



Figure similar

SIMATIC, electronic module for ET200iSP, 4 AI, RTD, for connection of resistance thermometers PT100/Ni100, Ex ib (ia Ga) IIC T4 Gb, Ex ib [ia IIIC Da] IIC T4 Gb, Ex ib [ia] I Mb

General information	
Product brand name	SIMATIC
Product family	ET 200iSP
Product category	Analog module input
Product type designation	4AI RTD
HW functional status	4
Firmware version	V1.1.0
Product function	
• Isochronous mode	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
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.	19 mA
from load voltage (power bus), max.	22 mA
Power loss	
Power loss, typ.	0.4 W
Hardware configuration	
Fieldbus connection via separate transceiver	Yes
Analog inputs	
Number of analog inputs	4
Cycle time (all channels) max.	320 ms; 66 ms basic conversion time x 4 channels with interference frequency suppression 60 Hz, 80 ms basic conversion time x 4 channels with interference frequency suppression 50 Hz
Technical unit for temperature measurement adjustable	Yes
Input ranges	
• Voltage	No
• Current	No
• Thermocouple	No
• Resistance thermometer	Yes
• Resistance	Yes

Input ranges (rated values), resistance thermometer	
• Ni 100	Yes
— Input resistance (Ni 100)	2 000 kΩ
• Pt 100	Yes
— Input resistance (Pt 100)	2 000 kΩ
Input ranges (rated values), resistors	
• 0 to 600 ohms	Yes; also 1 000 ohms
— Input resistance (0 to 600 ohms)	1 000 kΩ
Characteristic linearization	
• parameterizable	Yes
— for resistance thermometer	Yes
Cable length	
• shielded, max.	500 m
Analog value generation for the inputs	
Measurement principle	integrating (Sigma-Delta)
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit
• Integration time, parameterizable	Yes
• Basic conversion time, including integration time (ms)	80 ms at 50 Hz; 66 ms at 60 Hz
— additional conversion time for wire-break monitoring	5 ms
• 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
Encoder	
Connection of signal encoders	
• for resistance measurement with two-wire connection	Yes
• for resistance measurement with three-wire connection	Yes
• for resistance measurement with four-wire connection	Yes
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.015 %
Temperature error (relative to input range), (+/-)	0.02 %/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	
• Resistance thermometer, relative to input range, (+/-)	0.15 %; Applies to resistances standard ±0.8 K, climatic ±0.3 K
Basic error limit (operational limit at 25 °C)	
• Resistance thermometer, relative to input range, (+/-)	0.1 %; Applies to resistances standard ±0.5 K, climatic ±0.2 K
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
• Common mode interference, min.	90 dB
Interfaces	
Number of PROFINET interfaces	0
Protocols	
Supports protocol for PROFINET IO	No
PROFIsafe	No
PROFIBUS	No
Further protocols	
• other bus systems	No
Interrupts/diagnostics/status information	
Alarms	
• Diagnostic alarm	Yes
• Limit value alarm	Yes
Diagnoses	
• Diagnostic information readable	Yes

• Wire-break • Short-circuit • Group error	Yes; R > 2 kOhm Yes Yes		
Diagnostics indication LED			
• Group error SF (red)	Yes		
Ex(i) characteristics			
Module for Ex(i) protection	Yes; for more Co/Lo combinations, see certificate IECEx KEM 05.0009		
maximum values for connecting terminals for gas group IIC			
• Uo (no-load voltage), max. • Io (short-circuit current), max. • Po (power output), max. • Co (permissible external capacity), max. • Lo (permissible external inductivity), max.	5.9 V 24 mA 36 mW 43 µF 50 mH		
Potential separation			
Potential separation analog inputs			
• between the channels • between the channels and backplane bus • Between the channels and load voltage L+	No Yes Yes; Channels and power bus		
Degree and class of protection			
IP degree of protection	IP30		
Standards, approvals, certificates			
CE mark	CE 0344		
UKCA mark	DEKRA 21UKEX0088 Importer UK: Siemens plc Manchester M20 2UR		
cULus	LISTED E334384		
FM approval	CLASSIFIED 3025852		
Suitable for safety functions	No		
INMETRO certificate	UL-BR 12.0069		
reference designation according to IEC 81346-2 (2009)	K		
Highest safety class achievable in safety mode			
• acc. to EN 954 • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508	n.a. none No		
Use in hazardous areas			
• ATEX marking • IECEx • CCC Ex • EAC Ex • FM marking • Explosion protection category for gas • Explosion protection category for dust • associated equipment (Ex ia) • associated equipment (Ex ib)	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 IECEx KEM 05.0009 2020322316002944 PB Ex ib [ia] I Mb 1Ex ib [ia Ga] IIC T4 Gb [Ex ia Da] IIIC 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 ATEX gas explosion protection, Zone 1 ATEX dust explosion protection, Zone 21 always install in corresponding enclosure Yes Yes		
Marine approval			
• Germanischer Lloyd (GL) • American Bureau of Shipping (ABS) • Bureau Veritas (BV) • Det Norske Veritas (DNV)	Yes Yes Yes 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	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](#)
[China RoHS](#)
[Metrological Approval](#)
[KC](#)

General Product ApprovalFor use in hazardous locations






[Miscellaneous](#)


For use in hazardous locationsMaritime application





[Miscellaneous](#)



Maritime applicationEnvironment






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