SIEMENS

Data sheet 6ES7134-7SD51-0AB0

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 x (f1 +/- 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	Yes; R > 2 kOhm
● Short-circuit	Yes
● Group error	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.	5.9 V
● Io (short-circuit current), max.	24 mA
● Po (power output), max.	36 mW
● Co (permissible external capacity), max.	43 µF
● Lo (permissible external inductivity), max.	50 mH
Potential separation	
Potential separation analog inputs	
● between the channels	No
● between the channels and backplane bus	Yes
● Between the channels and load voltage L+	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	n.a.
● Performance level according to ISO 13849-1	none
● SIL acc. to IEC 61508	No
Use in hazardous areas	
● ATEX marking	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	IECEx KEM 05.0009
● CCC Ex	2020322316002944
● EAC Ex	PB Ex ib [ia] I Mb 1Ex ib [ia Ga] IIC T4 Gb [Ex ia Da] IIIC
● FM marking	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
● Explosion protection category for gas	ATEX gas explosion protection, Zone 1
● Explosion protection category for dust	ATEX dust explosion protection, Zone 21 always install in corresponding enclosure
● associated equipment (Ex ia)	Yes
● associated equipment (Ex ib)	Yes
Marine approval	
● Germanischer Lloyd (GL)	Yes
● American Bureau of Shipping (ABS)	Yes
● Bureau Veritas (BV)	Yes
● Det Norske Veritas (DNV)	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 Approval | For use in hazardous locations

Miscellaneous

For use in hazardous locations | Maritime application

CCC-Ex

Miscellaneous

Maritime application | Environment

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