



Figure similar

SIMATIC, electronic module for ET200iSP, 4 AI HART, 2-wire transducer, for connecting HART 2-wire transmitters, supported HART protocol version 6.0, Ex ib (ia Ga) IIC T4 Gb, Ex ib [ia IIIC Da] IIC T4 Gb, Ex ib [ia] I Mb

| General information                                                   |                                                                                                      |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Product type designation                                              | 4AI I 2WIRE HART                                                                                     |
| HW functional status                                                  | 17                                                                                                   |
| Firmware version                                                      | V3.0.4                                                                                               |
| Product function                                                      |                                                                                                      |
| • Isochronous mode                                                    | No                                                                                                   |
| Installation type/mounting                                            |                                                                                                      |
| Rack mounting                                                         | No                                                                                                   |
| Front mounting                                                        | Yes                                                                                                  |
| Rail mounting                                                         | Yes                                                                                                  |
| Wall mounting/direct mounting                                         | No                                                                                                   |
| Supply voltage                                                        |                                                                                                      |
| Type of supply voltage                                                | DC                                                                                                   |
| permissible range, lower limit (DC)                                   | 20.4 V                                                                                               |
| permissible range, upper limit (DC)                                   | 28.8 V                                                                                               |
| Input current                                                         |                                                                                                      |
| Current consumption, typ.                                             | 280 mA                                                                                               |
| from load voltage (power bus), max.                                   | 320 mA                                                                                               |
| Output voltage                                                        |                                                                                                      |
| Power supply to the transmitters                                      |                                                                                                      |
| • short-circuit proof                                                 | Yes                                                                                                  |
| • Supply current, max.                                                | 23 mA; per channel                                                                                   |
| Power loss                                                            |                                                                                                      |
| Power loss, typ.                                                      | 2.7 W                                                                                                |
| Hardware configuration                                                |                                                                                                      |
| Fieldbus connection via separate transceiver                          | Yes                                                                                                  |
| Analog inputs                                                         |                                                                                                      |
| Number of analog inputs                                               | 4                                                                                                    |
| permissible input current for current input (destruction limit), max. | 90 mA                                                                                                |
| Cycle time (all channels) max.                                        | 120 ms; 30 ms basic conversion time x4 channels with 60 Hz, 50 Hz interference frequency suppression |
| Technical unit for temperature measurement adjustable                 | Yes                                                                                                  |
| Input ranges                                                          |                                                                                                      |
| • Voltage                                                             | No                                                                                                   |
| • Current                                                             | Yes                                                                                                  |
| • Thermocouple                                                        | No                                                                                                   |
| • Resistance thermometer                                              | No                                                                                                   |

|                                                                                                 |                                                                     |
|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| • Resistance                                                                                    | No                                                                  |
| Input ranges (rated values), currents                                                           |                                                                     |
| • 4 mA to 20 mA                                                                                 | Yes                                                                 |
| Cable length                                                                                    |                                                                     |
| • shielded, max.                                                                                | 500 m                                                               |
| <b>Analog value generation for the inputs</b>                                                   |                                                                     |
| Measurement principle                                                                           | integrating (Sigma-Delta)                                           |
| Integration and conversion time/resolution per channel                                          |                                                                     |
| • Resolution with overrange (bit including sign), max.                                          | 13 bit                                                              |
| • Integration time, parameterizable                                                             | No                                                                  |
| • Interference voltage suppression for interference frequency f1 in Hz                          | 50 / 60 Hz                                                          |
| Smoothing of measured values                                                                    |                                                                     |
| • parameterizable                                                                               | Yes; in 4 stages                                                    |
| • Step: None                                                                                    | Yes; 1x cycle time                                                  |
| • Step: low                                                                                     | Yes; 4x cycle time                                                  |
| • Step: Medium                                                                                  | Yes; 32x cycle time                                                 |
| • Step: High                                                                                    | Yes; 64x cycle time                                                 |
| <b>Encoder</b>                                                                                  |                                                                     |
| Connection of signal encoders                                                                   |                                                                     |
| • for current measurement as 2-wire transducer                                                  | Yes                                                                 |
| — Burden of 2-wire transmitter, max.                                                            | 750 Ω                                                               |
| <b>Errors/accuracies</b>                                                                        |                                                                     |
| Linearity error (relative to input range), (+/-)                                                | 0.015 %                                                             |
| Temperature error (relative to input range), (+/-)                                              | 0.005 %/K                                                           |
| Crosstalk between the inputs, min.                                                              | -50 dB                                                              |
| Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)                       | 0.01 %                                                              |
| Operational error limit in overall temperature range                                            |                                                                     |
| • Current, relative to input range, (+/-)                                                       | 0.15 %                                                              |
| Basic error limit (operational limit at 25 °C)                                                  |                                                                     |
| • Current, relative to input range, (+/-)                                                       | 0.1 %                                                               |
| Interference voltage suppression for $f = n \times (f1 \pm 1 \%)$ , f1 = interference frequency |                                                                     |
| • Series mode interference (peak value of interference < rated value of input range), min.      | 70 dB                                                               |
| <b>Interfaces</b>                                                                               |                                                                     |
| Number of PROFINET interfaces                                                                   | 0                                                                   |
| <b>Protocols</b>                                                                                |                                                                     |
| Supports protocol for PROFINET IO                                                               | No                                                                  |
| PROFIsafe                                                                                       | No                                                                  |
| PROFIBUS                                                                                        | No                                                                  |
| Further protocols                                                                               |                                                                     |
| • other bus systems                                                                             | No                                                                  |
| <b>Interrupts/diagnostics/status information</b>                                                |                                                                     |
| Alarms                                                                                          |                                                                     |
| • Diagnostic alarm                                                                              | Yes; Parameterizable                                                |
| • Limit value alarm                                                                             | Yes; Parameterizable                                                |
| Diagnoses                                                                                       |                                                                     |
| • Diagnostic information readable                                                               | Yes                                                                 |
| • Wire break                                                                                    | Yes; I load < 3.6 mA                                                |
| • short-circuit                                                                                 | Yes; I load > 25 mA                                                 |
| Diagnostics indication LED                                                                      |                                                                     |
| • Group error SF (red)                                                                          | Yes                                                                 |
| <b>Ex(i) characteristics</b>                                                                    |                                                                     |
| Module for Ex(i) protection                                                                     | Yes; for more Co/Lo combinations, see certificate IECEx KEM 05.0006 |
| maximum values for connecting terminals for gas group IIC                                       |                                                                     |
| • Uo (no-load voltage), max.                                                                    | 27.6 V                                                              |
| • Io (short-circuit current), max.                                                              | 88.2 mA                                                             |
| • Po (power output), max.                                                                       | 610 mW                                                              |

|                                                                                               |                                                                                                                                                     |         |                |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------|
| <ul style="list-style-type: none"><li>• Co (permissible external capacity), max.</li></ul>    | 83 nF                                                                                                                                               |         |                |
| <ul style="list-style-type: none"><li>• Lo (permissible external inductivity), max.</li></ul> | 3 mH                                                                                                                                                |         |                |
| Potential separation                                                                          |                                                                                                                                                     |         |                |
| between channels and powerbus                                                                 | Yes                                                                                                                                                 |         |                |
| Potential separation analog inputs                                                            |                                                                                                                                                     |         |                |
| <ul style="list-style-type: none"><li>• between the channels</li></ul>                        | No                                                                                                                                                  |         |                |
| <ul style="list-style-type: none"><li>• between the channels and backplane bus</li></ul>      | Yes                                                                                                                                                 |         |                |
| Degree and class of protection                                                                |                                                                                                                                                     |         |                |
| IP degree of protection                                                                       | IP30                                                                                                                                                |         |                |
| Standards, approvals, certificates                                                            |                                                                                                                                                     |         |                |
| CE mark                                                                                       | CE 0344                                                                                                                                             |         |                |
| UKCA mark                                                                                     | DEKRA 21UKEX0089 Importer UK: Siemens plc Manchester M20 2UR                                                                                        |         |                |
| cULus                                                                                         | LISTED E334384                                                                                                                                      |         |                |
| FM approval                                                                                   | CLASSIFIED 3025852                                                                                                                                  |         |                |
| Suitable for safety functions                                                                 | No                                                                                                                                                  |         |                |
| INMETRO certificate                                                                           | UL-BR 12.0072                                                                                                                                       |         |                |
| reference designation according to IEC 81346-2 (2009)                                         | K                                                                                                                                                   |         |                |
| Highest safety class achievable in safety mode                                                |                                                                                                                                                     |         |                |
| <ul style="list-style-type: none"><li>• acc. to EN 954</li></ul>                              | n.a.                                                                                                                                                |         |                |
| <ul style="list-style-type: none"><li>• Performance level according to ISO 13849-1</li></ul>  | none                                                                                                                                                |         |                |
| <ul style="list-style-type: none"><li>• SIL acc. to IEC 61508</li></ul>                       | No                                                                                                                                                  |         |                |
| Use in hazardous areas                                                                        |                                                                                                                                                     |         |                |
| <ul style="list-style-type: none"><li>• ATEX marking</li></ul>                                | II 2 G (1) G Ex ib [ia Ga] IIC T4 Gb II 2 G (1) D Ex ib [ia IIIC Da] IIC T4 Gb I M2 Ex ib [ia] I Mb                                                 |         |                |
| <ul style="list-style-type: none"><li>• ATEX certificate</li></ul>                            | KEMA 04 ATEX 1244                                                                                                                                   |         |                |
| <ul style="list-style-type: none"><li>• IECEx</li></ul>                                       | IECEx KEM 05.0006                                                                                                                                   |         |                |
| <ul style="list-style-type: none"><li>• CCC Ex</li></ul>                                      | 2020322316002941                                                                                                                                    |         |                |
| <ul style="list-style-type: none"><li>• EAC Ex</li></ul>                                      | PB Ex ib [ia] I Mb 1Ex ib [ia Ga] IIC T4 Gb [Ex ia Da] IIIC                                                                                         |         |                |
| <ul style="list-style-type: none"><li>• FM marking</li></ul>                                  | Class I, Zone 1 AEx ib [ia] IIC T4 Ex ib IIC T4 NI, Class I, DIV.2, GP. A,B,C,D T4 AIS, Class I, DIV.1, GP. A,B,C,D T4 DIP Class II, III, GP. E,F,G |         |                |
| <ul style="list-style-type: none"><li>• Explosion protection category for gas</li></ul>       | ATEX gas explosion protection, Zone 1                                                                                                               |         |                |
| <ul style="list-style-type: none"><li>• Explosion protection category for dust</li></ul>      | ATEX dust explosion protection, Zone 21 always install in corresponding enclosure                                                                   |         |                |
| <ul style="list-style-type: none"><li>• associated equipment (Ex ia)</li></ul>                | Yes                                                                                                                                                 |         |                |
| <ul style="list-style-type: none"><li>• associated equipment (Ex ib)</li></ul>                | Yes                                                                                                                                                 |         |                |
| Marine approval                                                                               |                                                                                                                                                     |         |                |
| <ul style="list-style-type: none"><li>• Germanischer Lloyd (GL)</li></ul>                     | Yes                                                                                                                                                 |         |                |
| <ul style="list-style-type: none"><li>• American Bureau of Shipping (ABS)</li></ul>           | Yes                                                                                                                                                 |         |                |
| <ul style="list-style-type: none"><li>• Bureau Veritas (BV)</li></ul>                         | Yes                                                                                                                                                 |         |                |
| <ul style="list-style-type: none"><li>• Det Norske Veritas (DNV)</li></ul>                    | Yes                                                                                                                                                 |         |                |
| Connection method                                                                             |                                                                                                                                                     |         |                |
| Design of electrical connection                                                               | Screw/spring-type terminal                                                                                                                          |         |                |
| Dimensions                                                                                    |                                                                                                                                                     |         |                |
| Width                                                                                         | 30 mm                                                                                                                                               |         |                |
| Height                                                                                        | 129 mm                                                                                                                                              |         |                |
| Depth                                                                                         | 136.5 mm                                                                                                                                            |         |                |
| Weights                                                                                       |                                                                                                                                                     |         |                |
| Weight, approx.                                                                               | 230 g                                                                                                                                               |         |                |
| Classifications                                                                               |                                                                                                                                                     |         |                |
|                                                                                               |                                                                                                                                                     | Version | Classification |
|                                                                                               | eClass                                                                                                                                              | 16      | 27-24-26-01    |
|                                                                                               | eClass                                                                                                                                              | 14      | 27-24-26-01    |
|                                                                                               | eClass                                                                                                                                              | 12      | 27-24-26-01    |
|                                                                                               | eClass                                                                                                                                              | 9.1     | 27-24-26-01    |
|                                                                                               | eClass                                                                                                                                              | 9       | 27-24-26-01    |
|                                                                                               | eClass                                                                                                                                              | 8       | 27-24-26-01    |
|                                                                                               | eClass                                                                                                                                              | 7.1     | 27-24-26-01    |
|                                                                                               | eClass                                                                                                                                              | 6       | 27-24-26-01    |

|        |    |             |
|--------|----|-------------|
| ETIM   | 10 | EC001596    |
| ETIM   | 9  | EC001596    |
| ETIM   | 8  | EC001596    |
| ETIM   | 7  | EC001596    |
| IDEA   | 4  | 3562        |
| UNSPSC | 15 | 32-15-17-05 |

Approvals / Certificates

General Product Approval



[Miscellaneous](#)

[Metrological Approval](#)



General Product Approval

For use in hazardous locations

[China RoHS](#)

[Manufacturer Declaration](#)



[EM](#)



For use in hazardous locations

[Miscellaneous](#)



[CCC-Ex](#)



[Miscellaneous](#)

For use in hazardous locations

Maritime application



Maritime application

Environment

[NK / Nippon Kaiji Kyokai](#)



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