |               |
|               | 15     | 1                    | 5.5-22         | A1         | 36DUDC4WH       |               | 30                                 | 37DUDC4WHD     |               | 30A/600V                       | 37DUDC4WHF     |               | 30                          | 37DUDC4WHP     |               |
|               | 30     | (1¼)                 | 10-40          | A1         | 36EUEC4WH       |               | 60                                 | 37EUEC4WHD     |               | 60A/600V                       | 37EUEC4WHF     |               | 50                          | 37EUEC4WHP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUEC4WH       |               | 100                                | 37FUEC4WHD     |               | 100A/600V                      | 37FUEC4WHF     |               | 100                         | 37FUEC4WHP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUGC4WH       |               | 200                                | 37GUGC4WHD     |               | 200A/600V                      | 37GUGC4WHF     |               | 100                         | 37GUGC4WHP     |               |
| 575           | 75     | 3                    | 25-100         | B          | 36HUGC4WH       |               | 200                                | 37HUGC4WHD     |               | 200A/600V                      | 37HUGC4WHF     |               | 125                         | 37HUGC4WHP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUHC4WH       |               | 200                                | 37IUHC4WHD     |               | 200A/600V                      | 37IUHC4WHF     |               | 150                         | 37IUHC4WHP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUHC4WH       |               | 400                                | 37JUHC4WHD     |               | 400A/600V                      | 37JUHC4WHF     |               | 250                         | 37JUHC4WHP     |               |
|               | 15     | 1                    | 5.5-22         | A1         | 36DUDC5WE       |               | 30                                 | 37DUDC5WED     |               | 30A/600V                       | 37DUDC5WEF     |               | 30                          | 37DUDC5WEP     |               |
|               | 30     | (1¼)                 | 10-40          | A1         | 36EUEC5WE       |               | 60                                 | 37EUEC5WED     |               | 60A/600V                       | 37EUEC5WEF     |               | 50                          | 37EUEC5WEP     |               |
|               | 40     | 2                    | 13-52          | B          | 36FUEC5WE       |               | 100                                | 37FUEC5WED     |               | 100A/600V                      | 37FUEC5WEF     |               | 50                          | 37FUEC5WEP     |               |
|               | 60     | (2½)                 | 25-100         | B          | 36GUGC5WE       |               | 100                                | 37GUGC5WED     |               | 100A/600V                      | 37GUGC5WEF     |               | 100                         | 37GUGC5WEP     |               |
|               | 75     | 3                    | 25-100         | B          | 36HUGC5WE       |               | 200                                | 37HUGC5WED     |               | 200A/600V                      | 37HUGC5WEF     |               | 125                         | 37HUGC5WEP     |               |
|               | 100    | (3½)                 | 50-200         | B          | 36IUHC5WE       |               | 200                                | 37IUHC5WED     |               | 200A/600V                      | 37IUHC5WEF     |               | 150                         | 37IUHC5WEP     |               |
|               | 150    | 4                    | 50-200         | B          | 36JUHC5WE       |               | 400                                | 37JUHC5WED     |               | 400A/600V                      | 37JUHC5WEF     |               | 250                         | 37JUHC5WEP     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).



## Wye Delta, Closed Transition with Solid State Overload, Class 36 &amp; 37

## Selection

| Ordering Information                                                                                                                                                                                                                                                       | Coil and Control Voltage                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/167.</li> <li>► Wiring Diagrams see page 9/183.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <p>The coil voltage will always match the motor voltage. As standard, a CPT is supplied and 120V control voltage is utilized. To change to 120V voltage (CPT not supplied), change the 9th character to "F". To change to 24VAC voltage (CPT not supplied), change the 9th character to "J".</p> |

NEMA 12 Enclosures (Supplied as NEMA 12, field convertible to 3/3R)<sup>①</sup>

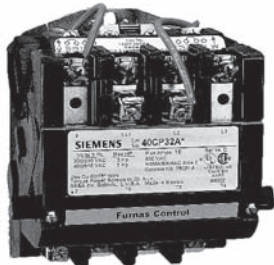
| Motor Voltage | Max Hp | NEMA Size (1/2 Size) | Overload Relay |            | Non-Combination |               | Combination Non-Fusible Disconnect |                |               | Combination Fusible Disconnect |                |               | Combination Circuit Breaker |                |               |
|---------------|--------|----------------------|----------------|------------|-----------------|---------------|------------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-----------------------------|----------------|---------------|
|               |        |                      | Amp Range      | Frame Size | Catalog Number  | List Price \$ | Disc. Amp Rating                   | Catalog Number | List Price \$ | Fuse Clip Amp/Volt Rating      | Catalog Number | List Price \$ | Circuit Breaker Amps        | Catalog Number | List Price \$ |
| 200           | 10     | 1                    | 10–40          | A1         | 36DUEC6ND       |               | 60                                 | 37DUEC6NDD     |               | 60A/250V                       | 37DUEC6NDF     |               | 50                          | 37DUEC6NDP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUEC6ND       |               | 100                                | 37EUEC6NDD     |               | 100A/250V                      | 37EUEC6NDF     |               | 100                         | 37EUEC6NDP     |               |
|               | 20     | 2                    | 13–52          | B          | 36FUEC6ND       |               | 100                                | 37FUEC6NDD     |               | 100A/250V                      | 37FUEC6NDF     |               | 100                         | 37FUEC6NDP     |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGC6ND       |               | 200                                | 37GUGC6NDD     |               | 200A/250V                      | 37GUGC6NDF     |               | 125                         | 37GUGC6NDP     |               |
|               | 40     | 3                    | 25–100         | B          | 36HUGC6ND       |               | 200                                | 37HUGC6NDD     |               | 200A/250V                      | 37HUGC6NDF     |               | 150                         | 37HUGC6NDP     |               |
|               | 50     | (3½)                 | 50–200         | B          | 36IUHC6ND       |               | 200                                | 37IUHC6NDD     |               | 200A/250V                      | 37IUHC6NDF     |               | 250                         | 37IUHC6NDP     |               |
|               | 60     | 4                    | 50–200         | B          | 36JUHC6ND       |               | 400                                | 37JUHC6NDD     |               | 400A/250V                      | 37JUHC6NDF     |               | 250                         | 37JUHC6NDP     |               |
|               | 75     | 5                    | 55–250         | —          | 36LPSC6ND       |               | 400                                | 37LPSC6NDD     |               | 400A/250V                      | 37LPSC6NDF     |               | 400                         | 37LPSC6NDP     |               |
|               | 150    | 5                    | 55–250         | —          | 36LPUC6ND       |               | 600                                | 37LPUC6NDD     |               | 600A/250V                      | 37LPUC6NDF     |               | 600                         | 37LPUC6NDP     |               |
| 230           | 300    | 6                    | 160–630        | —          | 36MPXC6ND       |               | 1200                               | 37MPXC6NDD     |               | 1200A/250V                     | 37MPXC6NDF     |               | 1200                        | 37MPXC6NDP     |               |
|               | 10     | 1                    | 10–40          | A1         | 36DUEC2NG       |               | 60                                 | 37DUEC2NGD     |               | 60A/250V                       | 37DUEC2NGF     |               | 50                          | 37DUEC2NGP     |               |
|               | 15     | (1¼)                 | 10–40          | A1         | 36EUEC2NG       |               | 60                                 | 37EUEC2NGD     |               | 60A/250V                       | 37EUEC2NGF     |               | 50                          | 37EUEC2NGP     |               |
|               | 25     | 2                    | 13–52          | B          | 36FUEC2NG       |               | 100                                | 37FUEC2NGD     |               | 100A/250V                      | 37FUEC2NGF     |               | 100                         | 37FUEC2NGP     |               |
|               | 30     | (2½)                 | 25–100         | B          | 36GUGC2NG       |               | 200                                | 37GUGC2NGD     |               | 200A/250V                      | 37GUGC2NGF     |               | 100                         | 37GUGC2NGP     |               |
|               | 50     | 3                    | 25–100         | B          | 36HUGC2NG       |               | 200                                | 37HUGC2NGD     |               | 200A/250V                      | 37HUGC2NGF     |               | 150                         | 37HUGC2NGP     |               |
|               | 60     | (3½)                 | 50–200         | B          | 36IUHC2NG       |               | 200                                | 37IUHC2NGD     |               | 200A/250V                      | 37IUHC2NGF     |               | 250                         | 37IUHC2NGP     |               |
|               | 75     | 4                    | 50–200         | B          | 36JUHC2NG       |               | 400                                | 37JUHC2NGD     |               | 400A/250V                      | 37JUHC2NGF     |               | 250                         | 37JUHC2NGP     |               |
|               | 100    | 5                    | 55–250         | —          | 36LPSC2NG       |               | 400                                | 37LPSC2NGD     |               | 400A/250V                      | 37LPSC2NGF     |               | 400                         | 37LPSC2NGP     |               |
| 460           | 150    | 5                    | 55–250         | —          | 36LPUC2NG       |               | 600                                | 37LPUC2NGD     |               | 600A/250V                      | 37LPUC2NGF     |               | 600                         | 37LPUC2NGP     |               |
|               | 350    | 6                    | 160–630        | —          | 36MPXC2NG       |               | 1200                               | 37MPXC2NGD     |               | 1200A/250V                     | 37MPXC2NGF     |               | 1200                        | 37MPXC2NGP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDC4NH       |               | 30                                 | 37DUDC4NHD     |               | 30A/600V                       | 37DUDC4NHF     |               | 30                          | 37DUDC4NHP     |               |
|               | 30     | (1¼)                 | 10–40          | A1         | 36EUEC4NH       |               | 60                                 | 37EUEC4NHD     |               | 60A/600V                       | 37EUEC4NHF     |               | 50                          | 37EUEC4NHP     |               |
|               | 40     | 2                    | 13–52          | B          | 36FUEC4NH       |               | 100                                | 37FUEC4NHD     |               | 100A/600V                      | 37FUEC4NHF     |               | 100                         | 37FUEC4NHP     |               |
|               | 60     | (2½)                 | 25–100         | B          | 36GUGC4NH       |               | 200                                | 37GUGC4NHD     |               | 200A/600V                      | 37GUGC4NHF     |               | 100                         | 37GUGC4NHP     |               |
|               | 75     | 3                    | 25–100         | B          | 36HUGC4NH       |               | 200                                | 37HUGC4NHD     |               | 200A/600V                      | 37HUGC4NHF     |               | 125                         | 37HUGC4NHP     |               |
|               | 100    | (3½)                 | 50–200         | B          | 36IUHC4NH       |               | 200                                | 37IUHC4NHD     |               | 200A/600V                      | 37IUHC4NHF     |               | 150                         | 37IUHC4NHP     |               |
|               | 150    | 4                    | 50–200         | B          | 36JUHC4NH       |               | 400                                | 37JUHC4NHD     |               | 400A/600V                      | 37JUHC4NHF     |               | 250                         | 37JUHC4NHP     |               |
| 575           | 200    | 5                    | 55–250         | —          | 36LPSC4NH       |               | 400                                | 37LPSC4NHD     |               | 400A/600V                      | 37LPSC4NHF     |               | 400                         | 37LPSC4NHP     |               |
|               | 300    | 5                    | 55–250         | —          | 36LPUC4NH       |               | 600                                | 37LPUC4NHD     |               | 600A/600V                      | 37LPUC4NHF     |               | 600                         | 37LPUC4NHP     |               |
|               | 700    | 6                    | 160–630        | —          | 36MPXC4NH       |               | 1600                               | 37MPXC4NHD     |               | 1600A/600V                     | 37MPXC4NHF     |               | 1200                        | 37MPXC4NHP     |               |
|               | 15     | 1                    | 5.5–22         | A1         | 36DUDC5NE       |               | 30                                 | 37DUDC5NED     |               | 30A/600V                       | 37DUDC5NEF     |               | 30                          | 37DUDC5NEP     |               |
|               | 30     | (1¼)                 | 10–40          | A1         | 36EUEC5NE       |               | 60                                 | 37EUEC5NED     |               | 60A/600V                       | 37EUEC5NEF     |               | 50                          | 37EUEC5NEP     |               |
|               | 40     | 2                    | 13–52          | B          | 36FUEC5NE       |               | 100                                | 37FUEC5NED     |               | 100A/600V                      | 37FUEC5NEF     |               | 50                          | 37FUEC5NEP     |               |
|               | 60     | (2½)                 | 25–100         | B          | 36GUGC5NE       |               | 100                                | 37GUGC5NED     |               | 100A/600V                      | 37GUGC5NEF     |               | 100                         | 37GUGC5NEP     |               |
|               | 75     | 3                    | 25–100         | B          | 36HUGC5NE       |               | 200                                | 37HUGC5NED     |               | 200A/600V                      | 37HUGC5NEF     |               | 125                         | 37HUGC5NEP     |               |
|               | 100    | (3½)                 | 50–200         | B          | 36IUHC5NE       |               | 200                                | 37IUHC5NED     |               | 200A/600V                      | 37IUHC5NEF     |               | 150                         | 37IUHC5NEP     |               |
| 575           | 150    | 4                    | 50–200         | B          | 36JUHC5NE       |               | 400                                | 37JUHC5NED     |               | 400A/600V                      | 37JUHC5NEF     |               | 250                         | 37JUHC5NEP     |               |
|               | 200    | 5                    | 55–250         | —          | 36LPSC5NE       |               | 400                                | 37LPSC5NED     |               | 400A/600V                      | 37LPSC5NEF     |               | 250                         | 37LPSC5NEP     |               |
|               | 300    | 5                    | 55–250         | —          | 36LPUC5NE       |               | 600                                | 37LPUC5NED     |               | 600A/600V                      | 37LPUC5NEF     |               | 400                         | 37LPUC5NEP     |               |
|               | 700    | 6                    | 160–630        | —          | 37MPXC5NF       |               | 1600                               | 37MPXC5NED     |               | 1600A/600V                     | 37MPXC5NEF     |               | 1600                        | 37MPXC5NEP     |               |

**Note:** All starter sizes carry one maximum Hp rating (per the National Electric Code).

① See page 9/110 for conduit hubs and conversion instructions.

## 3-Phase, Class 40

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                               |                              | Coil Table |  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------|--|
|                                                                                   | <ul style="list-style-type: none"><li>▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>▶ Field Modification Kits see page 9/104.</li><li>▶ Factory Modifications see page 9/119.</li><li>▶ Dimensions see pages 9/144 open and 9/157 enclosed.</li><li>▶ Wiring Diagrams see page 9/184.</li><li>▶ Replacement Parts see page 9/131.</li></ul> | 60Hz Voltage                 | Letter     |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                    | 24                           | J          |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                    | 120                          | F          |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                    | 110–120/220–240 <sup>①</sup> | A          |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                    | 200–208                      | D          |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                    | 220–240                      | G          |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                    | 277                          | L          |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                    | 220–240/440–480 <sup>①</sup> | C          |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                    | 440–480                      | H          |  |
| 575–600                                                                           | E                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |            |  |
|                                                                                   | For other voltages and frequencies, see Factory Modifications page 9/119.                                                                                                                                                                                                                                                                                                                                                          |                              |            |  |

## Open Type &amp; Standard Width Enclosure, 3-Phase, 3-Pole

| Open Type & Standard NEMA Enclosures, 1 Phase, 3 Pole |              |              |              |                                    |                 |              |                        |                  |                           |                  |                                                                                                             |                  |                                                                        |                  |                                                                                                                                                         |                  |                                                                     |                  |
|-------------------------------------------------------|--------------|--------------|--------------|------------------------------------|-----------------|--------------|------------------------|------------------|---------------------------|------------------|-------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------|------------------|
| Max Hp                                                |              |              |              | Contact-<br>actor<br>Amp<br>Rating | NEMA<br>Size    | Half<br>Size | Enclosure              |                  |                           |                  |                                                                                                             |                  |                                                                        |                  |                                                                                                                                                         |                  |                                                                     |                  |
| 200<br>Volts                                          | 230<br>Volts | 460<br>Volts | 575<br>Volts |                                    |                 |              | Open Type <sup>④</sup> |                  | NEMA 1<br>General Purpose |                  | NEMA 4/4X<br>Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |                  | NEMA 4X<br>Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |                  | NEMA 7 & 9<br>NEMA 3 & 4<br>Div 1 and Div 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |                  | NEMA 12 <sup>③</sup><br>NEMA 3/3R<br>Industrial Use<br>Weatherproof |                  |
|                                                       |              |              |              |                                    |                 |              | Catalog<br>Number      | List<br>Price \$ | Catalog<br>Number         | List<br>Price \$ | Catalog<br>Number                                                                                           | List<br>Price \$ | Catalog<br>Number                                                      | List<br>Price \$ | Catalog<br>Number                                                                                                                                       | List<br>Price \$ | Catalog<br>Number                                                   | List<br>Price \$ |
| 1½                                                    | 1½           | 2            | 2            | 9                                  | 00              | —            | 40BP32A*               |                  | 40BP32B*                  |                  | Use Size 0                                                                                                  | —                | Use Size 0                                                             | —                | Use Size 0                                                                                                                                              | —                |                                                                     |                  |
| 3                                                     | 3            | 5            | 5            | 18                                 | 0               | —            | 40CP32A*               |                  | 40CP32B*                  |                  | 40CP32W*                                                                                                    |                  | 40CP32F*                                                               |                  | 40CP32H*                                                                                                                                                | 40CP320*         |                                                                     |                  |
| 7½                                                    | 7½           | 10           | 10           | 27                                 | 1               | —            | 40DP32A*               |                  | 40DP32B*                  |                  | 40DP32W*                                                                                                    |                  | 40DP32F*                                                               |                  | 40DP32H*                                                                                                                                                | 40DP320*         |                                                                     |                  |
| 10                                                    | 10           | 15           | 15           | 40                                 | —               | 1¼           | 40EP32A*               |                  | 40EP32B*                  |                  | 40EP32W*                                                                                                    |                  | 40EP32F*                                                               |                  | 40EP32H*                                                                                                                                                | 40EP320*         |                                                                     |                  |
| 10                                                    | 15           | 25           | 25           | 45                                 | 2               | —            | 40FP32A*               |                  | 40FP32B*                  |                  | 40FP32W*                                                                                                    |                  | 40FP32F*                                                               |                  | 40FP32H*                                                                                                                                                | 40FP320*         |                                                                     |                  |
| 15                                                    | 20           | 30           | 30           | 60                                 | —               | 2½           | 40GP32A*               |                  | 40GP32B*                  |                  | 40GP32W*                                                                                                    |                  | 40GP32F*                                                               |                  | 40GP32H*                                                                                                                                                | 40GP320*         |                                                                     |                  |
| 25                                                    | 30           | 50           | 50           | 90                                 | 3               | —            | 40HP32A*               |                  | 40HP32B*                  |                  | 40HP32W*                                                                                                    |                  | 40HP32F*                                                               |                  | 40HP32H*                                                                                                                                                | 40HP320*         |                                                                     |                  |
| 30                                                    | 40           | 75           | 75           | 115                                | —               | 3½           | 40IP32A*               |                  | 40IP32B*                  |                  | 40IP32W*                                                                                                    |                  | 40IP32F*                                                               |                  | 40IP32H*                                                                                                                                                | 40IP320*         |                                                                     |                  |
| 40                                                    | 50           | 100          | 100          | 135                                | 4               | —            | 40JG32A*               |                  | 40JG32B*                  |                  | 40JG32W*                                                                                                    |                  | 40JG32F*                                                               |                  | 40JG32H*                                                                                                                                                | 40JG320*         |                                                                     |                  |
| 75                                                    | 100          | 200          | 200          | 270                                | 5               | —            | 40LP32A*               |                  | 40LP32B*                  |                  | 40LP32E* <sup>③</sup>                                                                                       |                  | —                                                                      | —                | 40LP32H*                                                                                                                                                | 40LP320*         |                                                                     |                  |
| 150                                                   | 200          | 400          | 400          | 540                                | 6               | —            | 40MP32A*               |                  | 40MP32B*                  |                  | 40MP32E* <sup>③</sup>                                                                                       |                  | —                                                                      | —                | —                                                                                                                                                       | 40MP320*         |                                                                     |                  |
| —                                                     | 300          | 600          | 600          | 810                                | 7 <sup>④⑦</sup> | —            | 40NH32A*               |                  | 40NH32B*                  |                  | 40NH32E* <sup>③</sup>                                                                                       |                  | —                                                                      | —                | —                                                                                                                                                       | 40NH320*         |                                                                     |                  |
| —                                                     | 450          | 900          | 900          | 1215                               | 8 <sup>⑤⑦</sup> | —            | 40PH32A*               |                  | 40PH32B*                  |                  | 40PH32E* <sup>③</sup>                                                                                       |                  | —                                                                      | —                | —                                                                                                                                                       | 40PH320*         |                                                                     |                  |

## Extra Wide Enclosure, 3-Phase, 3-Pole

| Max Hp       |              |              |              | Contactor<br>Amp<br>Range | NEMA<br>Size | Half<br>Size | Enclosure                              |               |                                                                                                          |               |                                                                                                                                                         |               |                                                                     |               |
|--------------|--------------|--------------|--------------|---------------------------|--------------|--------------|----------------------------------------|---------------|----------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts |                           |              |              | NEMA 1 <sup>①</sup><br>General Purpose |               | NEMA 4/4X Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 7 & 9<br>NEMA 3 & 4<br>Div 1 and Div 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |               | NEMA 12 <sup>③</sup><br>NEMA 3/3R<br>Industrial Use<br>Weatherproof |               |
|              |              |              |              |                           |              |              | Catalog Number                         | List Price \$ | Catalog Number                                                                                           | List Price \$ | Catalog Number                                                                                                                                          | List Price \$ | Catalog Number                                                      | List Price \$ |
| 1 ½          | 1 ½          | 2            | 2            | 9                         | 00           | —            | 40BP82B*                               |               | Use Size 0                                                                                               | —             | Use Size 0                                                                                                                                              | —             | Use Size 0                                                          | —             |
| 3            | 3            | 5            | 5            | 18                        | 0            | —            | 40CP82B*                               |               | 40CP82W*                                                                                                 |               | 40CP82H*                                                                                                                                                |               | 40CP820*                                                            |               |
| 7 ½          | 7 ½          | 10           | 10           | 27                        | 1            | —            | 40DP82B*                               |               | 40DP82W*                                                                                                 |               | 40DP82H*                                                                                                                                                |               | 40DP820*                                                            |               |
| 10           | 10           | 15           | 15           | 40                        | —            | 1 ¼          | 40EP82B*                               |               | 40EP82W*                                                                                                 |               | 40EP82H*                                                                                                                                                |               | 40EP820*                                                            |               |
| 10           | 15           | 25           | 25           | 45                        | 2            | —            | 40FP82B*                               |               | 40FP82W*                                                                                                 |               | 40FP82H*                                                                                                                                                |               | 40FP820*                                                            |               |
| 15           | 20           | 30           | 30           | 60                        | —            | 2 ½          | 40GP82B*                               |               | 40GP82W*                                                                                                 |               | 40GP82H*                                                                                                                                                |               | 40GP820*                                                            |               |
| 25           | 30           | 50           | 50           | 90                        | 3            | —            | 40HP82B*                               |               | 40HP82W*                                                                                                 |               | 40HP82H*                                                                                                                                                |               | 40HP820*                                                            |               |
| 30           | 40           | 75           | 75           | 115                       | —            | 3 ½          | 40IP82B*                               |               | 40IP82W*                                                                                                 |               | 40IP82H*                                                                                                                                                |               | 40IP820*                                                            |               |
| 40           | 50           | 100          | 100          | 135                       | 4            | —            | 40JG82B*                               |               | 40JG82W*                                                                                                 |               | 40JG82H*                                                                                                                                                |               | 40JG820*                                                            |               |

Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Dual voltage coils not available in size 5-8 starters.

② For conduit hubs and conversion instructions, see page 9/110.

③ Enclosure is NEMA Type 4 (painted steel).

④ Only available

F coil 100-250V AC 50/60Hz, or DC  
H coil 150-500V AC 50/60Hz, or DC

⑤ Only available

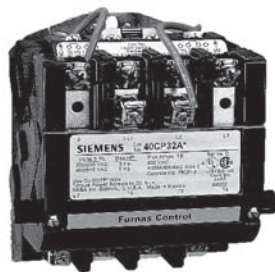
F coil 100-250V AC 50/60Hz, or DC

| Standard Auxiliary Contacts          |                      |               |                     |
|--------------------------------------|----------------------|---------------|---------------------|
| Type                                 | Size (3rd Character) | Configuration | Internal / External |
| All FVNR<br>Starters &<br>Contactors | B Thru E             | 1N.O.         | Internal            |
|                                      | F Thru J             | 1N.O.         | External            |
|                                      | L Thru M             | 2N.O., 2N.C.  | External            |
|                                      | N Thru P             | 1N.O., 1N.C.  | External            |

⑦ Lugs are not included, refer to page 9/108.

## Single Phase, 4-Pole &amp; Vacuum, Class 40

## Selection



## Ordering Information

- ▶ Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- ▶ Field Modification Kits see page 9/104.
- ▶ Factory Modifications see page 9/119.
- ▶ Dimensions see pages 9/144 open and 9/157 enclosed.
- ▶ Wiring Diagrams see page 9/184.
- ▶ Replacement Parts see page 9/131.

## Coil Table

| 60Hz Voltage                 | Letter |
|------------------------------|--------|
| 24                           | J      |
| 120                          | F      |
| 110–120/220–240 <sup>①</sup> | A      |
| 200–208                      | D      |
| 220–240                      | G      |
| 277                          | L      |
| 220–240/440–480 <sup>①</sup> | C      |
| 440–480                      | H      |
| 575–600                      | E      |

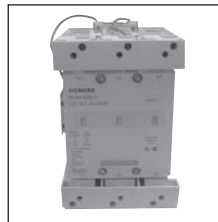
For other voltages and frequencies, see Factory Modifications page 9/119.

Open Type & Standard Width Enclosure, Single Phase, 2-Pole<sup>③④</sup>

| Max Hp       |                        | 208/<br>230<br>Volts | Contact<br>Amp<br>Rating | NEMA<br>Size | Half<br>Size | Enclosure                  |            |                                                                                      |            |                                                                                               |            |                                                                                                                                                        |            |                                                                     |            |              |            |
|--------------|------------------------|----------------------|--------------------------|--------------|--------------|----------------------------|------------|--------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------------------------------------------------|------------|--------------|------------|
| 115<br>Volts | Open Type <sup>⑤</sup> |                      |                          |              |              | NEMA 1<br>General Purposes |            | NEMA 4/4X<br>Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant |            | NEMA 4X<br>Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |            | NEMA 7 & 9<br>NEMA 3 & 4<br>Div 1 and Div 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosure<br>Indoor/Outdoor Use |            | NEMA 12<br>NEMA 3/3R <sup>②</sup><br>Industrial Use<br>Weatherproof |            |              |            |
|              | Catalog No             |                      |                          |              |              | List Price\$               | Catalog No | List Price\$                                                                         | Catalog No | List Price\$                                                                                  | Catalog No | List Price\$                                                                                                                                           | Catalog No | List Price\$                                                        | Catalog No | List Price\$ | Catalog No |
| 1/8          | 1                      | 9                    | 00                       | —            | 40BP12A*     | 40BP12B*                   | Use Size 0 | —                                                                                    | Use Size 0 | —                                                                                             | Use Size 0 | —                                                                                                                                                      | Use Size 0 | —                                                                   |            |              |            |
| 1            | 2                      | 18                   | 0                        | —            | 40CP12A*     | 40CP12B*                   | 40CP12W*   | —                                                                                    | 40CP12F*   | —                                                                                             | 40CP12H*   | —                                                                                                                                                      | 40CP120*   | —                                                                   |            |              |            |
| 2            | 3                      | 27                   | 1                        | —            | 40DP12A*     | 40DP12B*                   | 40DP12W*   | —                                                                                    | 40DP12F*   | —                                                                                             | 40DP12H*   | —                                                                                                                                                      | 40DP120*   | —                                                                   |            |              |            |
| 3            | 5                      | 35                   | 1P                       | —            | 40EP12A*     | 40EP12B*                   | 40EP12W*   | —                                                                                    | 40EP12F*   | —                                                                                             | 40EP12H*   | —                                                                                                                                                      | 40EP120*   | —                                                                   |            |              |            |
| 3            | 7½                     | 45                   | 2                        | —            | 40FP12A*     | 40FP12B*                   | 40FP12W*   | —                                                                                    | 40FP12F*   | —                                                                                             | 40FP12H*   | —                                                                                                                                                      | 40FP120*   | —                                                                   |            |              |            |
| 5            | 10                     | 60                   | —                        | 2½           | 40GP12A*     | 40GP12B*                   | 40GP12W*   | —                                                                                    | 40GP12F*   | —                                                                                             | 40GP12H*   | —                                                                                                                                                      | 40GP120*   | —                                                                   |            |              |            |
| 7½           | 15                     | 90                   | 3                        | —            | 40HP12A*     | 40HP12B*                   | 40HP12W*   | —                                                                                    | 40HP12F*   | —                                                                                             | 40HP12H*   | —                                                                                                                                                      | 40HP120*   | —                                                                   |            |              |            |

## Open Type &amp; Standard Width Enclosure, 4-Pole

| Max Hp       |              |              |              | Con-<br>tactor<br>Amp<br>Rating | NEMA<br>Size | Half<br>Size | Enclosure  |               |                           |               |                                                                                                             |               |                                                                        |               |                                                                                                                                                        |               |                                                                     |               |
|--------------|--------------|--------------|--------------|---------------------------------|--------------|--------------|------------|---------------|---------------------------|---------------|-------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts |                                 |              |              | Open Type  |               | NEMA 1<br>General Purpose |               | NEMA 4/4X<br>Stainless <sup>②</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X<br>Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 7 & 9<br>NEMA 3 & 4<br>Div 1 and Div 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosure<br>Indoor/Outdoor Use |               | NEMA 12<br>NEMA 3/3R <sup>②</sup><br>Industrial Use<br>Weatherproof |               |
|              |              |              |              |                                 |              |              | Catalog No | List Price \$ | Catalog No                | List Price \$ | Catalog No                                                                                                  | List Price \$ | Catalog No                                                             | List Price \$ | Catalog No                                                                                                                                             | List Price \$ | Catalog No                                                          | List Price \$ |
|              |              |              |              |                                 |              |              |            |               |                           |               |                                                                                                             |               |                                                                        |               |                                                                                                                                                        |               |                                                                     |               |
| 1/8          | 1 1/2        | 2            | 2            | 9                               | 00           | —            | 40BP22A*   |               | 40BP22B*                  |               | Use Size 0                                                                                                  | —             | Use Size 0                                                             | —             | Use Size 0                                                                                                                                             | —             | Use Size 0                                                          | —             |
| 2            | 3            | 5            | 5            | 18                              | 0            | —            | 40CP22A*   |               | 40CP22B*                  |               | 40CP22W*                                                                                                    |               | 40CP22F*                                                               |               | 40CP22H*                                                                                                                                               |               | 40CP220*                                                            |               |
| 3            | 7 1/2        | 10           | 10           | 27                              | 1            | —            | 40DP22A*   |               | 40DP22B*                  |               | 40DP22W*                                                                                                    |               | 40DP22F*                                                               |               | 40DP22H*                                                                                                                                               |               | 40DP220*                                                            |               |
| 5            | 10           | 15           | 15           | 40                              | —            | 1 1/4        | 40EP22A*   |               | 40EP22B*                  |               | 40EP22W*                                                                                                    |               | 40EP22F*                                                               |               | 40EP22H*                                                                                                                                               |               | 40EP220*                                                            |               |

Vacuum Contactors, 3-Phase, 3-Pole<sup>①</sup>

| Max Hp |      |      |      | Contact<br>Amp<br>Rating | NEMA<br>Size | Open Type      |               |
|--------|------|------|------|--------------------------|--------------|----------------|---------------|
| 200V   | 230V | 460V | 575V |                          |              | Catalog Number | List Price \$ |
| 40     | 50   | 100  | 100  | 135                      | 4            | 40JV32A*       |               |
| 75     | 100  | 200  | 200  | 270                      | 5            | 40LV32A*       |               |
| 150    | 200  | 400  | 400  | 540                      | 6            | 40MV32A*       |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Dual voltage coils not available for vacuum contactors. Refer to Page 9/119 for a complete list of available coil voltages.

② For conduit hubs and conversion instructions, see page 9/110.

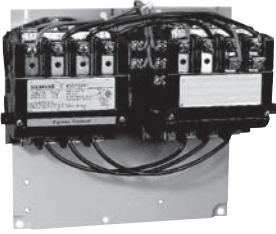
③ To order single phase contactor in an extra wide enclosure, order the enclosure kit from Page 9/113 and the open style contactor as separate items.

④ Coils D, F, or G will be wired for incoming voltage. J coil will be wired for separate source. Coils E, H, and L do not apply to single phase starters.

⑤ 1 NO Auxiliary.

## Class 43

## Selection



## Ordering Information

- ▶ Replace the (\*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- ▶ Field Modification Kits see page 9/104.
- ▶ Factory Modifications see page 9/119.
- ▶ Dimensions see pages 9/145 open and 9/162 enclosed.
- ▶ Wiring Diagrams see page 9/184.
- ▶ Replacement Parts see page 9/131.

## Coil Table

| 60Hz Voltage                 | Letter |
|------------------------------|--------|
| 24                           | J      |
| 120                          | F      |
| 110–120/220–240 <sup>①</sup> | A      |
| 200–208                      | D      |
| 220–240                      | G      |
| 277                          | L      |
| 220–240/440–480 <sup>①</sup> | C      |
| 440–480                      | H      |
| 575–600                      | E      |

For other voltages and frequencies, see Factory Modifications page 9/119.

## Open Type &amp; Standard Width Enclosure, 3-Phase, 3-Pole

| Max Hp       |              |              |              | Cont-actor<br>Amp<br>Rating | NEMA<br>Size | Half<br>Size | Enclosure              |                  |                           |                  |                                                                                                          |                  |                                                                     |                  |                                                                                                                                                         |                  |                                                                     |                  |
|--------------|--------------|--------------|--------------|-----------------------------|--------------|--------------|------------------------|------------------|---------------------------|------------------|----------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------|------------------|
| 200<br>Volts | 230<br>Volts | 460<br>Volts | 575<br>Volts |                             |              |              | Open Type <sup>②</sup> |                  | NEMA 1<br>General Purpose |                  | NEMA 4/4X Stainless <sup>③</sup><br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |                  | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |                  | NEMA 7 & 9<br>NEMA 3 & 4<br>Div 1 and Div 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |                  | NEMA 12 <sup>④</sup><br>NEMA 3/3R<br>Industrial Use<br>Weatherproof |                  |
|              |              |              |              |                             |              |              | Catalog<br>Number      | List<br>Price \$ | Catalog<br>Number         | List<br>Price \$ | Catalog<br>Number                                                                                        | List<br>Price \$ | Catalog<br>Number                                                   | List<br>Price \$ | Catalog<br>Number                                                                                                                                       | List<br>Price \$ | Catalog<br>Number                                                   | List<br>Price \$ |
| ½            | ½            | 2            | 2            | 9                           | 00           | —            | 43BP32A*               |                  | 43BP32B*                  |                  | Use Size 0                                                                                               | —                | Use Size 0                                                          | —                | Use Size 0                                                                                                                                              | —                | Use Size 0                                                          | —                |
| 3            | 3            | 5            | 5            | 18                          | 0            | —            | 43CP32A*               |                  | 43CP32B*                  |                  | 43CP32W*                                                                                                 |                  | 43CP32F*                                                            |                  | 43CP32H*                                                                                                                                                |                  | 43CP320*                                                            |                  |
| 7½           | 7½           | 10           | 10           | 27                          | 1            | —            | 43DP32A*               |                  | 43DP32B*                  |                  | 43DP32W*                                                                                                 |                  | 43DP32F*                                                            |                  | 43DP32H*                                                                                                                                                |                  | 43DP320*                                                            |                  |
| 10           | 10           | 15           | 15           | 40                          | —            | 1¼           | 43EP32A*               |                  | 43EP32B*                  |                  | 43EP32W*                                                                                                 |                  | 43EP32F*                                                            |                  | 43EP32H*                                                                                                                                                |                  | 43EP320*                                                            |                  |
| 10           | 15           | 25           | 25           | 45                          | 2            | —            | 43FP32A*               |                  | 43FP32B*                  |                  | 43FP32W*                                                                                                 |                  | 43FP32F*                                                            |                  | 43FP32H*                                                                                                                                                |                  | 43FP320*                                                            |                  |
| 15           | 20           | 30           | 30           | 60                          | —            | 2½           | 43GP32A*               |                  | 43GP32B*                  |                  | 43GP32W*                                                                                                 |                  | 43GP32F*                                                            |                  | 43GP32H*                                                                                                                                                |                  | 43GP320*                                                            |                  |
| 25           | 30           | 50           | 50           | 90                          | 3            | —            | 43HP32A*               |                  | 43HP32B*                  |                  | 43HP32W*                                                                                                 |                  | 43HP32F*                                                            |                  | 43HP32H*                                                                                                                                                |                  | 43HP320*                                                            |                  |
| 30           | 40           | 75           | 75           | 115                         | —            | 3½           | 43IP32A*               |                  | 43IP32B*                  |                  | 43IP32W*                                                                                                 |                  | 43IP32F*                                                            |                  | 43IP32H*                                                                                                                                                |                  | 43IP320*                                                            |                  |
| 40           | 50           | 100          | 100          | 135                         | 4            | —            | 43JG32A*               |                  | 43JG32B*                  |                  | 43JG32W*                                                                                                 |                  | 43JG32F*                                                            |                  | 43JG32H*                                                                                                                                                |                  | 43JG320*                                                            |                  |
| 75           | 100          | 200          | 200          | 270                         | 5            | —            | 43LP32A*               |                  | 43LP32B*                  |                  | 43LP32E* <sup>③</sup>                                                                                    |                  | —                                                                   | —                | —                                                                                                                                                       | —                | 43LP320*                                                            |                  |
| 100          | 200          | 400          | 400          | 540                         | 6            | —            | 43MP32A*               |                  | 43MP32B*                  |                  | 43MP32E* <sup>③</sup>                                                                                    |                  | —                                                                   | —                | —                                                                                                                                                       | —                | 43MP320*                                                            |                  |
| —            | 300          | 600          | 600          | 810                         | 7⑤           | —            | 43NH32A*               |                  | 43NH32B*                  |                  | 43NH32E* <sup>③</sup>                                                                                    |                  | —                                                                   | —                | —                                                                                                                                                       | —                | 43NH320*                                                            |                  |
| —            | 450          | 900          | 900          | 1215                        | 8⑥           | —            | 43PH32A*               |                  | —                         | —                | —                                                                                                        | —                | —                                                                   | —                | —                                                                                                                                                       | —                | —                                                                   | —                |

Open Type & Standard Width Enclosure, Single Phase, 3-Wire, 2-Pole<sup>④</sup>

| Max Hp       |                      | Cont-actor<br>Amp<br>Rating | NEMA<br>Size | Enclosure  |               |                           |               |                                                                                              |               |                                                                     |               |                                                                                                                                                         |               |                                                         |               |
|--------------|----------------------|-----------------------------|--------------|------------|---------------|---------------------------|---------------|----------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------|---------------|
| 115<br>Volts | 208/<br>230<br>Volts |                             |              | Open Type  |               | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless®<br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4X Fiberglass<br>Watertight, Dust-tight<br>Corrosion Resistant |               | NEMA 7 & 9<br>NEMA 3 & 4<br>Div 1 and Div 2<br>Class I Groups C & D<br>Class II Groups E, F & G<br>Class III<br>Bolted Enclosures<br>Indoor/Outdoor Use |               | NEMA 12®<br>NEMA 3/3R<br>Industrial Use<br>Weatherproof |               |
|              |                      |                             |              | Catalog No | List Price \$ | Catalog No                | List Price \$ | Catalog No                                                                                   | List Price \$ | Catalog No                                                          | List Price \$ | Catalog No                                                                                                                                              | List Price \$ | Catalog No                                              | List Price \$ |
|              |                      |                             |              |            |               |                           |               |                                                                                              |               |                                                                     |               |                                                                                                                                                         |               |                                                         |               |
| 1/2          | 1                    | 9                           | 00           | 43BP12A*   |               | 43BP12B*                  |               | Use Size 0                                                                                   | —             | Use Size 0                                                          | —             | Use Size 0                                                                                                                                              | —             | Use Size 0                                              | —             |
| 1            | 2                    | 18                          | 0            | 43CP12A*   |               | 43CP12B*                  |               | 43CP12W*                                                                                     |               | 43CP12F*                                                            |               | 43CP12H*                                                                                                                                                |               | 43CP120*                                                |               |
| 2            | 3                    | 27                          | 1            | 43DP12A*   |               | 43DP12B*                  |               | 43DP12W*                                                                                     |               | 43DP12F*                                                            |               | 43DP12H*                                                                                                                                                |               | 43DP120*                                                |               |
| 3            | 5                    | 35                          | 1P           | 43EP12A*   |               | 43EP12B*                  |               | 43EP12W*                                                                                     |               | 43EP12F*                                                            |               | 43EP12H*                                                                                                                                                |               | 43EP120*                                                |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Dual voltage coils not available in size 5–8 starters.

② For conduit hubs and conversion instructions, see page 9/110.

③ Enclosure is NEMA Type 4 (painted steel).

④ Coils D, F, or G will be wired for incoming voltage. J coil will be wired for separate source. Coils E, H, and L do not apply to single phase starters.

⑤ Only available  
F coil 100–250V AC 50/60Hz, or DC  
H coil 150–500V AC 50/60Hz, or DC

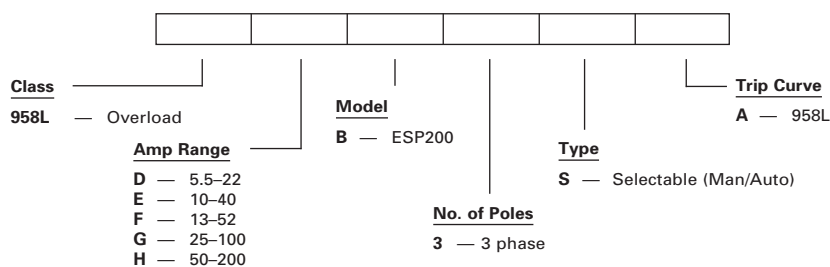
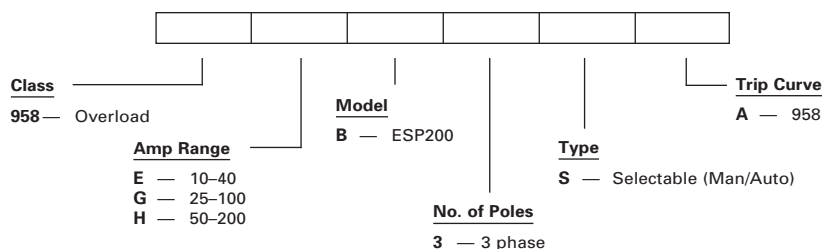
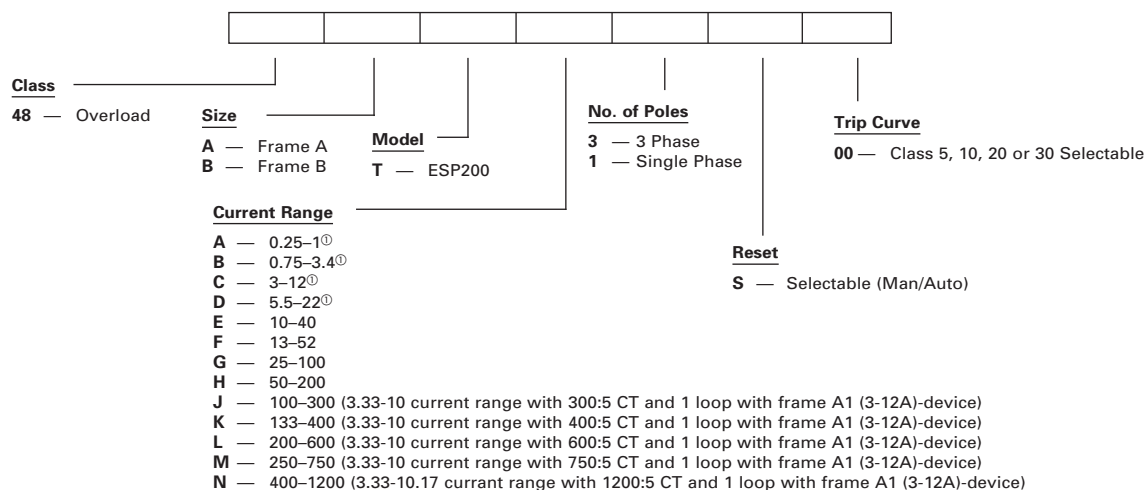
⑥ Only available

F coil 100–250V AC 50/60Hz, or DC

⑦ Auxiliary contacts  
43B–43E 4th pole built-in  
43F–43J 2 NO & 2 NC

## Catalog Numbering System

## General

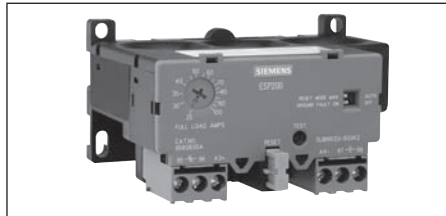


① Ranges available in Single or 3-phase.



## Solid State ESP200, Class 48, 958 and 958L

## General



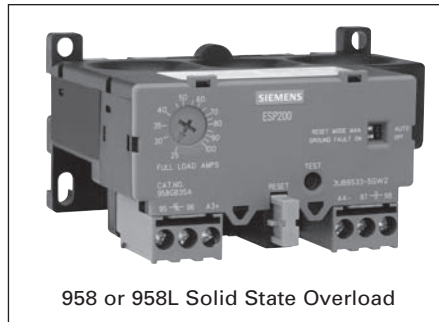
| Features                                                                                                                                               | Benefits                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>▪ Trip Classes - 5, 10, 20, or 30 Selectable by DIP-switches</li> </ul>                                         | <ul style="list-style-type: none"> <li>▪ Field changeable reduces time and inventory. Suitable for light, normal and heavy starting conditions</li> </ul>                                                                        |
| <ul style="list-style-type: none"> <li>▪ Phase Loss Protection - Trips in less than 3 Seconds</li> </ul>                                               | <ul style="list-style-type: none"> <li>▪ Protects motor burn out and minimizes motor heating up</li> </ul>                                                                                                                       |
| <ul style="list-style-type: none"> <li>▪ Phase Unbalance - Trips based on Trip Class selected</li> </ul>                                               | <ul style="list-style-type: none"> <li>▪ Minimizes temperature rise of the motor on a asymmetrical three-phase-system</li> </ul>                                                                                                 |
| <ul style="list-style-type: none"> <li>▪ Ground Fault - Trips 60% of Motor Current</li> </ul>                                                          | <ul style="list-style-type: none"> <li>▪ Provides optimum system protection of motors against high-resistance short-circuits or ground faults due to moisture, condensation, damage of insulation or any other reason</li> </ul> |
| <ul style="list-style-type: none"> <li>▪ Trip Indicator - Visible</li> </ul>                                                                           | <ul style="list-style-type: none"> <li>▪ Save time, faster to identify overload Trip</li> </ul>                                                                                                                                  |
| <ul style="list-style-type: none"> <li>▪ Ambient Insensitive</li> </ul>                                                                                | <ul style="list-style-type: none"> <li>▪ Prevents nuisance tripping</li> </ul>                                                                                                                                                   |
| <ul style="list-style-type: none"> <li>▪ No Heaters Required</li> </ul>                                                                                | <ul style="list-style-type: none"> <li>▪ Saves cost and eliminates time for installation of heaters</li> </ul>                                                                                                                   |
| <ul style="list-style-type: none"> <li>▪ Self-Powered - No outside source required</li> </ul>                                                          | <ul style="list-style-type: none"> <li>▪ Reduce cost for external power supply</li> </ul>                                                                                                                                        |
| <ul style="list-style-type: none"> <li>▪ FLA dial with wide Adjustment - 4:1 ratio</li> </ul>                                                          | <ul style="list-style-type: none"> <li>▪ Provides wide range, reduces inventory</li> </ul>                                                                                                                                       |
| <ul style="list-style-type: none"> <li>▪ Self Protected in short circuit condition (when used with proper fuses or motor starter protector)</li> </ul> | <ul style="list-style-type: none"> <li>▪ Unlike bimetal overloads, this eliminates replacement of the overload heaters after short circuit</li> </ul>                                                                            |
| <ul style="list-style-type: none"> <li>▪ Test Button - Tests Electronics</li> </ul>                                                                    | <ul style="list-style-type: none"> <li>▪ Tests the complete electronic functions including the trip mechanism. Increases up time</li> </ul>                                                                                      |
| <ul style="list-style-type: none"> <li>▪ Thermal Memory</li> </ul>                                                                                     | <ul style="list-style-type: none"> <li>▪ Prevents re-starting motor when it is still hot</li> </ul>                                                                                                                              |
| <ul style="list-style-type: none"> <li>▪ Conformally coated circuit board</li> </ul>                                                                   | <ul style="list-style-type: none"> <li>▪ Resists against environmental conditions</li> </ul>                                                                                                                                     |
| <ul style="list-style-type: none"> <li>▪ 1 NO and 1NC Contacts Standard. B600, R300</li> </ul>                                                         | <ul style="list-style-type: none"> <li>▪ Makes it easier for user to wire local contacts</li> </ul>                                                                                                                              |
| <ul style="list-style-type: none"> <li>▪ Operating Temperature: -25 °C - 65 °C</li> </ul>                                                              | <ul style="list-style-type: none"> <li>▪ Wide operating temperature range prevents nuisance tripping with temperature changes</li> </ul>                                                                                         |
| <ul style="list-style-type: none"> <li>▪ Repeat Accuracy &lt;1 %.</li> </ul>                                                                           | <ul style="list-style-type: none"> <li>▪ For more precise settings and reduced nuisance tripping</li> </ul>                                                                                                                      |
| <ul style="list-style-type: none"> <li>▪ Removable Terminal Block</li> </ul>                                                                           | <ul style="list-style-type: none"> <li>▪ Terminal Block can be removed without removing wires. Saves time for replacements</li> </ul>                                                                                            |
| <ul style="list-style-type: none"> <li>▪ Automatic reset</li> </ul>                                                                                    | <ul style="list-style-type: none"> <li>▪ Auto. Reset is 3 minutes after tripping, allowing motor to cool down before re-start. If Manual Reset is selected, overload can be reset immediately</li> </ul>                         |
| <ul style="list-style-type: none"> <li>▪ Remote reset</li> </ul>                                                                                       | <ul style="list-style-type: none"> <li>▪ As an alternative to the mechanical RESET options, an electrical remote RESET can be used by applying 24 V DC to terminals A3 and A4</li> </ul>                                         |
| <ul style="list-style-type: none"> <li>▪ DIN Rail Mounted</li> </ul>                                                                                   | <ul style="list-style-type: none"> <li>▪ Reduces installation time</li> </ul>                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>▪ Touch - Safe Terminals</li> </ul>                                                                             | <ul style="list-style-type: none"> <li>▪ Protects against accidental touching of live circuits</li> </ul>                                                                                                                        |
| <ul style="list-style-type: none"> <li>▪ UL listed CSA certified</li> </ul>                                                                            | <ul style="list-style-type: none"> <li>▪ Third party approval standard</li> </ul>                                                                                                                                                |

## Solid State ESP200, Class 48, 958, 958L and Bimetal

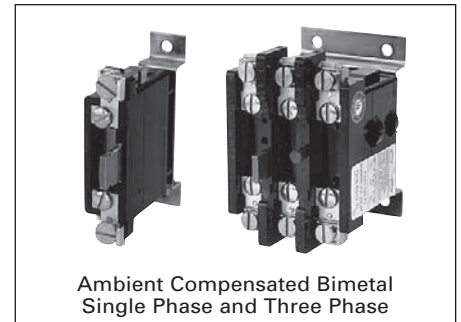
## General



ESP200 Solid State Overload



958 or 958L Solid State Overload



Ambient Compensated Bimetal Single Phase and Three Phase

## Applications

**ESP200 Solid State Overloads**

Designed for a wide variety of applications. The field selectable Trip Class 5, 10, 20 or 30 can easily be set by 2 DIP switches. This eliminates the guess factor of an application requirements and provides reduced inventory for multiple applications. The inherent benefits of the ESP200 ultimately results in cost savings for the user.

ESP200 has a 4:1 current adjustment range with a fine adjustment dial labeled in full load amps. The heaterless overload minimizes the heat trapped in the enclosures, reduces cost for ventilation or cooling. Easily accessible Reset button, provides visible and audible indications to ensure the tripped overload is ready to re-start.

Designed to replace thermal, or ESP100 overload relays for any application. It has the same dimensions and footprint of the ESP100 overload relays. It can be directly coupled to the contactors or remotely mounted. In addition to the NEMA contactor applications, it also can be used with other types of controllers for applications requiring DP or IEC contactors. As a retrofit for other brands, it is used with a plate available for retrofitting competitive products.

**958 ESP200 Special Use Solid State Overloads**

This overload is specifically designed for special applications, to provide excellent protection of hermetically sealed and artificially cooled motors that require ambient insensitive and quick trip response times. Combined with a series lockout relay, it provides unsurpassed protection for hermetically sealed compressor motors in air conditioning applications. The combination of high trip speed, current adjustment, and ease of installation makes it suitable for these applications. The trip curves are customized to provide proper overload protection for these loads without causing nuisance tripping.

It has selectable manual or automatic reset mode, and provides ground fault selection to protect equipment from damage in case of a fault.

**958L ESP200 Oil Field Solid State Overloads**

Specifically designed for the oil market and the cycling loads experienced with these types of pumping applications. These overload relays provide protection for standard motors, oil well pump motors, multi-torque connections, and ultra-high slip motors.

Rotors can be damaged in less than 15 seconds during motor stall conditions if electrical power is not removed. To prevent damage during motor stall, the 958L solid state overload removes the power in 7 seconds at 250% lock rotor current. Therefore, the motor casing and the rotor will be protected from being damage saving the user money and time.

**Ambient Compensated Bimetal Overloads**

- Automatic or manual reset adjustment
- A manual test button is provided to test the operation of the 3-pole overload relay control contacts
- $\pm 15\%$  nominal trip current adjustment
- Accept either standard Class 20 or Quick Trip (NEMA Class 10) heater elements without any other changes or adjustments
- Available with a normally open contact for an alarm circuit (SPDT) up to 60A
- Compensated bimetal overload relays provide a constant trip time in ambient temperatures from  $-20^{\circ}\text{F}$  to  $+170^{\circ}\text{F}$  for a given heater rating
- UL Listed File #E22655 or Component Recognized
- CSA Certified File #LR6535

**Ambient Compensated Bimetal Overloads**

These thermal type overload relays are used to protect motors from excessive heat resulting from sustained motor overloads, rapid motor cycling and stalled rotor conditions. Although these devices function based on thermal principles they are designed to compensate for the ambient air temperature surrounding the overload. This helps prevent the occurrence of nuisance tripping when there are high surrounding ambient temperatures. The percentage of overload determines the length of time required to open the circuit.

## Solid State Class 48, ESP200 and 3RB20

## Selection



3-Phase, 48ATC3S00

## Ordering Information

- For CT's see Accessories page 9/67.
- Dimensions see page 9/146.
- To retrofit or direct mount to a contactor, order 49ASMP1, 2, or 3 separately. See Retrofit Plates below.
- For remote mounting of frame size A order 49ASMS1 terminals separately, see page 9/108.

## Solid State—Class 48

| Current Adjustment Range | Phase | Frame Size | Catalog Number | MRPD/MLFB   | List Price \$ |
|--------------------------|-------|------------|----------------|-------------|---------------|
| 0.25–1                   | 3     | "A"        | 48ATA3S00      | 3UB81134AB2 |               |
| 0.75–3.4                 | 3     | "A"        | 48ATB3S00      | 3UB81134BB2 |               |
| 3–12                     | 3     | "A1"       | 48ATC3S00      | 3UB81234CW2 |               |
| 5.5–22                   | 3     | "A1"       | 48ATD3S00      | 3UB81234DW2 |               |
| 10–40                    | 3     | "A1"       | 48ATE3S00      | 3UB81234EW2 |               |
| 13–52                    | 3     | "B"        | 48BTF3S00      | 3UB81334FW2 |               |
| 25–100                   | 3     | "B"        | 48BTG3S00      | 3UB81334GW2 |               |
| 50–200                   | 3     | "B"        | 48BTH3S00      | 3UB81334HW2 |               |
| 100–300                  | 3     | "A1" ②     | 48ATJ3S00      | 3UB81234JW2 |               |
| 133–400                  | 3     | "A1" ③     | 48ATK3S00      | 3UB81234KW2 |               |
| 200–600                  | 3     | "A1" ④     | 48ATL3S00      | 3UB81234LW2 |               |
| 250–750                  | 3     | "A1" ⑤     | 48ATM3S00      | 3UB81234MW2 |               |
| 400–1220                 | 3     | "A1" ⑤     | 48ATN3S00      | 3UB81234NW2 |               |
| 0.25–1                   | 1     | "A"        | 48ATA1S00      | 3UB88134AB2 |               |
| 0.75–3.4                 | 1     | "A"        | 48ATB1S00      | 3UB88134BB2 |               |
| 3–12                     | 1     | "A1"       | 48ATC1S00      | 3UB88234CW2 |               |
| 5.5–22                   | 1     | "A1"       | 48ATD1S00      | 3UB88234DW2 |               |
| 25–100                   | 1     | "B"        | 48BTG1S00      | 3UB88334GW2 |               |

Solid State—3RB206<sup>③⑥</sup>, 3-Phase, Manual/Auto Reset

| For Contactor Size | Setting Range Amps | Class 10 Catalog Number | List Price \$ | Class 20 Catalog Number | List Price \$ |
|--------------------|--------------------|-------------------------|---------------|-------------------------|---------------|
| 5                  | 55 - 250           | 3RB2066-1GC2            |               | 3RB2066-2GC2            |               |
| 6                  | 160 - 630          | 3RB2066-1MC2            |               | 3RB2066-2MC2            |               |

## Retrofit Plates for Contactors, Class 48

| Replacement for Starter Sizes | ESP200 Overload Frame Size <sup>①</sup> | Retrofit Plate Suffix | Plate Kit Separate | Price Adder \$ |
|-------------------------------|-----------------------------------------|-----------------------|--------------------|----------------|
| Size 00–1¼<br>Size 2, 2½      | A or A1<br>B                            | 1P<br>2P              | 49ASMP1<br>49ASMP2 |                |
| Size 3, 3½<br>Size 4          | B<br>B                                  | 3P<br>4P              | 49ASMP3<br>49ASMP3 |                |

## Ambient Compensated Bimetal—Open Type Class 48 Single Phase, 3-Phase (Panel Mount Only)

| Poles | Amp Rating                         | Auxiliary Contacts                                 | Contact Rating                                            | Catalog Number                                                             | List Price \$ |
|-------|------------------------------------|----------------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------|---------------|
| 1     | 25<br>60<br>100<br>180             | 1 NC<br>1 NC<br>1 NC<br>1 NC                       | 5A (B600)<br>&<br>5A (P300)                               | 48DA18AA4<br>48GA18AA4<br>48HA18AA4<br>48JA18AA4                           |               |
| 3     | 30<br>30<br>60<br>60<br>100<br>180 | 1 NC<br>1 NO/NC<br>1 NC<br>1 NO/NC<br>3 NC<br>3 NC | 10A (A600)<br>&<br>5A (P300)<br><br>5A (B600) & 5A (P300) | 48DC38AA4<br>48DC39AA4<br>48GC38AA4<br>48GC39AA4<br>48HA38AA4<br>48JA38AA4 |               |

① To determine frame size of replacement solid state overload, refer to retrofit plates table above.

② Requires use of 300:5 Current Transformers—3 of 97CT005.

③ Product Category: IEC.

④ Requires use of 600:5 Current Transformers—3 of 97CT008.

⑤ Requires use of 1200:5 Current Transformers—3 of 97CT012.

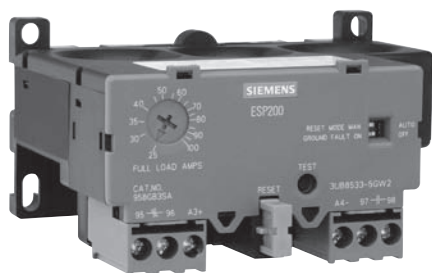
⑥ Overload has busbar connections.

⑦ Requires use of 750:5 Current Transformers—3 of 97CT009.

⑧ Requires use of 400:5 Current Transformers—3 of 97CT006.

## Special Use Solid State Overloads, Class 958 and 958L

## Selection



Class 958, 958L

## Ordering Information

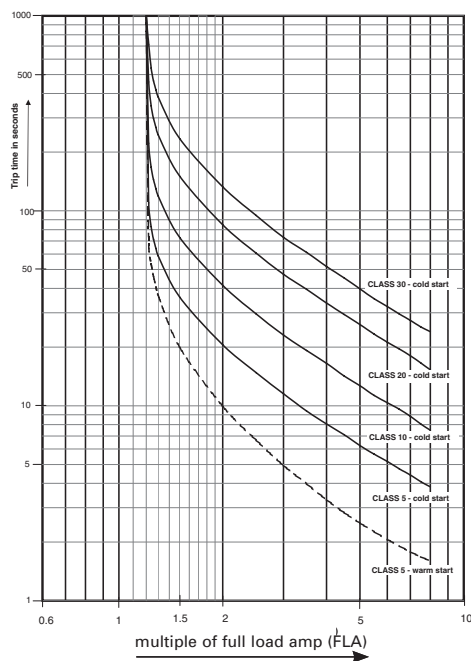
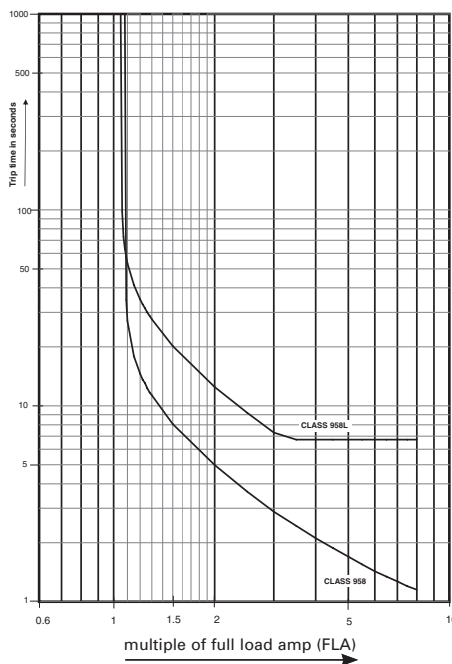
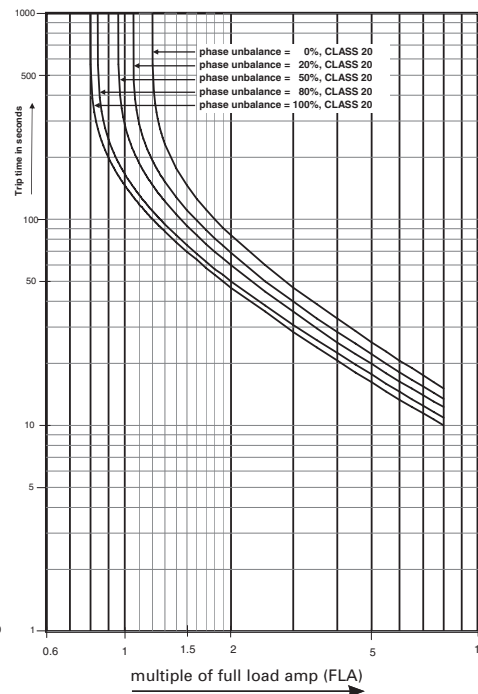
- Dimensions see page 9/146.

## Current Transformers

| Rating | Catalog No. | List Price \$ |
|--------|-------------|---------------|
| 150:5  | 97CT002     |               |
| 200:5  | 97CT003     |               |
| 250:5  | 97CT004     |               |
| 300:5  | 97CT005     |               |
| 400:5  | 97CT006     |               |
| 600:5  | 97CT008     |               |
| 750:5  | 97CT009     |               |
| 1200:5 | 97CT012     |               |

## Solid State—Class 958 and 958L

| Current Adjustment Range | Phase | Frame Size | Catalog Number | MRPD/MLFB   | List Price \$ |
|--------------------------|-------|------------|----------------|-------------|---------------|
| 10–40                    | 3     | "A1"       | 958EB3SA       | 3UB85235EW2 |               |
| 25–100                   | 3     | "B"        | 958GB3SA       | 3UB85335GW2 |               |
| 50–200                   | 3     | "B"        | 958HB3SA       | 3UB85335HW2 |               |
| 5.5–22                   | 3     | "A1"       | 958LB3SA       | 3UB85236DW2 |               |
| 10–40                    | 3     | "A1"       | 958LB3SA       | 3UB85236EW2 |               |
| 13–52                    | 3     | "B"        | 958LFB3SA      | 3UB85336FW2 |               |
| 25–100                   | 3     | "B"        | 958LGB3SA      | 3UB85336GW2 |               |
| 50–200                   | 3     | "B"        | 958LHB3SA      | 3UB85336HW2 |               |

Time - Current - Characteristics  
CLASS 48Time - Current - Characteristics  
CLASS 958, 958LTrip - curve depending on unbalance  
CLASS 20

① Temperature rating  $-25^{\circ}$  to  $+60^{\circ}\text{C}$ .

## Slim Line NEMA Pump Controller for the Agricultural industry, Class 82

## General

## Features

The Class 82 Slim Line NEMA Pump was designed specifically for the agricultural market. It is well suited for irrigation and similar pumping applications and is built to withstand the harsh elements of the outdoors

## Typical applications include:

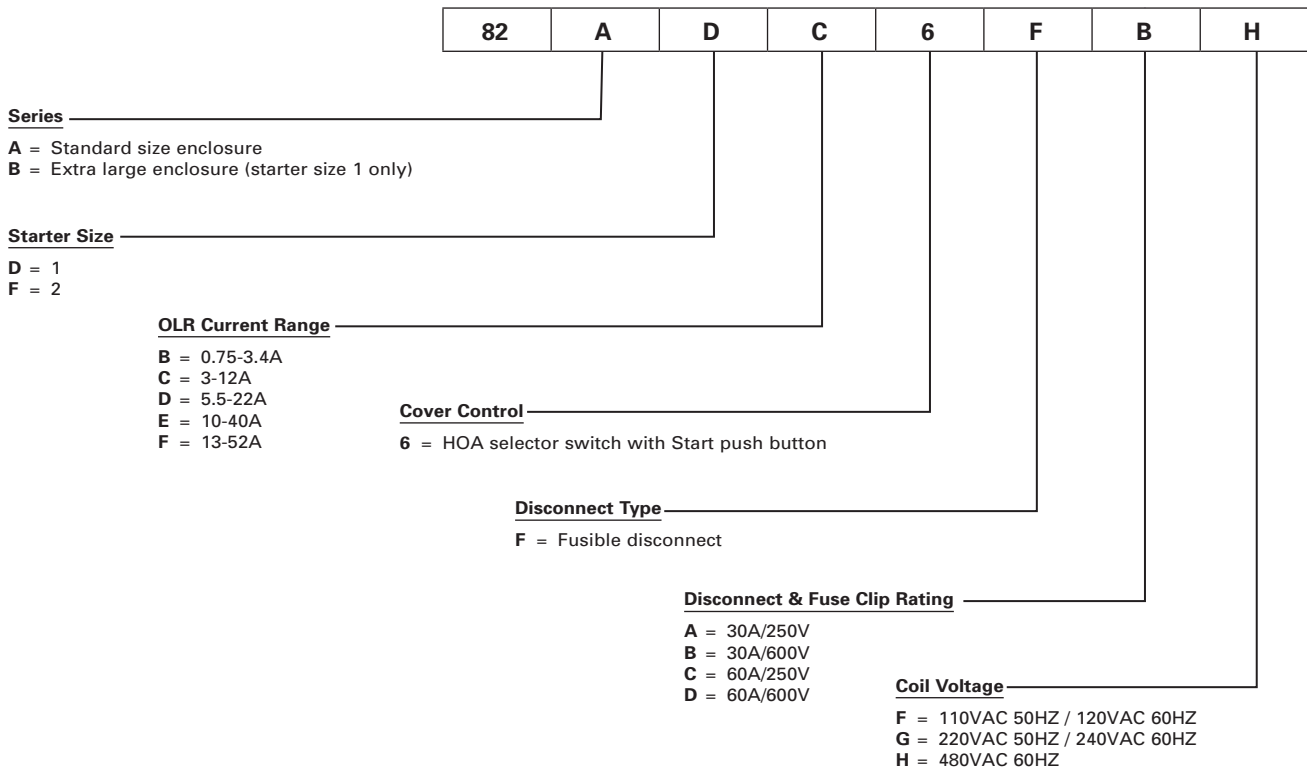
- Crop irrigation
- Sprinklers, misters and soakers
- Watering for livestock and other dairy applications
- Ground dewatering for excavation and construction sites

## Why you should use the Class 82 Pump Panel

- Simplicity and its compact lightweight design makes this an attractive solution to your budgeting challenges.
- The contactor is NEMA rated to provide reliable motor control and protection expected in the most demanding applications.
- The ESP200 solid-state overload relay has a protective coating on the circuit board which gives it superior protection against high humidity, condensation and corrosive environments.
- Its size and weight is about half that of the Class 87 which increases the ease of installation.



## Catalog Numbering System





## Slim Line NEMA Pump Controller for the Agricultural industry, Class 82

## General

|  | Ordering Information                                                                                                                                                                                                                                                                                  |  | Coil Table                |                |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------|----------------|
|                                                                                   | <ul style="list-style-type: none"> <li>► Field Modification Kits (see accessories on this page)</li> <li>► Factory Modifications (NA)</li> <li>► Dimensions see page 9/167</li> <li>► Wiring Diagram see page 9/187</li> <li>► Replacement Parts (refer to instruction sheet A5E35327591A)</li> </ul> |  | 50/60Hz Voltage           | Letter         |
|                                                                                   |                                                                                                                                                                                                                                                                                                       |  | 110VAC 50HZ / 120VAC 60HZ | F              |
|                                                                                   |                                                                                                                                                                                                                                                                                                       |  | 220VAC 50HZ / 240VAC 60HZ | G <sup>①</sup> |
|                                                                                   |                                                                                                                                                                                                                                                                                                       |  | 480VAC 60HZ               | H <sup>②</sup> |

## Product Selection

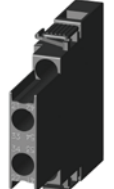
| Max Hp Rating<br>Motor Voltage |     | NEMA Size | Overload<br>Relay Amp<br>Range | Disc. Amp<br>Rating | Fuse Clip<br>Amp/Volts | HOA & Start Push Button |               | HOA & Start Push Button<br>(Extra wide Encl) |               |
|--------------------------------|-----|-----------|--------------------------------|---------------------|------------------------|-------------------------|---------------|----------------------------------------------|---------------|
| 230                            | 460 |           |                                |                     |                        | Catalog Number          | List Price \$ | Catalog Number                               | List Price \$ |
| —                              | 1   | 1         | 0.75–3.4                       | 30                  | 30A/600V               | 82ADB6FB*               |               | 82BDB6FB* <sup>③</sup>                       |               |
| —                              | 5   | 1         | 3–12                           | 30                  | 30A/600V               | 82ADC6FB*               |               | 82BDC6FB* <sup>③</sup>                       |               |
| —                              | 10  | 1         | 5.5–22                         | 30                  | 30A/600V               | 82ADD6FB*               |               | 82BDD6FB* <sup>③</sup>                       |               |
| —                              | 10  | 1         | 10–40                          | 30                  | 30A/600V               | —                       |               | 82BDE6FB* <sup>③</sup>                       |               |
| 2                              | —   | 1         | 3–12                           | 30                  | 30A/250V               | 82ADC6FA*               |               | 82BDC6FA* <sup>③</sup>                       |               |
| 3                              | —   | 1         | 5.5–22                         | 30                  | 30A/250V               | 82ADD6FA*               |               | 82BDD6FA* <sup>③</sup>                       |               |
| 7 1/2                          | —   | 1         | 10–40                          | 30                  | 30A/250V               | 82ADE6FA*               |               | 82BDE6FA* <sup>③</sup>                       |               |
| —                              | 25  | 2         | 13–52                          | 60                  | 60A/600V               | 82AFF6FD* <sup>③</sup>  |               | —                                            |               |
| 15                             | —   | 2         | 13–52                          | 60                  | 60A/250V               | 82AFF6FC* <sup>③</sup>  |               | —                                            |               |

Replace the (\*) with a letter from the coil table.

③ Available in May 2017.

## Accessories

| Image                                                                               | Description                                                              | Catalog Number | List Price |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------|------------|
|  | 3/4" type 3R conduit hub                                                 | ECHS075        |            |
|                                                                                     | 1" type 3R conduit hub                                                   | ECHS100        |            |
|                                                                                     | 1 1/4" type 3R conduit hub                                               | ECHS125        |            |
|                                                                                     | 1 1/2" type 3R conduit hub                                               | ECHS150        |            |
|  | Disconnect switch<br>auxiliary contacts<br>2 NO/2 NC DPDT<br>(NEMA A600) | HA261234       |            |
|  | Fuse puller kit<br>for 30A switch (1 kit<br>required per switch)         | HP61           |            |
|  | 30A, 240V Class R<br>Fuse Clip Kits                                      | HR21           |            |
|                                                                                     | 30A, 600V Class R<br>Fuse Clip Kits                                      | HR612          |            |

| Image                                                                               | Description                                                                   | Catalog Number | List Price |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------|------------|
|  | Contactor auxiliary<br>contacts, side mounted<br>1 NO/NC (NEMA A300/<br>Q300) | 3RH29111DA11   |            |
|  | ESP200 tamper resis-<br>tance cover                                           | 49ASTC1        |            |

① G coil is not available with a 600v disconnect

② H coil is not available with a 250v disconnect

## Slim Line NEMA Pump Controller for the Agricultural industry, Class 82

## Selection

## Class 82 Technical information

| General Technical Data:                           |                                                                                                                              |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Weight                                            | Size 1 (Standard Encl.) 23lbs.<br>Size 1 (Extra Wide Encl.) 47lbs.<br>Size 2 (Standard Encl.) 47lbs.                         |
| Height x Width x Depth                            | Size 1 (Standard Encl.) 26 x 12 x 5in.<br>Size 1 (Extra Wide Encl.) 35 x 17 x 6in.<br>Size 2 (Standard Encl.) 35 x 17 x 6in. |
| Maximum altitude                                  | 6560 ft.                                                                                                                     |
| Ambient (outside enclosure) storage temperature   | (-30 to 65)°C / (-22 to 149)°F                                                                                               |
| Ambient (outside enclosure) operating temperature | (-20 to 40)°C / (-4 to 104)°F                                                                                                |
| Country of origin                                 | Mexico                                                                                                                       |
| Horsepower Rating:                                |                                                                                                                              |
| See selection table above                         | See selection table above                                                                                                    |
| Contactor:                                        |                                                                                                                              |
| Number of NO main contacts                        | 3                                                                                                                            |
| Amp rating                                        | 32A, 50A                                                                                                                     |
| Mechanical operating cycles                       | 10,000,000                                                                                                                   |
| Internal / Standard Auxiliary Contact:            |                                                                                                                              |
| Number of NC / NO auxiliary contacts              | 1NC / 1NO                                                                                                                    |
| NEMA contact rating designation                   | A600 AC / Q600 DC                                                                                                            |
| Optional auxiliary contacts available             | Yes                                                                                                                          |
| Coil:                                             |                                                                                                                              |
| Voltage                                           | 220/230V 50/60Hz, 460V 60Hz, or 110/120V 50/60Hz                                                                             |
| Apparent pull-in / holding power                  | 81 VA / 10.5 VA                                                                                                              |
| Normal coil operating limits (% of rated voltage) | 80% - 110% at 60Hz                                                                                                           |
| Pick-up time / Drop-out time                      | 8-40 / 4-16 msec                                                                                                             |
| Overload Relay:                                   |                                                                                                                              |
| Current range                                     | 0.75 - 3.4 or 3 - 12 or 5.5 - 22 or 10 - 40 Amps or 13 - 52 Amps                                                             |
| Trip Class                                        | Class 5 / 10 (factory set) / 20 / 30                                                                                         |
| Trip detection                                    | Overload, phase failure, phase unbalance, ground fault                                                                       |
| Phase failure sensitivity                         | Trip time after phase loss: < 3 sec                                                                                          |
| Repeat accuracy                                   | Within 1%                                                                                                                    |
| Reset options                                     | Manual, automatic and remote                                                                                                 |
| External reset                                    | Yes                                                                                                                          |
| Test function                                     | Electronics and manual actuation                                                                                             |
| Conformal coating on printed circuit board        | Yes                                                                                                                          |
| Number of NC / NO auxiliary contacts              | 1NC / 1NO                                                                                                                    |
| Rating of auxiliary contacts                      | B600 AC / R300 DC                                                                                                            |
| Single contact isolation                          | 600 V                                                                                                                        |
| Dual contact isolation                            | 300 V differing polarity / 600 V common polarity                                                                             |

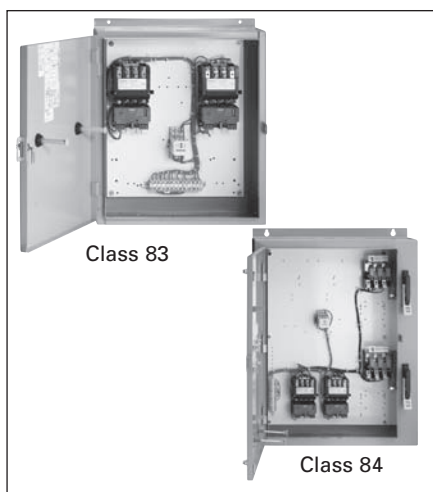
## Slim Line NEMA Pump Controller for the Agricultural industry, Class 82

## Technical

## Class 82 Technical information

|                                                      |                                                                                                        |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Disconnect Switch:</b>                            |                                                                                                        |
| Rating                                               | 30 A with 30A/600 or 30A/250 V Class H fuse clips<br>60 A with 60A/600 or 60A/250 V Class H fuse clips |
| Fuse type accepted                                   | Class H, J or R                                                                                        |
| <b>Enclosure:</b>                                    |                                                                                                        |
| Type                                                 | NEMA Type 3/3R enclosure                                                                               |
| Rating                                               | Weather proof for outdoor use                                                                          |
| <b>Standard Control Devices:</b>                     |                                                                                                        |
| Hand-Off-Auto selector switch                        | 3SU1 30mm, round, metal with matte finish                                                              |
| Start push button                                    | 3SU1 30mm, round, metal with matte finish                                                              |
| <b>Mounting / Wiring:</b>                            |                                                                                                        |
| Mounting orientation                                 | Vertical                                                                                               |
| Mounting type                                        | Pole and surface                                                                                       |
| Disconnect line side connection type / torque        | Box lug / 35 lb in (14 - 10); 40 lb in (8); 45 lb in (6 - 4) AWG                                       |
| Disconnect line side solid and stranded conductors   | 1x(14 - 2 AWG) 60/75°C AL or CU                                                                        |
| Power terminal block connection type / torque        | Screw / 24 - 32 lb - in                                                                                |
| Power terminal block solid and stranded conductors   | 1x(18 - 2 AWG) 75°C CU                                                                                 |
| Control terminal block connection type / torque      | Screw / 12 - 18 lb - in                                                                                |
| Control terminal block solid and stranded conductors | 1x(22 - 8 AWG) 75°C CU                                                                                 |
| Coil connection type / torque                        | Screw / 7 - 10 lb in                                                                                   |
| Coil solid and stranded conductors                   | 2x(16 - 12 AWG) CU 60/75°C                                                                             |
| Main auxiliary contact connection type / torque      | Screw / 7 - 10 lb in                                                                                   |
| Main auxiliary contact solid and stranded conductors | 2x(20 - 16), 2x(18 - 14) 75°C CU                                                                       |
| OLR auxiliary contact connection type / torque       | Screw / 7 - 10 lb in                                                                                   |
| OLR auxiliary contact solid and stranded conductors  | 2x(20 - 14 AWG) CU 60/75°C                                                                             |
| <b>Short Circuit Current Rating:</b>                 |                                                                                                        |
| Fuses                                                | 10kA@600V (Class H or K); 85kA@600V (Class R or J)                                                     |
| <b>Certificates / Approvals:</b>                     |                                                                                                        |
| cULus                                                | UL (file no. E185287)                                                                                  |
| UL rated Service Entrance Equipment                  | ISO 9001 certification                                                                                 |

## General



## Features

- Heavy Duty NEMA Starters
- Solid State or Thermal Overload Relays
- Fusible or MCP
- Heavy Duty Disconnect Handle
- Flexibility with Field Modifications
- Alternator Transfer on De-energization
- UL Listed for Outdoor Use
- UL Listed file #E14900 (class 83); file #E185287 (class 84)
- CSA certified file #LR 6535 (class 83 & 84)

## Application

Duplex pump controls are designed to perform one or both of two distinct functions: duplexing and alternation. The duplexing function provides capacity for system peaking or above normal demand without having the full motor capacity spinning at all times. It also provides standby capacity for use when one of the motors or pumps is disabled. The duplexing function is also referred to as lead/lag or main/standby. When two pumps or compressors are controlled by a duplex controller, they are started in sequence as necessary to attain preset values of pressure, flow or liquid level.

Two field devices such as pressure switches or float switches provide electrical signals to the duplex controller. One remote device is set to initiate the starting of the lead motor. This motor is rated to handle normal system demand. The second motor is usually the same rating and is referred to as the lag motor. It is only energized when the system demand is greater than the capacity of the lead motor. The lag motor is started when the second remote device is signalling for more output than the lead motor can produce.

The alternation function reverses the lead and lag mode for the two motors in a duplex system. Upon alternation the first motor as described above becomes the lag motor and the second motor assumes the lead function. The alternation is usually programmed to occur at any time both pumps come to rest. The alternation function equalizes wear on the two machines and extends the life of seals and bearings.

## Enclosure Types

Duplex controllers are available in NEMA 1, 12/3/3R, 4 (painted) and 4/4X (stainless) enclosures. Enclosures protect personnel from contact with live parts and depending upon the construction, protect the control in varying degrees from physical damage and harmful atmospheres. All enclosures are supplied with corrosion resistant finishes.

## Heavy Duty Starters

These Duplex controllers use the same starters described in the heavy duty starter section of this catalog.

## Siemens Type ETI Circuit Breaker

The ETI circuit breaker is a device designed specifically for application in motor circuits. The ETI is a magnetic only protective device designed to provide protection against short circuit current.

The instantaneous-only type ETI circuit breaker employs adjustable magnetic trip settings to allow broader application ranges and a higher degree of motor short circuit protection.

## Features

Two control transformers may be provided for low voltage control to safeguard personnel from high voltage. One transformer is required for each starter to provide independent control circuits.

A Hand-Off-Auto selector switch for each starter may be mounted in the enclosure door or furnished separately for remote control. Test push buttons or pilot lights may also be installed on the enclosure.

Solid-state or Ambient Compensated Bimetal Overload Relays are supplied as standard.

## Heavy Duty Disconnect Switches

The disconnect switch that goes the distance in durability, performance and reliability has the following advantages:

- Visible blades for the highest level of safety
- Double break switching action to reduce arcing, increase lifetime and eliminate the "electric hinge"
- More rugged positive action switch
- Oversized lugs are standard
- Line side shield to help guard personnel from contact with live parts
- Higher horsepower rating for design E high efficiency motors
- UL listed for IIsco, Burndy and T&B crimp type lugs
- The 200A switch accepts up to 300 MCM versus 250 MCM wire size

Its rugged construction - with a high fault withstand rating of 100kA at 600 VAC when fused with class R rated fuses - meets the most stringent industry standards set forth by the automotive, petro-chemical, and pulp and paper industries. UL recognized and CSA certified, our disconnect switches are available either non-fusible or fusible with class R and class J fuse clips.

## Non-Combination, Class 83

## Selection

| Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Coil Table                                                                                                                                                                                                                                                                                                                                                                                    |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|-----------------|---|-----|---|----------------------|---|----------------------|---|------------------|---|----------------------|---|----------------------|---|
| <ul style="list-style-type: none"> <li>▶ Standard duplex controllers include an alternator indicated by characters "92" within the catalog number. The standard coil voltage supplied with the alternator is 120V separate control. This is the only control voltage available with the alternator.</li> <li>▶ To omit the alternator, change the character string within the catalog number from "92" to "95". All coil voltages listed in the coil table are valid with non-alternator controllers.</li> <li>▶ To change the coil voltage for non-alternator controllers with a solid-state OLR, change the 9th character in the catalog number with a letter shown in the coil table. To change the coil voltage for non-alternator controllers with a bimetal OLR, change the 8th character in the catalog number with a letter shown in the coil table.</li> <li>▶ Heater elements for bimetal overloads see page 9/124 (6-Required).</li> <li>▶ Field Modification Kits see page 9/104.</li> <li>▶ Factory Modifications see page 9/119.</li> <li>▶ Dimensions see page 9/168.</li> </ul> | <table> <tr> <th>60Hz Voltage</th><th>Letter</th></tr> <tr> <td>24<sup>②</sup></td><td>J</td></tr> <tr> <td>120</td><td>F</td></tr> <tr> <td>200–208<sup>②</sup></td><td>D</td></tr> <tr> <td>220–240<sup>②</sup></td><td>G</td></tr> <tr> <td>277<sup>②</sup></td><td>L</td></tr> <tr> <td>440–480<sup>②</sup></td><td>H</td></tr> <tr> <td>550–600<sup>②</sup></td><td>E</td></tr> </table> | 60Hz Voltage | Letter | 24 <sup>②</sup> | J | 120 | F | 200–208 <sup>②</sup> | D | 220–240 <sup>②</sup> | G | 277 <sup>②</sup> | L | 440–480 <sup>②</sup> | H | 550–600 <sup>②</sup> | E |
| 60Hz Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Letter                                                                                                                                                                                                                                                                                                                                                                                        |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 24 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | J                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | F                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 200–208 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | D                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 220–240 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | G                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 277 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | L                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 440–480 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | H                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 550–600 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | E                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| <ul style="list-style-type: none"> <li>▶ Wiring Diagrams see page 9/185.</li> <li>▶ Replacement Parts see page 9/131.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                               |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |

## Non-Combination (with Solid-State Overload)

| Max Hp         |               |                |               | NEMA Size      | Half Size     | Overload       |               | Enclosure              |               |                                                                                     |               |                                       |               |                                                                                        |               |
|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|------------------------|---------------|-------------------------------------------------------------------------------------|---------------|---------------------------------------|---------------|----------------------------------------------------------------------------------------|---------------|
| 200 Volts      | 230 Volts     | 460 Volts      | 575 Volts     |                |               | Amp Range      | Frame Size    | NEMA 1 General Purpose |               | NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel |               | NEMA 4 Painted Watertight, Dust-tight |               | NEMA 12 NEMA 3/3R <sup>①</sup> Industrial Use Weatherproof (Field Convertible to 3/3R) |               |
| Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number         | List Price \$ | Catalog Number                                                                      | List Price \$ | Catalog Number                        | List Price \$ | Catalog Number                                                                         | List Price \$ |
| 1/8            | 1/8           | 1/8            | 1/8           | 0              | —             | 0.25–1         | A             | 83CUA92BF              |               | 83CUA92WF                                                                           |               | 83CUA92EF                             |               | 83CUA920F                                                                              |               |
| 1/8            | 3/8           | 1 1/2          | 2             | 0              | —             | 0.75–3.4       | A             | 83CUB92BF              |               | 83CUB92WF                                                                           |               | 83CUB92EF                             |               | 83CUB920F                                                                              |               |
| 2              | 2             | 5              | 5             | 0              | —             | 3–12           | A1            | 83CUC92BF              |               | 83CUC92WF                                                                           |               | 83CUC92EF                             |               | 83CUC920F                                                                              |               |
| 3              | 3             | —              | —             | 0              | —             | 5.5–22         | A1            | 83CUD92BF              |               | 83CUD92WF                                                                           |               | 83CUD92EF                             |               | 83CUD920F                                                                              |               |
| 1/8            | 1/8           | 1/8            | 1/8           | 1              | —             | 0.25–1         | A             | 83DUA92BF              |               | 83DUA92WF                                                                           |               | 83DUA92EF                             |               | 83DUA920F                                                                              |               |
| 1/8            | 3/8           | 1 1/2          | 2             | 1              | —             | 0.75–3.4       | A             | 83DUB92BF              |               | 83DUB92WF                                                                           |               | 83DUB92EF                             |               | 83DUB920F                                                                              |               |
| 2              | 2             | 5              | 5             | 1              | —             | 3–12           | A1            | 83DUC92BF              |               | 83DUC92WF                                                                           |               | 83DUC92EF                             |               | 83DUC920F                                                                              |               |
| 3              | 3             | 10             | 10            | 1              | —             | 5.5–22         | A1            | 83DUD92BF              |               | 83DUD92WF                                                                           |               | 83DUD92EF                             |               | 83DUD920F                                                                              |               |
| 7 1/2          | 7 1/2         | —              | —             | 1              | —             | 10–40          | A1            | 83DUE92BF              |               | 83DUE92WF                                                                           |               | 83DUE92EF                             |               | 83DUE920F                                                                              |               |
| 10             | 10            | 15             | 15            | —              | 1 1/4         | 10–40          | A1            | 83EUE92BF              |               | 83EUE92WF                                                                           |               | 83EUE92EF                             |               | 83EUE920F                                                                              |               |
| 10             | 15            | 25             | 25            | 2              | —             | 13–52          | B             | 83FUF92BF              |               | 83FUF92WF                                                                           |               | 83FUF92EF                             |               | 83FUF920F                                                                              |               |
| 15             | 20            | 30             | 30            | —              | 2 1/4         | 25–100         | B             | 83GUG92BF              |               | 83GUG92WF                                                                           |               | 83GUG92EF                             |               | 83GUG920F                                                                              |               |
| 25             | 30            | 50             | 50            | 3              | —             | 25–100         | B             | 83HUG92BF              |               | 83HUG92WF                                                                           |               | 83HUG92EF                             |               | 83HUG920F                                                                              |               |
| 30             | 40            | 75             | 75            | —              | 3 1/4         | 50–200         | B             | 83IUH92BF              |               | 83IUH92WF                                                                           |               | 83IUH92EF                             |               | 83IUH920F                                                                              |               |
| 40             | 50            | 100            | 100           | 4              | —             | 50–200         | B             | 83JUH92BF              |               | 83JUH92WF                                                                           |               | 83JUH92EF                             |               | 83JUH920F                                                                              |               |

## Non-Combination (with Ambient Compensated Bimetal Overload)

| Max Hp         |               |                |               | NEMA Size      | Half Size     | Enclosure              |               |                                                                                    |               |                                      |               |                                                     |               |
|----------------|---------------|----------------|---------------|----------------|---------------|------------------------|---------------|------------------------------------------------------------------------------------|---------------|--------------------------------------|---------------|-----------------------------------------------------|---------------|
| 200 Volts      | 230 Volts     | 460 Volts      | 575 Volts     |                |               | NEMA 1 General Purpose |               | NEMA 4/4X Stainless Watertight, Dust-tight Corrosion Resistant 304 Stainless Steel |               | NEMA 4 Painted Watertight Dust-tight |               | NEMA 12/3R <sup>①</sup> Industrial Use Weatherproof |               |
| Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number         | List Price \$ | Catalog Number                                                                     | List Price \$ | Catalog Number                       | List Price \$ | Catalog Number                                      | List Price \$ |
| 3              | 3             | 5              | 5             | 0              | —             | 83CP92BF81             |               | 83CP92WF81                                                                         |               | 83CP92EF81                           |               | 83CP920F81                                          |               |
| 7 1/2          | 7 1/2         | 10             | 10            | 1              | —             | 83DP92BF81             |               | 83DP92WF81                                                                         |               | 83DP92EF81                           |               | 83DP920F81                                          |               |
| 10             | 10            | 15             | 15            | —              | 1 1/4         | 83EP92BF81             |               | 83EP92WF81                                                                         |               | 83EP92EF81                           |               | 83EP920F81                                          |               |
| 10             | 15            | 25             | 25            | 2              | —             | 83FP92BF81             |               | 83FP92WF81                                                                         |               | 83FP92EF81                           |               | 83FP920F81                                          |               |
| 15             | 20            | 30             | 30            | —              | 2 1/2         | 83GP92BF81             |               | 83GP92WF81                                                                         |               | 83GP92EF81                           |               | 83GP920F81                                          |               |
| 25             | 30            | 50             | 50            | 3              | —             | 83HP92BF81             |               | 83HP92WF81                                                                         |               | 83HP92EF81                           |               | 83HP920F81                                          |               |
| 30             | 40            | 75             | 75            | —              | 3 1/2         | 83IP92BF81             |               | 83IP92WF81                                                                         |               | 83IP92EF81                           |               | 83IP920F81                                          |               |
| 40             | 50            | 100            | 100           | 4              | —             | 83JP92BF81             |               | 83JP92WF81                                                                         |               | 83JP92EF81                           |               | 83JP920F81                                          |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① NEMA 12 is field convertible to NEMA 3/3R. For conduit hubs and conversion instructions, see page 9/110.

② Not available on standard alternator style ('92' in the catalog number).

③ For NO/NC SPDT contact on overload, replace "81" with "91". "81" will give a NC contact.



## Combination Disconnect (Fusible &amp; Non-Fusible), Class 84

## Selection

| Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Coil Table                                                                                                                                                                                                                                                                                                                                                                                    |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|-----------------|---|-----|---|----------------------|---|----------------------|---|------------------|---|----------------------|---|----------------------|---|
| <ul style="list-style-type: none"> <li>▶ Standard duplex controllers include an alternator indicated by characters "92" within the catalog number. The standard coil voltage supplied with the alternator is 120V separate control. This is the only control voltage available with the alternator.</li> <li>▶ To omit the alternator, change the character string within the catalog number from "92" to "95". All coil voltages listed in the coil table are valid with non-alternator controllers.</li> <li>▶ To change the coil voltage for non-alternator controllers with a solid-state OLR, change the 10th character in the catalog number with a letter shown in the coil table. To change the coil voltage for non-alternator controllers with a bimetal OLR, change the 9th character in the catalog number with a letter shown in the coil table.</li> <li>▶ Heater elements for bimetal overloads see page 9/124 (6-Required).</li> <li>▶ For factory installed fusible disconnect, see page 9/120.</li> <li>▶ Field Modification Kits see page 9/104.</li> <li>▶ Factory Modifications see page 9/119.</li> </ul> | <table> <tr> <th>60Hz Voltage</th><th>Letter</th></tr> <tr> <td>24<sup>②</sup></td><td>J</td></tr> <tr> <td>120</td><td>F</td></tr> <tr> <td>200–208<sup>②</sup></td><td>D</td></tr> <tr> <td>220–240<sup>②</sup></td><td>G</td></tr> <tr> <td>277<sup>②</sup></td><td>L</td></tr> <tr> <td>440–480<sup>②</sup></td><td>H</td></tr> <tr> <td>550–600<sup>②</sup></td><td>E</td></tr> </table> | 60Hz Voltage | Letter | 24 <sup>②</sup> | J | 120 | F | 200–208 <sup>②</sup> | D | 220–240 <sup>②</sup> | G | 277 <sup>②</sup> | L | 440–480 <sup>②</sup> | H | 550–600 <sup>②</sup> | E |
| 60Hz Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Letter                                                                                                                                                                                                                                                                                                                                                                                        |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 24 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | J                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | F                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 200–208 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | D                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 220–240 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | G                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 277 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | L                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 440–480 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | H                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 550–600 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | E                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| <ul style="list-style-type: none"> <li>▶ Dimensions see page 9/168.</li> <li>▶ Wiring Diagrams see page 9/185.</li> <li>▶ Replacement Parts see page 9/131.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                               |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |

## Two Disconnect Switches with Solid-State Overload

| Max Hp         |               |                |               | NEMA Size      | Half Size     | Overload       |               | Disc. Amp Range | Enclosure                 |                                                                                              |                                          |                                                                                                    |               |  |            |  |
|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|-----------------|---------------------------|----------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------|---------------|--|------------|--|
| 200 Volts      | 230 Volts     | 460 Volts      | 575 Volts     |                |               | Amp Range      | Frame Size    |                 | NEMA 1<br>General Purpose | NEMA 4/4X Stainless<br>Watertight, Dust-tight,<br>Corrosion Resistant<br>304 Stainless Steel | NEMA 4 Painted<br>Watertight, Dust-tight | NEMA 12<br>NEMA 3/3R <sup>Ⓢ</sup><br>Industrial Use<br>Weatherproof<br>(Field Convertible to 3/3R) |               |  |            |  |
| Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number  | List Price \$             | Catalog Number                                                                               | List Price \$                            | Catalog Number                                                                                     | List Price \$ |  |            |  |
| ½              | ¾             | ½              | ½             | 0              | —             | 0.25–1         | A             | 30              | 84CUA92BDF                |                                                                                              | 84CUA92WDF                               |                                                                                                    | 84CUA92EDF    |  | 84CUA920DF |  |
| ½              | ¾             | 1½             | 2             | 0              | —             | 0.75–3.4       | A             | 30              | 84CUB92BDF                |                                                                                              | 84CUB92WDF                               |                                                                                                    | 84CUB92EDF    |  | 84CUB920DF |  |
| 2              | 2             | 5              | 5             | 0              | —             | 3–12           | A1            | 30              | 84CUC92BDF                |                                                                                              | 84CUC92WDF                               |                                                                                                    | 84CUC92EDF    |  | 84CUC920DF |  |
| 3              | 3             | —              | —             | 0              | —             | 5.5–22         | A1            | 30              | 84CUD92BDF                |                                                                                              | 84CUD92WDF                               |                                                                                                    | 84CUD92EDF    |  | 84CUD920DF |  |
| ½              | ¾             | ½              | ½             | 1              | —             | 0.25–1         | A             | 30              | 84DUA92BDF                |                                                                                              | 84DUA92WDF                               |                                                                                                    | 84DUA92EDF    |  | 84DUA920DF |  |
| ½              | ¾             | 1½             | 2             | 1              | —             | 0.75–3.4       | A             | 30              | 84DUB92BDF                |                                                                                              | 84DUB92WDF                               |                                                                                                    | 84DUB92EDF    |  | 84DUB920DF |  |
| 2              | 2             | 5              | 5             | 1              | —             | 3–12           | A1            | 30              | 84DUC92BDF                |                                                                                              | 84DUC92WDF                               |                                                                                                    | 84DUC92EDF    |  | 84DUC920DF |  |
| 3              | 3             | 10             | 10            | 1              | —             | 5.5–22         | A1            | 30              | 84DUD92BDF                |                                                                                              | 84DUD92WDF                               |                                                                                                    | 84DUD92EDF    |  | 84DUD920DF |  |
| 7½             | 7½            | —              | —             | 1              | —             | 10–40          | A1            | 30              | 84DUE92BDF                |                                                                                              | 84DUE92WDF                               |                                                                                                    | 84DUE92EDF    |  | 84DUE920DF |  |
| 10             | 10            | 15             | 15            | —              | 1½            | 10–40          | A1            | 60              | 84EUE92BDF                |                                                                                              | 84EUE92WDF                               |                                                                                                    | 84EUE92EDF    |  | 84EUE920DF |  |
| 10             | 15            | 25             | 25            | 2              | —             | 13–52          | B             | 60              | 84FUF92BDF                |                                                                                              | 84FUF92WDF                               |                                                                                                    | 84FUF92EDF    |  | 84FUF920DF |  |
| 15             | 20            | 30             | 30            | —              | 2½            | 25–100         | B             | 100             | 84GUG92BDF                |                                                                                              | 84GUG92WDF                               |                                                                                                    | 84GUG92EDF    |  | 84GUG920DF |  |
| 20             | 25            | 50             | 50            | 3              | —             | 25–100         | B             | 100             | 84HUG92BDF                |                                                                                              | 84HUG92WDF                               |                                                                                                    | 84HUG92EDF    |  | 84HUG920DF |  |
| 30             | 40            | 75             | 75            | —              | 3½            | 50–200         | B             | 200             | 84IUH92BDF                |                                                                                              | 84IUH92WDF                               |                                                                                                    | 84IUH92EDF    |  | 84IUH920DF |  |
| 40             | 50            | 100            | 100           | 4              | —             | 50–200         | B             | 200             | 84JUH92BDF                |                                                                                              | 84JUH92WDF                               |                                                                                                    | 84JUH92EDF    |  | 84JUH920DF |  |

## Two Disconnect Switches with Ambient Compensated Bimetal Overload

| Max Hp    |           |           |           | NEMA Size | Half Size | Disc Amp Range | Enclosure                 |               |                                                                                             |               |                                            |               |                                                           |               |
|-----------|-----------|-----------|-----------|-----------|-----------|----------------|---------------------------|---------------|---------------------------------------------------------------------------------------------|---------------|--------------------------------------------|---------------|-----------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless<br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4 Painted<br>Watertight<br>Dust-tight |               | NEMA 12/3R <sup>①</sup><br>Industrial Use<br>Weatherproof |               |
|           |           |           |           |           |           |                | Catalog Number            | List Price \$ | Catalog Number                                                                              | List Price \$ | Catalog Number                             | List Price \$ | Catalog Number                                            | List Price \$ |
| 3         | 3         | 5         | 5         | 0         | —         | 30             | 84CP92BDF81               |               | 84CP92WDF81                                                                                 |               | 84CP92EDF81                                |               | 84CP920DF81                                               |               |
| 7½        | 7½        | 10        | 10        | 1         | —         | 30             | 84DP92BDF81               |               | 84DP92WDF81                                                                                 |               | 84DP92EDF81                                |               | 84DP920DF81                                               |               |
| 10        | 10        | 15        | 15        | —         | 1¼        | 60             | 84EP92BDF81               |               | 84EP92WDF81                                                                                 |               | 84EP92EDF81                                |               | 84EP920DF81                                               |               |
| 10        | 15        | 25        | 25        | 2         | —         | 60             | 84FP92BDF81               |               | 84FP92WDF81                                                                                 |               | 84FP92EDF81                                |               | 84FP920DF81                                               |               |
| 15        | 20        | 30        | 30        | —         | 2½        | 100            | 84GP92BDF81               |               | 84GP92WDF81                                                                                 |               | 84GP92EDF81                                |               | 84GP920DF81                                               |               |
| 20        | 25        | 50        | 50        | 3         | —         | 100            | 84HP92BDF81               |               | 84HP92WDF81                                                                                 |               | 84HP92EDF81                                |               | 84HP920DF81                                               |               |
| 30        | 40        | 75        | 75        | —         | 3½        | 200            | 84IP92BDF81               |               | 84IP92WDF81                                                                                 |               | 84IP92EDF81                                |               | 84IP920DF81                                               |               |
| 40        | 50        | 100       | 100       | 4         | —         | 200            | 84JP92BDF81               |               | 84JP92WDF81                                                                                 |               | 84JP92EDF81                                |               | 84JP920DF81                                               |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① NEMA 12 is field convertible to NEMA 3/3R. For conduit hubs and conversion instructions, see page 9/110.

② Not available on standard alternator style ('92' in the catalog number).

③ For NO/NC SPDT contact on overload, replace "81" with "91". "81" will give a NC contact.

## Combination Circuit Breaker, Class 84

## Selection

| Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Coil Table                                                                                                                                                                                                                                                                                                                                                                                    |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|-----------------|---|-----|---|----------------------|---|----------------------|---|------------------|---|----------------------|---|----------------------|---|
| <ul style="list-style-type: none"> <li>▶ Standard duplex controllers include an alternator indicated by characters "92" within the catalog number. The standard coil voltage supplied with the alternator is 120V separate control. This is the only control voltage available with the alternator.</li> <li>▶ To omit the alternator, change the character string within the catalog number from "92" to "95". All coil voltages listed in the coil table are valid with non-alternator controllers.</li> <li>▶ To change the coil voltage for non-alternator controllers, change the 10th character in the catalog number with a letter shown in the coil table.</li> <li>▶ Heater elements for bimetal overloads see page 9/124 (6-Required).</li> <li>▶ Field Modification Kits see page 9/104.</li> <li>▶ Factory Modifications see page 9/119.</li> </ul> | <table> <tr> <th>60Hz Voltage</th><th>Letter</th></tr> <tr> <td>24<sup>②</sup></td><td>J</td></tr> <tr> <td>120</td><td>F</td></tr> <tr> <td>200–208<sup>②</sup></td><td>D</td></tr> <tr> <td>220–240<sup>②</sup></td><td>G</td></tr> <tr> <td>277<sup>②</sup></td><td>L</td></tr> <tr> <td>440–480<sup>②</sup></td><td>H</td></tr> <tr> <td>550–600<sup>②</sup></td><td>E</td></tr> </table> | 60Hz Voltage | Letter | 24 <sup>②</sup> | J | 120 | F | 200–208 <sup>②</sup> | D | 220–240 <sup>②</sup> | G | 277 <sup>②</sup> | L | 440–480 <sup>②</sup> | H | 550–600 <sup>②</sup> | E |
| 60Hz Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Letter                                                                                                                                                                                                                                                                                                                                                                                        |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 24 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | J                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | F                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 200–208 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | D                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 220–240 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | G                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 277 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | L                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 440–480 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | H                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| 550–600 <sup>②</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | E                                                                                                                                                                                                                                                                                                                                                                                             |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| ▶ Dimensions see page 9/168.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                               |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| ▶ Wiring Diagrams see page 9/185.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                               |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |
| ▶ Replacement Parts see page 9/131.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                               |              |        |                 |   |     |   |                      |   |                      |   |                  |   |                      |   |                      |   |

## 2 Motor Circuit Protectors (with Solid-State Overload)

| Max Hp    |           |           |           | NEMA Size | Half Size | Overload  |            | Motor Circuit Interrupter ETI | Enclosure                 |                                                                                           |                                          |                                                                                                  |                |               |                |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-------------------------------|---------------------------|-------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------|----------------|---------------|----------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           | Amp Range | Frame Size |                               | NEMA 1<br>General Purpose | NEMA 4/4X Stainless<br>Watertight, Dust-tight, Corrosion Resistant , 304 Stainless Steel, | NEMA 4 Painted<br>Watertight, Dust-tight | NEMA 12<br>NEMA 3/3R <sup>Ⓢ</sup><br>Industrial Use, Weatherproof<br>(Field Convertible to 3/3R) |                |               |                |               |
|           |           |           |           |           |           |           |            |                               | Catalog Number            | List Price \$                                                                             | Catalog Number                           | List Price \$                                                                                    | Catalog Number | List Price \$ | Catalog Number | List Price \$ |
| ½         | ½         | ½         | ½         | 0         | —         | 0.25–1    | A          | 3                             | 84CUA92BMF                |                                                                                           | 84CUA92WMF                               |                                                                                                  | 84CUA92EMF     |               | 84CUA920MF     |               |
| ½         | ¾         | 1½        | 2         | 0         | —         | 0.75–3.4  | A          | 3                             | 84CUB92BMF                |                                                                                           | 84CUB92WMF                               |                                                                                                  | 84CUB92EMF     |               | 84CUB920MF     |               |
| 2         | 2         | 5         | 5         | 0         | —         | 3–12      | A1         | 10                            | 84CUC92BMF                |                                                                                           | 84CUC92WMF                               |                                                                                                  | 84CUC92EMF     |               | 84CUC920MF     |               |
| 3         | 3         | —         | —         | 0         | —         | 5.5–22    | A1         | 25                            | 84CUD92BMF                |                                                                                           | 84CUD92WMF                               |                                                                                                  | 84CUD92EMF     |               | 84CUD920MF     |               |
| ½         | ¾         | ¾         | ¾         | 1         | —         | 0.25–1    | A          | 3                             | 84DUA92BMF                |                                                                                           | 84DUA92WMF                               |                                                                                                  | 84DUA92EMF     |               | 84DUA920MF     |               |
| ½         | ¾         | 1½        | 2         | 1         | —         | 0.75–3.4  | A          | 3                             | 84DUB92BMF                |                                                                                           | 84DUB92WMF                               |                                                                                                  | 84DUB92EMF     |               | 84DUB920MF     |               |
| 2         | 2         | 5         | 5         | 1         | —         | 3–12      | A1         | 10                            | 84DUC92BMF                |                                                                                           | 84DUC92WMF                               |                                                                                                  | 84DUC92EMF     |               | 84DUC920MF     |               |
| 3         | 3         | 10        | 10        | 1         | —         | 5.5–22    | A1         | 25                            | 84DUD92BMF                |                                                                                           | 84DUD92WMF                               |                                                                                                  | 84DUD92EMF     |               | 84DUD920MF     |               |
| 7½        | 7½        | —         | —         | 1         | —         | 10–40     | A1         | 30                            | 84DUE92BMF                |                                                                                           | 84DUE92WMF                               |                                                                                                  | 84DUE92EMF     |               | 84DUE920MF     |               |
| —         | —         | 15        | 15        | —         | 1½        | 10–40     | A1         | 40                            | 84EUE92BMF                |                                                                                           | 84EUE92WMF                               |                                                                                                  | 84EUE92EMF     |               | 84EUE920MF     |               |
| 10        | 15        | 25        | 25        | 2         | —         | 13–52     | B          | 50                            | 84FUF92BMF                |                                                                                           | 84FUF92WMF                               |                                                                                                  | 84FUF92EMF     |               | 84FUF920MF     |               |
| 15        | 20        | 30        | 30        | —         | 2½        | 25–100    | B          | 100                           | 84GUG92BMF                |                                                                                           | 84GUG92WMF                               |                                                                                                  | 84GUG92EMF     |               | 84GUG920MF     |               |
| 20        | 25        | 50        | 50        | 3         | —         | 25–100    | B          | 100                           | 84HUG92BMF                |                                                                                           | 84HUG92WMF                               |                                                                                                  | 84HUG92EMF     |               | 84HUG920MF     |               |
| 30        | 40        | 75        | 75        | —         | 3½        | 50–200    | B          | 125                           | 84IUH92BMF                |                                                                                           | 84IUH92WMF                               |                                                                                                  | 84IUH92EMF     |               | 84IUH920MF     |               |
| 40        | 50        | 100       | 100       | 4         | —         | 50–200    | B          | 150                           | 84JUH92BMF                |                                                                                           | 84JUH92WMF                               |                                                                                                  | 84JUH92EMF     |               | 84JUH920MF     |               |

## 2 Motor Circuit Protectors (with Ambient Compensated Bimetal Overload)

| Max Hp    |           |           |           | NEMA Size | Half Size | Motor Circuit Interrupter ETI | Enclosure                 |               |                                                                                             |               |                                            |               |                                                           |               |
|-----------|-----------|-----------|-----------|-----------|-----------|-------------------------------|---------------------------|---------------|---------------------------------------------------------------------------------------------|---------------|--------------------------------------------|---------------|-----------------------------------------------------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           |                               | NEMA 1<br>General Purpose |               | NEMA 4/4X Stainless<br>Watertight, Dust-tight<br>Corrosion Resistant<br>304 Stainless Steel |               | NEMA 4 Painted<br>Watertight<br>Dust-tight |               | NEMA 12/3R <sup>①</sup><br>Industrial Use<br>Weatherproof |               |
|           |           |           |           |           |           |                               | Catalog Number            | List Price \$ | Catalog Number                                                                              | List Price \$ | Catalog Number                             | List Price \$ | Catalog Number                                            | List Price \$ |
| ½         | ¾         | 1½        | 2         | 0         | —         | 3                             | 84CPB92BMF81              |               | 84CPB92WMF81                                                                                |               | 84CPB92EMF81                               |               | 84CPB92OMF81                                              |               |
| 2         | 2         | 5         | 5         | 0         | —         | 10                            | 84CPD92BMF81              |               | 84CPD92WMF81                                                                                |               | 84CPD92EMF81                               |               | 84CPD92OMF81                                              |               |
| 3         | 3         | —         | —         | 0         | —         | 25                            | 84CPE92BMF81              |               | 84CPE92WMF81                                                                                |               | 84CPE92EMF81                               |               | 84CPE92OMF81                                              |               |
| ½         | ¾         | 1½        | 2         | 1         | —         | 3                             | 84DPB92BMF81              |               | 84DPB92WMF81                                                                                |               | 84DPB92EMF81                               |               | 84DPB92OMF81                                              |               |
| 2         | 2         | 5         | 5         | 1         | —         | 10                            | 84DPD92BMF81              |               | 84DPD92WMF81                                                                                |               | 84DPD92EMF81                               |               | 84DPD92OMF81                                              |               |
| 3         | 3         | 10        | 10        | 1         | —         | 25                            | 84DPE92BMF81              |               | 84DPE92WMF81                                                                                |               | 84DPE92EMF81                               |               | 84DPE92OMF81                                              |               |
| 7½        | 7½        | —         | —         | 1         | —         | 30                            | 84DPF92BMF81              |               | 84DPF92WMF81                                                                                |               | 84DPF92EMF81                               |               | 84DPF92OMF81                                              |               |
| —         | —         | 15        | 15        | —         | 1½        | 40                            | 84EPF92BMF81              |               | 84EPF92WMF81                                                                                |               | 84EPF92EMF81                               |               | 84EPF92OMF81                                              |               |
| 10        | 10        | —         | —         | —         | 1½        | 50                            | 84EPG92BMF81              |               | 84EPG92WMF81                                                                                |               | 84EPG92EMF81                               |               | 84EPG92OMF81                                              |               |
| —         | —         | 15        | 20        | 2         | —         | 40                            | 84FPF92BMF81              |               | 84FPF92WMF81                                                                                |               | 84FPF92EMF81                               |               | 84FPF92OMF81                                              |               |
| 10        | 15        | 25        | 25        | 2         | —         | 50                            | 84FPH92BMF81              |               | 84FPH92WMF81                                                                                |               | 84FPH92EMF81                               |               | 84FPH92OMF81                                              |               |
| —         | —         | 30        | 30        | —         | 2½        | 50                            | 84GPH92BMF81              |               | 84GPH92WMF81                                                                                |               | 84GPH92EMF81                               |               | 84GPH92OMF81                                              |               |
| 15        | 20        | —         | —         | —         | 2½        | 100                           | 84GPG92BMF81              |               | 84GPG92WMF81                                                                                |               | 84GPG92EMF81                               |               | 84GPG92OMF81                                              |               |
| —         | —         | 30        | 40        | 3         | —         | 50                            | 84HPJ92BMF81              |               | 84HPJ92WMF81                                                                                |               | 84HPJ92EMF81                               |               | 84HPJ92OMF81                                              |               |
| 20        | 25        | 50        | 50        | 3         | —         | 100                           | 84HPK92BMF81              |               | 84HPK92WMF81                                                                                |               | 84HPK92EMF81                               |               | 84HPK92OMF81                                              |               |
| 30        | 40        | 75        | 75        | —         | 3½        | 125                           | 84IPL92BMF81              |               | 84IPL92WMF81                                                                                |               | 84IPL92EMF81                               |               | 84IPL92OMF81                                              |               |
| 40        | 50        | 100       | 100       | 4         | —         | 150                           | 84JPM92BMF81              |               | 84JPM92WMF81                                                                                |               | 84JPM92EMF81                               |               | 84JPM92OMF81                                              |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

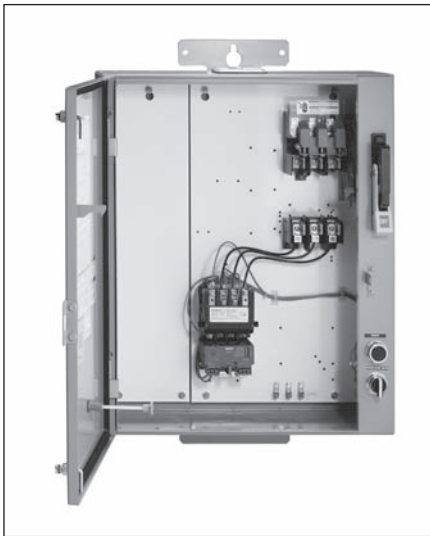
① NEMA 12 is field convertible to NEMA 3/3R. For conduit hubs and conversion instructions, see page 9/110.

② Not available on standard alternator style ('92' in the catalog number).

③ For NO/NC SPDT contact on overload, replace "81" with "91". "81" will give a NC contact.

## Features

- Fully Gasketed NEMA 3R Rainproof Enclosures
- 100,000 Amp Interrupting Capacity with Class R Fuses
- Heavy Duty NEMA Starters
- Solid State or Ambient Compensated Bimetal Overload Relays
- Heavy Duty Disconnect Handle
- Available in Reduced Voltage Versions
- Bold Pilot Legend on Front
- Generous Accessory Space
- Copper Grounding Lug For Three #6 Wires
- UL Listed for Outdoor Use and Service Equipment File #E185287



## Application

Heavy duty pump control panels are designed to withstand the most demanding environments. Typical applications include irrigation, agriculture, petrochemical, wastewater treatment and wherever motor control is challenged by harsh elements.

Rugged pump control panels utilized cold forming "tox" process. They are more rainproof, sleet and ice resistant than in the past.

Installation is easy. Panels are factory wired to provide flexible control and protect against short circuits and overloads. Ample space is provided for field modifications and installation of accessories.

The pump control panels feature a full sized removable auxiliary panel for the mounting of accessories. The fusible version features fuse clips for full sized RK5 or compact class J fuses and accessory mounting space for the most commonly used accessories.

Class 87 pump panels become jockey pump panels with the addition of a pressure switch. The jockey pump's primary function is to maintain water pressure at a preset level and thus compensate for possible shortage of water in the pumping system. When the water pressure drops below the preset level, the pressure switch energizes the starter which in turn activates the jockey pump. The water pressure is then brought back up to the desired level. This insures the maintenance of proper water pressure at all times.

## Features

Specified by Fortune 500 companies, Siemens NEMA starters offer prolonged service under severe duty conditions. NEMA rated, these starters utilize large silver cadmium oxide contacts and wide copper heat sinks to ensure rapid heat dissipation and maximum electrical life.

### ESP200 solid state overload relay

Refer to the section on Class 48 overload relays for features and benefits. Pump panels are factory set at trip Class 10.

### The ambient compensated bimetal overload relays

are designed to parallel thermal characteristics of typical pump motors. They prevent nuisance trips that may result from operation of the control in a higher ambient temperature than that at the pump. These relays are trip-free, tamperproof and can be set to reset automatically or manually.

### HOA and Start Pushbutton

Every pump panel comes with an HOA and a start pushbutton.

### Half Size Starters

Siemens motor matched starters feature all the rugged performance characteristics of our NEMA rated starter sizes, but are fractionally sized to more closely match your exact motor rating. As a result, significant economic savings are made possible without sacrificing the reliability you expect from a heavy duty starter.

These additional starter sizes have the reserve capacity to handle occasional plugging and jogging without de-rating the device.

Siemens motor matched can save hundreds, even thousands of dollars per project.

Siemens motor matched starters comply with NEMA, UL and CSA standards.

Panels are predrilled for easy repositioning of the fuse trailer block to accommodate 250 and 600 volt fuses and full sized RK or compact J fuses. Circuit breakers are also available.

### Heavy Duty Fusible Disconnect Switch

The disconnect switch has the following advantages:

- Visible blades for the highest level of safety
- Double Break Switching Action to reduce arcing, increase lifetime and eliminate the "electric hinge"
- Oversized lugs are standard
- Line side shield to help guard personnel from contact with live parts

### Motor Circuit Protector

The motor circuit protector provides fast, accurate fault clearing that will minimize damage to the motor and control apparatus and protect branch circuit conductors. Continuous current ratings and adjustable trip ranges meet NEC requirements for full load and locked rotor currents. The adjustable instantaneous trip point can be set precisely to assure fault protection and eliminate nuisance tripping.

### Removable Door

Enclosure door may be lifted off to make wiring easier.

### Mounting Flanges

Convenient flanges at top and bottom of the enclosure provide easy mounting. They fit pole or flat surfaces using keyhole slots.

### Quarter Turn Latches

Quarter turns are utilized to secure the door.

### Wind Catches

A wind catch is provided to prevent the door from slamming shut (or open) due to high wind conditions.

### Safety Disconnect Handle

Up to three padlocks can be used to lock the disconnect in the OFF position. Maintenance work can be performed without hazard to personnel.

### External Reset

The overload relay may be quickly reset by means of a button on the front of the enclosure.

### Bold Pilot Legend

Provides positive indication of the selector switch position for use to stop the pump motor.

### Ground Lugs

Insures proper connecting of ground wires and lightning arresters.

### UL Listed

Assures proper construction throughout control panel.

### Reduced Voltage

Available in part winding, wye delta and auto transformer types, these controls may be necessary where the power company limits the amount of current drawn from its lines, or where starting torque must be reduced.

### Fully gasketed NEMA 3/12 weather-proof enclosures are supplied with Class 88 reduced voltage starters.

**Part Winding Starters** apply starting current in timed steps to minimize voltage fluctuations.

**Auto Transformer Starters** maintain a closed circuit during transition and eliminate voltage or current surges. They draw less current than part winding starters and are well suited for starting motors over 20 Hp.

**Wye Delta starters** and motors are used in areas where the power supply is inadequate to supply full starting current without objectionable voltage drop or for applications where low starting torque is required. Centrifugal pumps and similar apparatus requiring a low starting torque are typical applications. Both ends of all three windings of the wye delta motor are brought out so that they may be accessible for reconnecting from wye to delta.

### Auxiliary Equipment

**Pilot Lights** are easily installed on the enclosure. Oil Tight and Heavy Duty, they meet NEMA A600 requirements.

**Lightning Arresters** protect the control panel from lightning induced surges.

**Undervoltage and Phase Sensing Relays** protect the pump against low voltage, voltage imbalance, loss of phase and phase reversal.

**Anti-Backspin Timers** prevent the motor from starting during motor/shaft backspin.

### The TOX Box

Siemens uses the TOX process to manufacture the enclosures for the pump panels.

Advantages of the TOX process:

- Joints are 50-70% stronger
- Since the TOX process compresses the metal at the joint, it does not leave the high stresses in the metal
- Increased corrosion resistance. The protective layer on the metal is not damaged in the process, but instead flows with the material

### Class 87 NEMA Vacuum Starter Pump Control Panels

The Siemens vacuum starter pump controllers are designed for the harshest environments. Typical environments include chemical, petrochemical, waste water treatment and mining. Contaminations present in these severe environments are detrimental to conventional air-break contacts decreasing their life expectancy and reliability. The Siemens vacuum starter pump controllers are well suited for these environments because the contacts are contained in hermetically sealed contact tubes. This prevents contamination in the atmosphere from affecting the operation of the contacts. Additionally, neither arcs nor arcing gases are produced which dramatically increases the electrical endurance of the contacts.

# Standard Pump Panel with Solid State Overload, Class 87

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Coil Table      |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------|----------------|
|                                                                                   | <ul style="list-style-type: none"> <li>▶ Field Modification Kits see page 9/104.</li> <li>▶ Factory Modifications see page 9/119.</li> <li>▶ Dimensions see page 9/169.</li> <li>▶ Wiring Diagrams see page 9/187.</li> <li>▶ Replacement Parts see page 9/131.</li> <li>▶ Sizes 1-4 will be supplied standard with a 240/480 volt coil. To change the coil voltage, change the 8th character in the catalog number to the letter shown in the coil table.</li> <li>▶ Sizes 5 &amp; 6 will be supplied standard with a 480 volt coil. To change the coil voltage, change the 8th character in the catalog number to the letter shown in the coil table.</li> </ul> |  | 60Hz Voltage    | Letter         |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 24              | J              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 120             | F              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 110-120/220-240 | A <sup>①</sup> |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 200-208         | D              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 220-240         | G              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 220-240/440-480 | C <sup>①</sup> |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 277             | L              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 440-480         | H              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 550-600         | E              |

### Fusible Disconnect

| Max Hp    |           |           |           | NEMA Size | Half Size | Overload              |            | Disc. Amp Range | Fuse Clip Amp / Volts | Catalog Number | List Price \$ |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------------------|------------|-----------------|-----------------------|----------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           | Amp Range             | Frame Size |                 |                       |                |               |
| —         | —         | 1         | 1         | 1         | —         | 0.75-3.4 <sup>②</sup> | A          | 30              | 30A/600V              | 87DUB6FC       |               |
| —         | —         | 5         | 5         | 1         | —         | 3-12                  | A1         | 30              | 30A/600V              | 87DUC6FC       |               |
| —         | —         | 10        | 10        | 1         | —         | 5.5-22                | A1         | 30              | 30A/600V              | 87DUD6FC       |               |
| —         | —         | 10        | 10        | 1         | —         | 5.5-22                | A1         | 60              | 60A/600V              | 87DUD60C       |               |
| —         | —         | 15        | 15        | —         | 1½        | 10-40                 | A1         | 30              | 30A/600V              | 87EUE6FC       |               |
| —         | —         | 15        | 15        | —         | 1½        | 10-40                 | A1         | 60              | 60A/600V              | 87EUE60C       |               |
| —         | —         | 25        | 25        | 2         | —         | 13-52                 | B          | 60              | 60A/600V              | 87FUF6FC       |               |
| —         | —         | 25        | 25        | 2         | —         | 13-52                 | B          | 100             | 100A/600V             | 87FUF60C       |               |
| —         | —         | 30        | 30        | —         | 2½        | 25-100                | B          | 60              | 60A/600V              | 87GUG6FC       |               |
| —         | —         | 30        | 30        | —         | 2½        | 25-100                | B          | 100             | 100A/600V             | 87GUG60C       |               |
| —         | —         | 50        | 50        | 3         | —         | 25-100                | B          | 100             | 100A/600V             | 87HUG6FC       |               |
| —         | —         | 50        | 50        | 3         | —         | 25-100                | B          | 200             | 200A/600V             | 87HUG60C       |               |
| —         | —         | 75        | 75        | —         | 3½        | 50-200                | B          | 200             | 200A/600V             | 87IUH6FC       |               |
| —         | —         | 100       | 100       | 4         | —         | 50-200                | B          | 200             | 200A/600V             | 87JUH6FC       |               |
| —         | —         | 200       | 200       | 5         | —         | 55-250                | —          | 400             | 400A/600V             | 87LPU6FH       |               |
| —         | —         | 250       | —         | 6         | —         | 160-630               | —          | 600             | 600A/600V             | 87MSW6FH       |               |
| 2         | 2         | —         | —         | 1         | —         | 3-12                  | A1         | 30              | 30A/250V              | 87DUC6LC       |               |
| 3         | 3         | —         | —         | 1         | —         | 5.5-22                | A1         | 30              | 30A/250V              | 87DUD6LC       |               |
| 7½        | 7½        | —         | —         | 1         | —         | 10-40                 | A1         | 30              | 30A/250V              | 87DUE6LC       |               |
| 7½        | 7½        | —         | —         | 1         | —         | 10-40                 | A1         | 60              | 60A/250V              | 87DUE6PC       |               |
| 10        | 10        | —         | —         | —         | 1½        | 10-40                 | A1         | 60              | 60A/250V              | 87EUE6LC       |               |
| 10        | 15        | —         | —         | 2         | —         | 13-52                 | B          | 60              | 60A/250V              | 87FUF6LC       |               |
| 10        | 15        | —         | —         | 2         | —         | 13-52                 | B          | 100             | 100A/250V             | 87FUF6PC       |               |
| 15        | 20        | —         | —         | —         | 2½        | 25-100                | B          | 60              | 60A/250V              | 87GUG6LC       |               |
| 15        | 20        | —         | —         | —         | 2½        | 25-100                | B          | 100             | 100A/250V             | 87GUG6PC       |               |
| 20        | 30        | —         | —         | 3         | —         | 25-100                | B          | 100             | 100A/250V             | 87HUG6LC       |               |
| 25        | 30        | —         | —         | 3         | —         | 25-100                | B          | 200             | 200A/250V             | 87HUG6PC       |               |
| 30        | 40        | —         | —         | —         | 3½        | 50-200                | B          | 200             | 200A/250V             | 87IUH6LC       |               |
| 40        | 50        | —         | —         | 4         | —         | 50-200                | B          | 200             | 200A/250V             | 87JUH6LC       |               |
| 75        | 100       | —         | —         | 5         | —         | 55-250                | —          | 400             | 400A/250V             | 87LPU6LG       |               |

### Circuit Breaker

| Max Hp    |           |           |           | NEMA Size | Half Size | Overload              |            | Motor Circuit Interrupter ETI Amps | Catalog Number | List Price \$ |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------------------|------------|------------------------------------|----------------|---------------|
| 200 Volts | 230 Volts | 460 Volts | 575 Volts |           |           | Amp Range             | Frame Size |                                    |                |               |
| ½         | ½         | 1         | 1         | 1         | —         | 0.75-3.4 <sup>②</sup> | A          | 3                                  | 87DUB6MC       |               |
| 2         | 2         | 5         | 5         | 1         | —         | 3-12                  | A1         | 10                                 | 87DUC6MC       |               |
| 3         | 3         | 10        | 10        | 1         | —         | 5.5-22                | A1         | 25                                 | 87DUD6MC       |               |
| 7½        | 7½        | 10        | —         | 1         | —         | 10-40                 | A1         | 30                                 | 87DUE6MC       |               |
| —         | —         | 15        | 15        | —         | 1½        | 10-40                 | A1         | 40                                 | 87EUE6MC       |               |
| 10        | 15        | 25        | 25        | 2         | —         | 13-52                 | B          | 50                                 | 87FUF6MC       |               |
| 15        | 20        | 30        | 30        | —         | 2½        | 25-100                | B          | 100                                | 87GUG6MC       |               |
| 25        | 30        | 50        | 50        | 3         | —         | 25-100                | B          | 100                                | 87HUG6MC       |               |
| 30        | 40        | 75        | 75        | —         | 3½        | 50-200                | B          | 125                                | 87IUH6MC       |               |
| 40        | 50        | 100       | 100       | 4         | —         | 50-200                | B          | 150                                | 87JUH6MC       |               |
| 50        | 75        | 150       | 200       | 5         | —         | 55-250                | —          | 250                                | 87LPT6MH       |               |
| 75        | 100       | 200       | 200       | 5         | —         | 55-250                | —          | 400                                | 87LPU6MH       |               |
| 100       | 125       | 250       | 300       | 6         | —         | 160-630               | —          | 400                                | 87MSW6MH       |               |
| 150       | 200       | 400       | 400       | 6         | —         | 160-630               | —          | 600                                | 87MSX6MH       |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Not available on Size 5 and larger.

② For an overload amp range of 0.25-1A, change the 5th character from a 'B' to an 'A'.

③ A version with coil code A is also stocked via Controls Express.



## Pump Panel with Ambient Compensated Bimetal Overload, Class 87

## Selection

| Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Coil Table                                                                                         |                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>▶ Heater elements for bimetal overloads see page 9/124 (3-Required).</li> <li>▶ Field Modification Kits see page 9/104.</li> <li>▶ Factory Modifications see page 9/119.</li> <li>▶ Dimensions see page 9/169.</li> <li>▶ Wiring Diagrams see page 9/187.</li> <li>▶ Replacement Parts see page 9/131.</li> <li>▶ Sizes 1-4 will be supplied standard with a 230/480 volt coil. To change the coil voltage, change the 8th character in the catalog number to the letter shown in the coil table.</li> <li>▶ Sizes 5 &amp; 6 will be supplied standard with a 480 volt coil. To change the coil voltage, change the 8th character in the catalog number to the letter shown in the coil table.</li> </ul> | 60Hz Voltage                                                                                       | Letter                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 24<br>120<br>110–120/220–240<br>200–208<br>220–240<br>220–240/440–480<br>277<br>440–480<br>550–600 | J<br>F<br>A <sup>Ⓢ</sup><br>D<br>G<br>C <sup>Ⓢ</sup><br>L<br>H<br>E |

## Fusible Disconnect

| Max HP |      |      |      | NEMA Size | Half Size | Disc<br>Amp Rating | Fuse Clip<br>Amps/Volts | Catalog Number | List Price \$ |
|--------|------|------|------|-----------|-----------|--------------------|-------------------------|----------------|---------------|
| 200V   | 230V | 460V | 575V |           |           |                    |                         |                |               |
| —      | —    | 10   | 10   | 1         | —         | 30                 | 30A/600V                | 87DAE6FC       |               |
| —      | —    | 10   | 10   | 1         | —         | 60                 | 60A/600V                | 87DAE60C       |               |
| —      | —    | 15   | 15   | —         | 1¾        | 30                 | 30A/600V                | 87EAF6FC       |               |
| —      | —    | 15   | 15   | —         | 1¾        | 60                 | 60A/600V                | 87EAF60C       |               |
| —      | —    | 25   | 25   | 2         | —         | 60                 | 60A/600V                | 87FAJ6FC       |               |
| —      | —    | 25   | 25   | 2         | —         | 100                | 100A/600V               | 87FAJ60C       |               |
| —      | —    | 30   | 30   | —         | 2½        | 60                 | 60A/600V                | 87GAK6FC       |               |
| —      | —    | 30   | 30   | —         | 2½        | 100                | 100A/600V               | 87GAK60C       |               |
| —      | —    | 50   | 50   | 3         | —         | 100                | 100A/600V               | 87HAN6FC       |               |
| —      | —    | 50   | 50   | 3         | —         | 200                | 200A/600V               | 87HAN60C       |               |
| —      | —    | 75   | 75   | —         | 3½        | 200                | 200A/600V               | 87IAP6FC       |               |
| —      | —    | 100  | 100  | 4         | —         | 200                | 200A/600V               | 87JAR6FC       |               |
| 7½     | 7½   | —    | —    | 1         | —         | 30                 | 30A/250V                | 87DAE6LC       |               |
| 7½     | 7½   | —    | —    | 1         | —         | 60                 | 60A/250V                | 87DAE6PC       |               |
| 10     | 10   | —    | —    | —         | 1¾        | 60                 | 60A/250V                | 87EAG6LC       |               |
| 10     | 15   | —    | —    | 2         | —         | 60                 | 60A/250V                | 87FAJ6LC       |               |
| 10     | 15   | —    | —    | 2         | —         | 100                | 100A/250V               | 87FAJ6PC       |               |
| 15     | 20   | —    | —    | —         | 2½        | 100                | 100A/250V               | 87GAL6LC       |               |
| 25     | 30   | —    | —    | 3         | —         | 100                | 100A/250V               | 87HAN6LC       |               |
| 25     | 30   | —    | —    | 3         | —         | 200                | 200A/250V               | 87HAN6PC       |               |
| 30     | 40   | —    | —    | —         | 3½        | 200                | 200A/250V               | 87IAP6LC       |               |
| 40     | 50   | —    | —    | 4         | —         | 200                | 200A/250V               | 87JAR6LC       |               |

## Circuit Breaker

| Max HP |      |      |      | NEMA Size | Half Size | Motor Circuit<br>Interrupter<br>ETI Amps | Catalog Number | List Price \$ |
|--------|------|------|------|-----------|-----------|------------------------------------------|----------------|---------------|
| 200V   | 230V | 460V | 575V |           |           |                                          |                |               |
| ½      | ½    | 1    | 1    | 1         | —         | 3                                        | 87DAA6MC       |               |
| 1      | 1    | 3    | 3    | 1         | —         | 10                                       | 87DAB6MC       |               |
| 3      | 3    | 7½   | 7½   | 1         | —         | 25                                       | 87DAD6MC       |               |
| 7½     | 7½   | 10   | 10   | 1         | —         | 30                                       | 87DAE6MC       |               |
| 7½     | 7½   | 15   | 15   | —         | 1¾        | 40                                       | 87EAF6MC       |               |
| 10     | 10   | —    | —    | —         | 1¾        | 50                                       | 87EAG6MC       |               |
| —      | —    | 15   | 20   | 2         | —         | 40                                       | 87FAH6MC       |               |
| 10     | 15   | 25   | 25   | 2         | —         | 50                                       | 87FAJ6MC       |               |
| —      | —    | 30   | 30   | —         | 2½        | 50                                       | 87GAK6MC       |               |
| 15     | 20   | —    | —    | —         | 2½        | 100                                      | 87GAL6MC       |               |
| 25     | 30   | 50   | 50   | 3         | —         | 100                                      | 87HAN6MC       |               |
| 30     | 40   | 75   | 75   | —         | 3½        | 125                                      | 87IAP6MC       |               |
| 40     | 50   | 100  | 100  | 4         | —         | 150                                      | 87JAR6MC       |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

Ⓢ Not available on Size 5 or above.

## Selection

| Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                          | Coil Table                                                                                                                                                                                                                                                                                                            |              |        |    |   |     |   |         |   |         |   |     |   |         |   |         |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|----|---|-----|---|---------|---|---------|---|-----|---|---------|---|---------|---|
| <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/169.</li> <li>► Wiring Diagrams see page 9/187.</li> <li>► Replacement Parts see page 9/131.</li> <li>► Replace the (*) in the catalog number with a letter from the coil table.</li> <li>► Refer to page 17-49 for information on the 958L OLR</li> </ul> | <table> <tr> <th>60Hz Voltage</th><th>Letter</th></tr> <tr> <td>24</td><td>J</td></tr> <tr> <td>120</td><td>F</td></tr> <tr> <td>200-208</td><td>D</td></tr> <tr> <td>220-240</td><td>G</td></tr> <tr> <td>277</td><td>L</td></tr> <tr> <td>440-480</td><td>H</td></tr> <tr> <td>550-600</td><td>E</td></tr> </table> | 60Hz Voltage | Letter | 24 | J | 120 | F | 200-208 | D | 220-240 | G | 277 | L | 440-480 | H | 550-600 | E |
| 60Hz Voltage                                                                                                                                                                                                                                                                                                                                                                                                                  | Letter                                                                                                                                                                                                                                                                                                                |              |        |    |   |     |   |         |   |         |   |     |   |         |   |         |   |
| 24                                                                                                                                                                                                                                                                                                                                                                                                                            | J                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |         |   |         |   |     |   |         |   |         |   |
| 120                                                                                                                                                                                                                                                                                                                                                                                                                           | F                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |         |   |         |   |     |   |         |   |         |   |
| 200-208                                                                                                                                                                                                                                                                                                                                                                                                                       | D                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |         |   |         |   |     |   |         |   |         |   |
| 220-240                                                                                                                                                                                                                                                                                                                                                                                                                       | G                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |         |   |         |   |     |   |         |   |         |   |
| 277                                                                                                                                                                                                                                                                                                                                                                                                                           | L                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |         |   |         |   |     |   |         |   |         |   |
| 440-480                                                                                                                                                                                                                                                                                                                                                                                                                       | H                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |         |   |         |   |     |   |         |   |         |   |
| 550-600                                                                                                                                                                                                                                                                                                                                                                                                                       | E                                                                                                                                                                                                                                                                                                                     |              |        |    |   |     |   |         |   |         |   |     |   |         |   |         |   |

## Vacuum Break Pump Control Panels (Vacuum Contactor with Trip Class 10 Solid-State Overload Relay)

| Max Hp    |           | NEMA Size | Overload Relay Range | Fusible Disconnect   |                |               | Circuit Breaker |                |               |
|-----------|-----------|-----------|----------------------|----------------------|----------------|---------------|-----------------|----------------|---------------|
| 480 Volts | 575 Volts |           |                      | Fuse Clip Amps/Volts | Catalog Number | List Price \$ | MCI Amps        | Catalog Number | List Price \$ |
| 100       | 100       | 4         | 55-250A              | 200A/600V            | 87JCM4F*       |               | 250A            | 87JCM4M*       |               |
| 200       | 200       | 5         | 55-250A              | 400A/600V            | 87LCU4F*       |               | 400A            | 87LCT4M*       |               |
| 250       | 300       | 6         | 160-630A             | —                    | —              |               | 400A            | 87MCW4M*       |               |
| 400       | 400       | 6         | 160-630A             | —                    | —              |               | 600A            | 87MCX4M*       |               |

## Oil Well Pump Control Panels (Open Air Contactor with 958L Solid-State Overload Relay)

| Max Hp    |           | NEMA Size | Overload Relay Range | Fusible Disconnect   |                |               | Circuit Breaker |                |               |
|-----------|-----------|-----------|----------------------|----------------------|----------------|---------------|-----------------|----------------|---------------|
| 480 Volts | 575 Volts |           |                      | Fuse Clip Amps/Volts | Catalog Number | List Price \$ | MCI Amps        | Catalog Number | List Price \$ |
| 25        | 25        | 2         | 13-52                | 60A/600V             | 87FPI6F*       |               | 50              | 87FPI6M*       |               |
| 50        | 50        | 3         | 25-100               | 100A/600V            | 87HPK6F*       |               | 100             | 87HPK6M*       |               |
| 100       | 100       | 4         | 50-200               | 200A/600V            | 87JPM6F*       |               | 150             | 87JPM6M*       |               |

**Note:** Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

## Auto Transformer &amp; Part winding (2 Step) with Solid State Overload, Class 88

## Selection

| Ordering Information                                                                                                                                                                                                                                                                  | Coil and Control Voltage                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/169.</li> <li>► Wiring Diagrams see pages 9/180 and 9/181.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <p>The coil voltage on the contactors will be the motor voltage. A CPT will be supplied to provide the control voltage. The control voltage will be 120V.</p> <p>To change the control voltage to customer supplied (no CPT included), change the 9th character to the following:<br/>for 24V , use "J"<br/>for 120V, use "F"</p> |

## Auto Transformer Type

| Motor Voltage | Max Hp | Overload  |            | NEMA Size | Half Size | Fusible Disconnect        |                |               | Circuit Breaker      |                |               |
|---------------|--------|-----------|------------|-----------|-----------|---------------------------|----------------|---------------|----------------------|----------------|---------------|
|               |        | Amp Range | Frame Size |           |           | Fuse Clip Size Amps/Volts | Catalog Number | List Price \$ | Circuit Breaker Amps | Catalog Number | List Price \$ |
| 230           | 15     | 13-52     | B          | 2         | —         | 60A/250V                  | 88FUFT2FG      |               | 50                   | 88FUFT2MG      |               |
|               | 20     | 25-100    | B          | —         | 2½        | 100A/250V                 | 88GUGT2FG      |               | 100                  | 88GUGT2MG      |               |
|               | 30     | 25-100    | B          | 3         | —         | 100A/250V                 | 88HUGT2FG      |               | 100                  | 88HUGT2MG      |               |
|               | 40     | 50-200    | B          | —         | 3½        | 200A/250V                 | 88IUHT2FG      |               | 125                  | 88IUHT2MG      |               |
|               | 50     | 50-200    | B          | 4         | —         | 200A/250V                 | 88JUHT2FG      |               | 150                  | 88JUHT2MG      |               |
|               | 75     | 55-250    | —          | 5         | —         | —                         | —              |               | 250                  | 88LPST2MG      |               |
|               | 100    | 55-250    | —          | 5         | —         | 400A/250V                 | 88LPUT2FG      |               | 400                  | 88LPUT2MG      |               |
|               | 200    | 160-630   | —          | 6         | —         | —                         | —              |               | 600                  | 88MSXT2MG      |               |
| 460           | 25     | 13-52     | B          | 2         | —         | 60A/600V                  | 88FUFT4FH      |               | 50                   | 88FUFT4MH      |               |
|               | 30     | 25-100    | B          | —         | 2½        | 60A/600V                  | 88GUGT4FH      |               | 50                   | 88GUGT4MH      |               |
|               | 50     | 25-100    | B          | 3         | —         | 100A/600V                 | 88HUGT4FH      |               | 100                  | 88HUGT4MH      |               |
|               | 75     | 50-200    | B          | —         | 3½        | 200A/600V                 | 88IUHT4FH      |               | 125                  | 88IUHT4MH      |               |
|               | 100    | 50-200    | B          | 4         | —         | 200A/600V                 | 88JUHT4FH      |               | 150                  | 88JUHT4MH      |               |
|               | 150    | 55-250    | —          | 5         | —         | —                         | —              |               | 250                  | 88LPST4MH      |               |
|               | 200    | 55-250    | —          | 5         | —         | 400A/600V                 | 88LPST4FH      |               | 400                  | 88LPST4MH      |               |
|               | 250    | 160-630   | —          | 6         | —         | —                         | —              |               | 400                  | 88MSVT4MH      |               |
|               | 400    | 160-630   | —          | 6         | —         | 600A/600V                 | 88MSXT4FH      |               | 600                  | 88MSXT4MH      |               |

## Part Winding 2 Step

| Motor Voltage | Max Hp | Overload  |            | NEMA Size | Half Size | Fusible Disconnect        |                |               | Circuit Breaker      |                |               |
|---------------|--------|-----------|------------|-----------|-----------|---------------------------|----------------|---------------|----------------------|----------------|---------------|
|               |        | Amp Range | Frame Size |           |           | Fuse Clip Size Amps/Volts | Catalog Number | List Price \$ | Circuit Breaker Amps | Catalog Number | List Price \$ |
| 230           | 20     | 10-40     | A1         | —         | 1½        | 100A/250V                 | 88EUEP2FG      |               | 100                  | 88EUEP2MG      |               |
|               | 25     | 13-52     | B          | 2         | —         | 100A/250V                 | 88FUF2FG       |               | 100                  | 88FUF2MG       |               |
|               | 40     | 25-100    | B          | —         | 2½        | 200A/250V                 | 88GUGP2FG      |               | 100                  | 88GUGP2MG      |               |
|               | 50     | 25-100    | B          | 3         | —         | 200A/250V                 | 88HUGP2FG      |               | 150                  | 88HUGP2MG      |               |
|               | 60     | 50-200    | B          | —         | 3½        | 200A/250V                 | 88IUHP2FG      |               | 250                  | 88IUHP2MG      |               |
|               | 75     | 50-200    | B          | 4         | —         | 400A/250V                 | 88JUHP2FG      |               | 250                  | 88JUHP2MG      |               |
|               | 125    | 55-250    | —          | 5         | —         | —                         | —              |               | 400                  | 88LPSP2MG      |               |
|               | 150    | 55-250    | —          | 5         | —         | 600A/250V                 | 88LPUP2FG      |               | 600                  | 88LPUP2MG      |               |
| 460           | 30     | 10-40     | A1         | —         | 1½        | 100A/600V                 | 88EUEP4FH      |               | 100                  | 88EUEP4MH      |               |
|               | 40     | 13-52     | B          | 2         | —         | 100A/600V                 | 88FUF4FH       |               | 100                  | 88FUF4MH       |               |
|               | 60     | 25-100    | B          | —         | 2½        | 200A/600V                 | 88GUGP4FH      |               | 100                  | 88GUGP4MH      |               |
|               | 75     | 25-100    | B          | 3         | —         | 200A/600V                 | 88HUGP4FH      |               | 150                  | 88HUGP4MH      |               |
|               | 100    | 50-200    | B          | —         | 3½        | 200A/600V                 | 88IUHP4FH      |               | 250                  | 88IUHP4MH      |               |
|               | 150    | 50-200    | B          | 4         | —         | 400A/600V                 | 88JUHP4FH      |               | 250                  | 88JUHP4MH      |               |
|               | 250    | 55-250    | —          | 5         | —         | —                         | —              |               | 400                  | 88LPSP4MH      |               |
|               | 350    | 55-250    | —          | 5         | —         | 600A/600V                 | 88LPUP4FH      |               | 600                  | 88LPUP4MH      |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

## Wye Delta with Solid State Overload, Class 88

## Selection

| Ordering Information                                                                                                                                                                                                                                                                  | Coil and Control Voltage                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>► Field Modification Kits see page 9/104.</li> <li>► Factory Modifications see page 9/119.</li> <li>► Dimensions see page 9/169.</li> <li>► Wiring Diagrams see pages 9/182 and 9/183.</li> <li>► Replacement Parts see page 9/131.</li> </ul> | <p>The coil voltage on the contactors will be the motor voltage. A CPT will be supplied to provide the control voltage. The control voltage will be 120V.</p> <p>To change the control voltage to customer supplied (no CPT included), change the 9th character to the following:</p> <p>for 24V , use "J"</p> <p>for 120V, use "F"</p> |

## Wye Delta

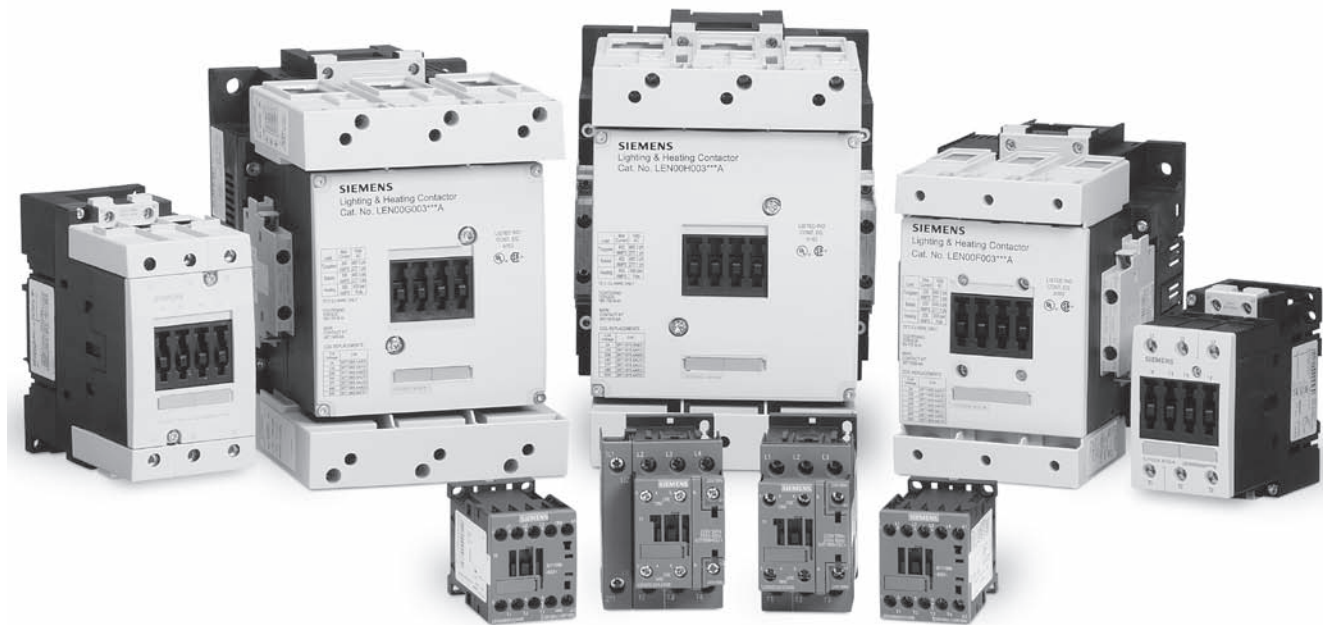
| Motor Voltage | Max Hp  | Overload  |            | NEMA Size | Half Size | Fuse Clip Size Amps/Volts | Motor Circuit Interruter ETI Amps | Open Transition    |               |                 |               | Closed Transition  |               |                 |               |
|---------------|---------|-----------|------------|-----------|-----------|---------------------------|-----------------------------------|--------------------|---------------|-----------------|---------------|--------------------|---------------|-----------------|---------------|
|               |         | Amp Range | Frame Size |           |           |                           |                                   | Fusible Disconnect |               | Circuit Breaker |               | Fusible Disconnect |               | Circuit Breaker |               |
|               |         |           |            |           |           |                           |                                   | Catalog Number     | List Price \$ | Catalog Number  | List Price \$ | Catalog Number     | List Price \$ | Catalog Number  | List Price \$ |
| 200           | 10      | 10-40     | A1         | 1         | —         | 60A/250V                  | 50                                | 88DUE06FD          |               | 88DUE06MD       |               | 88DUEC6FD          |               | 88DUEC6MD       |               |
|               | 15      | 10-40     | A1         | —         | 1½        | 100A/250V                 | 100                               | 88EUE06FD          |               | 88EUE06MD       |               | 88EUEC6FD          |               | 88EUEC6MD       |               |
|               | 20      | 13-52     | B          | 2         | —         | 100A/250V                 | 100                               | 88FUF06FD          |               | 88FUF06MD       |               | 88FUC6FD           |               | 88FUC6MD        |               |
|               | 30      | 25-100    | B          | —         | 2½        | 200A/250V                 | 125                               | 88GUG06FD          |               | 88GUG06MD       |               | 88GUC6FD           |               | 88GUC6MD        |               |
|               | 40      | 25-100    | B          | 3         | —         | 200A/250V                 | 150                               | 88HUG06FD          |               | 88HUG06MD       |               | 88HUC6FD           |               | 88HUC6MD        |               |
|               | 50      | 50-200    | B          | —         | 3½        | 200A/250V                 | 250                               | 88IUH06FD          |               | 88IUH06MD       |               | 88IHC6FD           |               | 88IHC6MD        |               |
|               | 60      | 50-200    | B          | 4         | —         | 400A/250V                 | 250                               | 88JUH06FD          |               | 88JUH06MD       |               | 88JHC6FD           |               | 88JHC6MD        |               |
|               | 75      | 55-250    | —          | 5         | —         | 400A/250V                 | 400                               | 88LPS06FD          |               | 88LPS06MD       |               | 88LPC6FD           |               | 88LPC6MD        |               |
|               | 150     | 55-250    | —          | 5         | —         | 600A/250V                 | 600                               | 88LPU06FD          |               | 88LPU06MD       |               | 88LPC6FD           |               | 88LPC6MD        |               |
| 300           | 160-630 | —         | 6          | —         | —         | 800                       | —                                 |                    | 88MSX06MD     |                 | —             |                    | 88MSXC6MD     |                 |               |
| 230           | 10      | 10-40     | A1         | 1         | —         | 60A/250V                  | 50                                | 88DUE02FG          |               | 88DUE02MG       |               | 88DUEC2FG          |               | 88DUEC2MG       |               |
|               | 15      | 10-40     | A1         | —         | 1½        | 60A/250V                  | 50                                | 88EUE02FG          |               | 88EUE02MG       |               | 88EUEC2FG          |               | 88EUEC2MG       |               |
|               | 25      | 13-52     | B          | 2         | —         | 100A/250V                 | 100                               | 88FUF02FG          |               | 88FUF02MG       |               | 88FUC2FG           |               | 88FUC2MG        |               |
|               | 30      | 25-100    | B          | —         | 2½        | 200A/250V                 | 100                               | 88GUG02FG          |               | 88GUG02MG       |               | 88GUC2FG           |               | 88GUC2MG        |               |
|               | 50      | 25-100    | B          | 3         | —         | 200A/250V                 | 150                               | 88HUG02FG          |               | 88HUG02MG       |               | 88HUC2FG           |               | 88HUC2MG        |               |
|               | 60      | 50-200    | B          | —         | 3½        | 200A/250V                 | 250                               | 88IUH02FG          |               | 88IUH02MG       |               | 88IHC2FG           |               | 88IHC2MG        |               |
|               | 75      | 50-200    | B          | 4         | —         | 400A/250V                 | 250                               | 88JUH02FG          |               | 88JUH02MG       |               | 88JHC2FG           |               | 88JHC2MG        |               |
|               | 100     | 55-250    | —          | 5         | —         | 400A/250V                 | 400                               | 88LPS02FG          |               | 88LPS02MG       |               | 88LPC2FG           |               | 88LPC2MG        |               |
|               | 150     | 55-250    | —          | 5         | —         | 600A/250V                 | 600                               | 88LPU02FG          |               | 88LPU02MG       |               | 88LPC2FG           |               | 88LPC2MG        |               |
| 350           | 160-630 | —         | 6          | —         | —         | 1200                      | —                                 |                    | 88MSX02MG     |                 | —             |                    | 88MSXC2MG     |                 |               |
| 460           | 15      | 5.5-22    | A1         | 1         | —         | 30A/600V                  | 30                                | 88DUD04FH          |               | 88DUD04MH       |               | 88DUDC4FH          |               | 88DUDC4MH       |               |
|               | 30      | 10-40     | A1         | —         | 1½        | 60A/600V                  | 50                                | 88EUE04FH          |               | 88EUE04MH       |               | 88EUEC4FH          |               | 88EUEC4MH       |               |
|               | 40      | 13-52     | B          | 2         | —         | 100A/600V                 | 100                               | 88FUF04FH          |               | 88FUF04MH       |               | 88FUC4FH           |               | 88FUC4MH        |               |
|               | 60      | 25-100    | B          | —         | 2½        | 200A/600V                 | 100                               | 88GUG04FH          |               | 88GUG04MH       |               | 88GUC4FH           |               | 88GUC4MH        |               |
|               | 75      | 25-100    | B          | 3         | —         | 200A/600V                 | 125                               | 88HUG04FH          |               | 88HUG04MH       |               | 88HUC4FH           |               | 88HUC4MH        |               |
|               | 100     | 50-200    | B          | —         | 3½        | 200A/600V                 | 150                               | 88IUH04FH          |               | 88IUH04MH       |               | 88IHC4FH           |               | 88IHC4MH        |               |
|               | 150     | 50-200    | B          | 4         | —         | 400A/600V                 | 250                               | 88JUH04FH          |               | 88JUH04MH       |               | 88JHC4FH           |               | 88JHC4MH        |               |
|               | 200     | 55-250    | —          | 5         | —         | 400A/600V                 | 400                               | 88LPS04FH          |               | 88LPS04MH       |               | 88LPC4FH           |               | 88LPC4MH        |               |
|               | 300     | 55-250    | —          | 5         | —         | 600A/600V                 | 600                               | 88LPU04FH          |               | 88LPU04MH       |               | 88LPC4FH           |               | 88LPC4MH        |               |
| 700           | 160-630 | —         | 6          | —         | —         | 1200                      | —                                 |                    | 88MSX04MH     |                 | —             |                    | 88MSXC4MH     |                 |               |
| 575           | 15      | 5.5-22    | A1         | 1         | —         | 30A/600V                  | 30                                | 88DUD05FE          |               | 88DUD05ME       |               | 88DUDC5FE          |               | 88DUDC5ME       |               |
|               | 30      | 10-40     | A1         | —         | 1½        | 60A/600V                  | 50                                | 88EUE05FE          |               | 88EUE05ME       |               | 88EUEC5FE          |               | 88EUEC5ME       |               |
|               | 40      | 13-52     | B          | 2         | —         | 100A/600V                 | 50                                | 88FUF05FE          |               | 88FUF05ME       |               | 88FUC5FE           |               | 88FUC5ME        |               |
|               | 60      | 25-100    | B          | —         | 2½        | 200A/600V                 | 100                               | 88GUG05FE          |               | 88GUG05ME       |               | 88GUC5FE           |               | 88GUC5ME        |               |
|               | 75      | 25-100    | B          | 3         | —         | 200A/600V                 | 125                               | 88HUG05FE          |               | 88HUG05ME       |               | 88HUC5FE           |               | 88HUC5ME        |               |
|               | 100     | 50-200    | B          | —         | 3½        | 200A/600V                 | 150                               | 88IUH05FE          |               | 88IUH05ME       |               | 88IHC5FE           |               | 88IHC5ME        |               |
|               | 150     | 50-200    | B          | 4         | —         | 400A/600V                 | 250                               | 88JUH05FE          |               | 88JUH05ME       |               | 88JHC5FE           |               | 88JHC5ME        |               |
|               | 200     | 55-250    | —          | 5         | —         | 400A/600V                 | 400                               | 88LPS05FE          |               | 88LPS05ME       |               | 88LPC5FE           |               | 88LPC5ME        |               |
|               | 300     | 55-250    | —          | 5         | —         | 600A/600V                 | 400                               | 88LPU05FE          |               | 88LPU05ME       |               | 88LPC5FE           |               | 88LPC5ME        |               |
| 700           | 160-630 | —         | 6          | —         | —         | 1200                      | —                                 |                    | 88MSX05ME     |                 | —             |                    | 88MSXC5ME     |                 |               |

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

## Electrically Held Lighting Contactors, Class LE

## Features

Simplicity and compact lightweight design makes Class LE lighting contactors an attractive solution to your budgeting challenges.



- Used in applications where it is not critical that contacts remain closed if control power is lost
- Rated for tungsten lighting (incandescent filament), ballast lighting (fluorescent, HID, metal halide, mercury vapor, quartz halogen and sodium-lamp), resistive and general use loads
- Contacts are rated 20 - 400 amps at 600 volts
- 3 and 4 pole (up to 12 pole for 30 and 60 amp contactors)
- Most contactors have built-in auxiliary contacts for convenient 3-wire control
- Wide range of coil voltages from 24 to 600 VAC 50/60Hz
- Compact design allows for smaller panels and more wiring room
- Finger and back-of-hand safe terminals
- Panel and DIN rail mounting
- Full line of enclosures including NEMA 1, 3/3R, 4, 4/4X stainless steel and 12
- Available in combination form with choice of non-fusible disconnect, fusible disconnect or circuit breaker
- Full line of factory and field modifications



## Electrically Held Lighting Contactors, Class LE

## Features

## Catalog Numbering System

|                                      | LE |  |  |  |  | 0 |  |  |  |
|--------------------------------------|----|--|--|--|--|---|--|--|--|
| <b>Disconnect Type</b>               |    |  |  |  |  |   |  |  |  |
| B = Combination Circuit Breaker      |    |  |  |  |  |   |  |  |  |
| D = Combination Non-Fused Disconnect |    |  |  |  |  |   |  |  |  |
| F = Combination Fusible Disconnect   |    |  |  |  |  |   |  |  |  |
| N = Non-Combination                  |    |  |  |  |  |   |  |  |  |
| <b>Disconnect Rating</b>             |    |  |  |  |  |   |  |  |  |
| 0 = N/A                              |    |  |  |  |  |   |  |  |  |
| A = 30A/250V Disconnect              |    |  |  |  |  |   |  |  |  |
| B = 30A/600V Disconnect              |    |  |  |  |  |   |  |  |  |
| C = 60A/250V Disconnect              |    |  |  |  |  |   |  |  |  |
| D = 60A/600V Disconnect              |    |  |  |  |  |   |  |  |  |
| E = 100A/250V Disconnect             |    |  |  |  |  |   |  |  |  |
| F = 100A/600V Disconnect             |    |  |  |  |  |   |  |  |  |
| G = 200A/250V Disconnect             |    |  |  |  |  |   |  |  |  |
| H = 200A/600V Disconnect             |    |  |  |  |  |   |  |  |  |
| J = 400A/250V Disconnect             |    |  |  |  |  |   |  |  |  |
| K = 400A/600V Disconnect             |    |  |  |  |  |   |  |  |  |
| T = 20A Circuit Breaker              |    |  |  |  |  |   |  |  |  |
| V = 30A Circuit Breaker              |    |  |  |  |  |   |  |  |  |
| Y = 60A Circuit Breaker              |    |  |  |  |  |   |  |  |  |
| Z = 100A Circuit Breaker             |    |  |  |  |  |   |  |  |  |
| <b>Enclosure Type</b>                |    |  |  |  |  |   |  |  |  |
| 0 = Open                             |    |  |  |  |  |   |  |  |  |
| 1 = NEMA 1                           |    |  |  |  |  |   |  |  |  |
| 2 = NEMA 12/3R                       |    |  |  |  |  |   |  |  |  |
| 4 = NEMA 4/4X SS                     |    |  |  |  |  |   |  |  |  |
| <b>Contactors Rating (Amp)</b>       |    |  |  |  |  |   |  |  |  |
| B = 20                               |    |  |  |  |  |   |  |  |  |
| C = 30                               |    |  |  |  |  |   |  |  |  |
| D = 60                               |    |  |  |  |  |   |  |  |  |
| E = 100                              |    |  |  |  |  |   |  |  |  |
| F = 200                              |    |  |  |  |  |   |  |  |  |
| G = 300                              |    |  |  |  |  |   |  |  |  |
| H = 400                              |    |  |  |  |  |   |  |  |  |
| <b>N.C. Poles</b>                    |    |  |  |  |  |   |  |  |  |
| 0 = None                             |    |  |  |  |  |   |  |  |  |
| <b>N.O. Poles</b>                    |    |  |  |  |  |   |  |  |  |
| 03 = Three                           |    |  |  |  |  |   |  |  |  |
| 04 = Four                            |    |  |  |  |  |   |  |  |  |
| 06 = Six                             |    |  |  |  |  |   |  |  |  |
| 09 = Nine                            |    |  |  |  |  |   |  |  |  |
| 12 = Twelve                          |    |  |  |  |  |   |  |  |  |
| <b>Coil Voltage (AC 60Hz)</b>        |    |  |  |  |  |   |  |  |  |
| 024 = 24                             |    |  |  |  |  |   |  |  |  |
| 120 = 120                            |    |  |  |  |  |   |  |  |  |
| 208 = 208                            |    |  |  |  |  |   |  |  |  |
| 240 = 240                            |    |  |  |  |  |   |  |  |  |
| 277 = 277                            |    |  |  |  |  |   |  |  |  |
| 347 = 347                            |    |  |  |  |  |   |  |  |  |
| 480 = 480                            |    |  |  |  |  |   |  |  |  |
| 600 = 600                            |    |  |  |  |  |   |  |  |  |
| <b>Series</b>                        |    |  |  |  |  |   |  |  |  |
| A = 200 – 400A Contactors            |    |  |  |  |  |   |  |  |  |
| B = 20 – 100A Contactors             |    |  |  |  |  |   |  |  |  |

## Electrically Held Lighting Contactors, Class LE

## Selection

## Ordering Information

- ▶ Replace \*\*\* with a number from the coil table.
- ▶ Field Modification Kits see page 9/104.
- ▶ Factory Modifications see page 9/119.
- ▶ Dimensions see page 9/149 for open, page 9/170 for enclosed.
- ▶ Wiring Diagram see page 9/188.
- ▶ Replacement Parts see page 9/134.

## Coil Table

| VAC 60Hz          | *** |
|-------------------|-----|
| 24                | 024 |
| 120               | 120 |
| 208               | 208 |
| 240               | 240 |
| 277               | 277 |
| 347 <sup>1)</sup> | 347 |
| 480               | 480 |
| 600               | 600 |

Replace the (\*\*\*) with a number from the coil table.

## Non-Combination Contactor

| Max. Amp Rating | Number of Poles | Normally Closed Contacts | Normally Open Contacts | Enclosure Type |               |                       |               |
|-----------------|-----------------|--------------------------|------------------------|----------------|---------------|-----------------------|---------------|
|                 |                 |                          |                        | Open           | 1             | 3/3R/12 <sup>2)</sup> | 4/4X 304 S.S. |
|                 |                 |                          |                        | Catalog Number |               |                       |               |
| 20              | 3               | 0                        | 3                      | LEN00B003***B  | LEN01B003***B | LEN02B003***B         | LEN04B003***B |
|                 | 4               | 0                        | 4                      | LEN00B004***B  | LEN01B004***B | LEN02B004***B         | LEN04B004***B |
| 30              | 3               | 0                        | 3                      | LEN00C003***B  | LEN01C003***B | LEN02C003***B         | LEN04C003***B |
|                 | 4               | 0                        | 4                      | LEN00C004***B  | LEN01C004***B | LEN02C004***B         | LEN04C004***B |
|                 | 6               | 0                        | 6                      | LEN00C006***B  | LEN01C006***B | LEN02C006***B         | LEN04C006***B |
|                 | 9               | 0                        | 9                      | LEN00C009***B  | LEN01C009***B | LEN02C009***B         | LEN04C009***B |
|                 | 12              | 0                        | 12                     | LEN00C012***B  | LEN01C012***B | LEN02C012***B         | LEN04C012***B |
| 60              | 3               | 0                        | 3                      | LEN00D003***B  | LEN01D003***B | LEN02D003***B         | LEN04D003***B |
|                 | 6               | 0                        | 6                      | LEN00D006***B  | LEN01D006***B | LEN02D006***B         | LEN04D006***B |
|                 | 9               | 0                        | 9                      | LEN00D009***B  | LEN01D009***B | LEN02D009***B         | LEN04D009***B |
|                 | 12              | 0                        | 12                     | LEN00D012***B  | LEN01D012***B | LEN02D012***B         | LEN04D012***B |
| 100             | 3               | 0                        | 3                      | LEN00E003***B  | LEN01E003***B | LEN02E003***B         | LEN04E003***B |
| 200             | 3               | 0                        | 3                      | LEN00F003***A  | LEN01F003***A | LEN02F003***A         | LEN04F003***A |
| 300             | 3               | 0                        | 3                      | LEN00G003***A  | LEN01G003***A | LEN02G003***A         | LEN04G003***A |
| 400             | 3               | 0                        | 3                      | LEN00H003***A  | LEN01H003***A | LEN02H003***A         | LEN04H003***A |

1) Not available on 200 - 400A contactors.

2) Type 12 field convertible to type 3/3R.

## Electrically Held Lighting Contactors, Class LE

## Technical

| Contactor                                               | LEN00B003                                                | LEN00B004                                                | LEN00C003                                                | LEN00C004                                                |
|---------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|
| <b>General technical data:</b>                          |                                                          |                                                          |                                                          |                                                          |
| Finger-safe (main circuit / control circuit)            | yes / yes                                                | yes / yes                                                | yes / yes                                                | yes / yes                                                |
| Degree of pollution                                     | 3                                                        | 3                                                        | 3                                                        | 3                                                        |
| Altitude (m)                                            | 2,000                                                    | 2,000                                                    | 2,000                                                    | 2,000                                                    |
| Ambient storage temperature (°C)                        | -55 to 80                                                | -55 to 80                                                | -55 to 80                                                | -55 to 80                                                |
| Ambient operating temperature (°C)                      | 0 to 40                                                  | 0 to 40                                                  | 0 to 40                                                  | 0 to 40                                                  |
| Humidity (% non-condensing)                             | 10 to 95                                                 | 10 to 95                                                 | 10 to 95                                                 | 10 to 95                                                 |
| Shock resistance at rectangular impulse (g/ms)          | 6.7 / 5, 4.2 / 10                                        | 6.7 / 5, 4.2 / 10                                        | 7.5 / 5, 4.7 / 10                                        | 7.5 / 5, 4.7 / 10                                        |
| Shock resistance at sine pulse (g/ms)                   | 10.5 / 5, 6.6 / 10                                       | 10.5 / 5, 6.6 / 10                                       | 11.8 / 5, 7.4 / 10                                       | 11.8 / 5, 7.4 / 10                                       |
| Rated impulse voltage resistance (kV)                   | no data                                                  | no data                                                  | no data                                                  | no data                                                  |
| Rated insulation voltage (V)                            | no data                                                  | no data                                                  | no data                                                  | no data                                                  |
| <b>Mechanical operating cycles as operating time:</b>   |                                                          |                                                          |                                                          |                                                          |
| of contactor                                            | 30,000,000                                               | 30,000,000                                               | 10,000,000                                               | 10,000,000                                               |
| of contactor with additional aux contacts               | 10,000,000                                               | 10,000,000                                               | 10,000,000                                               | 10,000,000                                               |
| <b>Main circuit:</b>                                    |                                                          |                                                          |                                                          |                                                          |
| Number of NC / NO main contacts                         | 0NC / 3NO                                                | 0NC / 4NO                                                | 0NC / 3NO                                                | 0NC / 4NO                                                |
| Typical power loss per conductor (W)                    | 0.7                                                      | 0.7                                                      | 0.9                                                      | 0.9                                                      |
| Off-load operating frequency (cycles per hour)          | 10,000                                                   | 10,000                                                   | 5,000                                                    | 5,000                                                    |
| <b>Current ratings:</b>                                 |                                                          |                                                          |                                                          |                                                          |
| <b>Tungsten (poles per phase)</b>                       | 20A @277V 1p 1ph<br>20A @480V 2p 1ph<br>20A @480V 3p 3ph | 20A @277V 1p 1ph<br>20A @480V 2p 1ph<br>20A @480V 3p 3ph | 30A @277V 1p 1ph<br>30A @480V 2p 1ph<br>30A @480V 3p 3ph | 30A @277V 1p 1ph<br>30A @480V 2p 1ph<br>30A @480V 3p 3ph |
| <b>Ballast (poles per phase)</b>                        | 20A @347V 1p 1ph<br>20A @600V 2p 1ph<br>20A @600V 3p 3ph | 20A @347V 1p 1ph<br>20A @600V 2p 1ph<br>20A @600V 3p 3ph | 30A @347V 1p 1ph<br>30A @600V 2p 1ph<br>30A @660V 3p 3ph | 30A @347V 1p 1ph<br>30A @600V 2p 1ph<br>30A @600V 3p 3ph |
| <b>General and resistive (poles per phase)</b>          | 20A @600V 1p 1ph<br>20A @600V 2p 1ph<br>20A @600V 3p 3ph | 20A @600V 1p 1ph<br>20A @600V 2p 1ph<br>20A @600V 3p 3ph | 30A @600V 1p 1ph<br>30A @600V 2p 1ph<br>30A @600V 3p 3ph | 30A @600V 1p 1ph<br>30A @600V 2p 1ph<br>30A @600V 3p 3ph |
| <b>Coil ratings:</b>                                    |                                                          |                                                          |                                                          |                                                          |
| Nominal voltage                                         | 2)                                                       | 2)                                                       | 2)                                                       | 2)                                                       |
| Inrush / sealed power (VA)                              | 31.7 / 4.8                                               | 31.7 / 4.8                                               | 87 / 9.4                                                 | 87 / 9.4                                                 |
| Coil voltage tolerance factor                           | 0.8 - 1.1                                                | 0.8 - 1.1                                                | 0.8 - 1.1                                                | 0.8 - 1.1                                                |
| <b>Internal/standard auxiliary contact:</b>             |                                                          |                                                          |                                                          |                                                          |
| Number of NC / NO auxiliary contacts                    | 0NC / 1NO                                                | NA <sup>①</sup>                                          | 1NC / 1NO                                                | 1NC / 1NO                                                |
| Rating                                                  | A600 / Q600                                              | NA                                                       | A600 / Q600                                              | A600 / Q600                                              |
| <b>Installation/mounting/dimensions:</b>                |                                                          |                                                          |                                                          |                                                          |
| Mounting orientation                                    | vertical                                                 | vertical                                                 | vertical                                                 | vertical                                                 |
| Type of mounting: screw / DIN rail                      | yes / yes                                                | yes / yes                                                | yes / yes                                                | yes / yes                                                |
| Height x Width x Depth (mm)                             | 57.5 x 45 x 73                                           | 57.5 x 45 x 73                                           | 85 x 45 x 97                                             | 85 x 60 x 97                                             |
| Minimum clearance to sides (mm)                         | 0                                                        | 0                                                        | 0                                                        | 0                                                        |
| Minimum clearance to earthed parts (mm)                 | 6                                                        | 6                                                        | 6                                                        | 6                                                        |
| Connection type / torque for main circuit terminals     | screw / 7-10 lb in                                       | screw / 7-10 lb in                                       | screw / 18-22 lb in                                      | screw / 18-22 lb in                                      |
| Connection type / torque for control circuit terminals  | screw / 7-10 lb in                                       | screw / 7-10 lb in                                       | screw / 7-10 lb in                                       | screw / 7-10 lb in                                       |
| Solid and stranded conductors for main contacts (AWG)   | 2x(20-16),<br>2x(18-14), 2x(12)                          | 2x(20-16),<br>2x(18-14), 2x(12)                          | 2x(6-12),<br>2x(14-8)                                    | 2x(6-12),<br>2x(14-8)                                    |
| Solid and stranded conductors for control circuit (AWG) | 2x(20-16),<br>2x(18-14)                                  | 2x(20-16),<br>2x(18-14)                                  | 2x(20-16),<br>2x(18-14)                                  | 2x(20-16),<br>2x(18-14)                                  |
| Conductor type for main and control circuits            | 75°C CU                                                  | 75°C CU                                                  | 75°C CU                                                  | 75°C CU                                                  |
| <b>Short circuit current rating of main circuit:</b>    |                                                          |                                                          |                                                          |                                                          |
| Short circuit current rating                            | 5kA @ 600V                                               | 5kA @ 600V                                               | 5kA @ 600V                                               | 5kA @ 600V                                               |
| Max fuse / circuit breaker (Amp)                        | 30 / 25                                                  | 30 / 25                                                  | 60 / 40                                                  | 60 / 40                                                  |
| <b>Certificates:</b>                                    | <b>cULus</b>                                             | <b>cULus</b>                                             | <b>cULus</b>                                             | <b>cULus</b>                                             |

① Must use an external (optional) auxiliary contact.

② Refer to catalog selection tables for coil voltages.

## Electrically Held Lighting Contactors, Class LE

## Technical

| LEN00D003                                                | LEN00E003                                                   | LEN00F003                                                   | LEN00G003                                                   | LEN00H003                                                   |
|----------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| no / yes                                                 | no / yes                                                    | no / yes                                                    | no / yes                                                    | no / yes                                                    |
| 3                                                        | 3                                                           | 3                                                           | 3                                                           | 3                                                           |
| 2,000                                                    | 2,000                                                       | 2,000                                                       | 2,000                                                       | 2,000                                                       |
| -55 to 80                                                | -55 to 80                                                   | -55 to 80                                                   | -55 to 80                                                   | -55 to 80                                                   |
| 0 to 40                                                  | 0 to 40                                                     | 0 to 40                                                     | 0 to 40                                                     | 0 to 40                                                     |
| 10 to 95                                                 | 10 to 95                                                    | 10 to 95                                                    | 10 to 95                                                    | 10 to 95                                                    |
| 10 / 5, 5 / 10                                           | 6.8 / 5, 4 / 10                                             | 8.5 / 5, 4.2 / 10                                           | 8.5 / 5, 4.2 / 10                                           | 8.5 / 5, 4.2 / 10                                           |
| 15 / 5, 8 / 10                                           | 10.6 / 5, 6.2 / 10                                          | 13.4 / 5, 6.5 / 10                                          | 13.4 / 5, 6.5 / 10                                          | 13.4 / 5, 6.5 / 10                                          |
| no data                                                  | no data                                                     | no data                                                     | no data                                                     | no data                                                     |
| no data                                                  | no data                                                     | no data                                                     | no data                                                     | no data                                                     |
| <b>Mechanical operating cycles as operating time:</b>    |                                                             |                                                             |                                                             |                                                             |
| 10,000,000                                               | 10,000,000                                                  | 10,000,000                                                  | 10,000,000                                                  | 10,000,000                                                  |
| 10,000,000                                               | 10,000,000                                                  | 10,000,000                                                  | 10,000,000                                                  | 10,000,000                                                  |
| <b>Main circuit:</b>                                     |                                                             |                                                             |                                                             |                                                             |
| ONC / 3NO                                                | ONC / 3NO                                                   | ONC / 3NO                                                   | ONC / 3NO                                                   | ONC / 3NO                                                   |
| 2.6                                                      | 7.7                                                         | 13                                                          | 18                                                          | 35                                                          |
| 5,000                                                    | 5,000                                                       | 2,000                                                       | 2,000                                                       | 2,000                                                       |
| <b>Current ratings:</b>                                  |                                                             |                                                             |                                                             |                                                             |
| 60A @277V 1p 1ph<br>60A @480V 2p 1ph<br>60A @480V 3p 3ph | 100A @277V 1p 1ph<br>100A @480V 2p 1ph<br>100A @480V 3p 3ph | 200A @277V 1p 1ph<br>200A @480V 2p 1ph<br>200A @480V 3p 3ph | 300A @277V 1p 1ph<br>300A @480V 2p 1ph<br>300A @480V 3p 3ph | 400A @277V 1p 1ph<br>400A @480V 2p 1ph<br>400A @480V 3p 3ph |
| 60A @600V 1p 1ph<br>60A @600V 2p 1ph<br>60A @600V 3p 3ph | 100A @600V 1p 1ph<br>100A @600V 2p 1ph<br>100A @600V 3p 3ph | 200A @600V 1p 1ph<br>200A @600V 2p 1ph<br>200A @600V 3p 3ph | 300A @600V 1p 1ph<br>300A @600V 2p 1ph<br>300A @600V 3p 3ph | 400A @600V 1p 1ph<br>400A @600V 2p 1ph<br>400A @600V 3p 3ph |
| 60A @600V 1p 1ph<br>60A @600V 2p 1ph<br>60A @600V 3p 3ph | 100A @600V 1p 1ph 100A<br>@600V 2p 1ph<br>100A @600V 3p 3ph | 200A @600V 1p 1ph 200A<br>@600V 2p 1ph<br>200A @600V 3p 3ph | 300A @600V 1p 1ph 300A<br>@600V 2p 1ph<br>300A @600V 3p 3ph | 400A @600V 1p 1ph 400A<br>@600V 2p 1ph<br>400A @600V 3p 3ph |
| <b>Coil ratings:</b>                                     |                                                             |                                                             |                                                             |                                                             |
| 2)                                                       | 2)                                                          | 2)                                                          | 2)                                                          | 2)                                                          |
| 166 / 12.6                                               | 300 / 21                                                    | 300 / 5.8                                                   | 590 / 6.7                                                   | 830 / 9.2                                                   |
| 0.8 - 1.1                                                | 0.8 - 1.1                                                   | 0.8 - 1.1                                                   | 0.8 - 1.1                                                   | 0.8 - 1.1                                                   |
| <b>Internal/standard auxiliary contact:</b>              |                                                             |                                                             |                                                             |                                                             |
| NA ①                                                     | NA ①                                                        | 2NC / 2NO                                                   | 2NC / 2NO                                                   | 2NC / 2NO                                                   |
| NA                                                       | NA                                                          | A300 / Q300                                                 | A300 / Q300                                                 | A300 / Q300                                                 |
| <b>Installation/mounting/dimensions:</b>                 |                                                             |                                                             |                                                             |                                                             |
| vertical                                                 | vertical                                                    | vertical                                                    | vertical                                                    | vertical                                                    |
| yes / yes                                                | yes / yes                                                   | yes / no                                                    | yes / no                                                    | yes / no                                                    |
| 112 x 55 x 115                                           | 146 x 70 x 139                                              | 172 x 120 x 180                                             | 210 x 145 x 202                                             | 214 x 160 x 225                                             |
| 6                                                        | 6                                                           | 10                                                          | 10                                                          | 10                                                          |
| 6                                                        | 6                                                           | 10                                                          | 10                                                          | 10                                                          |
| screw / 27-40 lb in                                      | screw / 36-53 lb in                                         | screw / 90-110 lb in                                        | screw / 180-195 lb in                                       | screw / 180-195 lb in                                       |
| screw / 7-10 lb in                                       | screw / 7-10 lb in                                          | screw / 7-10 lb in                                          | screw / 7-10 lb in                                          | screw / 7-10 lb in                                          |
| 2x(18-3),<br>1x(18-2)                                    | 2x(10-1/0),<br>1x(10-2/0)                                   | 2x(6-3/0)                                                   | 2x(2/0-500MCM)                                              | 2x(2/0-500MCM)                                              |
| 2x(18-14)                                                | 2x(18-14)                                                   | 2x(18-14)                                                   | 2x(18-14)                                                   | 2x(18-14)                                                   |
| 75°C CU                                                  | 75°C CU                                                     | 75°C CU                                                     | 75°C CU                                                     | 75°C CU                                                     |
| <b>Short circuit current rating of main circuit:</b>     |                                                             |                                                             |                                                             |                                                             |
| 5kA @ 600V                                               | 10kA @ 600V                                                 | 10kA @ 600V                                                 | 18kA @ 600V                                                 | 18kA @ 600V                                                 |
| 100 / 80                                                 | 200 / 125                                                   | 400 / 250                                                   | 600 / 400                                                   | 800 / 500                                                   |
| cULus                                                    | cULus                                                       | cULus                                                       | cULus                                                       | cULus                                                       |

## Electrically Held Lighting Contactors, Class LE

## Selection



## Ordering Information

- ▶ Replace \*\*\* with a number from the coil table.
- ▶ Field Modification Kits see page 9/104.
- ▶ Factory Modifications see page 9/119.
- ▶ Dimensions see page 9/170.
- ▶ Wiring Diagram see page 9/188.
- ▶ Replacement Parts see page 9/134.

## Coil Table

| VAC 60Hz         | *** |
|------------------|-----|
| 24               | 024 |
| 120              | 120 |
| 208              | 208 |
| 240              | 240 |
| 277              | 277 |
| 347 <sup>①</sup> | 347 |
| 480              | 480 |
| 600              | 600 |

Replace the (\*\*\*) with a number from the coil table.

## Combination Contactor

| Disconnect Type | Max. Amp Rating | Number of NO Poles | Disc. Amp Rating | Disc Amp / Fuse Clip Rating | Circuit Breaker Rating | Enclosure Type |                                       |               |
|-----------------|-----------------|--------------------|------------------|-----------------------------|------------------------|----------------|---------------------------------------|---------------|
|                 |                 |                    |                  |                             |                        | 1              | 3/3R/12 <sup>②</sup> , 4 <sup>③</sup> | 4/4X 304 S.S. |
|                 |                 |                    |                  |                             |                        | Catalog Number |                                       |               |
| Non-Fusible     | 20              | 3                  | 30A              | —                           | —                      | LEDB1B003***B  | LEDB2B003***B                         | LEDB4B003***B |
|                 | 30              | 3                  | 30A              | —                           | —                      | LEDB1C003***B  | LEDB2C003***B                         | LEDB4C003***B |
|                 | 60              | 3                  | 60A              | —                           | —                      | LEDD1D003***B  | LEDD2D003***B                         | LEDD4D003***B |
|                 | 100             | 3                  | 100A             | —                           | —                      | LEDF1E003***B  | LEDF2E003***B                         | LEDF4E003***B |
|                 | 200             | 3                  | 200A             | —                           | —                      | LEDH1F003***A  | LEDH2F003***A                         | LEDH4F003***A |
|                 | 300             | 3                  | 400A             | —                           | —                      | LEDK1G003***A  | LEDK2G003***A                         | LEDK4G003***A |
| Fusible         | 20              | 3                  | —                | 30A/250V                    | —                      | LEFA1B003***B  | LEFA2B003***B                         | LEFA4B003***B |
|                 |                 | 3                  | —                | 30A/600V                    | —                      | LEFB1B003***B  | LEFB2B003***B                         | LEFB4B003***B |
|                 | 30              | 3                  | —                | 30A/250V                    | —                      | LEFA1C003***B  | LEFA2C003***B                         | LEFA4C003***B |
|                 |                 | 3                  | —                | 30A/600V                    | —                      | LEFB1C003***B  | LEFB2C003***B                         | LEFB4C003***B |
|                 | 60              | 3                  | —                | 60A/250V                    | —                      | LEFC1D003***B  | LEFC2D003***B                         | LEFC4D003***B |
|                 |                 | 3                  | —                | 60A/600V                    | —                      | LEFD1D003***B  | LEFD2D003***B                         | LEFD4D003***B |
|                 | 100             | 3                  | —                | 100A/250V                   | —                      | LEFE1E003***B  | LEFE2E003***B                         | LEFE4E003***B |
|                 |                 | 3                  | —                | 100A/600V                   | —                      | LEFF1E003***B  | LEFF2E003***B                         | LEFF4E003***B |
|                 | 200             | 3                  | —                | 200A/250V                   | —                      | LEFG1F003***A  | LEFG2F003***A                         | LEFG4F003***A |
|                 |                 | 3                  | —                | 200A/600V                   | —                      | LEFH1F003***A  | LEFH2F003***A                         | LEFH4F003***A |
|                 | 300             | 3                  | —                | 400A/250V                   | —                      | LEFJ1G003***A  | LEFJ2G003***A                         | LEFJ4G003***A |
|                 |                 | 3                  | —                | 400A/600V                   | —                      | LEFK1G003***A  | LEFK2G003***A                         | LEFK4G003***A |
| Circuit Breaker | 20              | 3                  | —                | —                           | 20A                    | LEBT1B003***B  | LEBT2B003***B                         | LEBT4B003***B |
|                 | 30              | 3                  | —                | —                           | 30A                    | LEBV1C003***B  | LEBV2C003***B                         | LEBV4C003***B |
|                 | 60              | 3                  | —                | —                           | 60A                    | LEBY1D003***B  | LEBY2D003***B                         | LEBY4D003***B |
|                 | 100             | 3                  | —                | —                           | 100A                   | LEBZ1E003***B  | LEBZ2E003***B                         | LEBZ4E003***B |

① Not available on 200 - 400A contactors.

② Type 12 field convertible to type 3/3R.

③ Type 4 painted enclosure through 100 Amp only.

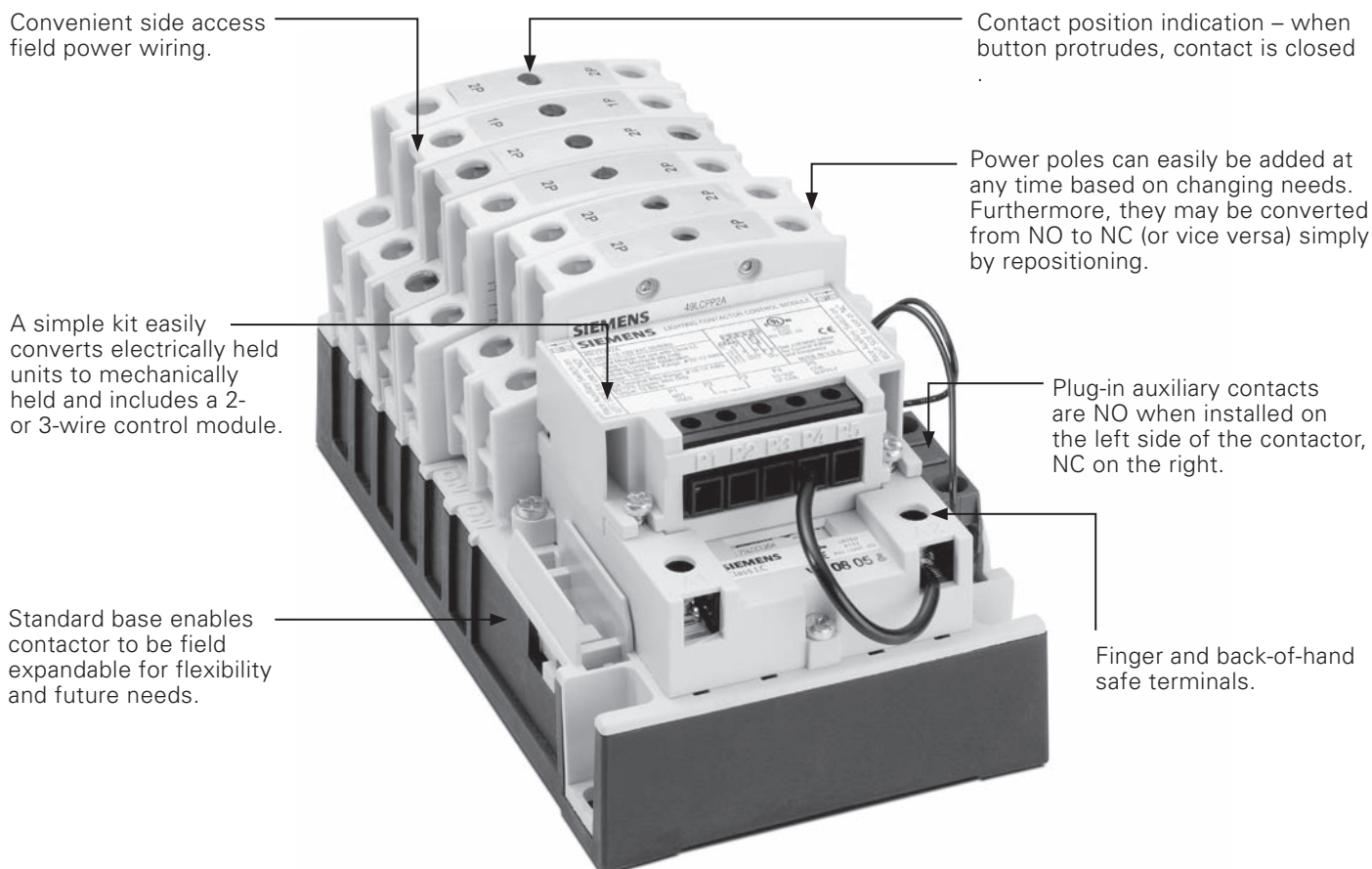


## Electrically Held Lighting Contactors, Class LC

## Features

Class LC lighting contactors deliver unprecedented versatility in application, simplicity in configuration and performance in operation. Ingenious design, rugged construction and a host

of truly useful features make them uniquely appealing to all those who use them.



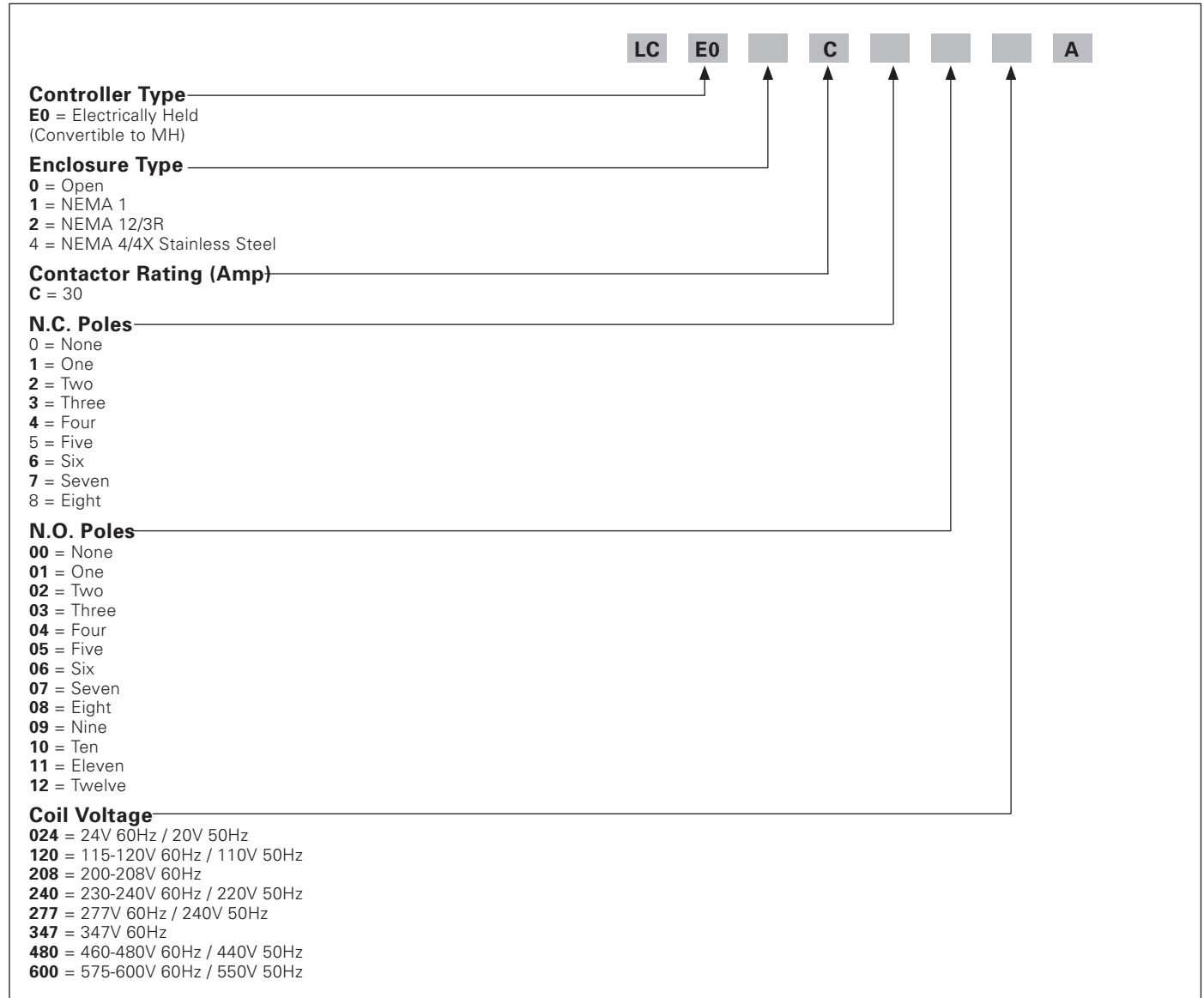
- Used in all applications where either electrically or mechanically held contactors are specifically suited and also ideal for maximum flexibility and future expansion
- Rated for tungsten lighting (incandescent filament), ballast lighting (fluorescent, HID, metal halide, mercury vapor, quartz halogen and sodium-lamp), resistive and general use loads
- Contacts are rated up to 30 amps at 600 volts
- Up to 12 poles (maximum of 8 normally closed)
- Wide range of coil voltages from 24 to 600 VAC 50/60Hz

- Can be ordered as either electrically or mechanically held and can also be converted from electrically to mechanically held in the field with a simple conversion kit
- Modular design enables you to stock the building block components to assemble all configurations of both the electrically and mechanically held contactors thus dramatically reducing inventory
- Full line of enclosures including NEMA 1, 3/3R, 4, 4/4X stainless steel and 12
- Full line of factory and field modifications

## Electrically Held Lighting Contactors, Class LC

## Features

## Catalog Numbering System



## Electrically Held Lighting Contactors, Class LC

## Selection

|                                                                                   | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Coil Table                                           |     |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-----|
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | VAC 60Hz                                             | *** |
|  | <ul style="list-style-type: none"> <li>▶ To order standard electrically held contactor, simply select catalog number from tables below.</li> <li>▶ To order mechanically held contactor, select catalog number from tables below and specify conversion module from factory modification section from page 9/122.</li> <li>▶ To convert standard electrically held contactor to mechanically held in the field, select catalog number from tables below and select conversion module kit from field modification section on page 9/106.</li> <li>▶ Replace *** with a number from the coil table.</li> <li>▶ Field Modification Kits see page 9/104.</li> <li>▶ Factory Modifications see page 9/119.</li> <li>▶ Dimensions see page 9/148 open, page 9/170 enclosed.</li> <li>▶ Wiring Diagrams see page 9/188.</li> <li>▶ Replacement Parts see page 9/134.</li> </ul> | 24                                                   | 024 |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 120                                                  | 120 |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 208                                                  | 208 |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 240                                                  | 240 |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 277                                                  | 277 |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 347                                                  | 347 |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 480                                                  | 480 |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 600                                                  | 600 |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Replace the (***) with a number from the coil table. |     |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                      |     |

## Non-Combination Contactor (30 Amp max.)

| No. of Poles |      | Enclosure Type |               |                      |               |
|--------------|------|----------------|---------------|----------------------|---------------|
|              |      | Open           | 1             | 3/3R/12 <sup>①</sup> | 4/4X 304 S.S. |
| N.C.         | N.O. | Catalog Number |               |                      |               |
| 2            | 0    | LCE00C200***A  | LCE01C200***A | LCE02C200***A        | LCE04C200***A |
| 3            |      | LCE00C300***A  | LCE01C300***A | LCE02C300***A        | LCE04C300***A |
| 4            |      | LCE00C400***A  | LCE01C400***A | LCE02C400***A        | LCE04C400***A |
| 5            |      | LCE00C500***A  | LCE01C500***A | LCE02C500***A        | LCE04C500***A |
| 6            |      | LCE00C600***A  | LCE01C600***A | LCE02C600***A        | LCE04C600***A |
| 7            |      | LCE00C700***A  | LCE01C700***A | LCE02C700***A        | LCE04C700***A |
| 8            |      | LCE00C800***A  | LCE01C800***A | LCE02C800***A        | LCE04C800***A |
| 1            | 1    | LCE00C101***A  | LCE01C101***A | LCE02C101***A        | LCE04C101***A |
| 2            |      | LCE00C201***A  | LCE01C201***A | LCE02C201***A        | LCE04C201***A |
| 3            |      | LCE00C301***A  | LCE01C301***A | LCE02C301***A        | LCE04C301***A |
| 4            |      | LCE00C401***A  | LCE01C401***A | LCE02C401***A        | LCE04C401***A |
| 5            |      | LCE00C501***A  | LCE01C501***A | LCE02C501***A        | LCE04C501***A |
| 6            |      | LCE00C601***A  | LCE01C601***A | LCE02C601***A        | LCE04C601***A |
| 7            |      | LCE00C701***A  | LCE01C701***A | LCE02C701***A        | LCE04C701***A |
| 8            |      | LCE00C801***A  | LCE01C801***A | LCE02C801***A        | LCE04C801***A |
| 0            | 2    | LCE00C002***A  | LCE01C002***A | LCE02C002***A        | LCE04C002***A |
| 1            |      | LCE00C102***A  | LCE01C102***A | LCE02C102***A        | LCE04C102***A |
| 2            |      | LCE00C202***A  | LCE01C202***A | LCE02C202***A        | LCE04C202***A |
| 3            |      | LCE00C302***A  | LCE01C302***A | LCE02C302***A        | LCE04C302***A |
| 4            |      | LCE00C402***A  | LCE01C402***A | LCE02C402***A        | LCE04C402***A |
| 5            |      | LCE00C502***A  | LCE01C502***A | LCE02C502***A        | LCE04C502***A |
| 6            |      | LCE00C602***A  | LCE01C602***A | LCE02C602***A        | LCE04C602***A |
| 7            |      | LCE00C702***A  | LCE01C702***A | LCE02C702***A        | LCE04C702***A |
| 8            |      | LCE00C802***A  | LCE01C802***A | LCE02C802***A        | LCE04C802***A |
| 0            | 3    | LCE00C003***A  | LCE01C003***A | LCE02C003***A        | LCE04C003***A |
| 1            |      | LCE00C103***A  | LCE01C103***A | LCE02C103***A        | LCE04C103***A |
| 2            |      | LCE00C203***A  | LCE01C203***A | LCE02C203***A        | LCE04C203***A |
| 3            |      | LCE00C303***A  | LCE01C303***A | LCE02C303***A        | LCE04C303***A |
| 4            |      | LCE00C403***A  | LCE01C403***A | LCE02C403***A        | LCE04C403***A |
| 5            |      | LCE00C503***A  | LCE01C503***A | LCE02C503***A        | LCE04C503***A |
| 6            |      | LCE00C603***A  | LCE01C603***A | LCE02C603***A        | LCE04C603***A |
| 7            |      | LCE00C703***A  | LCE01C703***A | LCE02C703***A        | LCE04C703***A |
| 8            |      | LCE00C803***A  | LCE01C803***A | LCE02C803***A        | LCE04C803***A |

① Type 12 field convertible to Type 3/3R.

## Electrically Held Lighting Contactors, Class LC

## Selection

## Non-Combination Contactor (30 Amp max.)

| No. of Poles |      | Enclosure Type |               |               |               |
|--------------|------|----------------|---------------|---------------|---------------|
|              |      | Open           | 1             | 3/3R/12 ①     | 4/4X 304 S.S. |
| N.C.         | N.O. | Catalog Number |               |               |               |
| 0            | 4    | LCE00C004***A  | LCE01C004***A | LCE02C004***A | LCE04C004***A |
| 1            |      | LCE00C104***A  | LCE01C104***A | LCE02C104***A | LCE04C104***A |
| 2            |      | LCE00C204***A  | LCE01C204***A | LCE02C204***A | LCE04C204***A |
| 3            |      | LCE00C304***A  | LCE01C304***A | LCE02C304***A | LCE04C304***A |
| 4            |      | LCE00C404***A  | LCE01C404***A | LCE02C404***A | LCE04C404***A |
| 5            |      | LCE00C504***A  | LCE01C504***A | LCE02C504***A | LCE04C504***A |
| 6            |      | LCE00C604***A  | LCE01C604***A | LCE02C604***A | LCE04C604***A |
| 7            |      | LCE00C704***A  | LCE01C704***A | LCE02C704***A | LCE04C704***A |
| 8            |      | LCE00C804***A  | LCE01C804***A | LCE02C804***A | LCE04C804***A |
| 0            | 5    | LCE00C005***A  | LCE01C005***A | LCE02C005***A | LCE04C005***A |
| 1            |      | LCE00C105***A  | LCE01C105***A | LCE02C105***A | LCE04C105***A |
| 2            |      | LCE00C205***A  | LCE01C205***A | LCE02C205***A | LCE04C205***A |
| 3            |      | LCE00C305***A  | LCE01C305***A | LCE02C305***A | LCE04C305***A |
| 4            |      | LCE00C405***A  | LCE01C405***A | LCE02C405***A | LCE04C405***A |
| 5            |      | LCE00C505***A  | LCE01C505***A | LCE02C505***A | LCE04C505***A |
| 6            |      | LCE00C605***A  | LCE01C605***A | LCE02C605***A | LCE04C605***A |
| 0            | 6    | LCE00C006***A  | LCE01C006***A | LCE02C006***A | LCE04C006***A |
| 1            |      | LCE00C106***A  | LCE01C106***A | LCE02C106***A | LCE04C106***A |
| 2            |      | LCE00C206***A  | LCE01C206***A | LCE02C206***A | LCE04C206***A |
| 3            |      | LCE00C306***A  | LCE01C306***A | LCE02C306***A | LCE04C306***A |
| 4            |      | LCE00C406***A  | LCE01C406***A | LCE02C406***A | LCE04C406***A |
| 5            |      | LCE00C506***A  | LCE01C506***A | LCE02C506***A | LCE04C506***A |
| 6            |      | LCE00C606***A  | LCE01C606***A | LCE02C606***A | LCE04C606***A |
| 0            | 7    | LCE00C007***A  | LCE01C007***A | LCE02C007***A | LCE04C007***A |
| 1            |      | LCE00C107***A  | LCE01C107***A | LCE02C107***A | LCE04C107***A |
| 2            |      | LCE00C207***A  | LCE01C207***A | LCE02C207***A | LCE04C207***A |
| 3            |      | LCE00C307***A  | LCE01C307***A | LCE02C307***A | LCE04C307***A |
| 4            |      | LCE00C407***A  | LCE01C407***A | LCE02C407***A | LCE04C407***A |
| 0            | 8    | LCE00C008***A  | LCE01C008***A | LCE02C008***A | LCE04C008***A |
| 1            |      | LCE00C108***A  | LCE01C108***A | LCE02C108***A | LCE04C108***A |
| 2            |      | LCE00C208***A  | LCE01C208***A | LCE02C208***A | LCE04C208***A |
| 3            |      | LCE00C308***A  | LCE01C308***A | LCE02C308***A | LCE04C308***A |
| 4            |      | LCE00C408***A  | LCE01C408***A | LCE02C408***A | LCE04C408***A |
| 0            | 9    | LCE00C009***A  | LCE01C009***A | LCE02C009***A | LCE04C009***A |
| 1            |      | LCE00C109***A  | LCE01C109***A | LCE02C109***A | LCE04C109***A |
| 2            |      | LCE00C209***A  | LCE01C209***A | LCE02C209***A | LCE04C209***A |
| 0            | 10   | LCE00C010***A  | LCE01C010***A | LCE02C010***A | LCE04C010***A |
| 1            |      | LCE00C110***A  | LCE01C110***A | LCE02C110***A | LCE04C110***A |
| 2            |      | LCE00C210***A  | LCE01C210***A | LCE02C210***A | LCE04C210***A |
| 0            | 11   | LCE00C011***A  | LCE01C011***A | LCE02C011***A | LCE04C011***A |
| 0            | 12   | LCE00C012***A  | LCE01C012***A | LCE02C012***A | LCE04C012***A |

① Type 12 field convertible to Type 3/3R.

## Electrically Held Lighting Contactors, Class LC

## Technical

| General technical data:                        |                                                              |
|------------------------------------------------|--------------------------------------------------------------|
| Finger-safe (main circuit / control circuit)   | yes / yes                                                    |
| Degree of pollution                            | 3                                                            |
| Altitude (m)                                   | 2,000                                                        |
| Ambient storage temperature (°C)               | -30 to 65                                                    |
| Ambient operating temperature (°C)             | -25 to 40                                                    |
| Humidity (% non-condensing)                    | no data                                                      |
| Shock resistance at rectangular impulse (g/ms) | no data                                                      |
| Shock resistance at sine pulse (g/ms)          | no data                                                      |
| Rated impulse voltage resistance (kV)          | no data                                                      |
| Rated insulation voltage (V)                   | 600                                                          |
| Mechanical operating cycles as operating time: |                                                              |
| of contactor                                   | 100,000                                                      |
| of contactor with additional aux contacts      | 100,000                                                      |
| Main circuit:                                  |                                                              |
| Number of main contacts                        | 2 - 12 (maximum of 8 NC)                                     |
| Typical power loss per conductor (W)           | no data                                                      |
| Off-load operating frequency (cycles per hour) | 60 for continued operation                                   |
| Current ratings:                               |                                                              |
| Tungsten (poles per phase)                     | 20A @277V 1p 1ph<br>20A @480V 2p 1ph<br>20A @480V 3p 3ph     |
| Ballast (poles per phase)                      | 30A @347V 1p 1ph<br>30A @600V 2p 1ph<br>30A @600V 3p 3ph     |
| General and resistive (poles per phase)        | 30A @600V 1p 1ph<br>30A @600V 2p 1ph<br>30A @600V 3p 3ph     |
| Coil ratings:                                  |                                                              |
| Nominal voltage                                | (refer to coil voltage table)                                |
| Inrush / sealed power (VA)                     | 248 / 28                                                     |
| Coil voltage tolerance factor                  | 0.85 - 1.1                                                   |
| External/optional auxiliary contact:           |                                                              |
| Number of NC / NO auxiliary contacts           | 2NC / 2NO max                                                |
| Rating                                         | A600, 24VDC, 24VAC                                           |
| Installation/mounting/dimensions:              |                                                              |
| Mounting orientation                           | vertical                                                     |
| Type of mounting: screw / DIN rail             | yes / no                                                     |
| Height x Width x Depth (mm)                    | 188 x 106 x 98                                               |
| Minimum clearance to sides (mm)                | 12.7                                                         |
| Minimum clearance to earthed parts (mm)        | 12.7                                                         |
| Connection type / torque:                      |                                                              |
| Main contact terminals                         | screw / 35 lb in                                             |
| Coil terminals                                 | screw / 15 lb in                                             |
| Auxiliary contact terminals                    | screw / 7-12 lb in                                           |
| Control module terminals                       | screw / 5 lb in                                              |
| Solid and stranded conductors (AWG):           |                                                              |
| Main contact terminals                         | 1x(14-8), #8 solid or stranded<br>2x(14-8), #8 stranded only |
| Coil terminals                                 | 2x(18-14)                                                    |
| Auxiliary contact terminals                    | 2x(22-12)                                                    |
| Control module terminals                       | 1x(22-12)                                                    |
| Conductor type for main / control circuits     | 75°C CU / 60-75°C CU                                         |
| Short circuit current rating of main circuit:  |                                                              |
| Short circuit current rating                   | (see SCCR tables)                                            |
| Certificates:                                  |                                                              |
|                                                | cUL                                                          |

## Coil voltages:

|                           |
|---------------------------|
| 24V 60Hz / 20V 50Hz       |
| 115-120V 60Hz / 110V 50Hz |
| 200-208V 60Hz             |
| 230-240V 60Hz / 220V 50Hz |
| 277V 60Hz / 240V 50Hz     |
| 347V 60Hz                 |
| 460-480V 60Hz / 440V 50Hz |
| 575-600V 60Hz / 550V 50Hz |

## Short circuit current ratings with fuses:

| Max. Volt. | Fuse    | Max. Device Rating (Amps) | SCCR (kA) |
|------------|---------|---------------------------|-----------|
| 600        | RK fuse | 60                        | 5         |

## Short circuit current ratings with circuit breakers:

| Max. Volt. | Siemens Listed Circuit Breaker | Max. Device Rating (Amps) | SCCR (kA) |
|------------|--------------------------------|---------------------------|-----------|
| 600        | NGG3B040L                      | 40                        | 5         |
| 480        | HEG3B040L                      | 40                        | 5         |
| 480        | ED63B040L                      | 40                        | 5         |
| 480        | NGG3B040L                      | 40                        | 5         |

## Conversion module:

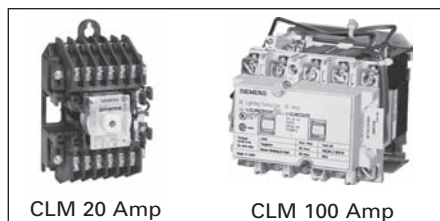
| Input Volt. (AC) | Steady State Current @ Rated Volts (mA) | Max. VA |
|------------------|-----------------------------------------|---------|
| 24               | 80                                      | 5       |
| 115-120          | 83                                      | 12      |
| 200-277          | 91                                      | 30      |

## Conversion module:

|                                     |          |
|-------------------------------------|----------|
| Min. pulse duration (3-wire module) | 250ms    |
| Max. allowable leakage current      | 1.8 mA   |
| EMI                                 | 35 V/m   |
| Surge transient peak                | 6 kV     |
| Frequency range                     | 40-70 Hz |

## Mechanically and Magnetically Held Lighting Contactors, Class CLM

## Selection

**Mechanically Latched Lighting and Heating Contactor**

The CLM Lighting Contactors can be used with metal halide, mercury vapor, quartz halogen, tungsten and fluorescent lighting. They provide reliable and convenient lighting control in numerous applications, such as industrial plants, schools, hospitals, office buildings, shopping centers, airports, stadiums . . . literally everywhere lighting is required.

The CLMs are listed under UL 508 with no derating when used open or enclosed. Combination lighting contactors are listed for UL service entrance.

UL listed File #E60310

CSA Certified File LR 6535

**Type CLM 20 Amp Lighting Contactor Solid State Control Modules**

The CLM 20 amp lighting contactor is an electromagnetically operated, mechanically latched three wire control contactor. The most commonly used method of control is a three position momentary contact switch with a center-off position. The controlling device must be able to make the coil inrush current but need not break it. The coil current is interrupted by the control contacts within the CLM contactor. Power for the control line may come from a separate source or directly from the line side of the CLM contactor. The CLM contactor can also be controlled by devices such as:

- Break-glass control stations
- Timers having single pole, double throw contacts
- Photo-electric cells<sup>①</sup>
- Energy management systems<sup>①</sup>
- Microprocessors<sup>①</sup>
- Occupancy sensors<sup>①</sup>

Control modules make it possible to use a controlling device that does not have enough current-carrying capacity to control the CLM contactor directly. Control modules are also used when

the control station is to be located at a distance greater than the allowable contactor line run.

Another use for control modules occurs when the controlling device is only available as a single pole single-throw contact necessitating a two wire control line.

Still another application for control modules is when start-stop three wire control is needed.

Control modules also can make it possible to operate the CLM coil from its own incoming line at one voltage while providing the control at a second, perhaps lower voltage.

**Two Wire Control Module (Accessory 47)**

The advantages of two wire controls are:

1. Control station can have lower ampacity rating.
2. Control station can be located an extended distance from the CLM contactor.
3. Control module can frequently be controlled directly from microprocessor.
4. Control devices can be two wire single pole, single-throw types.
5. Control voltage may be different than the CLM coil circuit and at a lower voltage level.

**Note:** If the control power to the solid state control module is lost while the module is energized the lighting contactor will open. If the line power to the lighting contactor is lost while the contactor is energized the contactor will not change state with return of line voltage. Power will be restored to the load if the control module is still energized. Control station should be the maintained type.

**Three Wire Control Module (Accessory 48)**

1. The accessory 48 consists of two relays with contacts appropriately interconnected which provides for an interlocking that prevents both relays from being energized simultaneously.
2. This module has similar characteristics to the two wire module (Accessory 47) except there is no change of switch contact position upon loss of control line power. Control stations should be the momentary type.

**Stop-Start Control Module (Accessory 49)**

Stop-start three wire maintained control is an arrangement used mostly when controlling motors, but can be used in lighting applications.

Any number of momentary contact control stations consisting of normally open start buttons and normally closed stop buttons can be used. Start buttons are connected in parallel and stop buttons in series.

**Operation (Magnetic Latch)**

A permanent magnet is built into the contactor structure of the 30A, 60A, 100A, and 200A contactors that will maintain the contactor in its energized state indefinitely without using control power. When energized, a DC current is applied that produces a magnetic field that reinforces the polarity of the permanent magnet, and the contactor pulls in immediately. The current to the coil is disconnected by the coil clearing interlock. In order to drop out the contactor, it is necessary to apply a field through the OFF coil in the reverse direction to the permanent magnet. This momentarily cancels the magnetic attraction and the contactor drops out. Coil and module failures are possible when used with solid state relays and PLC outputs. 24-volt systems are ok to use, but 120 volts and above should be discouraged. If higher values cannot be avoided, an interposing relay should be used.

**(Mechanically Latched)**

The 300 & 400A lighting and heating contactors operate using a latching mechanism.

**Closing** – When the “close” pushbutton is operated, the closing coil is energized, closing the contactor. As the contactor closes, the latch lever hooks over the latch pin to mechanically latch the contactor closed. The coil-clearing auxiliary contact de-energizes the closing coil.

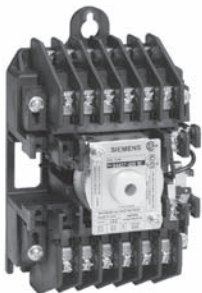
**Opening** – When the “Trip” pushbutton is operated, the trip solenoid coil is energized, unhooking the latch lever from the latch pin, which allows the contactor to open. As the contactor opens, the coil-clearing auxiliary contact de-energizes the trip solenoid coil.

<sup>①</sup> Operation through control modules.



## Mechanically and Magnetically Held Lighting Contactors, Class CLM

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                          |  | Coil Table                                                             |                                               |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------|-----------------------------------------------|
|                                                                                   | <ul style="list-style-type: none"> <li>▶ Replace *** with a number from the coil table.</li> <li>▶ Field modification kits see page 9/104.</li> <li>▶ Factory modifications see page 9/119.</li> <li>▶ Dimensions see page 9/153 open page 9/170 enclosed.</li> <li>▶ Wiring Diagrams see page 9/191.</li> <li>▶ Replacement parts see page 9/134.</li> </ul> |  | 60Hz Voltage                                                           | Number                                        |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                               |  | 24 <sup>②</sup><br>120<br>208<br>240<br>277<br>480<br>600 <sup>③</sup> | 024<br>120<br>208<br>240<br>277<br>480<br>600 |

## Open and Non-combination Enclosed Contactors

| Max<br>Amp<br>Rating | Number<br>of Poles | Open Type <sup>④</sup>                                                                                                     |               | Enclosure                 |               |                                                                     |               |                                                                                                                  |               |
|----------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------|---------------|---------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------------------|---------------|
|                      |                    | Catalog Number                                                                                                             | List Price \$ | NEMA 1<br>General Purpose |               | NEMA 12<br>NEMA 3/3R <sup>⑤</sup><br>Industrial Use<br>Weatherproof |               | NEMA 4/4X Stainless Steel <sup>⑥</sup><br>Watertight, Dust-tight,<br>Corrosion Resistant,<br>304 Stainless Steel |               |
|                      |                    |                                                                                                                            |               | Catalog Number            | List Price \$ | Catalog Number                                                      | List Price \$ | Catalog Number                                                                                                   | List Price \$ |
| 20                   | 2                  | see table<br>below                                                                                                         |               | CLM1B02***                |               | CLM2B02***                                                          |               | CLMSB02***                                                                                                       |               |
|                      | 3                  |                                                                                                                            |               | CLM1B03***                |               | CLM2B03***                                                          |               | CLMSB03***                                                                                                       |               |
|                      | 4                  |                                                                                                                            |               | CLM1B04***                |               | CLM2B04***                                                          |               | CLMSB04***                                                                                                       |               |
|                      | 6                  |                                                                                                                            |               | CLM1B06***                |               | CLM2B06***                                                          |               | CLMSB06***                                                                                                       |               |
|                      | 8                  |                                                                                                                            |               | CLM1B08***                |               | CLM2B08***                                                          |               | CLMSB08***                                                                                                       |               |
|                      | 10                 |                                                                                                                            |               | CLM1B10***                |               | CLM2B10***                                                          |               | CLMSB10***                                                                                                       |               |
| 30                   | 2                  | CLM0C02***<br>CLM0C03***<br>CLM0C04***<br>CLM0C05***<br>CLM0C06***<br>CLM0C08***<br>CLM0C09***<br>CLM0C10***<br>CLM0C12*** |               | CLM1C02***                |               | CLM2C02***                                                          |               | CLMSC02***                                                                                                       |               |
|                      | 3                  |                                                                                                                            |               | CLM1C03***                |               | CLM2C03***                                                          |               | CLMSC03***                                                                                                       |               |
|                      | 4                  |                                                                                                                            |               | CLM1C04***                |               | CLM2C04***                                                          |               | CLMSC04***                                                                                                       |               |
|                      | 5                  |                                                                                                                            |               | CLM1C05***                |               | CLM2C05***                                                          |               | CLMSC05***                                                                                                       |               |
|                      | 6                  |                                                                                                                            |               | CLM1C06***                |               | CLM2C06***                                                          |               | —                                                                                                                | —             |
|                      | 8                  |                                                                                                                            |               | CLM1C08***                |               | CLM2C08***                                                          |               | —                                                                                                                | —             |
| 60                   | 2                  | CLM0D02***<br>CLM0D03***<br>CLM0D04***<br>CLM0D05***<br>CLM0D06***<br>CLM0D08***<br>CLM0D09***<br>CLM0D10***<br>CLM0D12*** |               | CLM1D02***                |               | CLM2D02***                                                          |               | CLMSD02***                                                                                                       |               |
|                      | 3                  |                                                                                                                            |               | CLM1D03***                |               | CLM2D03***                                                          |               | CLMSD03***                                                                                                       |               |
|                      | 4                  |                                                                                                                            |               | CLM1D04***                |               | CLM2D04***                                                          |               | CLMSD04***                                                                                                       |               |
|                      | 5                  |                                                                                                                            |               | CLM1D05***                |               | CLM2D05***                                                          |               | CLMSD05***                                                                                                       |               |
|                      | 6                  |                                                                                                                            |               | CLM1D06***                |               | CLM2D06***                                                          |               | —                                                                                                                | —             |
|                      | 8                  |                                                                                                                            |               | CLM1D08***                |               | CLM2D08***                                                          |               | —                                                                                                                | —             |
| 100                  | 2                  | CLM0E02***<br>CLM0E03***<br>CLM0E04***<br>CLM0E05***                                                                       |               | CLM1E02***                |               | CLM2E02***                                                          |               | CLMSE02***                                                                                                       |               |
|                      | 3                  |                                                                                                                            |               | CLM1E03***                |               | CLM2E03***                                                          |               | CLMSE03***                                                                                                       |               |
|                      | 4                  |                                                                                                                            |               | CLM1E04***                |               | CLM2E04***                                                          |               | CLMSE04***                                                                                                       |               |
|                      | 5                  |                                                                                                                            |               | CLM1E05***                |               | CLM2E05***                                                          |               | CLMSE05***                                                                                                       |               |
| 200                  | 2                  | CLM0F02***<br>CLM0F03***<br>CLM0F04***<br>CLM0F05***                                                                       |               | CLM1F02***                |               | CLM2F02***                                                          |               | CLMSF02***                                                                                                       |               |
|                      | 3                  |                                                                                                                            |               | CLM1F03***                |               | CLM2F03***                                                          |               | CLMSF03***                                                                                                       |               |
|                      | 4                  |                                                                                                                            |               | CLM1F04***                |               | CLM2F04***                                                          |               | CLMSF04***                                                                                                       |               |
|                      | 5                  |                                                                                                                            |               | CLM1F05***                |               | CLM2F05***                                                          |               | CLMSF05***                                                                                                       |               |
| 300                  | 2                  | CLM0G02***<br>CLM0G03***                                                                                                   |               | CLM1G02***                |               | CLM2G02***                                                          |               | —                                                                                                                | —             |
|                      | 3                  |                                                                                                                            |               | CLM1G03***                |               | CLM2G03***                                                          |               | —                                                                                                                | —             |
| 400                  | 2                  | CLM0H02***<br>CLM0H03***                                                                                                   |               | CLM1H02***                |               | CLM2H02***                                                          |               | —                                                                                                                | —             |
|                      | 3                  |                                                                                                                            |               | CLM1H03***                |               | CLM2H03***                                                          |               | —                                                                                                                | —             |

## Open 20 Amp Contactors

| Max<br>Amp<br>Rating | Number<br>of Poles <sup>①</sup> | 110–120V Coil 50/60Hz |               | 208–240V Coil 50/60Hz |               | 265–277V Coil 50/60Hz |               |
|----------------------|---------------------------------|-----------------------|---------------|-----------------------|---------------|-----------------------|---------------|
|                      |                                 | Catalog Number        | List Price \$ | Catalog Number        | List Price \$ | Catalog Number        | List Price \$ |
| 20                   | 2                               | CLM22031              |               | CLM22061              |               | CLM22071              |               |
|                      | 3                               | CLM32031              |               | CLM32061              |               | CLM32071              |               |
|                      | 4                               | CLM42031              |               | CLM42061              |               | CLM42071              |               |
|                      | 6                               | CLM62031              |               | CLM62061              |               | CLM62071              |               |
|                      | 8                               | CLM82031              |               | CLM82061              |               | CLM82071              |               |
|                      | 10                              | CLM102031             |               | CLM102061             |               | CLM102071             |               |
|                      | 12                              | CLM122031             |               | CLM122061             |               | CLM122071             |               |

① Contactors with 2–6-poles will be assembled with all poles located in the top portion of the contactor. Contactors with 8–12-poles will be assembled with 6-poles in the top portion and the remaining poles in the bottom portion of the contactor.

② 24 volt coils are not available on 20, 300 and 400 amp contactor sizes. For 24 volt control of 20 amp contactor select solid state control module.

③ For conduit hubs and conversion instructions, see page 9/110.

④ CLM 30 & 60A 6-12-pole can be field assembled. Order mounting kit 49MCMPPMA and the appropriate number of 2-5 pole contactors.

⑤ 24, 480 or 600 volt coils are not available on 20 amp contactors.

## Combination Mechanically and Magnetically Held Lighting Contactors, Class CM

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                 |  | Coil Table       |        |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------|--------|
|                                                                                   | <ul style="list-style-type: none"> <li>▶ Replace *** with a number from the coil table.</li> <li>▶ Field modification kits see page 9/104.</li> <li>▶ Factory modifications see page 9/119.</li> <li>▶ Dimensions see page 9/170.</li> <li>▶ Wiring Diagrams see page 9/191.</li> <li>▶ Replacement parts see page 9/134.</li> </ul> |  | 60Hz Voltage     | Number |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                      |  | 24 <sup>①</sup>  | 024    |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                      |  | 120              | 120    |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                      |  | 208              | 208    |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                      |  | 240              | 240    |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                      |  | 277              | 277    |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                      |  | 480              | 480    |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                      |  | 600 <sup>③</sup> | 600    |

## Combination Lighting Contactors

| Disconnect Type | Contactor Amp Rating | Number of NO Poles | Disc Amp Rating | Disc Amp/Fuse Clip Rating | Circuit Breaker Rating | Enclosure                 |               |                                                                                                                             |               |                |               |
|-----------------|----------------------|--------------------|-----------------|---------------------------|------------------------|---------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------|---------------|----------------|---------------|
|                 |                      |                    |                 |                           |                        | NEMA 1<br>General Purpose |               | NEMA 12, NEMA 3/3R <sup>②</sup><br>NEMA 4 Painted (thru 100 amps)<br>Industrial Use<br>Weatherproof, Watertight, Dust-tight |               |                |               |
|                 |                      |                    |                 |                           |                        | Catalog Number            | List Price \$ | Catalog Number                                                                                                              | List Price \$ | Catalog Number | List Price \$ |
| Non-Fusible     | 20                   | 3                  | 30A             | —                         | —                      | CMNB14***                 |               | CMNB24***                                                                                                                   |               | CMNBS4***      |               |
|                 | 30                   | 3                  | 30A             | —                         | —                      | CMNC14***                 |               | CMNC24***                                                                                                                   |               | CMNCS4***      |               |
|                 | 60                   | 3                  | 60A             | —                         | —                      | CMND15***                 |               | CMND25***                                                                                                                   |               | CMNDS5***      |               |
|                 | 100                  | 3                  | 100A            | —                         | —                      | CMNE16***                 |               | CMNE26***                                                                                                                   |               | CMNES6***      |               |
|                 | 200                  | 3                  | 200A            | —                         | —                      | CMNF17***                 |               | CMNF27***                                                                                                                   |               | CMNFS7***      |               |
|                 | 300                  | 3                  | 400A            | —                         | —                      | CMNG18***                 |               | CMNG28***                                                                                                                   |               | CMNGS8***      |               |
| Fusible         | 20                   | 3                  | —               | 30A/250V                  | —                      | CMFB10***                 |               | CMFB20***                                                                                                                   |               | CMFBS0***      |               |
|                 |                      | 3                  | —               | 30A/600V                  | —                      | CMFB11***                 |               | CMFB21***                                                                                                                   |               | CMFBS1***      |               |
|                 | 30                   | 3                  | —               | 30A/250V                  | —                      | CMFC10***                 |               | CMFC20***                                                                                                                   |               | CMFCS0***      |               |
|                 |                      | 3                  | —               | 30A/600V                  | —                      | CMFC11***                 |               | CMFC21***                                                                                                                   |               | CMFCS1***      |               |
|                 | 60                   | 3                  | —               | 60A/250V                  | —                      | CMFD12***                 |               | CMFD22***                                                                                                                   |               | CMFDS2***      |               |
|                 |                      | 3                  | —               | 60A/600V                  | —                      | CMFD13***                 |               | CMFD23***                                                                                                                   |               | CMFDS3***      |               |
|                 | 100                  | 3                  | —               | 100A/250V                 | —                      | CMFE14***                 |               | CMFE24***                                                                                                                   |               | CMFES4***      |               |
|                 |                      | 3                  | —               | 100A/600V                 | —                      | CMFE15***                 |               | CMFE25***                                                                                                                   |               | CMFES5***      |               |
|                 | 200                  | 3                  | —               | 200A/250V                 | —                      | CMFF16***                 |               | CMFF26***                                                                                                                   |               | CMFFS6***      |               |
|                 |                      | 3                  | —               | 200A/600V                 | —                      | CMFF17***                 |               | CMFF27***                                                                                                                   |               | CMFFS7***      |               |
|                 | 300                  | 3                  | —               | 400A/250V                 | —                      | CMFG18***                 |               | CMFG28***                                                                                                                   |               | CMFGS8***      |               |
|                 |                      | 3                  | —               | 400A/600V                 | —                      | CMFG19***                 |               | CMFG29***                                                                                                                   |               | CMFGS9***      |               |
| Circuit Breaker | 20                   | 3                  | —               | —                         | 20A                    | CMBB14***                 |               | CMBB24***                                                                                                                   |               | CMBBS4***      |               |
|                 | 30                   | 3                  | —               | —                         | 30A                    | CMBC15***                 |               | CMBC25***                                                                                                                   |               | CMBCS5***      |               |
|                 | 60                   | 3                  | —               | —                         | 60A                    | CMBD18***                 |               | CMBD28***                                                                                                                   |               | CMBDS8***      |               |
|                 | 100                  | 3                  | —               | —                         | 100A                   | CMBE18***                 |               | CMBE28***                                                                                                                   |               | CMBES8***      |               |
|                 | 200                  | 3                  | —               | —                         | 200A                   | CMBF10***                 |               | CMBF20***                                                                                                                   |               | CMBFS0***      |               |
|                 | 300                  | 3                  | —               | —                         | 300A                   | CMBG11***                 |               | CMBG21***                                                                                                                   |               | CMBGS1***      |               |

## Lighting &amp; Heating Contactor Ratings CLM

## Maximum AC/DC Voltage and Amp Ratings

| Load Type | Amperes Continuous | Poles to Load |                                |
|-----------|--------------------|---------------|--------------------------------|
|           |                    | 1 for 1-Phase | 2 for 1-Phase<br>3 for 3-Phase |
| Tungsten  | 20                 | 250V AC       | 250V AC                        |
| Ballast   | 20                 | 347V AC       | 600V AC                        |
| General   | 30                 | 347V AC       | 600V AC                        |
| General   | 20                 | 125V DC       | 250V DC                        |

| Inrush Current Over Fuse Size (amps RMS)<br>at AC Control Voltage 20A CLM |      |      |      |      |      |
|---------------------------------------------------------------------------|------|------|------|------|------|
| Amps                                                                      | 120V | 240V | 277V | 347V | 480V |
| Inrush                                                                    | 5.0  | 2.5  | 2.2  | 1.8  | 1.3  |
| Fuse                                                                      | 2.0  | 1.0  | 1.0  | 0.75 | 0.5  |

| Contactor Ratings |                    |                        |                           |
|-------------------|--------------------|------------------------|---------------------------|
| Load Type         | Amperes Continuous | Max Volts Line to Line | Max Volts Line to Neutral |
| Tungsten          | 30-400             | 480                    | 277                       |
| Ballast           | 30-400             | 600                    | 346                       |
| Heating           | 30-400             | 600                    | 346                       |

| AC Coil Data      |           |           |            |
|-------------------|-----------|-----------|------------|
| Contactor Amperes | No. Poles | Inrush VA | Dropout VA |
| 20                | 2-12      | 625       | 6          |
| 30                | 2-5       | 410       | 40         |
| 60                | 2-3       | 410       | 40         |
| 60                | 4-5       | 600       | 40         |
| 100/200           | 2-3       | 900       | 200        |
| 100/200           | 4-5       | 1300      | 130        |
| 300/400           | 2-3       | 1600      | 550        |

① 24 volt coils are not available on 20 and 300 amp contactors. Use solid state control module on 20 amp size.

② For conduit hubs and conversion instructions, see page 9/110.

③ 600 volt coils are not available on 20 amp contactors.

## Class MT

## General

## Features

- Enclosed coils (50-5000VA); Completely encloses the transformer coils against moisture, dust, dirt and industrial contaminants for maximum protection in hostile and industrial environments.
- Fuse clips (most models). Factory mounted for integral fusing on the secondary side to save panel space, save wiring time and save the cost of buying an add-on fuse block or kit
- Integrally finger safe terminals. Between terminals and transformer, protect against electrical creepage. Up to 30% greater terminal contact area permits low-loss connections. Extra-deep barriers reduce the chance of shorts from frayed leads or careless wiring
- Terminals. Molded into the transformer, are difficult to break during wiring. A full quarter-inch of thread on the 8-32 terminal screws prevents stripping and pullout
- Jumpers supplied. Two jumper links are standard with all transformers which can be wired for dual primary voltages

## Operation

Industrial control circuits and motor control loads typically require more current when they are initially energized than under normal operating conditions. This period of high current demand, referred to as inrush, may be as great as ten times the current required under steady state (normal) operating conditions, and can last up to 40 milliseconds. A transformer in a circuit subject to inrush will typically attempt to provide the load with the required current during the inrush period. However, it will be at the expense of the secondary voltage stability by allowing the voltage to the load to decrease as the current increases. This period of secondary voltage instability, resulting from increased current, can be of such magnitude that the transformer is unable to supply sufficient voltage to energize the load. The transformer must therefore be designed and constructed to accommodate the high inrush current, while maintaining secondary voltage stability. According to NEMA standards, the secondary voltage would typically be at 85% of the rated voltage.



Industrial Control Power Transformers are specifically designed and built to provide adequate voltage to the load while accommodating the high current levels present at inrush. These transformers deliver excellent secondary voltage regulation and meet or exceed the standards established by NEMA, ANSI, UL and cUL. Their rugged construction and excellent electrical characteristics ensure reliable operation of electromagnetic devices and trouble-free performance.

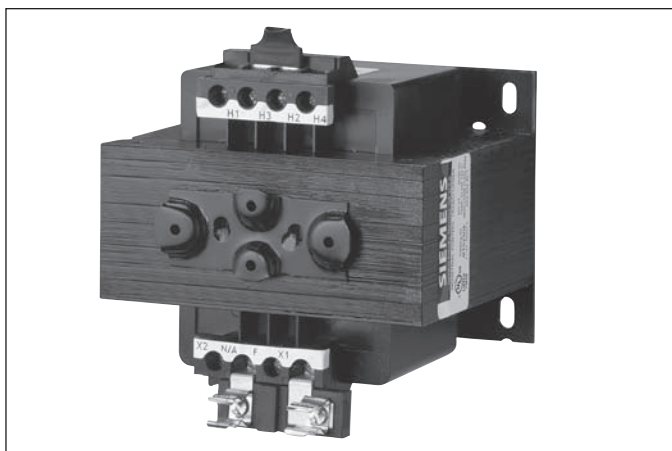
## Specifications

- Laminations are built with silicon steel to minimize core losses and to increase optimum performance and efficiency
- Copper magnet wire of the highest quality assures efficient operation
- Factory mounted type "K" fuse clips are standard on all secondary transformers where possible
- Two jumper links are standard with all transformers which can be wired for dual primary voltages
- cUL Listed and CSA certified

- 50/60 Hz rated
- Insulation materials are of the highest rating available for the temperature class
- Mounting plate is heavy gauge steel to add strength to core construction and provide stable mounting. Slotted mounting feet permit easy installation
- Attractive black finish; easy-to-read nameplate with complete rating data and wiring diagram
- Class 130°C (226°F) insulation system. 80°C (176°F) temperature rise. (50-750VA typical)
- Class 180°C (356°F) insulation system. 120°C (248°F) temperature rise. (1000-5000VA typical)
- Optional field mounted 2-pole primary Class CC fuse block is available

## Class MTG

## Genera



## Features

- Class MTG Industrial Control Transformers are 100% certified for all domestic and International Applications
- The MTG line has full compliance with IEC Safety standards EN 61 558
- CE Mark in accordance with requirements for EN 61 558
- Meets IP-20 specifications per IEC 529 for finger-safe protection when used with Siemens Touch Safe snap on terminal cover kits. Meets IP-00 specifications when covers are not used.
- UL Listed
- Exceeds applicable requirements for control transformers as determined by NEMA and ANSI
- Insulation requirements is twice that of UL5085
- Available in 50 to 750 VA sizes, in all standard voltage combinations
- Class 130°C (226°F) insulation system. 80°C (176°F) temperature rise. (50-750VA typical)
- Class 180°C (356°F) insulation system. 120°C (248°F) temperature rise. (1000-5000VA typical)
- Primary and secondary fusing capability available as field installed kits for domestic or international fusing
- Integrally-molded terminals and barriers between terminals make breakage virtually impossible during wiring. The MTG transformer construction is the same as our high quality Class MT transformers

#### Optional Field Installed Fuse Clip Kits For Panel Mounting

- 2-Pole primary Class CC fuse block
- 1-Pole secondary midget fuse block for  $1\frac{3}{32} \times 1\frac{1}{2}$  fuses
- 2-Pole primary international type fuse blocks
- 1-Pole secondary international type fuse blocks

#### Optional Touch-Safe Snap-On Terminal Cover Kits

The Touch-Safe terminal covers are designed to comply with IEC 742 and IP 20 requirements. When installed, the covers prevent contact with current carrying parts on the transformer and are available for 4 terminal configurations.

The international fuse block kits have inherent touch safe terminals and fuse clips.

#### Siemens Meets International Standards

CSA (Canadian Standards Association) was utilized as a Competent Body in reviewing, interpreting and properly complying with the requirements of IEC-742 to place a CE mark on its MTG Series product. As a National Certification Body, CSA also has the proper documentation and reports on file for MTG Series to utilize the CB Scheme ensuring acceptance throughout the world.

The standard Siemens MTG product is available with terminal covers which meets the requirements of IEC-529, IP20 degree of protection and meets the applicable requirements for covers per IEC-742.

#### IEC-742

The requirements for industrial control circuit transformers to be used in the European Common Market are identified by the International Electrotechnical Commission (IEC) and specified under IEC-742, Non-Short Circuit Proof Isolating Transformers, under the Low Voltage Directive 73/23/EEC. Manufacturers of control transformers indicate compliance with these requirements by placing a CE mark on the product.

- Winding to winding insulation requirements may be twice that for IEC-742 compared to UL506
- The electrical clearances between current carrying parts are one-third greater to comply with IEC-742 requirements for units up to 250VA with voltages up to 440 volts ac
- Transformers manufactured to IEC-742 requirements will have a minimum of 10% higher overload capacity than those manufactured only to UL506 requirements

While no requirement exists in IEC-742 for the electrical connections to be either finger safe or touch proof, the specification does state that IF a transformer is supplied with a cover to prevent incidental contact with current carrying parts, that cover must utilize two separate methods or places of securing it to the component, with neither being dependent upon the other. Additionally, one of these methods MUST require a tool to remove it.

#### IEC-529

The requirements for finger-safe or touch-proof electrical connections are identified by the International Electrotechnical Commission (IEC) under specification 529, Classification of Degrees of Protection Provided by Enclosures. These various degrees of protection are identified and differentiated by IP ratings.

The IP specification which most closely approximates protection to a human finger is IP20. This IP rating would be the most common degree of touch-proof connection for electrical components such as transformers.

#### EN 61 558

The requirements for industrial control transformers to be used in the European Common Market are identified by the IEC and specified in EN 61 558, Safety of Power Control Transformers, under Low Voltage Directive 73/23/EEC. CE mark on the product indicates compliance.



## Class MT, MTG

## General

## Transformer Selection Process

Selecting a transformer for industrial control circuit applications requires knowledge of the following terms:

**Inrush VA** is the product of load voltage (V) multiplied by the current (A) that is required during circuit start-up. It is calculated by adding the inrush VA requirements of all devices (contactors, timers, relays, pilot lights, solenoids, etc.), which will be energized together. Inrush VA requirements are best obtained from the component manufacturer.

**Sealed VA** is the product of load voltage (V) multiplied by the current (A) that is required to operate the circuit after initial start-up or under normal operating conditions. It is calculated by adding the sealed VA requirements of all electrical components of the circuit that will be energized at any given time. Sealed VA requirements are best obtained from the component manufacturer. Sealed VA is also referred to as steady state VA.

**Primary Voltage** is the voltage available from the electrical distribution system and its operational frequency, which is connected to the transformer supply voltage terminals.

**Secondary Voltage** is the voltage required for load operation which is connected to the transformer load voltage terminals.



Fuse Clip Kit KCCFPX2R

## Primary Fuse Kit

In addition to factory installed secondary fusing, Siemens offers a primary fuse kit for class MT transformers size 50–750 VA for field installation. The primary fuse kit includes a 2-pole Class CC fuse block, instructions and all associated mounting and wiring hardware. Additionally, this fuse kit will fit most competitors' units. To order this kit, use catalog number **KCCFPX2R**. The primary fuse kit, when installed, will add a maximum of 0.69 in. (18 mm) to the transformer "A" dimension and 1.94 in. (49 mm) to the "C" dimension.

Once the circuit variables have been determined, transformer selection is a simple 5-step process as follows:

1. Determine the Application Inrush VA by using the following industry accepted formula:  

$$\text{Application Inrush VA} = \sqrt{(\text{Inrush VA})^2 + (\text{Sealed VA})^2}$$
2. Refer to the Regulation Data Chart. If the primary voltage is basically stable and does not vary by more than 5% from nominal, the 90% secondary voltage column should be used. If the primary voltage varies between 5% and 10% of nominal, the 95% secondary voltage column should be used.
3. After determining the proper secondary voltage column, read down until a value equal to or greater than the Application Inrush VA is found. In no case should a figure less than the Application Inrush VA be used.
4. Read left to the Transformer VA Rating column to determine the proper transformer for this application. As a final check, make sure that the Transformer VA Rating is equal to or greater than the total sealed requirements. If not, select a transformer with a VA rating equal to or greater than the total sealed VA.
5. Refer to the following pages to determine the proper catalog number based on the transformer VA, and primary and secondary voltage requirements.

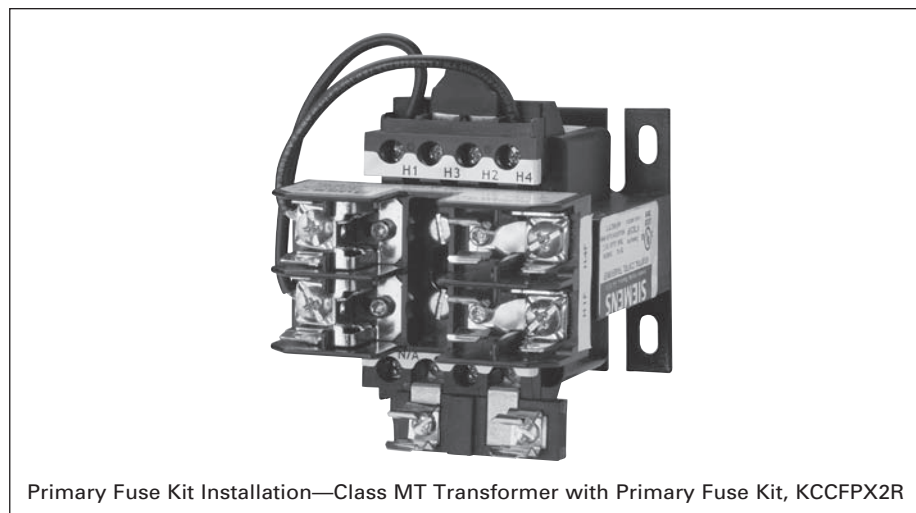
## Regulation Data Chart

| Transformer VA Ratings | Inrush VA At 20% Power Factor |                          |                          |
|------------------------|-------------------------------|--------------------------|--------------------------|
|                        | NEMA/IEC 95% Sec Voltage      | NEMA/IEC 90% Sec Voltage | NEMA/IEC 85% Sec Voltage |
| 25                     | 100/—                         | 130/—                    | 150/—                    |
| 50                     | 170/190                       | 200/220                  | 240/270                  |
| 75                     | 310/350                       | 410/460                  | 540/600                  |
| 100                    | 370/410                       | 540/600                  | 730/810                  |
| 150                    | 780/860                       | 930/1030                 | 1150/1270                |
| 200                    | 810/900                       | 1150/1270                | 1450/1600                |
| 250                    | 1400/1540                     | 1900/2090                | 2300/2530                |
| 300                    | 1900/2090                     | 2700/2970                | 3850/4240                |
| 350                    | 3100/3410                     | 3650/4020                | 4800/5280                |
| 500                    | 4000/4400                     | 5300/5830                | 7000/7700                |
| 750                    | 8300/9130                     | 11000/12100              | 14000/15400              |
| 1000 <sup>①</sup>      | 15000/—                       | 21000/—                  | 27000/—                  |
| 1000 <sup>②</sup>      | 9000/—                        | 13000/—                  | 18500/—                  |
| 1500                   | 10500/—                       | 15000/—                  | 205000/—                 |
| 2000                   | 17000/—                       | 25500/—                  | 34000/—                  |
| 3000                   | 24000/—                       | 36000/—                  | 47500/—                  |
| 5000                   | 55000/—                       | 92500/—                  | 115000/—                 |

To comply with NEMA standards, which require all magnetic devices to operate successfully at 85% of rated voltage, the 90% secondary voltage column is most often used in selecting a transformer.

① For units with Class 105°C insulation systems.

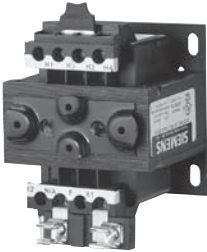
② For units with Class 180°C insulation systems.



Primary Fuse Kit Installation—Class MT Transformer with Primary Fuse Kit, KCCFPX2R

## Domestic, Class MT

## Selection



## Ordering Information

- Use the Voltage Table to determine the primary and secondary voltage required.
- Field Modifications see page 9/112.
- Dimensions see page 9/155.
- Wiring Diagrams see page 9/193.
- Touchsafe cover chart see page 9/101.

## Voltage Table

| Primary Volts 50/60 Hz                                     | Secondary Volts                                | Letter |
|------------------------------------------------------------|------------------------------------------------|--------|
| 240 X 480, 230 X 460, 220 X 440                            | 120/115/110                                    | A      |
| 240 X 480                                                  | 24                                             | B      |
| 120 X 240                                                  | 24                                             | C      |
| 115 X 230                                                  | 24                                             | D      |
| 550/575/600                                                | 110/115/120                                    | E      |
| 208/277                                                    | 120                                            | F      |
| 208/230/460                                                | 115                                            | G      |
| 230/460/575                                                | 95/115                                         | H      |
| 380/400/415                                                | 110 X 220                                      | I      |
| 208/230/460, 200/220/440, 240/480                          | 24 X 115, 23 X 110, 25 X 120                   | J      |
| 240/416/480/600, 230/400/460/575, 220/380/440/550, 208/500 | 99/120/130, 95/115/125, 91/110/120, 85/100/110 | L      |
| 240 X 480                                                  | 120 X 240                                      | M      |

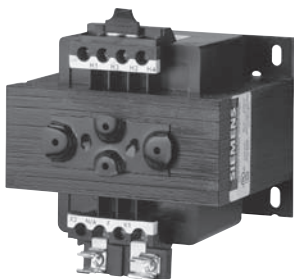
| VA Rating | Voltage Letter A |               | Voltage Letter B |               | Voltage Letter C |               | Voltage Letter D |               | Voltage Letter E |               | Voltage Letter F |               |
|-----------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
|           | Catalog No       | List Price \$ | Catalog No       | List Price \$ | Catalog No       | List Price \$ | Catalog No       | List Price \$ | Catalog No       | List Price \$ | Catalog No       | List Price \$ |
| 50        | MT0050A          |               | MT0050B          |               | MT0050C          |               | MT0050D          |               | MT0050E          |               | MT0050F          |               |
| 75        | MT0075A          |               | MT0075B          |               | MT0075C          |               | MT0075D          |               | MT0075E          |               | MT0075F          |               |
| 100       | MT0100A          |               | MT0100B          |               | MT0100C          |               | MT0100D          |               | MT0100E          |               | MT0100F          |               |
| 150       | MT0150A          |               | MT0150B          |               | MT0150C          |               | MT0150D          |               | MT0150E          |               | MT0150F          |               |
| 200       | MT0200A          |               | MT0200B          |               | MT0200C          |               | MT0200D          |               | MT0200E          |               | MT0200F          |               |
| 250       | MT0250A          |               | MT0250B          |               | MT0250C          |               | MT0250D          |               | MT0250E          |               | MT0250F          |               |
| 300       | MT0300A          |               | MT0300B          |               | MT0300C          |               | MT0300D          |               | MT0300E          |               | MT0300F          |               |
| 350       | MT0350A          |               | MT0350B          |               | MT0350C          |               | MT0350D          |               | MT0350E          |               | MT0350F          |               |
| 500       | MT0500A          |               | MT0500B          |               | MT0500C          |               | MT0500D          |               | MT0500E          |               | MT0500F          |               |
| 750       | MT0750A          |               | MT0750B          |               | —                | —             | —                | —             | MT0750E          |               | MT0750F          |               |
| 1000      | MT1000A          |               | —                | —             | —                | —             | —                | —             | MT1000E          |               | —                | —             |
| 1500      | MT1500A          |               | —                | —             | —                | —             | —                | —             | —                | —             | —                | —             |
| 2000      | MT2000A          |               | —                | —             | —                | —             | —                | —             | —                | —             | —                | —             |
| 3000      | MT3000A          |               | —                | —             | —                | —             | —                | —             | —                | —             | —                | —             |
| 5000      | MT5000A          |               | —                | —             | —                | —             | —                | —             | —                | —             | —                | —             |

| VA Rating | Voltage Letter G |               | Voltage Letter H |               | Voltage Letter I |               | Voltage Letter J |               | Voltage Letter L |               | Voltage Letter M |               |
|-----------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
|           | Catalog No       | List Price \$ | Catalog No       | List Price \$ | Catalog No       | List Price \$ | Catalog No       | List Price \$ | Catalog No       | List Price \$ | Catalog No       | List Price \$ |
| 50        | MT0050G          |               | MT0050H          |               | MT0050I          |               | MT0050J          |               | MT0050L          |               | MT0050M          |               |
| 75        | MT0075G          |               | MT0075H          |               | MT0075I          |               | MT0075J          |               | —                | —             | MT0075M          |               |
| 100       | MT0100G          |               | MT0100H          |               | MT0100I          |               | MT0100J          |               | MT0100L          |               | MT0100M          |               |
| 150       | MT0150G          |               | MT0150H          |               | MT0150I          |               | MT0150J          |               | MT0150L          |               | MT0150M          |               |
| 200       | MT0200G          |               | MT0200H          |               | MT0200I          |               | MT0200J          |               | —                | —             | MT0200M          |               |
| 250       | MT0250G          |               | MT0250H          |               | MT0250I          |               | MT0250J          |               | MT0250L          |               | MT0250M          |               |
| 300       | MT0300G          |               | MT0300H          |               | MT0300I          |               | MT0300J          |               | —                | —             | MT0300M          |               |
| 350       | MT0350G          |               | MT0350H          | —             | MT0350I          |               | MT0350J          |               | MT0350L          |               | MT0350M          |               |
| 500       | MT0500G          |               | MT0500H          |               | MT0500I          |               | MT0500J          |               | MT0500L          |               | MT0500M          |               |
| 750       | MT0750G          |               | MT0750H          |               | MT0750I          |               | —                | —             | MT0750L          |               | MT0750M          |               |
| 1000      | MT1000G          |               | MT1000H          |               | MT1000I          |               | —                | —             | —                | —             | MT1000M          |               |
| 1500      | MT1500G          |               | MT1500H          |               | MT1500I          |               | —                | —             | —                | —             | —                | —             |
| 2000      | MT2000G          |               | MT2000H          |               | MT2000I          |               | —                | —             | —                | —             | —                | —             |
| 3000      | MT3000G          |               | MT3000H          |               | MT3000I          |               | —                | —             | —                | —             | —                | —             |
| 5000      | MT5000G          |               | MT5000H          |               | —                | —             | —                | —             | —                | —             | —                | —             |



## International, Class MTG

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                           |  | Voltage Table                     |                              |        |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|------------------------------|--------|
|                                                                                   | <ul style="list-style-type: none"> <li>▶ Use the Voltage Table to determine the primary and secondary voltage required.</li> <li>▶ Field Modifications see page 9/112.</li> <li>▶ Dimensions see page 9/155.</li> <li>▶ Wiring Diagrams see page 9/193.</li> <li>▶ Touchsafe cover chart see below.</li> </ul> |  | Primary Volts 50/60 Hz            | Secondary Volts              | Letter |
|                                                                                   |                                                                                                                                                                                                                                                                                                                |  | 240 X 480, 230 X 460, 220 X 440   | 120/115/110                  | A      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                |  | 240 X 480                         | 24                           | B      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                |  | 120 X 240                         | 24                           | C      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                |  | 550/575/600                       | 110/115/120                  | E      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                |  | 380/400/415                       | 110 X 220                    | I      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                |  | 208/230/460, 200/220/440, 240/480 | 24 X 115, 23 X 110, 25 X 120 | J      |
|                                                                                   |                                                                                                                                                                                                                                                                                                                |  | 380                               | 24                           | P      |

| VA Rating | Voltage Letter A |             | Voltage Letter B |             | Voltage Letter C |             | Voltage Letter E |             | Voltage Letter I |             | Voltage Letter J |             | Voltage Letter P |             |
|-----------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|           | Catalog No       | ListPrice\$ | Catalog No       | ListPrice\$ | Catalog No       | ListPrice\$ | Catalog No       | ListPrice\$ | Catalog No       | ListPrice\$ | Catalog No       | ListPrice\$ | Catalog No       | ListPrice\$ |
| 50        | MTG0050A         |             | MTG0050B         |             | MTG0050C         |             | MTG0050E         |             | MTG0050I         |             | MTG0050J         |             | MTG0050P         |             |
| 75        | MTG0075A         |             | MTG0075B         |             | MTG0075C         |             | MTG0075E         |             | MTG0075I         |             | MTG0075J         |             | MTG0075P         |             |
| 100       | MTG0100A         |             | MTG0100B         |             | MTG0100C         |             | MTG0100E         |             | MTG0100I         |             | MTG0100J         |             | MTG0100P         |             |
| 150       | MTG0150A         |             | MTG0150B         |             | MTG0150C         |             | MTG0150E         |             | MTG0150I         |             | MTG0150J         |             | MTG0150P         |             |
| 200       | MTG0200A         |             | MTG0200B         |             | MTG0200C         |             | MTG0200E         |             | MTG0200I         |             | MTG0200J         |             | MTG0200P         |             |
| 250       | MTG0250A         |             | MTG0250B         |             | MTG0250C         |             | MTG0250E         |             | MTG0250I         |             | MTG0250J         |             | MTG0250P         |             |
| 300       | MTG0300A         |             | MTG0300B         |             | MTG0300C         |             | MTG0300E         |             | MTG0300I         |             | MTG0300J         |             | MTG0300P         |             |
| 350       | MTG0350A         |             | MTG0350B         |             | MTG0350C         |             | MTG0350E         |             | MTG0350I         |             | MTG0350J         |             | MTG0350P         |             |
| 500       | MTG0500A         |             | MTG0500B         |             | MTG0500C         |             | MTG0500E         |             | MTG0500I         |             | MTG0500J         |             | MTG0500P         |             |
| 750       | MTG0750A         |             | MTG0750B         |             | MTG0750C         |             | MTG0750E         |             | MTG0750I         |             | MTG0750J         |             | MTG0750P         |             |
| 1000      | MTG1000A         |             | MTG1000B         |             | MTG1000C         |             | —                | —           | —                | —           | MTG1000J         |             | —                | —           |
| 1500      | MTG1500A         |             | —                | —           | —                | —           | —                | —           | —                | —           | —                | —           | —                | —           |
| 2000      | MTG2000A         |             | —                | —           | —                | —           | —                | —           | —                | —           | —                | —           | —                | —           |
| 3000      | MTG3000A         |             | —                | —           | —                | —           | —                | —           | —                | —           | —                | —           | —                | —           |
| 5000      | MTG5000A         |             | —                | —           | —                | —           | —                | —           | —                | —           | —                | —           | —                | —           |

## Touchsafe Covers For MT style CPT

| VA Rating | Voltage Letter    | Primary Side Touchsafe? | Secondary Side Touchsafe? | Secondary Side Fuse Clips? |
|-----------|-------------------|-------------------------|---------------------------|----------------------------|
| 50        | A,B,C,D,E,F,G,H,J | Yes                     | Yes                       | Yes <sup>①</sup>           |
|           | I,L,M             | Yes                     | Yes                       | No <sup>②</sup>            |
| 75        | A,B,C,D,E,F,G,H,J | Yes                     | Yes                       | Yes <sup>①</sup>           |
|           | I,M               | Yes                     | Yes                       | No <sup>②</sup>            |
| 100       | A,B,C,D,E,F,G,H,J | Yes                     | Yes                       | Yes <sup>①</sup>           |
|           | I,L,M             | Yes                     | Yes                       | No <sup>②</sup>            |
| 150       | A,B,C,D,E,F,G,H,J | Yes                     | Yes                       | Yes <sup>①</sup>           |
|           | I,L,M             | Yes                     | Yes                       | No <sup>②</sup>            |
| 200       | A,B,C,D,E,F,G,H,J | Yes                     | Yes                       | Yes <sup>①</sup>           |
|           | I,M               | Yes                     | Yes                       | No <sup>②</sup>            |
| 250       | A,B,C,D,E,F,G,H,J | Yes                     | Yes                       | Yes <sup>①</sup>           |
|           | I,L,M             | Yes                     | Yes                       | No <sup>②</sup>            |
| 300       | A,B,C,D,E,F,G,H,J | Yes                     | Yes                       | Yes <sup>①</sup>           |
|           | I,M               | Yes                     | Yes                       | No <sup>②</sup>            |
| 350       | A,B,C,D,E,F,G,H,J | Yes                     | Yes                       | Yes <sup>①</sup>           |
|           | I,L,M             | Yes                     | Yes                       | No <sup>②</sup>            |
| 500       | A,B,C,D,E,F,G,H,J | Yes                     | No <sup>③</sup>           | Yes <sup>①</sup>           |
|           | I,L,M             | Yes                     | Yes                       | No <sup>②</sup>            |
| 750       | A,B,C,D,E,F,G,H   | Yes                     | No <sup>③</sup>           | Yes <sup>①</sup>           |
|           | I,L,M             | Yes                     | Yes                       | No <sup>②</sup>            |
| 1000      | A,E,G,H           | Yes                     | No <sup>③</sup>           | Yes <sup>①</sup>           |
|           | I,M               | Yes                     | Yes                       | No <sup>②</sup>            |
| 1500      | A,G,H             | Yes                     | No <sup>③</sup>           | Yes <sup>①</sup>           |
|           | I                 | Yes                     | Yes                       | No <sup>②</sup>            |
| 2000      | A,G,H             | Yes                     | No <sup>③</sup>           | Yes <sup>①</sup>           |
|           | I                 | Yes                     | Yes                       | No <sup>②</sup>            |
| 3000      | A,G,H,I           | Yes                     | Yes                       | No <sup>②</sup>            |
| 5000      | A,G,H             | Yes                     | Yes                       | No <sup>②</sup>            |

① Needs US2:KCCSECFVCR to be Touchsafe

② If secondary fuse holder is required, use KCCF1G panel mount fuse holder

③ Needs US2:KCCSECFVCR2

④ International fusing options, see CPT accessory page

## Touchsafe Covers For MTG style CPT

| VA Rating | Voltage Letter | Primary Side Touchsafe? | Secondary Side Touchsafe? | Secondary Side Fuse Clips? <sup>④</sup> |
|-----------|----------------|-------------------------|---------------------------|-----------------------------------------|
| 50        | A,B,C,E,I,J,P  | Yes                     | Yes                       | No                                      |
| 75        | A,B,C,E,I,J,P  | Yes                     | Yes                       | No                                      |
| 100       | A,B,C,E,I,J,P  | Yes                     | Yes                       | No                                      |
| 150       | A,B,C,E,I,J,P  | Yes                     | Yes                       | No                                      |
| 200       | A,B,C,E,I,J,P  | Yes                     | Yes                       | No                                      |
| 250       | A,B,C,E,I,J,P  | Yes                     | Yes                       | No                                      |
| 300       | A,B,C,E,I,J,P  | Yes                     | Yes                       | No                                      |
| 350       | A,B,C,E,I,J,P  | Yes                     | Yes                       | No                                      |
| 500       | A,B,C,E,I,J,P  | Yes                     | Yes                       | No                                      |
| 750       | A,B,C,E,I,J,P  | Yes                     | Yes                       | No                                      |
| 1000      | A,B,C,J        | Yes                     | Yes                       | No                                      |
| 1500      | A              | Yes                     | Yes                       | No                                      |
| 2000      | A              | Yes                     | Yes                       | No                                      |
| 3000      | A              | Yes                     | Yes                       | No                                      |
| 5000      | A              | Yes                     | Yes                       | No                                      |

## Class SMF, MMS, MRS

## Selection

## Accessories—Class SMF

| Description                             | Catalog Number | List Price \$ |
|-----------------------------------------|----------------|---------------|
| Handle Guard Kit with Padlock Provision | SMFFL1         |               |
| Emergency Off Actuator                  | SMFPB1         |               |
| Additional Key for Key Operated Devices | SMFFK1         |               |

Pilot Light Kits—Class MMS, MRS<sup>①</sup>

| Device    | Voltage Rating | Red Pilot Light |               | Green Pilot Light |               |
|-----------|----------------|-----------------|---------------|-------------------|---------------|
|           |                | Catalog Number  | List Price \$ | Catalog Number    | List Price \$ |
| Class SMF | 115–277V AC    | SMFPL10         |               | SMFPL10G          |               |

## Enclosures—Class SMF

| Enclosure Type                              | For Use With SMF                           | Catalog Number | List Price \$ |
|---------------------------------------------|--------------------------------------------|----------------|---------------|
| Standard Size<br>NEMA 1<br>General Purpose  | F01, F01P, F02, F02P, F03, F03P, F04, F04P | SMFFE2         |               |
| Oversized<br>NEMA Type 1<br>General Purpose | F01, F01P, F02, F02P, F03, F03P, F04, F04P | SMFFE1         |               |
| NEMA 3R, 4, 12<br>Watertight<br>Dust-tight  | F01, F01P, F02, F02P, F03, F03P, F04, F04P | SMF40BC2       |               |

## Nameplates—Class SMF

| For Use On                                                            | Nameplate Marking | Without Pilot Light |               | With Pilot Light |               |
|-----------------------------------------------------------------------|-------------------|---------------------|---------------|------------------|---------------|
|                                                                       |                   | Catalog Number      | List Price \$ | Catalog Number   | List Price \$ |
| Standard commercial switch box cover including stainless steel plates | None              | SMFFN2              |               | —                | —             |
| Stainless Steel Plate                                                 | None              | SMFFSN3             |               | SMFFSN4          |               |
| NEMA 1 surface mounted enclosure or gray flush plate                  | None              | SMFFN30             |               | SMFFN40          |               |
|                                                                       | High              | SMFFN31             |               | SMFFN41          |               |
|                                                                       | Low               | SMFFN32             |               | SMFFN42          |               |

## Replacement Parts—Class SMF, MMS

| Description                                                         | Catalog Number | List Price \$ |
|---------------------------------------------------------------------|----------------|---------------|
| Replacement Toggle Kits: Type FW and KW (NEMA 4 Metallic Enclosure) | SMFHW1         |               |

## Accessories—Class MMS, MRS

| Description                             | Catalog Number | List Price \$ |
|-----------------------------------------|----------------|---------------|
| Handle Guard Kit with Padlock Provision | SMFFL1         |               |
| Emergency Off Actuator                  | SMFPB1         |               |
| Additional Key for Key Operated Devices | SMFFK1         |               |

Pilot Light Kits—Class MMS, MRS<sup>①</sup>

| Device    | Voltage Rating | Red Pilot Light |               | Green Pilot Light |               |
|-----------|----------------|-----------------|---------------|-------------------|---------------|
|           |                | Catalog Number  | List Price \$ | Catalog Number    | List Price \$ |
| Class MMS | 110–120V AC    | SMFPL11         |               | SMFPL11G          |               |
|           | 208–277V AC    | SMFPL12         |               | SMFPL12G          |               |
|           | 440–600V AC    | SMFPL13         |               | SMFPL13G          |               |

## Enclosures—Class MMS

| Enclosure Type                              | For Use With MMS                                                   | Catalog Number | List Price \$ |
|---------------------------------------------|--------------------------------------------------------------------|----------------|---------------|
| Standard Size<br>NEMA 1<br>General Purpose  | K01, K01P, K01B, K02, K02A, K02B, K03, K03A, K03B, K04, K04A, K04B | MMSKE3         |               |
| Oversized<br>NEMA Type 1<br>General Purpose | K01, K02B, K02C, K03, K03A, K03B, K04, K04B, K04C, K02             | SMFKE1         |               |
| Jumbo<br>NEMA Type 1<br>General Purpose     | K01, K02B, K02C, K03, K03A, K03B, K04, K04B, K04C, K02             | SMFKE2         |               |
| NEMA 3R, 4, 12<br>Watertight<br>Dust-tight  | K01, K02B, K02C, K03, K03A, K03B, K04, K04B, K04C                  | SMF40BC2       |               |

## Nameplates—Class MMS

| For Use On                                                            | Nameplate Marking | Without Pilot Light |               | With Pilot Light |               |
|-----------------------------------------------------------------------|-------------------|---------------------|---------------|------------------|---------------|
|                                                                       |                   | Catalog Number      | List Price \$ | Catalog Number   | List Price \$ |
| Standard commercial switch box cover including stainless steel plates | None              | SMFFN1              |               | —                | —             |
| NEMA 1 surface mounted enclosure or gray flush plate                  | None              | SMFFN10             |               | SMFFN20          |               |
|                                                                       | High              | SMFFN11             |               | SMFFN21          |               |
|                                                                       | Low               | SMFFN12             |               | SMFFN22          |               |
|                                                                       | Forward           | SMFFN13             |               | —                | —             |
|                                                                       | Reverse           | SMFFN14             |               | SMFFN24          |               |

<sup>①</sup> Pilot lights can be field installed on standard NEMA 1 general purpose surface mount enclosures, and NEMA 3R, 4 and 12 enclosures only. For flush mounting units a complete switch unit with pilot light must be ordered.

## Class 11 - 3RV

## Selection

|                                                                                                            | Description                                                                                                                                                                                   | Type                                                                             |                                                  | Catalog Number                                                                                   | List Price \$ |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------|
| <br><b>3RV2901-1D</b>     | <b>Auxiliary Contact Blocks</b>                                                                                                                                                               |                                                                                  |                                                  |                                                                                                  |               |
|                                                                                                            | <b>Plug in contact block</b><br>1 block per 3RV mountable at the front                                                                                                                        | 1 SPDT contact, NO/NC<br>1 NO + 1 NC<br>1 SPDT contact NO/NC electronic contact④ |                                                  | <b>3RV2901-1D</b><br><b>3RV2901-1E</b><br><b>3RV2901-1G</b>                                      |               |
| <br><b>3RV2901-1A</b>     | <b>Side mount auxiliary contact with screw connection</b><br>1 side mount auxiliary contact per 3RV mountable on the left-hand side                                                           | 1 NO + 1 NC<br>2 NO<br>2 NC<br>2 NO + 2 NC                                       |                                                  | <b>3RV2901-1A</b><br><b>3RV2901-1B</b><br><b>3RV2901-1C</b><br><b>3RV2901-1J</b>                 |               |
|                                                                                                            | <b>Signaling Contact Block</b>                                                                                                                                                                |                                                                                  |                                                  |                                                                                                  |               |
| <br><b>3RV2922-1CP0</b>   | <b>Signaling contact</b><br>1 signaling contact per 3RV mountable on the left-hand side. Can also be fitted together with side mount auxiliary contact.                                       | 1NO + 1NC for any trip<br>+<br>1NO + 1NC for short circuit trip only.            |                                                  | <b>3RV2921-1M</b>                                                                                |               |
|                                                                                                            | <b>Auxiliary Releases</b>                                                                                                                                                                     |                                                                                  |                                                  |                                                                                                  |               |
| <br><b>3RV2902-1DP0</b> | <b>Undervoltage release</b><br>1 undervoltage release per 3RV mountable on the right-hand side. Cannot be fitted together with shunt trip.                                                    | AC 50Hz<br>—<br>230V<br>415V                                                     | AC 60Hz<br>120V<br>208V<br>240V<br>480V          | <b>3RV2902-1AF0</b><br><b>3RV2902-1AM1</b><br><b>3RV2902-1AP0</b><br><b>3RV2902-1AV1</b>         |               |
|                                                                                                            | <b>Undervoltage release with early make contacts (2NO)</b><br>1 undervoltage release per 3RV mountable at the right-hand side. Cannot be fitted together with shunt trip.                     | AC 50Hz<br>230V<br>415V                                                          | AC 60Hz<br>240V<br>480V                          | <b>3RV2922-1CP0</b><br><b>3RV2922-1CV1</b>                                                       |               |
| <br><b>3RV2928-1H</b>   | <b>Shunt trip</b><br>1 shunt trip per 3RV mountable at the right-hand side. Cannot be fitted together with undervoltage release.                                                              | AC 50Hz/60Hz①<br>20–24V<br>90–110V<br>200–240V<br>350–415V                       | DC②<br>20–70V<br>70–190V<br>190–330V<br>330–500V | <b>3RV2902-1DB0</b><br><b>3RV2902-1DF0</b><br><b>3RV2902-1DP0</b><br><b>3RV2902-1DV0</b>         |               |
|                                                                                                            | <b>Pilot Lights</b> AC 50Hz/60Hz                                                                                                                                                              |                                                                                  |                                                  |                                                                                                  |               |
| <br><b>3RV2901-0H</b>   | For NEMA 1 enclosure only. Kit includes Red, Green, and Amber lenses                                                                                                                          | 24V<br>120V<br>240V<br>480V<br>600V                                              |                                                  | <b>49SBLBJ</b> ③<br><b>49SBLBF</b> ③<br><b>49SBLBG</b> ③<br><b>49SBLBH</b> ③<br><b>49SBLBE</b> ③ |               |
|                                                                                                            |                                                                                                                                                                                               | <b>Lug Kit</b>                                                                   |                                                  |                                                                                                  |               |
|                                                                                                            | Required for Type E Manual Combination Starter                                                                                                                                                | For 3RV with amp range: 0.11-22A up to 480V Max. 0.11-12.5A up to 575V Max       |                                                  | <b>3RV2928-1H</b>                                                                                |               |
| <b>Mounting</b>                                                                                            |                                                                                                                                                                                               |                                                                                  |                                                  |                                                                                                  |               |
|                                                                                                            | <b>Push-in Mounting Hole Kit</b><br>For screw panel mounting of the 3RV                                                                                                                       | Four mounting holes required for each 3RV.                                       |                                                  | <b>3RV2928-0B</b>                                                                                |               |
| <b>Sealing device</b>                                                                                      |                                                                                                                                                                                               |                                                                                  |                                                  |                                                                                                  |               |
|                                                                                                            | <b>Adjustment Dial covers</b>                                                                                                                                                                 | For sealing the FLA adjustment dial (Kit includes 10 covers)                     |                                                  | <b>3RV2908-0P</b>                                                                                |               |
|                                                                                                            | <b>Front mount auxiliary cover</b>                                                                                                                                                            | For sealing the front mount auxiliary opening. (Kit includes 10 covers)          |                                                  | <b>3RV2901-0H</b>                                                                                |               |
| <b>Door Operators</b>                                                                                      |                                                                                                                                                                                               |                                                                                  |                                                  |                                                                                                  |               |
|                                                                                                            | <b>Thru-the-door operators</b><br>Rotary operating mechanism, rated NEMA 12, lockable with up to 3 padlocks in the OFF position. Includes extension shift and connecting element for the 3RV. | With Black Handle                                                                | 130 mm depth                                     | <b>3RV2926-0B</b>                                                                                |               |
|                                                                                                            |                                                                                                                                                                                               |                                                                                  | 330 mm depth with supporting bracket             | <b>3RV2926-0K</b>                                                                                |               |

① 100% on time.

② 5 sec. max. on time.

③ Product Category: PILO.

④ Compatible for use in dusty atmospheres. Contacts rated for 1-300mA @ 3-60V.

## Pilot Devices

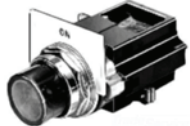
## Selection

| Push Buttons and Selector Switches                                                                                                                                                                                                                                                                                                                                                                                                | Class                                                                                         | Enclosure Type | Controller Size or (Lighting Rating) | Type                                                 | Catalog Number | List Price \$ |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------|--------------------------------------|------------------------------------------------------|----------------|---------------|
|  <p><b>49SBPB5</b></p>  <p><b>49SBSB1</b></p>  <p><b>49SAP05</b></p>  <p><b>49SAS01</b></p> | 14, 40, LC, LEN, CLM <sup>Ⓢ</sup>                                                             | Open           | 00-4                                 | Start, Stop Push Buttons                             | <b>49SAPB5</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | 1              | 00-4 or (20–100A)                    | Hand-Off-Auto Selector Switch                        | <b>49SASB1</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Off-On Selector Switch                               | <b>49SASB4</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Start, Stop Push Buttons                             | <b>49SBPB5</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                | 5-8 or (200–400A)                    | Hand-Off-Auto Selector Switch                        | <b>49SBSB1</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Off-On Selector Switch                               | <b>49SBSB4</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Start, Stop Push Buttons                             | <b>49SAP05</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | 12, 4/4X       | 00-8 or (20–400A)                    | Hand-Off-Auto Selector Switch                        | <b>49SAS01</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Keyed Hand-Off-Auto (key removable in all positions) | <b>49SAS09</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Off-On Selector Switch                               | <b>49SAS04</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Start, Stop Push Buttons                             | <b>49SAP05</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Hand-Off-Auto Selector Switch                        | <b>49SAS01</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Keyed Hand-Off-Auto (key removable in all positions) | <b>49SAS09</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Off-On Selector Switch                               | <b>49SAS04</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   | 22, 43                                                                                        | Open           | 00-4                                 | Forward-Off-Reverse Selector Switch                  | <b>49SASB2</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | 1              | 00-4                                 | Forward-Off-Reverse Selector Switch                  | <b>49SBSB2</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                | 5-8                                  | Forward, Reverse, Stop Push Buttons                  | <b>49SAP02</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | 12, 4/4X       | 0-8                                  | Forward-Off-Reverse Selector Switch                  | <b>49SAS02</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Forward, Reverse, Stop Push Buttons                  | <b>49SAP02</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Forward-Off-Reverse Selector Switch                  | <b>49SAS02</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   | 30 (2S1W)                                                                                     | Open           | 0-4                                  | High-Off-Low Selector Switch                         | <b>49SASB3</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | 1              | 0-1 ¾                                | High-Off-Low Selector Switch                         | <b>49SBSB3</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                | 2-4                                  | High, Low, Stop Push Buttons                         | <b>49SAP03</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | 12, 4/4X       | 0-4                                  | High-Off-Low Selector Switch                         | <b>49SAS03</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | High, Low, Stop Push Buttons                         | <b>49SAP03</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | High-Off-Low Selector Switch                         | <b>49SAS03</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   | 30 (2S2W)                                                                                     | Open           | 0-4                                  | High-Off-Low Selector Switch                         | <b>49SASB3</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | 1              | 0-4                                  | High-Off-Low Selector Switch                         | <b>49SBSB3</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | 12, 4/4X       | 0-4                                  | High, Low, Stop Push Buttons                         | <b>49SAP03</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   | 17, 18, 36, 37, 83, 84, LED, LEF, LEB, CMN <sup>Ⓢ</sup> , CMF <sup>Ⓢ</sup> , CMB <sup>Ⓢ</sup> | 1, 12, 4/4X    | 0-8 (20-400A)                        | High-Off-Low Selector Switch                         | <b>49SAS03</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Start, Stop Push Buttons                             | <b>49SAP05</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Hand-Off-Auto Selector Switch                        | <b>49SAS01</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Keyed Hand-Off-Auto (key removable in all positions) | <b>49SAS09</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   | 25, 26                                                                                        | 1, 12, 4/4X    | 0-8                                  | Off-On Selector Switch                               | <b>49SAS04</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | Forward, Reverse, Stop Push Buttons                  | <b>49SAP02</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   | 32                                                                                            | 1, 12, 4/4X    | 0-4                                  | Forward-Off-Reverse Selector Switch                  | <b>49SAS02</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | High, Low, Stop Push Buttons                         | <b>49SAP03</b> |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                |                                      | High-Off-Low Selector Switch                         | <b>49SAS03</b> |               |

<sup>Ⓢ</sup> To be used for replacement of switch only. Does not include relay or extra contact block on 30-400A CLM and CM Lighting Contactors. Class 49SB not available for these devices.

## Pilot Lights

## Selection

| Description                                                                                        | Class                                                                                                                      | Enclosure Type | Controller Size or (Lighting Rating)  | Lens Color(s)               | Legend(s)                                                                         | Voltage               | Catalog Number   | List Price \$ |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------|-----------------------------|-----------------------------------------------------------------------------------|-----------------------|------------------|---------------|
|  <b>49SBLBF</b>   | 14, 40, 22 <sup>②</sup> , 43 <sup>②</sup> , 30 (2S2W) <sup>③</sup> , LC, LEN, CLM                                          | 1              | 00-4 or (20-200A)                     | Red, Green, Amber           | ON, RUN, OFF <sup>①</sup> , OL TRIPPED <sup>④</sup> , FORWARD, REVERSE, LOW, HIGH | 24 Vac                | <b>49SBLBJ</b>   |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 120 Vac               | <b>49SBLBF</b>   |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 208/240/277 Vac       | <b>49SBLBG</b>   |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 480 Vac               | <b>49SBLBH</b>   |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 600 Vac               | <b>49SBLBE</b>   |               |
|                                                                                                    |                                                                                                                            | 1<br>12, 4/4X  | 5-8 or (300-400A)<br>0-8 or (20-400A) | Red<br>(Transformer Type)   | ON                                                                                | 24 Vac (Full Voltage) | <b>49SPLOBRJ</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 120 Vac               | <b>49SPLOBRF</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 240 Vac               | <b>49SPLOBRG</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 480 Vac               | <b>49SPLOBRH</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 600 Vac               | <b>49SPLOBRE</b> |               |
|                                                                                                    |                                                                                                                            |                | Green<br>(Transformer Type)           | OFF <sup>④</sup>            |                                                                                   | 24 Vac (Full Voltage) | <b>49SPLOAGJ</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 120 Vac               | <b>49SPLOAGF</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 240 Vac               | <b>49SPLOAGG</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 480 Vac               | <b>49SPLOAGH</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 600 Vac               | <b>49SPLOAGE</b> |               |
|  <b>49SPL0BRF</b> | 30 (2S1W) <sup>②</sup>                                                                                                     | 1              | 0-4                                   | Red, Green, Amber           | ON, RUN, OFF <sup>①</sup> , OL TRIPPED <sup>④</sup> , FORWARD, REVERSE, LOW, HIGH | 24 Vac                | <b>49SBLBJ</b>   |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 120 Vac               | <b>49SBLBF</b>   |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 208/240/277 Vac       | <b>49SBLBG</b>   |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 480 Vac               | <b>49SBLBH</b>   |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 600 Vac               | <b>49SBLBE</b>   |               |
|                                                                                                    |                                                                                                                            | 1              | 2-4                                   | Red<br>(Transformer Type)   | ON                                                                                | 24 Vac (Full Voltage) | <b>49SPLOBRJ</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 120 Vac               | <b>49SPLOBRF</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 240 Vac               | <b>49SPLOBRG</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 480 Vac               | <b>49SPLOBRH</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 600 Vac               | <b>49SPLOBRE</b> |               |
|                                                                                                    |                                                                                                                            | 12, 4/4X       | 0-4                                   | Green<br>(Transformer Type) | OFF <sup>④</sup>                                                                  | 24 Vac (Full Voltage) | <b>49SPLOAGJ</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 120 Vac               | <b>49SPLOAGF</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 240 Vac               | <b>49SPLOAGG</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 480 Vac               | <b>49SPLOAGH</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 600 Vac               | <b>49SPLOAGE</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 24 Vac (Full Voltage) | <b>49SPLOBRJ</b> |               |
|                                                                                                    | 17, 18, 25 <sup>②</sup> , 26 <sup>②</sup> , 32 <sup>②</sup> , 36, 37, 81, 83, 84, 87, 88, LC, LED, LEF, LEB, CMN, CMF, CMB | 1, 12, 4/4X    | 0-6 (20-400A)                         | Red<br>(Transformer Type)   | ON                                                                                | 120 Vac               | <b>49SPLOBRF</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 240 Vac               | <b>49SPLOBRG</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 480 Vac               | <b>49SPLOBRH</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       | Green<br>(Transformer Type) | OFF <sup>④</sup>                                                                  | 600 Vac               | <b>49SPLOBRE</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 24 Vac (Full Voltage) | <b>49SPLOAGJ</b> |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   | 120 Vac               | <b>49SPLOAGF</b> |               |
|  <b>49SBLBL</b> | Lens Kit ONLY<br>(30 (2S1W))<br>(14, 40, 22, 43, 30 (2S2W), LC, LEN, CLM)                                                  | 1              | 0-1 3/4<br>00-4 or (20-200A)          | Red, Green, Amber           | —                                                                                 | —                     | <b>49SBLBL</b>   |               |
|                                                                                                    |                                                                                                                            |                |                                       |                             |                                                                                   |                       |                  |               |
|                 | LED bulb BA9s type<br>Used to replace incandescent or LED bulbs <sup>⑤</sup>                                               | —              | —                                     | Red                         | —                                                                                 | 24 V AC/DC            | <b>52AED2</b>    |               |
|                                                                                                    |                                                                                                                            |                |                                       | Green                       |                                                                                   |                       | <b>52AED3</b>    |               |
|                                                                                                    |                                                                                                                            |                |                                       | Amber                       |                                                                                   |                       | <b>52AED4</b>    |               |
|                                                                                                    |                                                                                                                            |                |                                       | White                       |                                                                                   |                       | <b>52AEDB</b>    |               |
|                                                                                                    |                                                                                                                            | —              | —                                     | Red                         | —                                                                                 | 120 - 600 V AC/DC     | <b>52AEB2</b>    |               |
|                                                                                                    |                                                                                                                            |                |                                       | Green                       |                                                                                   |                       | <b>52AEB3</b>    |               |
|                                                                                                    |                                                                                                                            |                |                                       | Amber                       |                                                                                   |                       | <b>52AEB4</b>    |               |
|                                                                                                    |                                                                                                                            |                |                                       | White                       |                                                                                   |                       | <b>52AEBB</b>    |               |

① "Off" PL requires: (1) N.C. aux contact, 49AB01 on sizes 00-4.

② Class 22, 25, 26, 30, 32, 43, 83 & 84 requires qty. of (2) pilot light kits. Does not apply to 49SB kits. Select appropriate legend plate as a separate item per

type of starter; either "FORWARD" & "REVERSE" or "LOW" & "HIGH".

③ 2S2W is starter size 0-4.

④ Includes NC aux contact for NEMA starter Size 0-4.

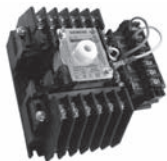
⑤ The "OL TRIPPED" pilot light with a bimetal OLR, requires the OLR to have a N.O. contact as well as a N.C. contact.

⑥ LED bulb applies to only 49SP\* pilot lights. They do not apply to 49SB\* pilot lights.

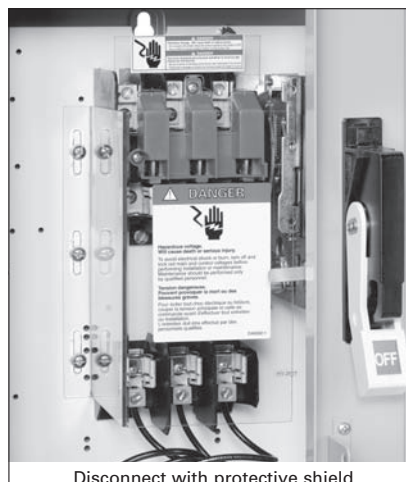
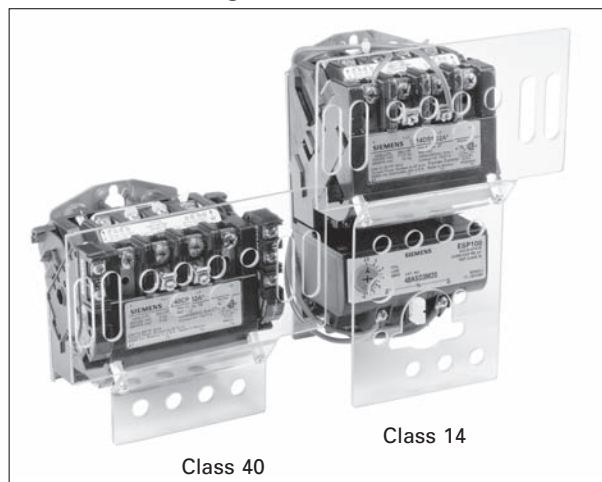
## NEMA, Lighting and Heating Contactors, 20 Amp CLM, CMB, CMF, CMN

## Selection

Solid State Control Module Kits For Lighting and Heating Contactors<sup>①</sup>

|  | CLM 20 Amp Contactor Kit Description | Accessory                      | Catalog Number | List Price \$ | Accessory                      | Catalog Number | List Price \$ | Accessory                           | Catalog Number | List Price \$ |
|-----------------------------------------------------------------------------------|--------------------------------------|--------------------------------|----------------|---------------|--------------------------------|----------------|---------------|-------------------------------------|----------------|---------------|
|                                                                                   | 120V AC, 50/60 Hz                    | 47<br>(2-Wire Control)<br>(2W) | CLM4379771     |               | 48<br>(3-Wire Control)<br>(3W) | CLM4379781     |               | 49<br>(Start/Stop Control)<br>(3WS) | CLM4379791     |               |
|                                                                                   | 24V AC/DC, 50/60 Hz                  |                                | CLM4379772     |               |                                | CLM4379782     |               |                                     | CLM4379792     |               |
|                                                                                   | 240/277V AC, 50/60 Hz                |                                | CLM4379773     |               |                                | CLM4379783     |               |                                     | CLM4379793     |               |

## Protective Shielding for NEMA Products



## Class 14, 22, 30, 40, 43

| Contactor or Starter Size       | 00-1%  | List Price \$ | 2-2½   | List Price \$ | 3-3½   | List Price \$ | 4      | List Price \$ |
|---------------------------------|--------|---------------|--------|---------------|--------|---------------|--------|---------------|
| Contactor Shield Catalog Number | 49PSC1 |               | 49PSC2 |               | 49PSC3 |               | 49PSC4 |               |
| Starter Shield Catalog Number   | 49PSS1 |               | 49PSS2 |               | 49PSS3 |               | 49PSS4 |               |

## Class 17, 25, 32, 87

| Disconnect Size | Catalog Number | List Price \$ |
|-----------------|----------------|---------------|
| 30A             | 49PSD5         |               |
| 60 & 100A       | 49PSD6         |               |
| 200A            | 49PSD7         |               |

| Power Pole Kits                                                                     | Class | Enclosure type    | Contactor Size (Amp) | Description                                                                                                            | Field Kit Catalog No.                                                |
|-------------------------------------------------------------------------------------|-------|-------------------|----------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
|  | LC    | Open, 1, 12, 4/4X | 30                   | Single power pole<br>Double power pole                                                                                 | 49LCP1A<br>49LCP2A                                                   |
| Electrically Held to Mechanically Held Conversion Modules                           | Class | Enclosure type    | Contactor Size (Amp) | Description                                                                                                            | Field Kit Catalog No.                                                |
|  | LC    | Open, 1, 12, 4/4X | 30                   | 2-wire, 24VAC<br>2-wire, 110-120VAC<br>2-wire, 200-277VAC<br>3-wire, 24VAC<br>3-wire, 110-120VAC<br>3-wire, 200-277VAC | 49LCCM1A<br>49LCCM2A<br>49LCCM3A<br>49LCCM4A<br>49LCCM5A<br>49LCCM6A |

<sup>①</sup> These kits are only for use with 20A mechanically held lighting contactors.



## NEMA, Reduced Voltage and Lighting

## Selection

## Starter/Contactor Auxiliary Contact Kits

| Description                                                                       | Class                                                          | Size         | Type                         | Catalog Number | List Price \$ |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------|--------------|------------------------------|----------------|---------------|
|  | 14, 17, 18, 22, 25, 26, 30, 32, 36, 37, 40, 43, 83, 84, 87, 88 | 00-4         | 1 NO                         | 49AB10         |               |
|                                                                                   |                                                                |              | 1 NC                         | 49AB01         |               |
|                                                                                   |                                                                |              | 1 NC Early Break             | 49AB01EB       |               |
|                                                                                   |                                                                |              | 1 NC Late Break              | 49AB01LB       |               |
|                                                                                   |                                                                |              | 1 NC Extra Late Break        | 49AB01XLB      |               |
|                                                                                   |                                                                |              | 1 NO Extra Late Make         | 49AB10XLM      |               |
|                                                                                   |                                                                |              | 1 NO & 1 NC                  | 49AB11         |               |
|                                                                                   |                                                                |              | 2 NO                         | 49AB20         |               |
|                                                                                   |                                                                |              | 4 NO                         | 49AB40         |               |
|                                                                                   |                                                                |              | 3 NO & 1 NC                  | 49AB31         |               |
|                                                                                   |                                                                |              | 2 NO & 2 NC                  | 49AB22         |               |
|                                                                                   |                                                                |              | 2 NO                         | 3RH1921-1EA20  |               |
|                                                                                   |                                                                |              | 1 NO & 1 NC                  | 3RH1921-1DA11  |               |
|                                                                                   |                                                                |              | 2 NC                         | 3RH1921-1EA02  |               |
|  | 14, 17, 18, 22, 25, 26, 36, 37, 40, 43, 87, 88                 | 5, 6         | 2 NO                         | 49CAL18-11     |               |
|                                                                                   |                                                                |              | 1 NO & 1 NC (Inside L or R)  | 49CAL18-11B    |               |
|  | 14, 17, 18, 22, 25, 26, 40, 43                                 | 7, 8         | 1 NO & 1 NC (Outside L or R) | 49CAL18-11B    |               |
|                                                                                   |                                                                |              | 1 NO & 1 NC (Outside L or R) | 49CAL18-11B    |               |
|  | LC                                                             | 30           | 1 NO/NC                      | 49LCAC1PA      |               |
|                                                                                   |                                                                |              | 2 NO/NC                      | 49LCAC2PA      |               |
|  | LE                                                             | 20           | Front Mounted 1 NO/NC        | 3RH2911-1HA11  |               |
|                                                                                   |                                                                | 30           | Side Mounted 1 NO/NC         | 3RH2911-1DA11  |               |
|                                                                                   |                                                                | 60-400       | Side Mounted 1 NO/NC         | 3RH1921-1EA11  |               |
|  | CLM, CMN, CMF, CMB                                             | 20 Amps      | 1 NO/NC SPDT                 | CLM4097291     |               |
|                                                                                   |                                                                | 20 Amps      | 2 NO/NC SPDT                 | CLM4097292     |               |
|                                                                                   |                                                                | 30-200 Amps  | 1 NO & 1 NC                  | CLMFCAK11      |               |
|                                                                                   |                                                                |              | 2 NC                         | CLMFCAK02      |               |
|                                                                                   |                                                                |              | 2 NO                         | CLMFCAK20      |               |
|                                                                                   |                                                                | 300-400 Amps | 1 Coil Clearing NO & NC      | CLMFCCK11      |               |
|                                                                                   |                                                                |              | 1 NO & 1 NC                  | CLMHCAK11      |               |
|                                                                                   |                                                                |              | 2 NC                         | CLMHCAK02      |               |
|                                                                                   |                                                                |              | 2 NO                         | CLMHCAK20      |               |
|                                                                                   |                                                                |              | 1 Coil Clearing NO & NC      | CLMHCCK11      |               |

## Disconnect Auxiliary Switch Kits

| Description                                                                                                     | Class                                              | Disconnect Amp or CB Rating | Type                       | Catalog Number | List Price \$ |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------|----------------------------|----------------|---------------|
| Non-fusible or Fusible Type  | 17, 25, 32, 37, 83, 84, 87, 88, LED, LEF, CMN, CMF | 30 - 200A                   | 2 NO/2 NC DPDT (NEMA A600) | HA261234       |               |
| MCP                          | 18, 26, 32, 37, 83, 84, 87, 88, LEB, CMB           | 3A-125A                     | 1 NO/1 NC 240V             | A02ED62        |               |
|                                                                                                                 |                                                    | 250A                        | 1 NO/1 NC 480V             | A02FD64        |               |
|                                                                                                                 |                                                    | 400A-600A                   | (2) 1 NO/1 NC SPDT-480V    | A02JLD64       |               |

Control Power Transformer Kits<sup>①②</sup>

| Description                                                                                                       | Recommended Transformer Size |                       | VA Rating                                                                                                                                                                                                              | Catalog Number       | List Price \$ | Transformer Table |                 |      |  |
|-------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------|-------------------|-----------------|------|--|
|                                                                                                                   | Control Size                 | Transformer VA        |                                                                                                                                                                                                                        |                      |               | Primary Volts     | Secondary Volts | Code |  |
| <br><br>Transformer<br>50/60HZ | 00-2½                        | 45 or 50 <sup>③</sup> | 45 VA                                                                                                                                                                                                                  | KT*050 <sup>②③</sup> |               | 120               | 24              | 1    |  |
|                                                                                                                   | 3-3½                         | 75                    | 50 VA                                                                                                                                                                                                                  | KT*050P <sup>③</sup> |               | 208               | 24              | G    |  |
|                                                                                                                   | 4                            | 150                   | 100 VA                                                                                                                                                                                                                 | KT*100               |               | 208               | 120             | H    |  |
|                                                                                                                   | 5-6                          | 150                   | 150 VA                                                                                                                                                                                                                 | KT*150               |               | 240/480           | 24              | 4    |  |
|                                                                                                                   | 7-8                          | 300                   | 200 VA                                                                                                                                                                                                                 | KT*200               |               | 240/480           | 120             | 8    |  |
|                                                                                                                   | Lighting Control             |                       | 300 VA                                                                                                                                                                                                                 | KT*300               |               | 277               | 24              | 5    |  |
|                                                                                                                   | CLM                          |                       | 500 VA                                                                                                                                                                                                                 | KT*500               |               | 277               | 120             | 7    |  |
|                                                                                                                   | 20A, 2 - 12P                 | 150                   | Replace * with code from Transformer table. Kits used with NEMA 1 general purpose lift-off cover type require extra wide enclosure.<br>Class 14 Sizes 0-2½<br>Class 30 (2S2W) Sizes 0-2½<br>Class 30 (2S1W) Sizes 0-1½ |                      |               | 600               | 24              | 6    |  |
|                                                                                                                   | 30A, 3P                      | 100                   |                                                                                                                                                                                                                        |                      |               | 600               | 120             | 9    |  |
|                                                                                                                   | 30A, 6 - 12P                 | 200                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | 60A, 3P                      | 100                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | 60A, 4 - 6P                  | 150                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | 60A, 8 - 12P                 | 250                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | 100/200A, 3P                 | 200                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | 100/200A, 5P                 | 250                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | 300/400A, 3P                 | 250                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | LC & LE                      |                       |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | LC 30A, 2-12P                | 100                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | LE 20, 30, 60A, 3 & 4P       | 45                    |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | LE 30A, 6P                   | 45                    |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | LE 30A, 9-12P                | 100                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | LE 60A, 6-12P                | 150                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | LE 100, 200A, 3P             | 100                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |
|                                                                                                                   | LE 300, 400A, 3P             | 150                   |                                                                                                                                                                                                                        |                      |               |                   |                 |      |  |

① Installation of CPTs may require a larger enclosure.  
 ② 45VA transformer kits will include secondary but not primary fusing. Sizes 50VA and higher include

2-pole primary fusing and 1-pole secondary fusing.

③ For 24VAC control a minimum of 100VA CPT is required.

## ESP200 Accessories

## Selection

## Accessories

| Description                                                                         |                                                                                                                                                | Catalog Number                    | List Price \$          |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|
|    | ESP200 Tamper Resistance Cover                                                                                                                 | <b>49ASTC1</b><br><b>3UB89848</b> |                        |
|    | ESP100/200 Mounting Plate                                                                                                                      | <b>Frame Size</b>                 | <b>Controller Size</b> |
|                                                                                     |                                                                                                                                                | A or A1                           | 00 - 1 3/4             |
|                                                                                     |                                                                                                                                                | B                                 | 2 - 2 1/2              |
|                                                                                     |                                                                                                                                                | B                                 | 3-4                    |
|    | Mounting Kit                                                                                                                                   | <b>49ASMS1</b>                    |                        |
|    | Universal Reset Operator<br>8" for class 36, 37 and 87<br>in NEMA 1, 12 and 3/3R                                                               | <b>49MARB</b>                     |                        |
|   | Single Reset (blue)<br>for class 14, 17, 18, 22, 25, 26, 30 and 32<br>in NEMA 1, 12 and 4/4X                                                   | <b>49MBRS</b>                     |                        |
|  | Single Reset (red)<br>for class 14, 22 and 30<br>in NEMA 4/4X                                                                                  | <b>49MARSR</b>                    |                        |
|  | ESP200 Reset Extender                                                                                                                          | <b>49ASRE</b>                     |                        |
|  | Protective Boot<br>Offers protection from ice and foreign substances<br>from interfering with button operation.<br>For use with 49MARSR reset. | <b>52AABA</b>                     |                        |
|  | Current Transformer 300:5 use with <b>3UB81234JW2</b>                                                                                          | <b>97CT005</b>                    |                        |
|                                                                                     | Current Transformer 400:5 use with <b>3UB81234KW2</b>                                                                                          | <b>97CT006</b>                    |                        |
|                                                                                     | Current Transformer 600:5 use with <b>3UB81234LW2</b>                                                                                          | <b>97CT008</b>                    |                        |
|                                                                                     | Current Transformer 750:5 use with <b>3UB81234MW2</b>                                                                                          | <b>97CT009</b>                    |                        |
|                                                                                     | Current Transformer 1200:5 use with <b>3UB81234NW2</b>                                                                                         | <b>97CT012</b>                    |                        |

## Miscellaneous Kits

| Description                                                                         |                                                                              | Class                                                                                                                            | Encl. Type                | Controller Size | Catalog Number                                    | List Price \$                                                          |  |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------|---------------------------------------------------|------------------------------------------------------------------------|--|
|    | Mechanical Interlock for Horizontally Mounted Contactors                     | Includes wire                                                                                                                    | 14, 40                    | Open            | 00–1<br>1¼<br>2, 2½<br>3, 3½<br>4                 | 49CCF22H<br>49EEF22H<br>49GGF22H<br>49HHP22H<br>49JJG22H               |  |
|                                                                                     |                                                                              | Interlock Only                                                                                                                   | 14, 40                    | Open            | 5, 6                                              | 3RA1954-2A                                                             |  |
|                                                                                     |                                                                              | Wire Kit Only                                                                                                                    |                           |                 | 5<br>6                                            | 3RA1963-2A<br>3RA1973-2A                                               |  |
|                                                                                     |                                                                              | Base Plate Only                                                                                                                  |                           |                 | 5<br>6                                            | 3RA1962-2A<br>3RA1972-2A                                               |  |
|                                                                                     |                                                                              | Mechanical Interlock                                                                                                             | 14, 40                    | Open            | 7<br>8                                            | 49VM750H<br>49VM1650H                                                  |  |
|                                                                                     |                                                                              | Includes wire & mounting plate                                                                                                   | 14, 40                    | Open            | 00–1<br>1¼<br>2, 2½<br>3, 3½<br>4                 | 49CCF22HP<br>49EEF22HP<br>49GGF22HP<br>49HHP22HP<br>49JJG22HP          |  |
|                                                                                     |                                                                              | Includes mounting plate (Different Frame Sizes)                                                                                  | 14, 40                    | Open            | Left<br>2, 2½<br>3, 3½<br>Right<br>3, 3½<br>2, 2½ | 49L107944<br>49L107945                                                 |  |
|    | Surge Suppressor                                                             | Surge Suppressor for 120V AC coil. Limits transient voltage produced by the coil to 220% maximum peak line volts.                | All but Class LC, LE, CLM | All             | 00–4 <sup>①</sup>                                 | 49D26344                                                               |  |
|    | Auxiliary Power Pole                                                         | NO 36A at 600V AC Max<br>NC 25A at 600V AC Max                                                                                   | All but Class LC, LE, CLM | All             | 00–1¼                                             | 49SAF0<br>49SAFC                                                       |  |
|    | Main Contacts Lighting Contactors                                            | Top or Bottom, 2-Pole<br>Top, 3-Pole<br>Top or Bottom, 4-Pole<br>Top or Bottom, 6-Pole                                           | CLM                       | All             | 20 Amps                                           | CLM4097331<br>CLM4097332<br>CLM4097333<br>CLM4097334                   |  |
|  | Load Side Power Take Off Kit                                                 | Includes 3 power lugs for making extra connections to the load side of the contactor                                             | All but Class LC, LE, CLM | All             | 00–1¼                                             | 49SAE                                                                  |  |
|  | Lug Kit for Contactors                                                       | For AL/CU Wire                                                                                                                   | 14, 40                    | All             | 2-2½<br>3-3½<br>4 Line 4 Load                     | 49SAAF <sup>③</sup><br>49SAAH <sup>③</sup><br>75D35994002 <sup>③</sup> |  |
|                                                                                     |                                                                              | For AL/CU Wire                                                                                                                   | 14, 40                    | All             | 5, 6                                              | 3RT1966-4G <sup>②</sup>                                                |  |
|                                                                                     |                                                                              | Use CU Only                                                                                                                      | 14, 40                    | All             | 7<br>8                                            | 49ZATK750-3 <sup>②</sup><br>49ZATK1650-6 <sup>②</sup>                  |  |
|  | Three Conductor Ground Lug Kit Meets UL 508 and CSA Standard 22.2 No 14-1973 | 2-14 AWG AL/CU Wire                                                                                                              | All                       | All             | All                                               | 75D28182001                                                            |  |
|  | Lightning Arrestor                                                           |                                                                                                                                  | All                       | All             | All                                               | 49D45584002                                                            |  |
|  | Backspin Timer                                                               | On delay timer that reduces risk of starting into a backspin                                                                     | 87, 88                    | All             | All                                               | 3RP2025-1AQ30<br>3RP2025-1AP30                                         |  |
|  | Hole Plug                                                                    | Covers the hole that is typically used for the conduit hub                                                                       | 87                        | All             | 1-4                                               | 49D41149006                                                            |  |
|  | Hole Plug                                                                    | Covers the hole in the enclosure door/cover normally filled by overload reset 49MBRS. Hole plug is used for enclosed contactors. | 40, 43, LC, LE, CLM & CM  | 1               | All                                               | 49MZPB2                                                                |  |

| Illustration                                                                                                                                                                                      | Description | Contactor                                          | Wire Size                                    | Catalog Number | List Price \$ |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------|----------------------------------------------|----------------|---------------|
|  <p><b>Lug Kit</b><br/>1 Kit = 1 Terminal block. 1 kit necessary for each line and load.</p> <p>3RT1966-4G</p> |             | NEMA size 4 (Vacuum)<br>NEMA size 5<br>NEMA size 6 | 2/0 to 600 MCM, max. one 500MCM & one 600MCM | 3RT1966-4G     |               |

① Surge Suppression for NEMA sizes 5 – 8 are supplied internal with the coil. For size 4 panel mount.

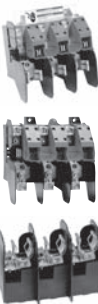
② Only 3 lugs are supplied for line or load.  
If lugs for line and load are required order 2 kits.

③ Lug Kit for contactors include 3 lugs for line or load.  
75D35994001 for line side.  
75D35994002 for load side.

## NEMA Accessories

## Selection

Fused and Non-Fused Disconnect Switch Kits<sup>②</sup>

|  | Basic Switch Ampere Rating | Switch Catalog Number Non-Fused | List Price \$ | Switch Catalog Number Fused | List Price \$ | Kit Description | Load Base Catalog Number Class J | List Price \$ | Load Base Catalog Number Class H <sup>③</sup> | List Price \$ | Lug Wire Size       |
|-----------------------------------------------------------------------------------|----------------------------|---------------------------------|---------------|-----------------------------|---------------|-----------------|----------------------------------|---------------|-----------------------------------------------|---------------|---------------------|
|  | 30                         | HNB612                          |               | HFB21                       |               | 30A, 250V       | —                                | —             | HBB21                                         |               | #14-2 AWG (Cu/Al)   |
|                                                                                   |                            |                                 |               | HFB612                      |               | 30A, 600V       | HBB612                           |               | HBB612                                        |               |                     |
|                                                                                   | 60                         | HNB623                          |               | HFB22                       |               | 60A, 250V       | —                                | —             | HBB22                                         |               | #14-2 AWG (Cu/Al)   |
|                                                                                   |                            |                                 |               | HFB62                       |               | 60A, 600V       | HBB62                            |               | HBB62                                         |               |                     |
|  | 100                        | HNB623                          |               | HFB63                       |               | 100A, 250V      | —                                | —             | HBB63                                         |               | #14-1/0 AWG (Cu/Al) |
|                                                                                   | 200                        | HNB64                           |               | HFB64                       |               | 100A, 600V      | HBB63                            |               | HBB64                                         |               | #6-300 AWG (Cu/Al)  |
|                                                                                   |                            |                                 |               |                             |               | 200A, 250V      | —                                | —             |                                               |               |                     |
|                                                                                   |                            |                                 |               |                             |               | 200A, 600V      | HBB64                            |               |                                               |               |                     |

## Class R Fuse Conversion Kits

|  | Catalog Number | Description    | List Price \$ |
|-----------------------------------------------------------------------------------|----------------|----------------|---------------|
|  | HR21           | 30A, 240V      |               |
|                                                                                   | HR612          | 30A, 600V      |               |
|                                                                                   | HR612          | 60A, 240V      |               |
|                                                                                   | HR62           | 60A, 600V      |               |
|                                                                                   | HR63           | 100A, 240/600V |               |
|                                                                                   | HR64           | 200A, 240/600V |               |

## Hazardous Location Accessories For Enclosure Types 7 &amp; 9

|                |                                                                                    | Description                                                                                                                                                          | Conduit Size Inches | Catalog Number | List Price \$ |
|----------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------|---------------|
| Breather/Drain |  | Install in bottom as drain.<br>Install in top as breather.<br>Suitable for Class I groups C & D and<br>for Class II groups F & G applications only.<br>for 1/2" NPT. |                     | 51AADB         |               |

## Metal Conduit Hubs

| Description                                                                         | Conduit Size | Class | Controller Size | Enclosure Type | Milbank Catalog No. <sup>④</sup> |
|-------------------------------------------------------------------------------------|--------------|-------|-----------------|----------------|----------------------------------|
|  | 1"           | 87    | All             | 3R             | A7514                            |
|                                                                                     | 1 1/2"       |       |                 |                | A7516                            |
|                                                                                     | 2"           |       |                 |                | A7517                            |
|                                                                                     | 2 1/2"       |       |                 |                | A7518                            |

① Product Category: PILO.  
② Product Category: HDSS.

③ For Class R fuses order Class H kit from this table and the Class R conversion kit.

④ Milbank catalog numbers are for reference only. Milbank conduit hubs are not sold by Siemens but can be purchased at a typical electrical hardware and supply distributor.

## NEMA, Overload Relays

## Selection

## Sirius 3RB20

| Illustration                                                                                                                                                                                                                    | Description                                                                                                                                                   |                                  | For Overload Type | Catalog Number | List Price \$ |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------|----------------|---------------|
| <br>Reset plunger with reset button<br><br><br>Flexible reset | <b>Reset mechanisms</b>                                                                                                                                       |                                  |                   |                |               |
|                                                                                                                                                                                                                                 | <b>Reset plunger</b><br>Mounts directly to overload relay. Requires separate reset operator in enclosure door. Kit includes reset plunger, holder and funnel. |                                  | 3RB206            | 3RU1900-1A     |               |
|                                                                                                                                                                                                                                 | <b>Flexible cable reset mechanism</b><br>Requires a 6.5 mm hole in the enclosure with a maximum enclosure thickness of 8 mm.                                  | Cable length<br>15.75 in (400mm) | 3RB206            | 3RU1900-1B     |               |
|                                                                                                                                                                                                                                 |                                                                                                                                                               | Cable length<br>23.62 in (600mm) |                   | 3RU1900-1C     |               |
|                                                                                                                                                                                                                                 | <b>Covers</b><br>Tamper resistant cover for current setting and manual/automatic reset button.                                                                |                                  | 3RB206            | 3RB2984-0      |               |

## Competitive Retrofit Overload Plates

| Manufacturer | NEMA Size | Plate Part Number | List Price \$ |
|--------------|-----------|-------------------|---------------|
| A-B          | 0, 1      | 49D57090          |               |
| A-B          | 2         | 49D57161          |               |
| Sq. D        | 0, 1      | 49D57091          |               |

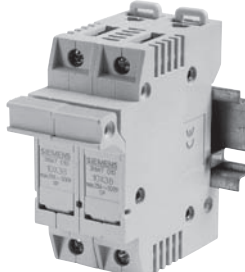
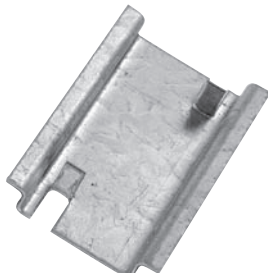
## Electronic Coil System with Remaining Lifetime Indication and 24VDC PLC Output

| Class | Size | Model Type | 21 - 27V       |               | 96 - 127V      |               | 200 - 277V     |               |
|-------|------|------------|----------------|---------------|----------------|---------------|----------------|---------------|
|       |      |            | Catalog Number | List Price \$ | Catalog Number | List Price \$ | Catalog Number | List Price \$ |
| All   | 5    | P          | —              | —             | 3RT1965-5PF31  |               | 3RT1965-5PP31  |               |
|       |      | V          | —              | —             | 3RT1966-5PF31  |               | 3RT1966-5PP31  |               |
|       | 6    | P          | —              | —             | 3RT1975-5PF31  |               | 3RT1975-5PP31  |               |
|       |      | V          | —              | —             | 3RT1976-5PF31  |               | 3RT1976-5PP31  |               |

## Fuse Blocks, Touch-Safe Terminal Covers

| Catalog Number                                                                                                | Description                                              | List Price \$ |
|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------|
| <b>KCCF1G</b>                                                                                                 | SECONDARY FUSE BLOCK, 1P, 250V MAX                       |               |
| <br><b>KCCFBCK</b>           | SINGLE POLE FUSE BLOCK COVER KIT                         |               |
| <br><b>KCCFP2RG</b>          | 2 Pole PRIMARY FUSE BLOCK, 2P, 600V MAX (block only)     |               |
| <br><b>KCCFPX2R</b>         | 2 Pole PRIMARY FUSE BLOCK KIT with wire Leads            |               |
| <b>US2:49FCCPT</b>                                                                                            | Secondary Fuse Clips, 2 per pack                         |               |
| <b>US2:49JUCPT</b>                                                                                            | Terminal Jumpers                                         |               |
| <br><b>US2:KCCSECFVCR</b>  | Terminal touchsafe cover Secondary Side: VAs 45 thru 350 |               |
| <br><b>US2:KCCSECFVCR2</b> | Terminal touchsafe cover Secondary Side: VAs 500 thru 2K |               |
| <b>US2:KCCFP3POLE</b>                                                                                         | 3 pole fuse blk (2 pole primary and 1 pole secondary)    |               |

International Fusing<sup>①</sup>

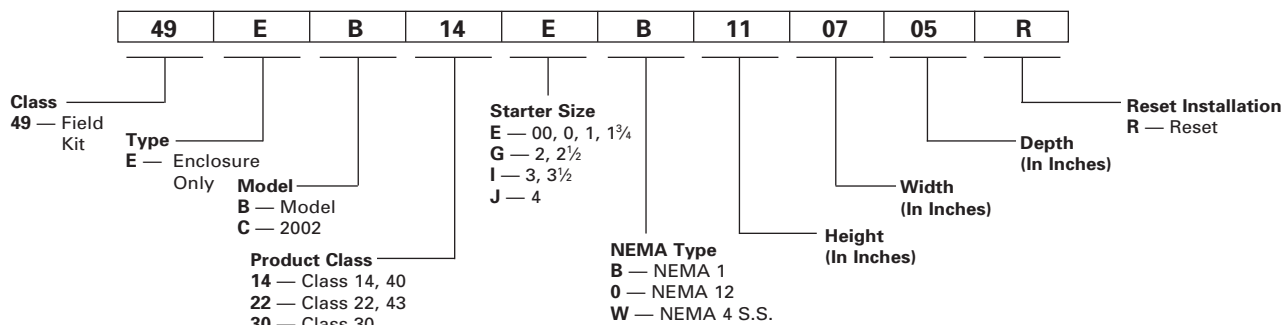
| Catalog Number                                                                                             | Description                                                                                                                            | List Price \$ |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <br><b>8WA1011-1SF12</b> | 1-Pole Fuse Block, Touch-Safe. Up to 6.3A for 5 mm × 20 mm or 5 mm × 25 mm (Requires DIN Rail Mounting)                                |               |
| <br><b>3NW7013</b>       | 1-Pole Fuse Block, Touch-Safe 32A, for 10 × 38 mm Cylindrical Fuses. (Requires DIN Rail Mounting.)                                     |               |
| <br><b>3NW7023</b>      | 2-Pole Fuse Block, Touch-Safe 32A, for 10 × 38 mm Cylindrical Fuses. (Requires DIN Rail Mounting.)                                     |               |
| <br><b>3NW7111</b>     | 1-Pole Fuse Block, Touch-Safe 4-50A, for 14 × 51 mm Cylindrical Fuses. (Requires DIN Rail Mounting.)                                   |               |
| <br><b>8WA1815</b>     | Fuse Block DIN Rail Mounting for separate screw mounting to panel. (Max 2-pole 2-25A size per rail.) (Max 1-pole 4-50A size per rail.) |               |

<sup>①</sup> Product Category: IEC.



## Non-Combination Enclosure Kits, Class 49

## Selection



## Non-Reversing Starters &amp; Contactors Class 14, 40

| Size     | NEMA 1<br>General Purpose (Clamshell) <sup>②④</sup> |               |                       |            |               | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight, Corrosion Resistant <sup>③⑥</sup> |               |                       |            |               | NEMA 12/3/3R <sup>①</sup><br>Industrial Use, Weatherproof <sup>③⑤</sup> |               |                       |            |               |
|----------|-----------------------------------------------------|---------------|-----------------------|------------|---------------|-----------------------------------------------------------------------------------------------|---------------|-----------------------|------------|---------------|-------------------------------------------------------------------------|---------------|-----------------------|------------|---------------|
|          | Without CPT                                         |               | With CPT (Extra Wide) |            |               | Without CPT                                                                                   |               | With CPT (Extra Wide) |            |               | Without CPT                                                             |               | With CPT (Extra Wide) |            |               |
|          | Model C Enclosure                                   |               | Model C Enclosure     |            |               | Model B Enclosure                                                                             |               | Model B Enclosure     |            |               | Model B Enclosure                                                       |               | Model B Enclosure     |            |               |
|          | Catalog Number                                      | List Price \$ | Catalog Number        | Max CPT VA | List Price \$ | Catalog Number                                                                                | List Price \$ | Catalog Number        | Max CPT VA | List Price \$ | Catalog Number                                                          | List Price \$ | Catalog Number        | Max CPT VA | List Price \$ |
| 00-1 1/4 | 49EC14EB110705R                                     |               | 49EC14IB201208R       | 200        |               | 49EB14EW130806R                                                                               |               | 49EB22EW131306R       |            |               | 49EB14E0130806R                                                         |               | 49EB22E0131306R       |            |               |
| 2, 2 1/2 | 49EC14GB140807R                                     |               | 49EC14IB201208R       | 200        |               | 49EB14GW160907R                                                                               |               | 49EB22GW161406R       |            |               | 49EB14G0160907R                                                         |               | 49EB22G0161406R       |            |               |
| 3, 3 1/2 | 49EC14IB201208R                                     |               | 49EC14IB201208R       | 100        |               | 49EB14JW261408R                                                                               |               | 49EB14JW261408R       |            |               | 49EB14J0261408R                                                         |               | 49EB14J0261408R       |            |               |
| 3, 3 1/2 | —                                                   | —             | 49EC14JB251409R       | 250        | —             | —                                                                                             | —             | —                     | —          | —             | —                                                                       | —             | —                     | —          | —             |
| 4        | 49EC14JB251409R                                     |               | 49EC14JB251409R       | 300        |               | 49EB14JW261408R                                                                               |               | 49EB22JW302410R       |            |               | 49EB14J0261408R                                                         |               | 49EB22J0302410R       |            |               |

## Reversing Starters &amp; Reversing Contactors Class 22, 43

| Size     | NEMA 1<br>General Purpose (Clamshell) <sup>②④</sup> |               |                       |            |               | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight, Corrosion Resistant <sup>③⑥</sup> |               |                       |            |               | NEMA 12/3/3R <sup>①</sup><br>Industrial Use, Weatherproof <sup>③⑤</sup> |               |                       |            |               |
|----------|-----------------------------------------------------|---------------|-----------------------|------------|---------------|-----------------------------------------------------------------------------------------------|---------------|-----------------------|------------|---------------|-------------------------------------------------------------------------|---------------|-----------------------|------------|---------------|
|          | Without CPT                                         |               | With CPT (Extra Wide) |            |               | Without CPT                                                                                   |               | With CPT (Extra Wide) |            |               | Without CPT                                                             |               | With CPT (Extra Wide) |            |               |
|          | Model C Enclosure                                   |               | Model C Enclosure     |            |               | Model B Enclosure                                                                             |               | Model B Enclosure     |            |               | Model B Enclosure                                                       |               | Model B Enclosure     |            |               |
|          | Catalog Number                                      | List Price \$ | Catalog Number        | Max CPT VA | List Price \$ | Catalog Number                                                                                | List Price \$ | Catalog Number        | Max CPT VA | List Price \$ | Catalog Number                                                          | List Price \$ | Catalog Number        | Max CPT VA | List Price \$ |
| 00-1 1/4 | 49EC14IB201208R                                     |               | 49EC14IB201208R       | 200        |               | 49EB22EW131306R                                                                               |               | 49EB22EW131306R       |            |               | 49EB22E0131306R                                                         |               | 49EB22E0131306R       |            |               |
| 2, 2 1/2 | 49EC14IB201208R                                     |               | 49EC14IB201208R       | 200        |               | 49EB22GW161406R                                                                               |               | 49EB22GW161406R       |            |               | 49EB22G0161406R                                                         |               | 49EB22G0161406R       |            |               |
| 3, 3 1/2 | 49EC14JB251409R                                     |               | 49EC14JB251409R       | 250        |               | 49EB22JW261808R                                                                               |               | 49EB22JW302410R       |            |               | 49EB22J0261808R                                                         |               | 49EB22J0302410R       |            |               |
| 4        | 49EC14JB251409R                                     |               | 49EC14JB251409R       | 300        |               | 49EB22JW302410R                                                                               |               | 49EB22JW302410R       |            |               | 49EB22J0302410R                                                         |               | 49EB22J0302410R       |            |               |

## Two-Speed Two-Winding Starters Class 30

| Size     | NEMA 1<br>General Purpose (Clamshell) <sup>②④</sup> |               |                              |            |               | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight, Corrosion Resistant <sup>③⑥</sup> |               |                       |            |               | NEMA 12/3/3R <sup>①</sup><br>Industrial Use, Weatherproof <sup>③⑤</sup> |               |                       |            |               |
|----------|-----------------------------------------------------|---------------|------------------------------|------------|---------------|-----------------------------------------------------------------------------------------------|---------------|-----------------------|------------|---------------|-------------------------------------------------------------------------|---------------|-----------------------|------------|---------------|
|          | Without CPT                                         |               | With CPT (Extra Wide)        |            |               | Without CPT                                                                                   |               | With CPT (Extra Wide) |            |               | Without CPT                                                             |               | With CPT (Extra Wide) |            |               |
|          | Model C Enclosure                                   |               | Model C Enclosure            |            |               | Model B Enclosure                                                                             |               | Model B Enclosure     |            |               | Model B Enclosure                                                       |               | Model B Enclosure     |            |               |
|          | Catalog Number                                      | List Price \$ | Catalog Number               | Max CPT VA | List Price \$ | Catalog Number                                                                                | List Price \$ | Catalog Number        | Max CPT VA | List Price \$ | Catalog Number                                                          | List Price \$ | Catalog Number        | Max CPT VA | List Price \$ |
| 0-1 1/4  | 49EC14IB201208R <sup>②</sup>                        |               | 49EC14JB251409R <sup>②</sup> | 200        |               | 49EB30EW131306R                                                                               |               | 49EB30GW161808R       |            |               | 49EB30E0131306R                                                         |               | 49EB30G0161808R       |            |               |
| 2, 2 1/2 | 49EC14IB201208R <sup>②</sup>                        |               | 49EC14JB251409R <sup>②</sup> | 200        |               | 49EB30GW161406R                                                                               |               | 49EB30GW161808R       |            |               | 49EB30G0161406R                                                         |               | 49EB30G0161808R       |            |               |
| 3, 3 1/2 | 49EC14JB251409R <sup>②</sup>                        |               | 49EB22JB302410R <sup>③</sup> | 300        |               | 49EB30JW261808R                                                                               |               | 49EB22JW302410R       |            |               | 49EB30J0261808R                                                         |               | 49EB22J0302410R       |            |               |
| 4        | 49EC14JB251409R                                     |               | 49EB22JB302410R <sup>③</sup> | 300        |               | 49EB22JW302410R                                                                               |               | 49EB22JW302410R       |            |               | 49EB22J0302410R                                                         |               | 49EB22J0302410R       |            |               |

## Two-Speed One-Winding Starters Class 30

| Size     | NEMA 1<br>General Purpose (Clamshell) <sup>②④</sup> |               |                              |            |               | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Dust-tight, Corrosion Resistant <sup>③⑥</sup> |               |                       |            |               | NEMA 12/3/3R <sup>①</sup><br>Industrial Use, Weatherproof <sup>③⑤</sup> |               |                       |            |               |
|----------|-----------------------------------------------------|---------------|------------------------------|------------|---------------|-----------------------------------------------------------------------------------------------|---------------|-----------------------|------------|---------------|-------------------------------------------------------------------------|---------------|-----------------------|------------|---------------|
|          | Without CPT                                         |               | With CPT (Extra Wide)        |            |               | Without CPT                                                                                   |               | With CPT (Extra Wide) |            |               | Without CPT                                                             |               | With CPT (Extra Wide) |            |               |
|          | Model C Enclosure                                   |               | Model C Enclosure            |            |               | Model B Enclosure                                                                             |               | Model B Enclosure     |            |               | Model B Enclosure                                                       |               | Model B Enclosure     |            |               |
|          | Catalog Number                                      | List Price \$ | Catalog Number               | Max CPT VA | List Price \$ | Catalog Number                                                                                | List Price \$ | Catalog Number        | Max CPT VA | List Price \$ | Catalog Number                                                          | List Price \$ | Catalog Number        | Max CPT VA | List Price \$ |
| 0-1 1/4  | 49EC14IB201208R <sup>②</sup>                        |               | 49EC14JB251409R <sup>②</sup> | 200        |               | 49EB30EW131306R                                                                               |               | 49EB30GW161808R       |            |               | 49EB30E0131306R                                                         |               | 49EB30G0161808R       |            |               |
| 2, 2 1/2 | 49EB30GB161808R <sup>③</sup>                        |               | 49EB22JB302410R <sup>③</sup> | 300        |               | 49EB30GW161808R                                                                               |               | 49EB22JW261808R       |            |               | 49EB30G0161808R                                                         |               | 49EB22J0261808R       |            |               |
| 3, 3 1/2 | 49EB30IB192208R <sup>③</sup>                        |               | 49EB22JB302410R <sup>③</sup> | 300        |               | 49EB22JW302410R                                                                               |               | 49EB22JW302410R       |            |               | 49EB22J0302410R                                                         |               | 49EB22J0302410R       |            |               |
| 4        | 49EB22JB302410R <sup>③</sup>                        |               | 49EB22JB302410R <sup>③</sup> | 300        |               | 49EB22JW302410R                                                                               |               | 49EB22JW302410R       |            |               | 49EB22J0302410R                                                         |               | 49EB22J0302410R       |            |               |

**Note:** Dimensions...See appropriate Product Class Outline Drawing beginning on page 9/157.

① For conduit hubs and conversion instructions, see page 9/110.

② Clamshell enclosure suitable for one operating device and two pilot lights. See Field Mods page 9/104.

③ Hinged cover enclosures, except for 49EB14E0130806R, are suitable for one or more class 52 operating devices and one or more class 52 pilot lights. See Field Mods page 9/100.

④ Install NEMA 1 hole plug cat. no. 3SB1902-0AR (included) when the cover OL reset is not needed.

⑤ Install NEMA 12 hole plug cat. no. 52ABH6 (not included) when the cover OL reset is not needed.

⑥ Install NEMA 4X stainless steel hole plug cat. no. 52ABHS (not included) when the cover OL reset is not needed.

## Lighting Enclosure Tables

## Selection

## Lighting Contactors Class LC and LE

| Contactor       | Type 1 <sup>1)</sup> |                 |        | Type 4/4X Stainless Steel <sup>2)</sup> |                 |        | Type 3/3R/12 <sup>3)</sup> |                 |        |
|-----------------|----------------------|-----------------|--------|-----------------------------------------|-----------------|--------|----------------------------|-----------------|--------|
|                 | Without CPT          | With CPT        | Max.   | Without CPT                             | With CPT        | Max.   | Without CPT                | With CPT        | Max.   |
|                 | Catalog Number       | Catalog Number  | CPT VA | Catalog Number                          | Catalog Number  | CPT VA | Catalog Number             | Catalog Number  | CPT VA |
|                 |                      |                 |        |                                         |                 |        |                            |                 |        |
| LC 30A 2-12P    | 49EC14GB140807R      | 49EC14IB201208R | 200    | 49EB22GW161406R                         | 49EB30GW161808  |        | 49EB22G0161406R            | 49EB30G0B161808 |        |
| LE 20, 30A 3-4P | 49EC14EB110705R      | 49EC14IB201208R | 200    | 49EB22GW161406R                         | 49EB22GW161406R |        | 49EB22G0161406R            | 49EB22G0161406R |        |
| LE 30A 6-9P     | 49EC14IB201208R      | 49EC14IB201208R | 200    | 49ECLXXW161406                          | 49EB14JW261408R |        | 49ECLXX0161406             | 49EB14J0261408R |        |
| LE 30A 12P      | 49EC14IB201208R      | 49EC14JB251409R | 250    | 49ECLXXW161406                          | 49EB14JW261408R |        | 49ECLXX0161406             | 49EB14J0261408R |        |
| LE 60A 3P       | 49EC14GB140807R      | 49EC14IB201208R | 200    | 49EB22GW161406R                         | 49EB22GW161406R |        | 49EB22G0161406R            | 49EB22G0161406R |        |
| LE 60A 6-9P     | 49EC14IB201208R      | 49EC14IB201208R | 200    | 49ECLXXW161406                          | 49EB14JW261408R |        | 49ECLXX0161406             | 49EB14J0261408R |        |
| LE 60A 12P      | 49EC14IB201208R      | 49EC14IB201209R | 250    | 49ECLXXW161406                          | 49EB14JW261408R |        | 49ECLXX0161406             | 49EB14J0261408R |        |
| LE 100A 3P      | 49EC14IB201208R      | 49EC14IB201208R | 200    | 49ECLXXW161406                          | 49EB14JW261408R |        | 49ECLXX0161406             | 49EB14J0261408R |        |

## Lighting &amp; Heating Contactors Class CLM

| Size | Pole | NEMA 1<br>General Purpose (Clamshell) <sup>②④</sup> |               |                       |         |               | NEMA 4/4X Stainless <sup>①</sup><br>Watertight, Corrosion Resistant <sup>③⑤</sup> |               |                       |         |               | NEMA 12/3/3R <sup>①</sup><br>Industrial Use <sup>③⑤</sup> |               |                       |         |               |
|------|------|-----------------------------------------------------|---------------|-----------------------|---------|---------------|-----------------------------------------------------------------------------------|---------------|-----------------------|---------|---------------|-----------------------------------------------------------|---------------|-----------------------|---------|---------------|
|      |      | Without CPT                                         |               | With CPT (Extra Wide) |         |               | Without CPT                                                                       |               | With CPT (Extra Wide) |         |               | Without CPT                                               |               | With CPT (Extra Wide) |         |               |
|      |      | Model C/B Enclosure                                 | List Price \$ | Model C/B Enclosure   | Max CPT | List Price \$ | Model B Enclosure                                                                 | List Price \$ | Model B Enclosure     | Max CPT | List Price \$ | Model B Enclosure                                         | List Price \$ | Model B Enclosure     | Max CPT | List Price \$ |
|      |      | Catalog Number                                      |               | Catalog Number        |         |               | Catalog Number                                                                    |               | Catalog Number        |         |               | Catalog Number                                            |               | Catalog Number        |         |               |
| 20A  | 2-12 | 49EC14GB140807R                                     |               | 49EC14IB201208R       | 200VA   |               | 49EB22GW161406R                                                                   |               | 49EB22GW161406R       | —       |               | 49EB22G0161406R                                           |               | 49EB22G0161406R       | —       |               |
| 30A  | 2-5  | 49EC14EB110705R                                     |               | 49EC14IB201208R       | 200VA   |               | 49EB22GW161406R                                                                   |               | 49EB22GW161406R       | —       |               | 49EB22G0161406R                                           |               | 49EB22G0161406R       | —       |               |
| 30A  | 6-12 | 49EB30GB161808R                                     |               | 49EB30GB161808R       | 200VA   |               | 49ECLXXW161406                                                                    |               | 49EB30GW161808R       | —       |               | 49ECLXX0161406                                            |               | 49EB30G0161808R       | —       |               |
| 60A  | 2-5  | 49EC14GB140807R                                     |               | 49EC14IB201208R       | 200VA   |               | —                                                                                 | —             | —                     | —       | —             | —                                                         | —             | —                     | —       | —             |
| 60A  | 6-12 | 49EB30IB192208R                                     |               | 49EB30IB192208R       | 250VA   |               | —                                                                                 | —             | —                     | —       | —             | —                                                         | —             | —                     | —       | —             |
| 100A | 2-5  | 49EC14IB201208R                                     |               | 49EC14IB201208R       | 200VA   |               | —                                                                                 | —             | —                     | —       | —             | —                                                         | —             | —                     | —       | —             |

**Note:** Dimensions...See appropriate Product Class Outline Drawing on page 9/170.

① For conduit hubs and conversion instructions, see page 9/110.

② Clamshell enclosure suitable for one operating device and two pilot lights. See Field Mods page 9/104.

③ Hinged cover enclosure suitable for one or more class 52 operating devices and one or more class 52 pilot lights. See Field Mods page 9/104.

④ Install NEMA 1 hole plug cat. no. **3SB1902-0AR** (included) when the cover OL reset is not needed.

⑤ Install NEMA 12 hole plug cat. no. **52ABH6** (not included) when the cover OL reset is not needed.

⑥ Install NEMA 4X stainless steel hole plug cat. no. **52ABHS** (not included) when the cover OL reset is not needed.

## Features and Benefits

### Features

- Manufactured with a cold forming "TOX" process
- 100kA short circuit rating when protected with class R fuses to 600V or MCP to 480V and when installing listed components from the instruction guide
- Enclosure types available, Nema 1, 12, 3/3R and painted NEMA 4. Nema 12 field convertible to 3/3R/4 with the appropriate conduit hub and drain hole
- Pre-Drilled mounting panels
- Heavy duty quarter turns
- Industrial type disconnect handle

### Disconnect Type Enclosure Kit

- Used to assemble both non-fusible and fusible combination starters
- Accommodates Class 14 full voltage non-reversing (FVNR) NEMA starters 00 – 4 including Siemens exclusive half sizes
- Handle mechanism, power wire, mounting panel, reset assembly, and instruction guide included. Hardware for panel mounted devices and disconnect switch are not included

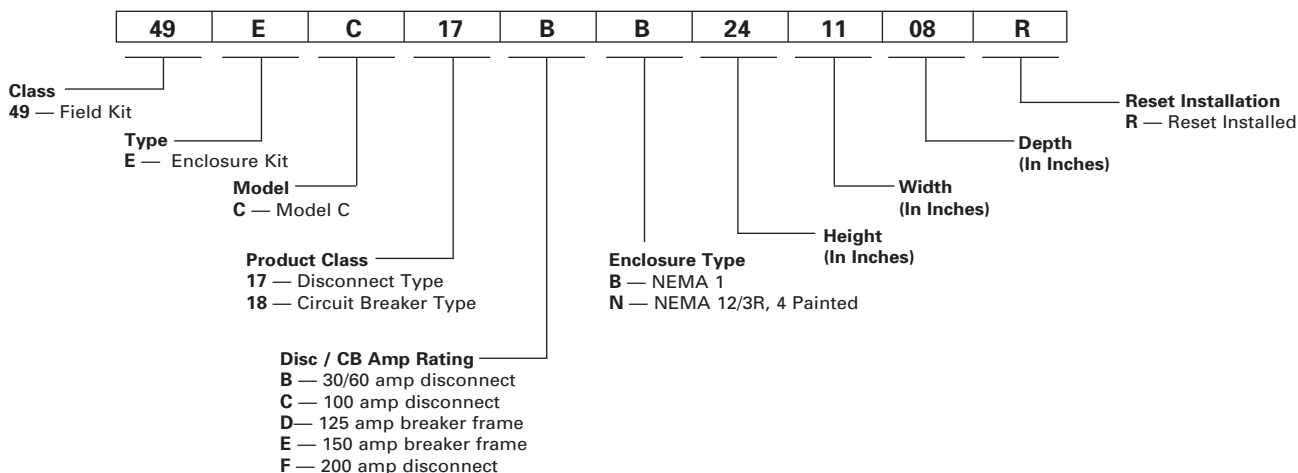
### MCP Type Enclosure Kit

- Used to assemble combination starters with circuit breakers
- Accommodates Class 14 full voltage non-reversing (FVRN) NEMA starters 00 – 4 including Siemens exclusive half sizes
- Handle mechanism, power wire, mounting panel, reset assembly and instruction guide included. Circuit breaker not included however, mounting hardware for the circuit breaker is

### How to Select the Required Kits to Assemble a Combination Starter

1. From the catalog, select a class 14 open type starter with the required starter size and overload relay type.
2. Based on the starter size, select the enclosure kit from table 1a for fusible or non-fusible combination starters or select from table 1b for combination starters with an MCP.
3. For a non-fusible combination starter, select the disconnect switch kit from table 2a. For a fusible combination starter, select the appropriate disconnect switch, fuse clip kit, and class R rejection kit from table 2b (for H fusing, class R rejection kit not required). For combination starters with MCP, select the appropriate circuit breaker kit from table 3.

### Nomenclature for Combination Enclosure Kits



## Selection

Table 1a - FVNR Combination Starter Kits for use with Disconnect Devices

| Starter Size | Disc. Amp Rating | NEMA 1<br>General Purpose |               | NEMA 12, 3/3R, 4 Painted ①<br>Industrial Use, Weatherproof, Watertight, Dust-tight |               | NEMA 4/4X Stainless Steel<br>Watertight, Dust-tight, Corrosion Resistant |               |
|--------------|------------------|---------------------------|---------------|------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------|---------------|
|              |                  | Catalog Number            | List Price \$ | Catalog Number                                                                     | List Price \$ | Catalog Number                                                           | List Price \$ |
| 0 - 2        | 60               | 49EC17BB241108R           |               | 49EC17BN241108R                                                                    |               | 49EC17BW241108R                                                          |               |
| 2 ½ - 3      | 100              | 49EC17CB242008R           |               | 49EC17CN242008R                                                                    |               | 49EC17CW242008R                                                          |               |
| 3 ½ - 4      | 200              | 49EC17FB362408R           |               | 49EC17FN362408R                                                                    |               | 49EC17FW362408R                                                          |               |

Table 1b. – FVNR Combination Starter Kits for use with MCP Devices

| Starter Size | Max MCP Amps | NEMA 1<br>General Purpose |               | NEMA 12, 3/3R, 4 Painted ①<br>Industrial Use, Weatherproof, Watertight, Dust-tight |               | NEMA 4/4X Stainless Steel<br>Watertight, Dust-tight, Corrosion Resistant |               |
|--------------|--------------|---------------------------|---------------|------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------|---------------|
|              |              | Catalog Number            | List Price \$ | Catalog Number                                                                     | List Price \$ | Catalog Number                                                           | List Price \$ |
| 0 - 2        | 50           | 49EC18DB241108R           |               | 49EC18DN241108R                                                                    |               | 49EC18DW241108R                                                          |               |
| 2 ½ - 3      | 125          | 49EC18DB242008R           |               | 49EC18DN242008R                                                                    |               | 49EC18DW242008R                                                          |               |
| 3 ½          | 125          | 49EC18DB362408R           |               | 49EC18DN362408R                                                                    |               | 49EC18DW362408R                                                          |               |
| 4            | 150          | 49EC18EB362408R           |               | 49EC18EN362408R                                                                    |               | 49EC18EW362408R                                                          |               |

Table 2a – Non-Fusible Disconnect Kits

| Disconnect Switch |                |               |
|-------------------|----------------|---------------|
| Switch Rating     | Catalog Number | List Price \$ |
| 30A               | HNB612         |               |
| 60A               | HNB623         |               |
| 100A              | HNB623         |               |
| 200A              | HNB64          |               |



Table 2b – Fusible Disconnect Kits

| Fuse Clip Ratings | Class | Disconnect Switch |               | Load Base for Fuse |               | Rejection Clips for Class R Fusing |               |
|-------------------|-------|-------------------|---------------|--------------------|---------------|------------------------------------|---------------|
|                   |       | Catalog Number    | List Price \$ | Catalog Number     | List Price \$ | Catalog Number                     | List Price \$ |
| 30A-250V          | H     | HFB21             |               | HBB21              |               | HR21                               |               |
| 30A-600V          | H     | HFB612            |               | HBB612             |               | HR612                              |               |
| 60A-250V          | H     | HFB22             |               | HBB22              |               | HR612                              |               |
| 60A-600V          | H     | HFB62             |               | HBB62              |               | HR62                               |               |
| 100A-250V         | H     | HFB63             |               | HBB63              |               | HR63                               |               |
| 100A-600V         | H     | HFB63             |               | HBB63              |               | HR63                               |               |
| 200A-250V         | H     | HFB64             |               | HBB64              |               | HR64                               |               |
| 200A-600V         | H     | HFB64             |               | HBB64              |               | HR64                               |               |

Table 3 – Circuit Breaker Kits

| Starter Size | MCP Type Used with Solid State Overload Relay |                                |                     | MCP Type Used with Thermal Overload Relay |                     |
|--------------|-----------------------------------------------|--------------------------------|---------------------|-------------------------------------------|---------------------|
|              | Overload Amp Range                            | Motor Circuit Interrupter Amps | Circuit Breaker Kit | Motor Circuit Interrupter Amps            | Circuit Breaker Kit |
| 0            | 0.75-3.4                                      | 3                              | ED63A003            | 3                                         | ED63A003            |
|              | 3-12                                          | 10                             | ED63A010            | 10                                        | ED63A010            |
|              | 5.5-22                                        | 25                             | ED63A025            | 25                                        | ED63A025            |
| 1            | 0.75-3.4                                      | 3                              | ED63A003            | 3                                         | ED63A003            |
|              | 3-12                                          | 10                             | ED63A010            | 10                                        | ED63A010            |
|              | 5.5-22                                        | 25                             | ED63A025            | 25                                        | ED63A025            |
|              | 10-40                                         | 30                             | ED63A030            | 30                                        | ED63A030            |
| 1 ½          | 10-40                                         | 40                             | ED63A040            | 40                                        | ED63A040            |
| 2            | 13-52                                         | 50                             | ED63A050            | 50                                        | ED63A050            |
| 2 ½          | 25-100                                        | 100                            | ED63A100            | 100                                       | ED63A100            |
| 3            | 25-100                                        | 100                            | ED63A100            | 100                                       | ED63A100            |
| 3 ½          | 50-200                                        | 125                            | ED63A125            | 125                                       | ED63A125            |
| 4            | 50-200                                        | 150                            | FXD63A150L          | 150                                       | FXD63A150L          |

① For conduit hubs and conversion instructions, see page 9/110.

## Class 87 Pump Panel Enclosure Kits

## Selection

|  | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                    | Coil Table      |                |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
|                                                                                   | <ul style="list-style-type: none"><li>▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li><li>▶ Refer to Class 87 section of catalog for pump panel ratings and other details.</li><li>▶ Handle mechanism, power wire, mounting panel, reset assembly and instruction guide are included with the enclosure kit.</li></ul> | 60Hz Voltage    | Letter         |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                         | 24              | J              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                         | 120             | F              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                         | 110–120/220–240 | A <sup>①</sup> |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                         | 200–208         | D              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                         | 220–240         | G              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                         | 220–240/440–480 | C <sup>①</sup> |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                         | 277             | L              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                         | 440–480         | H              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                         | 550–600         | E              |

## Pump Panels with Solid-State Overload Relay Class 87

| To Field Assemble This Pump Panel: | Order these components   |                                         |                   |                |                         |                           | Enclosure List Price \$ |
|------------------------------------|--------------------------|-----------------------------------------|-------------------|----------------|-------------------------|---------------------------|-------------------------|
|                                    | Enclosure Catalog Number | Starter with Solid-State Overload Relay | Disconnect Switch | Fuse Load Base | Class R Rejection Clips | Motor Circuit Interrupter |                         |
| 87DUB6F*                           | 49EB87GF242008           | 14DUB32A*                               | HFB612            | HBB612         | HR612                   | —                         |                         |
| 87DUC6F*                           | 49EB87GF242008           | 14DUC32A*                               | HFB612            | HBB612         | HR612                   | —                         |                         |
| 87DUD6F*                           | 49EB87GF242008           | 14DUD32A*                               | HFB612            | HBB612         | HR612                   | —                         |                         |
| 87DUD60*                           | 49EB87GF242008           | 14DUD32A*                               | HFB62             | HBB62          | HR62                    | —                         |                         |
| 87EUE6F*                           | 49EB87GF242008           | 14EUE32A*                               | HFB612            | HBB612         | HR612                   | —                         |                         |
| 87EUE60*                           | 49EB87GF242008           | 14EUE32A*                               | HFB62             | HBB62          | HR62                    | —                         |                         |
| 87FUF6F*                           | 49EB87GF242008           | 14FUF32A*                               | HFB62             | HBB62          | HR62                    | —                         |                         |
| 87FUF60*                           | 49EB87GF242008           | 14FUF32A*                               | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87GUG6F*                           | 49EB87GF242008           | 14GUG32A*                               | HFB62             | HBB62          | HR62                    | —                         |                         |
| 87GUG60*                           | 49EB87GF242008           | 14GUG32A*                               | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87HUG6F*                           | 49EB87JF362408           | 14HUG32A*                               | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87HUG60*                           | 49EB87JM362408           | 14HUG32A*                               | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87IUH6F*                           | 49EB87JM362408           | 14IUH32A*                               | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87JUH6F*                           | 49EB87JM362408           | 14JUH32A*                               | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87DUC6L*                           | 49EB87GF242008           | 14DUC32A*                               | HFB21             | HBB21          | HR21                    | —                         |                         |
| 87DUD6L*                           | 49EB87GF242008           | 14DUD32A*                               | HFB21             | HBB21          | HR21                    | —                         |                         |
| 87DUE6L*                           | 49EB87GF242008           | 14DUE32A*                               | HFB21             | HBB21          | HR21                    | —                         |                         |
| 87DUE6P*                           | 49EB87GF242008           | 14DUE32A*                               | HFB22             | HBB22          | HR612                   | —                         |                         |
| 87EUE6L*                           | 49EB87GF242008           | 14EUE32A*                               | HFB22             | HBB22          | HR612                   | —                         |                         |
| 87FUF6L*                           | 49EB87GF242008           | 14FUF32A*                               | HFB22             | HBB22          | HR612                   | —                         |                         |
| 87FUF6P*                           | 49EB87GF242008           | 14FUF32A*                               | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87GUG6L*                           | 49EB87GF242008           | 14GUG32A*                               | HFB22             | HBB22          | HR612                   | —                         |                         |
| 87GUG6P*                           | 49EB87GF242008           | 14GUG32A*                               | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87HUG6L*                           | 49EB87JF362408           | 14HUG32A*                               | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87HUG6P*                           | 49EB87JM362408           | 14HUG32A*                               | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87IUH6L*                           | 49EB87JM362408           | 14IUH32A*                               | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87JUH6L*                           | 49EB87JM362408           | 14JUH32A*                               | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87DUB6M*                           | 49EB87GB242008           | 14DUB32A*                               | —                 | —              | —                       | ED63A003                  |                         |
| 87DUC6M*                           | 49EB87GB242008           | 14DUC32A*                               | —                 | —              | —                       | ED63A010                  |                         |
| 87DUD6M*                           | 49EB87GB242008           | 14DUD32A*                               | —                 | —              | —                       | ED63A025                  |                         |
| 87DUE6M*                           | 49EB87GB242008           | 14DUE32A*                               | —                 | —              | —                       | ED63A030                  |                         |
| 87EUE6M*                           | 49EB87GB242008           | 14EUE32A*                               | —                 | —              | —                       | ED63A040                  |                         |
| 87FUF6M*                           | 49EB87GB242008           | 14FUF32A*                               | —                 | —              | —                       | ED63A050                  |                         |
| 87GUG6M*                           | 49EB87GB242008           | 14GUG32A*                               | —                 | —              | —                       | ED63A100                  |                         |
| 87HUG6M*                           | 49EB87IB362408           | 14HUG32A*                               | —                 | —              | —                       | ED63A100                  |                         |
| 87IUH6M*                           | 49EB87IB362408           | 14IUH32A*                               | —                 | —              | —                       | ED63A125                  |                         |
| 87JUH6M*                           | 49EB87JB362408           | 14JUH32A*                               | —                 | —              | —                       | FXD63A150L                |                         |

① Dual voltage coils not available in size 5-8 starters.

## Class 87 Pump Panel Enclosure Kits

## Selection

|                                                                                   | Ordering Information                                                                                                                                                                                                                                                                                                                                                                                        | Coil Table      |                |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             | 60Hz Voltage    | Letter         |
|  | <ul style="list-style-type: none"> <li>▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.</li> <li>▶ Refer to Class 87 section of catalog for pump panel ratings and other details.</li> <li>▶ Handle mechanism, power wire, mounting panel, reset assembly and instruction guide are included with the enclosure kit.</li> </ul> | 24              | J              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             | 120             | F              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             | 110–120/220–240 | A <sup>①</sup> |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             | 200–208         | D              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             | 220–240         | G              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             | 220–240/440–480 | C <sup>①</sup> |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             | 277             | L              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             | 440–480         | H              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             | 550–600         | E              |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                |

## Pump Panels with Bimetal Overload Relay Class 87

| To Field Assemble This Pump Panel: | Order these components   |                                     |                   |                |                         |                           | Enclosure List Price \$ |
|------------------------------------|--------------------------|-------------------------------------|-------------------|----------------|-------------------------|---------------------------|-------------------------|
|                                    | Enclosure Catalog Number | Starter with Bimetal Overload Relay | Disconnect Switch | Fuse Load Base | Class R Rejection Clips | Motor Circuit Interrupter |                         |
| 87DAE6F*                           | 49EB87GF242008           | 14DP32A*81                          | HFB612            | HBB612         | HR612                   | —                         |                         |
| 87DAE60*                           | 49EB87GF242008           | 14DP32A*81                          | HFB62             | HBB62          | HR62                    | —                         |                         |
| 87EAF6F*                           | 49EB87GF242008           | 14EP32A*81                          | HFB612            | HBB612         | HR612                   | —                         |                         |
| 87EAF60*                           | 49EB87GF242008           | 14EP32A*81                          | HFB62             | HBB62          | HR62                    | —                         |                         |
| 87FAJ6F*                           | 49EB87GF242008           | 14FP32A*81                          | HFB62             | HBB62          | HR62                    | —                         |                         |
| 87FAJ60*                           | 49EB87GF242008           | 14FP32A*81                          | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87GAK6F*                           | 49EB87GF242008           | 14GP32A*81                          | HFB62             | HBB62          | HR62                    | —                         |                         |
| 87GAK60*                           | 49EB87GF242008           | 14GP32A*81                          | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87HAN6F*                           | 49EB87JF362408           | 14HP32A*81                          | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87HAN60*                           | 49EB87JM362408           | 14HP32A*81                          | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87IAP6F*                           | 49EB87JM362408           | 14IP32A*81                          | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87JAR6F*                           | 49EB87JM362408           | 14JG32A*81                          | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87DAE6L*                           | 49EB87GF242008           | 14DP32A*81                          | HFB21             | HBB21          | HR21                    | —                         |                         |
| 87DAE6P*                           | 49EB87GF242008           | 14DP32A*81                          | HFB22             | HBB22          | HR612                   | —                         |                         |
| 87EAG6L*                           | 49EB87GF242008           | 14EP32A*81                          | HFB22             | HBB22          | HR612                   | —                         |                         |
| 87FAJ6L*                           | 49EB87GF242008           | 14FP32A*81                          | HFB22             | HBB22          | HR612                   | —                         |                         |
| 87FAJ6P*                           | 49EB87GF242008           | 14FP32A*81                          | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87GAL6L*                           | 49EB87GF242008           | 14GP32A*81                          | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87HAN6L*                           | 49EB87JF362408           | 14HP32A*81                          | HFB63             | HBB63          | HR63                    | —                         |                         |
| 87HAN6P*                           | 49EB87JM362408           | 14HP32A*81                          | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87IAP6L*                           | 49EB87JM362408           | 14IP32A*81                          | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87JAR6L*                           | 49EB87JM362408           | 14JG32A*81                          | MCS620R           | FCK620         | SSRK34                  | —                         |                         |
| 87DAA6M*                           | 49EB87GB242008           | 14DP32A*81                          | —                 | —              | —                       | ED63A003                  |                         |
| 87DAB6M*                           | 49EB87GB242008           | 14DP32A*81                          | —                 | —              | —                       | ED63A010                  |                         |
| 87DAD6M*                           | 49EB87GB242008           | 14DP32A*81                          | —                 | —              | —                       | ED63A025                  |                         |
| 87DAE6M*                           | 49EB87GB242008           | 14DP32A*81                          | —                 | —              | —                       | ED63A030                  |                         |
| 87EAF6M*                           | 49EB87GB242008           | 14EP32A*81                          | —                 | —              | —                       | ED63A040                  |                         |
| 87EAG6M*                           | 49EB87GB242008           | 14EP32A*81                          | —                 | —              | —                       | ED63A050                  |                         |
| 87FAH6M*                           | 49EB87GB242008           | 14FP32A*81                          | —                 | —              | —                       | ED63A040                  |                         |
| 87FAJ6M*                           | 49EB87GB242008           | 14FP32A*81                          | —                 | —              | —                       | ED63A050                  |                         |
| 87GAK6M*                           | 49EB87GB242008           | 14GP32A*81                          | —                 | —              | —                       | ED63A050                  |                         |
| 87GAL6M*                           | 49EB87GB242008           | 14GP32A*81                          | —                 | —              | —                       | ED63A100                  |                         |
| 87HAN6M*                           | 49EB87IB362408           | 14HP32A*81                          | —                 | —              | —                       | ED63A100                  |                         |
| 87IAP6M*                           | 49EB87IB362408           | 14IP32A*81                          | —                 | —              | —                       | ED63A125                  |                         |
| 87JAR6M*                           | 49EB87JB362408           | 14JG32A*81                          | —                 | —              | —                       | FXD63A150L                |                         |

① Dual voltage coils not available in size 5-8 starters.

② For NO/NC SPDT contact on overload, replace "81" with "91". "81" will give a NC contact.



Selection

Ordering Information

- All modifications will consist of Siemens standard components as available. Standard equipment dimensions and enclosure construction may not apply when certain modifications and special features are added.

Pilot Devices

| Description       | Modification                                   | Class                                                                   | Enclosure Type | Modification Code | List Price \$ |
|-------------------|------------------------------------------------|-------------------------------------------------------------------------|----------------|-------------------|---------------|
| Push Buttons      | Start, Stop                                    | 14, 17, 18, 36, 37, 40, 83, 84, CLM, CM, LC, LE                         | All            | A1                | ⑤             |
|                   | Forward, Reverse, Stop                         | 22, 25, 26, 43                                                          | All            | A2                |               |
|                   | High, Low, Stop                                | 30, 32                                                                  | All            |                   |               |
|                   | E-Stop                                         | 14, 17, 18, 22, 25, 26, 30, 32, 36, 37, 40, 43                          | All            | ES                |               |
| Selector Switches | Hand-Off-Auto                                  | 14, 17, 18, 36, 37, 40, 83, 84, LC, LE                                  | All            | A3                | ⑤             |
|                   |                                                | CM, CLM                                                                 | All            | A3                |               |
|                   | For 24 volt HOA control, 20 Amp contactor only | CM, CLM                                                                 | 1              | EM                |               |
|                   | Off-On                                         | 14, 17, 18, 22, 25, 26, 30, 32, 36, 37, 40, 43, 83, 84, CLM, CM, LC, LE | All            | A4                | ⑤             |
|                   | Auto-Off                                       | 14, 17, 18, 40, 83, 84, CM, CLM, LC, LE                                 | All            | A6                | ⑤             |
|                   | Forward-Off-Reverse                            | 22, 25, 26, 43                                                          | All            | A5                |               |
|                   | High-Off-Low                                   | 30, 32                                                                  | All            |                   |               |
|                   | Hand-Off-Auto (Keyed)                          | 14, 17, 18, 36, 37, 40, 83, 84, LC, LE, CLM, CM                         | All            | A9                | ⑤             |
|                   | Auto-Off-Low-High                              | 30, 32                                                                  | All            | A0                |               |

Pilot Lights

| Class                                           | Enclosure Type | Lens Color → | Red                 | Green               | Red | Green | Red | Green | Amber      | White            | Red Push-To-Test    | Green Push-To-Test  | Green Push-To-Test | LED Bulb Upgrade |
|-------------------------------------------------|----------------|--------------|---------------------|---------------------|-----|-------|-----|-------|------------|------------------|---------------------|---------------------|--------------------|------------------|
|                                                 |                | Legend→      | On For/Rev Low/High | On For/Rev Low/High | Run | Run   | Off | Off   | OL Tripped | Control Power On | On For/Rev Low/High | On For/Rev Low/High | Off                |                  |
|                                                 |                | Mod Code →   | FA                  | FB                  | FC  | FD    | FJ  | FK    | FL④        | FW               | FS                  | FT                  | FU                 | FE①              |
| 14, 40, 17, 18, 36, 37, 87, 88, LC, LE, CLM, CM | All            |              |                     |                     |     |       |     |       |            |                  |                     |                     |                    |                  |
| 22, 25, 26, 30, 32, 43, 83, 84                  | All            |              |                     |                     | ③   | ③     |     |       |            |                  |                     |                     |                    |                  |

Coil Options

| Class 14, 17, 18, 22, 25, 26, 30, 32, 40, 43, 83⑤, 84⑤, 87, 88                                     |                                                                                      |                                           |                                 |       |   |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------|-------|---|
| Volts 60 HZ                                                                                        | Volts 50 HZ                                                                          | Coil Letter Change                        | Controller Size — List Price \$ |       |   |
|                                                                                                    |                                                                                      |                                           | 00–2½                           | 3, 3½ | 4 |
| 24<br>120<br>110–120/220–240<br>200–208<br>220–240<br>277<br>220–240/440–480<br>440–480<br>575–600 | 24<br>110<br>110/190–220<br>—<br>190–220<br>240<br>190–220/380–440<br>380–440<br>550 | J<br>F<br>A<br>D<br>G<br>L<br>C<br>H<br>E |                                 |       |   |
| DC Coil⑥                                                                                           | 24V<br>48V<br>125V<br>250V                                                           | S⑦<br>U<br>V<br>W                         |                                 |       |   |

| AC (50–60 HZ) or DC                                                                                  | Coil Letter Change                        | Controller Size 4 (Vacuum Only)<br>Size 5 & 6 (ALL) |
|------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------|
| 23–26V<br>42–48V<br>110–127V<br>200–220V<br>220–240V<br>240–277V<br>380–420V<br>440–480V<br>575–600V | J<br>U<br>F<br>D<br>G<br>L<br>K<br>H<br>E |                                                     |

① Pilot lights are transformer type as standard. For LED type bulbs, order suffix FE in addition to the standard device suffix(es). For example, to order red “ON” and green “OFF” pilot lights with LED bulbs, order FA, FK and FE.

② DC coils include 1 NC, late break aux. contact. This aux. contact takes up one side of the starter (00–4 only).

③ Price x 2 for Classes 22, 25, 26, 30, 32, 43, 83, 84.

④ Bimetal OL - Size 00 - 2 1/2 available. Solid-state OL - Size 00 - 4, 7 & 8 available.

⑤ For Class 83, 84 two devices are provided. Price x 2.

⑥ For Class 83, 84 standard enclosure (92) alternating relay available in 24V or 120V control only.

⑦ S coil is not available for size 4 contactors or starters.

⑧ Class 83 and 84 only.

## Selection

| Ordering Information                              | Transformer Table |                 |        |
|---------------------------------------------------|-------------------|-----------------|--------|
| ► Replace (*) with letter from Transformer Table. | Primary Volts     | Secondary Volts | Letter |
|                                                   | 120               | 24              | B      |
|                                                   | 208               | 24              | S      |
|                                                   | 208               | 120             | T      |
|                                                   | 240               | 24              | J      |
|                                                   | 240               | 120             | F      |
|                                                   | 277               | 24              | N      |
|                                                   | 277               | 120             | P      |
|                                                   | 380               | 110             | U      |
|                                                   | 415               | 100             | W      |
|                                                   | 480               | 240             | R      |
|                                                   | 480/240           | 24              | D      |
|                                                   | 480/240           | 120             | A      |
|                                                   | 600               | 24              | E      |
|                                                   | 600               | 120             | C      |

Control Power Transformers<sup>②</sup>

| Description                                              | Modification Code | Product Class                                                                                   | Enclosure Type       | 20–60 | 100 | —     | 200 | 300–400 | — | — | ← Lighting & Heating Ratings (Amps) |
|----------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------|----------------------|-------|-----|-------|-----|---------|---|---|-------------------------------------|
|                                                          |                   |                                                                                                 |                      | 0–2½  | 3   | 3½, 4 | 5   | 6       | 7 | 8 |                                     |
| Standard Capacity <sup>①</sup> with 1-Secondary Fuse     | B*                | 14, 17, 18, 22, 25, 26, 30, 32, 40, 43, 83 <sup>③</sup> , 84 <sup>④</sup> , 87, LE              | 1, 3, 4, 12<br>7 & 9 |       | —   | —     | —   | —       | — | — | ← Motor Controller Size             |
| Standard Capacity with 2-Primary and 1-Secondary Fuse    | D*                | 14, 17, 18, 22, 25, 26, 30, 32, 40, 43, 83 <sup>③</sup> , 84 <sup>④</sup> , 87, LC, LE, CLM, CM | 1, 3, 4, 12<br>7 & 9 |       |     |       |     |         |   |   |                                     |
| 100VA Extra Capacity with 2-Primary and 1-Secondary Fuse | C*                | 14, 17, 18, 22, 25, 26, 30, 32, 40, 43, 83 <sup>③</sup> , 84 <sup>④</sup> , 87, LC, LE, CLM, CM | 1, 3, 4, 12<br>7 & 9 |       |     |       |     |         |   |   |                                     |
|                                                          |                   | 36, 37, 88                                                                                      | All                  |       |     |       |     |         | — | — |                                     |
| 150VA Extra Capacity with 2-Primary and 1-Secondary Fuse | C*1               | 14, 17, 18, 22, 25, 26, 30, 32, 40, 43, 83 <sup>③</sup> , 84 <sup>④</sup> , 87, LC, LE, CLM, CM | 1, 3, 4, 12          |       |     |       |     |         |   |   |                                     |
|                                                          |                   | 36, 37, 88                                                                                      | All                  |       |     |       |     |         | — | — |                                     |

Factory Assembled Fuse Clips—Class 25, 32, 84<sup>④</sup>

| Fuse Clip Amps | Volts | Modification Code | List Price \$ |
|----------------|-------|-------------------|---------------|
| 30             | 250   | 10                |               |
| 30             | 600   | 11                |               |
| 60             | 250   | 12                |               |
| 60             | 600   | 13                |               |
| 100            | 250   | 14                |               |
| 100            | 600   | 15                |               |
| 200            | 250   | 16                |               |
| 200            | 600   | 17                |               |
| 400            | 250   | 18                |               |
| 400            | 600   | 19                |               |
| 600            | 250   | 20                |               |
| 600            | 600   | 21                |               |
| 800            | 600   | 23                |               |
| 1200           | 600   | 24                |               |
| 1600           | 600   | 25                |               |

**Note:** Factory will furnish the same voltage coils as transformer secondary voltage (except with class 36,37).

① The standard control transformer supplied for starter sizes 0 through 2½ will be rated 45VA and have the appropriate secondary fuse. Primary fuses will not be supplied as standard. For primary fuse option select appropriate suffix from table.

② For 24VAC control a minimum of 100VA CPT required.

③ Price x 2 Class 83 and 84.

④ Class 84 Duplex Controllers require two fusible disconnects thus multiply the price adder by two.

## Selection

## Additional Auxiliary Contacts

| Class                                             | NO<br>Contacts | NC<br>Contacts | Modification<br>Code | Controller Size — List Price \$ |     |     |     |
|---------------------------------------------------|----------------|----------------|----------------------|---------------------------------|-----|-----|-----|
|                                                   |                |                |                      | 00-1 $\frac{3}{4}$              | 2-4 | 5-6 | 7-8 |
| 14, 17, 18, 40, 83 <sup>③</sup> , 84 <sup>③</sup> | —              | 1              | G01                  |                                 |     | —   | —   |
|                                                   | —              | 2              | G02                  |                                 |     | —   | —   |
|                                                   | 1              | —              | G10                  |                                 |     | —   | —   |
|                                                   | 1              | 1              | G11                  |                                 |     | —   | —   |
|                                                   | 1              | 2              | G12                  |                                 |     | —   | —   |
|                                                   | 2              | —              | G20                  |                                 |     | —   | —   |
|                                                   | 2              | 1              | G21                  |                                 |     | —   | —   |
|                                                   | 2              | 2              | G22                  |                                 |     | —   | —   |
|                                                   | 2              | 3              | G23                  |                                 |     | —   | —   |
|                                                   | 3              | 1              | G31                  |                                 |     | —   | —   |
|                                                   | 3              | 2              | G32                  |                                 |     | —   | —   |
|                                                   | 3              | 3              | G33                  |                                 | —   | —   | —   |
|                                                   | 4              | —              | G40                  |                                 |     | —   | —   |
|                                                   | 4              | 1              | G41                  |                                 |     | —   | —   |
|                                                   | 4              | 2              | G42                  |                                 | —   | —   | —   |
|                                                   | 4              | 4              | G44                  |                                 | —   | —   | —   |
| 22, 25, 26, 43 &<br>30, 32 (2-winding)            | 5              | —              | G50                  |                                 |     | —   | —   |
|                                                   | 5              | 1              | G51                  |                                 | —   | —   | —   |
|                                                   | 5              | 3              | G53                  |                                 | —   | —   | —   |
|                                                   | 6              | —              | G60                  |                                 | —   | —   | —   |
|                                                   | 6              | 2              | G62                  |                                 | —   | —   | —   |
|                                                   | 7              | 1              | G71                  |                                 | —   | —   | —   |
| 30, 32<br>(1-winding)                             | 8              | —              | G80                  |                                 | —   | —   | —   |
|                                                   | —              | 2              | G02 <sup>①</sup>     |                                 |     | —   | —   |
|                                                   | 2              | —              | G20 <sup>①</sup>     |                                 |     | —   | —   |
|                                                   | 2              | 2              | G22 <sup>①</sup>     |                                 |     | —   | —   |
|                                                   | 4              | 0              | G40 <sup>①</sup>     |                                 |     | —   | —   |
|                                                   | 4              | 4              | G44 <sup>①</sup>     |                                 |     | —   | —   |
| LE, CLM, CM                                       | 6              | 2              | G62 <sup>①</sup>     |                                 |     | —   | —   |
|                                                   | 8              | 0              | G80 <sup>①</sup>     |                                 |     | —   | —   |
|                                                   | 0              | 2              | G02 <sup>①</sup>     | —                               |     | —   | —   |
|                                                   | 2              | —              | G20 <sup>①</sup>     | —                               |     | —   | —   |
|                                                   | 2              | 2              | G22 <sup>①</sup>     |                                 |     | —   | —   |
|                                                   | 4              | —              | G40 <sup>①</sup>     |                                 |     | —   | —   |
| LC                                                | 4              | 4              | G44 <sup>①</sup>     | —                               |     | —   | —   |
|                                                   | 6              | 2              | G62 <sup>①</sup>     | —                               |     | —   | —   |
|                                                   | 8              | —              | G80 <sup>①</sup>     | —                               |     | —   | —   |
|                                                   | 1              | 1              | G11                  |                                 | —   | —   | —   |
|                                                   | 0              | 1              | G01                  |                                 |     |     |     |
|                                                   | 1              | 0              | G10                  |                                 |     |     |     |
| LE, CLM, CM                                       | 1              | 1              | G11                  |                                 |     |     |     |
|                                                   | 0              | 2              | G02                  |                                 |     |     |     |
|                                                   | 2              | 0              | G20                  |                                 |     |     |     |
|                                                   | 0              | 2              | G02 <sup>①</sup>     |                                 | —   | —   | —   |
|                                                   | 2              | 0              | G20 <sup>①</sup>     |                                 | —   | —   | —   |
|                                                   | 2              | 2              | G22 <sup>①</sup>     |                                 | —   | —   | —   |

| Description                          | Class          | Modification<br>Code | Controller Size - Price Deduction \$ |                                   |   |                     |      |      |
|--------------------------------------|----------------|----------------------|--------------------------------------|-----------------------------------|---|---------------------|------|------|
|                                      |                |                      | 0, 1                                 | 1 $\frac{1}{4}$ - 2 $\frac{1}{2}$ | 3 | 3 $\frac{1}{2}$ , 4 | 5, 6 | 7, 8 |
| Omit Overload Relay and Reset Button | 17, 18, 25, 26 | EX1                  |                                      |                                   |   |                     |      |      |

① Auxiliary contacts will be added evenly across contactors. (i.e. Class 22, G02 suffix will add 2 NC contacts (one per contactor).

② Double the price addition for Class 30 and 32.

③ For class 83 and 84 contacts will be added to both starters. Price x 2.

## Selection

## Control Options

| Description                                                  | Class                                                  | Enclosure Type  | Modification Code                                                                           | List Price \$ |
|--------------------------------------------------------------|--------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------|---------------|
| Lighting Control Modules (does not include pilot devices)    | CLM 20 Amp only                                        | All             | 2W (2-wire control module)<br>3W (3-wire control module)<br>3WS (Start/Stop control module) |               |
| Surge Suppression for 120V AC Coil <sup>②</sup>              | 14, 17, 18, 22, 25, 26, 30, 32, 36, 37, 83, 84, 87, 88 | All             | SS                                                                                          |               |
| Disconnect Switch Interlock 2 NO/2 NC DPDT                   | 17, 25, 32, 37, 84, CM, LE                             | 1, 3, 4, 4X, 12 | GY                                                                                          |               |
| Motor Circuit Protector Interlock NO/NC SPDT                 | 18, 26, 32, 37, 84, CM, LE                             | All             | GY                                                                                          |               |
| Lightning Arrestor                                           | All                                                    | All             | L                                                                                           |               |
| Circuit Breaker Shunt Trip                                   | 18, 26, 32, 37, 84, 87, 88, CM, LE                     | All             | L6                                                                                          |               |
| Circuit Breaker Undervoltage Trip                            | 18, 26, 32, 37, 84, 87, 88, CM, LE                     | All             | L7                                                                                          |               |
| Circuit Breaker Alarm Switch Trip                            | 18, 26, 32, 37, 84, 87, 88, CM, LE                     | All             | L8                                                                                          |               |
| Ground Lug — 1 Conductor                                     | All                                                    | All             | L10                                                                                         |               |
| Control Circuit Fuse and Holder (Transformer Primary Fusing) | All                                                    | All             | F1 (1 fuse)<br>F2 (2 fuses)                                                                 |               |
| Control Circuit Circuit Breaker Internally Operated          | All                                                    | All             | F4                                                                                          |               |
| Space Heater (120V separate control)                         | All                                                    | All             | SH                                                                                          |               |
| Space Heater with Thermostat (120V separate control)         | All                                                    | All             | ST                                                                                          |               |
| Surge Capacitor                                              | 87, 88                                                 | All             | SC                                                                                          |               |
| Alarm Package (includes horn, light, relay & push-button)    | 83, 84, 87, 88                                         | All             | M7                                                                                          |               |
| Backspin Protection                                          | 87, 88                                                 | All             | T5                                                                                          |               |
| Minimum Run Timer 0.2 sec. - 3 mins.                         | 87, 88                                                 | All             | T6                                                                                          |               |
| Blown Control Fuse Indicator Light                           | 17, 25, 32, 37, 84, 87, 88, CM, LC, LE                 | All             | L11                                                                                         |               |
| Single Phase 120VAC Combination Starter                      | 17, 18, 25, 26                                         | All             | SP1                                                                                         |               |
| Single Phase 240VAC Combination Starter                      | 17, 18, 25, 26                                         | All             | SP2                                                                                         |               |

## Reversing Options

| Description                                   | Class  | Modification Code | Controller Size —List Price \$ |   |    |   |    |   |    |   |   |
|-----------------------------------------------|--------|-------------------|--------------------------------|---|----|---|----|---|----|---|---|
|                                               |        |                   | 0                              | 1 | 1¼ | 2 | 2½ | 3 | 3½ | 4 | 5 |
| Reversing in one speed only 2 speed 1 winding | 30, 32 | R6                |                                |   |    |   |    |   |    |   | — |
| Reversing in one speed only 2 speed 2 winding |        | R7                |                                |   |    |   |    |   |    |   | — |
| Reversing in both speeds 2 speed 1 winding    |        | R8                |                                |   |    |   |    |   |    |   | — |
| Reversing in both speeds 2 speed 2 winding    |        | R9                |                                |   |    |   |    |   |    |   | — |
| Reversing for Reduced Voltage                 | 36, 37 | R                 |                                |   |    |   |    |   |    |   |   |

Motor Management with PROFIBUS DP Communications<sup>③</sup>

| Description                                        | Class                  | Enclosure Type | Modification Code | List Price |
|----------------------------------------------------|------------------------|----------------|-------------------|------------|
| SIMOCODE pro C With 0.3-3A Current Module          | 14, 17, 18, 22, 25, 26 | All            | MC1               |            |
| SIMOCODE pro C With 2.4-25A Current Module         |                        |                | MC2               |            |
| SIMOCODE pro C With 10-100A Current Module         |                        |                | MC3               |            |
| SIMOCODE pro C With 20-200A Current Module         |                        |                | MC4               |            |
| SIMOCODE pro C With 63-630A Current Module         |                        |                | MC5               |            |
| SIMOCODE pro V With 0.3-3A Current/Voltage Module  |                        |                | MV1               |            |
| SIMOCODE pro V With 2.4-25A Current/Voltage Module |                        |                | MV2               |            |
| SIMOCODE pro V With 10-100A Current/Voltage Module |                        |                | MV3               |            |
| SIMOCODE pro V With 20-200A Current/Voltage Module |                        |                | MV4               |            |
| SIMOCODE pro V With 63-630A Current/Voltage Module |                        |                | MV5               |            |
| Factory Parameterization of SIMOCODE               |                        |                | MM0               |            |

| Electrically Held to Mechanically Held Conversion Modules                           | Class | Enclosure type    | Contactor Size (Amp) | Description                                                                                                            | Modification Code                      |
|-------------------------------------------------------------------------------------|-------|-------------------|----------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|  | LC    | Open, 1, 12, 4/4X | 30                   | 2-wire, 24VAC<br>2-wire, 110-120VAC<br>2-wire, 200-277VAC<br>3-wire, 24VAC<br>3-wire, 110-120VAC<br>3-wire, 200-277VAC | 2W1<br>2W2<br>2W3<br>3W1<br>3W2<br>3W3 |

<sup>①</sup> Supplied as NEMA 12, field convertible to NEMA 3R.  
<sup>②</sup> Surge Suppression for NEMA sizes 5 – 8 are supplied internal with the coil.

<sup>③</sup> A CPT must also be ordered to power the motor management device. Motor management may be ordered with other product classes as specials.

## Selection

## Control Relays

| Description                                                        | Class           | Enclosure Type    | Modification Code | List Price \$ |
|--------------------------------------------------------------------|-----------------|-------------------|-------------------|---------------|
| Control Relay                                                      | All             | 1, 3, 4, 7, 9, 12 | R40               |               |
| 4-Poles Max                                                        |                 |                   | R22               |               |
|                                                                    |                 |                   | R04               |               |
| Under/Over Voltage, Phase Failure, Phase Sequence, Phase Unbalance | All             | All               | R1                |               |
| Ground Fault Relay                                                 |                 | All               | R5                |               |
| Electronic On Delay Relay (.15s–100h) 24V/120V                     |                 | 1, 3, 4, 7, 9, 12 | T1                |               |
| Electronic On Delay Relay (.15s–100h) 24V/240V <sup>①</sup>        |                 |                   | T2                |               |
| Electronic Off Delay Relay (.15s–100s) 120V                        |                 |                   | T3                |               |
| Electronic Off Delay Relay (.15s–100s) 240V <sup>①</sup>           |                 |                   | T4                |               |
| 24 hour time clock                                                 | LC, LE, CLM, CM | All               | T7                |               |
| 24 hour time clock with day omission                               |                 |                   | T8                |               |
| 7 day time clock                                                   |                 |                   | T9                |               |
| Compelling Relay                                                   | 30, 32          | 1, 4, 12          | A6                |               |
| Acceleration Control                                               |                 |                   | A7                |               |
| Deceleration Control                                               |                 |                   | A8                |               |

## Meters—Mounted on Enclosure

| Description                                | Class                                                                                      | Enclosure Type  | Modification Code | List <sup>②</sup> Price \$ |
|--------------------------------------------|--------------------------------------------------------------------------------------------|-----------------|-------------------|----------------------------|
| Ammeter (includes a C.T. if necessary)     | 14, 17, 18, 22, 25, 26, 30 <sup>⑤</sup> , 32 <sup>⑤</sup> , 36, 37, 40, 43, 83, 84, 87, 88 | 1, 3, 4, 4X, 12 | M1                |                            |
| Ammeter and Switch (3-Phase with 3 C.T.'s) |                                                                                            | 1, 12           | M2                |                            |
| Voltmeter                                  |                                                                                            | 1, 3, 4, 4X, 12 | M3                |                            |
| Voltmeter and Switch (3-Phase)             |                                                                                            | 1, 12           | M4                |                            |
| Elapsed Time Meter <sup>③</sup>            |                                                                                            | 1, 3, 4, 4X, 12 | M5                |                            |

## Function Identification Plates

| Description                                              | Class | Modification Code | List Price \$ |
|----------------------------------------------------------|-------|-------------------|---------------|
| Function identification plate, with marking as specified | All   | N1                |               |

## Terminal Blocks

| Description      | Class | Modification Code | List Price \$ |
|------------------|-------|-------------------|---------------|
| 3 Point Terminal | All   | TC3 <sup>④</sup>  |               |
| 6 Point Terminal |       | TC6 <sup>④</sup>  |               |
| 9 Point Terminal |       | TC9 <sup>④</sup>  |               |

## Special Ratings

| Description             | Class                      | Modification Code | List Price \$ |
|-------------------------|----------------------------|-------------------|---------------|
| Service Entrance Rating | 17, 18, 25, 26, 32, 37, 84 | N3                |               |

## Drawings

| Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Class | Catalog Number | List Price \$ |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------|---------------|
| Approval/submittal and as-built drawings for factory modified product may be ordered. The drawing set includes an enclosure outline, a panel layout and a schematic. When entering the order, use the line item notes to reference a product and modifications or an existing order that the drawings are to be engineered for. Specify the contact information and an email address in the ship to address field. Attach any reference drawings to the order or forward to National Customer Support. Once completed, the drawing set will emailed. | All   | CONTROLDRAWING |               |

① Not available on Class 36, 37.

② Price x 2 Class 83 and 84.

③ ETM available with 120V coil only.

④ For terminal point more than 9 terminals use additional suffixes. Max 3 suffixes can be selected.

⑤ Class 30 and 32 can be modified with only an elapsed time meter. No other meters apply to class 30 or 32.

## Selection of Heater Elements for Overload Relays

## General

**Use only when motor full load current is not known.** Motor amps will vary depending on the type and manufacturer of the motor. These average values, for motors with service factor of 1.15, are to be used only as a guide. The formulas at the bottom of the page may be used to obtain approximate amps for other motors.

**Note:** RPM shown for 60 cycle motors. For 50 cycle motors, multiply RPM by .83.

**CAUTION:** Actual motor amps may be higher or lower than the values listed below for a particular motor. For more reliable motor protection, select heater elements by using the full load motor nameplate amps.

**Single Phase** motor full load amps of the same horsepower, voltage and speed vary over wide ranges. The following table conforms with table 430.148 of the NEC.

## 1-Phase

| Hp    | Full Load Current (60Hz) |           |
|-------|--------------------------|-----------|
|       | 115 Volts                | 230 Volts |
| 1/8   | 4.4                      | 2.2       |
| 1/4   | 5.8                      | 2.9       |
| 1/2   | 7.2                      | 3.6       |
| 3/4   | 9.8                      | 4.9       |
| 1     | 13.8                     | 6.9       |
| 1 1/2 | 16                       | 8         |
| 2     | 20                       | 10        |
| 3     | 24                       | 12        |
| 5     | 34                       | 17        |
| 7 1/2 | 56                       | 28        |
| 10    | 80                       | 40        |
| 10    | 100                      | 50        |

## 3-Phase

| Hp    | Syn Speed RPM | Full Load Current (60Hz) |           |           |           | 50 Hz     |
|-------|---------------|--------------------------|-----------|-----------|-----------|-----------|
|       |               | 200 Volts                | 230 Volts | 460 Volts | 575 Volts | 380 Volts |
| 1/4   | 1800          | 1.09                     | 0.95      | 0.48      | 0.38      | 0.55      |
|       | 1200          | 1.61                     | 1.40      | 0.70      | 0.56      | 0.81      |
|       | 900           | 1.84                     | 1.60      | 0.80      | 0.64      | 0.93      |
| 1/2   | 1800          | 1.37                     | 1.19      | 0.60      | 0.48      | 0.64      |
|       | 1200          | 1.83                     | 1.59      | 0.80      | 0.64      | 0.92      |
|       | 900           | 2.07                     | 1.80      | 0.90      | 0.72      | 1.04      |
| 3/4   | 1800          | 1.98                     | 1.72      | 0.86      | 0.69      | 0.99      |
|       | 1200          | 2.47                     | 2.15      | 1.08      | 0.86      | 1.24      |
|       | 900           | 2.74                     | 2.38      | 1.19      | 0.95      | 1.38      |
| 1     | 1800          | 2.83                     | 2.46      | 1.23      | 0.98      | 1.42      |
|       | 1200          | 3.36                     | 2.82      | 1.46      | 1.17      | —         |
|       | 900           | 3.75                     | 3.26      | 1.63      | 1.30      | 1.88      |
| 1 1/2 | 1800          | 3.22                     | 2.80      | 1.40      | 1.12      | 1.70      |
|       | 1200          | 4.09                     | 3.56      | 1.78      | 1.42      | 2.06      |
|       | 900           | 4.32                     | 3.76      | 1.88      | 1.50      | 2.28      |
| 2     | 1800          | 4.95                     | 4.30      | 2.15      | 1.72      | 2.60      |
|       | 1200          | 5.01                     | 4.36      | 2.18      | 1.74      | 2.69      |
|       | 900           | 5.59                     | 4.86      | 2.43      | 1.94      | 2.94      |
| 3     | 1800          | 6.07                     | 5.28      | 2.64      | 2.11      | 3.20      |
|       | 1200          | 6.44                     | 5.60      | 2.80      | 2.24      | 3.39      |
|       | 900           | 6.44                     | 5.60      | 2.80      | 2.24      | 3.39      |
| 4     | 1800          | 7.36                     | 6.40      | 3.20      | 2.56      | 3.84      |
|       | 1200          | 7.87                     | 6.84      | 3.42      | 2.74      | 4.14      |
|       | 900           | 9.09                     | 7.90      | 3.95      | 3.16      | 4.77      |
| 5     | 1800          | 9.59                     | 8.34      | 4.17      | 3.34      | 5.02      |
|       | 1200          | 10.8                     | 9.40      | 4.70      | 3.76      | 5.70      |
|       | 900           | 11.7                     | 10.2      | 5.12      | 4.10      | 6.20      |
| 7 1/2 | 1800          | 13.1                     | 11.4      | 5.70      | 4.55      | 6.80      |
|       | 1200          | 15.5                     | 13.5      | 5.76      | 5.41      | 8.20      |
|       | 900           | 16.6                     | 14.4      | 7.21      | 5.78      | 8.74      |
| 10    | 1800          | 18.2                     | 15.8      | 7.91      | 6.32      | 9.59      |
|       | 1200          | 18.3                     | 15.9      | 7.92      | 6.33      | 9.60      |
|       | 900           | 22.4                     | 19.5      | 9.79      | 7.81      | 11.50     |
| 15    | 1800          | 24.7                     | 21.5      | 10.7      | 8.55      | 13.00     |
|       | 1200          | 25.1                     | 21.8      | 10.9      | 8.70      | 13.20     |
|       | 900           | 26.5                     | 23.0      | 11.5      | 9.19      | 13.90     |
| 20    | 1800          | 29.2                     | 25.4      | 12.7      | 10.1      | 15.40     |
|       | 1200          | 30.8                     | 25.8      | 13.4      | 10.7      | 16.30     |
|       | 900           | 32.2                     | 28.0      | 14.0      | 11.2      | 16.90     |
| 25    | 1800          | 35.1                     | 30.5      | 15.2      | 12.2      | 18.50     |
|       | 1200          | 41.9                     | 36.4      | 18.2      | 14.5      | 22.00     |
|       | 900           | 45.1                     | 39.2      | 19.6      | 15.7      | 23.70     |
| 30    | 1800          | 47.6                     | 41.4      | 20.7      | 16.5      | 25.00     |
|       | 1200          | 51.2                     | 44.5      | 22.2      | 17.8      | 26.90     |
|       | 900           | 58.0                     | 50.4      | 25.2      | 20.1      | 30.50     |
| 40    | 1800          | 58.9                     | 51.2      | 25.6      | 20.5      | 31.00     |
|       | 1200          | 60.7                     | 52.8      | 26.4      | 21.1      | 31.90     |
|       | 900           | 63.1                     | 54.9      | 27.4      | 21.9      | 33.20     |

## 3-Phase

| Hp  | Syn Speed RPM | Full Load Current (60Hz) |           |           |           | 50 Hz     |
|-----|---------------|--------------------------|-----------|-----------|-----------|-----------|
|     |               | 200 Volts                | 230 Volts | 460 Volts | 575 Volts | 380 Volts |
| 25  | 3600          | 69.9                     | 60.8      | 30.4      | 24.3      | 36.80     |
|     | 1800          | 74.5                     | 64.8      | 32.4      | 25.9      | 39.20     |
|     | 1200          | 75.4                     | 65.6      | 32.8      | 26.2      | 39.60     |
| 30  | 3600          | 77.4                     | 67.3      | 33.7      | 27.0      | 40.70     |
|     | 1800          | 84.8                     | 73.7      | 36.8      | 29.4      | —         |
|     | 1200          | 86.9                     | 75.6      | 37.8      | 30.2      | 45.70     |
| 40  | 3600          | 90.6                     | 78.8      | 39.4      | 31.5      | 47.60     |
|     | 1800          | 94.1                     | 81.8      | 40.9      | 32.7      | 49.50     |
|     | 1200          | 111                      | 96.4      | 48.2      | 38.5      | —         |
| 50  | 3600          | 116                      | 101       | 50.4      | 40.3      | 61.00     |
|     | 1800          | 117                      | 102       | 50.6      | 40.4      | 61.20     |
|     | 1200          | 121                      | 105       | 52.2      | 41.7      | 63.20     |
| 60  | 3600          | 138                      | 120       | 60.1      | 48.2      | —         |
|     | 1800          | 143                      | 124       | 62.2      | 49.7      | 75.20     |
|     | 1200          | 145                      | 126       | 63.0      | 50.4      | 76.20     |
| 75  | 3600          | 150                      | 130       | 65.0      | 52.0      | 78.50     |
|     | 1800          | 164                      | 143       | 71.7      | 57.3      | —         |
|     | 1200          | 171                      | 149       | 74.5      | 59.4      | 90.00     |
| 100 | 3600          | 173                      | 150       | 75.0      | 60.0      | 91.10     |
|     | 1800          | 177                      | 154       | 77.0      | 61.5      | 93.10     |
|     | 1200          | 206                      | 179       | 89.6      | 71.7      | —         |
| 125 | 3600          | 210                      | 183       | 91.6      | 73.2      | 111.00    |
|     | 1800          | 212                      | 184       | 92.0      | 73.5      | 112.00    |
|     | 1200          | 222                      | 193       | 96.5      | 77.5      | 117.00    |
| 150 | 3600          | 266                      | 231       | 115       | 92.2      | —         |
|     | 1800          | 271                      | 236       | 118       | 94.8      | 144.00    |
|     | 1200          | 275                      | 239       | 120       | 95.6      | 145.00    |
| 200 | 3600          | 290                      | 252       | 126       | 101       | 153.00    |
|     | 1800          | —                        | 292       | 146       | 116       | —         |
|     | 1200          | —                        | 293       | 147       | 117       | 177.00    |
| 250 | 3600          | —                        | 298       | 149       | 119       | 180.00    |
|     | 1800          | —                        | 305       | 153       | 122       | 186.00    |
|     | 1200          | —                        | 343       | 171       | 137       | —         |
| 300 | 3600          | —                        | 348       | 174       | 139       | 210.00    |
|     | 1800          | —                        | 350       | 174       | 139       | 210.00    |
|     | 1200          | —                        | 365       | 183       | 146       | 211.00    |
| 400 | 3600          | —                        | 458       | 229       | 184       | —         |
|     | 1800          | —                        | 452       | 226       | 181       | 274.00    |
|     | 1200          | —                        | 460       | 230       | 184       | 276.00    |
| 500 | 3600          | —                        | 482       | 241       | 193       | 279.00    |
|     | 1800          | —                        | 559       | 279       | 223       | —         |
|     | 1200          | —                        | 568       | 284       | 227       | 343.00    |
| 600 | 3600          | —                        | 573       | 287       | 229       | 345.00    |
|     | 1800          | —                        | 600       | 300       | 240       | 347.00    |
|     | 1200          | —                        | 278       | 339       | 271       | 392.00    |
| 800 | 3600          | —                        | 684       | 342       | 274       | 395.00    |
|     | 1800          | —                        | 896       | 448       | 358       | —         |

#### Formula—Approximate Full Load Amps for Other Motors

208 Volt Full Load Amp  $\approx$  230 Volt current  $\times$  110%  
 2-Phase FLA  $\approx$  0.866  $\times$  the 3-Phase FLA  
 2-Phase, 3-wire current in common wire  $\approx$  1.41  $\times$  that in the other 2 lines

25Hz 1500 RPM, amps  $\approx$  amps of 60Hz, 3600 RPM  
 25Hz 750 RPM, amps  $\approx$  amps of 60Hz, 1800 RPM  
 Service factor 1.0  $\approx$  amps  $\times$  0.9  
 50°C–55°C motor  $\approx$  amps  $\times$  0.9

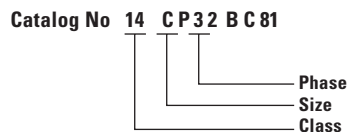


# Selection of Heater Elements for Overload Relays

## General

To Select Heater Catalog Number Use

- Product Class
- Controller Size
- Motor Amp
- Phase



1. Find heater table number below, using the Product Class, Controller Size and Phase. Heater table number is found in the column under the type of overload and phase.

2. Refer to the specified table and use the controller size and motor amps to select the heater catalog number.

**a.** If motor amps are not known, an approximate value may be found on the previous page. These values should be used with caution and only when motor amps are not available.

Heaters shown on the following pages provide a maximum trip rating of 125% of minimum motor amperes for 40°C motors (service factor 1.15). For other motors (service factor 1.0), select the next lower listed heater catalog number within the designated table which provides a maximum trip rating of approximately 115%.

Overload relays do not provide protection against short circuits. To ensure proper coordination with short circuit protective device, select heaters from the information packaged with the control device.

| Class                                                       | Description                                                                          | Size or Amperage | Controller Size Letter | Heater Table Number               |     |                                   |     |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------|------------------------|-----------------------------------|-----|-----------------------------------|-----|
|                                                             |                                                                                      |                  |                        | Bimetal Standard Trip (Class 20)  |     | Bimetal Quick Trip (Class 10)     |     |
|                                                             |                                                                                      |                  |                        | Compensated E Heaters Green Reset |     | Compensated K Heaters Green Reset |     |
|                                                             |                                                                                      |                  |                        | 1Ph                               | 3Ph | 1Ph                               | 3Ph |
| SMF                                                         | Manual                                                                               | All              | —                      | See Page 9/126                    |     |                                   |     |
|                                                             | Magnetic                                                                             |                  |                        |                                   |     |                                   |     |
| 14, 22                                                      | Non-reversing, Reversing                                                             | 00-4             | <b>B-J</b>             | 213                               | 233 | 313                               | 332 |
| 17, 18<br>25, 26<br>30, 32 <sup>①</sup><br>83, 84<br>87, 89 | Combination Reversing Combination Multi Speed Pump Controllers Motor Control Centers | 0-4              | <b>C-J</b>             | —                                 | 233 | —                                 | 332 |
| 48                                                          | Panel Mounted Overload Relay                                                         | 25-180A          | <b>D-J</b>             | 216                               | 238 | 316                               | 335 |

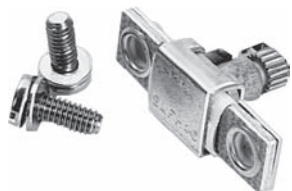
ESP200 starters do not require heater elements.

**① Overload Relay Selection Multi-Speed**

Each speed requires a separate set of overloads. The adjustment range must be selected on the basis of the full-load current for each particular speed.

## Heater Elements, Class SMF

## General



Heater Elements Class SMF

## Ordering Information

- Determine number of heater elements required from Table A.
- Determine motor full load current and service factor.  
**NOTE: If motor amps are unknown, an approximate value may be found on page 9/124. These values should be used with caution and only when motor amps are not available.**
- If the motor and controller are in the same ambient temperature:
  - For 1.15 to 1.25 service factor motors use 100% of motor full load current for heater element selection.
  - For 1.0 service factor motors use 90% of motor full load current for heater element selection.
  - Heater elements are class 20.
- If the motor and controller are in different ambient temperatures multiply motor full load current by the multiplier in Table B. Use the resultant full load current for heater element selection.
- Select proper heater element from table below.
- All tables are based on the operation of the motor and controller in the same ambient temperature, 40°C (104°F) or less. Always be certain the correct heater element is installed in the starter before operating the motor.

| Heater Catalog Number | Motor Full-Load Current (Amps) | List Price \$ |
|-----------------------|--------------------------------|---------------|
| SMFH01                | 0.157–0.173                    |               |
| SMFH02                | 0.174–0.192                    |               |
| SMFH03                | 0.193–0.212                    |               |
| SMFH04                | 0.213–0.235                    |               |
| SMFH05                | 0.236–0.261                    |               |
| SMFH06                | 0.262–0.289                    |               |
| SMFH07                | 0.290–0.321                    |               |
| SMFH08                | 0.322–0.355                    |               |
| SMFH09                | 0.356–0.399                    |               |
| SMFH10                | 0.41–0.44                      |               |
| SMFH11                | 0.45–0.49                      |               |
| SMFH12                | 0.50–0.53                      |               |
| SMFH13                | 0.54–0.58                      |               |
| SMFH14                | 0.59–0.65                      |               |
| SMFH15                | 0.66–0.71                      |               |
| SMFH16                | 0.72–0.78                      |               |
| SMFH17                | 0.79–0.85                      |               |
| SMFH18                | 0.86–0.96                      |               |
| SMFH19                | 0.97–1.04                      |               |
| SMFH20                | 1.05–1.16                      |               |
| SMFH21                | 1.17–1.25                      |               |
| SMFH22                | 1.30–1.39                      |               |
| SMFH23                | 1.38–1.54                      |               |
| SMFH24                | 1.48–1.63                      |               |
| SMFH25                | 1.57–1.75                      |               |
| SMFH26                | 1.66–1.86                      |               |

**Table A**  
Number of Heater Elements

| Device                                                   | Number of Heater Elements | Notes                                                                    |
|----------------------------------------------------------|---------------------------|--------------------------------------------------------------------------|
| SMFF*1<br>SMFF*2<br>SMFF*3<br>SMFF*4<br>SMFF*5<br>SMFF*6 | 1                         | All single pole and two pole SMF starters require only 1 Heater Element. |
| SMFF*22<br>SMFF*44                                       | 2                         | Duplex Unit. One Heater Element per starter.                             |
| SMFF*11<br>SMFF*22                                       | 2                         | Two Speed Starter. One Heater Element per speed.                         |

| Heater Catalog Number | Motor Full-Load Current (Amps) | List Price \$ |
|-----------------------|--------------------------------|---------------|
| SMFH27                | 1.80–1.99                      |               |
| SMFH28                | 1.96–2.15                      |               |
| SMFH29                | 2.16–2.38                      |               |
| SMFH30                | 2.39–2.75                      |               |
| SMFH31                | 2.76–2.84                      |               |
| SMFH32                | 2.85–3.06                      |               |
| SMFH33                | 3.07–3.45                      |               |
| SMFH34                | 3.46–3.70                      |               |
| SMFH35                | 3.71–4.07                      |               |
| SMFH36                | 4.08–4.32                      |               |
| SMFH37                | 4.33–4.90                      |               |
| SMFH38                | 4.91–5.35                      |               |
| SMFH39                | 5.36–5.85                      |               |
| SMFH40                | 5.86–6.41                      |               |
| SMFH41                | 6.42–6.79                      |               |
| SMFH42                | 6.80–7.57                      |               |
| SMFH43                | 7.58–8.15                      |               |
| SMFH44                | 8.16–8.98                      |               |
| SMFH45                | 8.99–9.67                      |               |
| SMFH46                | 9.68–9.95                      |               |
| SMFH47                | 9.96–10.8                      |               |
| SMFH48                | 10.9–12.1                      |               |
| SMFH49                | 12.2–13.1                      |               |
| SMFH50                | 13.2–13.9                      |               |
| SMFH51                | 14.0–15.0                      |               |
| SMFH52                | 15.1–16.0                      |               |

**Table B—Special Applications**  
Heater Element Selection

| Continuous Duty Motor Service Factor | Ambient Temperature of Motor |                                                     |                                                    |
|--------------------------------------|------------------------------|-----------------------------------------------------|----------------------------------------------------|
|                                      | Same as Controller Ambient   | Constant 10°C (18°F) Higher Than Controller Ambient | Constant 10°C (18°F) Lower Than Controller Ambient |
|                                      | Full Load Current Multiplier |                                                     |                                                    |
| 1.15 to 1.25                         | 1.0                          | 0.9                                                 | 1.05                                               |
| 1.0                                  | 0.9                          | 0.8                                                 | 0.95                                               |

## Full Load Motor Amps, Single Phase, Trip Class 20 – Tables 213, 216

## Selection

Table 213 for Class 14, 22 (1-Phase)

| Full Load Amps |           |            | Heater<br>Catalog No | List Price \$ |
|----------------|-----------|------------|----------------------|---------------|
| Size 00, 0, 1  | Size 1P   | Size 2, 2½ |                      |               |
| 0.37–0.40      | —         | —          | E3                   |               |
| 0.41–0.44      | 0.41–0.44 | —          | E4                   |               |
| 0.45–0.47      | 0.45–0.47 | —          | E5                   |               |
| 0.48–0.52      | 0.48–0.52 | —          | E6                   |               |
| 0.53–0.57      | 0.53–0.57 | —          | E7                   |               |
| 0.58–0.62      | 0.58–0.62 | —          | E8                   |               |
| 0.63–0.69      | 0.63–0.69 | —          | E9                   |               |
| 0.70–0.74      | 0.70–0.74 | —          | E11                  |               |
| 0.75–0.81      | 0.75–0.81 | —          | E12                  |               |
| 0.82–0.85      | 0.82–0.85 | —          | E13                  |               |
| 0.86–0.93      | 0.86–0.93 | —          | E14                  |               |
| 0.94–1.03      | 0.94–1.03 | —          | E16                  |               |
| 1.04–1.11      | 1.04–1.11 | —          | E17                  |               |
| 1.12–1.22      | 1.12–1.22 | —          | E18                  |               |
| 1.23–1.34      | 1.23–1.34 | —          | E23                  |               |
| 1.35–1.53      | 1.35–1.53 | —          | E24                  |               |
| 1.54–1.71      | 1.54–1.71 | —          | E26                  |               |
| 1.72–1.92      | 1.72–1.92 | —          | E27                  |               |
| 1.93–2.12      | 1.93–2.12 | —          | E28                  |               |
| 2.13–2.24      | 2.13–2.24 | —          | E29                  |               |
| 2.25–2.43      | 2.25–2.43 | —          | E31                  |               |
| 2.44–2.57      | 2.44–2.57 | —          | E32                  |               |
| 2.58–2.86      | 2.58–2.86 | —          | E33                  |               |
| 2.87–3.16      | 2.87–3.16 | —          | E34                  |               |
| 3.17–3.35      | 3.17–3.35 | —          | E36                  |               |
| 3.36–3.58      | 3.36–3.58 | —          | E37                  |               |
| 3.59–3.90      | 3.59–3.90 | —          | E38                  |               |
| 3.91–4.25      | 3.91–4.25 | —          | E39                  |               |
| 4.26–4.77      | 4.26–4.77 | —          | E41                  |               |
| 4.78–5.35      | 4.78–5.35 | —          | E42                  |               |
| 5.36–5.76      | 5.36–5.76 | —          | E44                  |               |
| 5.77–6.33      | 5.77–6.33 | —          | E46                  |               |
| 6.34–6.98      | 6.34–6.98 | —          | E47                  |               |
| 6.99–7.37      | 6.99–7.37 | —          | E48                  |               |
| 7.38–7.71      | 7.38–7.71 | —          | E49                  |               |
| 7.72–8.51      | 7.72–8.51 | —          | E50                  |               |
| 8.52–9.31      | 8.52–9.31 | —          | E51                  |               |
| 9.32–10.1      | 9.32–10.1 | —          | E52                  |               |
| 10.2–10.9      | 10.2–10.9 | —          | E53                  |               |
| 11.0–12.2      | 11.0–12.2 | —          | E54                  |               |
| 12.3–13.5      | 12.3–13.5 | —          | E55                  |               |
| 13.6–15.7      | 13.6–15.7 | —          | E56                  |               |
| 15.8–17.3      | 15.8–17.3 | 19.4–22.0  | E57                  |               |
| 17.4–19.9      | 17.4–19.9 | 22.1–23.5  | E60                  |               |
| 20.0–21.7      | 20.0–21.7 | 23.6–25.0  | E61                  |               |
| 21.8–23.4      | 21.8–23.4 | 25.1–27.0  | E62                  |               |
| 23.5–24.0      | 23.5–23.7 | 27.1–28.9  | E65                  |               |
| —              | 23.8–25.1 | 29.0–31.0  | E66                  |               |
| —              | 25.2–27.9 | 31.1–34.8  | E67                  |               |
| —              | 28.0–32.2 | 34.9–36.9  | E69                  |               |
| —              | 32.3–34.0 | 37.0–43.9  | E70                  |               |
| —              | —         | 44.0–46.0  | E72                  |               |
| —              | —         | 46.1–48.3  | E73                  |               |
| —              | —         | 48.4–55.0  | E74                  |               |
| —              | —         | 55.1–60.0  | E76                  |               |

Table 216 for Class 48

| Full Load Amps |            |             | Heater<br>Catalog No | List Price \$ |
|----------------|------------|-------------|----------------------|---------------|
| 48DA, 48GA     | 48HA       | 48JA        |                      |               |
| 0.34–0.36      | —          | —           | E3                   |               |
| 0.37–0.40      | —          | —           | E4                   |               |
| 0.41–0.43      | —          | —           | E5                   |               |
| 0.44–0.47      | —          | —           | E6                   |               |
| 0.48–0.51      | —          | —           | E7                   |               |
| 0.52–0.56      | —          | —           | E8                   |               |
| 0.57–0.62      | —          | —           | E9                   |               |
| 0.63–0.67      | —          | —           | E11                  |               |
| 0.68–0.73      | —          | —           | E12                  |               |
| 0.74–0.77      | —          | —           | E13                  |               |
| 0.78–0.84      | —          | —           | E14                  |               |
| 0.85–0.93      | —          | —           | E16                  |               |
| 0.94–1.00      | —          | —           | E17                  |               |
| 1.01–1.10      | —          | —           | E18                  |               |
| —              | —          | —           | E19                  |               |
| 1.11–1.21      | —          | —           | E23                  |               |
| 1.22–1.38      | —          | —           | E24                  |               |
| 1.39–1.54      | —          | —           | E26                  |               |
| 1.55–1.73      | —          | —           | E27                  |               |
| 1.74–1.91      | —          | —           | E28                  |               |
| 1.92–2.02      | —          | —           | E29                  |               |
| 2.03–2.19      | —          | —           | E31                  |               |
| 2.20–2.32      | —          | —           | E32                  |               |
| 2.33–2.58      | —          | —           | E33                  |               |
| 2.59–2.85      | —          | —           | E34                  |               |
| 2.86–3.02      | —          | —           | E36                  |               |
| 3.03–3.23      | —          | —           | E37                  |               |
| 3.24–3.52      | —          | —           | E38                  |               |
| 3.53–3.83      | —          | —           | E39                  |               |
| 3.84–4.30      | —          | —           | E41                  |               |
| 4.31–4.82      | —          | —           | E42                  |               |
| 4.83–5.19      | —          | —           | E44                  |               |
| 5.20–5.71      | —          | —           | E46                  |               |
| 5.72–6.29      | —          | —           | E47                  |               |
| 6.30–6.64      | —          | —           | E48                  |               |
| 6.65–6.95      | —          | —           | E49                  |               |
| 6.96–7.67      | —          | —           | E50                  |               |
| 7.68–8.39      | —          | —           | E51                  |               |
| 8.40–9.19      | —          | —           | E52                  |               |
| 9.20–9.94      | —          | —           | E53                  |               |
| 9.95–10.9      | —          | —           | E54                  |               |
| 11.0–12.2      | —          | —           | E55                  |               |
| 12.3–14.2      | —          | —           | E56                  |               |
| 14.3–15.6      | —          | —           | E57                  |               |
| —              | —          | —           | E59                  |               |
| 15.7–17.9      | —          | —           | E60                  |               |
| 18.0–19.6      | —          | —           | E61                  |               |
| 19.7–22.3      | —          | —           | E62                  |               |
| 22.4–24.0      | —          | —           | E65                  |               |
| 24.1–25.9      | —          | —           | E66                  |               |
| 26.0–29.5      | 27.1–30.0  | —           | E67                  |               |
| 29.6–32.5      | 30.1–33.2  | —           | E69                  |               |
| 32.6–33.5      | 33.3–35.7  | —           | E70                  |               |
| 33.6–36.9      | 35.8–39.4  | —           | E71                  |               |
| 37.0–39.2      | 39.5–43.4  | —           | E72                  |               |
| 39.3–43.1      | 43.5–46.9  | —           | E73                  |               |
| 43.2–47.4      | 47.0–51.5  | —           | E74                  |               |
| 47.5–50.0      | 51.6–57.0  | —           | E76                  |               |
| 50.1–55.2      | 57.1–62.8  | —           | E77                  |               |
| 55.3–60.0      | 62.9–69.1  | —           | E78                  |               |
| —              | 69.2–75.0  | —           | E79                  |               |
| —              | 75.1–83.3  | —           | E80                  |               |
| —              | —          | 50.0–55.9   | E88                  |               |
| —              | —          | 56.0–60.9   | E89                  |               |
| —              | —          | 61.0–65.9   | E91                  |               |
| —              | —          | 66.0–69.9   | E92                  |               |
| —              | —          | 70.0–75.9   | E93                  |               |
| —              | —          | 76.0–81.9   | E94                  |               |
| —              | 83.4–86.9  | 82.0–86.9   | E96                  |               |
| —              | 87.0–92.9  | 87.0–92.9   | E97                  |               |
| —              | 93.0–100.0 | 93.0–97.9   | E98                  |               |
| —              | —          | 98.0–107.9  | E99                  |               |
| —              | —          | 108.0–113.9 | E101                 |               |
| —              | —          | 114.0–125.0 | E102                 |               |
| —              | —          | 126.0–138.0 | E103                 |               |
| —              | —          | 139.0–153.0 | E104                 |               |
| —              | —          | 154.0–163.0 | E106                 |               |
| —              | —          | 164.0–180.0 | E107                 |               |

## Full Load Motor Amps, 3-Phase, Trip Class 20 – Tables 233, 238

## Selection

Table 233 for Class 14, 17, 18, 22, 25, 26, 30, 32, 83, 84, 87 (3-Phase)

| Full Load Amps |            |               |               |           | Heater<br>Catalog No | List Price \$ |
|----------------|------------|---------------|---------------|-----------|----------------------|---------------|
| Size 00, 0, 1  | Size 1 1/4 | Size 2, 2 1/2 | Size 3, 3 1/2 | Size 4    |                      |               |
| 0.38–0.40      | —          | —             | —             | —         | E6                   |               |
| 0.41–0.43      | —          | —             | —             | —         | E7                   |               |
| 0.44–0.48      | —          | —             | —             | —         | E8                   |               |
| 0.49–0.53      | —          | —             | —             | —         | E9                   |               |
| 0.54–0.57      | —          | —             | —             | —         | E11                  |               |
| 0.58–0.62      | —          | —             | —             | —         | E12                  |               |
| 0.63–0.66      | —          | —             | —             | —         | E13                  |               |
| 0.67–0.72      | —          | —             | —             | —         | E14                  |               |
| 0.73–0.80      | —          | —             | —             | —         | E16                  |               |
| 0.81–0.85      | —          | —             | —             | —         | E17                  |               |
| 0.86–0.92      | —          | —             | —             | —         | E18                  |               |
| 0.93–0.99      | —          | —             | —             | —         | E19                  |               |
| 1.00–1.08      | —          | —             | —             | —         | E23                  |               |
| 1.09–1.23      | —          | —             | —             | —         | E24                  |               |
| 1.24–1.37      | —          | —             | —             | —         | E26                  |               |
| 1.38–1.54      | —          | —             | —             | —         | E27                  |               |
| 1.55–1.69      | —          | —             | —             | —         | E28                  |               |
| 1.70–1.80      | —          | —             | —             | —         | E29                  |               |
| 1.81–1.94      | —          | —             | —             | —         | E31                  |               |
| 1.95–2.07      | —          | —             | —             | —         | E32                  |               |
| 2.08–2.26      | —          | —             | —             | —         | E33                  |               |
| 2.27–2.54      | 2.27–2.54  | —             | —             | —         | E34                  |               |
| 2.55–2.69      | 2.55–2.69  | —             | —             | —         | E36                  |               |
| 2.70–2.88      | 2.70–2.88  | —             | —             | —         | E37                  |               |
| 2.89–3.14      | 2.89–3.14  | —             | —             | —         | E38                  |               |
| 3.15–3.40      | 3.15–3.40  | —             | —             | —         | E39                  |               |
| 3.41–3.81      | 3.41–3.81  | —             | —             | —         | E41                  |               |
| 3.82–4.26      | 3.82–4.25  | —             | —             | —         | E42                  |               |
| 4.27–4.62      | 4.26–4.62  | —             | —             | —         | E44                  |               |
| 4.63–5.09      | 4.63–5.09  | —             | —             | —         | E46                  |               |
| 5.10–5.61      | 5.10–5.61  | —             | —             | —         | E47                  |               |
| 5.62–5.91      | 5.62–5.91  | —             | —             | —         | E48                  |               |
| 5.92–6.15      | 5.92–6.15  | —             | —             | —         | E49                  |               |
| 6.16–6.70      | 6.16–6.70  | —             | —             | —         | E50                  |               |
| 6.71–7.54      | 6.71–7.54  | —             | —             | —         | E51                  |               |
| 7.55–8.29      | 7.55–8.29  | —             | —             | —         | E52                  |               |
| 8.30–8.99      | 8.30–8.99  | —             | —             | —         | E53                  |               |
| 9.00–9.85      | 9.00–9.85  | —             | —             | —         | E54                  |               |
| 9.86–10.4      | 9.86–10.4  | —             | —             | —         | E55                  |               |
| 10.5–12.0      | 10.5–12.0  | 10.5–12.0     | —             | —         | E56                  |               |
| 12.1–13.6      | 12.1–13.6  | 12.1–13.6     | —             | —         | E57                  |               |
| 13.7–15.6      | 13.7–15.6  | 13.7–15.6     | —             | —         | E60                  |               |
| 15.7–17.0      | 15.7–17.0  | 15.7–17.1     | —             | —         | E61                  |               |
| 17.1–18.4      | 17.1–19.4  | 17.2–19.4     | —             | —         | E62                  |               |
| 18.5–19.4      | 19.5–20.9  | 19.5–20.9     | —             | —         | E65                  |               |
| 19.5–21.3      | 21.0–22.2  | 21.0–22.2     | —             | —         | E66                  |               |
| 21.4–24.4      | 22.3–25.3  | 22.3–25.3     | —             | —         | E67                  |               |
| 24.5–25.9      | 25.4–26.9  | 25.4–26.9     | 30.0–33.5     | —         | E69                  |               |
| 26.0–27.0      | 27.0–30.2  | 27.0–30.2     | 33.6–36.4     | —         | E70                  |               |
| —              | —          | —             | 36.5–39.6     | —         | E71                  |               |
| —              | 30.3–33.3  | 30.3–33.3     | —             | —         | E72                  |               |
| —              | 33.4–36.0  | 33.4–35.3     | 39.7–43.6     | —         | E73                  |               |
| —              | —          | —             | 43.7–46.5     | —         | E73A                 |               |
| —              | —          | 35.4–41.5     | 46.6–51.6     | —         | E74                  |               |
| —              | —          | 41.6–45.0     | 51.7–54.4     | —         | E76                  |               |
| —              | —          | 45.1–52.3     | 54.5–58.0     | —         | E77                  |               |
| —              | —          | 52.4–55.7     | 58.1–63.0     | —         | E78                  |               |
| —              | —          | 55.8–60.0     | 63.1–67.7     | —         | E79                  |               |
| —              | —          | —             | 67.8–72.4     | —         | E80                  |               |
| —              | —          | —             | —             | —         | E88                  |               |
| —              | —          | —             | —             | 56.9–60.9 | E89                  |               |
| —              | —          | —             | —             | 61.0–63.9 | E91                  |               |
| —              | —          | —             | —             | 64.0–67.7 | E92                  |               |
| —              | —          | —             | —             | 67.8–72.4 | E93                  |               |
| —              | —          | —             | 72.5–77.7     | —         | E94                  |               |
| —              | —          | —             | 80.1–88.1     | 77.8–85.9 | E96                  |               |
| —              | —          | —             | 88.2–91.5     | 86.0–91.9 | E97                  |               |
| —              | —          | —             | 91.6–96.8     | 92.0–96.7 | E98                  |               |
| —              | —          | —             | 96.9–99.0     | 96.8–105  | E99                  |               |
| —              | —          | —             | 99.1–108.0    | —         | E101                 |               |
| —              | —          | —             | —             | 106–115   | E102                 |               |
| —              | —          | —             | —             | 116–130   | E103                 |               |
| —              | —          | —             | —             | —         | E104                 |               |

Table 238 for Class 48

| Full Load Amps |           |            |            | Heater<br>Catalog No | List Price \$ |
|----------------|-----------|------------|------------|----------------------|---------------|
| 48DC           | 48GC      | 48HA       | 48JA       |                      |               |
| 0.30–0.32      | —         | —          | —          | E3                   |               |
| 0.33–0.35      | —         | —          | —          | E4                   |               |
| 0.36–0.38      | —         | —          | —          | E5                   |               |
| 0.39–0.41      | —         | —          | —          | E6                   |               |
| 0.42–0.44      | —         | —          | —          | E7                   |               |
| 0.45–0.49      | —         | —          | —          | E8                   |               |
| 0.50–0.54      | —         | —          | —          | E9                   |               |
| 0.55–0.58      | —         | —          | —          | E11                  |               |
| 0.59–0.63      | —         | —          | —          | E12                  |               |
| 0.64–0.67      | —         | —          | —          | E13                  |               |
| 0.68–0.73      | —         | —          | —          | E14                  |               |
| 0.74–0.81      | —         | —          | —          | E16                  |               |
| 0.82–0.87      | —         | —          | —          | E17                  |               |
| 0.88–0.94      | —         | —          | —          | E18                  |               |
| 0.95–1.00      | —         | —          | —          | E19                  |               |
| 1.01–1.10      | —         | —          | —          | E23                  |               |
| 1.11–1.26      | —         | —          | —          | E24                  |               |
| 1.27–1.40      | —         | —          | —          | E26                  |               |
| 1.41–1.58      | —         | —          | —          | E27                  |               |
| 1.59–1.74      | —         | —          | —          | E28                  |               |
| 1.75–1.85      | —         | —          | —          | E29                  |               |
| 1.86–1.99      | —         | —          | —          | E31                  |               |
| 2.00–2.11      | —         | —          | —          | E32                  |               |
| 2.12–2.31      | —         | —          | —          | E33                  |               |
| 2.32–2.59      | —         | —          | —          | E34                  |               |
| 2.60–2.75      | —         | —          | —          | E36                  |               |
| 2.76–2.95      | —         | —          | —          | E37                  |               |
| 2.96–3.21      | —         | —          | —          | E38                  |               |
| 3.22–3.48      | —         | —          | —          | E39                  |               |
| 3.49–3.89      | —         | —          | —          | E41                  |               |
| 3.90–4.35      | —         | —          | —          | E42                  |               |
| 4.36–4.73      | —         | —          | —          | E44                  |               |
| 4.74–5.21      | —         | —          | —          | E46                  |               |
| 5.22–5.74      | —         | —          | —          | E47                  |               |
| 5.75–6.05      | —         | —          | —          | E48                  |               |
| 6.06–6.46      | —         | —          | —          | E49                  |               |
| 6.47–6.95      | —         | —          | —          | E50                  |               |
| 6.96–8.09      | —         | —          | —          | E51                  |               |
| 8.10–9.29      | —         | —          | —          | E52                  |               |
| 9.30–10.4      | —         | —          | —          | E53                  |               |
| —              | —         | —          | —          | E54                  |               |
| 10.5–10.9      | —         | —          | —          | E55                  |               |
| 11.0–12.0      | —         | —          | —          | E56                  |               |
| 12.1–14.5      | —         | —          | —          | E57                  |               |
| 14.6–16.8      | —         | —          | —          | E60                  |               |
| 16.9–18.4      | 16.9–18.4 | —          | —          | E61                  |               |
| 18.5–20.9      | 18.5–20.9 | —          | —          | E62                  |               |
| 21.0–22.5      | 21.0–22.5 | —          | —          | E65                  |               |
| 22.6–24.3      | 22.6–24.7 | —          | —          | E66                  |               |
| 24.4–27.2      | 24.8–27.2 | 27.1–30.0  | —          | E67                  |               |
| 27.3–29.2      | 27.3–29.2 | 30.1–33.2  | —          | E69                  |               |
| 29.3–30.0      | 29.3–32.0 | 33.3–35.7  | —          | E70                  |               |
| —              | 32.1–34.9 | 35.8–39.4  | —          | E71                  |               |
| —              | —         | 39.5–43.4  | —          | E72                  |               |
| —              | 35.0–37.8 | 43.5–46.9  | —          | E73                  |               |
| —              | 37.9–41.7 | —          | —          | E73A                 |               |
| —              | 41.8–45.9 | 47.0–51.5  | —          | E74                  |               |
| —              | 46.0–49.0 | 51.6–57.0  | —          | E76                  |               |
| —              | 49.1–54.2 | 57.1–62.8  | —          | E77                  |               |
| —              | 54.3–60.0 | 62.9–69.1  | —          | E78                  |               |
| —              | —         | 69.2–75.0  | —          | E79                  |               |
| —              | —         | 75.1–83.3  | —          | E80                  |               |
| —              | —         | —          | 50.0–55.9  | E88                  |               |
| —              | —         | —          | 56.0–60.9  | E89                  |               |
| —              | —         | —          | 61.0–65.9  | E91                  |               |
| —              | —         | —          | 66.0–69.9  | E92                  |               |
| —              | —         | —          | 70.0–75.9  | E93                  |               |
| —              | —         | —          | 76.0–81.9  | E94                  |               |
| —              | —         | 83.4–86.9  | 82.0–86.9  | E96                  |               |
| —              | —         | 87.0–92.9  | 87.0–92.9  | E97                  |               |
| —              | —         | 93.0–100.0 | 93.0–97.9  | E98                  |               |
| —              | —         | —          | 98.0–107.9 | E99                  |               |
| —              | —         | —          | 108–113.9  | E101                 |               |
| —              | —         | —          | 114–125.9  | E102                 |               |
| —              | —         | —          | 126–138.9  | E103                 |               |
| —              | —         | —          | 139–153.9  | E104                 |               |
| —              | —         | —          | 154–163.9  | E106                 |               |
| —              | —         | —          | 164–180.9  | E107                 |               |

## Full Load Motor Amps, Single Phase, Trip Class 10 – Tables 313, 316

## Selection

Table 313 for Class 14, 22 (1-Phase)

| Full Load Amps |           |            | Heater<br>Catalog No | List Price \$ |
|----------------|-----------|------------|----------------------|---------------|
| Size 00, 0, 1  | Size 1P   | Size 2, 2½ |                      |               |
| 1.85–2.05      | 1.85–2.05 | —          | K21                  |               |
| 2.06–2.35      | 2.06–2.35 | —          | K22                  |               |
| 2.36–2.64      | 2.36–2.64 | —          | K24                  |               |
| 2.65–2.96      | 2.65–2.96 | —          | K27                  |               |
| 2.97–3.31      | 2.97–3.31 | —          | K28                  |               |
| 3.32–3.51      | 3.32–3.51 | —          | K29                  |               |
| 3.52–3.87      | 3.52–3.87 | —          | K31                  |               |
| 3.88–4.31      | 3.88–4.31 | —          | K32                  |               |
| 4.32–4.79      | 4.32–4.79 | —          | K33                  |               |
| 4.80–5.21      | 4.80–5.21 | —          | K34                  |               |
| 5.22–5.75      | 5.22–5.75 | —          | K36                  |               |
| 5.76–6.11      | 5.76–6.11 | —          | K37                  |               |
| 6.12–6.95      | 6.12–6.95 | —          | K39                  |               |
| 6.96–7.73      | 6.96–7.73 | —          | K41                  |               |
| 7.74–8.47      | 7.74–8.47 | —          | K42                  |               |
| 8.48–9.52      | 8.48–9.52 | —          | K43                  |               |
| 9.53–10.4      | 9.53–10.4 | —          | K49                  |               |
| 10.5–11.1      | 10.5–11.1 | —          | K50                  |               |
| 11.2–12.4      | 11.2–12.4 | —          | K52                  |               |
| 12.5–13.5      | 12.5–13.5 | —          | K53                  |               |
| 13.6–15.1      | 13.6–15.1 | —          | K54                  |               |
| 15.2–16.6      | 15.2–16.6 | —          | K55                  |               |
| 16.7–17.6      | 16.7–17.6 | —          | K57                  |               |
| 17.7–18.8      | 17.7–18.8 | 18.7–19.7  | K58                  |               |
| 18.9–21.6      | 18.9–21.6 | 19.8–21.3  | K60                  |               |
| 21.7–22.7      | 21.7–22.7 | 21.4–22.8  | K61                  |               |
| 22.8–25.3      | 22.8–25.3 | 22.9–24.2  | K62                  |               |
| —              | 25.4–26.6 | 24.3–26.5  | K63                  |               |
| —              | 26.7–30.1 | 26.6–29.3  | K64                  |               |
| —              | 30.2–33.0 | 29.4–32.0  | K67                  |               |
| —              | 33.1–34.1 | 32.1–35.6  | K68                  |               |
| —              | —         | 35.7–37.9  | K69                  |               |
| —              | —         | 38.0–40.3  | K70                  |               |
| —              | —         | 40.4–44.3  | K72                  |               |
| —              | —         | 44.4–49.5  | K73                  |               |
| —              | —         | 49.6–52.1  | K74                  |               |
| —              | —         | 52.2–53.7  | K75                  |               |
| —              | —         | 53.8–60.0  | K76                  |               |

Table 316 for Class 48

| Full Load Amps |           |            |             | Heater<br>Catalog No | List Price \$ |
|----------------|-----------|------------|-------------|----------------------|---------------|
| 48DA           | 48GA      | 48HA       | 48JA        |                      |               |
| 1.69–1.88      | —         | —          | —           | K21                  |               |
| 1.89–2.05      | —         | —          | —           | K22                  |               |
| 2.06–2.21      | —         | —          | —           | K23                  |               |
| 2.22–2.44      | —         | —          | —           | K24                  |               |
| 2.45–2.70      | —         | —          | —           | K26                  |               |
| 2.71–2.92      | —         | —          | —           | K27                  |               |
| 2.93–3.27      | —         | —          | —           | K28                  |               |
| 3.28–3.56      | —         | —          | —           | K29                  |               |
| 3.57–3.83      | —         | —          | —           | K31                  |               |
| 3.84–4.23      | —         | —          | —           | K32                  |               |
| 4.24–4.57      | —         | —          | —           | K33                  |               |
| 4.58–4.97      | —         | —          | —           | K34                  |               |
| 4.98–5.67      | —         | —          | —           | K36                  |               |
| 5.68–6.11      | —         | —          | —           | K37                  |               |
| 6.12–6.91      | —         | —          | —           | K39                  |               |
| 6.92–7.65      | —         | —          | —           | K41                  |               |
| 7.66–8.4       | —         | —          | —           | K42                  |               |
| 8.5–8.9        | —         | —          | —           | K43                  |               |
| 9.0–10.1       | 9.12–9.6  | —          | —           | K49                  |               |
| 10.2–11.2      | 9.7–10.4  | —          | —           | K50                  |               |
| 11.3–12.3      | 10.5–11.4 | —          | —           | K52                  |               |
| 12.4–13.3      | 11.5–12.1 | —          | —           | K53                  |               |
| 13.4–14.1      | 12.2–12.9 | —          | —           | K54                  |               |
| 14.2–15.0      | 13.0–13.7 | —          | —           | K55                  |               |
| 15.1–16.2      | 13.8–14.8 | —          | —           | K56                  |               |
| 16.3–17.5      | 14.9–16.4 | —          | —           | K57                  |               |
| 17.6–18.6      | 16.5–18.2 | —          | —           | K58                  |               |
| 18.7–19.9      | 18.3–19.5 | —          | —           | K60                  |               |
| 20.0–21.3      | 19.6–20.9 | —          | —           | K61                  |               |
| 21.4–22.8      | 21.0–22.8 | 23.2–25.1  | —           | K62                  |               |
| 22.9–25.1      | 22.9–24.7 | 25.2–27.3  | —           | K63                  |               |
| 25.2–27.6      | 24.8–27.6 | 27.4–30.4  | —           | K64                  |               |
| 27.7–30.0      | 27.7–30.5 | 30.5–33.3  | —           | K67                  |               |
| —              | 30.6–33.9 | 33.4–36.5  | —           | K68                  |               |
| —              | 34.0–37.3 | 36.6–39.3  | —           | K69                  |               |
| —              | 37.4–40.2 | 39.4–43.5  | —           | K70                  |               |
| —              | 40.3–41.9 | 43.6–46.6  | 43.0–46.5   | K72                  |               |
| —              | 42.0–45.9 | 46.7–51.1  | 46.6–50.9   | K73                  |               |
| —              | 46.0–50.9 | 51.2–56.3  | 51.0–55.9   | K74                  |               |
| —              | 51.0–52.9 | 56.4–61.1  | 56.0–59.1   | K75                  |               |
| —              | 53.0–57.7 | 61.2–64.9  | 59.2–68.7   | K76                  |               |
| —              | 57.8–60.0 | 65.0–71.9  | —           | K77                  |               |
| —              | —         | 72.0–80.7  | 68.8–80.7   | K78                  |               |
| —              | —         | 80.8–92.7  | 80.8–92.7   | K85                  |               |
| —              | —         | 92.8–100.0 | 92.8–103.9  | K86                  |               |
| —              | —         | —          | 104.0–113.5 | K87                  |               |
| —              | —         | —          | 113.6–127.9 | K89                  |               |
| —              | —         | —          | 128.0–143.9 | K92                  |               |
| —              | —         | —          | 144.0–163.9 | K94                  |               |
| —              | —         | —          | 164.0–180.0 | K96                  |               |

## Full Load Motor Amps, 3-Phase, Trip Class 10 – Tables 332, 335

## Selection

Table 332 for Class 14, 17, 18, 22, 25, 26, 30, 32, 83, 84, 87 (3-Phase)

| Full Load Amps |           |            |             |             | Heater Catalog No | List Price \$ |
|----------------|-----------|------------|-------------|-------------|-------------------|---------------|
| Size 00, 0, 1  | Size 1½   | Size 2, 2½ | Size 3, 3½  | Size 4      |                   |               |
| 1.52–1.65      | 1.52–1.65 | —          | —           | —           | K21               |               |
| 1.66–1.79      | 1.66–1.79 | —          | —           | —           | K22               |               |
| 1.80–1.94      | 1.80–1.94 | —          | —           | —           | K23               |               |
| 1.95–2.15      | 1.95–2.15 | —          | —           | —           | K24               |               |
| 2.16–2.37      | 2.16–2.37 | —          | —           | —           | K26               |               |
| 2.38–2.56      | 2.38–2.56 | —          | —           | —           | K27               |               |
| 2.57–2.87      | 2.57–2.87 | —          | —           | —           | K28               |               |
| 2.88–3.13      | 2.88–3.13 | —          | —           | —           | K29               |               |
| 3.14–3.37      | 3.14–3.37 | —          | —           | —           | K31               |               |
| 3.38–3.72      | 3.38–3.72 | —          | —           | —           | K32               |               |
| 3.73–4.00      | 3.73–4.00 | —          | —           | —           | K33               |               |
| 4.01–4.35      | 4.01–4.35 | —          | —           | —           | K34               |               |
| 4.36–4.99      | 4.36–4.99 | —          | —           | —           | K36               |               |
| 5.00–5.38      | 5.00–5.38 | —          | —           | —           | K37               |               |
| 5.39–5.79      | 5.39–5.79 | —          | —           | —           | K39               |               |
| 5.80–6.43      | 5.80–6.43 | —          | —           | —           | K41               |               |
| 6.44–6.83      | 6.44–6.83 | —          | —           | —           | K42               |               |
| 6.84–7.83      | 6.84–7.83 | —          | —           | —           | K43               |               |
| 7.84–8.23      | 7.84–8.23 | —          | —           | —           | K49               |               |
| 8.24–9.59      | 8.24–9.59 | —          | —           | —           | K50               |               |
| 9.60–9.90      | 9.60–9.90 | —          | —           | —           | K52               |               |
| 10.0–10.7      | 10.0–10.7 | —          | —           | —           | K53               |               |
| 10.8–11.6      | 10.8–11.6 | 12.1–12.7  | —           | —           | K54               |               |
| 11.7–12.3      | 11.7–12.3 | 12.8–13.5  | —           | —           | K55               |               |
| 12.4–13.4      | 12.4–13.4 | 13.6–14.6  | —           | —           | K56               |               |
| 13.5–14.2      | 13.5–14.2 | 14.7–15.9  | —           | —           | K57               |               |
| 14.3–15.1      | 14.3–15.1 | 16.0–16.9  | —           | —           | K58               |               |
| 15.2–17.5      | 15.2–17.5 | 17.0–18.2  | —           | —           | K60               |               |
| 17.6–18.7      | 17.6–18.7 | 18.3–19.5  | —           | —           | K61               |               |
| 18.8–20.0      | 18.8–20.0 | 19.6–20.9  | —           | —           | K62               |               |
| 20.1–21.5      | 20.1–21.5 | 21.0–23.1  | —           | —           | K63               |               |
| 21.6–23.9      | 21.6–23.9 | 23.2–25.4  | —           | —           | K64               |               |
| 24.0–25.8      | 24.0–25.8 | 25.5–27.9  | —           | —           | K67               |               |
| —              | 25.9–29.5 | —          | —           | —           | K68               |               |
| —              | —         | 28.0–30.5  | —           | —           | K69               |               |
| —              | 29.6–32.7 | 30.6–33.5  | 36.8–40.0   | —           | K70               |               |
| —              | 32.8–36.0 | 33.6–37.2  | 40.1–42.4   | —           | K72               |               |
| —              | —         | 37.3–40.7  | 42.5–46.3   | —           | K73               |               |
| —              | —         | 40.8–43.0  | 46.4–49.6   | —           | K74               |               |
| —              | —         | 43.1–47.9  | 49.7–52.3   | 49.7–52.3   | K75               |               |
| —              | —         | 48.0–52.7  | 52.4–57.5   | 52.4–57.5   | K76               |               |
| —              | —         | 52.8–58.3  | 57.6–63.9   | 57.6–63.9   | K77               |               |
| —              | —         | 58.4–60.0  | 64.0–67.9   | 63.1–68.1   | K78               |               |
| —              | —         | —          | 68.0–74.3   | 68.2–74.3   | K83               |               |
| —              | —         | —          | 74.4–77.9   | 74.4–79.9   | K85               |               |
| —              | —         | —          | 78.0–83.1   | 80.0–87.4   | K86               |               |
| —              | —         | —          | 83.2–91.4   | 87.5–90.0   | K87               |               |
| —              | —         | —          | 91.5–99.9   | 90.1–100.0  | K88               |               |
| —              | —         | —          | 100.0–108.0 | 100.1–108.0 | K89               |               |
| —              | —         | —          | —           | 108.1–119.0 | K90               |               |
| —              | —         | —          | —           | 119.1–130.0 | K92               |               |
| —              | —         | —          | —           | —           | K94               |               |
| —              | —         | —          | —           | —           | K96               |               |

Table 335 for Class 48

| Full Load Amps |           |            |             | Heater Catalog No | List Price \$ |
|----------------|-----------|------------|-------------|-------------------|---------------|
| 48DC           | 48GC      | 48HA       | 48JA        |                   |               |
| 1.56–1.69      | —         | —          | —           | K21               |               |
| 1.70–1.84      | —         | —          | —           | K22               |               |
| 1.85–1.98      | —         | —          | —           | K23               |               |
| 1.99–2.19      | —         | —          | —           | K24               |               |
| 2.20–2.43      | —         | —          | —           | K26               |               |
| 2.44–2.63      | —         | —          | —           | K27               |               |
| 2.64–2.95      | —         | —          | —           | K28               |               |
| 2.96–3.21      | —         | —          | —           | K29               |               |
| 3.22–3.45      | —         | —          | —           | K31               |               |
| 3.46–3.81      | —         | —          | —           | K32               |               |
| 3.82–4.10      | —         | —          | —           | K33               |               |
| 4.11–4.46      | —         | —          | —           | K34               |               |
| 4.47–5.10      | —         | —          | —           | K36               |               |
| 5.11–5.49      | —         | —          | —           | K37               |               |
| 5.50–6.21      | —         | —          | —           | K39               |               |
| 6.22–6.76      | —         | —          | —           | K41               |               |
| 6.77–7.62      | —         | —          | —           | K42               |               |
| 7.63–8.07      | —         | —          | —           | K43               |               |
| 8.08–9.19      | —         | —          | —           | K49               |               |
| 9.20–10.0      | —         | —          | —           | K50               |               |
| 10.1–11.0      | —         | —          | —           | K52               |               |
| 11.1–12.0      | —         | —          | —           | K53               |               |
| 12.1–12.7      | —         | —          | —           | K54               |               |
| 12.8–13.5      | —         | —          | —           | K55               |               |
| 13.6–14.5      | —         | —          | —           | K56               |               |
| 14.6–15.7      | —         | —          | —           | K57               |               |
| 15.8–16.7      | —         | —          | —           | K58               |               |
| 16.8–17.9      | —         | —          | —           | K60               |               |
| 18.0–19.2      | 18.0–19.2 | —          | —           | K61               |               |
| 19.3–20.5      | 19.3–20.5 | 23.2–25.1  | —           | K62               |               |
| 20.6–22.5      | 20.6–22.5 | 25.2–27.3  | —           | K63               |               |
| 22.6–24.8      | 22.6–24.8 | 27.4–30.4  | —           | K64               |               |
| 24.9–27.6      | 24.9–27.6 | 30.5–33.3  | —           | K67               |               |
| 27.7–30.0      | —         | 33.4–36.5  | —           | K68               |               |
| —              | 27.7–30.1 | 36.6–39.3  | —           | K69               |               |
| —              | 30.2–33.1 | 39.4–43.5  | —           | K70               |               |
| —              | 33.2–36.7 | 43.6–46.6  | 43.0–46.5   | K72               |               |
| —              | 36.8–40.1 | 46.7–51.1  | 46.6–50.9   | K73               |               |
| —              | 40.2–45.5 | 51.2–56.3  | 51.0–55.9   | K74               |               |
| —              | 45.6–47.9 | 56.4–61.1  | 56.0–59.1   | K75               |               |
| —              | 48.0–52.7 | 61.2–64.9  | 59.2–68.7   | K76               |               |
| —              | 52.8–55.1 | 65.0–71.9  | —           | K77               |               |
| —              | 55.2–60.0 | 72.0–80.7  | 68.8–80.7   | K78               |               |
| —              | —         | 80.8–92.7  | 80.8–92.7   | K85               |               |
| —              | —         | 92.8–100.0 | 92.8–103.9  | K86               |               |
| —              | —         | —          | 104.0–113.5 | K87               |               |
| —              | —         | —          | 113.6–127.9 | K89               |               |
| —              | —         | —          | 128.0–143.9 | K92               |               |
| —              | —         | —          | 144.0–163.9 | K94               |               |
| —              | —         | —          | 164.0–180.0 | K96               |               |



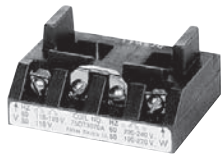
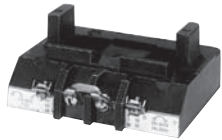
## Starters and Contactors – AC Coils

## Selection

## Ordering Information

► 4th character of starter or contactor catalog number indicates model.

## AC Coils — For Class 14, 17, 18, 22, 25, 26, 30, 32, 36, 37, 40, 43, 83, 84, 87, 88

|                                                                                     | Size  | Model           | Volts                                                                                          |                                                                                      | Catalog Number                                                                                                                       | List Price \$ |
|-------------------------------------------------------------------------------------|-------|-----------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------|
|                                                                                     |       |                 | 60Hz                                                                                           | 50Hz                                                                                 |                                                                                                                                      |               |
|    | 00-2½ | P<br>U (ESP200) | 24<br>120<br>110-120/220-240<br>208<br>220-240<br>277<br>220-240/440-480<br>440-480<br>575-600 | 24<br>110<br>110/190-220<br>—<br>190-220<br>240<br>190-220/380-440<br>380-440<br>550 | 75D73070J<br>75D73070F<br>75D73070A<br>75D73070D<br>75D73070G<br>75D73070L<br>75D73070C<br>75D73070H<br>75D73070E                    |               |
|                                                                                     | 3, 3½ | P<br>U (ESP200) | 24<br>120<br>110-120/220-240<br>208<br>220-240<br>277<br>220-240/440-480<br>440-480<br>575-600 | 24<br>110<br>110/190-220<br>—<br>190-220<br>240<br>190-220/380-440<br>380-440<br>550 | 75D73251J<br>75D73251F<br>75D73251A<br>75D73251D<br>75D73251G<br>75D73251L<br>75D73251C<br>75D73251H<br>75D73251E                    |               |
|   | 4     | G<br>U (ESP200) | 24<br>120<br>120/220-240<br>208<br>220-240<br>277<br>220-240/440-480<br>440-480<br>575-600     | 24<br>110<br>110/190-220<br>—<br>190-220<br>240<br>190-220/380-440<br>380-440<br>550 | 75D70131J<br>75D70131F<br>75D70131A<br>75D70131D<br>75D70131G<br>75D70131L<br>75D70131C<br>75D70131H<br>75D70131E                    |               |
|  | 4, 5  | V (Vacuum)      | 23-26<br>110-127<br>200-220<br>220-240<br>240-277<br>380-420<br>440-480<br>575-600             | 23-26<br>110-127<br>200-220<br>220-240<br>240-277<br>380-420<br>440-480<br>575-600   | 3RT1966-5AB31<br>3RT1966-5AF31<br>3RT1966-5AM31<br>3RT1966-5AP31<br>3RT1966-5AU31<br>3RT1966-5AV31<br>3RT1966-5AR31<br>3RT1966-5AT31 |               |
|                                                                                     | 5     | P               | 23-26<br>110-127<br>200-220<br>220-240<br>240-277<br>380-420<br>440-480<br>575-600             | 23-26<br>110-127<br>200-220<br>220-240<br>240-277<br>380-420<br>440-480<br>575-600   | 3RT1965-5AB31<br>3RT1965-5AF31<br>3RT1965-5AM31<br>3RT1965-5AP31<br>3RT1965-5AU31<br>3RT1965-5AV31<br>3RT1965-5AR31<br>3RT1965-5AT31 |               |
|                                                                                     | 6     | P<br>V (Vacuum) | 23-26<br>110-127<br>200-220<br>220-240<br>240-277<br>380-420<br>440-480<br>575-600             | 23-26<br>110-127<br>200-220<br>220-240<br>240-277<br>380-420<br>440-480<br>575-600   | 3RT1975-5AB31<br>3RT1975-5AF31<br>3RT1975-5AM31<br>3RT1975-5AP31<br>3RT1975-5AU31<br>3RT1975-5AV31<br>3RT1975-5AR31<br>3RT1975-5AT31 |               |
|  | 7     | H               | 100-250<br>150-500                                                                             | 100-250<br>150-500                                                                   | 75ZAF750-70<br>75ZAF750-71                                                                                                           |               |
|  | 8     | H               | 100-250                                                                                        | 100-250                                                                              | 75ZAF1650-70①                                                                                                                        |               |

① Set of 2 coils. Recommend to change printed circuit board when changing coils. 49ZP1650 see page 9/132.

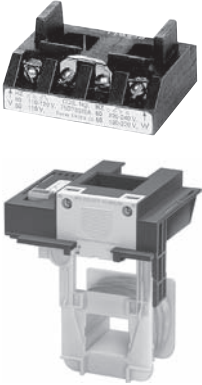
## Starters and Contactors – DC Coils, Late Break Aux Contacts, Rectifiers, Contact Kits

## Selection

## Ordering Information

- 4th character of starter or contactor catalog number indicates model.
- DC Coils for Size 00-4 require Late Break Interlock.

## DC Coils — For Class 14, 17, 18, 22, 25, 26, 30, 32, 40, 43

|                                                                                   | Size  | Model           | Volts DC                             | Catalog Number                                                             | List Price \$ |
|-----------------------------------------------------------------------------------|-------|-----------------|--------------------------------------|----------------------------------------------------------------------------|---------------|
|  | 00-2½ | P<br>U (ESP200) | 12<br>24<br>32<br>48<br>125<br>250   | 75D73070R<br>75D73070S<br>75D73070T<br>75D73070U<br>75D73070V<br>75D73070W |               |
|                                                                                   | 3, 3½ | P<br>U (ESP200) | 12<br>24<br>32<br>48<br>125<br>250   | 75D73251R<br>75D73251S<br>75D73251T<br>75D73251U<br>75D73251V<br>75D73251W |               |
|                                                                                   | 4     | G<br>U (ESP200) | 48<br>125<br>250                     | 75D70131U<br>75D70131V<br>75D70131W                                        |               |
|                                                                                   | 4, 5  | V (Vacuum)      | 23-26<br>42-48<br>110-127<br>240-277 | 3RT1966-5AB31<br>3RT1966-5AD31<br>3RT1966-5AF31<br>3RT1966-5AU31           |               |

Note: For sizes 7 & 8 contactors the AC coils are used for DC see page 9/129.

## Late Break Auxiliary Contacts

|                                                                                    | Control Size | Model      | Catalog Number | List Price \$ |
|------------------------------------------------------------------------------------|--------------|------------|----------------|---------------|
|  | 00-4         | P, G, S, T | 49AB01LB       |               |

## Board for Size 8 Contactor

|                                                                                    | Control Size | Model | Catalog Number | List Price |
|------------------------------------------------------------------------------------|--------------|-------|----------------|------------|
|  | 8            | H     | 49ZP1650       |            |

Contact Kits – Single Pole Stationary and Movable Contacts, Contact Spring<sup>①</sup>

| Description                                                                         | Size                                     | Number of Poles in Kit | Model<br>(4th position in part number) | Catalog Number             | List Price \$ |
|-------------------------------------------------------------------------------------|------------------------------------------|------------------------|----------------------------------------|----------------------------|---------------|
|  | Internal Aux Contact (00-1-¾)<br>00<br>0 |                        | P, U<br>P, U<br>P, U                   | 75AF14<br>75BF14<br>75CF14 |               |
|                                                                                     | 1<br>1¼-1P                               | 1                      | P, U<br>P, U                           | 75DF14<br>75EF14           |               |
|                                                                                     | 2                                        | 1                      | P, U                                   | 75FP14                     |               |
|                                                                                     | 2½                                       | 1                      | P, U                                   | 75GP14                     |               |
|                                                                                     | 3<br>3½                                  | 1                      | P, U<br>P, U                           | 75HF14<br>75IF14           |               |
|                                                                                     | 4<br>4 (Vacuum)                          | 1<br>3 (Bottles)       | G, T<br>V, C                           | 75JG14<br>3RT1964-6V       |               |
|                                                                                     | 5<br>5 (Vacuum)                          | 3<br>3 (Bottles)       | P<br>V, C                              | 3RT1966-6A<br>3RT1966-6V   |               |
|                                                                                     | 6<br>6 (Vacuum)                          | 3<br>3 (Bottles)       | P<br>V, C                              | 3RT1976-6A<br>3RT1976-6V   |               |
|                                                                                     | 7                                        | 3                      | H                                      | 49ZL750                    |               |
|                                                                                     | 8                                        | 3                      | H                                      | 49ZL1650                   |               |

## Armature and Magnet Kits

| Size  | Catalog Number | List Price \$ |
|-------|----------------|---------------|
| 00-2½ | 49AMSA2        |               |
| 3-3½  | 49AMSA3        |               |
| 4     | 49AMSA4        |               |

① On 3-phase controls, all 3-poles should be replaced - 3 kits required.

## Starters and Contactors – Coil VA Ratings and Overload Relays

## Selection

## Coil VA Ratings

| Device Type                                   | Contactors Size | Amps      | Volts | Number of Poles | Total Inrush VA | Total Sealed VA |
|-----------------------------------------------|-----------------|-----------|-------|-----------------|-----------------|-----------------|
| NEMA Starter                                  | 00 thru 2 1/2   | —         | —     | —               | 218             | 25              |
|                                               | 3 thru 3 1/2    | —         | —     | —               | 310             | 26              |
|                                               | 4               | —         | —     | —               | 510             | 51              |
|                                               | 5               | —         | —     | —               | 590             | 6.7             |
|                                               | 6               | —         | —     | —               | 830             | 9.2             |
|                                               | 7               | —         | —     | —               | 850             | 12              |
|                                               | 8               | —         | —     | —               | 1900            | 48              |
|                                               | 4,5,6 (Vacuum)  | —         | —     | —               | 630             | 7.4             |
| Lighting Contactor<br>Mechanically Held (CLM) | —               | 20        | —     | 2-12            | 625             | 6               |
|                                               | —               | 30        | —     | 2-5             | 410             | 40              |
|                                               | —               | 60        | —     | 2-3             | 410             | 40              |
|                                               | —               | 60        | —     | 4-5             | 600             | 40              |
|                                               | —               | 100 - 200 | —     | 2-3             | 900             | 200             |
|                                               | —               | 100 - 200 | —     | 4-5             | 1300            | 130             |
|                                               | —               | 300 - 400 | —     | 3               | 1600            | 550             |
| Lighting Contactor<br>Electrically Held (LC)  | —               | 30        | ALL   | 2-12            | 248             | 28              |
| Lighting Contactor<br>Electrically Held (LE)  | —               | 20        | ALL   | 3 and 4         | 31.7            | 4.8             |
|                                               | —               | 30        | ALL   | 3 and 4         | 87              | 9.4             |
|                                               | —               | 60        | ALL   | 3               | 166             | 12.6            |
|                                               | —               | 100       | ALL   | 3               | 300             | 21              |
|                                               | —               | 200       | ALL   | 3               | 300             | 5.6             |
|                                               | —               | 300       | ALL   | 3               | 590             | 6.7             |
|                                               | —               | 400       | ALL   | 3               | 830             | 9.2             |

Overload Relays<sup>①②</sup> – For Class 14, 17, 18, 22, 25, 26, 30, 32, 83, 84, 87

| Size | Half Size | Model | Number Poles | Ambient Comp Bimetal   |               |                          |               |
|------|-----------|-------|--------------|------------------------|---------------|--------------------------|---------------|
|      |           |       |              | Catalog Number (1) NC  | List Price \$ | Catalog Number (1) NO/NC | List Price \$ |
| 00-1 | —         | P     | 1<br>3       | 48DC18AA3<br>48DC38AA3 |               | 48DC39AA3                |               |
| 1P   | —         | P     | 1            | 48EC18AA3              |               |                          |               |
| —    | 1½        | P     | 3            | 48EC38AA3              |               | 48EC39AA3                |               |
| 2    | —         | P     | 1<br>3       | 48GC18AA3<br>48GC38AA3 |               | 48GC39AA3                |               |
| —    | 2½        | P     | 1<br>3       | 48GC18AA3<br>48GC38AA3 |               | 48GC39AA3                |               |
| 3    | —         | P     | 3            | 48HC38AA3              |               |                          |               |
| —    | 3½        | P     | 3            | 48HC38AA3              |               |                          |               |
| 4    | —         | G     | 3            | 48JC38AA3              |               |                          |               |

For Starter and Contactor replacement parts not found in this section, please refer to Field Modification kits found starting on page 9/103.

① For replacement Solid State overload relays, please see the Overload Relay section found starting on page 9/64.

② Includes overload mounting plate to be coupled to contactor mounting plate.

## Lighting and Heating Contactors, Type LC, LE, CLM, CMF, CMN

## Selection

| Power Pole Kits                                                                     | Class | Enclosure type                           | Contactors Size (Amp)                                                                                                                                                                          | Description                            | Catalog No.                                                                                          |
|-------------------------------------------------------------------------------------|-------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------|
|    | LC    | Open, 1, 12, 4/4X                        | 30                                                                                                                                                                                             | Single power pole<br>Double power pole | 49LCP1A<br>49LCP2A                                                                                   |
| Replacement Coil Kits                                                               | Class | Enclosure type                           | Description                                                                                                                                                                                    |                                        | Catalog No.                                                                                          |
|    | LC    | 30                                       | 24V 60Hz / 20V 50Hz<br>115-120V 60Hz / 110V 50Hz<br>200-208V 60Hz<br>230-240V 60Hz / 220V 50Hz<br>277V 60Hz / 240V 50Hz<br>347V 60Hz<br>460-480V 60Hz / 440V 50Hz<br>575-600V 60Hz / 550V 50Hz |                                        | 75LCC024A<br>75LCC120A<br>75LCC208A<br>75LCC240A<br>75LCC277A<br>75LCC347A<br>75LCC480A<br>75LCC600A |
|    | LE    | 20, 30<br>60<br>100                      | NA                                                                                                                                                                                             |                                        | NA                                                                                                   |
|  | LC    | 30                                       | NA                                                                                                                                                                                             |                                        | NA                                                                                                   |
|                                                                                     | LE    | 20, 30<br>60<br>100<br>200<br>300<br>400 | 1 contact kit includes 3 moving and 6 fixed contacts.                                                                                                                                          |                                        | 3RT1935-6A<br>3RT1945-6A<br>3RT1956-6A<br>3RT1965-6A<br>3RT1975-6A                                   |

AC Coils 20 Amps<sup>②</sup>

| Type | Contactors Size | Number of Poles | 120V, 60Hz<br>110V, 50Hz | List Price \$ | 240V, 60Hz<br>208V, 50Hz | List Price \$ | 277V<br>50/60Hz | List Price \$ |
|------|-----------------|-----------------|--------------------------|---------------|--------------------------|---------------|-----------------|---------------|
| CLM  | 20 Amp          | 2-12            | CLM4097341               |               | CLM4097342               |               | CLM4097343      |               |

AC Coils 30-400 Amps<sup>③</sup>

| <br><b>CLMC4C120</b><br><br><b>CLMGU3C120</b> | Type        | Contactor Size | Number of Poles | Catalog Number |            |            |             |            |            |           | List Price \$ |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|-----------------|----------------|------------|------------|-------------|------------|------------|-----------|---------------|
|                                                                                                                                                                                                                     |             |                |                 | 24V AC         | 120V AC    | 208V AC    | 220/240V AC | 277V AC    | 480V AC    | 600V AC   |               |
|                                                                                                                                                                                                                     | CLM†C       | 30 Amp         | 2-3-Pole        | CLMC4C024      | CLMC4C120  | CLMC4C208  | CLMC4C240   | CLMC4C277  | CLMC4C480  | CLMC4C600 |               |
|                                                                                                                                                                                                                     |             |                | 4-Pole          | CLMC4C024      | CLMC4C120  | CLMC4C208  | CLMC4C240   | CLMC4C277  | CLMC4C480  | CLMC4C600 |               |
|                                                                                                                                                                                                                     |             |                | 5-Pole          | CLMC5C024      | CLMC5C120  | CLMC5C208  | CLMC5C240   | CLMC5C277  | CLMC5C480  | CLMC5C600 |               |
|                                                                                                                                                                                                                     | CLM†D       | 60 Amp         | 2-3-Pole        | CLMD3C024      | CLMD3C120  | CLMD3C208  | CLMD3C240   | CLMD3C277  | CLMD3C480  | CLMD3C600 |               |
|                                                                                                                                                                                                                     |             |                | 4-Pole          | CLMD5C024      | CLMD5C120  | CLMD5C208  | CLMD5C240   | CLMD5C277  | CLMD5C480  | CLMD5C600 |               |
|                                                                                                                                                                                                                     |             |                | 5-Pole          | CLMD5C024      | CLMD5C120  | CLMD5C208  | CLMD5C240   | CLMD5C277  | CLMD5C480  | CLMD5C600 |               |
|                                                                                                                                                                                                                     | CLM†E       | 100, 200 Amp   | 2-3-Pole        | CLME3C024      | CLME3C120  | CLME3C208  | CLME3C240   | CLME3C277  | CLME3C480  | CLME3C600 |               |
|                                                                                                                                                                                                                     |             |                | 4-Pole          | CLME5C024      | CLME5C120  | CLME5C208  | CLME5C240   | CLME5C277  | CLME5C480  | CLME5C600 |               |
| 5-Pole                                                                                                                                                                                                              |             |                | CLME5C024       | CLME5C120      | CLME5C208  | CLME5C240  | CLME5C277   | CLME5C480  | CLME5C600  |           |               |
| CLM†G Latching Coil                                                                                                                                                                                                 | 300/400 Amp | 2-3-Pole       | —               | CLMGL3C120     | CLMGL3C208 | CLMGL3C240 | CLMGL3C277  | CLMGL3C480 | CLMGL3C600 |           |               |
| Unlatch Coil                                                                                                                                                                                                        |             | 2-3-Pole       | —               | CLMGU3C120     | CLMGU3C208 | CLMGU3C240 | CLMGU3C277  | CLMGU3C480 | CLMGU3C600 |           |               |

Control Module Rectifier<sup>③</sup>

| Type | Device         | Contactors Size | Number of Poles | Catalog Number | List Price \$ |
|------|----------------|-----------------|-----------------|----------------|---------------|
| CLM  | CLM†C to CLM†F | 30-200 Amps     | All             | CLMKCMR        |               |

① Product Category: IEC.

② Coil kits for 20 amp CLM contactors include the coil clearing auxiliary contact.

③ For 30-200 amp CLM contactors, in the event that either the coil or the control module fails, it is recommended that both be replaced.

## Lighting Contactors, CLM, CMB, CMF &amp; CMN

## Selection

## Ordering Information

- For **CLM**: 5th character of contactor catalog number indicates Frame Size.
- For **CMB, CMF, CMN**: 4th character of contactor catalog number indicates Frame Size.

## Main Contacts 20 Amp Lighting Contactors

| <br>CLM4097334 | Type | Contactor Size | Number of Poles  | Location                                               | Catalog Number                                       | List Price \$ |
|-------------------------------------------------------------------------------------------------|------|----------------|------------------|--------------------------------------------------------|------------------------------------------------------|---------------|
|                                                                                                 | CLM  | 20 Amp         | 2<br>3<br>4<br>6 | Top or Bottom<br>Top<br>Top or Bottom<br>Top or Bottom | CLM4097331<br>CLM4097332<br>CLM4097333<br>CLM4097334 |               |

## Main Contacts 30–400 Amp Lighting Contactors

| Type | Frame Size | Contactor Size | Number of Poles | Catalog Number | List Price \$ |
|------|------------|----------------|-----------------|----------------|---------------|
| CLM  | C          | 30 Amp         | 2               | CLMCCK02       |               |
|      |            |                | 3               | CLMCCK03       |               |
|      |            |                | 4               | CLMCCK04       |               |
|      |            |                | 5               | CLMCCK05       |               |
|      | D          | 60 Amp         | 2               | CLMDCK02       |               |
|      |            |                | 3               | CLMDCK03       |               |
|      |            |                | 4               | CLMDCK04       |               |
|      |            |                | 5               | CLMDCK05       |               |
|      | E          | 100 Amp        | 2               | CLMECK02       |               |
|      |            |                | 3               | CLMECK03       |               |
|      |            |                | 4               | CLMECK04       |               |
|      |            |                | 5               | CLMECK05       |               |
|      | F          | 200 Amp        | 2               | CLMFCK02       |               |
|      |            |                | 3               | CLMFCK03       |               |
|      |            |                | 4               | CLMFCK04       |               |
|      |            |                | 5               | CLMFCK05       |               |
|      | G          | 300 Amp        | 2               | CLMGCK02       |               |
|      |            |                | 3               | CLMGCK03       |               |
|      | H          | 400 Amp        | 2               | CLMHCK02       |               |
|      |            |                | 3               | CLMHCK03       |               |

Auxiliary Contact Blocks 20 Amp Lighting Contactors<sup>②</sup>

| Type | Contactor Size | Contacts                                            | Catalog Number           | List Price \$ |
|------|----------------|-----------------------------------------------------|--------------------------|---------------|
| CLM  | 20 Amp         | 1 Form C NO, NC Contact<br>2 Form C NO, NC Contacts | CLM4097291<br>CLM4097292 |               |

## Auxiliary Contact Blocks 30–400 Amp Lighting Contactors

| <br>CLMFCAK11 | Type | Frame Size          | Contactor Size | Contact Configuration                                         | Catalog Number                                   | List Price \$ |
|--------------------------------------------------------------------------------------------------|------|---------------------|----------------|---------------------------------------------------------------|--------------------------------------------------|---------------|
|                                                                                                  | CLM  | C to F <sup>①</sup> | 30–200 Amps    | 1 NO and 1 NC<br>2 NC<br>2 NO<br>1 Coil Clearing<br>NO and NC | CLMFCAK11<br>CLMFCAK02<br>CLMFCAK20<br>CLMFCAK11 |               |
|                                                                                                  |      | G to H <sup>①</sup> | 300–400 Amps   | 1 NO and 1 NC<br>2 NC<br>2 NO<br>1 Coil Clearing<br>NO and NC | CLMHCAK11<br>CLMHCAK02<br>CLMHCAK20<br>CLMHCAK11 |               |

① Maximum 1 block per contactor.  
② Maximum 2 blocks per contactor.

### Replacement Handle Assemblies and Disconnect Mechanisms Enclosure Types 1, 3R, 4, 4X Stainless Steel & 12

|                            |                                  |                                             | Handle Assembly Only |               | Handle Assembly and Disconnect Mechanism |               |
|----------------------------|----------------------------------|---------------------------------------------|----------------------|---------------|------------------------------------------|---------------|
| Class                      | Disconnect (Amps)                | Enclosure Size                              | Catalog Number       | List Price \$ | Catalog Number                           | List Price \$ |
| 17, 25, 32, 84, 87, CM, LE | 30, 60 & 100                     | All Standard and Extra-wide Sizes           | 75D73944015          |               | 75D68257103                              |               |
| 37, 88                     | 30 & 60                          |                                             | 75D73944018          |               | 75D68257048                              |               |
| 17, 25, 32, 84             | 200                              |                                             | 75D73944015          |               | 75D68257105                              |               |
| 37, 88, CM, LE             | 200                              |                                             | 75D73944015          |               | 75D68257063                              |               |
| 87                         | 200                              |                                             | 75D73944023          |               | 75D68257068                              |               |
| 17, 25, 37, 87, 88, CM, LE | 400 & 600                        |                                             | 75D73944027          |               | 75D68257078                              |               |
|                            |                                  |                                             | Handle Assembly Only |               | Handle Assembly and Disconnect Mechanism |               |
| Class                      | Motor Circuit Interrupter (Amps) | Enclosure Size                              | Catalog Number       | List Price \$ | Catalog Number                           | List Price \$ |
| 18, 26, 32, CM, LE         | 3 - 125                          | (24"H x 11"W x 8"D),<br>(24"H x 20"W x 8"D) | 75D73944025          |               | 75D68257080                              |               |
| 18, 26, 32                 | 100 - 125                        | (36"H x 24"W x 8"D)                         | 75D73944025          |               | 75D68257073                              |               |
| 18, 26, 32                 | 150 & 250                        | All Standard Sizes                          | 75D73944028          |               | 75D68257089                              |               |
| 18, 26, 37, 87, 88, CM     | 300 - 600                        |                                             | 75D73944027          |               | 75D68257078                              |               |
| 87                         | 3 - 125                          |                                             | 75D73944025          |               | 75D68257080                              |               |
| 87                         | 150                              |                                             | 75D73944028          |               | 75D68257089                              |               |
| 87                         | 250                              |                                             | 75D73944011          |               | 75D68257077                              |               |
| 37, 88                     | 30 - 125                         |                                             | 75D73944025          |               | 75D68257073                              |               |
| 37, 84, 88, CM             | 150 - 250                        |                                             | 75D73944011          |               | 75D68257077                              |               |
| 84                         | 3 - 125                          |                                             | 75D73944025          |               | 75D68257074                              |               |

### Quarter Turn Assemblies

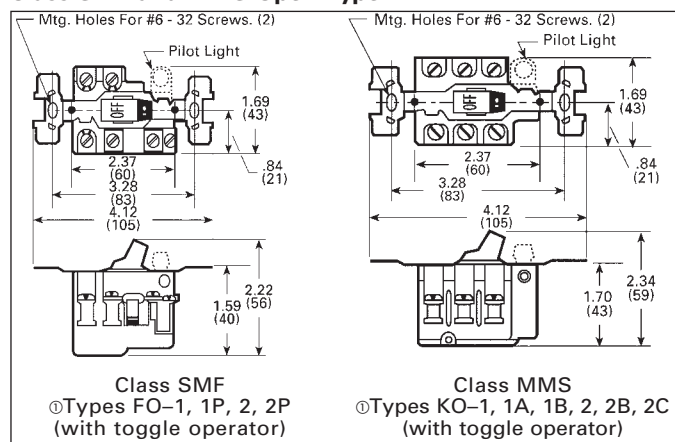
| Description                                                                         | Class              | Enclosure Type | Catalog Number | List Price \$ |
|-------------------------------------------------------------------------------------|--------------------|----------------|----------------|---------------|
|  | Quarter-Turn Latch | 1, 3/3R & 12   | 75D46260004    |               |
|                                                                                     |                    | 4 & 4X         | 75D46260005    |               |



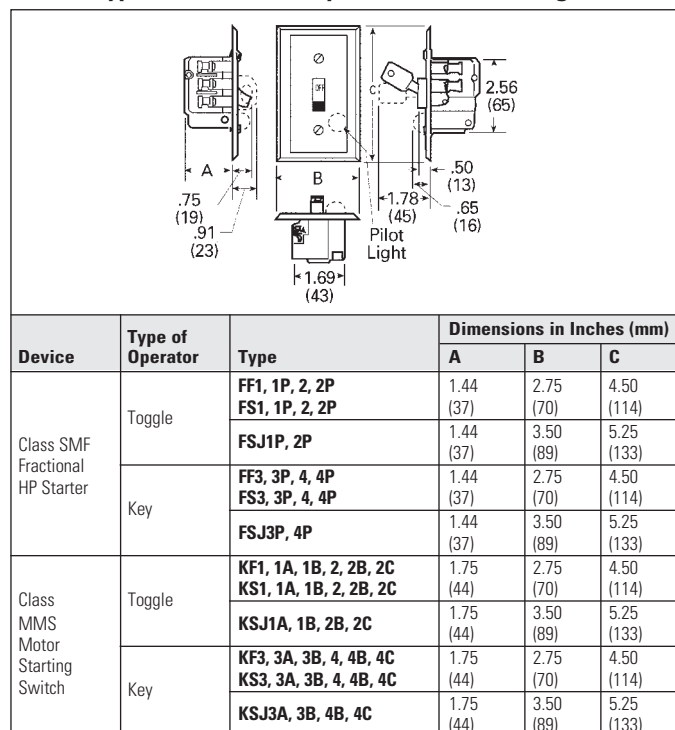
## Class SMF, MMS

## Dimensions

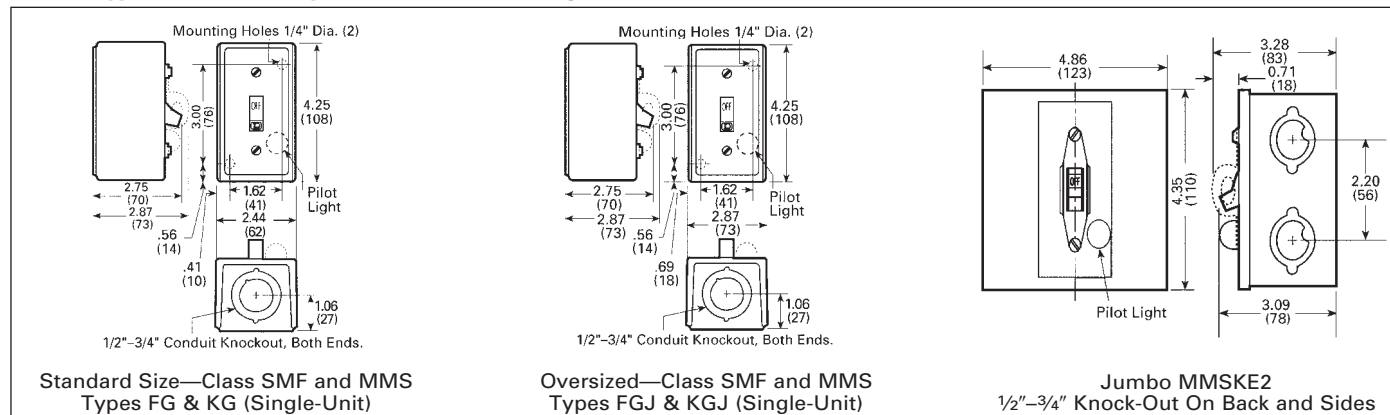
## Class SMF and MMS Open Type



## NEMA Type 1B General Purpose Flush Mounting



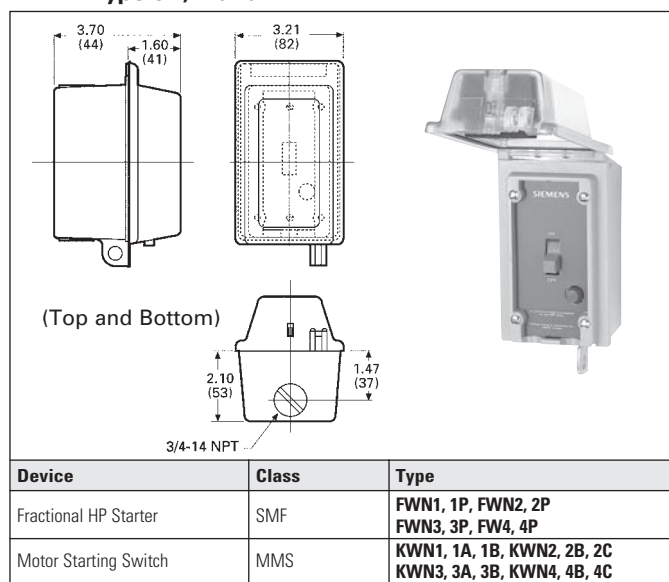
## NEMA Type 1 General Purpose Surface Mounting Enclosures



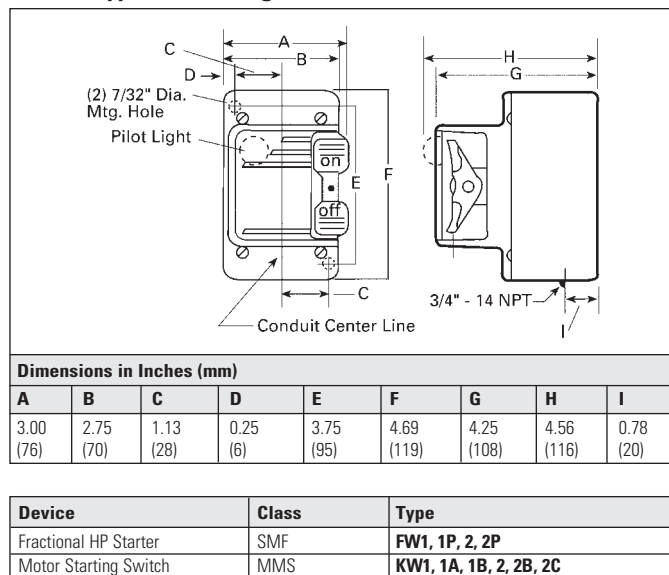
**Note:** Dimensions for reference, not for construction.  
Dimensions are in inches (mm).

① Dimensions typical for key operator devices.

## NEMA Type 3R, 4 and 12



## NEMA Type 4 Watertight Die Cast Zinc Enclosure

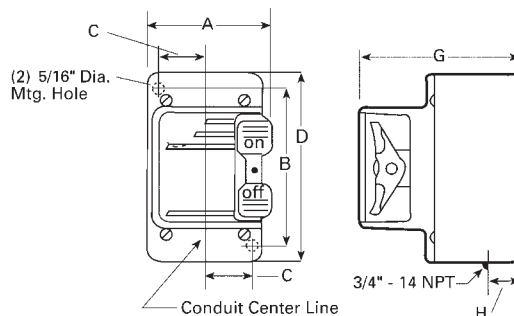


## NEMA Type 7 and 9 Cast Aluminum Enclosure

Dimensions in Inches (mm)

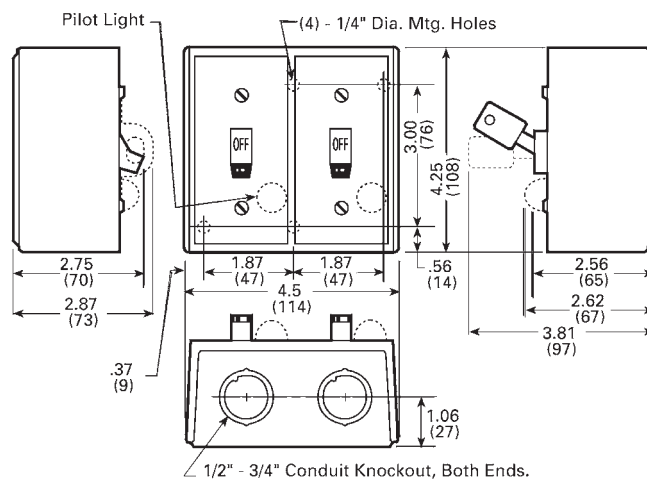
| A             | B             | C            | D             | G             | H            |
|---------------|---------------|--------------|---------------|---------------|--------------|
| 4.00<br>(101) | 5.75<br>(146) | 1.38<br>(35) | 6.36<br>(161) | 4.38<br>(111) | 1.20<br>(30) |

| Device                | Class | Type     |
|-----------------------|-------|----------|
| Fractional HP Starter | SMF   | FR1, FR2 |
| Motor Starting Switch | MMS   | KR1, KR2 |



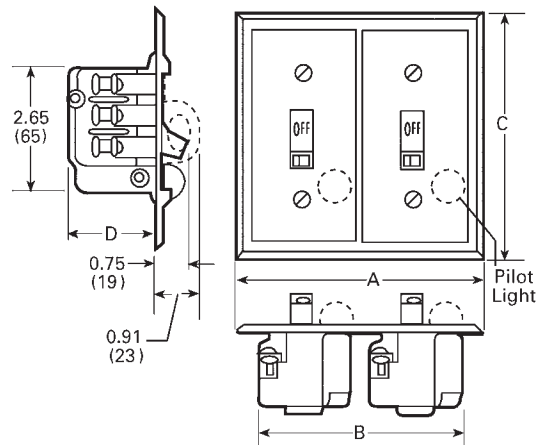
## NEMA Type 1 General Purpose Enclosure For Two Unit Devices

| Device                                       | Type of Operator | Class | Type                              |
|----------------------------------------------|------------------|-------|-----------------------------------|
| One Starter                                  | Toggle           | SMF   | FG02, 02P                         |
|                                              | Key              | SMF   | FG04P                             |
| Two Starters                                 | Toggle           | SMF   | FG222, 222P                       |
|                                              | Key              | SMF   | FG44P                             |
| One Starter and One Sel. Switch <sup>①</sup> | Toggle           | SMF   | FG71, 71P, 72, 72P                |
|                                              | Key              | SMF   | FG74P                             |
| Reversing Switch <sup>②</sup>                | Toggle           | MRS   | KG11, 11A, 11B, 22, 22A, 22B, 22C |
| Two Speed Starter                            | Toggle           | SMF   | FG11, 11P, 22, 22P                |
| Two Speed Switch                             | Toggle           | MMS   | KG11, 11A, 11B, 22, 22B, 22C      |



## NEMA Type 1B General Purpose Flush Mounting For Two Unit Devices

| Device <sup>③</sup>                              | Type of Operator | Class | Type                                    | A             | B            | C             | D            |
|--------------------------------------------------|------------------|-------|-----------------------------------------|---------------|--------------|---------------|--------------|
| Two Starters                                     | Toggle           | SMF   | FF22, 22P                               | 5.25<br>(133) | 3.75<br>(95) | 5.25<br>(133) | 1.44<br>(37) |
|                                                  |                  |       | FS22P                                   | 4.56<br>(116) | 3.50<br>(89) | 4.50<br>(114) | 1.44<br>(37) |
|                                                  | Key              | SMF   | FF44P                                   | 5.25<br>(133) | 3.75<br>(95) | 5.25<br>(133) | 1.44<br>(37) |
|                                                  |                  |       | FS44P                                   | 4.56<br>(116) | 3.50<br>(89) | 4.50<br>(114) | 1.44<br>(37) |
| One Starter and One Selector Switch <sup>④</sup> | Toggle           | SMF   | FF71, 71P, 72, 72P                      | 5.25<br>(133) | 0.75<br>(19) | 5.25<br>(133) | 2.00<br>(51) |
|                                                  |                  |       | FS71P, 72P                              | 4.56<br>(116) | 3.50<br>(89) | 4.50<br>(114) | 2.00<br>(51) |
|                                                  | Key              | SMF   | FF74P                                   | 5.25<br>(133) | 3.75<br>(95) | 5.25<br>(133) | 2.00<br>(51) |
|                                                  |                  |       | FS74P                                   | 4.56<br>(116) | 3.50<br>(89) | 4.50<br>(114) | 2.00<br>(51) |
| Reversing Switch                                 | Toggle           | MRS   | KF11, 11A, 11B<br>KF22, 22A<br>22B, 22C | 5.25<br>(133) | 3.75<br>(95) | 5.25<br>(133) | 1.75<br>(44) |
| Two Speed Switch                                 | Toggle           | SMF   | FF11, 11P, 22, 22P                      | 5.25<br>(133) | 3.75<br>(95) | 5.25<br>(133) | 1.44<br>(37) |
| Two Speed Switch                                 | Toggle           | MMS   | KF11, 11A, 11B<br>22, 22B, 22C          | 5.25<br>(133) | 3.75<br>(95) | 5.25<br>(133) | 1.44<br>(37) |



**Note:** Dimensions for reference, not for construction.  
Dimensions are in inches (mm).

① Selector switch is on the left, increases overall depth to 3.50 in. (89 mm).

② Only one pilot light (located on right) is used on MRS switches.

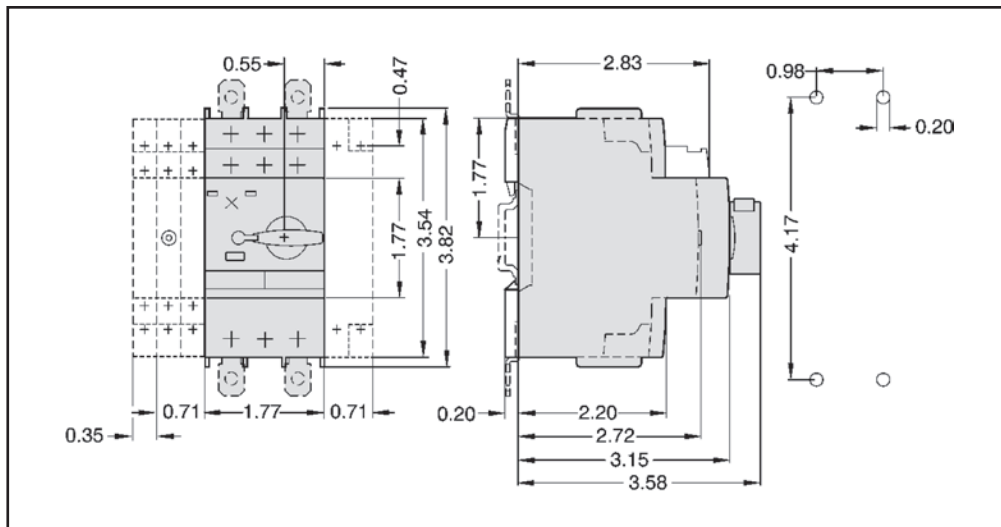
③ Dimensions include factory wired power connections.

④ Selector switch is on the left, extends 1.62 in. (41 mm) from mounting surface.

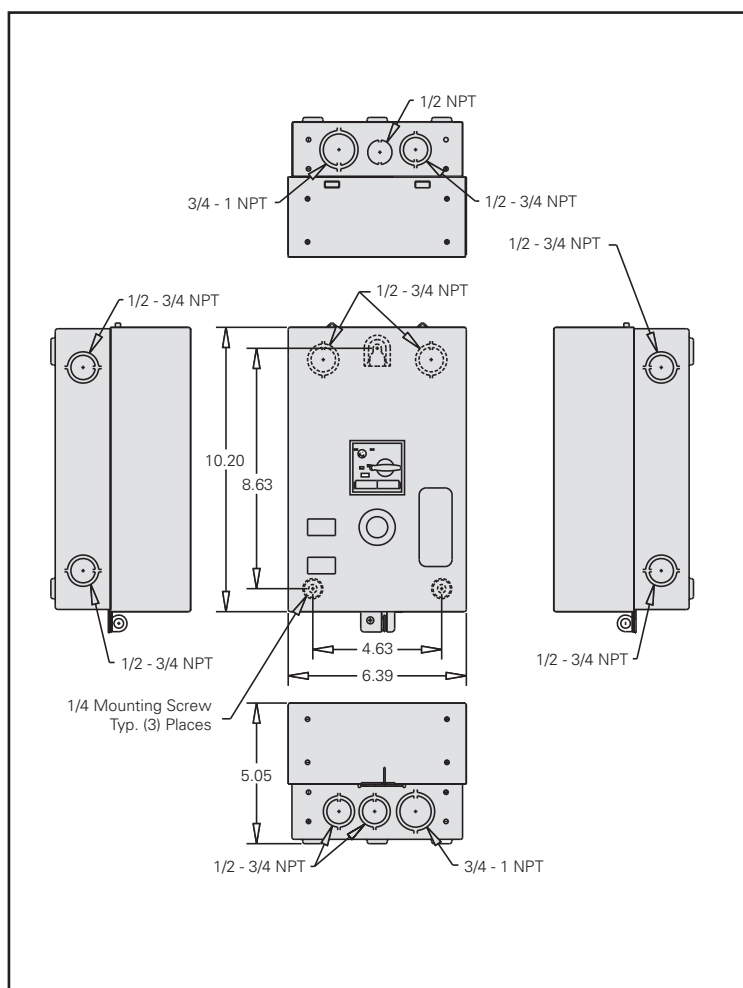
## Class 11 - 3RV

## Dimensions

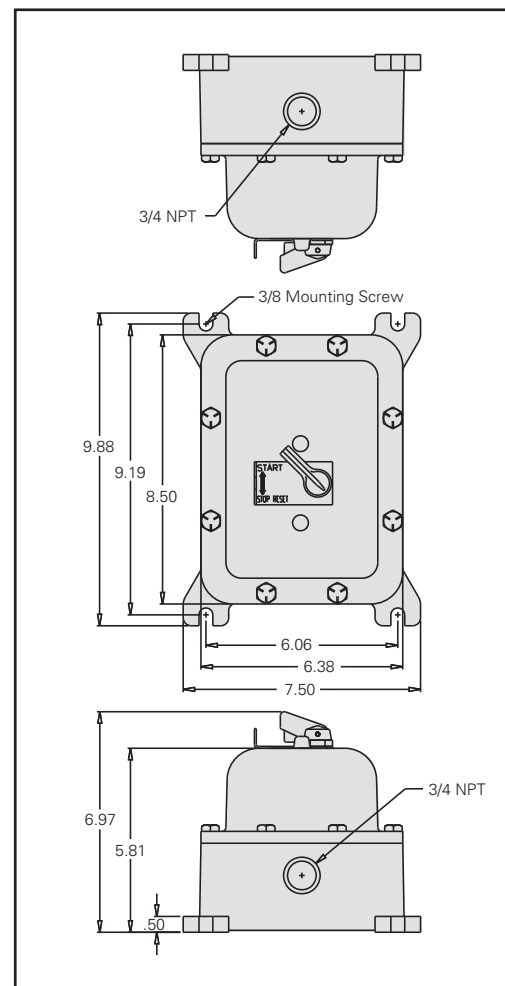
## 3RV102



## Class 11 - NEMA 1 Enclosure



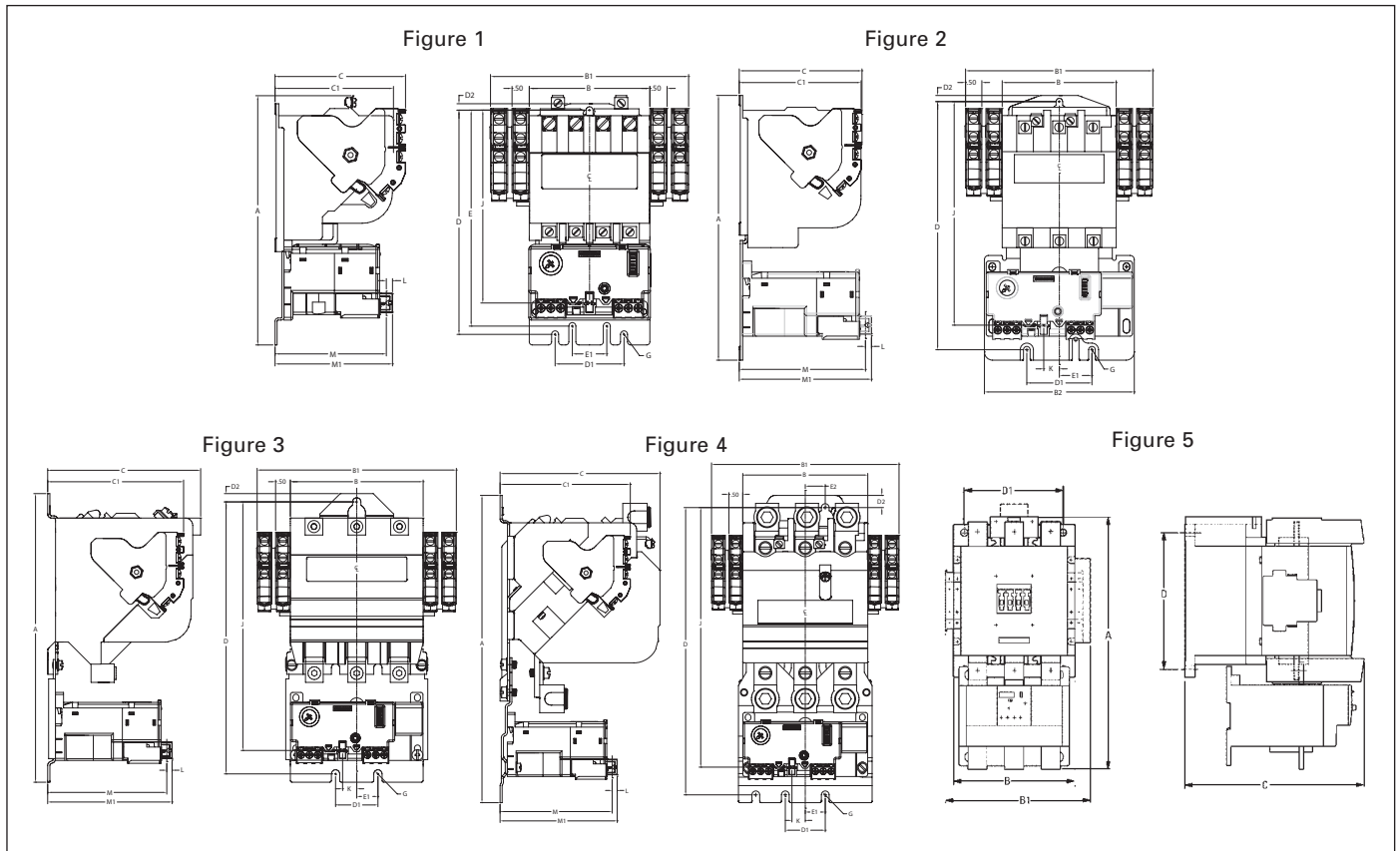
## Class 11 - NEMA 7 &amp; 9, 3 &amp; 4, and NEMA 7 &amp; 9 Enclosure



**Note:** Dimensions in inches (millimeters). Dimensions for reference, not for construction. Contact Sales Office for dimensions not listed.

## Solid State Overload, Class 14

## Dimensions



## Open Type Solid State Overload

| Size  | Figure | Outline Dimensions |               |               |               |               | Mounting Dimensions |                |               |              |               |              |              | Mounting Screw | Reset Dimensions |              |             |               |               |
|-------|--------|--------------------|---------------|---------------|---------------|---------------|---------------------|----------------|---------------|--------------|---------------|--------------|--------------|----------------|------------------|--------------|-------------|---------------|---------------|
|       |        | A                  | B             | B1            | B2            | C             | C1                  | D              | D1            | D2           | E             | E1           | E2           | G              | J                | K            | L           | M             | M1            |
| 00-1¼ | 1      | 7.44<br>(189)      | 3.50<br>(89)  | 5.75<br>(146) | —             | 3.75<br>(95)  | 3.50<br>(89)        | 6.50<br>(165)  | 2.00<br>(51)  | 0.19<br>(5)  | 6.27<br>(159) | 1.00<br>(25) | —            | #10            | 5.60<br>(142)    | —            | 0.18<br>(5) | 3.23<br>(82)  | 3.41<br>(87)  |
| 2-2½  | 2      | 8.13<br>(207)      | 3.50<br>(89)  | 5.75<br>(146) | 4.60<br>(117) | 4.00<br>(102) | 3.77<br>(96)        | 7.62<br>(194)  | 2.00<br>(51)  | 0.19<br>(5)  | —             | 1.00<br>(25) | —            | #10            | 6.87<br>(174)    | 0.48<br>(12) | 0.18<br>(5) | 3.88<br>(99)  | 4.06<br>(103) |
| 3-3½  | 3      | 9.78<br>(248)      | 4.50<br>(114) | 6.75<br>(171) | —             | 5.19<br>(132) | 4.66<br>(118)       | 9.22<br>(234)  | 1.44<br>(37)  | 0.28<br>(7)  | —             | 0.72<br>(18) | —            | 0.25<br>(6)    | 8.43<br>(214)    | 0.48<br>(12) | 0.18<br>(5) | 4.04<br>(103) | 4.22<br>(107) |
| 4     | 4      | 11.06<br>(281)     | 4.50<br>(114) | 6.75<br>(171) | —             | 5.75<br>(146) | 4.66<br>(118)       | 10.34<br>(263) | 1.44<br>(37)  | 0.44<br>(11) | —             | 0.72<br>(18) | 0.72<br>(18) | 0.25<br>(6)    | 9.35<br>(237)    | 0.48<br>(12) | 0.18<br>(5) | 4.04<br>(103) | 4.22<br>(107) |
| 5     | 5      | 12.76<br>(324)     | 5.71<br>(145) | 6.89<br>(175) | —             | 8.54<br>(217) | —                   | 7.09<br>(180)  | 4.72<br>(120) | —            | —             | —            | —            | 0.35<br>(9)    | —                | —            | —           | —             | —             |
| 6     | 6      | 13.03<br>(331)     | 6.30<br>(160) | 7.48<br>(190) | —             | 9.29<br>(236) | —                   | 7.09<br>(180)  | 5.12<br>(130) | —            | —             | —            | —            | 0.35<br>(9)    | —                | —            | —           | —             | —             |

**Note:** Dimensions in inches (millimeters). Dimensions for reference, not for construction. Contact Sales Office for dimensions not listed.

## Ambient Compensated Bimetal Class 14

## Dimensions

Figure 1

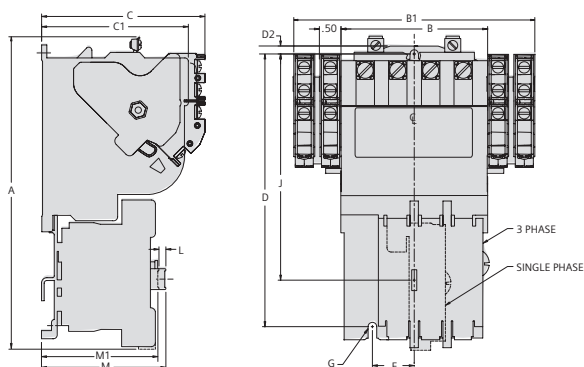


Figure 2

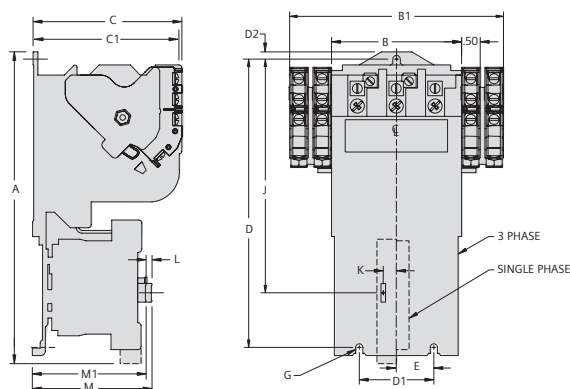


Figure 3

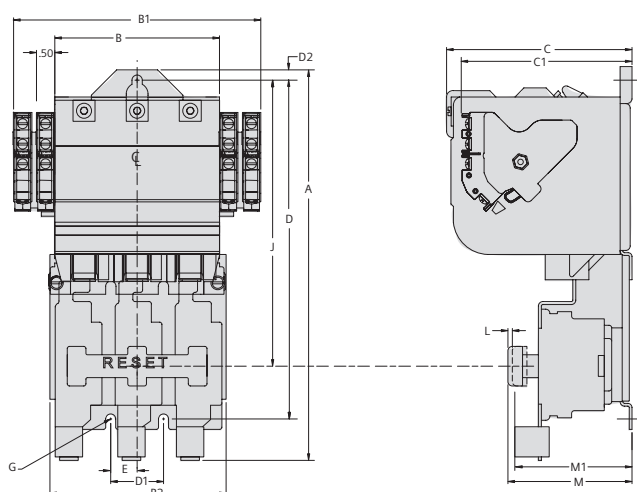
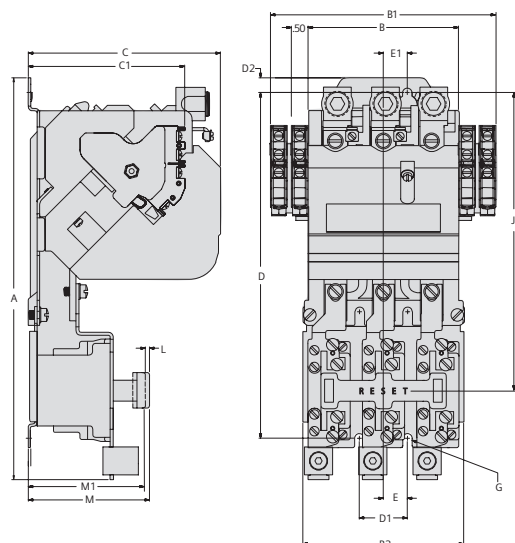


Figure 4



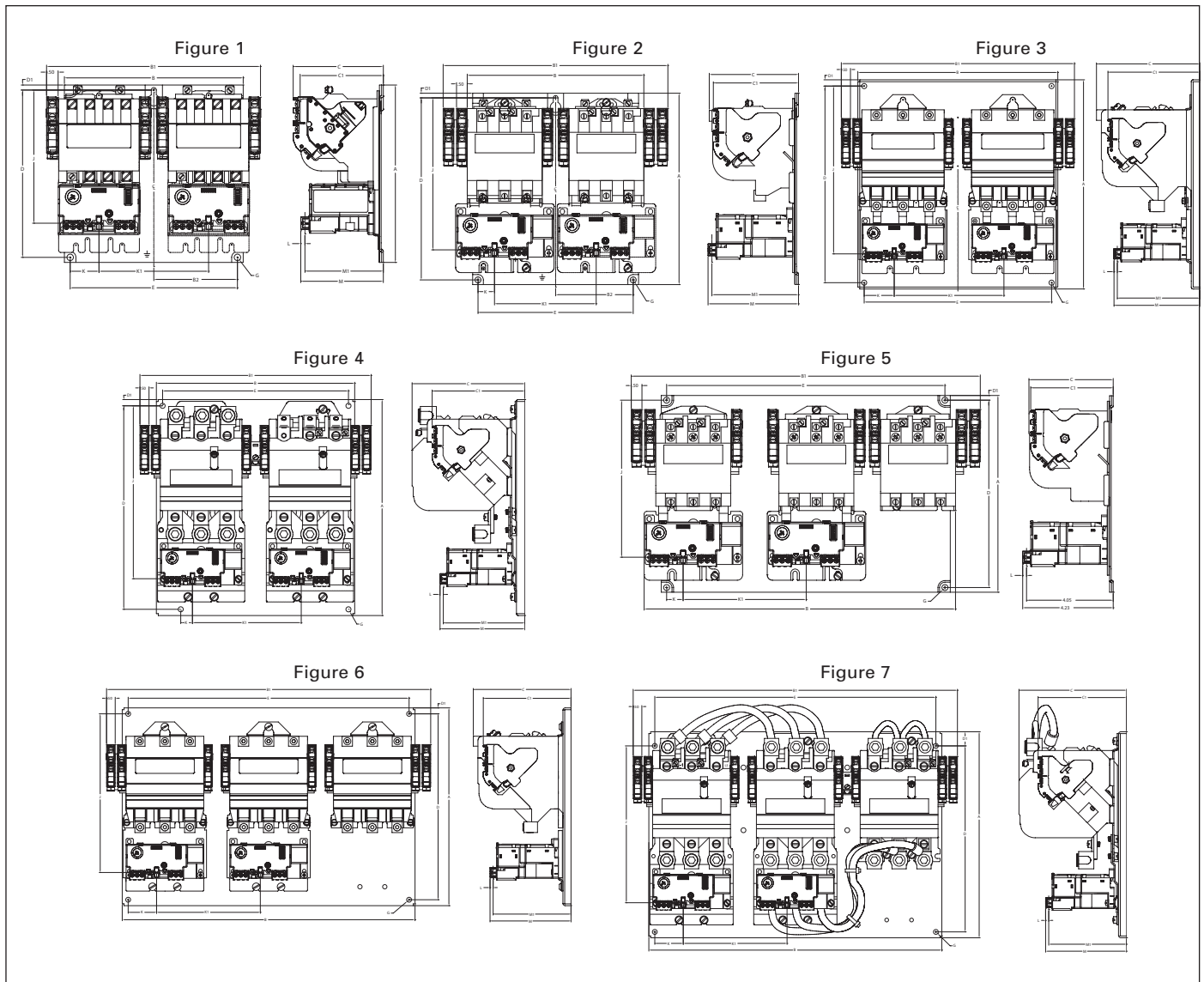
## Open Type Ambient Compensated Bimetal Overload

| Size  | Figure | Outline Dimensions |               |               |               |               | Mounting Dimensions |              |               |              |              | Mounting Screw | Reset Dimensions |             |             |              |              |
|-------|--------|--------------------|---------------|---------------|---------------|---------------|---------------------|--------------|---------------|--------------|--------------|----------------|------------------|-------------|-------------|--------------|--------------|
|       |        | A                  | B             | B1            | C             | C1            | D                   | D1           | D2            | E            | E1           | G              | J                | K           | L           | M            | M1           |
| 00-1¼ | 1      | 7.45<br>(189)      | 3.50<br>(89)  | 5.75<br>(146) | 3.89<br>(99)  | 3.50<br>(89)  | 6.50<br>(165)       | —            | 0.19<br>(4.8) | 1.00<br>(25) | —            | #10            | 5.39<br>(137)    | —           | 0.16<br>(4) | 2.97<br>(75) | 2.81<br>(71) |
| 2-2½  | 2      | 8.38<br>(213)      | 3.50<br>(89)  | 5.75<br>(146) | 4.00<br>(102) | 3.77<br>(96)  | 7.75<br>(197)       | 2.00<br>(51) | 0.19<br>(4.8) | 1.00<br>(25) | —            | #10            | 6.28<br>(160)    | 0.36<br>(9) | 0.16<br>(4) | 3.22<br>(82) | 3.06<br>(78) |
| 3-3½  | 3      | 10.66<br>(271)     | 4.50<br>(114) | 6.75<br>(171) | 5.06<br>(129) | 4.66<br>(118) | 9.25<br>(235)       | 1.44<br>(37) | 0.28<br>(7)   | 0.72<br>(18) | —            | 0.25<br>(6)    | 7.81<br>(198)    | —           | 0.12<br>(3) | 3.39<br>(86) | 3.27<br>(83) |
| 4     | 4      | 12.02<br>(305)     | 4.50<br>(114) | 6.75<br>(171) | 5.75<br>(146) | 4.66<br>(118) | 10.34<br>(263)      | 1.44<br>(37) | 0.44<br>(11)  | 0.72<br>(18) | 0.72<br>(18) | 0.25<br>(6)    | 8.78<br>(223)    | —           | 0.12<br>(3) | 3.63<br>(92) | 3.51<br>(89) |

**Note:** Dimensions in inches (millimeters). Dimensions for reference, not for construction. Contact Sales Office for dimensions not listed.

## Solid State Overload Class 22, 30

## Dimensions



## Class 22 Reversing &amp; Class 30 2 Speed/2 Winding

| Size  | Figure | Outline Dimensions |       |       |      |      |      | Mounting Dimensions |      |       | Mounting Screw | Reset Dimensions |      |      |      |      |      |
|-------|--------|--------------------|-------|-------|------|------|------|---------------------|------|-------|----------------|------------------|------|------|------|------|------|
|       |        | A                  | B     | B1    | B2   | C    | C1   | D                   | D1   | E     |                | J                | K    | K1   | L    | M    | M1   |
| 00-1½ | 1      | 7.69               | 7.75  | 10.50 | 3.62 | 3.92 | 3.61 | 7.25                | 0.22 | 7.25  | #10            | 5.77             | 1.25 | 4.75 | 0.18 | 3.58 | 3.40 |
| 2-2½  | 2      | 8.94               | 8.25  | 10.50 | 3.62 | 4.17 | 3.98 | 8.50                | 0.22 | 7.25  | #10            | 7.10             | 0.77 | 4.75 | 0.18 | 4.23 | 4.05 |
| 3-3½  | 3      | 11.44              | 10.94 | 12.75 | —    | 5.65 | 5.03 | 10.75               | 0.34 | 10.25 | #10            | 9.18             | 1.64 | 6.00 | 0.18 | 4.69 | 4.51 |
| 4     | 4      | 11.91              | 10.94 | 12.75 | —    | 6.22 | 5.12 | 11.22               | 0.34 | 10.25 | 0.25           | 9.53             | 0.65 | 6.00 | 0.18 | 4.68 | 4.50 |

## Class 30 2 Speed/1 Winding

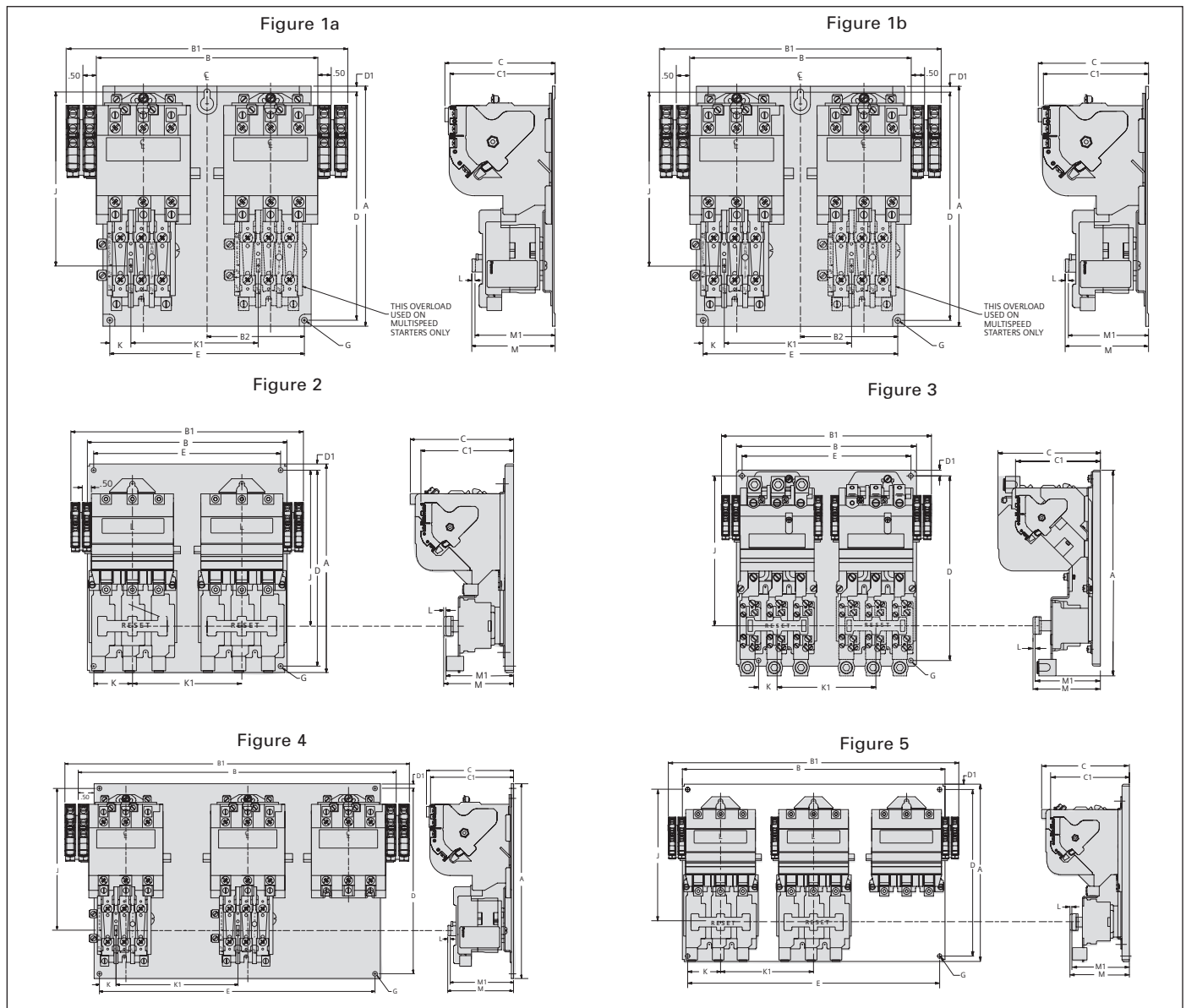
| Size  | Figure | Outline Dimensions |       |       |      |      |      | Mounting Dimensions |      |       | Mounting Screw | Reset Dimensions |      |      |      |      |      |
|-------|--------|--------------------|-------|-------|------|------|------|---------------------|------|-------|----------------|------------------|------|------|------|------|------|
|       |        | A                  | B     | B1    | B2   | C    | C1   | D                   | D1   | E     |                | J                | K    | K1   | L    | M    | M1   |
| 00-1½ | 1      | 7.69               | 7.75  | 10.50 | 3.62 | 3.92 | 3.61 | 7.25                | 0.22 | 7.25  | #10            | 5.77             | 1.25 | 4.75 | 0.18 | 3.58 | 3.40 |
| 2-2½  | 5      | 9.19               | 14.55 | 16.30 | —    | 3.94 | 3.85 | 8.75                | 0.22 | 13.00 | #10            | 7.33             | 0.77 | 5.75 | 0.18 | 4.23 | 4.05 |
| 3-3½  | 6      | 11.44              | 16.94 | 18.75 | —    | 5.65 | 5.07 | 10.75               | 0.34 | 16.25 | #10            | 9.18             | 1.64 | 6.00 | 0.18 | 4.68 | 4.50 |
| 4     | 7      | 11.91              | 16.94 | 17.75 | —    | 6.22 | 5.12 | 10.75               | 0.82 | 16.25 | #10            | 9.06             | 1.64 | 6.00 | 0.18 | 4.68 | 4.50 |

Note: Dimensions for reference, not for construction.  
Contact sales office for dimensions not listed.  
Dimensions are in inches (mm).



# Ambient Compensated Bimetal Overload Class 22, 30

## Dimensions



### Class 22 Reversing & Class 30 2 Speed/2 Winding with Bimetal Overload

| Size  | Figure | Outline Dimensions |       |       |      |      |      | Mounting Screw |      |       | Mounting Dimensions |      | Reset Dimensions |      |      |      |      |
|-------|--------|--------------------|-------|-------|------|------|------|----------------|------|-------|---------------------|------|------------------|------|------|------|------|
|       |        | A                  | B     | B1    | B2   | C    | C1   | D              | D1   | E     | G                   | J    | K                | K1   | L    | M    | M1   |
| 00-1½ | 1a     | 7.69               | 8.25  | 10.50 | 3.62 | 3.92 | 3.61 | 7.25           | 0.22 | 7.25  | #10                 | 5.60 | 1.25             | 4.75 | 0.16 | 3.12 | 3.07 |
| 2-2½  | 1b     | 8.94               | 8.25  | 10.50 | 3.62 | 4.17 | 3.98 | 8.50           | 0.22 | 7.25  | #10                 | 6.46 | 0.79             | 4.75 | 0.16 | 3.10 | 3.05 |
| 3-3½  | 2      | 11.44              | 10.94 | 12.94 | —    | 5.66 | 5.08 | 10.75          | 0.34 | 10.25 | #10                 | 8.56 | 2.12             | 6.00 | 0.12 | 3.83 | 3.71 |
| 4     | 3      | 12.50              | 10.94 | 12.75 | —    | 6.22 | 5.16 | 11.22          | 0.34 | 10.25 | 0.25                | 9.11 | 2.12             | 6.00 | 0.12 | 4.09 | 3.97 |

### Class 30 2 Speed/1 Winding with Bimetal Overload

| Size  | Figure | Outline Dimensions |       |       |      |      |      | Mounting Screw |      |       | Mounting Dimensions |      | Reset Dimensions |      |      |      |      |
|-------|--------|--------------------|-------|-------|------|------|------|----------------|------|-------|---------------------|------|------------------|------|------|------|------|
|       |        | A                  | B     | B1    | B2   | C    | C1   | D              | D1   | E     | G                   | J    | K                | K1   | L    | M    | M1   |
| 00-1½ | 1a     | 7.69               | 8.25  | 10.50 | 3.62 | 3.92 | 3.61 | 7.25           | 0.22 | 7.25  | #10                 | 5.60 | 1.25             | 4.75 | 0.16 | 3.12 | 3.07 |
| 2-2½  | 4      | 9.19               | 14.56 | 16.25 | —    | 4.11 | 3.92 | 8.75           | 0.22 | 13.00 | 0.25                | 6.71 | 0.78             | 5.75 | 0.16 | 3.10 | 3.05 |
| 3-3½  | 5      | 11.44              | 16.94 | 18.75 | —    | 5.66 | 5.08 | 10.75          | 0.34 | 16.25 | 0.25                | 8.56 | 2.12             | 6.00 | 0.12 | 3.83 | 3.71 |

**Note:** Dimensions for reference, not for construction.  
Contact sales office for dimensions not listed.  
Dimensions are in inches (mm).

## Full Voltage Open Type NEMA Contactor Size 00-8

Figure 1

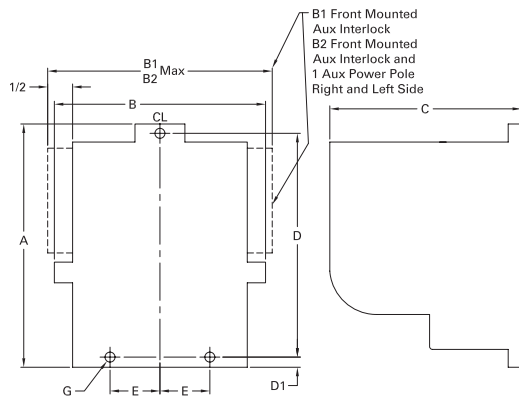


Figure 2

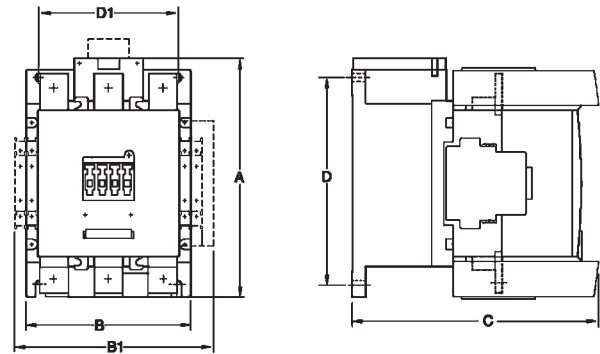


Figure 3

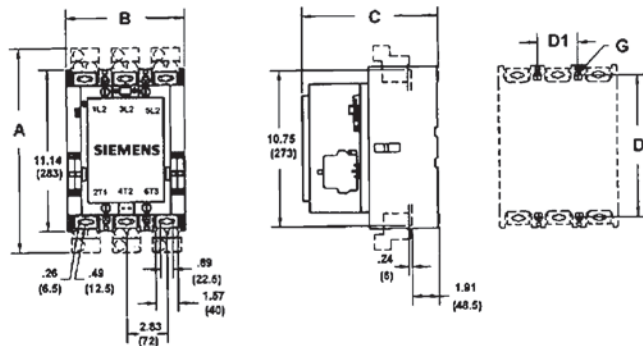
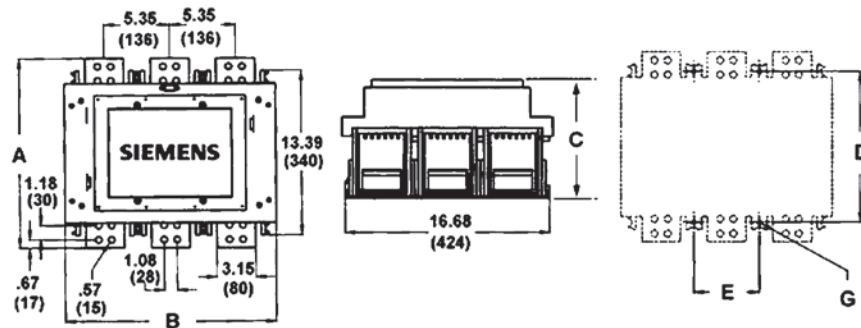


Figure 4



## Open Type

| Size  | 3rd Character of Catalog No. ① | Outline Dimensions |             |             |            |            |             | Mounting Dimensions |            |            | Mounting Screw |
|-------|--------------------------------|--------------------|-------------|-------------|------------|------------|-------------|---------------------|------------|------------|----------------|
|       |                                | Fig                | A           | B           | B1         | B2         | C           | D                   | D1         | E          |                |
| 00-1½ | C, D, E                        | 1                  | 4.31 (110)  | 3.94 (100)  | 4.25 (108) | 4.75 (121) | 3.75 (70)   | 3.94 (100)          | 0.19 (5)   | 1.00 (25)  | #10            |
| 2-2½  | F, G                           | 1                  | 4.88 (124)  | 3.94 (100)  | 4.25 (108) | —          | 4.00 (102)  | 4.50 (114)          | 0.19 (5)   | 1.00 (25)  | #10            |
| 3-3½  | H, I                           | 1                  | 6.13 (156)  | 5.13 (130)  | 5.50 (140) | —          | 5.06 (129)  | 5.63 (143)          | 0.25 (6)   | 0.75 (19)  | 0.25 (6)       |
| 4     | J                              | 1                  | 7.81 (198)  | 5.19 (132)  | 5.50 (140) | —          | 5.75 (146)  | 6.56 (167)          | 0.81 (21)  | 0.75 (19)  | 0.5 (13)       |
| 5     | L                              | 2                  | 8.27 (210)  | 5.71 (145)  | 6.89 (175) | —          | 8.54 (217)  | 7.09 (180)          | 4.72 (120) | —          | 0.35 (9)       |
| 6     | M                              | 2                  | 8.43 (214)  | 6.3 (160)   | 7.48 (190) | —          | 9.29 (236)  | 7.09 (180)          | 5.12 (130) | —          | 0.35 (9)       |
| 7     | N                              | 3                  | 14.05 (357) | 8.27 (210)  | —          | —          | 9.53 (242)  | 9.80 (249)          | 2.83 (72)  | —          | 0.25 (6)       |
| 8     | P                              | 4                  | 15.41 (392) | 17.23 (438) | —          | —          | 10.56 (268) | 12.28 (312)         | —          | 5.35 (136) | 0.35 (9)       |

**Note:** Dimensions for reference, not for construction.  
Contact sales office for dimensions not listed.  
Dimensions are in inches (mm).

① 3rd character of catalog number identifies contactor rating.

Figure 1

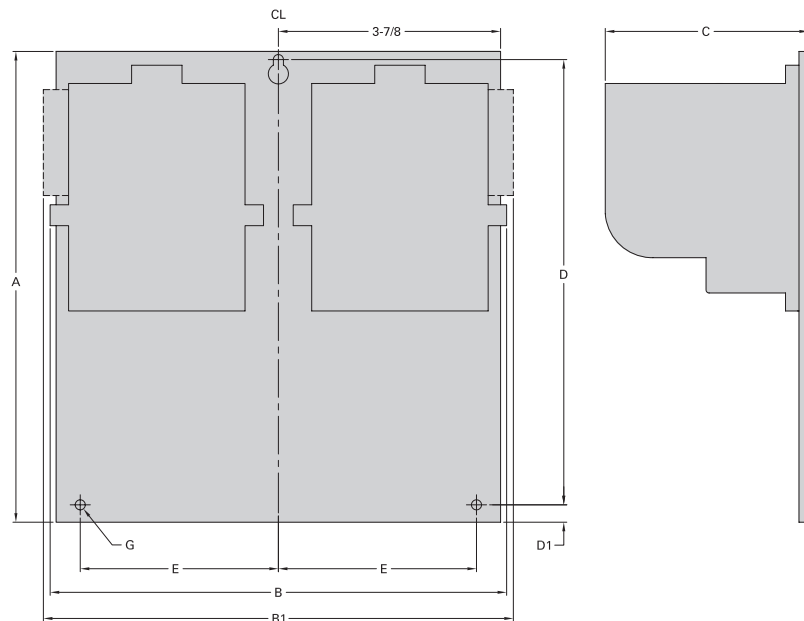
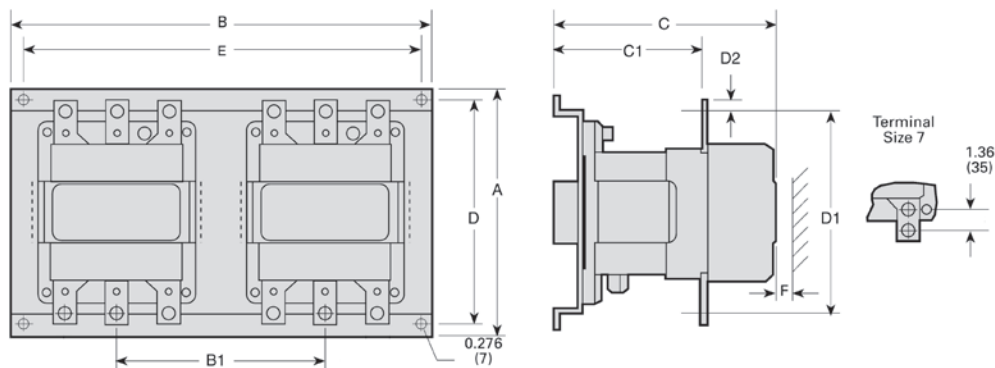


Figure 2



## Open Type Horizontal Mounted

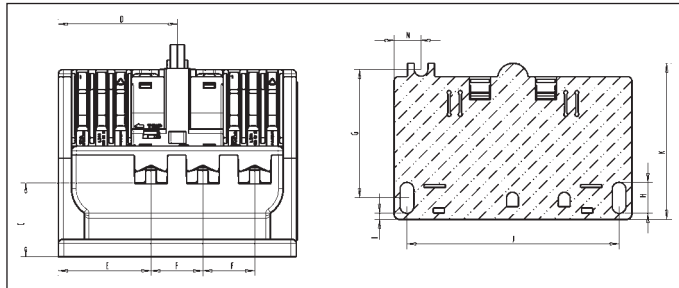
| Size  | Fig. | Outline Dimensions |             |             |             |            | Mounting Dimensions |             |             |           | Mounting Screw |
|-------|------|--------------------|-------------|-------------|-------------|------------|---------------------|-------------|-------------|-----------|----------------|
|       |      | A                  | B           | B1          | C           | C1         | D                   | D1          | E           | F         |                |
| 00-1¼ | 1    | 7.69 (195)         | 7.75 (197)  | 9.25 (235)  | 3.88 (98)   | —          | 7.25 (184)          | 0.25 (6)    | 3.63 (92)   | —         | #10            |
| 2, 2½ | 1    | 8.94 (227)         | 7.75 (197)  | 9.25 (235)  | 4.56 (116)  | —          | 8.5 (216)           | 0.25 (6)    | 3.63 (92)   | —         | #10            |
| 3-3½  | 1    | 11.44 (291)        | 10.94 (278) | 11.50 (292) | 5.19 (132)  | —          | 10.75 (273)         | 0.38 (6)    | 5.13 (130)  | —         | 0.25           |
| 4     | 1    | 8.50 (216)         | 10.94 (278) | 11.50 (292) | 6.25 (159)  | —          | 7.81 (198)          | 0.38 (6)    | 5.13 (130)  | —         | 0.25           |
| 5     | 2    | 18.07 (459)        | 14.20 (361) | —           | 9.44 (240)  | —          | 17.20 (437)         | —           | 9.61 (244)  | —         | —              |
| 6     | 2    | 11.61 (295)        | 18.88 (480) | 9.45 (240)  | 10.85 (276) | 7.44 (189) | 10.44 (265)         | 10.71 (272) | 17.72 (450) | 1.18 (30) | —              |

**Note:** Dimensions for reference, not for construction.  
Contact sales office for dimensions not listed.  
Dimensions are in inches (mm).

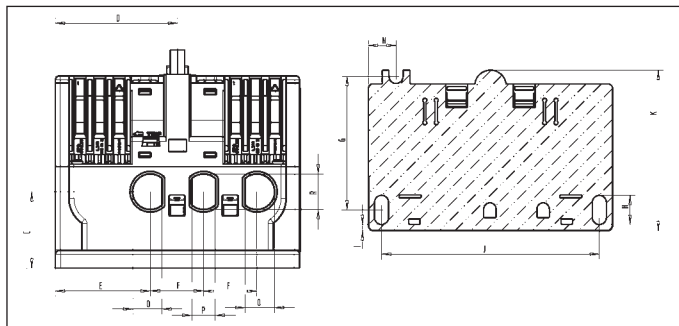
# Solid State Overload

## Dimensions

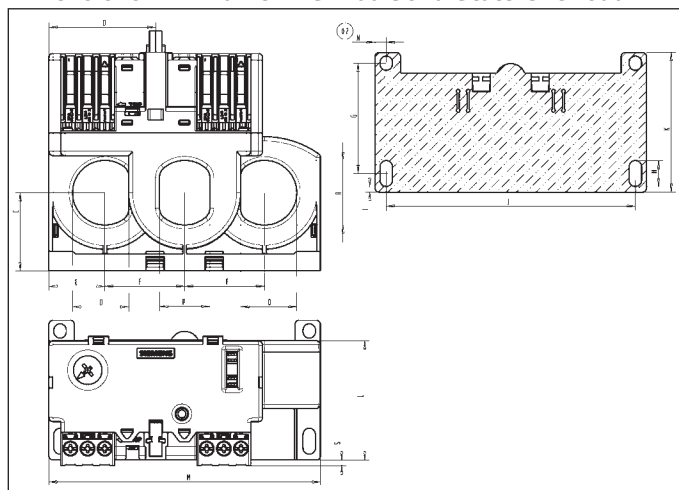
Dimensions "A" Frame—ESP200 Solid State Overload



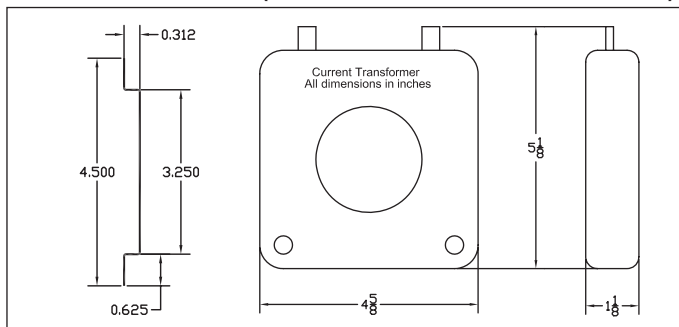
Dimensions "A1" Frame—ESP200 Solid State Overload



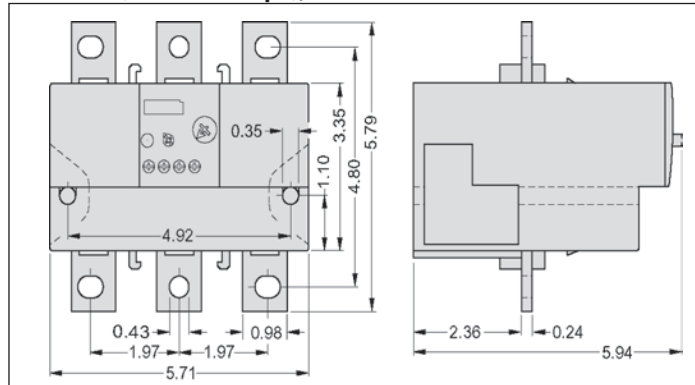
Dimensions "B" Frame—ESP200 Solid State Overload



Current Transformers (all CT's have the same dimensions)



Overload (55 - 630 Amps), SIRIUS 3RB20



| Dimensions | Frame Size A |      | Frame Size A1 |      | Frame Size B |      |
|------------|--------------|------|---------------|------|--------------|------|
|            | mm           | in.  | mm            | in.  | mm           | in.  |
| A          | 80           | 3.15 | 80            | 3.15 | 100.4        | 3.95 |
| B          | 12.6         | 0.5  | 12.6          | 0.5  | 8.6          | 0.34 |
| C          | 27.7         | 1.1  | 28            | 1.10 | 32.6         | 1.28 |
| D          | 44.85        | 1.77 | 44.85         | 1.77 | 44.85        | 1.77 |
| E          | 34.9         | 1.37 | 34.9          | 1.37 | 23.5         | 0.93 |
| F          | 19.6         | 0.77 | 19.6          | .077 | 33.5         | 1.32 |
| G          | 48.95        | 1.93 | 48.95         | 1.93 | 46.23        | 1.82 |
| H          | 10.7         | 0.42 | 10.7          | 0.42 | 10.9         | 0.43 |
| I          | 2.3          | 0.09 | 2.3           | 0.09 | 2.4          | 0.09 |
| J          | 80           | 3.15 | 80            | 3.15 | 104.6        | 4.12 |
| K          | 53.9         | 2.12 | 53.9          | 2.12 | 58.6         | 2.31 |
| L          | 66.0         | 2.6  | 55.9          | 2.20 | 50           | 1.97 |
| M          | 89.7         | 3.53 | 89.7          | 3.53 | 114          | 4.49 |
| N          | 10.18        | 0.40 | 10.18         | 0.40 | 4.7          | 0.19 |
| O          | —            | —    | 10.77         | 0.42 | 23.6         | 0.93 |
| P          | —            | —    | 8.62          | 0.34 | 21.1         | 0.83 |
| R          | —            | —    | 12.9          | 0.51 | 27.1         | 1.07 |
| S          | 9.5          | 0.37 | —             | —    | 2.45         | 0.1  |
| T          | 5.2          | 0.21 | 5.2           | 0.21 | 5.2          | 0.21 |

**Note:** When mounted on a plate, torque screws to 11 lb.in. (1.2 Nm).

# Panel Mounted Class 48 — Bimetal

## Dimensions

Figure 1

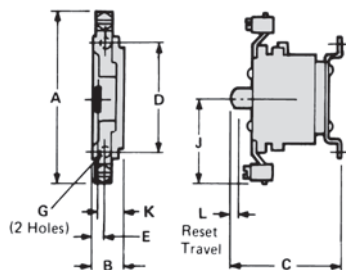


Figure 2

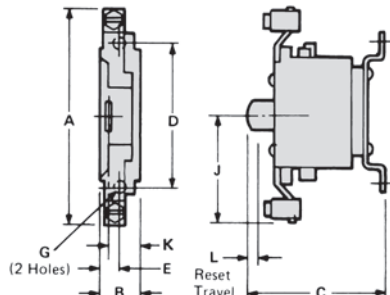


Figure 3

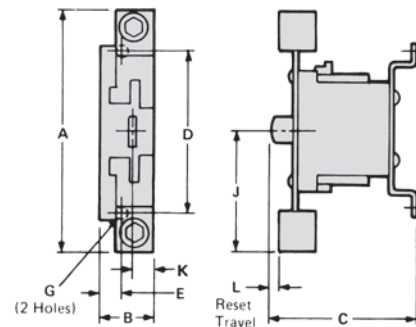


Figure 4

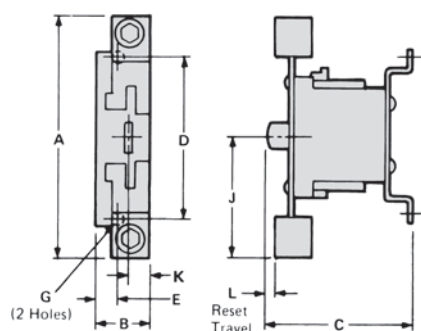


Figure 5

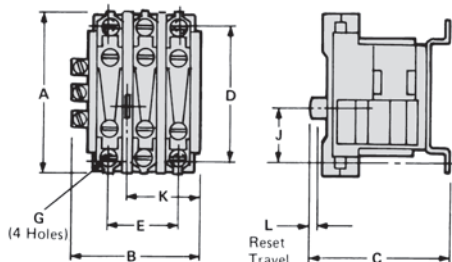


Figure 6

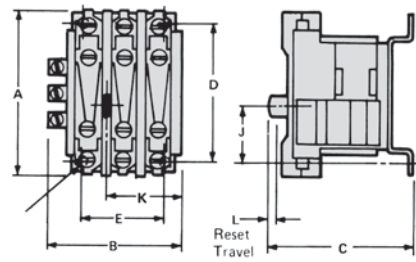


Figure 7

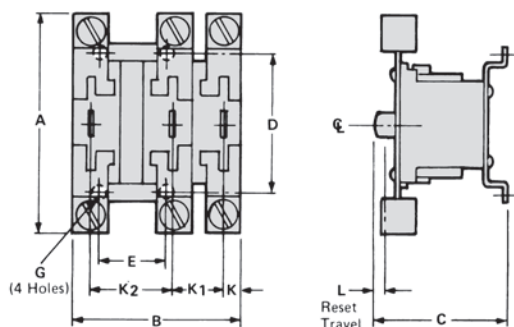
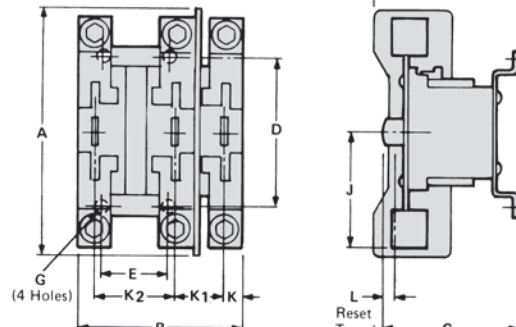


Figure 8



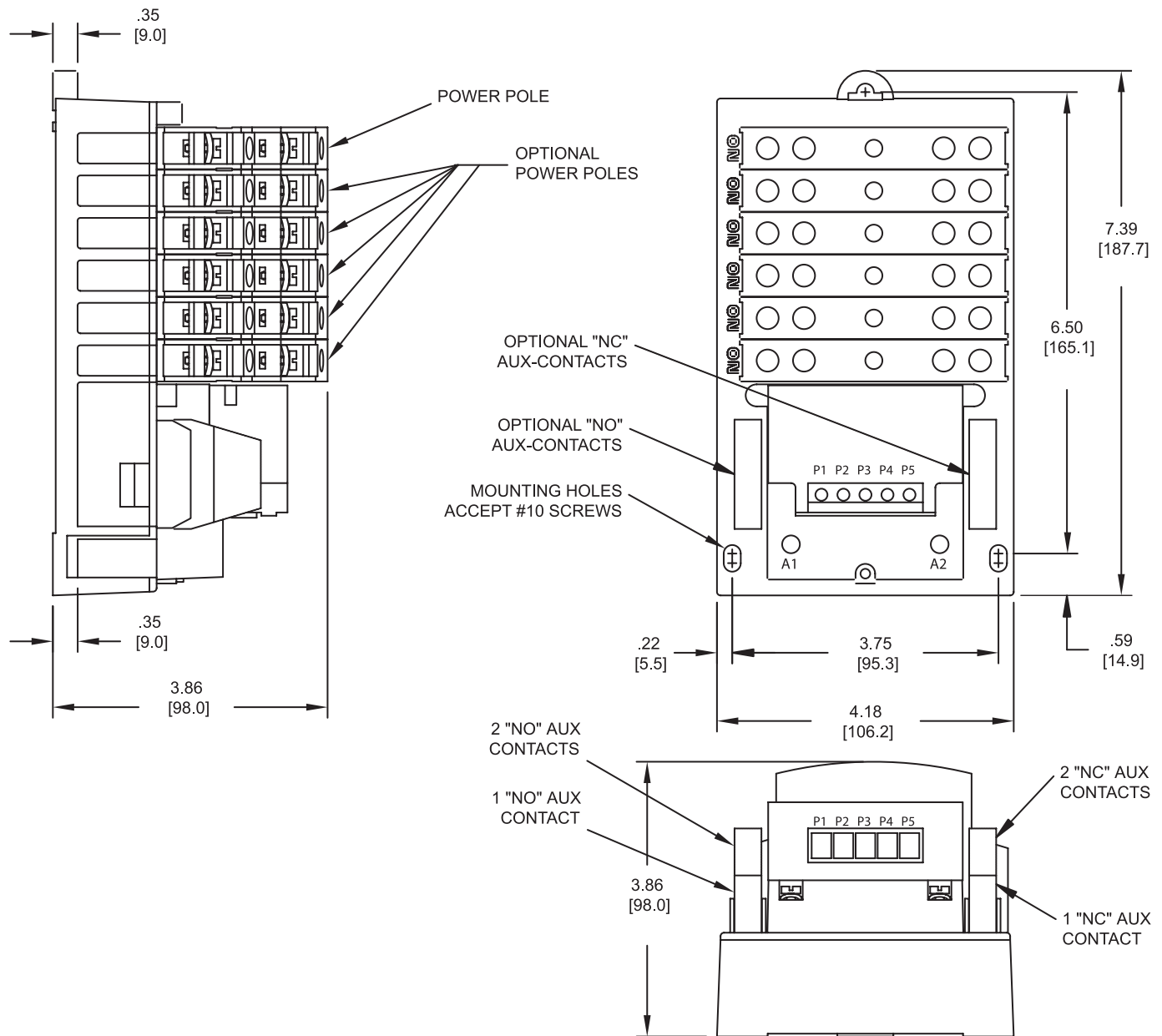
| Description    | Amp Rating | Fig | Outline Dimensions |            |            | Mounting Dimensions |          | Reset Dimensions |          |         | Mounting Screw G | Max Wire Size | Approx Ship Wt Lbs (Kg) | Ref Dwg |
|----------------|------------|-----|--------------------|------------|------------|---------------------|----------|------------------|----------|---------|------------------|---------------|-------------------------|---------|
|                |            |     | A                  | B          | C          | D                   | E        | J                | K        | L       |                  |               |                         |         |
| 1-Pole Bimetal | 25         | 1   | 3 1/2 (89)         | 7/8 (22)   | 3 3/8 (81) | 3 (76)              | 1/2 (13) | 1 1/4 (44)       | 3/4 (19) | 1/8 (3) | #10              | 8             | 2 (1)                   | D51820  |
| Ambient        | 60         | 2   | 4 1/8 (124)        | 7/8 (22)   | 3 3/8 (81) | 3 (76)              | 1/2 (13) | 2 1/8            | 3/4 (19) | 1/8 (3) | #10              | 1             | 2 (1)                   | D51830  |
| Compensated    | 100        | 3   | 4 1/8 (124)        | 1 1/4 (32) | 3 3/8 (90) | 3 1/2 (89)          | 5/8 (14) | 2 1/8            | 1/2 (13) | 1/8 (3) | #10              | 00            | 3 (1)                   | D51833  |
|                | 180        | 4   | 5 15/16 (151)      | 1 1/4 (32) | 3 3/8 (90) | 3 1/2 (89)          | 5/8 (14) | 3 (76)           | 1/2 (13) | 1/8 (3) | #10              | 250 MCM       | 4 (2)                   | D52206  |

| Description    | Amp Rating | Fig | Outline Dimensions |             |            | Mounting Dimensions |            | Reset Dimensions |              |              |        |          | Mtg Screw G | Max Wire Size | Approx Ship Wt Lbs (Kg) | Ref Dwg |
|----------------|------------|-----|--------------------|-------------|------------|---------------------|------------|------------------|--------------|--------------|--------|----------|-------------|---------------|-------------------------|---------|
|                |            |     | A                  | B           | C          | D                   | E          | J                | K            | K1           | K2     | L        |             |               |                         |         |
| 3-Pole Bimetal | 30         | 5   | 3 3/8 (92)         | 3 1/8 (78)  | 3 3/8 (79) | 3 (76)              | 1 1/2 (38) | 1 1/4 (32)       | 1 13/16 (46) | —            | —      | 3/16 (5) | #10         | 8             | 3 (1)                   | D54791  |
| Ambient        | 60         | 6   | 3 3/8 (98)         | 3 1/8 (78)  | 3 3/8 (79) | 3 (76)              | 1 1/2 (38) | 1 1/4 (32)       | 1 13/16 (46) | —            | —      | 3/16 (5) | #10         | 2             | 3 (1)                   | D54823  |
| Compensated    | 100        | 7   | 4 1/8 (124)        | 4 1/8 (113) | 3 3/8 (90) | 3 1/2 (89)          | 1 1/2 (41) | 2 1/8 (62)       | 5/8 (14)     | 1 13/16 (49) | 2 (51) | 1/8 (3)  | #10         | 00            | 4 (2)                   | D51868  |
|                | 180        | 8   | 6 1/2 (165)        | 4 1/8 (113) | 3 3/8 (90) | 3 1/2 (89)          | 1 1/2 (41) | 3 (76)           | 5/8 (14)     | 1 13/16 (49) | 2 (51) | 1/8 (3)  | #10         | 250 MCM       | 5 (2)                   | D52038  |

**Note:** Dimensions for reference, not for construction.  
Dimensions in inches (mm).

## Class LC Open Contactors

## Dimensions



Note:

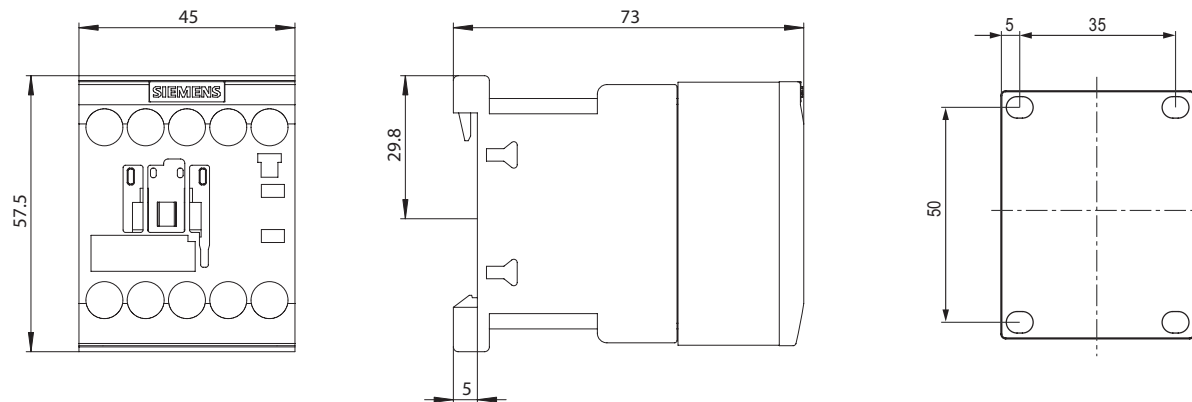
- 1) Mounting Dimensions remain the same for 1 to 12 Poles
- 2) Line and Load terminals are inter-changeable
- 3) Up to 2NO and 2NC auxiliary contacts can be added onto the base product
- 4) Same Power Pole can be configured as NO type or NC type



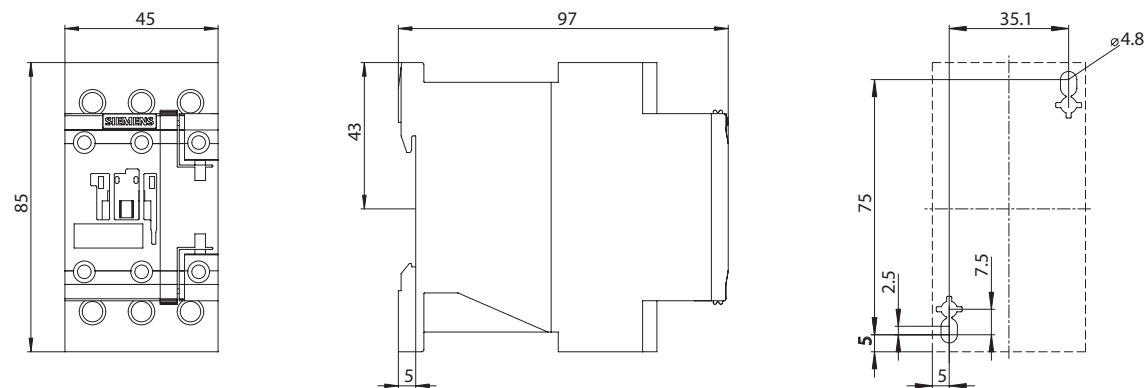
# Open Contactors, Class LE

## Dimensions

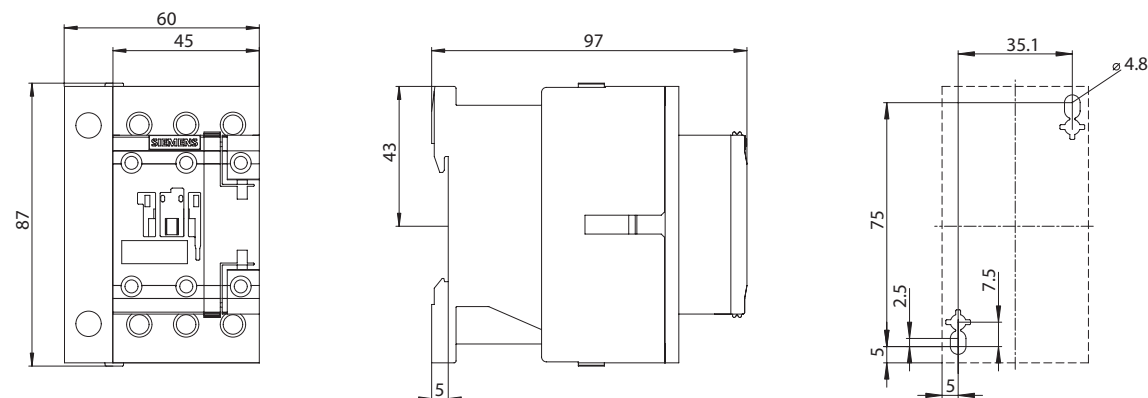
**LEN00B (20A 3 Pole and 4 Pole)**



**LEN00C003 (30A 3 Pole)**



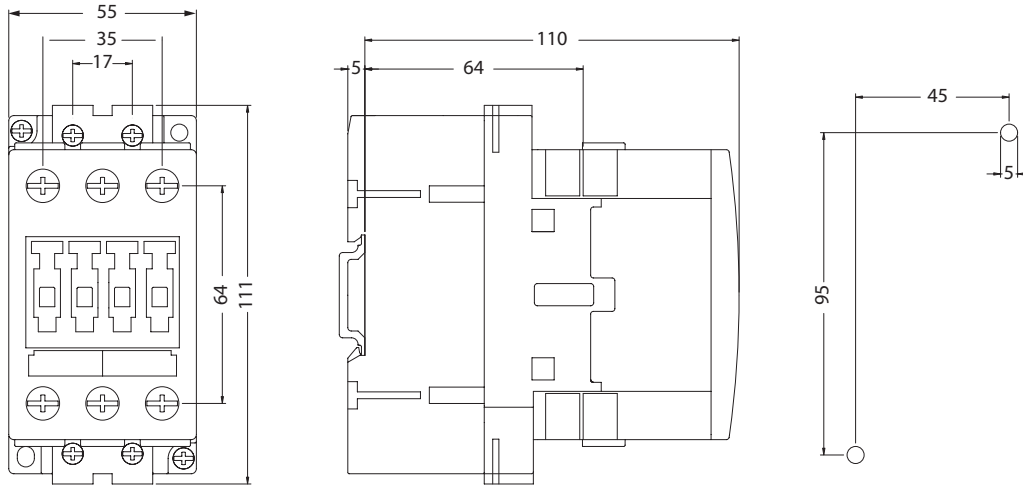
**LEN00C004 (30A 4 Pole)**



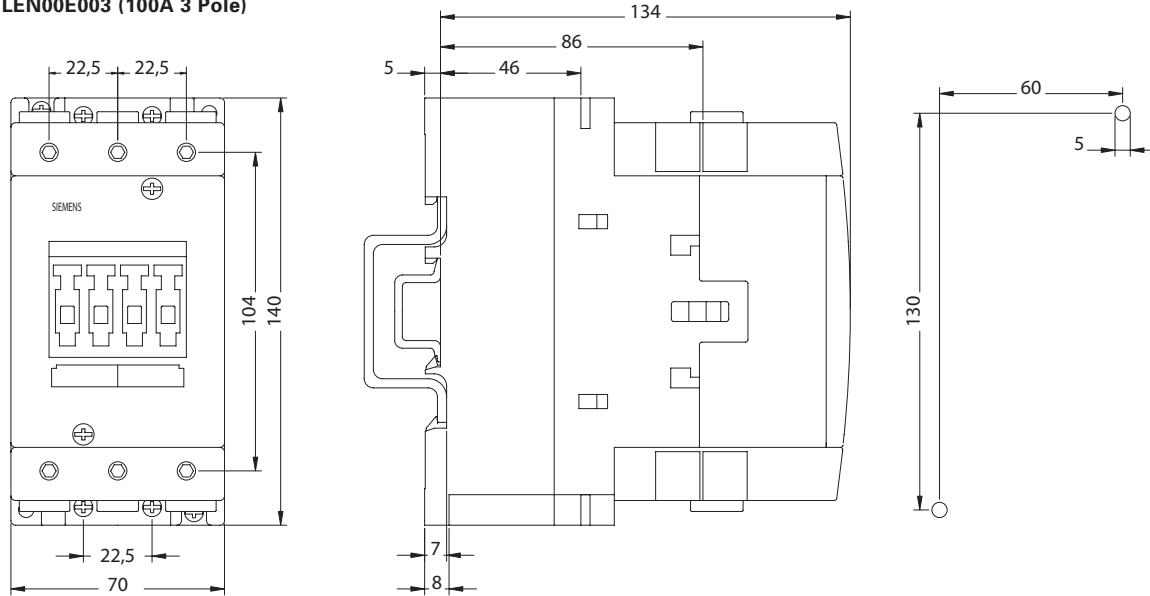
# Open Contactors, Class LE

## Dimensions

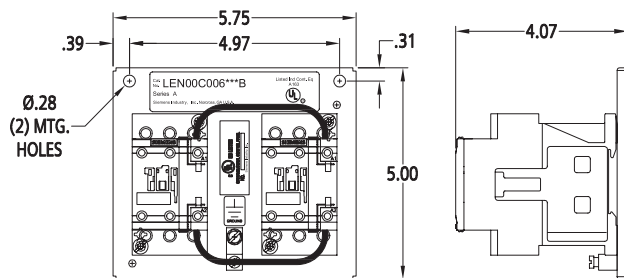
**LEN00D003 (60A 3 Pole)**



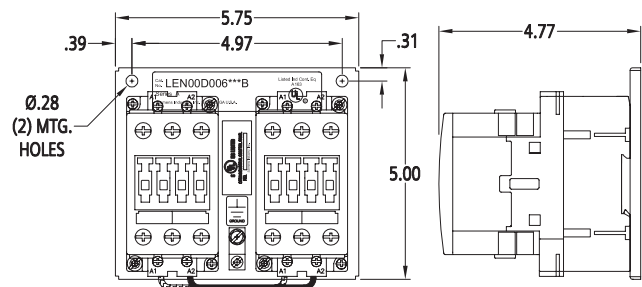
**LEN00E003 (100A 3 Pole)**



**LEN00C006 (30A 6 Pole)**



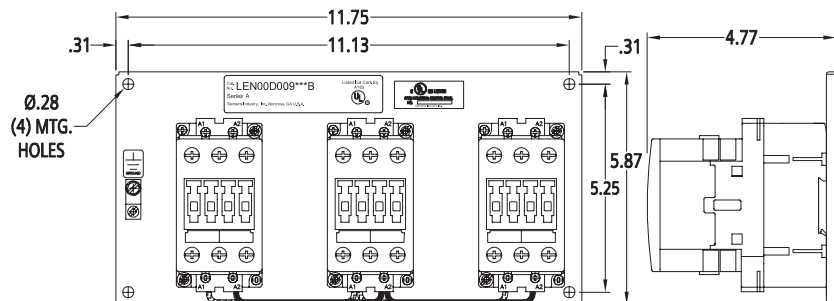
**LEN00D006 (60A 6 Pole)**



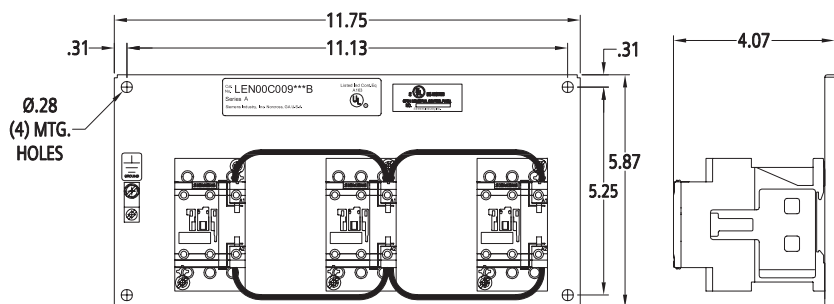
## Open Contactors, Class LE

## Dimensions

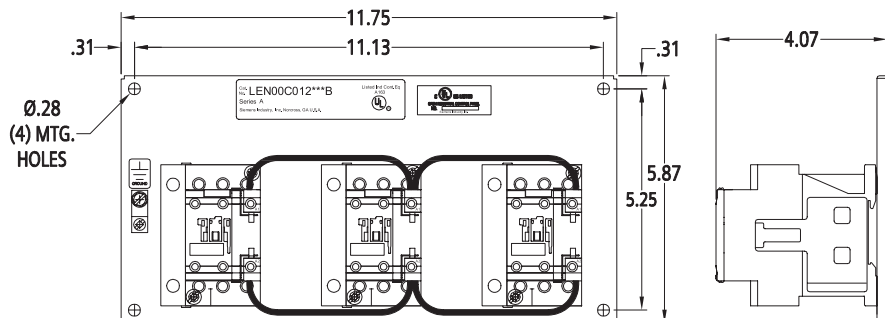
LEN00C009 (30A 9 Pole)



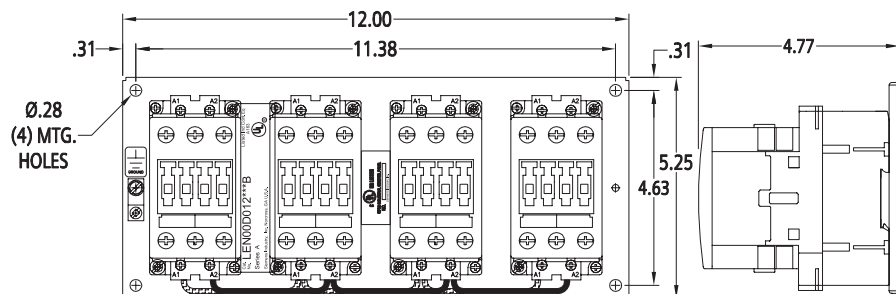
LEN00D009 (60A 9 Pole)



LEN00C012 (30A 12 Pole)



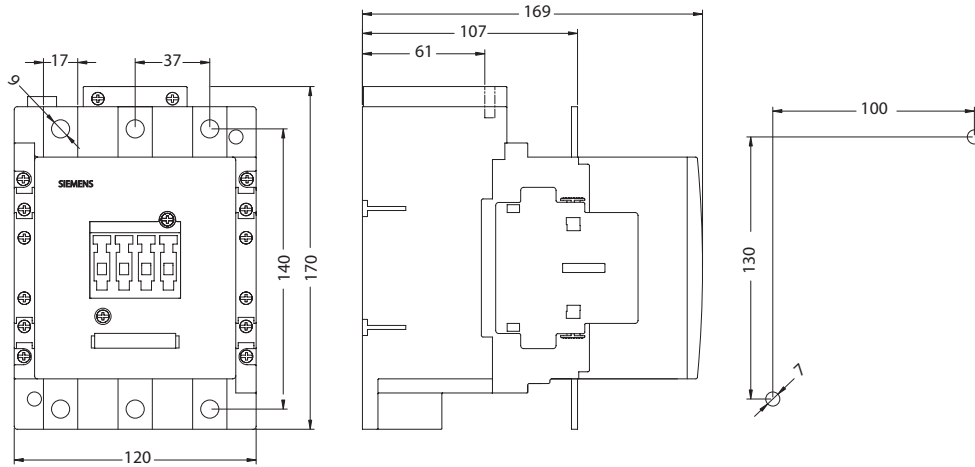
LEN00D012 (60A 12 Pole)



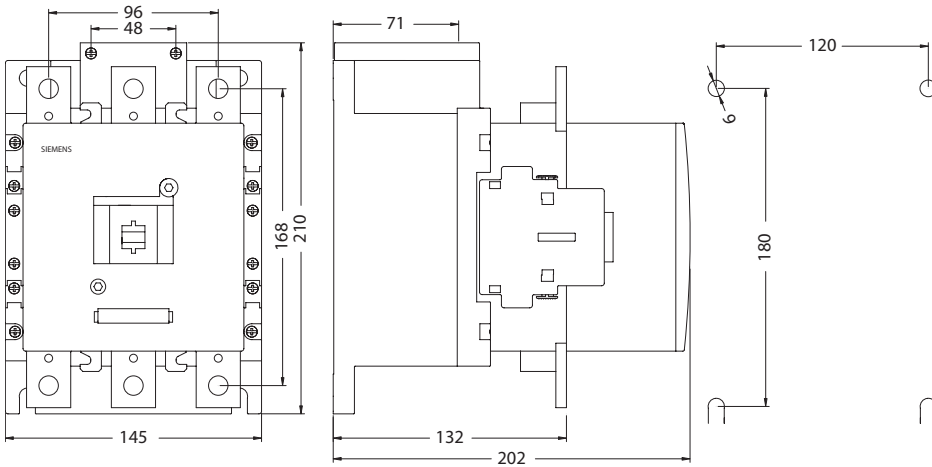
# Open Contactors, Class LE

## Dimensions

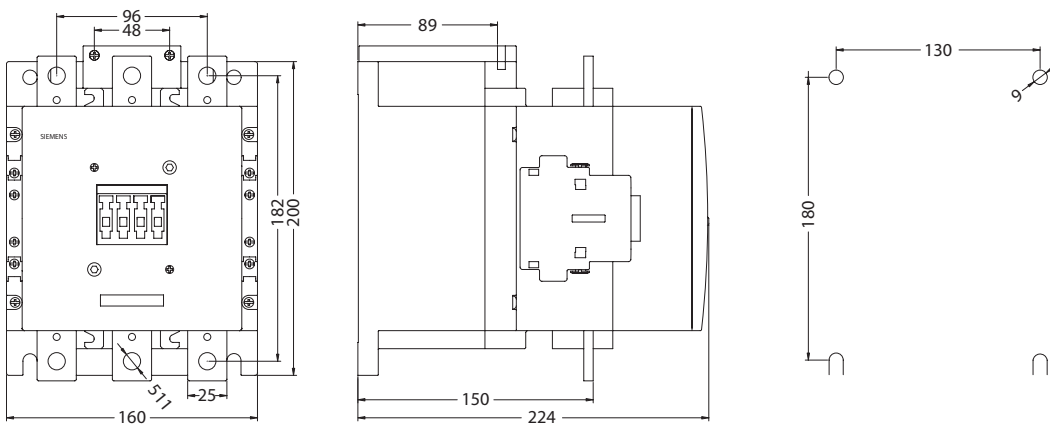
**LEN00F003 (200A 3 Pole)**



**LEN00G003 (300A 3 Pole)**



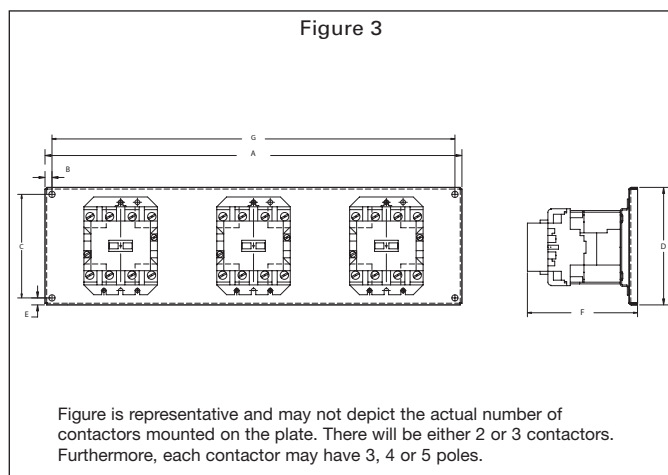
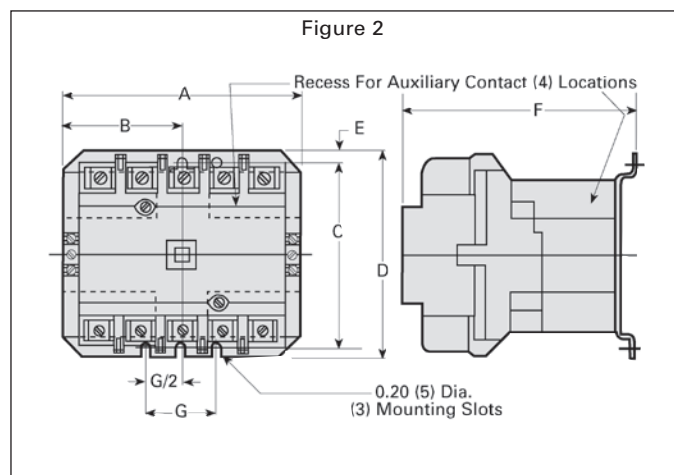
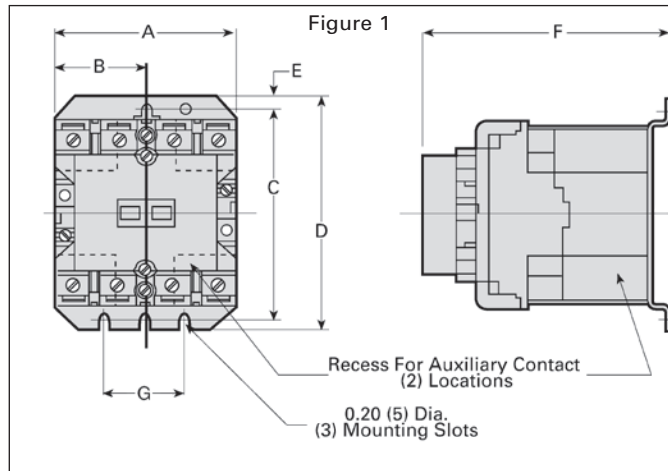
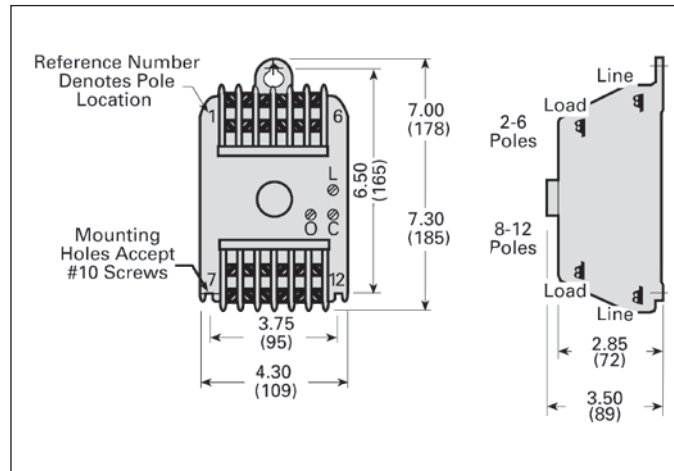
**LEN00H003 (400A 3 Pole)**



## Mechanically / Magnetically Held Lighting Contactors, Class CLM

## Dimensions

## CLM Contactor, 20 Amp



## Open Type Lighting and Heating Contactors

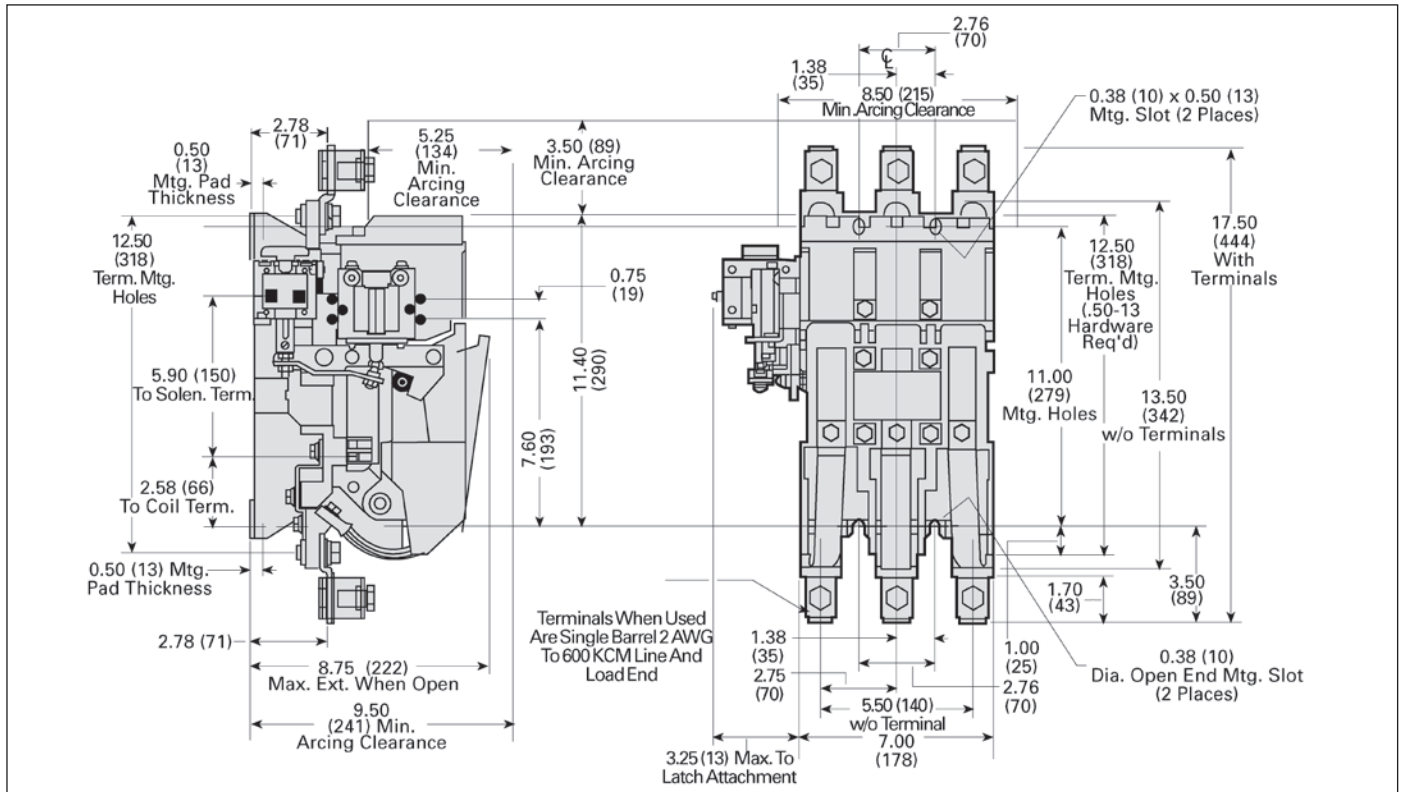
| Class | Figure Number | Amp Rating | Number of Poles | A           | B         | C          | D          | E         | F          | G           |
|-------|---------------|------------|-----------------|-------------|-----------|------------|------------|-----------|------------|-------------|
| CLM   | 1             | 30         | 2-4             | 3.31 (84)   | 1.65 (42) | 3.95 (100) | 4.38 (111) | 0.23 (6)  | 4.61 (117) | 1.50 (38)   |
|       |               | 30         | 5               | 4.19 (106)  | 2.09 (53) | 3.95 (100) | 4.38 (111) | 0.23 (6)  | 4.61 (117) | 1.50 (38)   |
|       | 2             | 60         | 2, 3            | 3.31 (84)   | 1.65 (42) | 3.95 (100) | 4.38 (111) | 0.23 (6)  | 4.94 (125) | 1.50 (38)   |
|       |               | 60         | 4, 5            | 5.06 (129)  | 2.53 (64) | 3.95 (100) | 4.38 (111) | 0.23 (6)  | 4.94 (125) | 1.50 (38)   |
|       |               | 100        | 2, 3            | 4.62 (117)  | 2.31 (59) | 6.00 (152) | 6.62 (168) | 0.38 (10) | 6.75 (171) | 1.88 (48)   |
|       |               | 100        | 4, 5            | 7.25 (184)  | 3.62 (92) | 6.00 (152) | 6.62 (168) | 0.38 (10) | 6.75 (171) | 1.88 (48)   |
|       |               | 200        | 2, 3            | 4.62 (117)  | 2.31 (59) | 6.00 (152) | 6.62 (168) | 0.38 (10) | 6.75 (171) | 1.88 (48)   |
|       |               | 200        | 4, 5            | 7.25 (184)  | 3.62 (92) | 6.00 (152) | 6.62 (168) | 0.38 (10) | 6.75 (171) | 1.88 (48)   |
|       | 3             | 30         | 6, 8            | 8.00 (196)  | 0.31 (8)  | 5.25 (129) | 5.87 (144) | 0.31 (8)  | 4.86 (119) | 7.38 (181)  |
|       |               | 30         | 9, 10, 12       | 11.75 (289) | 0.31 (8)  | 5.25 (129) | 5.87 (144) | 0.31 (8)  | 4.86 (119) | 11.13 (273) |
|       |               | 60         | 6               | 8.00 (196)  | 0.31 (8)  | 5.25 (129) | 5.87 (144) | 0.31 (8)  | 5.19 (127) | 7.38 (181)  |
|       |               | 60         | 8, 9, 10        | 11.75 (289) | 0.31 (8)  | 5.25 (129) | 5.87 (144) | 0.31 (8)  | 5.19 (127) | 11.13 (273) |
|       |               | 60         | 12              | 16.75 (410) | 0.31 (8)  | 5.25 (129) | 5.87 (144) | 0.31 (8)  | 5.19 (127) | 16.13 (395) |
|       |               | 60         | 12              | 16.75 (410) | 0.31 (8)  | 5.25 (129) | 5.87 (144) | 0.31 (8)  | 5.19 (127) | 16.13 (395) |

Note: Dimensions for reference, not for construction.  
Dimensions in inches (mm).

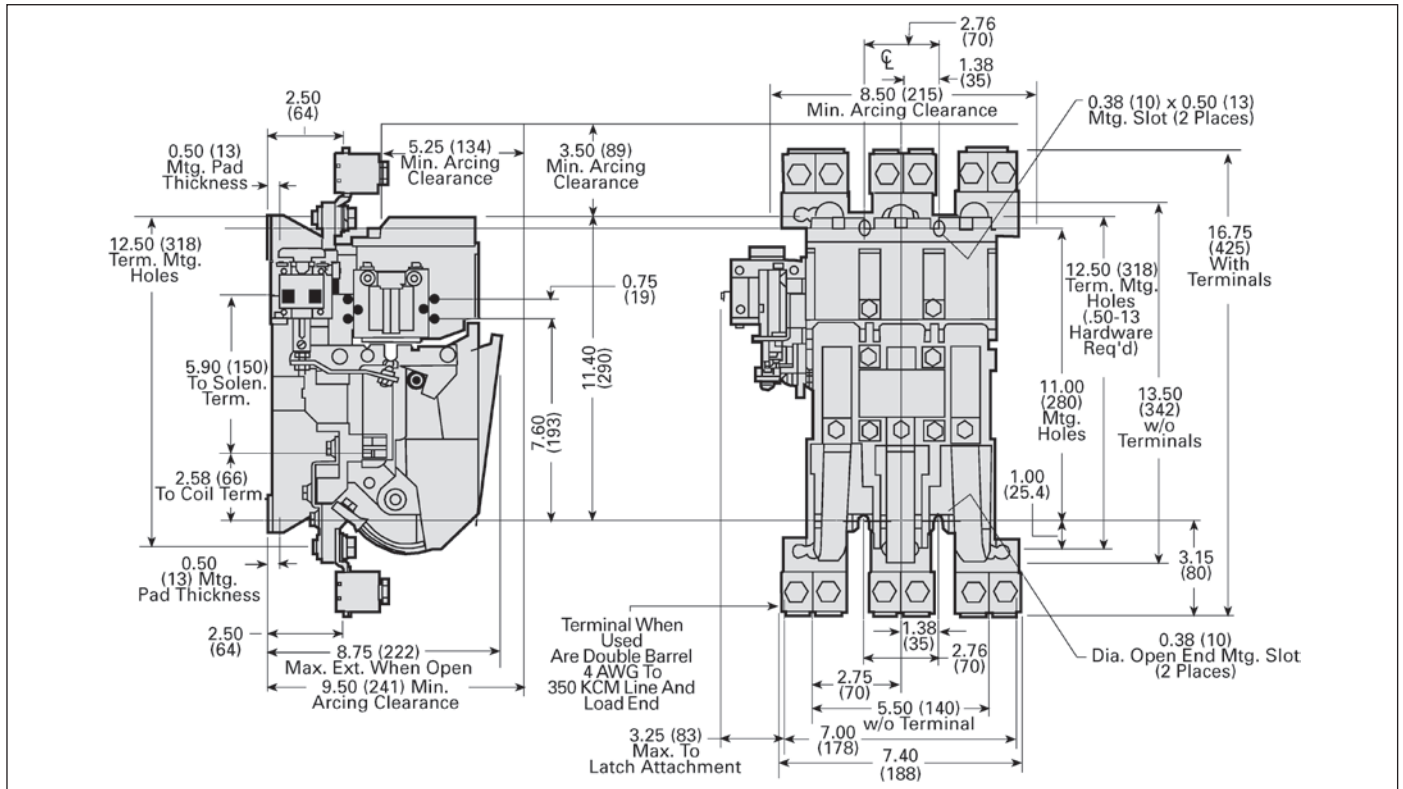
## Mechanically Latched 300 and 400 Amps, Class CLM

## Dimensions

## CLM Contactors 300 Amp



## CLM Contactors 400 Amp



Note: Dimensions for reference, not for construction.  
Dimensions in inches (mm).

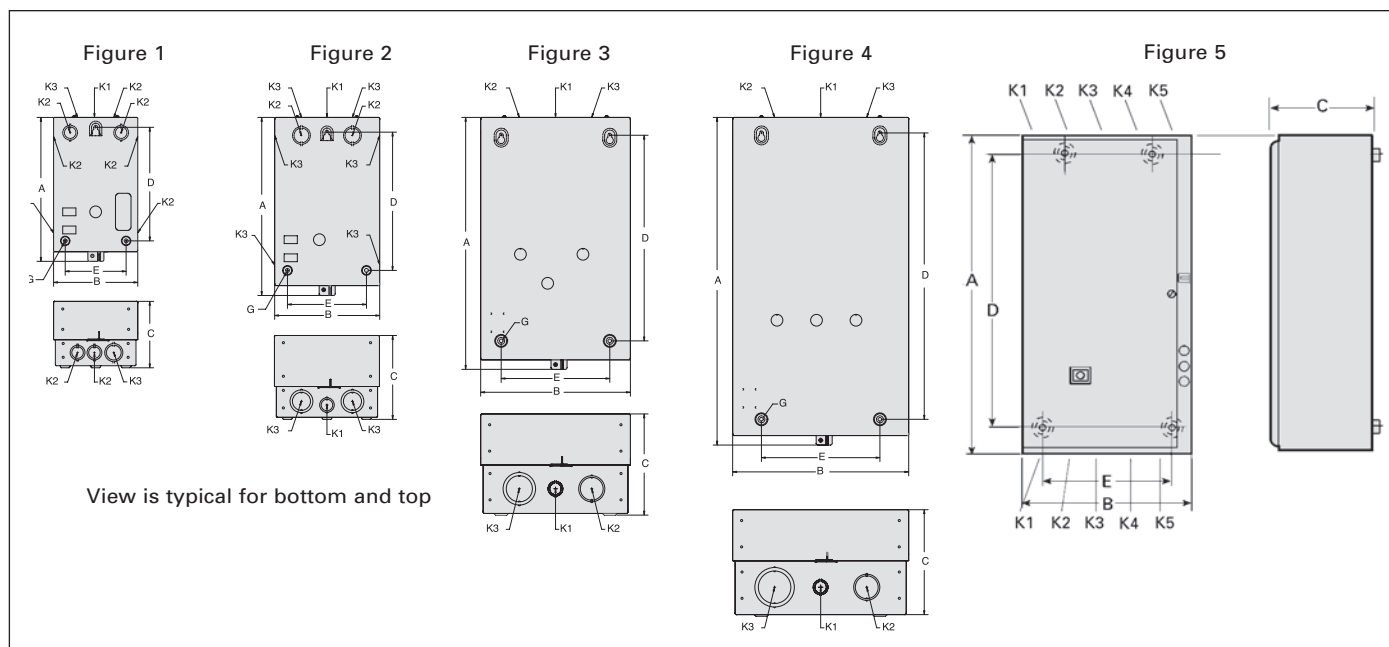


For the latest CAD or PDF dimension drawings, look on our website at  
[http://www.industry.usa.siemens.com/automation/us/en/industrial-controls/  
products/control-circuit-components/control-power-transformers/  
Pages/dimensional-drawings.aspx](http://www.industry.usa.siemens.com/automation/us/en/industrial-controls/products/control-circuit-components/control-power-transformers/Pages/dimensional-drawings.aspx)

For the latest CAD or PDF dimension drawings, look on our website at  
[http://www.industry.usa.siemens.com/automation/us/en/industrial-controls/  
products/control-circuit-components/control-power-transformers/  
Pages/dimensional-drawings.aspx](http://www.industry.usa.siemens.com/automation/us/en/industrial-controls/products/control-circuit-components/control-power-transformers/Pages/dimensional-drawings.aspx)

## Enclosed, Class 14, 40

## Dimensions

NEMA 1 General Purpose Enclosure (Standard width for use with or without CPT)<sup>①</sup>

| Size  | Max CPT Size | Figure | Outline Dimensions                   |                                      |                                      | Mounting Dimensions                   |                                      | Mounting Screw | Conduit Size |       |      |       |      | Approx Ship Wt Lbs (Kg) | Ref Dwg   |
|-------|--------------|--------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------------------|--------------------------------------|----------------|--------------|-------|------|-------|------|-------------------------|-----------|
|       |              |        | A                                    | B                                    | C                                    | D                                     | E                                    |                | K1           | K2    | K3   | K4    | K5   |                         |           |
| 00-1½ | w/o CPT      | 1      | 10 <sup>3</sup> / <sub>2</sub> (279) | 6 <sup>3</sup> / <sub>2</sub> (163)  | 5 <sup>1</sup> / <sub>2</sub> (128)  | 8 <sup>1</sup> / <sub>2</sub> (209)   | 4 <sup>1</sup> / <sub>2</sub> (117)  | ¼              | ½            | ½-¾   | ¾-1  | —     | —    | 10 (5)                  | D68870    |
| 2-2½  | w/o CPT      | 2      | 13 <sup>1</sup> / <sub>2</sub> (344) | 7 <sup>3</sup> / <sub>2</sub> (202)  | 6 <sup>1</sup> / <sub>2</sub> (162)  | 10 <sup>1</sup> / <sub>4</sub> (260)  | 6 (152)                              | ¼              | ½-¾          | ¾-1   | 1-1½ | —     | —    | 15 (7)                  | D68870    |
| 3-3½  | (100VA)      | 3      | 19 <sup>1</sup> / <sub>4</sub> (486) | 11 <sup>1</sup> / <sub>2</sub> (289) | 7 <sup>1</sup> / <sub>16</sub> (195) | 15 <sup>3</sup> / <sub>8</sub> (397)  | 8 <sup>1</sup> / <sub>4</sub> (210)  | ¼              | ½-¾          | 1-1½  | 1½-2 | —     | —    | 26 (12)                 | D68870    |
| 4     | (300VA)      | 4      | 24 <sup>1</sup> / <sub>4</sub> (632) | 13 <sup>3</sup> / <sub>8</sub> (340) | 8 <sup>1</sup> / <sub>8</sub> (206)  | 21 <sup>1</sup> / <sub>4</sub> (552)  | 9 (229)                              | ¼              | ½-¾          | 1½-1½ | 2-2½ | —     | —    | 37 (17)                 | D68870    |
| 5     | (300VA)      | 5      | 40 (1016)                            | 20 (508)                             | 11 (279)                             | 37 <sup>3</sup> / <sub>8</sub> (956)  | 15 <sup>1</sup> / <sub>4</sub> (387) | ¼              | 2-3          | 1½-1½ | ½-¾  | 1¼-1½ | 2-3  | 135 (36)                | D65608    |
| 6, 7  | (300VA)      | 5      | 48 (1219)                            | 20 (508)                             | 12 <sup>1</sup> / <sub>2</sub> (317) | 45 <sup>3</sup> / <sub>8</sub> (1148) | 10 (254)                             | ¼              | 2-2½         | 1½-1½ | ½-¾  | 1¼-1½ | 2-2½ | 150 (44)                | D65608013 |
| 8     |              | 5      | 79 (2010)                            | 22 (559)                             | 13 (330)                             | 78 (1981)                             | 18 (457)                             |                |              |       |      |       |      | 275 (125)               | D56032006 |

NEMA 1 General Purpose Enclosure (Extra wide for use with CPT)<sup>①</sup>

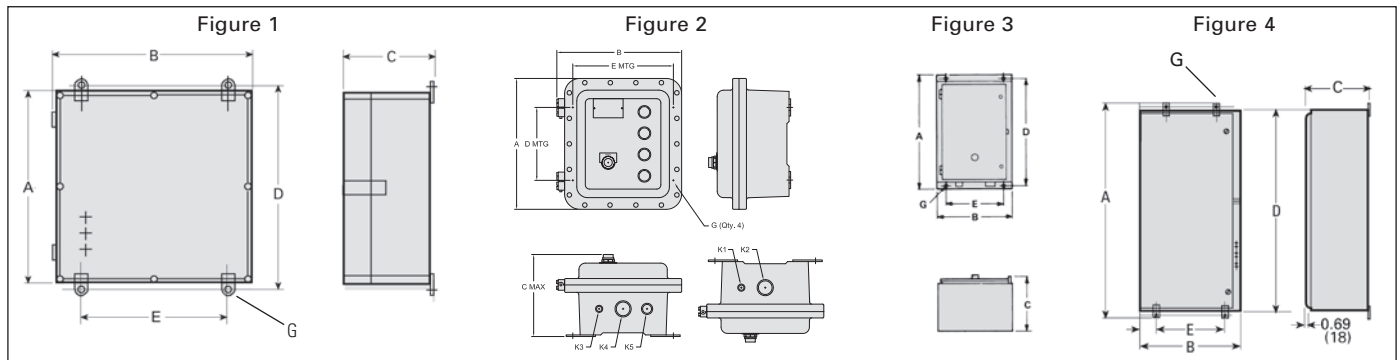
| Size  | Max CPT Size | Figure | Outline Dimensions                   |                                      |                                      | Mounting Dimensions                  |                                     | Mounting Screw | Conduit Size |         |      |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg |
|-------|--------------|--------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|-------------------------------------|----------------|--------------|---------|------|----|----|-------------------------|---------|
|       |              |        | A                                    | B                                    | C                                    | D                                    | E                                   |                | K1           | K2      | K3   | K4 | K5 |                         |         |
| 00-1½ | (200VA)      | 3      | 19 <sup>1</sup> / <sub>4</sub> (486) | 11 <sup>1</sup> / <sub>2</sub> (289) | 7 <sup>1</sup> / <sub>16</sub> (195) | 15 <sup>3</sup> / <sub>8</sub> (397) | 8 <sup>1</sup> / <sub>4</sub> (210) | ¼              | ½-¾          | 1-1½    | 1½-2 | —  | —  | 26 (12)                 | D68870  |
| 2-2½  | (200VA)      | 3      | 19 <sup>1</sup> / <sub>4</sub> (486) | 11 <sup>1</sup> / <sub>2</sub> (289) | 7 <sup>1</sup> / <sub>16</sub> (195) | 15 <sup>3</sup> / <sub>8</sub> (397) | 8 <sup>1</sup> / <sub>4</sub> (210) | ¼              | ½-¾          | 1-1½    | 1½-2 | —  | —  | 26 (12)                 | D68870  |
| 3-3½  | (250VA)      | 4      | 24 <sup>1</sup> / <sub>4</sub> (632) | 13 <sup>3</sup> / <sub>8</sub> (340) | 8 <sup>1</sup> / <sub>8</sub> (206)  | 21 <sup>1</sup> / <sub>4</sub> (552) | 9 (229)                             | ¼              | ½-¾          | 1-1½-1½ | 2-2½ | —  | —  | 37 (17)                 | D68870  |

**Note:** Dimensions in inches (millimeters). Dimensions for reference, not for construction. Contact Sales Office for dimensions not listed.

<sup>①</sup> Clamshell enclosure Size 00 - 4; Standard width and Extra wide.

## Enclosed, Class 14, 40

## Dimensions



## NEMA 4X Fiberglass Enclosures (Standard width for use with or without CPT)

| Size | Figure | Outline Dimensions |              |             | Mounting Dimensions |                | Mtg Screw | Conduit Size |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg        |
|------|--------|--------------------|--------------|-------------|---------------------|----------------|-----------|--------------|----|----|-------------------------|----------------|
|      |        | A                  | B            | C           | D                   | E              |           | K1           | K2 | K3 |                         |                |
| 0-2½ | 1      | 14.620 (371)       | 11.880 (302) | 6.890 (175) | 15.000 (381)        | 9.750 (248)    | ¼         | —            | —  | —  | 11 (4.9)                | 24-139-861-001 |
| 3-4  | 1      | 23.780 (604)       | 23.780 (604) | 6.890 (175) | 24.125 (612.7)      | 21.250 (539.7) | ¼         | —            | —  | —  | 28 (12.7)               | 24-139-861-003 |

## NEMA 7/9/3/4 Hazardous Location Enclosure (Standard width for use with or without CPT)

| Size | Figure | Outline Dimensions |             |             | Mounting Dimensions |             | Mtg Screw | Conduit Size |    |    |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg     |
|------|--------|--------------------|-------------|-------------|---------------------|-------------|-----------|--------------|----|----|----|----|-------------------------|-------------|
|      |        | A                  | B           | C           | D                   | E           |           | K1           | K2 | K3 | K4 | K5 |                         |             |
| 0-1¼ | 2      | 15.38 (392)        | 14.66 (372) | 9.63 (245)  | 8.56 (217)          | 11.81 (300) | ¾         | ½            | 1½ | ½  | 1½ | 1  | 40 (18.1)               | A5E39718997 |
| 2-2½ | 2      | 23.00 (584)        | 17.91 (455) | 10.44 (265) | 14.13 (359)         | 15.75 (400) | ¾         | 1½           | ½  | ½  | 1  | 1½ | 115 (52.2)              | A5E39719002 |
| 3-4  | 2      | 28.60 (726)        | 17.51 (445) | 12.56 (319) | 18.38 (467)         | 15.75 (400) | ¾         | 2½           | ½  | 1  | ½  | 2½ | 160 (72.6)              | A5E39719007 |
| 5    | 2      | 41.50 (1054)       | 24.00 (610) | 13.31 (338) | 29.00 (737)         | 21.75 (552) | ¾         | 4            | ½  | 1  | ½  | 4  | 305 (138.3)             | A5E39719014 |

## NEMA 7/9/3/4 Hazardous Location Enclosure (Extra wide for use with or without CPT)

| Size | Figure | Outline Dimensions |             |             | Mounting Dimensions |             | Mtg Screw | Conduit Size |    |    |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg     |
|------|--------|--------------------|-------------|-------------|---------------------|-------------|-----------|--------------|----|----|----|----|-------------------------|-------------|
|      |        | A                  | B           | C           | D                   | E           |           | K1           | K2 | K3 | K4 | K5 |                         |             |
| 0-1¼ | 2      | 23.00 (584)        | 17.91 (455) | 10.44 (265) | 14.13 (359)         | 15.75 (400) | ¾         | 1½           | ½  | ½  | 1  | 1½ | 115 (52.2)              | A5E39719002 |
| 2-2½ | 2      | 28.60 (726)        | 17.51 (445) | 12.56 (319) | 18.38 (467)         | 15.75 (400) | ¾         | 2½           | ½  | 1  | ½  | 2½ | 160 (72.6)              | A5E39719007 |
| 3-4  | 2      | 41.50 (1054)       | 24.00 (610) | 13.31 (338) | 29.00 (737)         | 21.75 (552) | ¾         | 4            | ½  | 1  | ½  | 4  | 305 (138.3)             | A5E39719014 |

## NEMA 12/3/3R Industrial Use Enclosure (Standard width for use without CPT)

| Size | Figure | Outline Dimensions |              |             | Mounting Dimensions |              | Mtg Screw | Conduit Size |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg |
|------|--------|--------------------|--------------|-------------|---------------------|--------------|-----------|--------------|----|----|-------------------------|---------|
|      |        | A                  | B            | C           | D                   | E            |           | K1           | K2 | K3 |                         |         |
| 0-1¼ | 3      | 13.000 (330)       | 7.750 (197)  | 5.438 (138) | 12.250 (311)        | 5.000 (127)  | ¼         | —            | —  | —  | 12 (5)                  | D41547  |
| 2-2½ | 3      | 16.000 (406)       | 8.125 (206)  | 6.063 (154) | 15.250 (387)        | 5.000 (127)  | ¼         | —            | —  | —  | 18 (8)                  | D41547  |
| 3-4  | 3      | 26.000 (660)       | 13.125 (333) | 7.563 (192) | 25.250 (641)        | 10.000 (254) | ¼         | —            | —  | —  | 49 (22)                 | D41552  |

## NEMA 12/3/3R Industrial Use Enclosure (Extra wide for use with CPT)

| Size | Figure | Outline Dimensions |              |              | Mounting Dimensions |              | Mtg Screw | Conduit Size |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg   |
|------|--------|--------------------|--------------|--------------|---------------------|--------------|-----------|--------------|----|----|-------------------------|-----------|
|      |        | A                  | B            | C            | D                   | E            |           | K1           | K2 | K3 |                         |           |
| 0-1¼ | 3      | 13.000 (330)       | 12.625 (321) | 5.375 (137)  | 12.250 (311)        | 10.000 (254) | ¼         | —            | —  | —  | 30 (14)                 | D17150    |
| 2-2½ | 3      | 16.000 (406)       | 13.250 (337) | 6.125 (156)  | 15.250 (387)        | 11.000 (279) | ¼         | —            | —  | —  | 33 (15)                 | D17150    |
| 3-3½ | 3      | 26.000 (660)       | 13.125 (333) | 7.563 (192)  | 25.250 (641)        | 10.000 (254) | ¼         | —            | —  | —  | 49 (22)                 | D41552    |
| 4    | 3      | 29.063 (738)       | 23.188 (589) | 9.250 (235)  | 27.563 (700)        | 20.000 (508) | ¾         | —            | —  | —  | 64 (29)                 | D17150    |
| 5    | 4      | 40.000 (1016)      | 20.000 (508) | 11.000 (279) | 41.000 (1041)       | 10.000 (254) | ¾         | —            | —  | —  | —                       | D65608007 |
| 6, 7 | 4      | 48.000 (1219)      | 20.000 (508) | 12.500 (317) | 49.000 (1244)       | 10.000 (254) | ¾         | —            | —  | —  | —                       | D65608009 |
| 8    | 5      | 79.000 (2010)      | 22.000 (559) | 13.000 (330) | 78.000 (1981)       | 18.000 (457) | ¾         | —            | —  | —  | 275 (125)               | D65632006 |

## NEMA 4/4X Stainless Steel Enclosure (Standard width for use without CPT)

| Size | Figure | Outline Dimensions |              |             | Mounting Dimensions |              | Mtg Screw | Conduit Size |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg |
|------|--------|--------------------|--------------|-------------|---------------------|--------------|-----------|--------------|----|----|-------------------------|---------|
|      |        | A                  | B            | C           | D                   | E            |           | K1           | K2 | K3 |                         |         |
| 0-1¼ | 3      | 13.000 (330)       | 7.750 (197)  | 5.438 (138) | 12.250 (311)        | 5.000 (127)  | ¼         | —            | —  | —  | 17.5 (8)                | D41546  |
| 2-2½ | 3      | 16.000 (406)       | 8.125 (206)  | 6.063 (154) | 15.250 (387)        | 5.000 (127)  | ¼         | —            | —  | —  | 36 (16)                 | D41546  |
| 3-4  | 3      | 26.000 (660)       | 13.125 (333) | 7.563 (192) | 25.250 (641)        | 10.000 (254) | ¼         | —            | —  | —  | 67 (30)                 | D41551  |

## NEMA 4/4X Stainless Steel Enclosure (Extra wide for use with CPT)

| Size           | Figure | Outline Dimensions |              |              | Mounting Dimensions |              | Mtg Screw | Conduit Size |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg   |
|----------------|--------|--------------------|--------------|--------------|---------------------|--------------|-----------|--------------|----|----|-------------------------|-----------|
|                |        | A                  | B            | C            | D                   | E            |           | K1           | K2 | K3 |                         |           |
| 0-1¼           | 3      | 13.000 (330)       | 12.625 (321) | 5.375 (137)  | 12.250 (311)        | 10.000 (254) | ¼         | —            | —  | —  | 30 (14)                 | D41917    |
| 2-2½           | 3      | 16.000 (406)       | 13.250 (337) | 6.000 (152)  | 15.250 (387)        | 11.000 (279) | ¼         | —            | —  | —  | 33 (15)                 | D42935    |
| 3-3½           | 3      | 26.000 (660)       | 18.000 (457) | 7.563 (192)  | 25.250 (641)        | 10.000 (254) | ¼         | —            | —  | —  | 67 (30)                 | D41551    |
| 4              | 3      | 29.000 (737)       | 23.188 (589) | 9.250 (235)  | 27.500 (699)        | 20.000 (508) | ¾         | —            | —  | —  | 64 (29)                 | D43292    |
| 5 (Painted)    | 4      | 40.000 (1016)      | 20.000 (508) | 11.000 (279) | 41.000 (1041)       | 10.000 (254) | ¾         | —            | —  | —  | —                       | D65608007 |
| 6, 7 (Painted) | 4      | 48.000 (1219)      | 20.000 (508) | 12.500 (317) | 49.000 (1244)       | 10.000 (254) | ¾         | —            | —  | —  | —                       | D65608009 |
| 8 (Painted)    | 5      | 79.000 (2010)      | 22.000 (559) | 13.000 (330) | 78.000 (1981)       | 18.000 (457) | ¾         | —            | —  | —  | 275 (125)               | D65632006 |

**Note:** Dimensions in inches (millimeters). Dimensions for reference, not for construction. Contact Sales Office for dimensions not listed.

① Used for addition of only CPT on size 2½. If pilot devices are needed, use size 3-3½ enclosure.

Figure 1

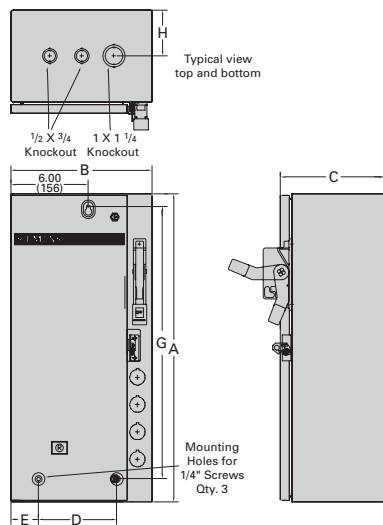


Figure 2

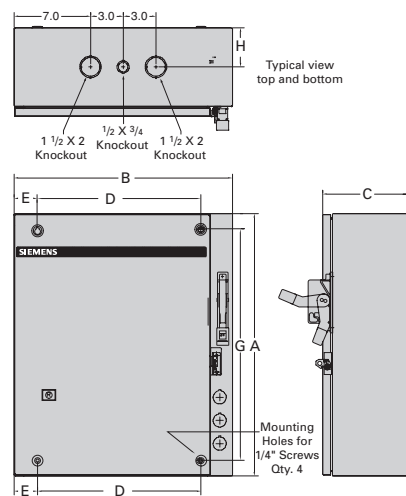


Figure 3

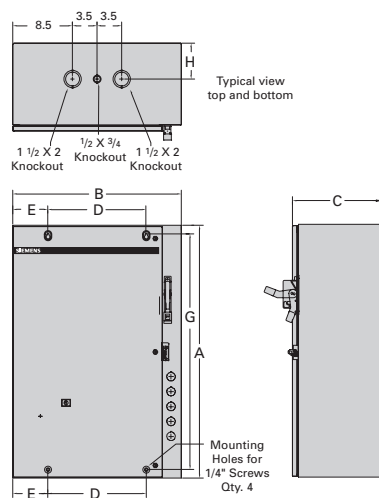
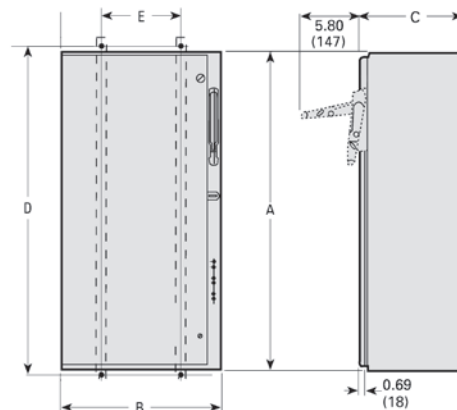


Figure 4

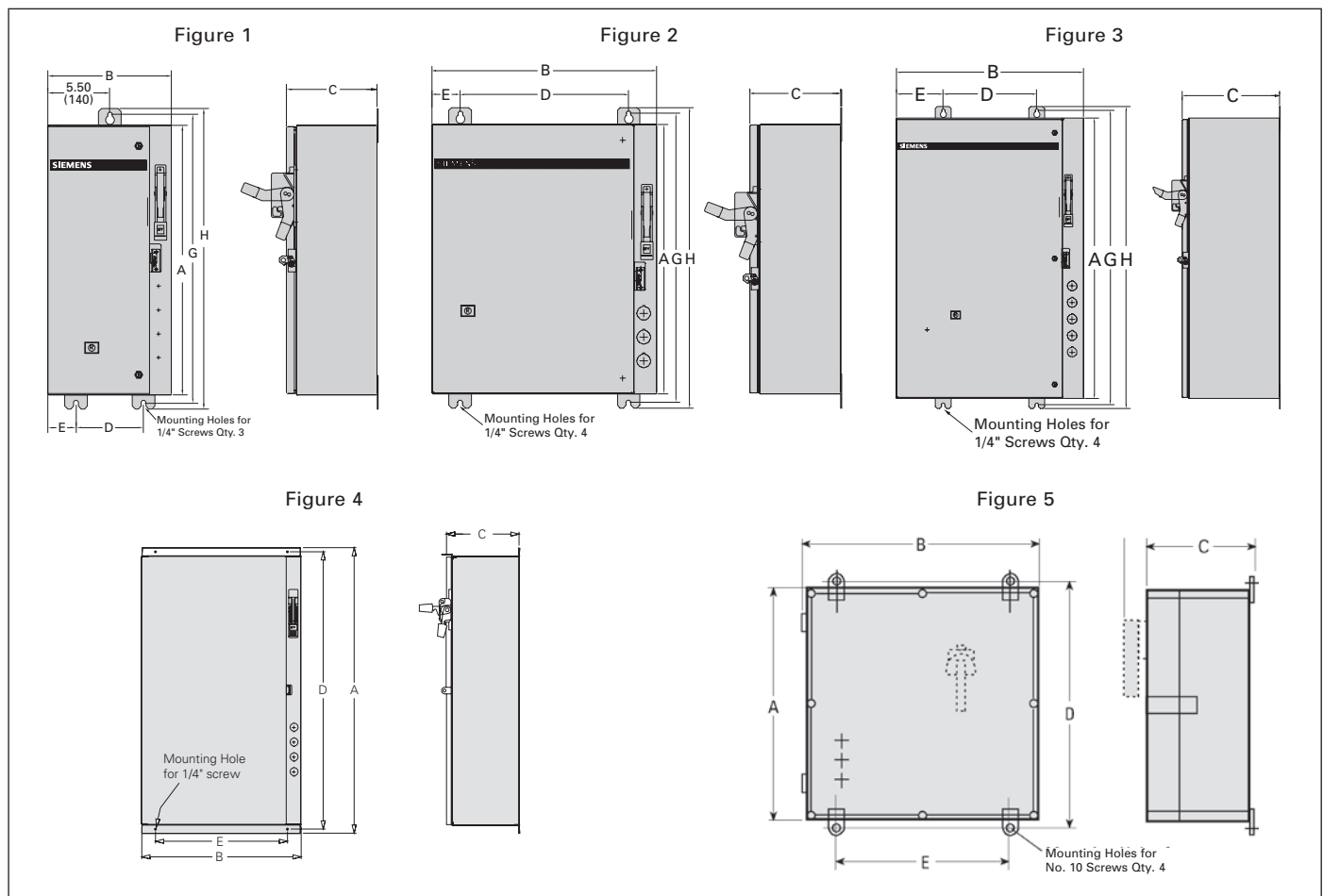


## NEMA 1 Standard Width 0-6

| Size                        | Figure | Outline Dimensions |          |              | Mounting Dimensions |            |             |            | Approx Ship Wt Lbs (Kg) | Ref Dwg   |
|-----------------------------|--------|--------------------|----------|--------------|---------------------|------------|-------------|------------|-------------------------|-----------|
|                             |        | A                  | B        | C            | D                   | E          | G           | H          |                         |           |
| 0-2                         | 1      | 24 (610)           | 11 (279) | 8 (203)      | 6.125 (156)         | 2.125 (54) | 21.00 (533) | 3.50 (90)  | 35 (16)                 | D68774001 |
| 2 1/2, 3 (except 200A Disc) | 2      | 24 (610)           | 20 (508) | 8 (203)      | 15.00 (381)         | 2.125 (54) | 21.00 (533) | 3.50 (90)  | 48 (22)                 | D68774002 |
| 3 (200A Disc.), 3 1/2, 4    | 3      | 36 (914)           | 24 (610) | 8 (203)      | 14.00 (356)         | 5.00 (127) | 33.50 (851) | 5.00 (127) | 101 (46)                | D68774003 |
| 5                           | 4      | 72.156 (1833)      | 20 (508) | 11.031 (280) | 71 (1803)           | 16 (406)   | —           | —          | 250 (113)               | D56032005 |
| 6                           | 4      | 79.125 (2010)      | 22 (559) | 13 (330)     | 78 (1981)           | 18 (457)   | —           | —          | 275 (125)               | D56032006 |

## NEMA 1 Extra Wide 0-3

| Size     | Figure | Outline Dimensions |          |         | Mounting Dimensions |            |             |            | Approx Ship Wt Lbs (Kg) | Ref Dwg   |
|----------|--------|--------------------|----------|---------|---------------------|------------|-------------|------------|-------------------------|-----------|
|          |        | A                  | B        | C       | D                   | E          | G           | H          |                         |           |
| 0-2      | 2      | 24 (610)           | 20 (508) | 8 (203) | 15.00 (381)         | 2.125 (54) | 21.00 (533) | 3.50 (90)  | 48 (22)                 | D68774002 |
| 2 1/2, 3 | 3      | 36 (914)           | 24 (610) | 8 (203) | 14.00 (356)         | 5.00 (127) | 33.50 (851) | 5.00 (127) | 101 (46)                | D68774003 |

**NEMA 12/3/3R/4 (Painted), 4/4X (Stainless) Standard Width 0–6**

| Size                        | Figure | Outline Dimensions |          |              | Mounting Dimensions |            |             |             | Approx Ship Wt Lbs (Kg) | Ref Dwg   |
|-----------------------------|--------|--------------------|----------|--------------|---------------------|------------|-------------|-------------|-------------------------|-----------|
|                             |        | A                  | B        | C            | D                   | E          | G           | H           |                         |           |
| 0–2                         | 1      | 24 (610)           | 11 (279) | 8 (203)      | 6.00 (152)          | 2.50 (64)  | 25.75 (654) | 26.75 (680) | 35 (16)                 | D56033    |
| 2 1/2, 3 (except 200A Disc) | 2      | 24 (610)           | 20 (508) | 8 (203)      | 15.00 (381)         | 2.50 (64)  | 25.75 (654) | 26.75 (680) | 48 (22)                 | D56033    |
| 3 (200A Disc), 3 1/2, 4     | 3      | 36 (914)           | 24 (610) | 8 (203)      | 12 (305)            | 6.00 (152) | 37.75 (959) | 38.75 (984) | 101 (46)                | D56033    |
| 5 (Painted)                 | 4      | 72.156 (1833)      | 20 (508) | 11.031 (280) | 71 (1830)           | 16 (406)   | —           | —           | 250 (113)               | D56032005 |
| 6 (Painted)                 | 4      | 79.125 (2010)      | 22 (559) | 13 (330)     | 78 (1981)           | 18 (457)   | —           | —           | 275 (125)               | D56032006 |

**NEMA 12/3/3R/4 (Painted), 4/4X (Stainless) Extra Wide 0–3**

| Size     | Figure | Outline Dimensions |          |         | Mounting Dimensions |            |             |             | Approx Ship Wt Lbs (Kg) | Ref Dwg |
|----------|--------|--------------------|----------|---------|---------------------|------------|-------------|-------------|-------------------------|---------|
|          |        | A                  | B        | C       | D                   | E          | G           | H           |                         |         |
| 0–2      | 2      | 24 (610)           | 20 (508) | 8 (203) | 15.00 (381)         | 2.50 (64)  | 25.75 (654) | 26.75 (654) | 49 (22)                 | D56033  |
| 2 1/2, 3 | 3      | 36 (914)           | 24 (610) | 8 (203) | 12.00 (305)         | 6.00 (152) | 37.75 (959) | 38.75 (984) | 102 (46)                | D56033  |

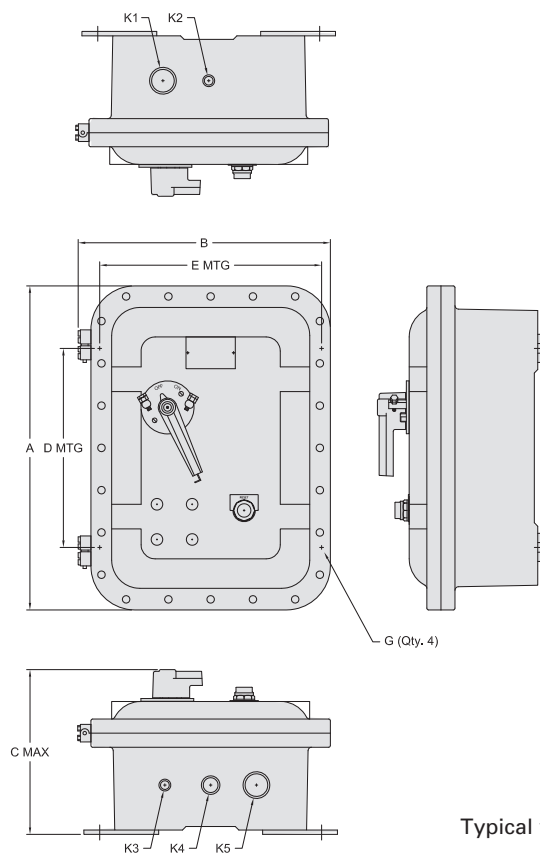
**NEMA 4X Fiberglass Standard Width 0–4**

| Size    | Figure | Outline Dimensions |             |             | Mounting Dimensions |             |   |   | Approx Ship Wt Lbs (Kg) | Ref Dwg |
|---------|--------|--------------------|-------------|-------------|---------------------|-------------|---|---|-------------------------|---------|
|         |        | A                  | B           | C           | D                   | E           | G | H |                         |         |
| 0–1 1/4 | 5      | 23.75 (603)        | 14.62 (371) | 7.12 (181)  | 24.09 (612)         | 12.20 (310) | — | — | 42 (19)                 | —       |
| 2–3 1/2 | 5      | 23.75 (603)        | 23.75 (603) | 8.50 (216)  | 24.06 (611)         | 21.30 (541) | — | — | 44 (20)                 | —       |
| 4       | 5      | 39.37 (1000)       | 29.52 (750) | 12.20 (310) | 40.94 (1040)        | 27.95 (710) | — | — | 55 (25)                 | —       |

**Note:** Dimensions in inches (mm).  
 Dimensions for reference, not for construction.  
 Contact sales office for dimensions not listed.



Figure 1



Typical view bottom and top

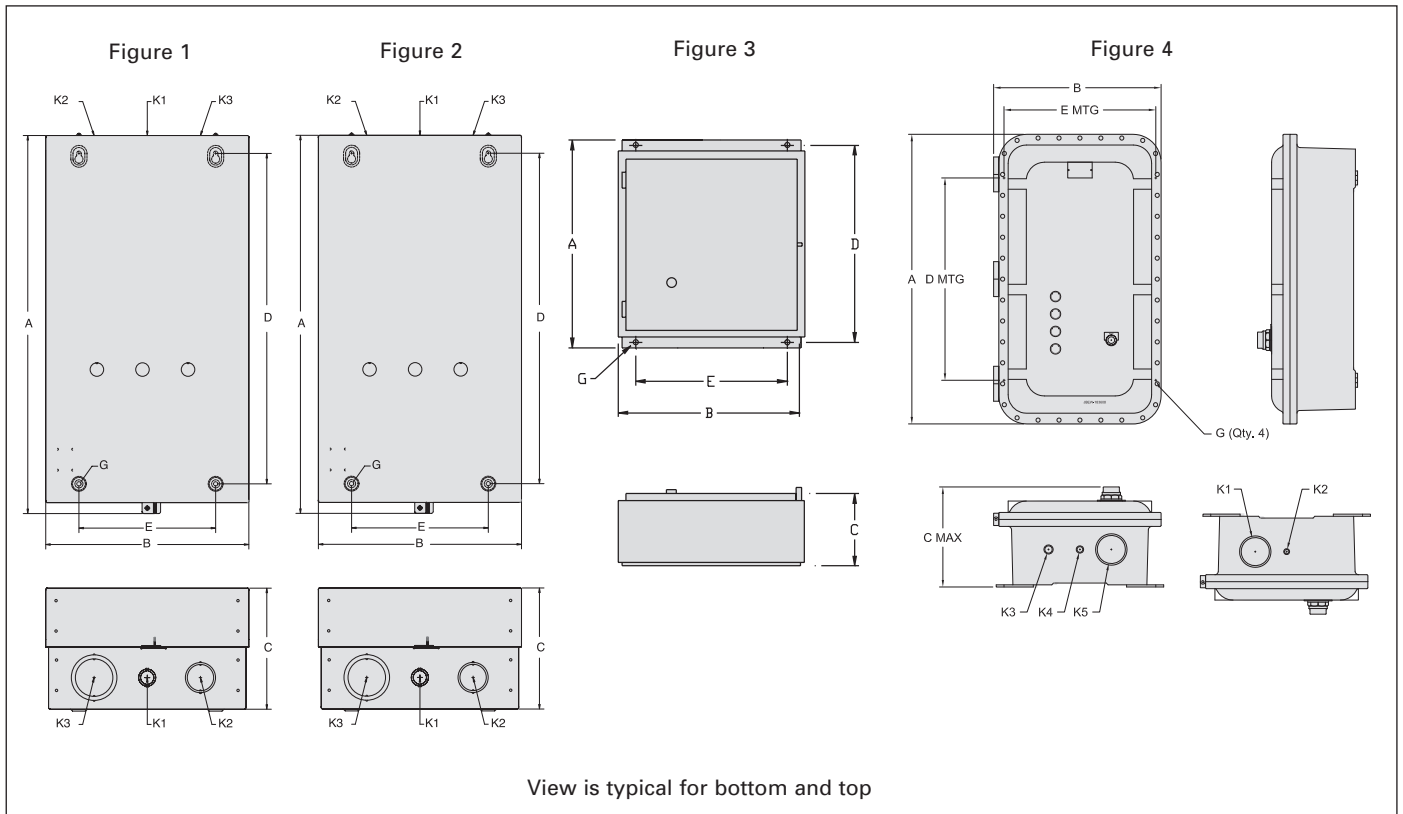
**NEMA 7/9/3/4 Hazardous Location Enclosure (Standard width for use with or without CPT)**

| Size | Figure | Outline Dimensions |             |             | Mounting Dimensions |             | Mtg Screw | Conduit Size |    |    |    |    | Approx Ship Wt<br>Lbs (Kg) | Ref Dwg     |
|------|--------|--------------------|-------------|-------------|---------------------|-------------|-----------|--------------|----|----|----|----|----------------------------|-------------|
|      |        | A                  | B           | C           | D                   | E           |           | K1           | K2 | K3 | K4 | K5 |                            |             |
| 0-1¼ | 1      | 23.00 (584)        | 17.91 (455) | 11.70 (297) | 14.13 (359)         | 15.75 (400) | ¾         | 1½           | ½  | ½  | 1  | 1½ | 110 (49.9)                 | A5E39719019 |
| 2-2½ | 1      | 28.60 (726)        | 17.51 (445) | 13.82 (351) | 18.38 (467)         | 15.75 (400) | ¾         | 2½           | ½  | 1  | ½  | 2½ | 170 (77.1)                 | A5E39719024 |
| 3-3½ | 1      | 28.90 (734)        | 20.37 (517) | 14.76 (375) | 27.50 (698)         | 13.13 (334) | ¾         | 2½           | ½  | 1  | ½  | 2½ | 170 (77.1)                 | A5E39719025 |
| 4    | 1      | 29.00 (737)        | 21.75 (552) | 14.95 (380) | 18.38 (467)         | 19.75 (502) | ¾         | 2½           | ½  | 1  | ½  | 2½ | 225 (102.1)                | A5E39719026 |
| 5    | 1      | 41.50 (1054)       | 24.00 (610) | 14.57 (370) | 29.00 (737)         | 21.75 (552) | ¾         | 4            | ½  | 1  | ½  | 4  | 320 (145.1)                | A5E39719027 |

**Note:** Dimensions in inches (mm). Dimensions for reference, not for construction. Contact Sales Office for dimensions not listed.

## Enclosed, Class 22, 43

## Dimensions



## NEMA 1 General Purpose Enclosure (Standard width for use with and without CPT)

| Size           | Figure | Outline Dimensions |           |           | Mounting Dimensions |           | Mounting Screw | Conduit Size |       |      |       | Approx Ship Wt Lbs (Kg) | Ref Dwg   |
|----------------|--------|--------------------|-----------|-----------|---------------------|-----------|----------------|--------------|-------|------|-------|-------------------------|-----------|
|                |        | A                  | B         | C         | D                   | E         | G              | K1           | K2    | K3   | K4    |                         |           |
| 00-2½ (200 VA) | 1      | 19⅞ (486)          | 11⅜ (289) | 7⅞ (195)  | 15⅝ (397)           | 8¼ (210)  | ¼              | ½-¾          | 1-1¼  | 1½-2 | —     | 30 (14)                 | D68870    |
| 3-4 (300 VA)   | 2      | 24⅞ (632)          | 13⅜ (340) | 8⅞ (206)  | 21¼ (552)           | 9 (229)   | ¼              | ½-¾          | 1¼-1½ | 2-2½ | —     | 52 (24)                 | D68870    |
| 5 (300 VA)     |        | 40 (1016)          | 20 (508)  | 11 (279)  | 37⅞ (956)           | 15¼ (387) | ¼              | 2-3          | 1¼-1½ | ½-¾  | 1¼-1½ | 135 (36)                | D65608    |
| 6, 7 (300 VA)  |        | 48 (1219)          | 20 (508)  | 12½ (317) | 45⅞ (1148)          | 10 (254)  | ¼              | 2-2½         | 1¼-1½ | ½-¾  | 1¼-1½ | 150 (44)                | D65608013 |

## NEMA 4/4X Stainless Steel Enclosure (with or without CPT)

| Size           | Figure | Outline Dimensions |           |           | Mounting Dimensions |          | Mtg Screw | Conduit Size |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg   |
|----------------|--------|--------------------|-----------|-----------|---------------------|----------|-----------|--------------|----|----|-------------------------|-----------|
|                |        | A                  | B         | C         | D                   | E        | G         | K1           | K2 | K3 |                         |           |
| 0-1¼           | 3      | 13 (330)           | 12⅝ (321) | 5⅞ (137)  | 12¼ (311)           | 10 (254) | ¼         | —            | —  | —  | 30 (14)                 | D41917    |
| 2-2½           | 3      | 16 (406)           | 13¼ (337) | 6 (152)   | 15¼ (387)           | 11 (279) | ¼         | —            | —  | —  | 33 (15)                 | D42935    |
| 3-3½ (w/o CPT) | 3      | 25⅞ (637)          | 17⅞ (437) | 7⅞ (187)  | 24⅞ (618)           | 14 (356) | ¼         | —            | —  | —  | 53 (24)                 | D17423    |
| 3-3½ (w/ CPT)  | 4      | 29 (737)           | 23⅞ (589) | 9¼ (235)  | 27½ (699)           | 20 (508) | ⅝         | —            | —  | —  | 64 (29)                 | D43292    |
| 5 (Painted)    |        |                    |           |           |                     |          |           |              |    |    |                         |           |
| 6, 7 (Painted) |        | 40 (1016)          | 20 (508)  | 11 (279)  | 41 (1041)           | 10 (254) | ⅝         | —            | —  | —  |                         | D65608007 |
|                |        | 48 (1219)          | 20 (508)  | 12½ (317) | 49 (1244)           | 10 (254) | ⅝         | —            | —  | —  |                         | 65608009  |

## NEMA 7/9/3/4 Hazardous Location Enclosure (with or without CPT)

| Size | Figure | Outline Dimensions |             |             | Mounting Dimensions |             | Mtg Screw | Conduit Size |    |    |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg     |
|------|--------|--------------------|-------------|-------------|---------------------|-------------|-----------|--------------|----|----|----|----|-------------------------|-------------|
|      |        | A                  | B           | C           | D                   | E           | G         | K1           | K2 | K3 | K4 | K5 |                         |             |
| 0-2½ | 4      | 28.60 (726)        | 17.51 (445) | 12.56 (319) | 18.38 (467)         | 15.75 (400) | ⅝         | 2½           | ½  | 1  | ½  | 2½ | 225 (102.1)             | A5E39719026 |
| 3-4  | 4      | 41.50 (1054)       | 24.00 (610) | 13.31 (338) | 29.00 (737)         | 21.75 (552) | ⅝         | 4            | ½  | 1  | ½  | 4  | 320 (145.1)             | A5E39719027 |

**Note:** Dimensions in inches (mm).

Dimensions for reference, not for construction.

Contact sales office for dimensions not listed.

## Enclosed, Class 22, 43

## Dimensions

Figure 5

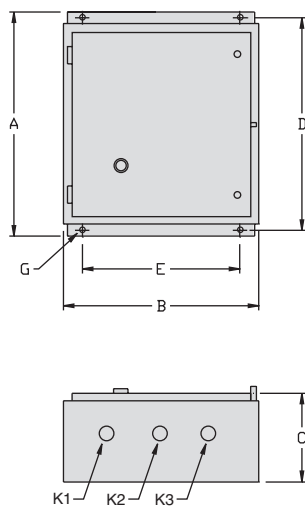


Figure 6

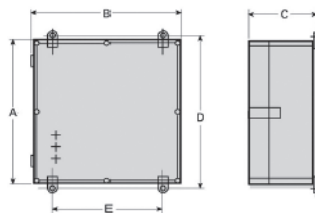
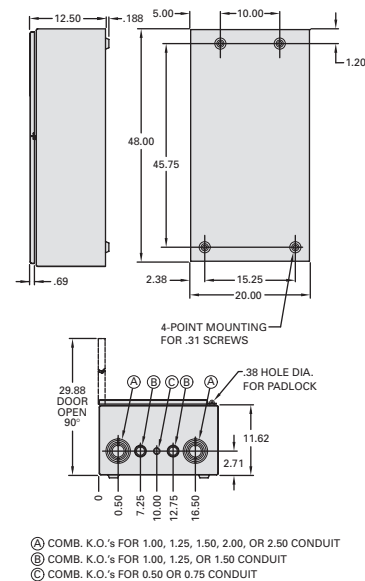


Figure 7



View is typical for bottom and top

## NEMA 12/3/3R Industrial Use Enclosure (with or without CPT)

| Size                | Figure | Outline Dimensions |           |           | Mounting Dimensions |          | Mtg Screw | Conduit Size |    |    | Approx Ship Wt<br>Lbs (Kg) | Ref Dwg   |
|---------------------|--------|--------------------|-----------|-----------|---------------------|----------|-----------|--------------|----|----|----------------------------|-----------|
|                     |        | A                  | B         | C         | D                   | E        |           | K1           | K2 | K3 |                            |           |
| 0-1¼                | 5      | 13 (330)           | 12⅞ (321) | 5⅝ (137)  | 12¼ (311)           | 10 (254) | ¼         | —            | —  | —  | 30 (14)                    | D17150    |
| 2-2½                | 5      | 16 (406)           | 13¼ (337) | 6⅞ (156)  | 15¼ (387)           | 11 (279) | ¼         | —            | —  | —  | 33 (15)                    | D17150    |
| 3-3½ (w/o CPT)      | 5      | 25⅞ (637)          | 17⅞ (437) | 7⅞ (187)  | 24⅞ (618)           | 14 (356) | ¼         | —            | —  | —  | 53 (24)                    | D17150    |
| 3-3½ (w/ CPT)<br>4  | 5      | 29⅞ (738)          | 23⅞ (589) | 9¼ (235)  | 27⅞ (700)           | 20 (508) | ⅜         | —            | —  | —  | 64 (29)                    | D17150    |
| 5                   | 7      | 40 (1016)          | 20 (508)  | 11 (279)  | 41 (1041)           | 10 (254) | ⅜         | —            | —  | —  | —                          | D65608007 |
| 6 (300 VA CPT max.) | 7      | 48 (1219)          | 20 (508)  | 12½ (318) | 45¼ (1162)          | 10 (254) | ¼         | —            | —  | —  | —                          | —         |

## NEMA 4X Fiberglass Enclosure (with or without CPT)

| Size | Figure | Outline Dimensions |             |            | Mounting Dimensions |           | Mtg Screw | Conduit Size |    |    | Approx Ship Wt<br>Lbs (Kg) | Ref Dwg |
|------|--------|--------------------|-------------|------------|---------------------|-----------|-----------|--------------|----|----|----------------------------|---------|
|      |        | A                  | B           | C          | D                   | E         |           | K1           | K2 | K3 |                            |         |
| 0-2½ | 6      | 23.78 (604)        | 14.68 (373) | 6.89 (175) | 22⅞ (579)           | 13⅞ (351) | ¼         | —            | —  | —  | 35                         | —       |
| 3-4  | 6      | 23.78 (604)        | 23.78 (604) | 6.89 (175) | 22⅞ (579)           | 22⅞ (579) | ¼         | —            | —  | —  | 38                         | —       |

**Note:** Dimensions in inches (mm).  
 Dimensions for reference, not for construction.  
 Contact sales office for dimensions not listed.

Figure 1

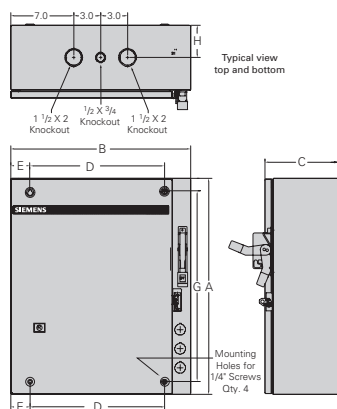


Figure 2

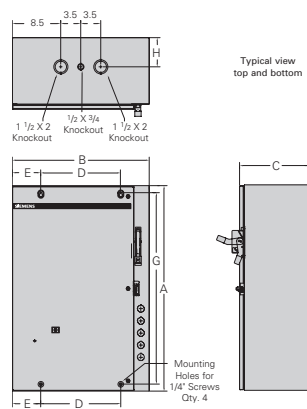


Figure 3

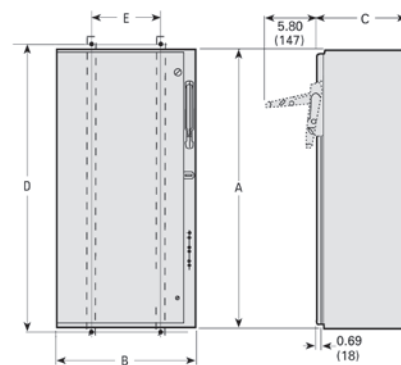


Figure 4

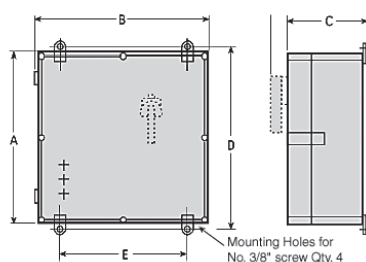


Figure 5

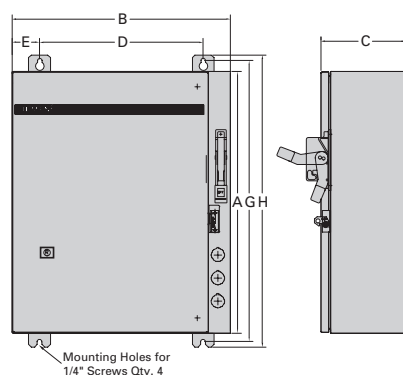
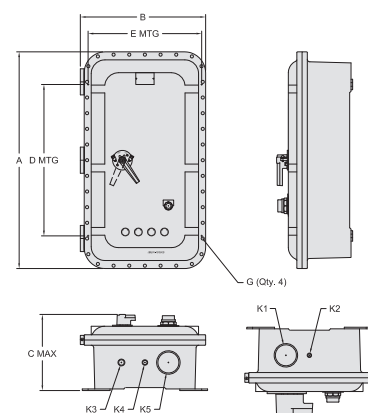


Figure 6



## NEMA 1 Standard Width 0-6

| Size        | Figure | Outline Dimensions |          |              | Mounting Dimensions |            |             |            | Approx Ship Wt Lbs (Kg) | Ref Dwg   |
|-------------|--------|--------------------|----------|--------------|---------------------|------------|-------------|------------|-------------------------|-----------|
|             |        | A                  | B        | C            | D                   | E          | G           | H          |                         |           |
| 0-2½        | 1      | 24 (610)           | 20 (508) | 8 (203)      | 15.00 (381)         | 2.125 (54) | 21.00 (533) | 3.50 (90)  | 60 (27)                 | D68774002 |
| 3-4         | 2      | 36 (914)           | 24 (610) | 8 (203)      | 14.00 (356)         | 5.00 (127) | 33.50 (851) | 5.00 (127) | 121 (55)                | D68774003 |
| 5 (Painted) | 3      | 72.156 (1833)      | 20 (508) | 11.031 (280) | 71 (1803)           | 16 (406)   | —           | —          | 250 (113)               | D56032005 |
| 6 (Painted) | 3      | 79.125 (2010)      | 22 (559) | 13 (330)     | 78 (1981)           | 18 (457)   | —           | —          | 275 (125)               | D56032006 |

## NEMA 12/3/3R/4 (Painted), 4/4X (Stainless) Standard Width 0-6

| Size        | Figure | Outline Dimensions |          |              | Mounting Dimensions |            |             |             | Approx Ship Wt Lbs (Kg) | Ref Dwg   |
|-------------|--------|--------------------|----------|--------------|---------------------|------------|-------------|-------------|-------------------------|-----------|
|             |        | A                  | B        | C            | D                   | E          | G           | H           |                         |           |
| 0-2½        | 5      | 24 (610)           | 20 (508) | 8 (203)      | 15.00 (381)         | 3.50 (90)  | 25.75 (654) | 26.75 (654) | 63 (29)                 | D68774005 |
| 3-4         | 5      | 36 (914)           | 24 (610) | 8 (203)      | 12 (305)            | 6.00 (152) | 37.75 (959) | 38.75 (984) | 124 (56)                | D68774006 |
| 5 (Painted) | 3      | 72.156 (1833)      | 20 (508) | 11.031 (280) | 71 (1803)           | 16 (406)   | —           | —           | 250 (113)               | D56032005 |
| 6 (Painted) | 3      | 79.125 (2010)      | 22 (559) | 13 (330)     | 78 (1981)           | 18 (457)   | —           | —           | 275 (125)               | D56032006 |

## NEMA 4X Fiberglass 0-4

| Size | Figure | Outline Dimensions |              |             | Mounting Dimensions |                | Mtg Screw | Conduit Size |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg        |
|------|--------|--------------------|--------------|-------------|---------------------|----------------|-----------|--------------|----|----|-------------------------|----------------|
|      |        | A                  | B            | C           | D                   | E              |           | K1           | K2 | K3 |                         |                |
| 0-2½ | 4      | 23.780 (604)       | 14.680 (373) | 6.890 (175) | 24.125 (612.7)      | 12.250 (311)   | ¾         | —            | —  | —  | 18 (8)                  | 24-139-861-001 |
| 3-4  | 4      | 23.780 (604)       | 23.780 (604) | 6.890 (175) | 24.125 (612.7)      | 21.250 (539.7) | ¾         | —            | —  | —  | 28 (12.7)               | 24-139-861-003 |

## NEMA 7/9/3/4 Hazardous Location 0-4

| Size | Figure | Outline Dimensions |             |             | Mounting Dimensions |             | Mtg Screw | Conduit Size |    |    |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg     |
|------|--------|--------------------|-------------|-------------|---------------------|-------------|-----------|--------------|----|----|----|----|-------------------------|-------------|
|      |        | A                  | B           | C           | D                   | E           |           | K1           | K2 | K3 | K4 | K5 |                         |             |
| 0-2½ | 6      | 29.00 (737)        | 21.75 (552) | 14.95 (380) | 18.38 (467)         | 19.75 (502) | ¾         | 2½           | ½  | 1  | ½  | 2½ | 225 (102.1)             | A5E39719026 |
| 3-4  | 6      | 41.50 (1054)       | 24.00 (610) | 14.57 (370) | 29.00 (737)         | 21.75 (552) | ¾         | 4            | ½  | 1  | ½  | 4  | 320 (145.1)             | A5E39719027 |

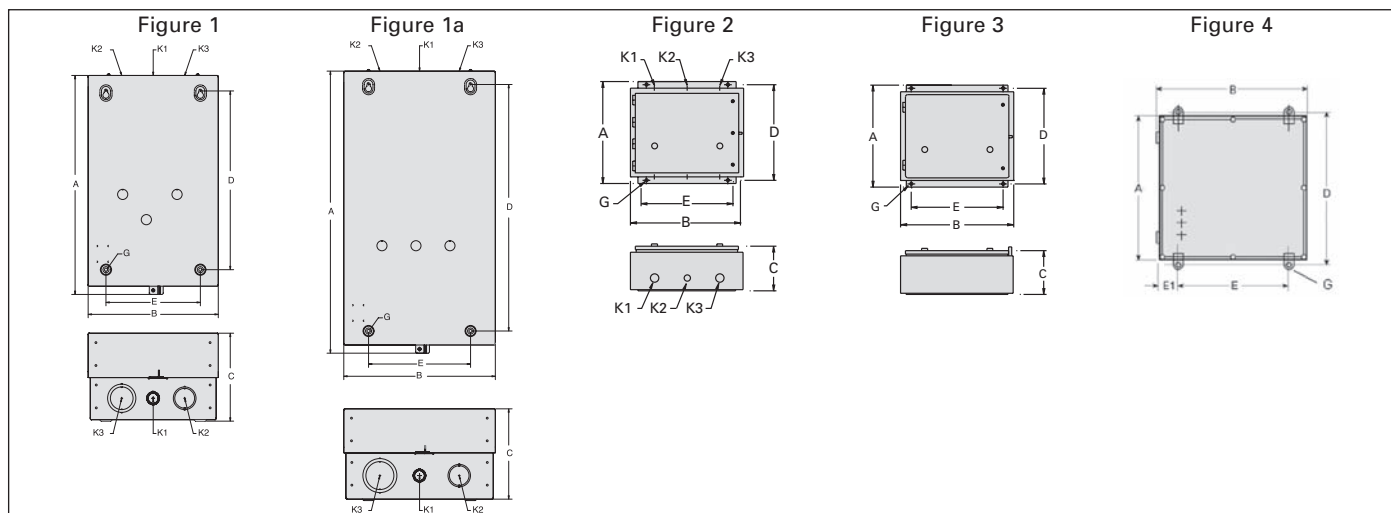
Note: Dimensions in inches (mm).

Dimensions for reference, not for construction.

Contact sales office for dimensions not listed.

## Enclosed, Class 30

## Dimensions



## 2 Speed 1 Winding

| NEMA 1 General Purpose Enclosure (Standard width for use with or without CPT)    |     |                    |               |              |                     |             |      |           |              |             |             |                         |             |
|----------------------------------------------------------------------------------|-----|--------------------|---------------|--------------|---------------------|-------------|------|-----------|--------------|-------------|-------------|-------------------------|-------------|
| Size                                                                             | Fig | Outline Dimensions |               |              | Mounting Dimensions |             |      | Mtg Screw | Conduit Size |             |             | Approx Ship Wt Lbs (Kg) | Ref Dwg     |
|                                                                                  |     | A                  | B             | C            | D                   | E           | G    |           | K1           | K2          | K3          |                         |             |
| 0-1 3/4 w/o CPT                                                                  | 1   | 19 1/8 (486)       | 11 3/8 (289)  | 7 1/16 (195) | 15 3/8 (397)        | 8 1/4 (210) | 3/4  | 1/4       | 1/2-3/4      | 1-1 1/4     | 1 1/2-2     | 26 (12)                 | D68870      |
| 0-1 3/4 (200 VA)                                                                 | 1a  | 24 3/8 (632)       | 13 3/8 (340)  | 8 1/8 (206)  | 21 3/4 (552)        | 9 (229)     | 1/4  | 1/4       | 1/2-3/4      | 1 1/4-1 1/2 | 2-2 1/2     | 52 (24)                 | D68870      |
| 2-2 1/2                                                                          | 2   | 16 (406)           | 17.13 (435)   | 7.63 (194)   | 15.25 (387)         | 14 (355)    | 1/4  | 1/4       | 1/2-3/4      | 1 1/4-1 1/2 | 1 1/4-1 1/2 | 39 (20)                 | D42932001   |
| 3-3 1/2                                                                          | 2   | 18.31 (465)        | 21.19 (538)   | 7.38 (187)   | 17.56 (446)         | 18 (457)    | 1/4  | 1/4       | 1 1/4-1 1/2  | 1/2-3/4     | 1 1/2-2     | 60 (27)                 | D72956002   |
| 4                                                                                | 3   | 29 (737)           | 23 3/16 (589) | 9 1/4 (235)  | 27 1/2 (699)        | 20 (508)    | 5/16 | 5/16      | —            | —           | —           | 61 (28)                 | D43292001   |
| NEMA 4/4X Stainless Steel Enclosure (Standard width for use with or without CPT) |     |                    |               |              |                     |             |      |           |              |             |             |                         |             |
| 0-1 3/4 w/o CPT                                                                  | 3   | 13 (330)           | 12 3/8 (321)  | 5 3/8 (137)  | 12 1/4 (311)        | 10 (254)    | 1/4  | 1/4       | —            | —           | —           | 34 (15)                 | D41917000   |
| 0-1 3/4 w/ CPT                                                                   | 3   | 16 (406)           | 17 1/8 (435)  | 7 3/8 (194)  | 15 1/4 (387)        | 14 (355)    | 1/4  | 1/4       | —            | —           | —           | 47 (21)                 |             |
| 2-2 1/2 w/o CPT                                                                  | 3   | 16 (406)           | 17 1/8 (435)  | 7 3/8 (194)  | 15 1/4 (387)        | 14 (355)    | 1/4  | 1/4       | —            | —           | —           | 47 (21)                 |             |
| 2-2 1/2 w/ CPT                                                                   | 3   | 25 1/16 (637)      | 17 3/16 (437) | 7 3/8 (187)  | 24 3/16 (618)       | 14 (355)    | 1/4  | 1/4       | —            | —           | —           | 55 (25)                 |             |
| 3-3 1/2                                                                          | 3   | 29 (737)           | 23 3/16 (589) | 9 1/4 (235)  | 27 1/2 (699)        | 20 (508)    | 5/16 | 5/16      | —            | —           | —           | 61 (28)                 | D43292001   |
| 4                                                                                | 3   | 29 (737)           | 23 3/16 (589) | 9 1/4 (235)  | 27 1/2 (699)        | 20 (508)    | 5/16 | 5/16      | —            | —           | —           | 61 (28)                 | D43292001   |
| NEMA 12/3R Industrial Use Enclosure (Standard width for use with or without CPT) |     |                    |               |              |                     |             |      |           |              |             |             |                         |             |
| 0-1 3/4 w/o CPT                                                                  | 3   | 13 (330)           | 12 3/8 (321)  | 5 3/8 (137)  | 12 1/4 (311)        | 10 (254)    | 1/4  | 1/4       | —            | —           | —           | 34 (15)                 |             |
| 0-1 3/4 w/ CPT                                                                   | 3   | 16 (406)           | 17 1/8 (435)  | 7 3/8 (194)  | 15 1/4 (387)        | 14 (355)    | 1/4  | 1/4       | —            | —           | —           | 47 (21)                 | D17150010   |
| 2-2 1/2 w/o CPT                                                                  | 3   | 16 (406)           | 17 1/8 (435)  | 7 3/8 (194)  | 15 1/4 (387)        | 14 (355)    | 1/4  | 1/4       | —            | —           | —           | 47 (21)                 | D17150010   |
| 2-2 1/2 w/ CPT                                                                   | 3   | 25 1/16 (637)      | 17 3/16 (437) | 7 3/8 (187)  | 24 3/16 (618)       | 14 (355)    | 1/4  | 1/4       | —            | —           | —           | 55 (25)                 |             |
| 3-4                                                                              | 3   | 29 (737)           | 23 3/16 (589) | 9 1/4 (235)  | 27 1/2 (699)        | 20 (508)    | 5/16 | 5/16      | —            | —           | —           | 61 (28)                 | D19673000   |
| NEMA 4X Fiberglass Enclosure (Standard width for use with or without CPT)        |     |                    |               |              |                     |             |      |           |              |             |             |                         |             |
| 0-2 1/2                                                                          | 4   | 23.780 (604)       | 23.780 (604)  | 6.890 (175)  | —                   | —           | 1/4  | 1/4       | —            | —           | —           | 28 (13)                 | 24139861003 |
| 3-4                                                                              | 4   | 39.37 (1000)       | 29.53 (750)   | 12.60 (320)  | —                   | —           | —    | —         | —            | —           | —           | —                       | 24139861004 |

## 2 Speed 2 Winding

| NEMA 1 General Purpose Enclosure (Standard width for use with or without CPT)    |     |                    |               |              |                     |             |      |           |              |             |         |                         |             |
|----------------------------------------------------------------------------------|-----|--------------------|---------------|--------------|---------------------|-------------|------|-----------|--------------|-------------|---------|-------------------------|-------------|
| Size                                                                             | Fig | Outline Dimensions |               |              | Mounting Dimensions |             |      | Mtg Screw | Conduit Size |             |         | Approx Ship Wt Lbs (Kg) | Ref Dwg     |
|                                                                                  |     | A                  | B             | C            | D                   | E           | G    |           | K1           | K2          | K3      |                         |             |
| 0-2 1/2 w/o CPT                                                                  | 1   | 19 1/8 (486)       | 11 3/8 (289)  | 7 1/16 (195) | 15 3/8 (397)        | 8 1/4 (210) | 3/4  | 1/4       | 1/2-3/4      | 1-1 1/4     | 1 1/2-2 | 30 (14)                 | D68870      |
| 0-2 1/2 (200 VA)                                                                 | 1a  | 24 3/8 (632)       | 13 3/8 (340)  | 8 1/8 (206)  | 21 3/4 (552)        | 9 (229)     | 1/4  | 1/4       | 1/2-3/4      | 1 1/4-1 1/2 | 2-2 1/2 | 52 (24)                 | D68870      |
| 3-4 w/o CPT                                                                      | 1a  | 24 3/8 (632)       | 13 3/8 (340)  | 8 1/8 (206)  | 21 3/4 (552)        | 9 (229)     | 1/4  | 1/4       | 1/2-3/4      | 1 1/4-1 1/2 | 2-2 1/2 | 52 (24)                 | D68870      |
| NEMA 4/4X Stainless Steel Enclosure (Standard width for use with or without CPT) |     |                    |               |              |                     |             |      |           |              |             |         |                         |             |
| 0-1 3/4 w/o CPT                                                                  | 3   | 13 (330)           | 12 3/8 (321)  | 5 3/8 (137)  | 12 1/4 (311)        | 10 (254)    | 1/4  | 1/4       | —            | —           | —       | 34 (15)                 |             |
| 0-1 3/4 w/ CPT                                                                   | 3   | 16 (406)           | 17 1/8 (435)  | 7 3/8 (194)  | 15 1/4 (387)        | 14 (355)    | 1/4  | 1/4       | —            | —           | —       | 41 (19)                 |             |
| 2-2 1/2 w/o CPT                                                                  | 3   | 16 (406)           | 13 1/4 (337)  | 6 (152)      | 15 1/4 (387)        | 11 (279)    | 1/4  | 1/4       | —            | —           | —       | 41 (19)                 |             |
| 2-2 1/2 w/ CPT                                                                   | 3   | 16 (406)           | 17 1/8 (435)  | 7 3/8 (194)  | 15 1/4 (387)        | 14 (355)    | 1/4  | 1/4       | —            | —           | —       | 41 (19)                 |             |
| 3-3 1/2 w/o CPT                                                                  | 3   | 25 1/16 (637)      | 17 3/16 (437) | 7 3/8 (187)  | 24 3/16 (618)       | 14 (355)    | 1/4  | 1/4       | —            | —           | —       | 55 (25)                 |             |
| 3-3 1/2 w/ CPT                                                                   | 3   | 29 (737)           | 23 3/16 (589) | 9 1/4 (235)  | 27 1/2 (699)        | 20 (508)    | 5/16 | 5/16      | —            | —           | —       | 61 (28)                 | D43292001   |
| 4                                                                                | 3   | 29 (737)           | 23 3/16 (589) | 9 1/4 (235)  | 27 1/2 (699)        | 20 (508)    | 5/16 | 5/16      | —            | —           | —       | 61 (28)                 | D43292001   |
| NEMA 12/3R Industrial Use Enclosure (Standard width for use with or without CPT) |     |                    |               |              |                     |             |      |           |              |             |         |                         |             |
| 0-1 3/4 w/o CPT                                                                  | 3   | 13 (330)           | 12 3/8 (321)  | 5 3/8 (137)  | 12 1/4 (311)        | 10 (254)    | 1/4  | 1/4       | —            | —           | —       | 34 (15)                 |             |
| 0-1 3/4 w/ CPT                                                                   | 3   | 16 (406)           | 17 1/8 (435)  | 7 3/8 (194)  | 15 1/4 (387)        | 14 (355)    | 1/4  | 1/4       | —            | —           | —       | 41 (19)                 | D17150010   |
| 2-2 1/2 w/o CPT                                                                  | 3   | 16 (406)           | 13 1/4 (337)  | 6 1/8 (156)  | 15 1/4 (387)        | 11 (279)    | 1/4  | 1/4       | —            | —           | —       | 41 (19)                 |             |
| 2-2 1/2 w/ CPT                                                                   | 3   | 16 (406)           | 17 1/8 (435)  | 7 3/8 (194)  | 15 1/4 (387)        | 14 (355)    | 1/4  | 1/4       | —            | —           | —       | 41 (19)                 | D17150010   |
| 3-3 1/2 w/o CPT                                                                  | 3   | 25 1/16 (637)      | 17 3/16 (437) | 7 3/8 (187)  | 24 3/16 (618)       | 14 (355)    | 1/4  | 1/4       | —            | —           | —       | 55 (25)                 |             |
| 3-4 w/ CPT                                                                       | 3   | 29 1/16 (738)      | 23 3/16 (589) | 9 1/4 (235)  | 27 3/8 (700)        | 20 (508)    | 5/16 | 5/16      | —            | —           | —       | 61 (28)                 | D19673000   |
| NEMA 4X Fiberglass Enclosure (Standard width for use with or without CPT)        |     |                    |               |              |                     |             |      |           |              |             |         |                         |             |
| 0-2 1/2                                                                          | 4   | 23.780 (604)       | 23.780 (604)  | 6.890 (175)  | —                   | —           | 1/4  | 1/4       | —            | —           | —       | 28 (13)                 | 24139861003 |
| 3-4                                                                              | 4   | 39.37 (1000)       | 29.53 (750)   | 12.60 (320)  | —                   | —           | —    | —         | —            | —           | —       | —                       | 24139861004 |

Note: Dimensions in inches (mm). Dimensions for reference, not for construction. Contact sales office for dimensions not listed.

## Enclosed, Class 32

## Dimensions

Figure 1

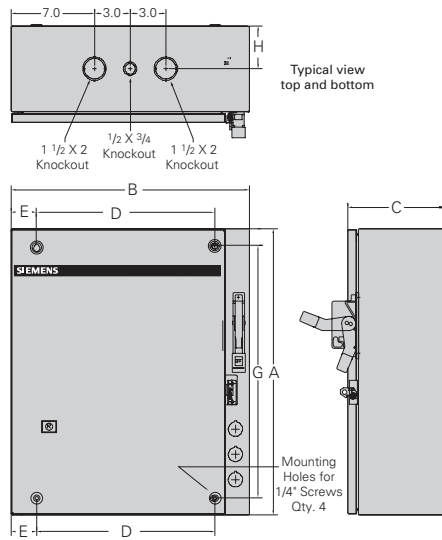


Figure 2

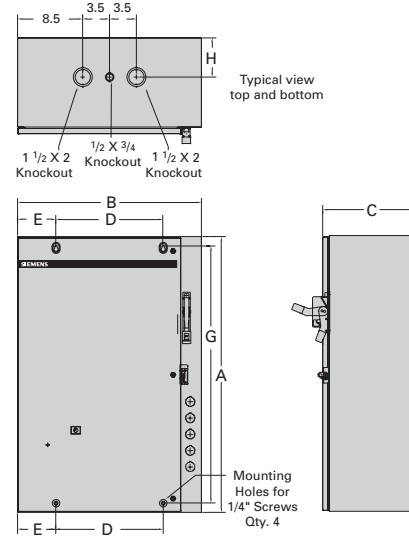


Figure 3

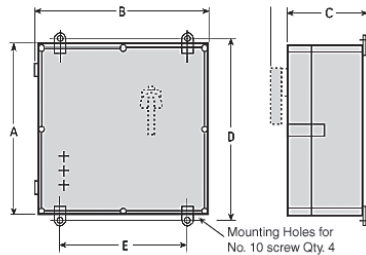
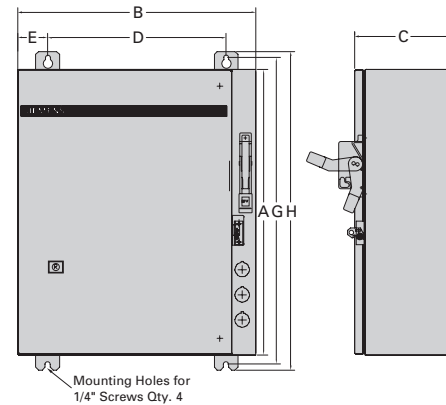


Figure 4



## NEMA 1 Standard Width 0-4

| Size                | Figure | Outline Dimensions |          |         | Mounting Dimensions |            |             |           | Approx Ship Wt Lbs (Kg) | Ref Dwg |
|---------------------|--------|--------------------|----------|---------|---------------------|------------|-------------|-----------|-------------------------|---------|
|                     |        | A                  | B        | C       | D                   | E          | G           | H         |                         |         |
| 0-1 1/4 (1 Winding) | 1      | 24 (610)           | 20 (508) | 8 (203) | 15.00 (381)         | 2.125 (54) | 21.00 (533) | 3.50 (90) | 68 (31)                 | D68774  |
| 2-4 (1 Winding)     | 2      | 36 (914)           | 24 (610) | 8 (203) | 14.00 (356)         | 5.00 (127) | 33.50 (851) | 3.50 (90) | 71 (32)                 | D68774  |
| 0-2 1/2 (2 Winding) | 1      | 24 (610)           | 20 (508) | 8 (203) | 15.00 (381)         | 2.125 (54) | 21.00 (533) | 3.50 (90) | 135 (61)                | D68774  |
| 3-4 (2 Winding)     | 2      | 36 (914)           | 24 (610) | 8 (203) | 14.00 (356)         | 5.00 (127) | 33.50 (851) | 3.50 (90) | 138 (63)                | D68774  |

## NEMA 12/3R/4 (Painted), 4/4X Stainless Standard Width 0-4

|                     |   |          |          |         |             |            |             |             |          |        |
|---------------------|---|----------|----------|---------|-------------|------------|-------------|-------------|----------|--------|
| 0-1 1/4 (1 Winding) | 4 | 24 (610) | 20 (508) | 8 (203) | 15.00 (381) | 2.50 (64)  | 25.75 (654) | 26.75 (680) | 68 (31)  | D68774 |
| 2-4 (1 Winding)     | 4 | 36 (914) | 24 (610) | 8 (203) | 12 (305)    | 6.00 (152) | 37.75 (959) | 38.75 (984) | 71 (32)  | D68774 |
| 0-2 1/2 (2 Winding) | 4 | 24 (610) | 20 (508) | 8 (203) | 15.00 (381) | 2.50 (64)  | 25.75 (654) | 26.75 (680) | 135 (61) | D68774 |
| 3-4 (2 Winding)     | 4 | 36 (914) | 24 (610) | 8 (203) | 12 (305)    | 6.00 (152) | 37.75 (959) | 38.75 (984) | 138 (63) | D68774 |

## Nema 4X Fiberglass 0-4

| Size    | Figure | Outline Dimensions |              |             | Mounting Dimensions |              | Mtg Screw | Conduit Size |    |    | Approx Ship Wt Lbs (Kg) | Ref Dwg |
|---------|--------|--------------------|--------------|-------------|---------------------|--------------|-----------|--------------|----|----|-------------------------|---------|
|         |        | A                  | B            | C           | D                   | E            |           | K1           | K2 | K3 |                         |         |
| 0-1 1/4 | 3      | 23.780 (604)       | 14.680 (373) | 6.890 (175) | 24.125 (613)        | 12.250 (311) | 1/4       | —            | —  | —  | 18 (8)                  | —       |
| 2-4     | 3      | 23.780 (604)       | 23.780 (604) | 6.890 (175) | 24.125 (613)        | 21.250 (540) | 1/4       | —            | —  | —  | 28 (13)                 | —       |

Note: Dimensions in inches (mm).

Dimensions for reference, not for construction.

Contact sales office for dimensions not listed.



Figure 1

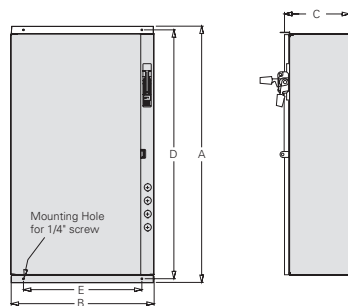
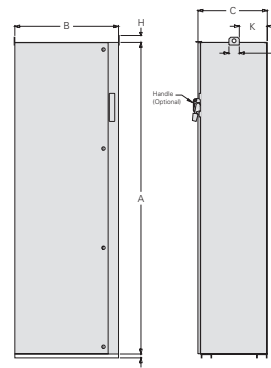


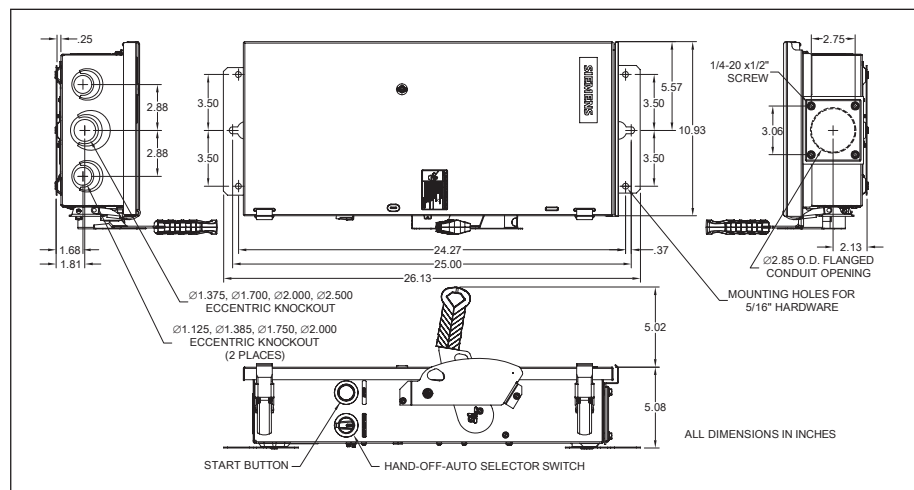
Figure 2



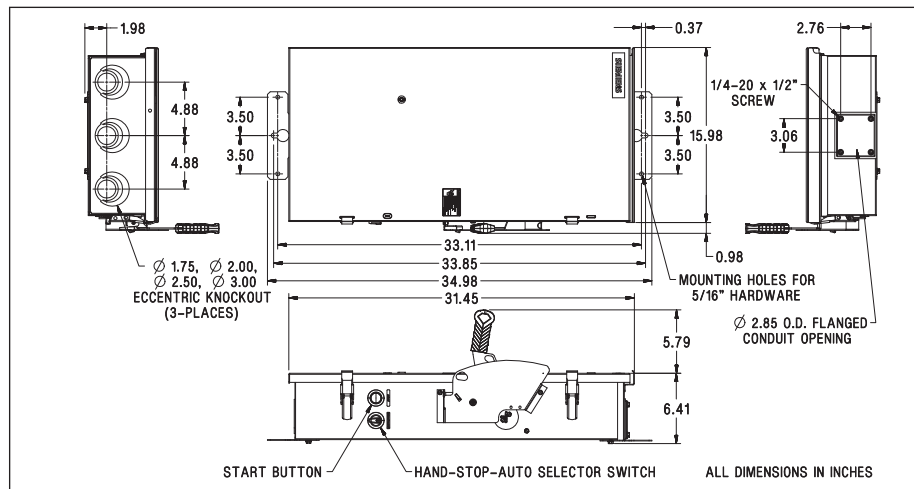
## Class 36, 37, NEMA 1, 4, 4X, 12/3R, Combination and Non-combination

| Reduced Voltage AutoTransformer Size | Part Winding & Wye Delta |                 | Figure | A        | B        | C  | D        | E       | G       | H       | I | J     | K      | L |
|--------------------------------------|--------------------------|-----------------|--------|----------|----------|----|----------|---------|---------|---------|---|-------|--------|---|
|                                      | Disconnect               | Circuit Breaker |        |          |          |    |          |         |         |         |   |       |        |   |
| 1 3/4-2 1/2                          | 0-2                      | 0-2 1/2         | 1      | 43 5/16  | 24 5/32  | 11 | 42 11/32 | 20      | —       | —       | — | —     | —      | — |
| 3-3 1/2                              | 2 1/2-3 1/2              | 3-3 1/2         | 1      | 55 5/16  | 28 9/32  | 11 | 54 11/32 | 24      | —       | —       | — | —     | —      | — |
| 4                                    | 4                        | 4               | 1      | 74 21/32 | 28 9/32  | 11 | 73 13/32 | 24      | —       | —       | — | —     | —      | — |
| 5, 6                                 | 5, 6                     | 5, 6            | 2      | 90       | 29 30/31 | 20 | 16       | 24 7/16 | 2 16/21 | 1 23/40 | — | 1 1/8 | 8 7/40 | 3 |

## Class 82 size 1

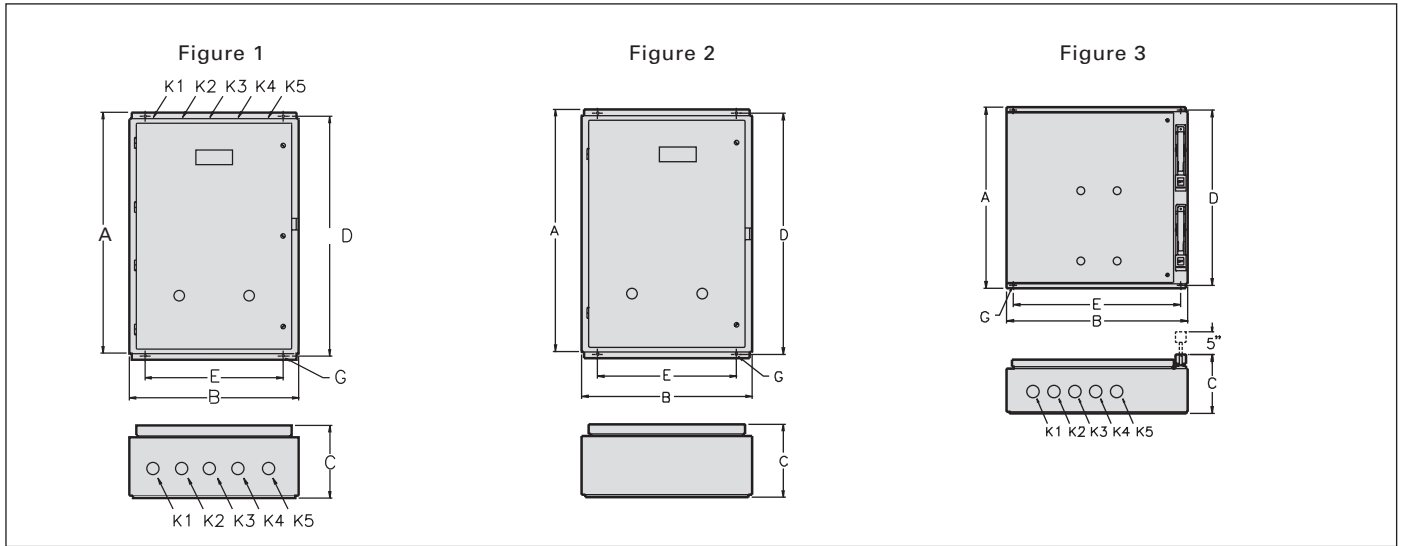


## Class 82 Size 1 1/2, 2



# Class 83, 84

## Dimensions



### Class 83 Non-Combination Type

| Enclosure Type         | Size  | Outline Dimensions |     |     |    | Mounting Dimensions |    | Mounting Screw | Conduit Size |       |     |       |        | Approx Ship Wt |
|------------------------|-------|--------------------|-----|-----|----|---------------------|----|----------------|--------------|-------|-----|-------|--------|----------------|
|                        |       | Figure             | A   | B   | C  | D                   | E  | G              | K1           | K2    | K3  | K4    | K5     | Lbs            |
| NEMA 1                 | 0-1¼  | 1                  | 19½ | 16⅞ | 6½ | 18¾                 | 13 | ¼              | 1¼-1½        | ½-¾   | ½   | ½-¾   | 1¼-1½  | 20             |
|                        | 2, 2½ | 1                  | 25⅞ | 17⅞ | 7⅞ | 24⅞                 | 14 | ¼              | 1¼-1½        | ½-¾   | ½-¾ | 1¼-1½ | 1½-2   | 57             |
|                        | 3-4   | 1                  | 29⅞ | 23⅞ | 9¼ | 27⅞                 | 20 | ⅝              | 2-2½         | 1¼-1½ | ½-¾ | 1¼-1½ | 2-2½-3 | 93             |
| NEMA 12                | 0-1¼  | 2                  | 19½ | 16⅞ | 6½ | 18¾                 | 13 | ¼              | —            | —     | —   | —     | —      | 20             |
|                        | 2, 2½ | 2                  | 25⅞ | 17⅞ | 7⅞ | 24⅞                 | 14 | ¼              | —            | —     | —   | —     | —      | 57             |
|                        | 3-4   | 2                  | 29⅞ | 23⅞ | 9¼ | 27⅞                 | 20 | ⅝              | —            | —     | —   | —     | —      | 93             |
| NEMA 4/4X <sup>②</sup> | 0-1¼  | 2                  | 19½ | 16⅞ | 6½ | 18¾                 | 13 | ¼              | —            | —     | —   | —     | —      | 20             |
|                        | 2, 2½ | 2                  | 25⅞ | 17⅞ | 7⅞ | 24⅞                 | 14 | ¼              | —            | —     | —   | —     | —      | 57             |
|                        | 3-4   | 2                  | 29⅞ | 23⅞ | 9¼ | 27⅞                 | 20 | ⅝              | —            | —     | —   | —     | —      | 93             |

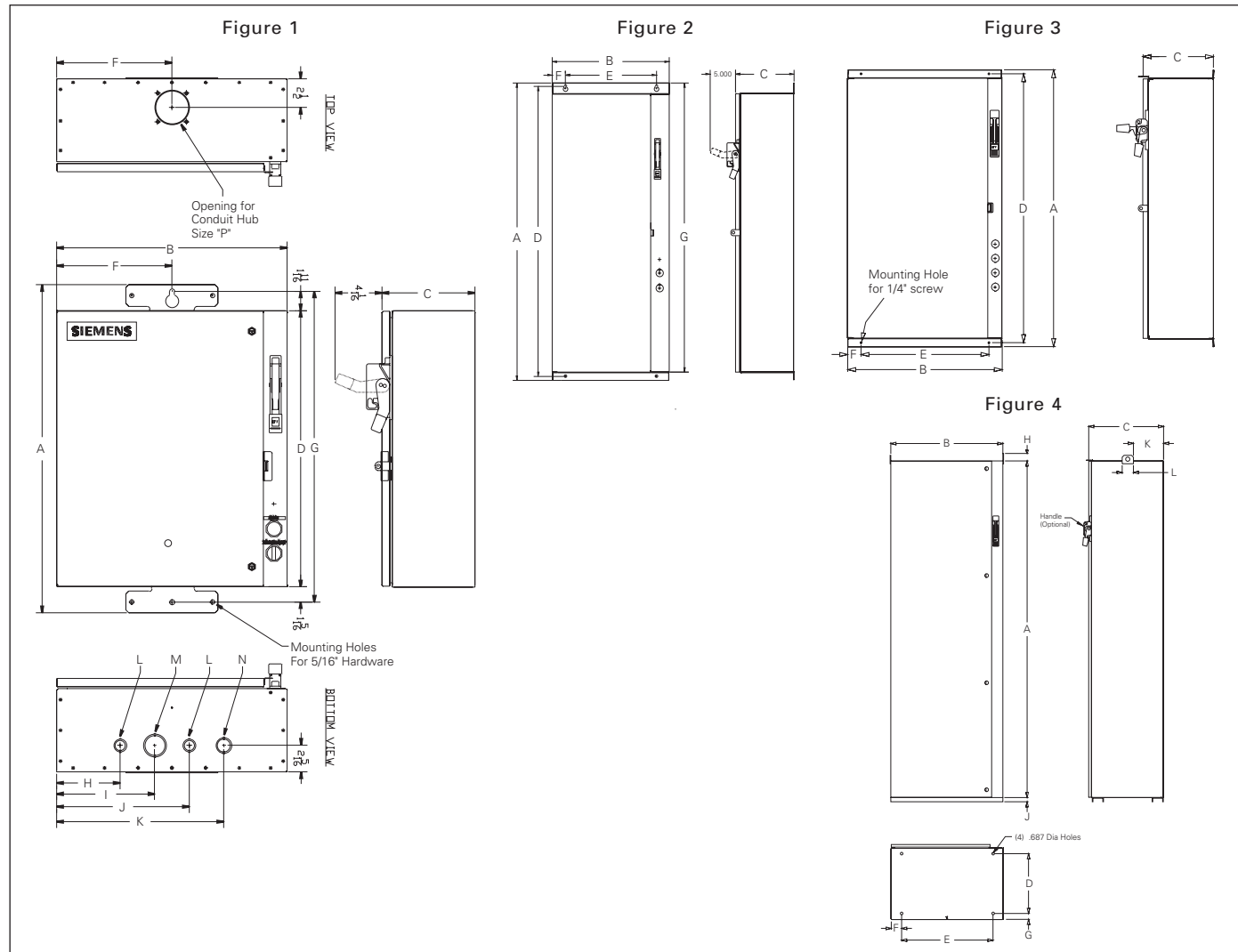
### Class 84 Combination Type

| Enclosure Type            | Size | Outline Dimensions |     |     |    | Mounting Dimensions             |     | Mounting Screw | Conduit Size |      |                                   |                                   |                                                                | Approx Ship Wt |
|---------------------------|------|--------------------|-----|-----|----|---------------------------------|-----|----------------|--------------|------|-----------------------------------|-----------------------------------|----------------------------------------------------------------|----------------|
|                           |      | Figure             | A   | B   | C  | D                               | E   | G              | K1           | K2   | K3                                | K4                                | K5                                                             | Lbs            |
| NEMA 1                    | 0-1¼ | 3                  | 34⅞ | 24⅝ | 7⅞ | 33                              | 20  | ⅜              | ⅞-1⅞         | ⅞-1⅞ | 1⅞-1⅞ <sup>3</sup> / <sub>4</sub> | 1⅞-1⅞ <sup>3</sup> / <sub>4</sub> | 1⅞ <sup>3</sup> / <sub>4</sub> -1⅞ <sup>3</sup> / <sub>2</sub> | 70             |
|                           | 2-4  | 3                  | 56  | 28½ | 9⅞ | 54⅞ <sup>1</sup> / <sub>6</sub> | 24¼ | ⅝              | —            | —    | —                                 | —                                 | —                                                              | 106            |
| NEMA 4(painted)<br>4X, 12 | 0-1¼ | 3                  | 34⅞ | 24⅝ | 7⅞ | 33                              | 20  | ⅜              | —            | —    | —                                 | —                                 | —                                                              | 70             |
|                           | 2-4  | 3                  | 56  | 28½ | 9⅞ | 54⅞ <sup>1</sup> / <sub>6</sub> | 24¼ | ⅝              | —            | —    | —                                 | —                                 | —                                                              | 106            |

① Dimensions may vary for size 3 & 4 stainless steel enclosures.

② NEMA 4 Painted, 4X Stainless Steel.

## Outline Drawings



## Class 87 Standard and Vacuum Starter Pump Panel

| Size    | Figure | A                 | B                | C                             | D                              | E   | F               | G                              | H                 | I                 | J                 | K                 | Conduit Knockout |        |       |    | Hub |
|---------|--------|-------------------|------------------|-------------------------------|--------------------------------|-----|-----------------|--------------------------------|-------------------|-------------------|-------------------|-------------------|------------------|--------|-------|----|-----|
|         |        |                   |                  |                               |                                |     |                 |                                |                   |                   |                   |                   | L                | M      | N     | P  |     |
| 1-2½    | 1      | 28½               | 20               | 8½ <sub>16</sub>              | 24                             | —   | 10              | 27                             | 5½                | 8½ <sub>2</sub>   | 11½               | 14½               | ½ x ¾            | 1¼ x 1 | ¾ x 1 | 1½ |     |
| 3-4     | 1      | 40½               | 24               | 8¾ <sub>32</sub>              | 36                             | —   | 12              | 39                             | 8¾ <sub>16</sub>  | 11½ <sub>16</sub> | 15¾ <sub>16</sub> | —                 | 1¾ x ¾           | 1¾ x 1 | —     | 2½ |     |
| 5       | 2      | 72½ <sub>32</sub> | 20               | 11                            | 71                             | 16  | 2½ <sub>8</sub> | 70 <sup>29</sup> <sub>32</sub> | —                 | —                 | —                 | —                 | —                | —      | —     | —  |     |
| 6       | 2      | 79½ <sub>8</sub>  | 22               | 12½ <sub>16</sub>             | 78                             | 18  | 2½ <sub>8</sub> | 77½ <sub>8</sub>               | —                 | —                 | —                 | —                 | —                | —      | —     | —  |     |
| 4 (Vac) | 2      | 55¾ <sub>32</sub> | 24¾ <sub>8</sub> | 9 <sup>22</sup> <sub>32</sub> | 54 <sup>26</sup> <sub>32</sub> | 20¼ | 2½ <sub>8</sub> | 54 <sup>23</sup> <sub>32</sub> | 26¾ <sub>16</sub> | —                 | 5                 | 27¼ <sub>32</sub> | —                | —      | —     | —  |     |

## Class 88 Reduced Voltage Pump Panels

| RVAT Size | Part Winding & Wye Delta |                 | Figure | A        | B       | C  | D        | E       | F      | H     | I | J     | K      | L |
|-----------|--------------------------|-----------------|--------|----------|---------|----|----------|---------|--------|-------|---|-------|--------|---|
|           | Fusible Disconnect       | Circuit Breaker |        |          |         |    |          |         |        |       |   |       |        |   |
| 2-2½      | 1-2                      | 1-2½            | 3      | 43 5/16  | 24 5/32 | 11 | 42 11/32 | 20      | 2 1/16 | —     | — | —     | —      | — |
| 3-3½      | 2½-3½                    | 3-3½            | 3      | 55 5/16  | 28 9/32 | 11 | 54 11/32 | 24      | 2 1/8  | —     | — | —     | —      | — |
| 4         | 4                        | 4               | 3      | 74 21/32 | 28 9/32 | 11 | 73 13/32 | 24      | 2 1/8  | —     | — | —     | —      | — |
| 5, 6      | 5, 6                     | 5, 6            | 4      | 90       | 30      | 20 | 16       | 24 7/16 | 2 3/4  | 1 1/2 | — | 1 1/8 | 8 1/16 | 3 |

**Note:** Dimensions in inches (millimeters). Dimensions for reference, not for construction. Contact Sales Office for dimensions not listed.

## Enclosed Contactors, Class LC and LE

## Dimensions

Figure 1

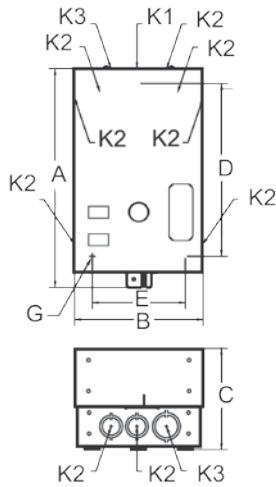


Figure 2

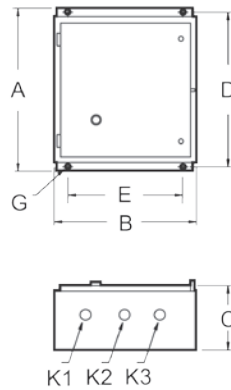
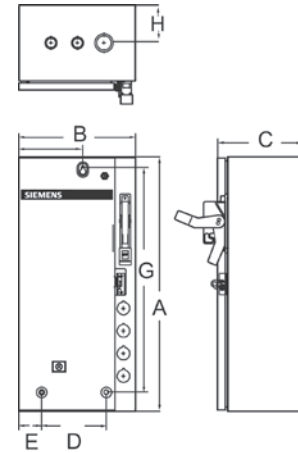


Figure 3



| Enclosure Type           | Contactor Rating (Class LC and LE)                              | Fig. | Outline Dimensions |       |       | Mounting |       | Conduit Size |           |          |    |    |
|--------------------------|-----------------------------------------------------------------|------|--------------------|-------|-------|----------|-------|--------------|-----------|----------|----|----|
|                          |                                                                 |      | A                  | B     | C     | D        | E     | K1           | K2        | K3       | K4 | K5 |
| 1 without CPT            | LE 20/30A 3-4P                                                  | 1    | 10.97              | 6.41  | 5.03  | 8.22     | 4.62  | 0.5          | 0.50-0.75 | 0.75-1   | —  | —  |
|                          | LC 30A 2-12P, LE 60A 3P                                         | 1    | 13.53              | 7.97  | 6.38  | 10.25    | 6.00  | 0.50-0.75    | 0.75-1    | 1-1.25   | —  | —  |
|                          | LE 30/60A 6-12P, LE 100A 3P                                     | 1    | 19.12              | 11.38 | 7.69  | 15.62    | 8.25  | 0.50-0.75    | 1-1.25    | 1.5-2    | —  | —  |
|                          | LE 200-400A 3P                                                  | 2    | 26.00              | 17.62 | 12.50 | 25.19    | 15.50 | 0.50-0.75    | 1.25-1.5  | 1.25-1.5 | —  | —  |
| 1 with CPT               | LC 30A 2-12P, LE 20A 3-4P, LE 30A 3-9P, LE 60A 3-9P, LE 100A 3P | 1    | 19.12              | 11.38 | 7.69  | 15.62    | 8.25  | 0.50-0.75    | 1-1.25    | 1.5-2    | —  | —  |
|                          | LE 30/60A 12P                                                   | 1    | 24.88              | 13.38 | 8.12  | 21.75    | 9.00  | 0.50-0.75    | 1.25-1.5  | 2-2.5    | —  | —  |
|                          | LE 200-400A 3P                                                  | 2    | 26.00              | 17.62 | 12.50 | 25.19    | 15.50 | —            | 1.25-1.5  | 1.25-1.5 | —  | —  |
| 12/3R & 4/4X without CPT | LE 20A 3-4P, LE 30/60A 3-9P, LE 100A 3P, LC 30A 2-12P           | 2    | 16.00              | 13.25 | 6.12  | 15.25    | 11.00 | —            | —         | —        | —  | —  |
|                          | LE 30/60A 12P                                                   | 2    | 26.00              | 13.12 | 7.56  | 25.25    | 10.00 | —            | —         | —        | —  | —  |
|                          | LE 200-400A 3P                                                  | 2    | 26.00              | 17.62 | 12.50 | 23.19    | 15.50 | —            | —         | —        | —  | —  |
| 12/3R & 4/4X with CPT    | LE 20/30A 3-4P, LE 60A 3P                                       | 2    | 16.00              | 13.25 | 6.12  | 15.25    | 11.00 | —            | —         | —        | —  | —  |
|                          | LC 30A 2-12P                                                    | 2    | 16.00              | 17.13 | 7.63  | 15.25    | 11.00 | —            | —         | —        | —  | —  |
|                          | LE 30/60A 6-12P, LE 100A 3P                                     | 2    | 26.00              | 13.12 | 7.56  | 15.25    | 14.00 | —            | —         | —        | —  | —  |
|                          | LE 200-400A 3P                                                  | 2    | 26.00              | 17.62 | 12.50 | 25.19    | 15.50 | —            | —         | —        | —  | —  |

| Enclosure Type                    | Type (Class LE)                    | Contactor Rating | Fig. | Outline Dimensions |    |    |
|-----------------------------------|------------------------------------|------------------|------|--------------------|----|----|
|                                   |                                    |                  |      | A                  | B  | C  |
| 1, 12 & 4/4X with and without CPT | Fusible and Non-fusible Disconnect | 20-60A           | 3    | 24                 | 11 | 8  |
|                                   |                                    | 100A             | 3    | 24                 | 20 | 8  |
|                                   |                                    | 200A             | 3    | 46                 | 20 | 10 |
|                                   |                                    | 300A             | 3    | 76                 | 22 | 13 |
|                                   | Circuit Breaker                    | 20-100A          | 3    | 24                 | 11 | 8  |

Dimensions are in inches.

1) G designates 0.25" mounting screw.

2) Enclosures shown in figure 1 have lift-off covers. All other enclosures have hinged covers.

## Enclosed Contactors, Class CLM, CM

## Dimensions

Figure 1

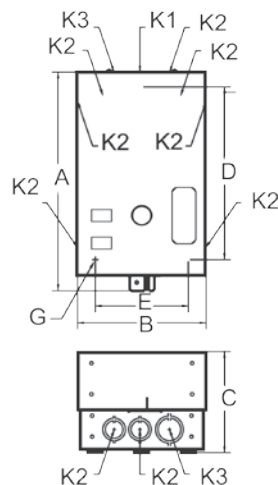


Figure 2

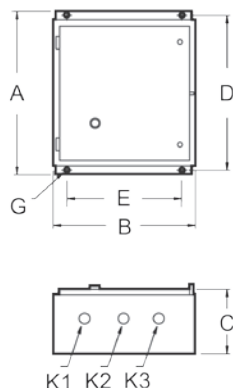
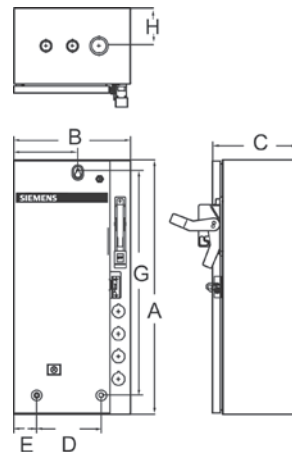


Figure 3



| Enclosure Type           | Contactor Rating (Class CLM)          | Fig. | Outline Dimensions |       |       | Mounting |       | Conduit Size |           |          |          |       |
|--------------------------|---------------------------------------|------|--------------------|-------|-------|----------|-------|--------------|-----------|----------|----------|-------|
|                          |                                       |      | A                  | B     | C     | D        | E     | K1           | K2        | K3       | K4       | K5    |
| 1 without CPT            | 30–60A (2-5p)                         | 1    | 10.97              | 6.41  | 5.03  | 8.22     | 4.62  | 0.5          | 0.50-0.75 | 0.75–1   | —        | —     |
|                          | 20A (2–12p)                           | 1    | 13.53              | 7.97  | 6.38  | 10.25    | 6.00  | 0.50-0.75    | 0.75-1    | 1-1.25   | —        | —     |
|                          | 30–60A (6-12p)                        | 2    | 16.00              | 17.12 | 7.62  | 15.25    | 14.00 | 0.50-0.75    | 1.25-1.5  | 1.25-1.5 | —        | —     |
|                          | 100A (2-5p)                           | 1    | 19.12              | 11.38 | 7.69  | 15.62    | 8.25  | 0.50-0.75    | 1-1.25    | 1.5-2    | —        | —     |
|                          | 200A (2-5p)                           | 1    | 24.88              | 13.38 | 8.12  | 21.75    | 9.00  | 0.50-0.75    | 1.25-1.5  | 2.5      | —        | —     |
|                          | 300–400A (2-5p)                       | 2    | 48.00              | 20.00 | 12.50 | 45.19    | 10.00 | 2.00-2.50    | 1.25-1.5  | 0.5-0.75 | 1.25-1.5 | 2-2.5 |
| 1 with CPT               | 20A (2–12p), 30A (2–5p)               | 1    | 19.12              | 11.38 | 7.69  | 15.62    | 8.25  | 0.50-0.75    | 1-1.25    | 1.5-2    | —        | —     |
|                          | 30–60A (6–12p)                        | 2    | 16.00              | 17.12 | 7.62  | 15.25    | 14.00 | 0.50-0.75    | 1.25-1.5  | 1.25-1.5 | —        | —     |
|                          | 100-200A (2-5p)                       | 2    | 26.00              | 17.62 | 12.50 | 25.19    | 15.50 | —            | 1.25-1.5  | 1.25-1.5 | —        | —     |
|                          | 300–400A (2-5p)                       | 2    | 48.00              | 20.00 | 12.50 | 45.19    | 10.00 | 2.00-2.50    | 1.25-1.5  | 0.5-0.75 | 1.25-1.5 | 2-2.5 |
| 12/3R & 4/4X without CPT | 20A (2–12p), 30A (2–12p), 60A (2-10p) | 2    | 16.00              | 13.25 | 6.12  | 15.25    | 11.00 | —            | —         | —        | —        | —     |
|                          | 100A (2-5p)                           | 2    | 16.00              | 13.00 | 9.50  | 15.12    | 11.00 | —            | —         | —        | —        | —     |
|                          | 60A (12p)                             | 2    | 19.00              | 22.00 | 8.00  |          |       | —            | —         | —        | —        | —     |
|                          | 200A (2-5p)                           | 2    | 26.00              | 17.62 | 12.50 | 23.19    | 15.50 | —            | —         | —        | —        | —     |
|                          | 300A -400A (3p),                      | 2    | 48.00              | 20.00 | 12.50 | 49.00    | 10.00 | —            | —         | —        | —        | —     |
| 12/3R & 4/4X with CPT    | 20A (2-12p), 30A (2-5p)               | 2    | 16.00              | 13.25 | 6.12  | 15.25    | 11.00 | —            | —         | —        | —        | —     |
|                          | 30A (6-12p)                           | 2    | 16.00              | 17.12 | 7.62  | 15.25    | 14.00 | —            | —         | —        | —        | —     |
|                          | 60-100A (2-5p)                        | 2    | 16.00              | 13.00 | 9.50  | 15.12    | 11.00 | —            | —         | —        | —        | —     |
|                          | 60A (6-12p)                           | 2    | 19.00              | 22.00 | 8.00  |          |       | —            | —         | —        | —        | —     |
|                          | 200A (3p)                             | 2    | 26.00              | 17.62 | 12.50 | 25.19    | 15.50 | —            | —         | —        | —        | —     |
|                          | 300–400A (3p)                         | 2    | 48.00              | 20.00 | 12.50 | 49.00    | 10.00 | —            | —         | —        | —        | —     |

| Enclosure Type                    | Type (Class CM)                    | Contactor Rating | Fig. | Outline Dimensions |    |    |
|-----------------------------------|------------------------------------|------------------|------|--------------------|----|----|
|                                   |                                    |                  |      | A                  | B  | C  |
| 1, 12 & 4/4X with and without CPT | Fusible and Non-fusible Disconnect | 20–60A           | 3    | 24                 | 11 | 8  |
|                                   |                                    | 100A             | 3    | 24                 | 20 | 8  |
|                                   |                                    | 200A             | 3    | 46                 | 20 | 10 |
|                                   |                                    | 300A             | 3    | 76                 | 22 | 13 |
|                                   | Circuit Breaker                    | 20-100A          | 3    | 24                 | 11 | 8  |

Dimensions are in inches.

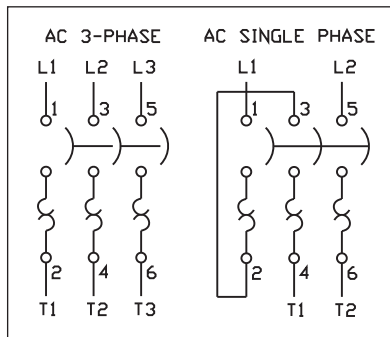
1) G designates 0.25" mounting screw.

2) Enclosures shown in figure 1 have lift-off covers. All other enclosures have hinged covers.

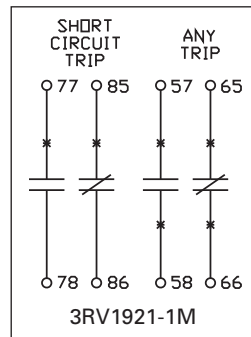
## Class 11 - 3RV, SMF, MMS

## Wiring Diagrams

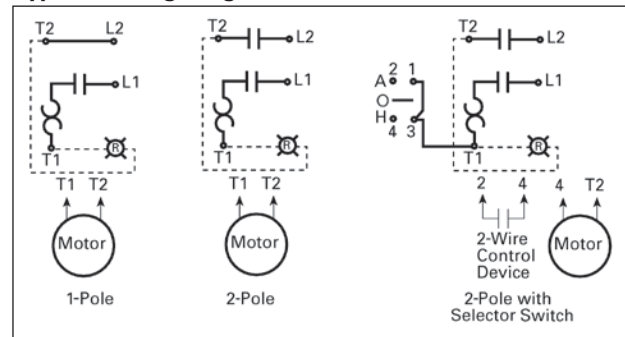
## Class 11 - 3RV



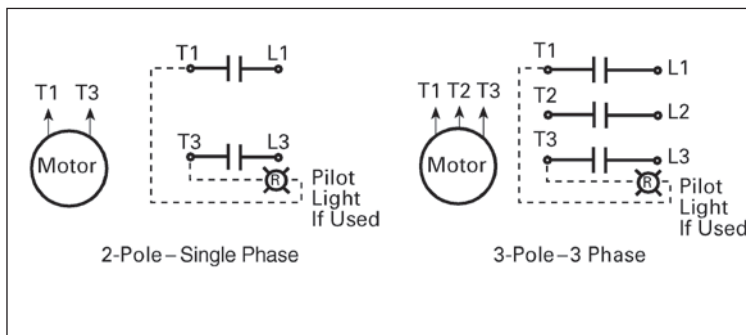
## Signaling Contact for Class 11 - 3RV



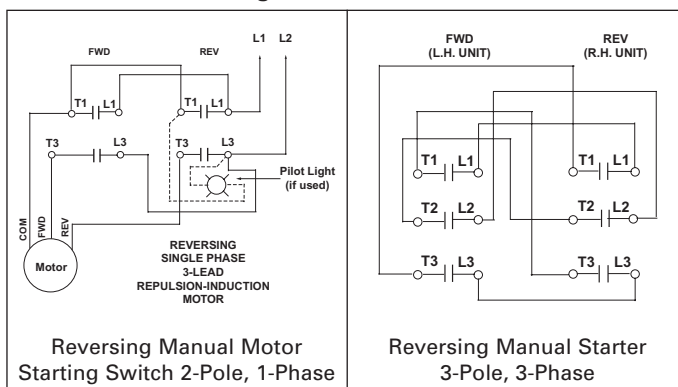
## Typical Wiring Diagrams—Class SMF



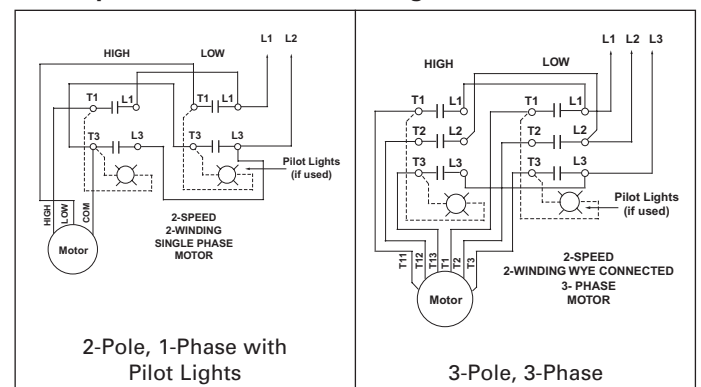
## Typical Wiring Diagrams—MMS



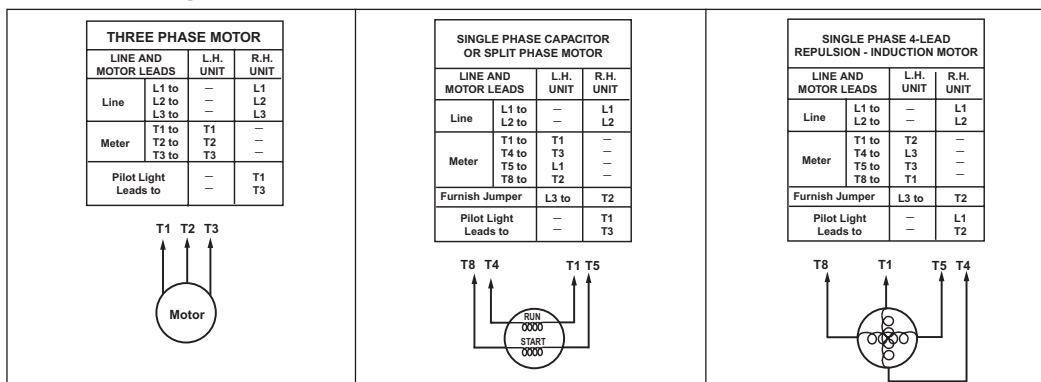
## AC Reversing Manual Starter and Manual Motor Starting Switches



## AC 2-Speed Manual Motor Starting Switches



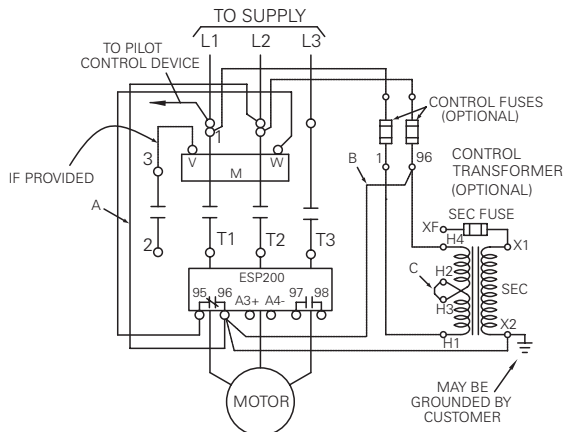
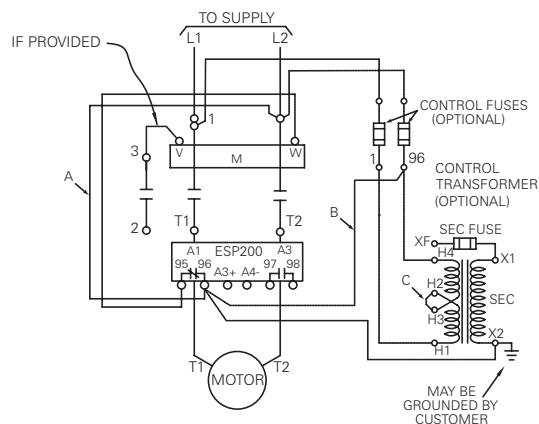
## 3-Pole Reversing Switches



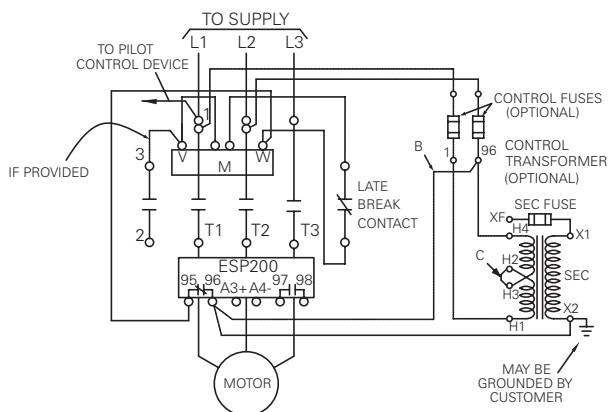


## 3-Phase and Single Phase Magnetic Starters

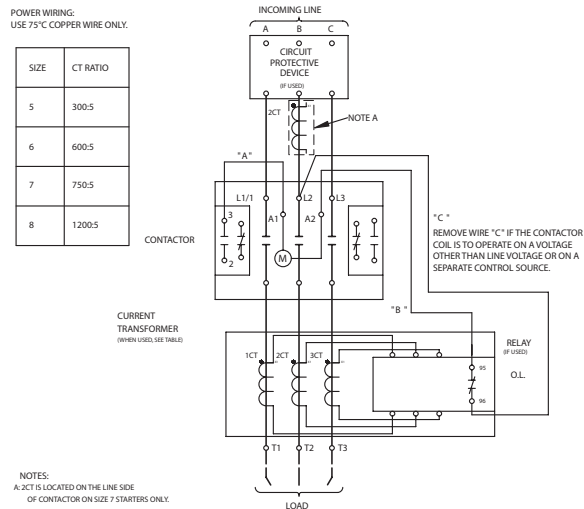
Three Phase Magnetic Starter, Size 00-4

Single Phase Magnetic Starter<sup>①②</sup>

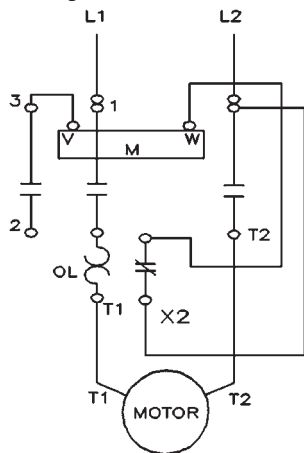
Three Phase Magnetic Starter with DC Coil, Sizes 00-4



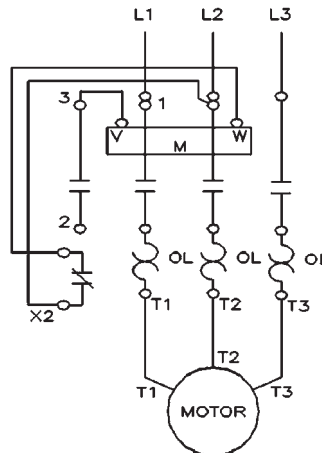
Solid State Overload 3-Phase Sizes 5-8



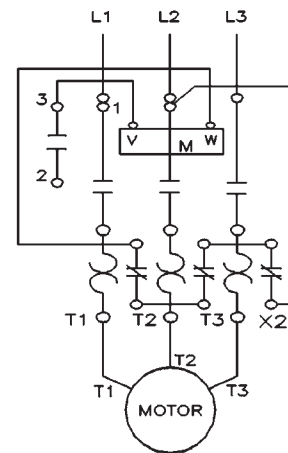
Ambient Compensated Single Phase Sizes 00-2 1/2



Ambient Compensated 3-Phase Sizes 00-2 1/2



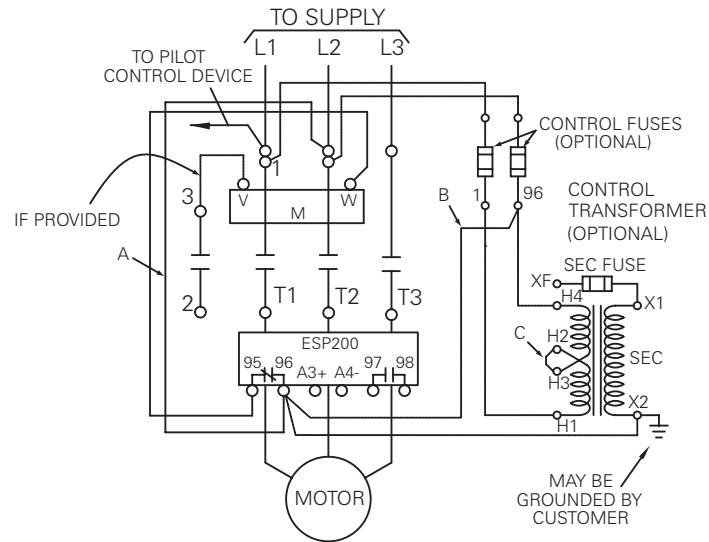
Ambient Compensated 3-Phase Sizes 3-4



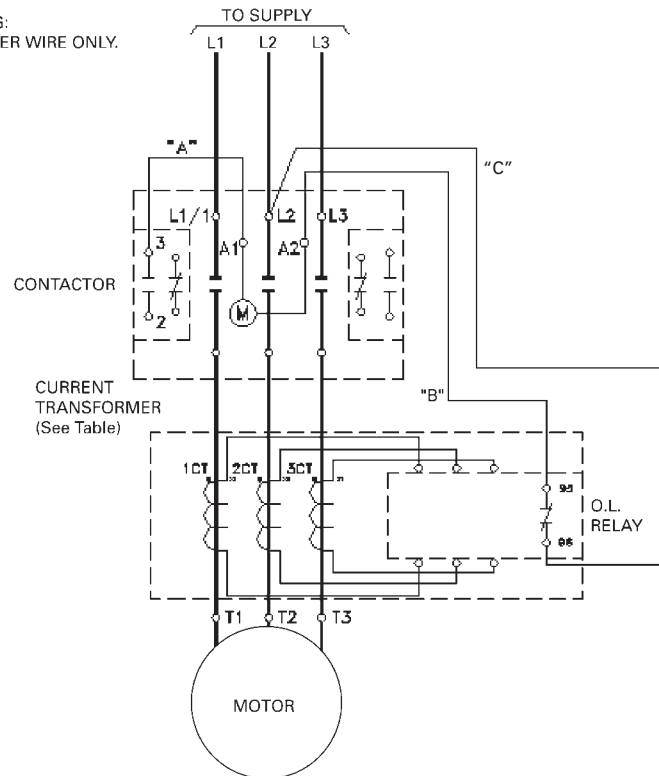
① Warning: The ESP200 Starter and Single Phase Motor must be wired as shown above. For L1, L2 do not use the middle terminal or hole.

② Full Load Amps (FLA): Adjustment of the ESP200 solid state overload relay accommodates the single phase motor.

## 3-Phase

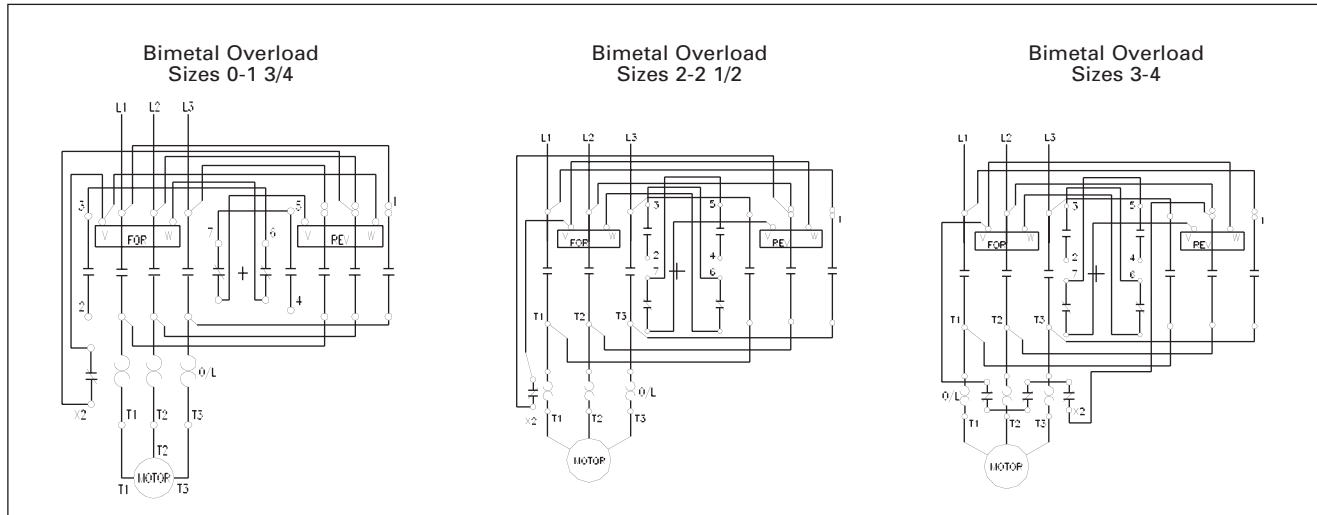
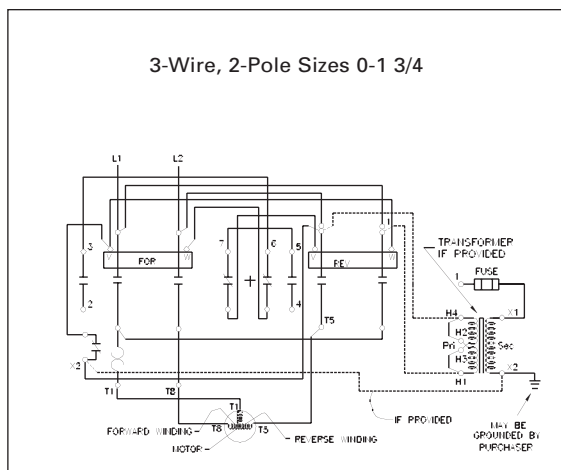
Size 00-4<sup>①</sup>Size 5-8<sup>②</sup>POWER WIRING:  
USE 75°C COPPER WIRE ONLY.

| SIZE | CT RATIO |
|------|----------|
| 5    | 300:5    |
| 6    | 600:5    |
| 7    | 750:5    |
| 8    | 1200:5   |



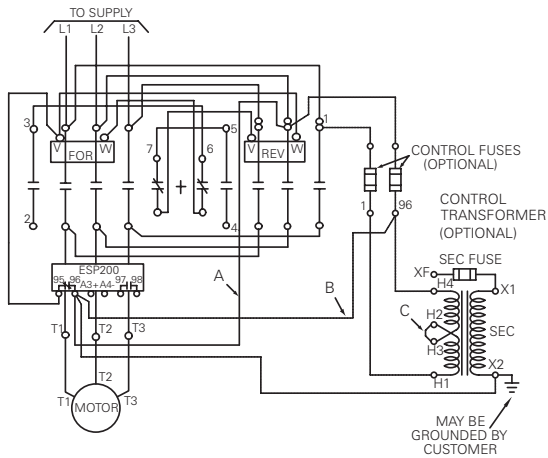
① Remove wire "C" if control transformer is used. For separate control voltage source, remove jumpers "A" and "B" and connect source to control fuse line terminals.

② Remove wire "C" if the contactor coil is to operate on a voltage other than line voltage or in a separate control source.

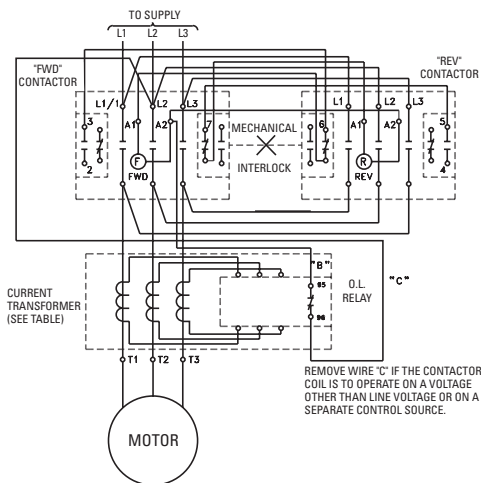
**3-Phase Ambient Compensated Overload****Single Phase Ambient Compensated Overload**

### 3-Phase Solid State Overload

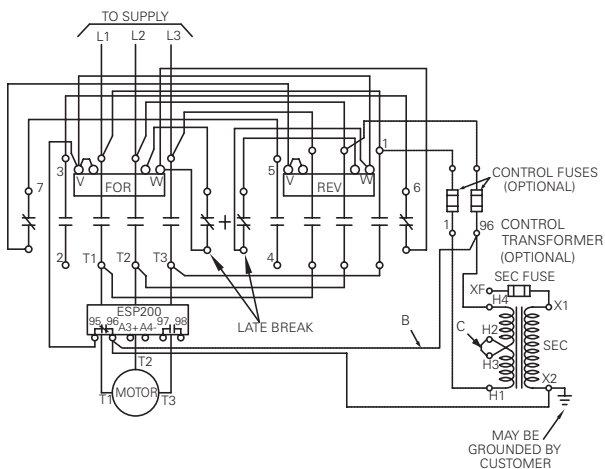
## 3-Phase Reversing Magnetic Starter Sizes 00-1 $\frac{3}{4}$



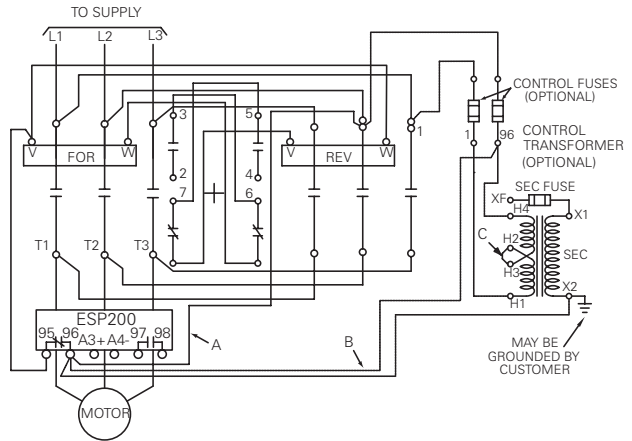
### Solid State Overload Sizes 5-6



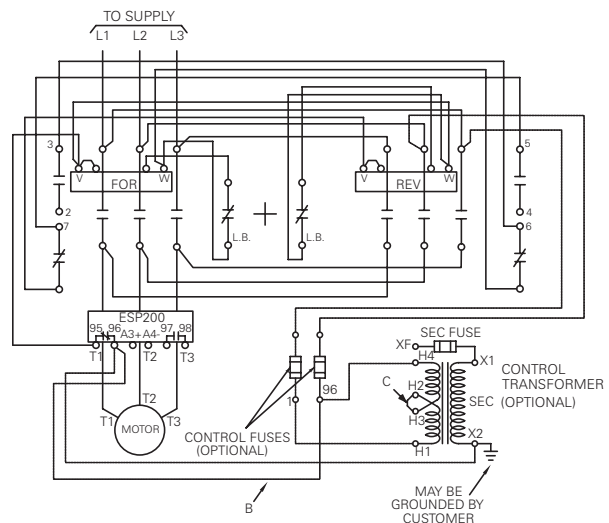
### 3-Phase Reversing Magnetic Starter with DC Coil, Sizes 00-1 $\frac{3}{4}$



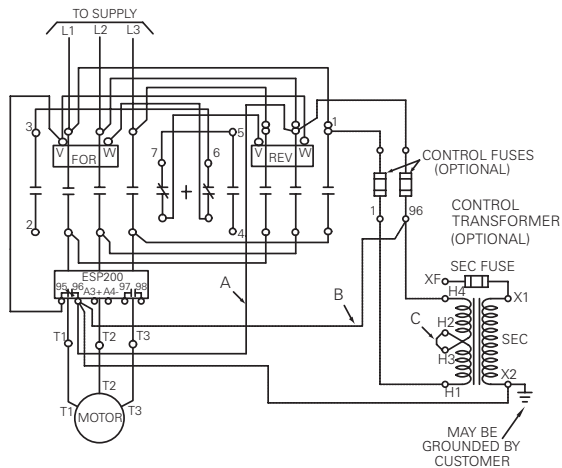
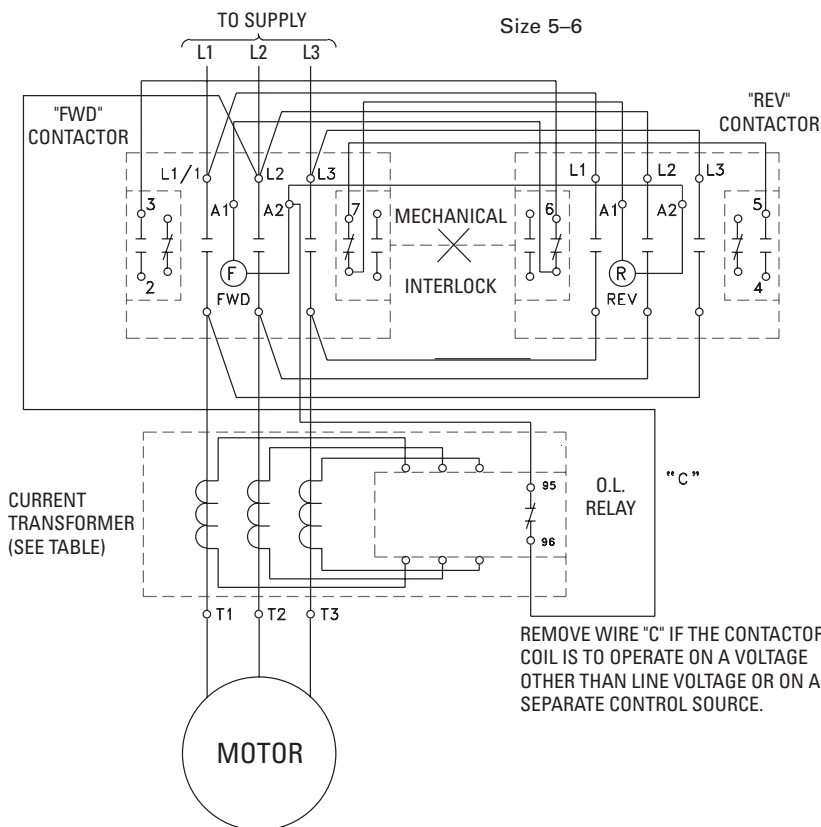
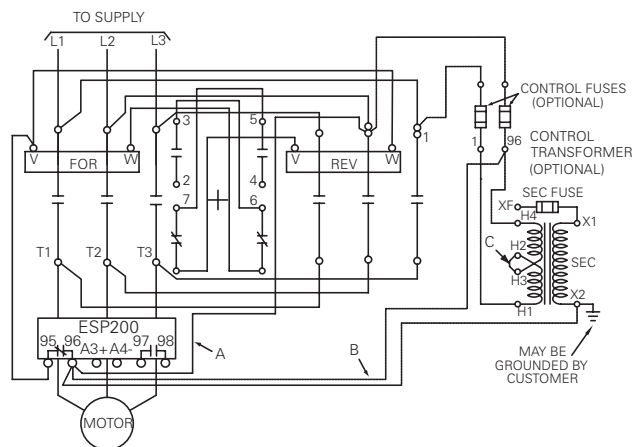
### 3-Phase Reversing Magnetic Starter Sizes 2-4



### 3-Phase Reversing Magnetic Starter with DC Coil, Sizes 2-4



## 3-Phase

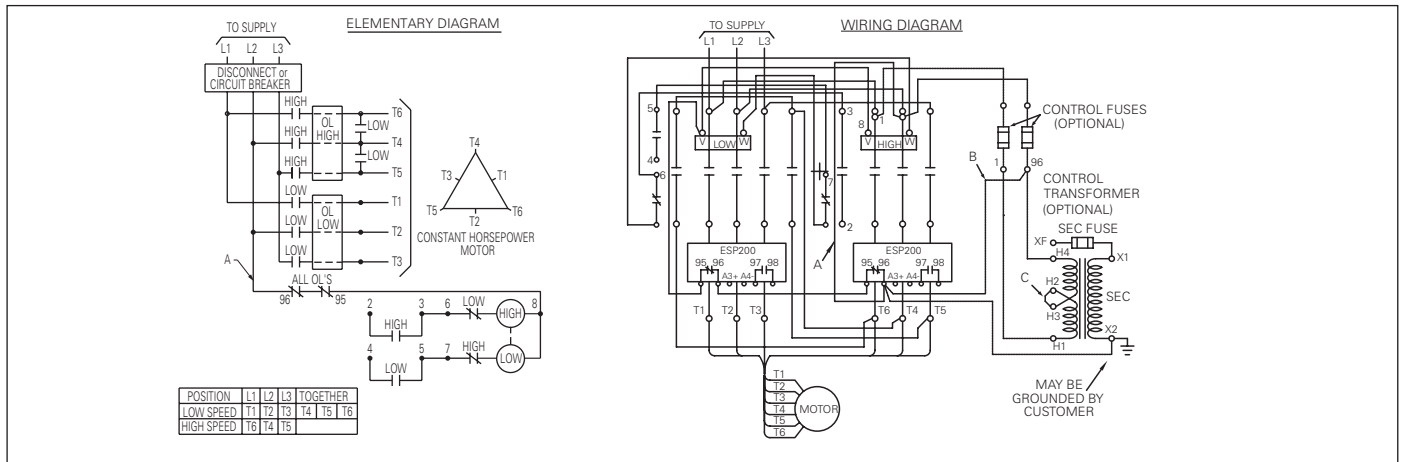
3-Phase Reversing Magnetic Starter  
Sizes 00-1 $\frac{3}{4}$ 3-Phase Reversing Magnetic Starter  
Sizes 2-4

| SIZE | CT RATIO |
|------|----------|
| 5    | 300:5    |
| 6    | 600:5    |

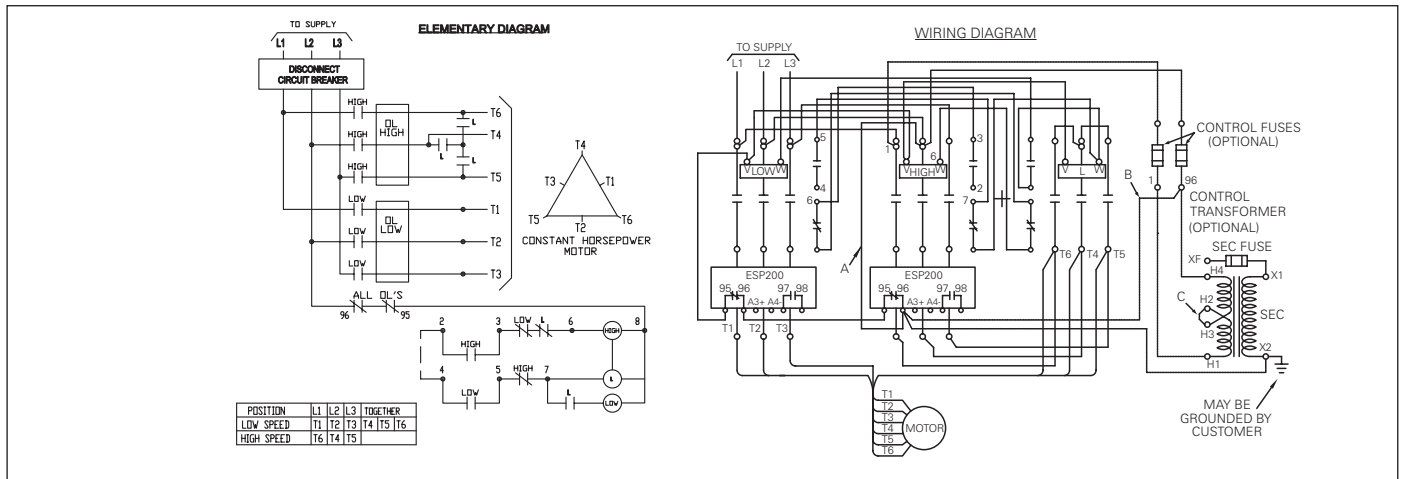
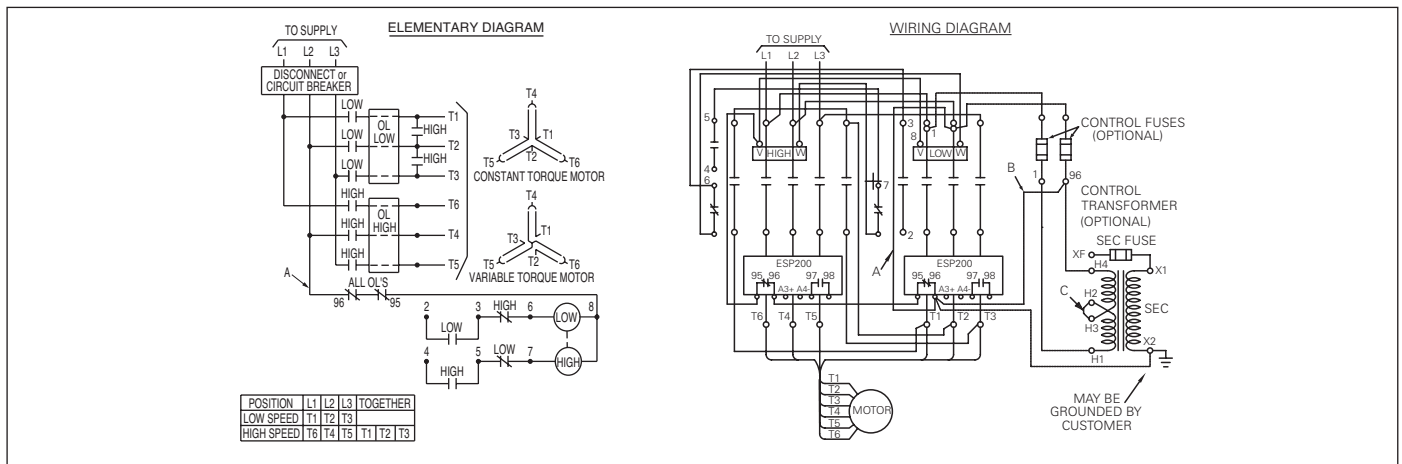
REMOVE WIRE "C" IF THE CONTACTOR COIL IS TO OPERATE ON A VOLTAGE OTHER THAN LINE VOLTAGE OR ON A SEPARATE CONTROL SOURCE.

## Class 30 &amp; 32 Non-Combination and Combination Starters

## Wiring Diagrams

1 Winding Constant Horsepower Size 0-1<sup>3</sup>/<sub>4</sub>

## 1 Winding Constant Horsepower Size 2-4

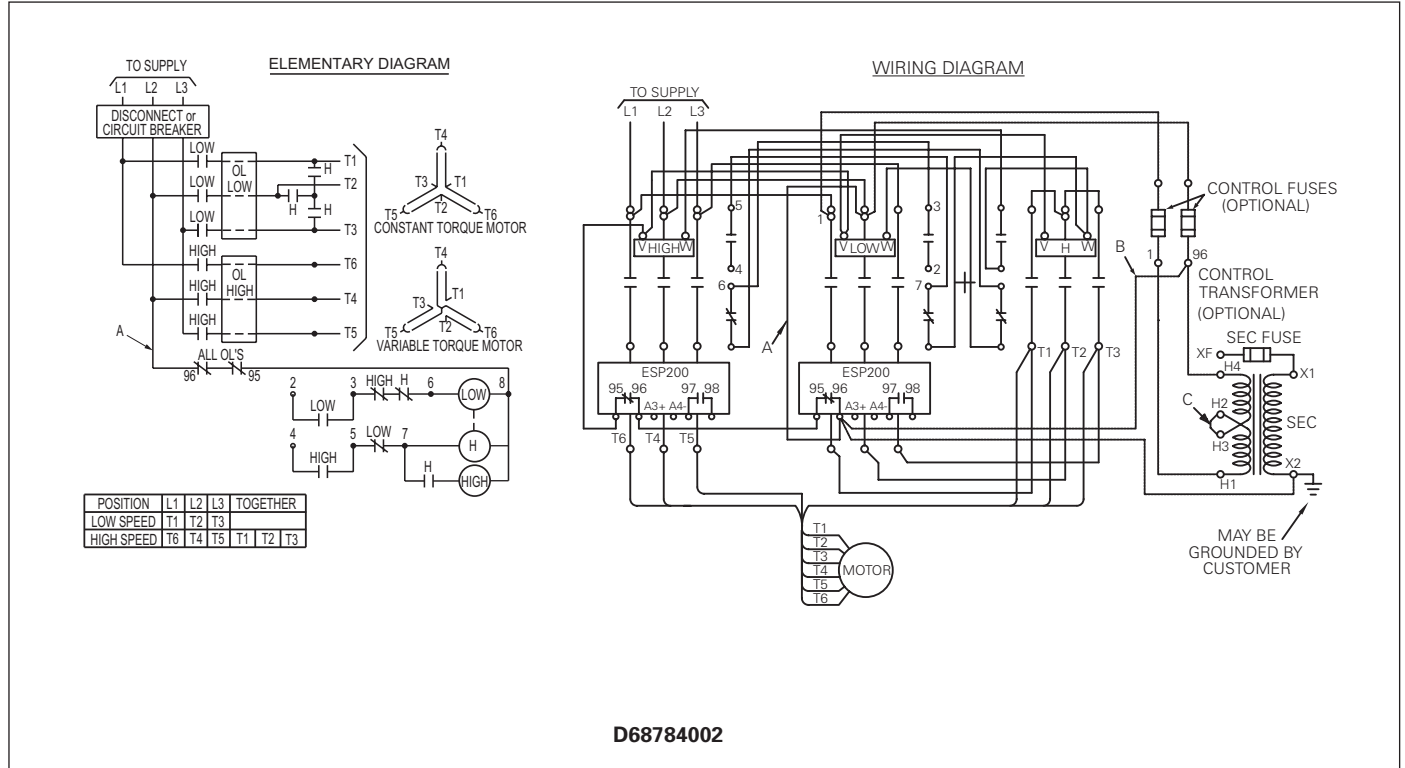
1 Winding Constant or Variable Torque Size 0-1<sup>3</sup>/<sub>4</sub>

**Note:** For separate control voltage source, remove jumpers "A" and "B" and connect source to control fuse terminal. Remove jumper "C" if control transformer is used.

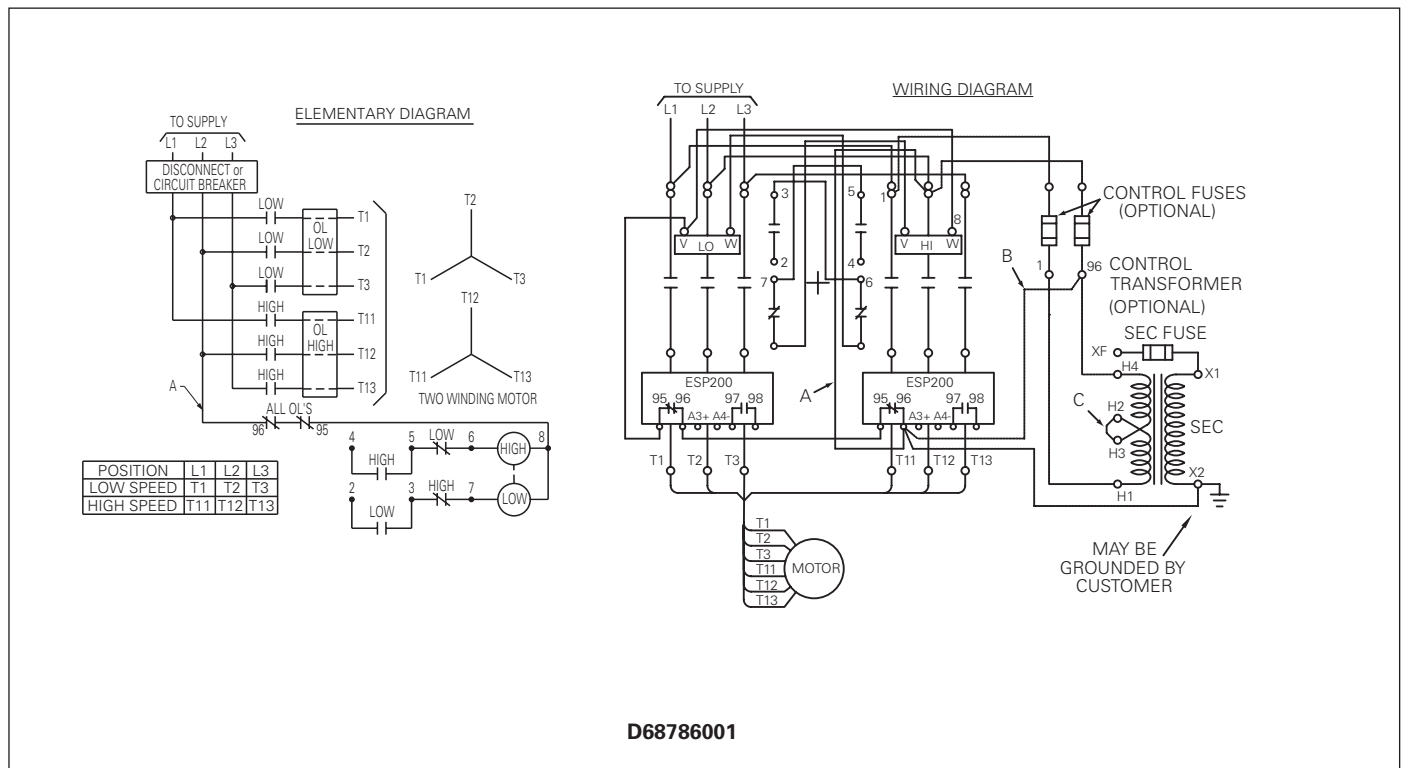
## Class 30 &amp; 32 Non-Combination and Combination Starters

## Wiring Diagrams

## 1 Winding Constant or Variable Torque Size 2-4



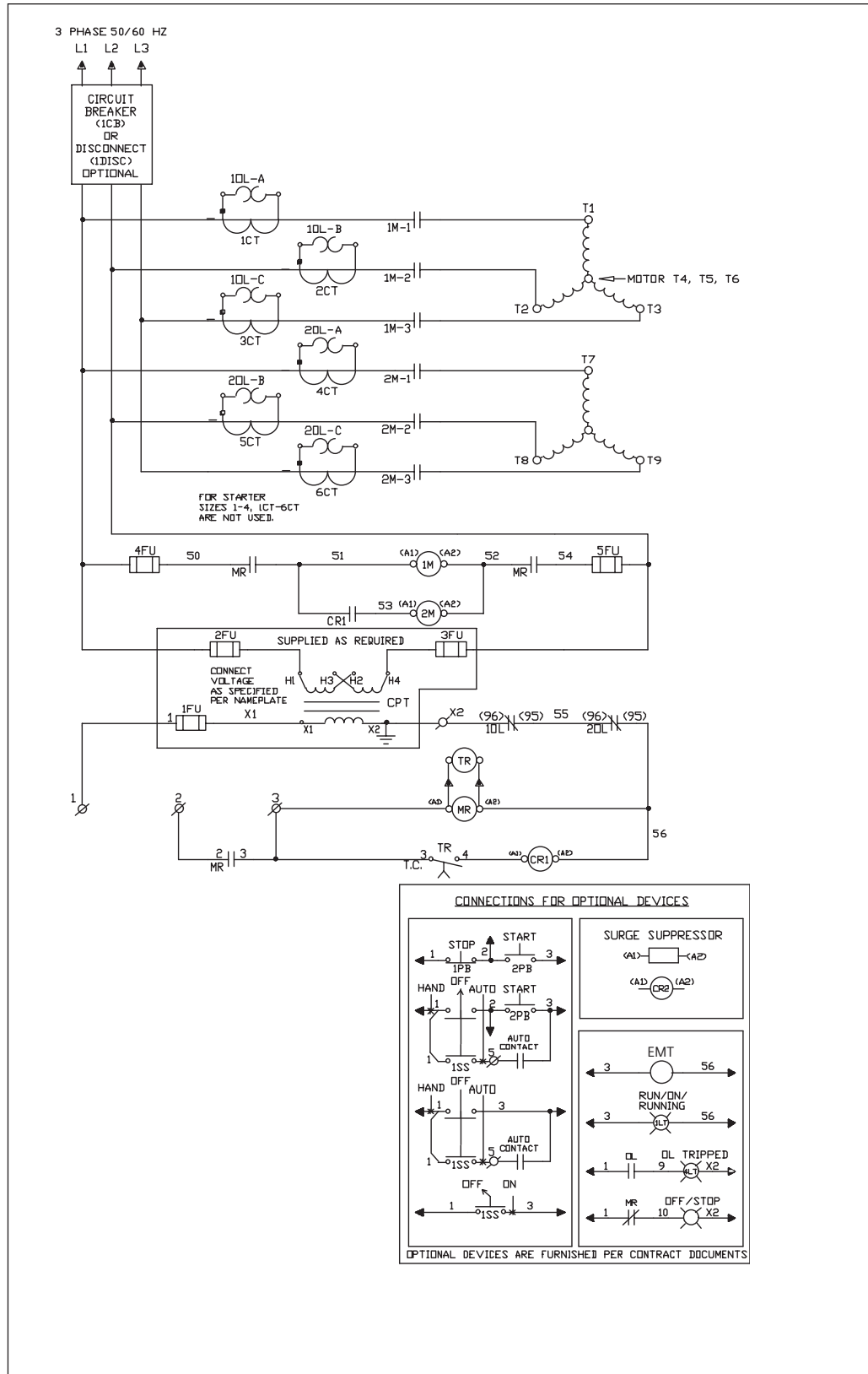
## 2 Winding Constant Horsepower &amp; 2 Winding Constant or Variable Torque Size 0-4

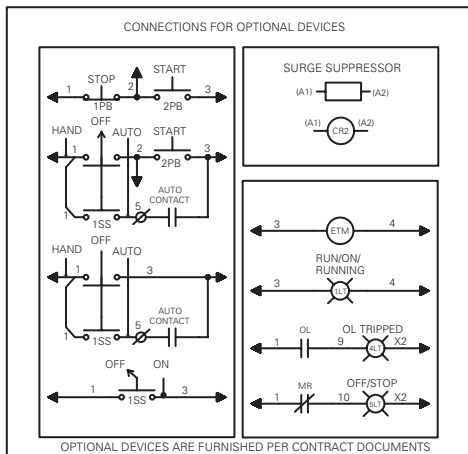
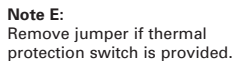


**Note:** For separate control voltage source, remove jumpers "A" and "B" and connect source to control fuse terminal. Remove jumper "C" if control transformer is used.

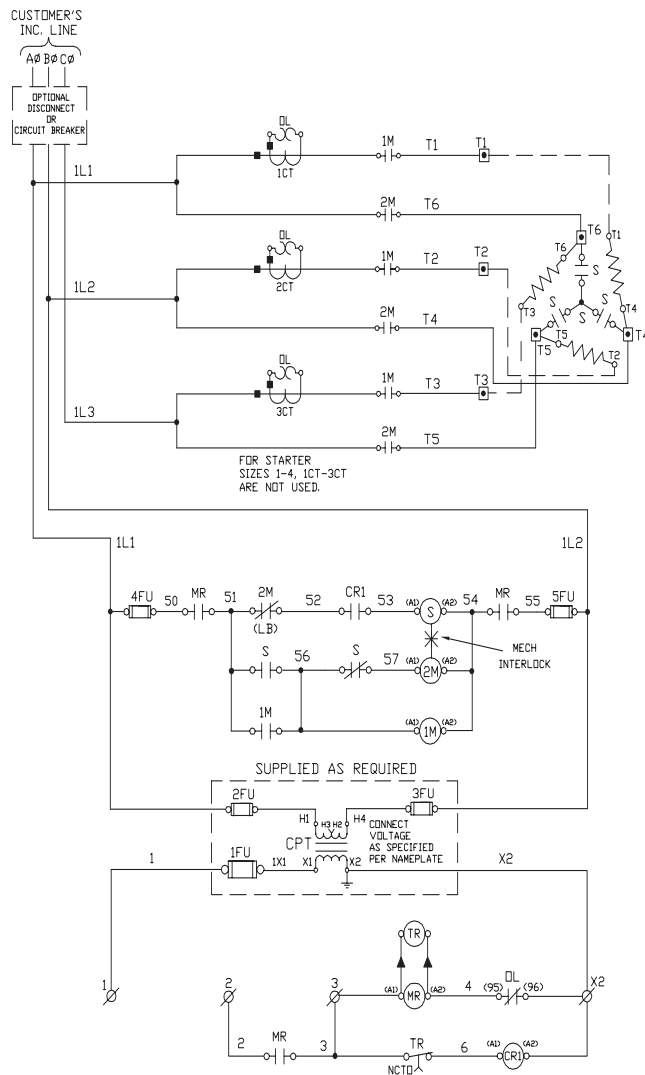


Part Winding

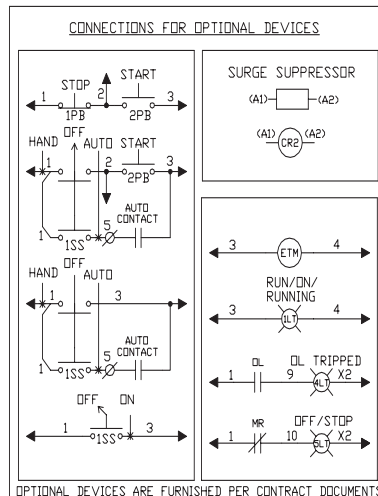




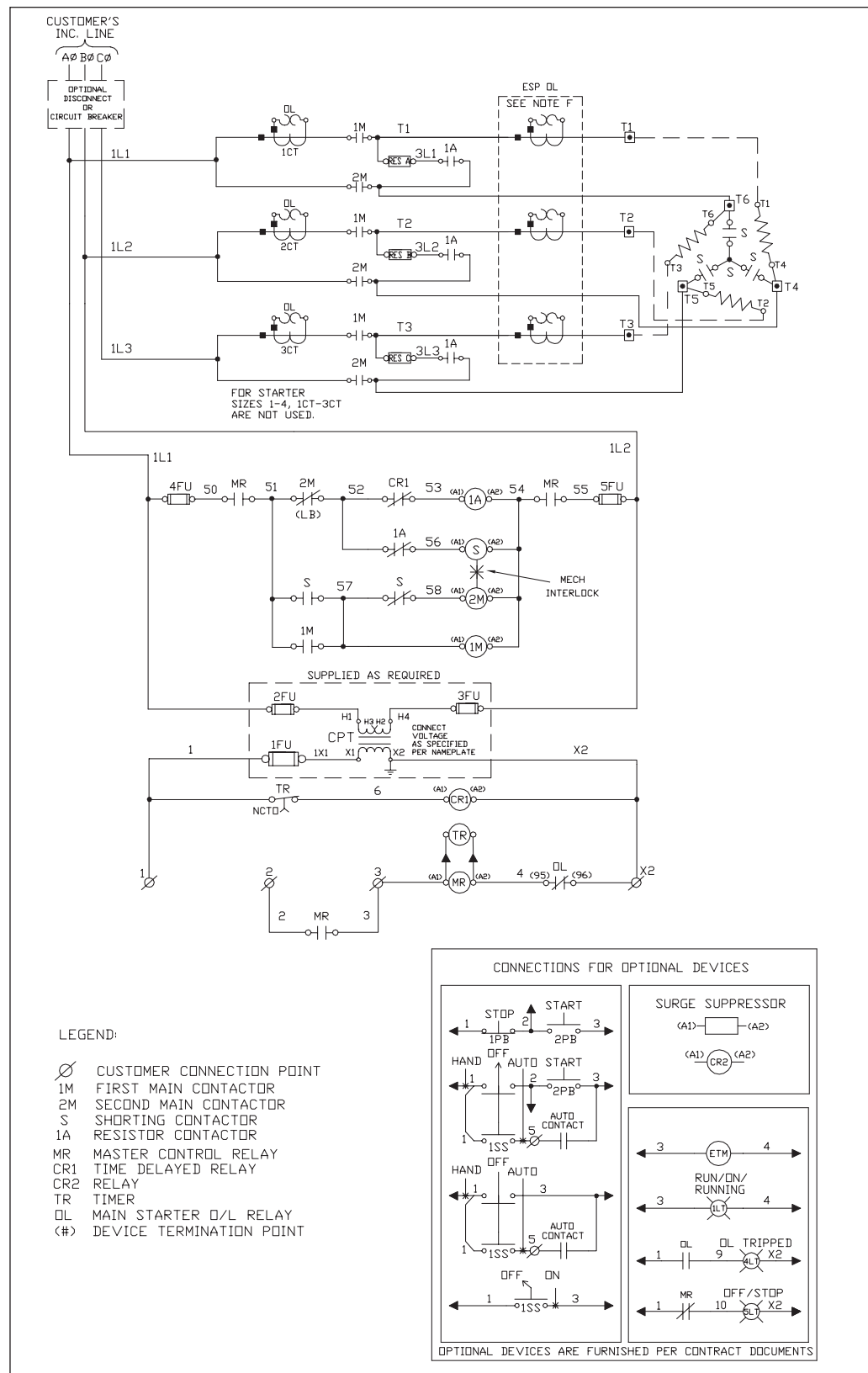
Wye Delta (Open Transition)



- LEGEND:
- Ø CUSTOMER CONNECTION POINT
  - 1M FIRST MAIN CONTACTOR
  - 2M SECOND MAIN CONTACTOR
  - S SHORTING CONTACTOR
  - MR MASTER CONTROL RELAY
  - CR1 TIME DELAYED RELAY
  - CR2 RELAY
  - TR TIMER
  - DL MAIN STARTER O/L RELAY
  - (#) DEVICE TERMINATION POINT

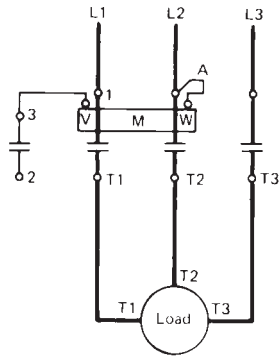


## Wye Delta (Closed Transition)

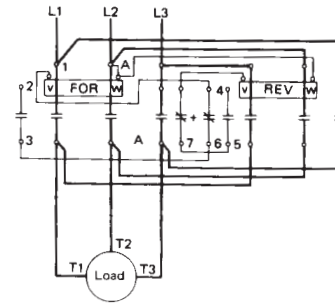


## 3-Phase Magnetic Contactors and Reversing Contactors

3-Phase Contactors—Size 00–4

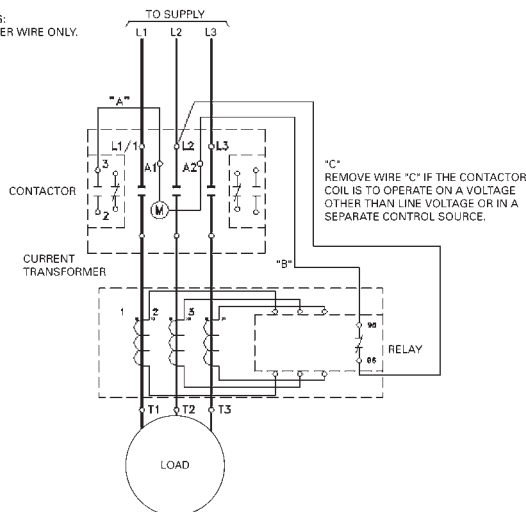


3-Phase Reversing Contactors—Size 00–4

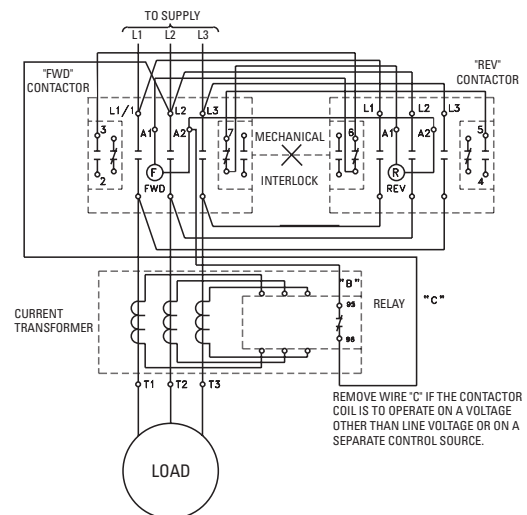


3-Phase Contactors—Size 5, 6

POWER WIRING:  
USE 75°C COPPER WIRE ONLY.

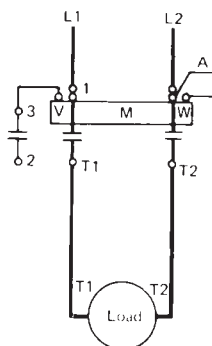


3-Phase Reversing Contactors—Size 5, 6

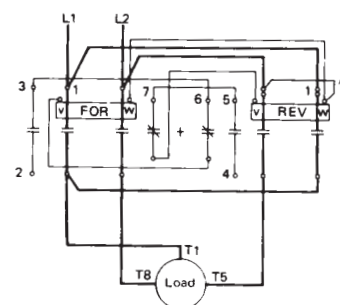


## Single Phase Magnetic Contactors and Reversing Contactors

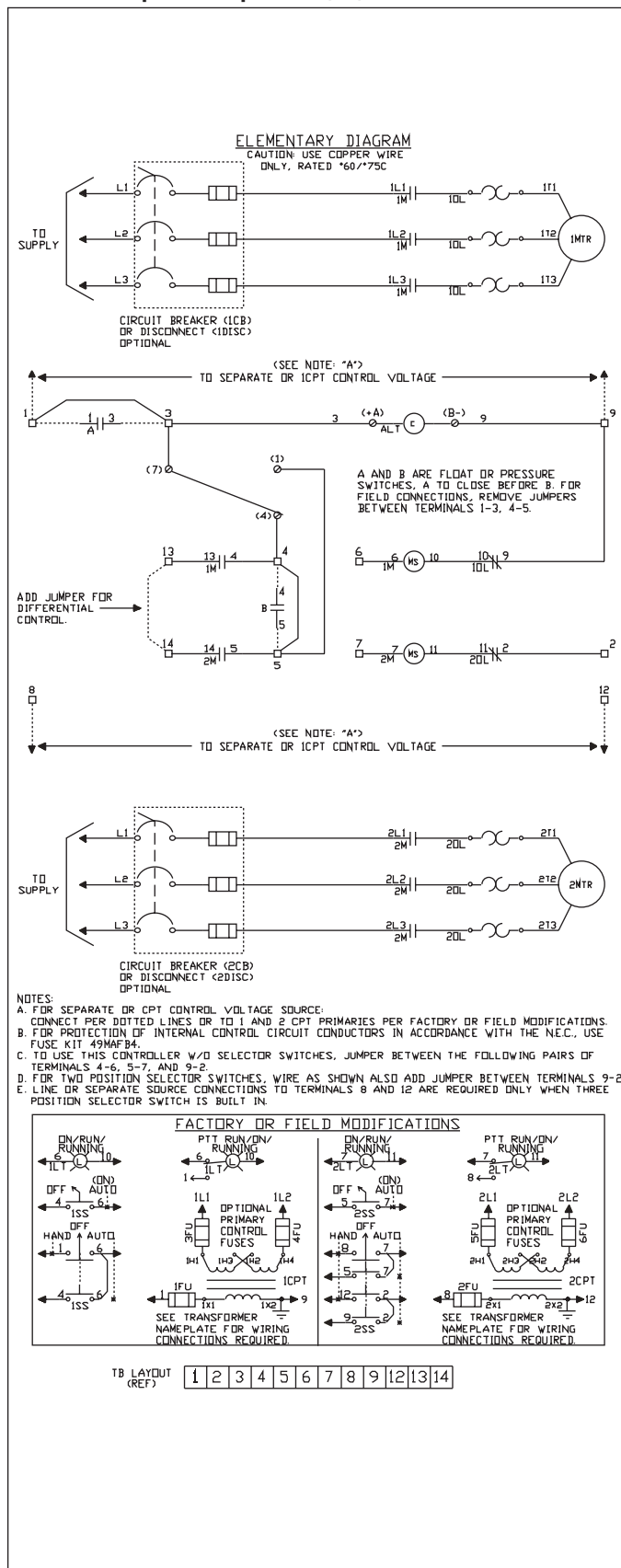
Single Phase Contactors—Size 00–4



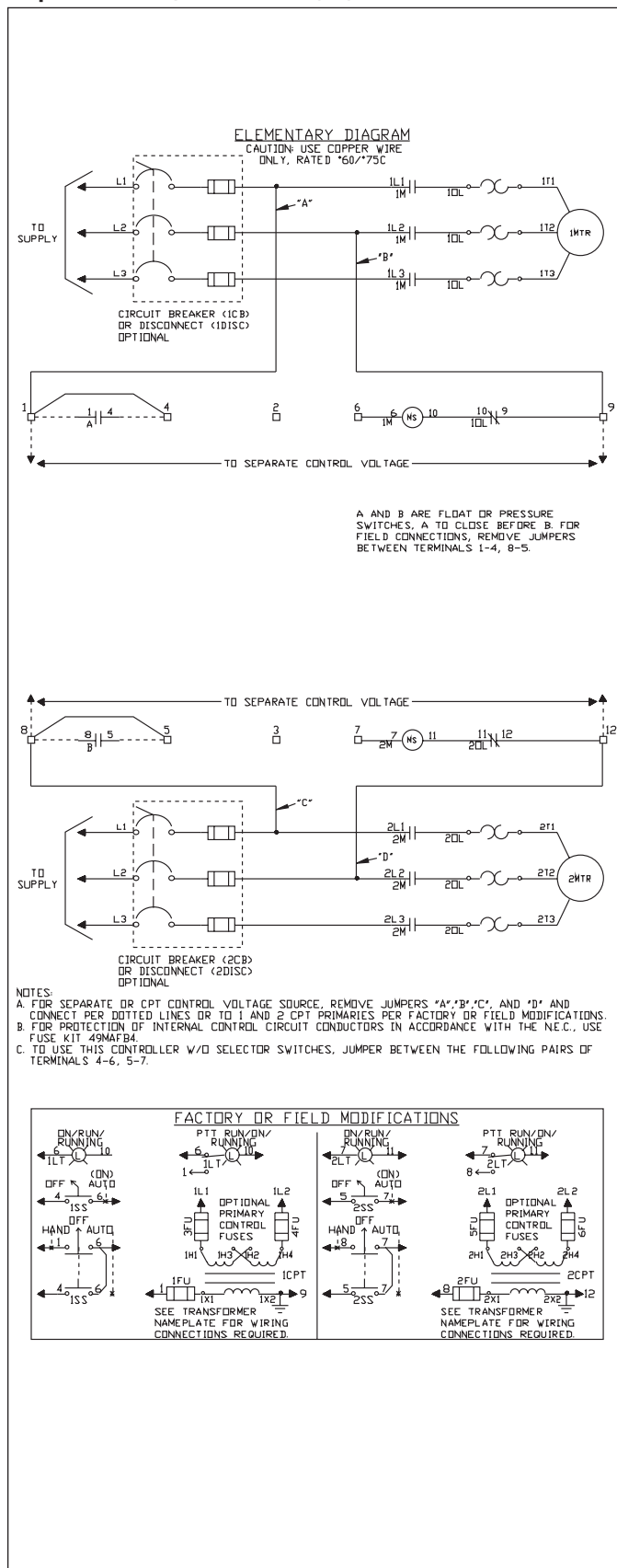
Single Phase Reversing Contactors—Size 00–1P



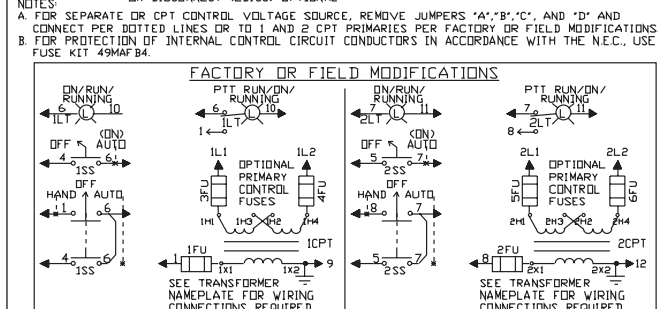
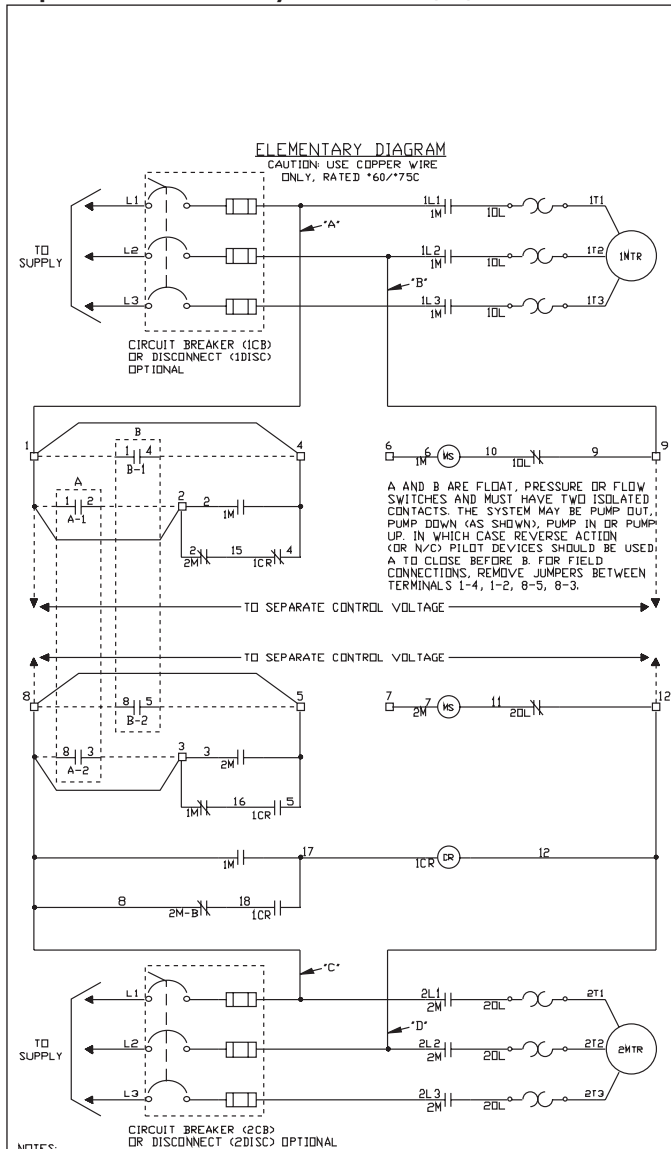
### Standard Duplex Pump Panel (92)



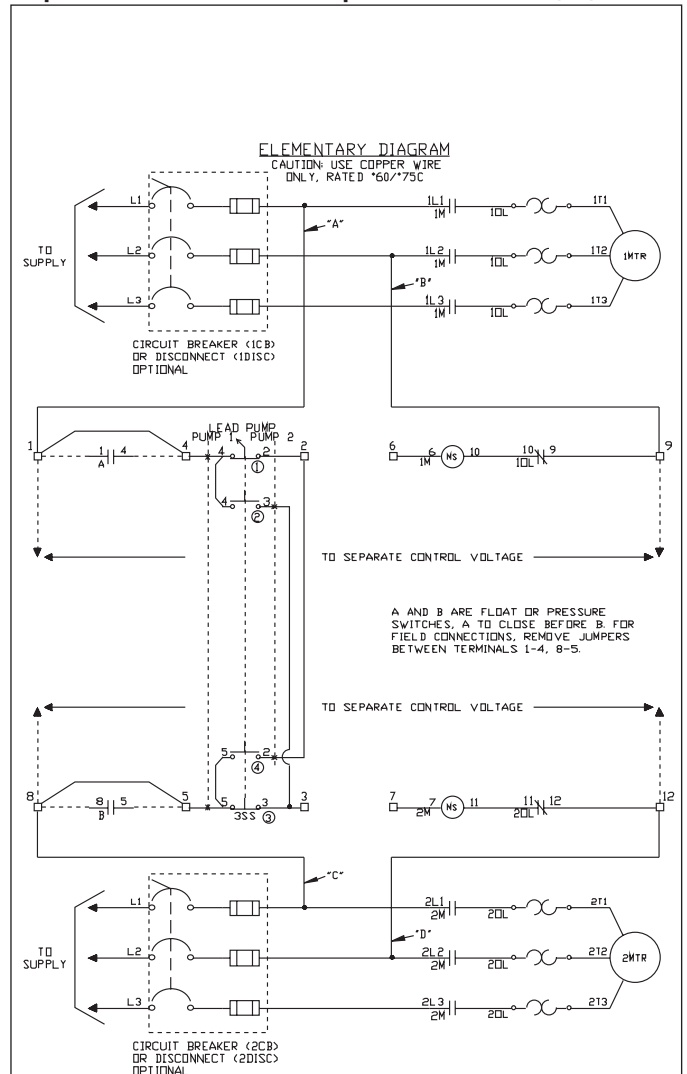
### Duplex Panel w/o alternator (95)



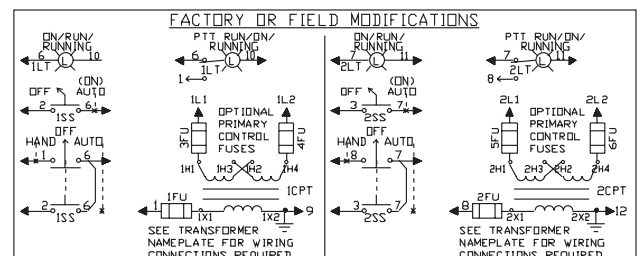
Duplex Panel with Relay Alternation (93)



Duplex Panel with Lead Pump Transfer Switch (94)

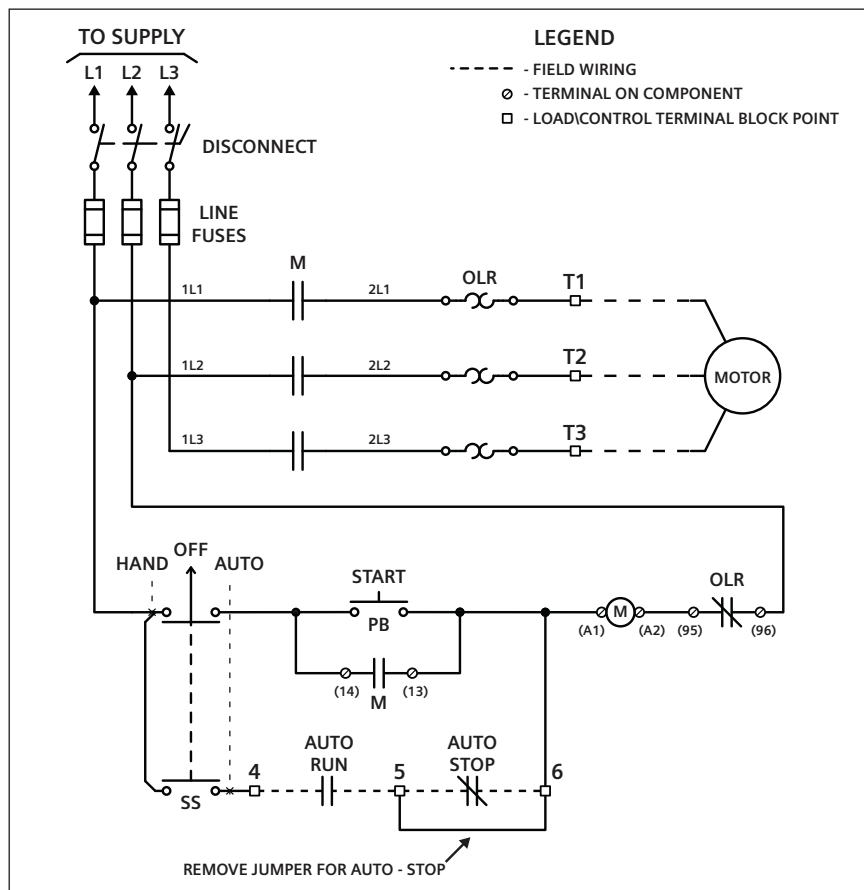


- NOTES:
- A. FOR SEPARATE OR CPT CONTROL VOLTAGE SOURCE, REMOVE JUMPERS \*A\*, \*B\*, \*C\*, AND \*D\* AND CONNECT PER DOTTED LINES OR TO 1 AND 2 CPT PRIMARIES PER FACTORY OR FIELD MODIFICATIONS.
- B. FOR PROTECTION OF INTERNAL CONTROL CIRCUIT CONDUCTORS IN ACCORDANCE WITH THE N.E.C., USE FUSE KIT 49MAFB4.
- C. TO USE THIS CONTROLLER W/O SELECTOR SWITCHES, JUMPER BETWEEN THE FOLLOWING PAIRS OF TERMINALS 2-6, 3-7.
- D. Ⓢ = SELECTOR SWITCH CONTACT LOCATION

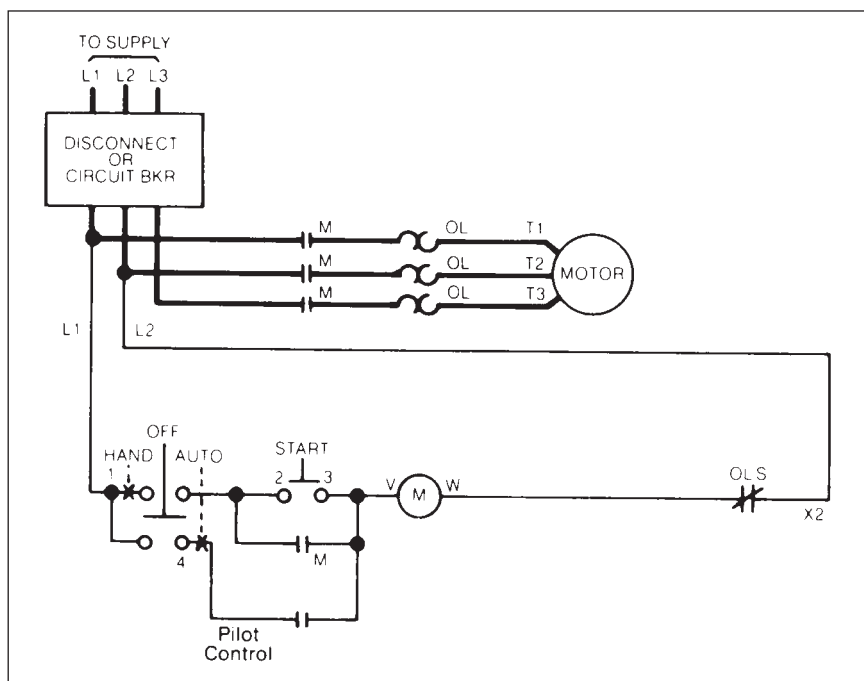




## Class 82 Pump Panel



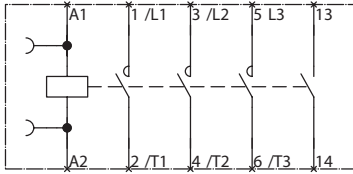
## Standard Class 87 Pump Panel



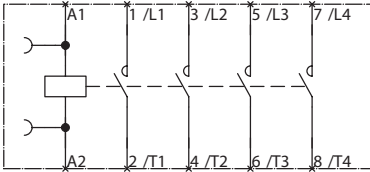
# Class LC and LE Electrically Held Contactors

## Wiring Diagrams

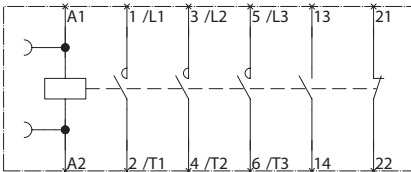
LEN00B003 (20A 3 Pole)



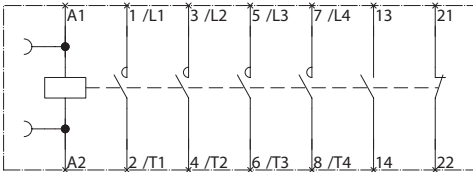
LEN00B004 (20A 4 Pole)



LEN00C003 (30A 3 Pole)

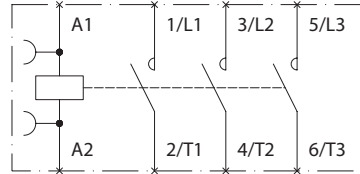


LEN00C004 (30A 4 Pole)



LEN00D003 (60A 3 Pole)

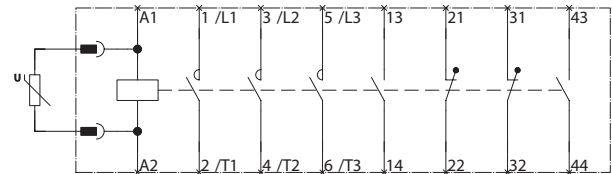
LEN00E003 (100A 3 Pole)



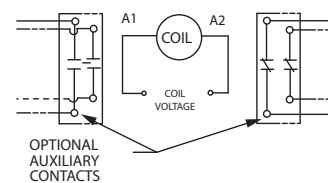
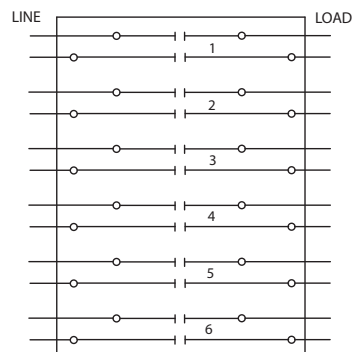
LEN00F003 (200A 3 Pole)

LEN00G003 (300A 3 Pole)

LEN00H003 (400A 3 Pole)

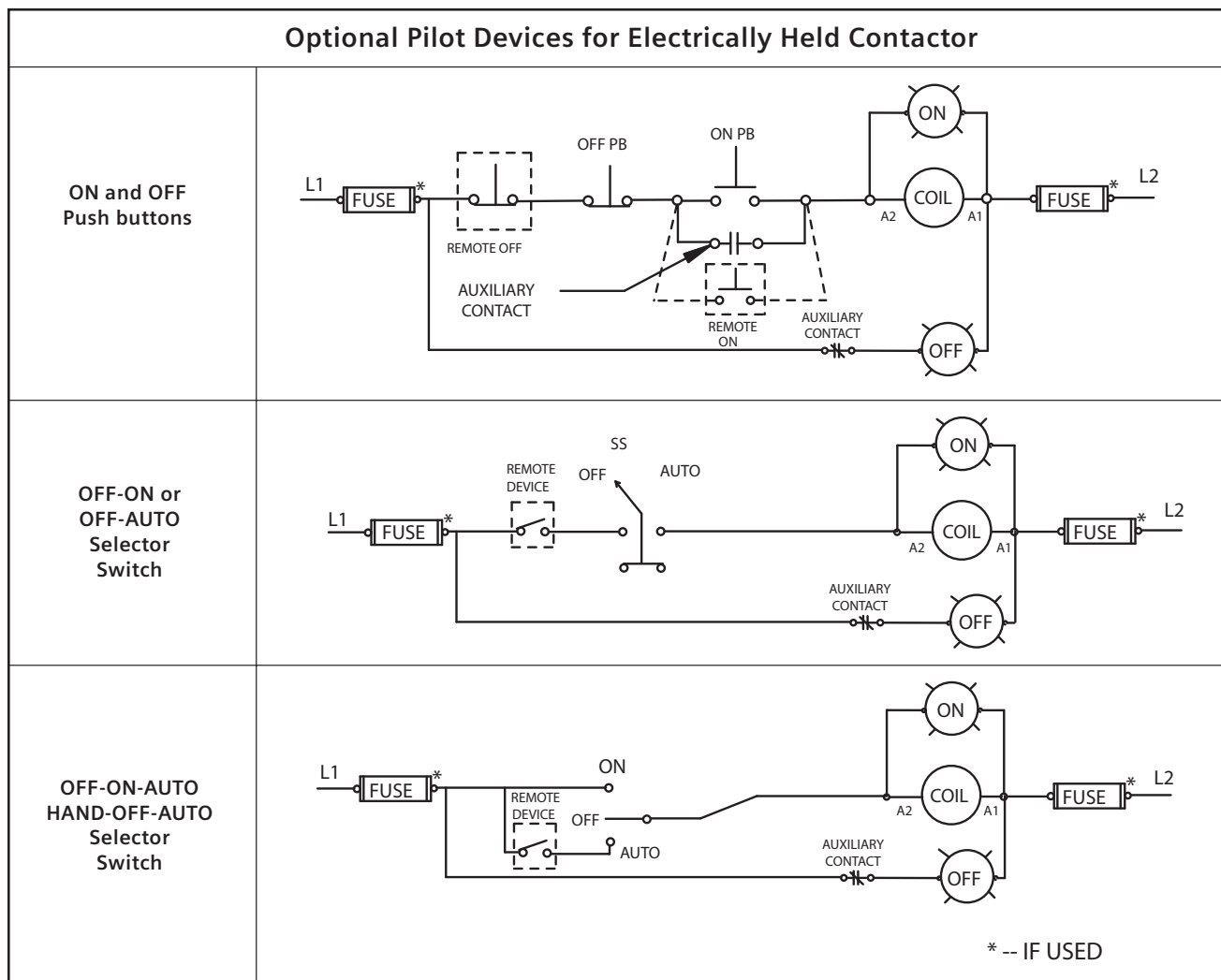


LCE00C (30A 2-12 Pole)



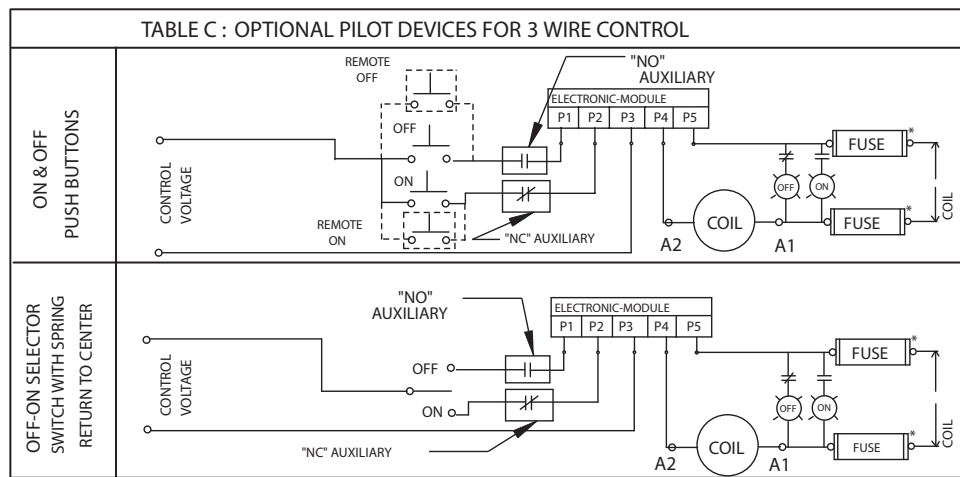
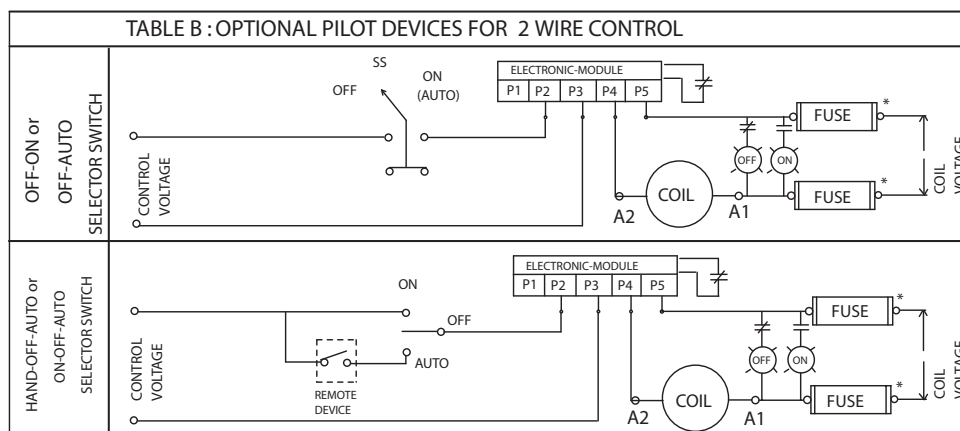
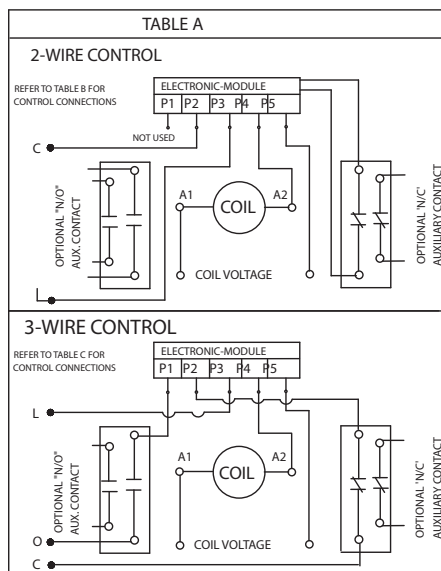
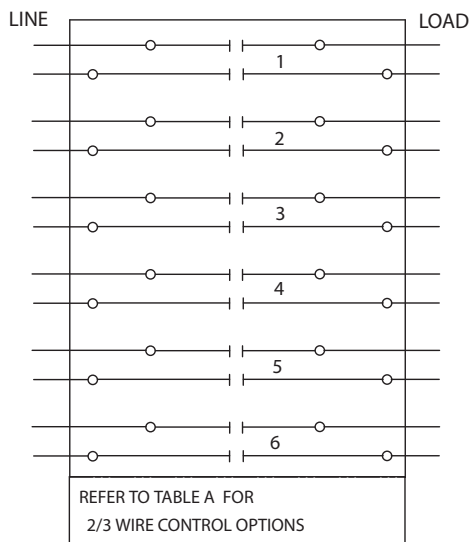
# Class LC and LE Electrically Held Contactors

## Wiring Diagrams



## Class LC (converted to mechanically held)

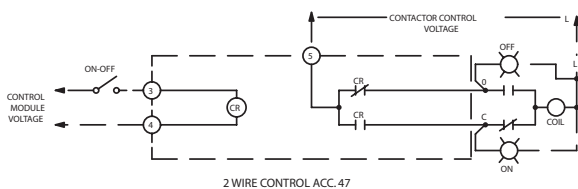
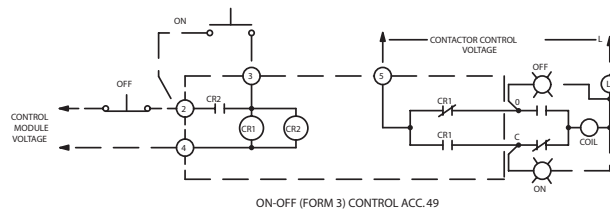
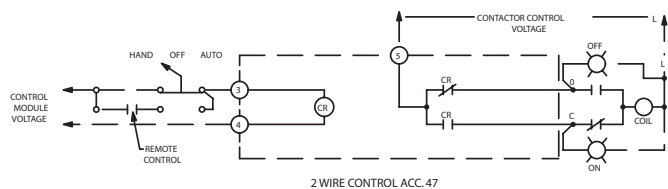
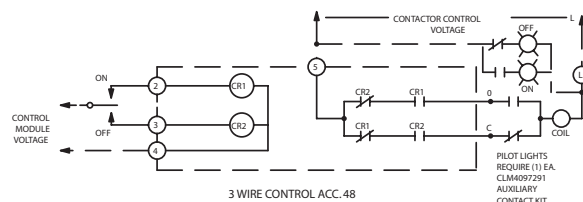
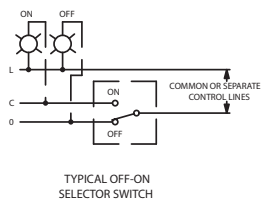
## Wiring Diagrams



\* -- IF USED

## Mechanically Latched 20 Amp, Class CLM

## Wiring Diagrams

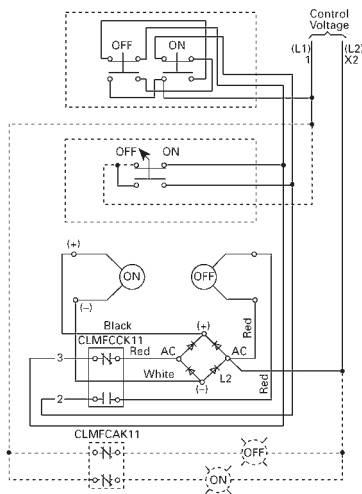


| CONNECTIONS TO CONTROL MODULES |                                    |
|--------------------------------|------------------------------------|
| MODULE TERMINAL                | CONNECT TO:                        |
| 1                              | NOT USED                           |
| 2                              | CONT. STATION FOR ACC. 48 & 49     |
| 3                              | CONT. STATION FOR ACC. 47, 48 & 49 |
| 4                              | MODULE CONTROL VOLTAGE *           |
| 5                              | CONTACTOR CONTROL VOLTAGE          |
| O                              | TERMINAL O ON CONTACTOR            |
| C                              | TERMINAL C ON CONTACTOR            |

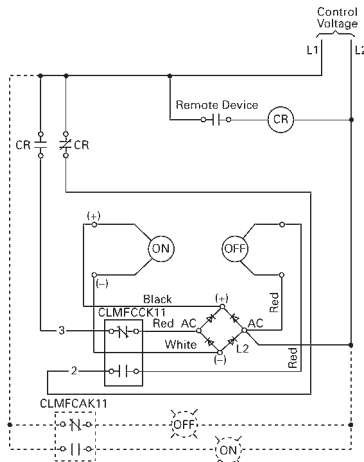
\* FOR 24VDC CONTROL MODULES  
CONNECT TERMINAL 4 TO NEGATIVE (-)

## Mechanically Latched 30-400 Amps, Class CLM

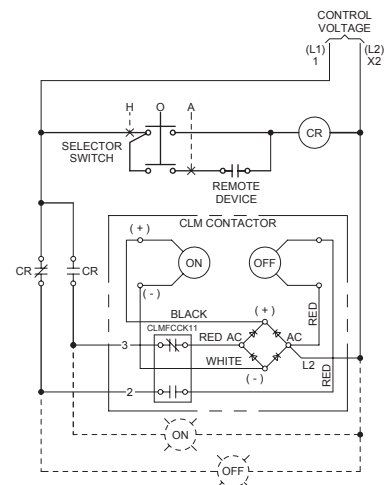
## Wiring Diagrams

Mechanically Latched, CLM 30-200 Amps<sup>①</sup>

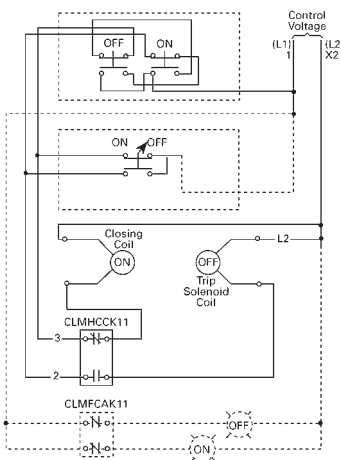
Connection Diagram for Common/Separate Control with Momentary Pushbutton or ON-OFF Selector Switch **CLMOC**, **CLMOD**, **CLMOE**, and **CLMOF**



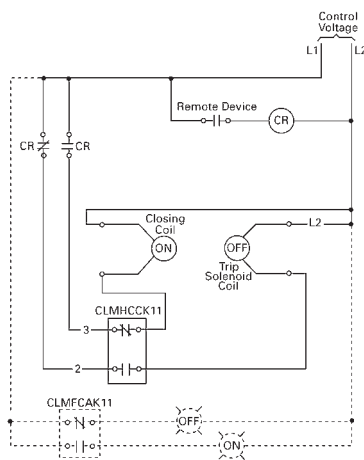
Connection for 2-Wire Control **CLMOC**, **CLMOD**, **CLMOE**, and **CLMOF**



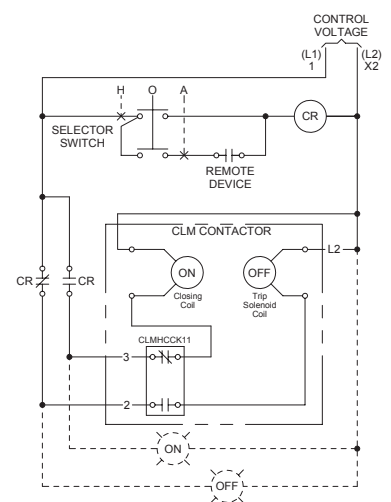
Connection for Hand/Off/Auto Control **CLMOC**, **CLMOD**, **CLMOE**, and **CLMOF**

Mechanically Latched Type CLM 300 and 400 Amp<sup>①</sup>

Connection Diagram for Common/Separate Control with Momentary Pushbutton or ON-OFF Selector Switch **CLMOG** and **CLMOH**



Connection for 2-Wire Control **CLMOG** and **CLMOH**

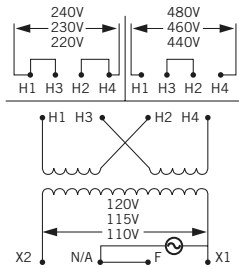
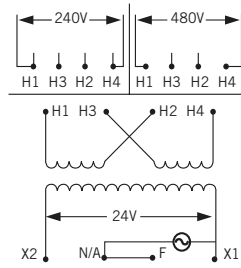
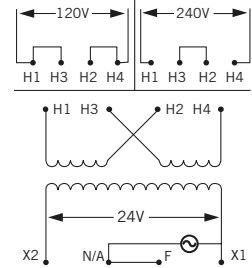
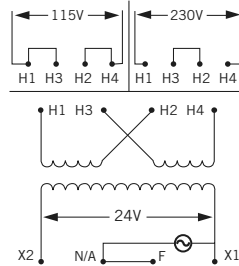
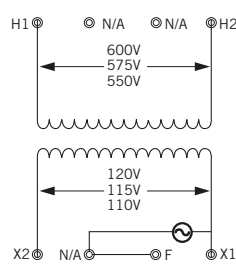
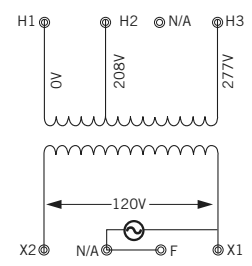
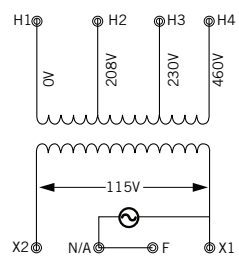


Connection for Hand/Off/Auto Control **CLMOG** and **CLMOH**

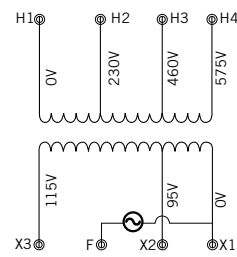
<sup>①</sup> Control relay is required for 2-wire and Hand/Off/Auto Control, as shown in diagram.

## Class MT, MTG

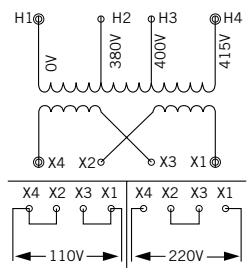
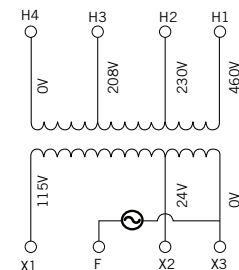
## Wiring Diagrams

Voltage Letter A<sup>①③</sup>Voltage Letter B<sup>②③</sup>Voltage Letter C<sup>②③</sup>Voltage Letter D<sup>②</sup>Voltage Letter E<sup>①③</sup>Voltage Letter F<sup>①</sup>Voltage Letter G<sup>①</sup>

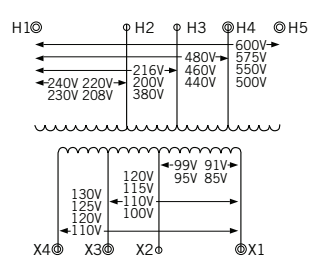
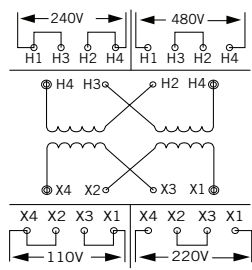
Voltage Letter H



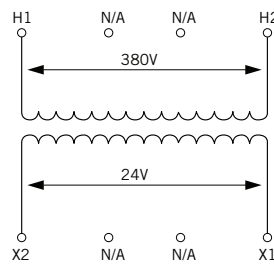
Voltage Letter I

Voltage Letter J<sup>②③</sup>

Voltage Letter L

Voltage Letter M<sup>①</sup>

Voltage Letter P



- ① Includes secondary fuse clips on sizes 50-750VA  
 ② Includes secondary fuse clips on sizes 50-500VA  
 ③ Secondary fuse clips are not included on MTG transformers.



