## SIEMENS

## Data sheet

## 6ES7144-5KD50-0BA0

OPL
6 0
00

SIMATIC ET 200AL, AI 4xRTD/TC, 4x M12, degree of protection IP67

Product type designation         AI 4xRTD/TC           HW functional status         FS01           Firmware version         V1.0.x           Product function         V1.0.x           Step / voltage         V1.0.x           power supply according to NEC Class 2 required         No           Load voltage 1L+         V1.0.x           Product function         Yes; against destruction           Input current         25 mA; without load           from load voltage 1L+ (unswitched voltage)         4 A; Maximu value	General information	
Firmware version       V1.0.x         Product function	Product type designation	AI 4xRTD/TC
Product function         KM data         Yes; I&M0 to I&M3           Engineering with         -         STEP 7 TIA Portal configurable/integrated from version         STEP 7 to rhigher           • STEP 7 tonfigurable/integrated from version         V5.5 SP4 and higher         STEP 7 tonfigurable/integrated from version           • PROFIBUS from GSD version/GSD revision         GSD as of Revision 5         SDML V2.34           Supply voltage	HW functional status	FS01
• I&M data     Yes; I&M0 to I&M3       Engineering with     •       • STEP 7 TIA Portal configurable/integrated from version     V5.5 SP4 and higher       • STEP 7 Configurable/integrated from version     V5.5 SP4 and higher       • PROFIBUS from GSD version/GSD revision     GSD as of Revision 5       • PROFINET from GSD version/GSD revision     GSD as of Revision 5       • PROFINET from GSD version/GSD revision     GSD as of Revision 5       • PROFINET from GSD version/GSD revision     GSD as of Revision 5       • PROFINET from GSD version/GSD revision     GSD as of Revision 5       • PROFINET from GSD version/GSD revision     GSD as of Revision 5       • PROFINET from GSD version/GSD revision     GSD as of Revision 5       • Prover supply according to NEC Class 2 required     No       Load voltage 1.+     •       • Rated value (DC)     24 V       • permissible range, upper limit (DC)     28.8 V       • Reverse polarity protection     Yes; against destruction       Input current     25 mA; without load       from load voltage 1.+ (unswitched voltage)     4 A; Maximum value       from load voltage 1.+ (unswitched voltage)     4 A; Maximum value       Power loss, typ.     0.6 W       Analog inputs     4       • For voltage measurement     4       • For voltage measurement     4       • For voltag	Firmware version	V1.0.x
Engineering with     STEP 7 TIA Portal configurable/integrated from version       • STEP 7 configurable/integrated from version     STEP 7 V16 or higher       • PROFIBUS from GSD version/GSD revision     GSD as of Revision 5       • PROFINET from GSD version/GSD revision     GSD as of Revision 5       • PROFINET from GSD version/GSD revision     GSD as of Revision 5       • PROFINET from GSD version/GSD revision     GSD as of Revision 5       • PROFINET from GSD version/GSD revision     GSDML V2.34       • Supply according to NEC Class 2 required     No       Load voltage 11+     •       • Rated value (DC)     24 V       • permissible range, lower limit (DC)     28.8 V       • permissible range, upper limit (DC)     28.8 V       • Reverse polarity protection     Yes; against destruction       Input current     Current consumption (rated value)       Current consumption (rated value)     25 mA; without load       from load voltage 11+ (unswitched voltage)     4 A; Maximum value       Power loss     Power loss, typ.       Power loss, typ.     0.6 W       Analog inputs     4       • For voltage measurement     4       • For resistance/resistance thermometer     4       • For resistance/resistance thermometer     230 300 µA       • For thermocouple measurement     4       • For thermocouple meas	Product function	
• STEP 7 TIA Portal configurable/integrated from version       STEP 7 V16 or higher         • STEP 7 configurable/integrated from version       V5.5 SP4 and higher         • PROFIBUS from GSD version/GSD revision       GSD as of Revision 5         Supply voltage       GSDML V2.34         Supply voltage       power supply according to NEC Class 2 required         No       Load voltage 1L+         • Rated value (DC)       24 V         • permissible range, upper limit (DC)       20.4 V         • permissible range, upper limit (DC)       28.8 V         • Reverse polarity protection       Yes; against destruction         Input current       Current consumption (rated value)         Current loss       Power loss         Power loss, typ.       0.6 W         Analog inputs       4         • For voltage measurement       4         • For voltage measurement       4         • For voltage measurement       4         • For thermocouple measurement       4         • For therm	• I&M data	Yes; I&M0 to I&M3
version       V5.5 SP4 and higher         • STEP 7 configurable/integrated from version       G5D as of Revision 5         • PROFINET from GSD version/GSD revision       G5D as of Revision 5         • PROFINET from GSD version/GSD revision       GSDML V2.34         Supply voltage          power supply according to NEC Class 2 required       No         Load voltage 1L+       •         • Rated value (DC)       24 V         • permissible range, lower limit (DC)       26 A V         • permissible range, upper limit (DC)       28 8 V         • Reverse polarity protection       Yes; against destruction         Input current       Current consumption (rated value)         Current consumption (rated value)       25 mA; without load         from load voltage 2L+, max.       4 A; Maximum value         Power loss, typ.       0.6 W         Analog inputs       4         • For voltage measurement       4         • For voltage for voltage input (destruction limit), max.       15 V         Isoft in persistic input voltage for voltage input (destruction limit), max.       230 300 µA         costant measurement current for resistance-type transmiter, typ.       230 300 µA         Costant measurement current for resistance-type transmiter, typ.       230 300 µA	Engineering with	
<ul> <li>PROFIBUS from GSD version/GSD revision</li> <li>GSD as of Revision 5</li> <li>GSDML V2.34</li> <li>Supply voltage</li> <li>power supply according to NEC Class 2 required</li> <li>No</li> <li>Load voltage 1.4</li> <li>Rated value (DC)</li> <li>24 V</li> <li>permissible range, lower limit (DC)</li> <li>28.8 V</li> <li>Reverse polarity protection</li> <li>Yes; against destruction</li> <li>Input current</li> <li>Current consumption (rated value)</li> <li>25 mA; without load</li> <li>from load voltage 1.4, max.</li> <li>4 A; Maximum value</li> <li>from load voltage 1.4, max.</li> <li>4 A; Maximum value</li> <li>Power loss, typ.</li> <li>0.6 W</li> <li>Analog inputs</li> <li>For voltage measurement</li> <li>For resistance/resistance thermometer measurement</li> <li>4</li> <li>For resistone for voltage input (destruction 15 V</li> <li>information to resistence-type transmitter, typ.</li> <li>Constant measurement current for resistance-type transmitter, typ.</li> <li>Cycle time (all channels), min.</li> <li>90 ms</li> <li>Technical unit for temperature measurement adjustable</li> <li>Yes; Degrees Celsius / degrees Fahrenheit / Kelvin</li> <li>Input ranges (rated values), voltages</li> <li>-80 mV to +80 mV</li> <li>Yes; 16 bit incl. sign</li> </ul>	• •	STEP 7 V16 or higher
PROFINET from GSD version/GSD revision     GSDML V2.34      Supply voltage     power supply according to NEC Class 2 required     Load voltage 1L+     Rated value (DC)     24 V     o permissible range, lower limit (DC)     28.8 V     o permissible range, lower limit (DC)     28.8 V     o Reverse polarity protection     Yes; against destruction     Input current     Current consumption (rated value)     from load voltage 1L+ (unswitched voltage)     from load voltage 2L+, max.     4 A; Maximum value     from load voltage 2L+, max.     4 A; Maximum value     from load voltage 2L+, max.     4 A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from load voltage 1L+ (unswitched voltage)         A; Maximum value     from couge inputs         A ( A; Maximum value     from couge measurement         A ( For resistance/resistance thermometer         measurement         A ( For termerature measurement adjustable         Yes; Degrees Celsius	<ul> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP4 and higher
Supply voltage           power supply according to NEC Class 2 required         No           Load voltage 1L+         • Rated value (DC)         24 V           • Permissible range, lower limit (DC)         20.4 V         • permissible range, upper limit (DC)         28.8 V           • Reverse polarity protection         Yes; against destruction         Input current           Current consumption (rated value)         25 mA; without load         from load voltage 2L+, max.         4 A; Maximum value           from load voltage 2L+, max.         4 A; Maximum value         Power loss         Power loss, typ.         0.6 W           Analog inputs         4         4         • For voltage measurement         4           • For voltage measurement         4         • For thermocouple measurement         4           • For thermocouple measurement         4         • For thermocouple measurement         4           • For thermocouple measurement         4         • So         • So           Constant measurement current for resistance-type transmitter, typ.         230 300 µA         • So my to +80 mV           Technical unit for temperature measurement adjustable         Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         • Input ranges (rated values), voltages	<ul> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	GSD as of Revision 5
power supply according to NEC Class 2 required         No           Load voltage 1L+         • Rated value (DC)         24 V           • Partisible range, lower limit (DC)         28.8 V         20.4 V           • permissible range, upper limit (DC)         28.8 V         9           • Reverse polarity protection         Yes; against destruction         1000000000000000000000000000000000000	<ul> <li>PROFINET from GSD version/GSD revision</li> </ul>	GSDML V2.34
Load voltage 1L+       • Rated value (DC)       24 V         • permissible range, lower limit (DC)       20.4 V         • permissible range, upper limit (DC)       28.8 V         • Reverse polarity protection       Yes; against destruction         Input current       Current consumption (rated value)         25 mA; without load       from load voltage 1L+ (unswitched voltage)         4 A; Maximum value       4 A; Maximum value         Power loss       Power loss         Power loss, typ.       0.6 W         Analog inputs       4         • For voltage measurement       4         • For voltage measurement       4         • For thermocouple measurement       4         • Constant measurement current for resistance-type transmitter, typ.       230 300 µA         Cycle time (all channels), min.       90 ms         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       •.80 mV to +80 mV       Yes; 16	Supply voltage	
<ul> <li>Rated value (DC)</li> <li>Permissible range, lower limit (DC)</li> <li>24 V</li> <li>permissible range, upper limit (DC)</li> <li>20.4 V</li> <li>permissible range, upper limit (DC)</li> <li>28.8 V</li> <li>Reverse polarity protection</li> <li>Yes; against destruction</li> </ul> Input current Current consumption (rated value) <ul> <li>from load voltage 1L+ (unswitched voltage)</li> <li>4 A; Maximum value</li> </ul> Power loss Power loss, typ. Analog inputs <ul> <li>For voltage measurement</li> <li>For voltage measurement</li> <li>For resistance/resistance thermometer measurement</li> <li>For thermocouple measurement</li> <li>For thermocouple measurement</li> <li>For thermocouple for voltage input (destruction limit), max.</li> </ul> Constant measurement current for resistance-type transmitter, typ. <ul> <li>Cycle time (all channels), min.</li> <li>Cycle time (all channels), min.</li> <li>Cycle time (all channels), min.</li> <li>Super Super Sup</li></ul>	power supply according to NEC Class 2 required	No
<ul> <li>permissible range, lower limit (DC)</li> <li>20.4 V</li> <li>permissible range, upper limit (DC)</li> <li>28.8 V</li> <li>Reverse polarity protection</li> <li>Yes; against destruction</li> <li>Input current</li> <li>Current consumption (rated value)</li> <li>from load voltage 1L+ (unswitched voltage)</li> <li>4 A; Maximum value</li> <li>from load voltage 2L+, max.</li> <li>4 A; Maximum value</li> <li>Power loss, typ.</li> <li>O.6 W</li> <li>Analog inputs</li> <li>For voltage measurement</li> <li>For voltage for voltage input (destruction limit), max.</li> <li>Constant measurement current for resistance-type transmitter, typ.</li> <li>Cycle time (all channels), min.</li> <li>Yes; Degrees Celsius / degrees Fahrenheit / Kelvin</li> <li>Input ranges (rated values), voltages</li> <li>-80 mV to +80 mV</li> <li>Yes; 16 bit incl. sign</li> </ul>	Load voltage 1L+	
• permissible range, upper limit (DC)       28.8 V         • Reverse polarity protection       Yes; against destruction         Input current	Rated value (DC)	24 V
<ul> <li>Reverse polarity protection</li> <li>Yes; against destruction</li> <li>Input current</li> <li>Current consumption (rated value)</li> <li>25 mA; without load</li> <li>from load voltage 1L+ (unswitched voltage)</li> <li>4 A; Maximum value</li> <li>from load voltage 2L+, max.</li> <li>4 A; Maximum value</li> <li>Power loss</li> <li>Power loss, typ.</li> <li>0.6 W</li> <li>Analog inputs</li> <li>For voltage measurement</li> <li>For resistance/resistance thermometer measurement</li> <li>For thermocouple measurement</li> <li>For thermocouple measurement</li> <li>For thermocouple measurement</li> <li>Constant measurement current for resistance-type transmitter, typ.</li> <li>Cycle time (all channels), min.</li> <li>Quert measurement adjustable</li> <li>Technical unit for temperature measurement adjustable</li> <li>Yes; 16 bit incl. sign</li> </ul>	<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
Input current       25 mA; without load         Current consumption (rated value)       25 mA; without load         from load voltage 1L+ (unswitched voltage)       4 A; Maximum value         from load voltage 2L+, max.       4 A; Maximum value         Power loss       4 A; Maximum value         Power loss, typ.       0.6 W         Analog inputs       4         Number of analog inputs       4         • For voltage measurement       4         • For resistance/resistance thermometer measurement       4         • For thermocouple measurement       4         • For thermocouple measurement       4         • For thermocouple measurement       230 300 µA         Constant measurement current for resistance-type transmitter, typ.       230 300 µA         Cycle time (all channels), min.       90 ms         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       • -80 mV to +80 mV       Yes; 16 bit incl. sign	<ul> <li>permissible range, upper limit (DC)</li> </ul>	28.8 V
Current consumption (rated value)       25 mA; without load         from load voltage 1L+ (unswitched voltage)       4 A; Maximum value         from load voltage 2L+, max.       4 A; Maximum value         Power loss       4 A; Maximum value         Power loss, typ.       0.6 W         Analog inputs       4         • For voltage measurement       4         • For voltage measurement       4         • For resistance/resistance thermometer measurement       4         • For thermocouple measurement       230 300 µA         Constant measurement current for resistance-type transmitter, typ.       230 300 µA         Cycle time (all channels), min.       90 ms         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       Yes; 16 bit incl. sign	<ul> <li>Reverse polarity protection</li> </ul>	Yes; against destruction
from load voltage 1L+ (unswitched voltage)       4 A; Maximum value         from load voltage 2L+, max.       4 A; Maximum value         Power loss       0.6 W         Analog inputs       0.6 W         Number of analog inputs       4         • For voltage measurement       4         • For resistance/resistance thermometer measurement       4         • For thermocouple measurement       90 ms         Constant measurement current for resistance-type       230 300 μA         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       • -80 mV to +80 mV       Yes; 16 bit incl. sign	Input current	
from load voltage 2L+, max.       4 A; Maximum value         Power loss       0.6 W         Analog inputs       4         Number of analog inputs       4         • For voltage measurement       4         • For resistance/resistance thermometer measurement       4         • For thermocouple measurement       4         • For thermocouple measurement       4         • For thermocouple measurement       15 V         Imit, max.       230 300 μA         Constant measurement current for resistance-type transmitter, typ.       230 300 μA         Cycle time (all channels), min.       90 ms         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       • -80 mV to +80 mV	Current consumption (rated value)	25 mA; without load
Power loss       0.6 W         Analog inputs       4         Number of analog inputs       4         • For voltage measurement       4         • For resistance/resistance thermometer measurement       4         • For thermocouple measurement       4         • For thermocouple measurement       4         • For thermocouple measurement       4         • Constant measurement current for resistance-type transmitter, typ.       230 300 µA         Cycle time (all channels), min.       90 ms         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       • -80 mV to +80 mV	from load voltage 1L+ (unswitched voltage)	4 A; Maximum value
Power loss, typ.       0.6 W         Analog inputs       4         Number of analog inputs       4         • For voltage measurement       4         • For resistance/resistance thermometer measurement       4         • For thermocouple measurement       4         • Constant measurement current for resistance-type transmitter, typ.       230 300 µA         Cycle time (all channels), min.       90 ms         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       • -80 mV to +80 mV	from load voltage 2L+, max.	4 A; Maximum value
Analog inputs       4         Number of analog inputs       4 <ul> <li>For voltage measurement</li> <li>For resistance/resistance thermometer measurement</li> <li>For thermocouple measurement</li> <li>For thermocouple measurement</li> <li>For thermocouple measurement</li> <li>For thermocouple measurement</li> <li>Constant measurement current for resistance-type transmitter, typ.</li> <li>Cycle time (all channels), min.</li> <li>90 ms</li> <li>Technical unit for temperature measurement adjustable</li> <li>Yes; Degrees Celsius / degrees Fahrenheit / Kelvin</li> <li>Input ranges (rated values), voltages</li> <li>-80 mV to +80 mV</li> <li>Yes; 16 bit incl. sign</li> </ul>	Power loss	
Number of analog inputs       4         • For voltage measurement       4         • For resistance/resistance thermometer measurement       4         • For thermocouple measurement       4         • For thermocouple measurement       4         permissible input voltage for voltage input (destruction limit), max.       15 V         Constant measurement current for resistance-type transmitter, typ.       230 300 µA         Cycle time (all channels), min.       90 ms         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       Yes; 16 bit incl. sign	Power loss, typ.	0.6 W
<ul> <li>For voltage measurement</li> <li>For resistance/resistance thermometer measurement</li> <li>For thermocouple measurement</li> <li>V</li> <li>15 V</li> <li>Constant measurement current for resistance-type transmitter, typ.</li> <li>Cycle time (all channels), min.</li> <li>Yes; Degrees Celsius / degrees Fahrenheit / Kelvin</li> <li>Input ranges (rated values), voltages</li> <li>-80 mV to +80 mV</li> <li>Yes; 16 bit incl. sign</li> </ul>	Analog inputs	
<ul> <li>For resistance/resistance thermometer measurement</li> <li>For thermocouple measurement</li> <li>For thermocouple measurement</li> <li>For thermocouple measurement</li> <li>For thermocouple measurement</li> <li>V</li> <li>Dermissible input voltage for voltage input (destruction limit), max.</li> <li>Constant measurement current for resistance-type transmitter, typ.</li> <li>Cycle time (all channels), min.</li> <li>Or ms</li> <li>Cycle time (all channels), min.</li> <li>90 ms</li> <li>Technical unit for temperature measurement adjustable</li> <li>Yes; Degrees Celsius / degrees Fahrenheit / Kelvin</li> <li>Input ranges (rated values), voltages</li> <li>-80 mV to +80 mV</li> <li>Yes; 16 bit incl. sign</li> </ul>	Number of analog inputs	4
measurement       4         • For thermocouple measurement       4         permissible input voltage for voltage input (destruction limit), max.       15 V         Constant measurement current for resistance-type transmitter, typ.       230 300 μA         Cycle time (all channels), min.       90 ms         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       Yes; 16 bit incl. sign	<ul> <li>For voltage measurement</li> </ul>	4
permissible input voltage for voltage input (destruction limit), max.       15 V         Constant measurement current for resistance-type transmitter, typ.       230 300 µA         Cycle time (all channels), min.       90 ms         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       • -80 mV to +80 mV         Yes; 16 bit incl. sign       Yes; 16 bit incl. sign		4
limit), max.       Constant measurement current for resistance-type         transmitter, typ.       230 300 μA         Cycle time (all channels), min.       90 ms         Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       • -80 mV to +80 mV         Yes; 16 bit incl. sign	For thermocouple measurement	4
transmitter, typ.     90 ms       Cycle time (all channels), min.     90 ms       Technical unit for temperature measurement adjustable     Yes; Degrees Celsius / degrees Fahrenheit / Kelvin       Input ranges (rated values), voltages     • -80 mV to +80 mV       Yes; 16 bit incl. sign     Yes; 16 bit incl. sign		15 V
Technical unit for temperature measurement adjustable       Yes; Degrees Celsius / degrees Fahrenheit / Kelvin         Input ranges (rated values), voltages       • -80 mV to +80 mV         Yes; 16 bit incl. sign       Yes; 16 bit incl. sign	51 ····	230 300 µA
Input ranges (rated values), voltages • -80 mV to +80 mV Yes; 16 bit incl. sign	Cycle time (all channels), min.	90 ms
-80 mV to +80 mV     Yes; 16 bit incl. sign	Technical unit for temperature measurement adjustable	Yes; Degrees Celsius / degrees Fahrenheit / Kelvin
	Input ranges (rated values), voltages	
— Input resistance (-80 mV to +80 mV) 10 MΩ	• -80 mV to +80 mV	Yes; 16 bit incl. sign
	<ul> <li>Input resistance (-80 mV to +80 mV)</li> </ul>	10 ΜΩ

Input ranges (rated values), thermocouples	
• Type B	Yes; 16 bit incl. sign
— Input resistance (Type B)	10 MΩ
• Type C	Yes; 16 bit incl. sign
<ul> <li>Input resistance (Type C)</li> </ul>	10 MΩ
• Туре Е	Yes; 16 bit incl. sign
<ul> <li>Input resistance (Type E)</li> </ul>	10 MΩ
• Type J	Yes; 16 bit incl. sign
<ul> <li>Input resistance (type J)</li> </ul>	10 MΩ
• Туре К	Yes; 16 bit incl. sign
— Input resistance (Type K)	10 MΩ
• Type L	Yes; 16 bit incl. sign
— Input resistance (Type L)	10 MΩ
• Type N	Yes; 16 bit incl. sign
— Input resistance (Type N)	10 MΩ
• Type R	Yes; 16 bit incl. sign
— Input resistance (Type R)	10 ΜΩ
• Type S	Yes; 16 bit incl. sign
— Input resistance (Type S)	10 MΩ
• Type T	Yes; 16 bit incl. sign
— Input resistance (Type T)	10 MΩ
• Type U	Yes; 16 bit incl. sign 10 MΩ
— Input resistance (Type U)	
Input ranges (rated values), resistance thermometer	Voc: Standard/alimate
• Ni 100	Yes; Standard/climate
— Input resistance (Ni 100)	10 ΜΩ
• Ni 1000	Yes; Standard/climate
— Input resistance (Ni 1000)	10 MΩ
• Pt 100	Yes; Standard/climate
— Input resistance (Pt 100)	10 MΩ
• Pt 1000	Yes; Standard/climate
— Input resistance (Pt 1000)	10 MΩ
Input ranges (rated values), resistors	
• 0 to 150 ohms	Yes
<ul> <li>Input resistance (0 to 150 ohms)</li> </ul>	10 MΩ
• 0 to 300 ohms	Yes
<ul> <li>Input resistance (0 to 300 ohms)</li> </ul>	10 MΩ
Thermocouple (TC)	
Temperature compensation	
— parameterizable	Yes
<ul> <li>internal temperature compensation</li> </ul>	Yes
— external temperature compensation with	Yes
compensations socket	
— dynamic reference temperature value	Yes
— fixed reference temperature	Yes
Cable length	
• shielded, max.	30 m
Analog value generation for the inputs	
Measurement principle	integrating
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	16 bit
<ul> <li>Integration time, parameterizable</li> </ul>	Yes; channel by channel
	16.7 / 20 / 60
Integration time (ms)     Regis conversion time, including integration time	
<ul> <li>Basic conversion time, including integration time (ms)</li> </ul>	18 / 21 / 61 ms
(ms) — additional conversion time for wire-break	4 ms
monitoring	
— additional conversion time for resistance	2 ms
measurement	
	60 / 50 / 16.7
<ul> <li>Interference voltage suppression for interference frequency f1 in Hz</li> </ul>	60 / 50 / 16.7

Smoothing of measured values	
parameterizable	Yes
Step: None	Yes; 1x cycle time
Step: low	Yes; 4x cycle time
Step: Medium	Yes; 16x cycle time
• Step: High	Yes; 32x cycle time
Encoder	
Connection of signal encoders	
<ul> <li>for resistance measurement with two-wire connection</li> </ul>	Yes
<ul> <li>for resistance measurement with three-wire connection</li> </ul>	Yes
• for resistance measurement with four-wire connection	Yes
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.025 %
Temperature error (relative to input range), (+/-)	0.01 %/K
Crosstalk between the inputs, max.	-70 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.01 %; 0.02% for Pt1000
Temperature error of internal compensation	±4 °C
Operational error limit in overall temperature range	
<ul> <li>Voltage, relative to input range, (+/-)</li> </ul>	0.35 %
<ul> <li>Resistance, relative to input range, (+/-)</li> </ul>	0.25 %
<ul> <li>Resistance thermometer, relative to input range, (+/-)</li> </ul>	0.25 %
• Thermocouple, relative to input range, (+/-)	TC type E, J, K, N, C, U, L: 0.35 %; TC type R, S, T: 0.4 %; TC type B: 0.45 %
Basic error limit (operational limit at 25 °C)	
<ul> <li>Voltage, relative to input range, (+/-)</li> </ul>	0.25 %
<ul> <li>Resistance, relative to input range, (+/-)</li> </ul>	0.15 %
<ul> <li>Resistance thermometer, relative to input range, (+/-</li> </ul>	0.15 %
<ul> <li>Thermocouple, relative to input range, (+/-)</li> </ul>	0.25 %
Interference voltage suppression for $f = n \times (f1 + /- 0.5 \%), f1 = 0.5 \%$	
<ul> <li>Series mode interference (peak value of interference &lt; rated value of input range), min.</li> </ul>	40 dB
Interrupts/diagnostics/status information	
Alarms	
Diagnostic alarm	Yes; Parameterizable
Limit value alarm	Yes; Parameterizable
Diagnoses	
• Wire-break	Yes; Not for ±80 mV
Overflow/underflow	Yes
Diagnostics indication LED	
<ul> <li>Channel status display</li> </ul>	Yes; green LED
for module diagnostics	Yes; green/red LED
Potential separation	
between the load voltages	Yes
Potential separation channels	
<ul> <li>between the channels</li> </ul>	No
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
<ul> <li>between the channels and the power supply of the electronics</li> </ul>	No
Isolation	
Isolation tested with	707 V DC (type test)
Degree and class of protection	
IP degree of protection	IP65/67
Standards, approvals, certificates	
Suitable for safety-related tripping of standard modules	Yes; From FS01
Suitable for applications according to AMS 2750	Yes; Declaration of Conformity, see online support entry 109757262

Suitable for applications according to CQI-9	Yes; Based on AMS 2750 E	
Highest safety class achievable for safety-related tripping of s	standard modules	
<ul> <li>Performance level according to ISO 13849-1</li> </ul>	PL d	
<ul> <li>Category according to ISO 13849-1</li> </ul>	Cat. 3	
• SIL acc. to IEC 62061	SIL 2	
Ambient conditions		
Ambient temperature during operation		
● min.	-30 °C	
• max.	55 °C	
connection method / header		
Design of electrical connection for the inputs and outputs	M12, 5-pole	
Design of electrical connection for supply voltage	M8, 4-pole	
ET-Connection		
ET-Connection	M8, 4-pin, shielded	
Dimensions		
Width	30 mm	
Height	159 mm	
Depth	40 mm	
Weights		
Weight, approx.	168 g	

last modified:

3/7/2022 🖸