6ES7531-7QD00-0AB0

Data sheet



SIMATIC S7-1500 Analog input module AI 4xU/I/RTD/TC ST, 16 bit resolution, Accuracy 0.3%, 4 channels in groups of 4; 2 channels for RTD measurement; Common mode voltage 10 V; Diagnostics; Hardware interrupts; Delivery including push-in front connector, infeed element, shield bracket, and shield terminal

Product type designation HW functional status From FS01	General information	
Firmware version FIW update possible FVes FV	Product type designation	AI 4xU/I/RTD/TC ST
Product function	HW functional status	From FS01
Product function IMM data ISMN data ISSN data	Firmware version	V1.0.0
I I I I I I I I I I I I I I I I I I I	 FW update possible 	Yes
Isochronous mode Prioritized startup No Prioritized startup No Adjustment of measuring range Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 To configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision Oversampling No MSI Pres CiR - Configuration in RUN Reparameterization possible in RUN Calibration possible in RUN Calibration possible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Function Current consumption, max. Encoder supply Supply Version Output current, max. Power Power loss, typ. Power loss, typ. Power loss, typ. Power loss, typ. Rola data value (DS) Power loss, typ. 2.3 W	Product function	
Prioritized startup Measuring range scalable Scalable measured values Adjustment of measuring range Prioritized startup No Start P TIA Portal configurable/integrated from version STEP 7 TIA Portal configurable/integrated from version STEP 7 tonfigurable/integrated from version PROFIBUS from GSD version/GSD revision Pressing mode	 I&M data 	Yes; I&M0 to I&M3
Measuring range scalable Scalable measured values Adjustment of measuring range Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision PROFINET from GSD version/GSD revision Oversampling No MSI Pes CIR - Configuration in RUN Reparameterization possible in RUN Cilloration possible in RUN Yes Supply voltage Rated value (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Premissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 165 mA Encoder supply 4 V encoder supply Short-circuit protection Yes Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power variable from the backplane bus Power loss, typ. Power loss, typ. Power loss, typ. 2.3 W	 Isochronous mode 	No
Scalable measured values Adjustment of measuring range Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 TO configurable/integrated from version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision Operating mode Oversampling MSI SI SI SI SI SUPPLY SUPP	 Prioritized startup 	No
• Adjustment of measuring range Engineering with • STEP 7 TIA Portal configurable/integrated from version • STEP 7 configurable/integrated from version • STEP 7 configurable/integrated from version • PROFIBUS from GSD version/GSD revision • PROFIBUS from GSD version/GSD revision • PROFINET from GSD version/GSD revision • PROFINET from GSD version/GSD revision • Oversampling • MSI • Oversampling • MSI • Yes CIR - Configuration in RUN Reparameterization possible in RUN Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. Encoder supply 24 V encoder supply • Short-circuit protection • Yes • Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power available from the backplane bus 0.7 W Power loss Power loss, typ. 2.3 W	 Measuring range scalable 	No
Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version STEP 7 configurable/integrated from version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision No versampling MSI STEP 7 modes Oversampling No versampling MSI STEP 7 modes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection STEP 7 modes Supply voltage Reverse polarity protection STEP 7 modes Supply voltage Su	 Scalable measured values 	No
STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision Operating mode Oversampling MSI STEP 7 configuration in RUN Reparameterization possible in RUN Reparameterization possible in RUN Yes CIR - Configuration in RUN Reparameterization possible in RUN Reparameterization possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Current consumption, max. 165 mA Encoder supply 24 V encoder supply Short-circuit protection Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power available from the backplane bus 0.7 W Power loss Power loss, typ.		No
version • STEP 7 configurable/integrated from version • PROFIBUS from GSD version/GSD revision • PROFIBUS from GSD version/GSD revision • PROFINET from GSD version/GSD revision • PROFINET from GSD version/GSD revision • Oversampling • Mo • Oversampling • MSI • MSI Reparameterization possible in RUN Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) permissible range value (DC) permissible range, upper limit (DC) permissible range, lower limit (DC) permissi		
PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision PROFINET from GSD version/GSD revision Operating mode Oversampling MSI MSI Ves CIR - Configuration in RUN Reparameterization possible in RUN Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. Encoder supply Short-circuit protection Output current, max. Power Power available from the backplane bus Power loss Power loss Power loss, typ. Vo Ves V1.0 / V5.1 V2.3 /- V2.3 /- V2.3 /- V2.3 /- Ves Supply Ves Calibration possible in RUN Yes 24 V Pes Supply Ves Supply Ves Output current Output current Output current, max. Output current, max. Output current, max. Output loss Power loss Power loss, typ. 2.3 W		V13 / V13.0.2
PROFINET from GSD version/GSD revision Operating mode Oversampling MS MS Yes CIR - Configuration in RUN Reparameterization possible in RUN Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 165 mA Encoder supply 24 V encoder supply Short-circuit protection Yes Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power loss Power loss, typ. 2.3 W	 STEP 7 configurable/integrated from version 	V5.5 SP3 / -
Operating mode Oversampling Mo MSI Yes CIR - Configuration in RUN Reparameterization possible in RUN Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 165 mA Encoder supply 24 V encoder supply 9 Short-circuit protection Yes Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power variable from the backplane bus 0.7 W Power loss Power loss, typ. 2.3 W	 PROFIBUS from GSD version/GSD revision 	V1.0 / V5.1
Oversampling	 PROFINET from GSD version/GSD revision 	V2.3 / -
Omes a configuration in RUN Reparameterization possible in RUN Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. Encoder supply 24 V encoder supply • Short-circuit protection • Output current, max. Power Power available from the backplane bus Power loss Power loss, typ. 2.3 W	Operating mode	
CiR - Configuration in RUN Reparameterization possible in RUN Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 165 mA Encoder supply 24 V encoder supply • Short-circuit protection Yes • Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power loss Power loss, typ. 2.3 W	 Oversampling 	No
Reparameterization possible in RUN Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 165 mA Encoder supply 24 V encoder supply • Short-circuit protection • Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power available from the backplane bus Power loss Power loss, typ. 2.3 W	• MSI	Yes
Calibration possible in RUN Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. Current consumption, max. 165 mA Encoder supply 24 V encoder supply 9 Short-circuit protection Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power loss, typ. 2.3 W	CiR - Configuration in RUN	
Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 165 mA Encoder supply 24 V encoder supply • Short-circuit protection • Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power available from the backplane bus 0.7 W Power loss Power loss, typ. 2.3 W	Reparameterization possible in RUN	Yes
Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 165 mA Encoder supply 24 V encoder supply Short-circuit protection Output current, max. Power Power available from the backplane bus Power loss Power loss, typ. 24 V Power loss Power loss, typ. 24 V Power loss Power loss, typ. 24 V Power loss Power loss Power loss Power loss, typ.	Calibration possible in RUN	Yes
permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 165 mA Encoder supply 4 V encoder supply Short-circuit protection Output current, max. Power Power available from the backplane bus Power loss Power loss, typ. 19.2 V 28.8 V 28.8 V 29.8 V 29.8 V 29.8 V 29.8 V 20.8 MA 20	Supply voltage	
permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. Encoder supply 24 V encoder supply • Short-circuit protection • Output current, max. Power Power available from the backplane bus Power loss Power loss, typ. 28.8 V Yes Yes 165 mA 165 mA 165 mA 20 mA; Max. 47 mA per channel for a duration < 10 s	Rated value (DC)	24 V
Reverse polarity protection Input current Current consumption, max. Encoder supply 24 V encoder supply • Short-circuit protection • Output current, max. Power Power available from the backplane bus Power loss Power loss, typ. Yes 20 mA; Max. 47 mA per channel for a duration < 10 s Power loss Power loss, typ. 2.3 W	permissible range, lower limit (DC)	19.2 V
Input current Current consumption, max. Encoder supply 24 V encoder supply • Short-circuit protection • Output current, max. Power Power available from the backplane bus Power loss Power loss, typ. 165 mA Yes 20 mA; Max. 47 mA per channel for a duration < 10 s 0.7 W Power loss Power loss, typ. 2.3 W	permissible range, upper limit (DC)	28.8 V
Current consumption, max. Encoder supply 24 V encoder supply Short-circuit protection Output current, max. Power Power available from the backplane bus Power loss Power loss, typ. 165 mA Yes 20 mA; Max. 47 mA per channel for a duration < 10 s 0.7 W Power loss Power loss, typ. 2.3 W	Reverse polarity protection	Yes
Encoder supply 24 V encoder supply Short-circuit protection Output current, max. Power Power available from the backplane bus Power loss Power loss Power loss, typ. 24 V encoder supply Yes 20 mA; Max. 47 mA per channel for a duration < 10 s 0.7 W Power loss Power loss, typ.	Input current	
24 V encoder supply Short-circuit protection Output current, max. Power Power available from the backplane bus Power loss Power loss, typ. 24 V encoder supply Yes 20 mA; Max. 47 mA per channel for a duration < 10 s Power loss 20 mA; Max. 47 mA per channel for a duration < 10 s Power loss 20 mA; Max. 47 mA per channel for a duration < 10 s	Current consumption, max.	165 mA
Short-circuit protection Output current, max. Power Power available from the backplane bus Power loss Power loss, typ. Yes 20 mA; Max. 47 mA per channel for a duration < 10 s 0.7 W Power loss 2.3 W	Encoder supply	
● Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power available from the backplane bus 0.7 W Power loss Power loss, typ. 2.3 W	24 V encoder supply	
Power available from the backplane bus 0.7 W Power loss Power loss, typ. 2.3 W	Short-circuit protection	Yes
Power available from the backplane bus O.7 W Power loss Power loss, typ. 2.3 W	 Output current, max. 	20 mA; Max. 47 mA per channel for a duration < 10 s
Power loss Power loss, typ. 2.3 W	Power	
Power loss, typ. 2.3 W	Power available from the backplane bus	0.7 W
•	Power loss	
Analog inputs	Power loss, typ.	2.3 W
	Analog inputs	

Number of analog inputs	4
For current measurement	4
For voltage measurement	4
For resistance/resistance thermometer	2
measurement	_
 For thermocouple measurement 	4
permissible input voltage for voltage input (destruction limit), max.	28.8 V
permissible input current for current input (destruction limit), max.	40 mA
Constant measurement current for resistance-type	150 Ohm, 300 Ohm, 600 Ohm, Pt100, Pt200, Ni100: 1.25 mA; 6 000
transmitter, typ.	Ohm, Pt500, Pt1000, Ni1000, LG-Ni1000: 0.625 mA; PTC: 0.472 mA
Technical unit for temperature measurement adjustable	Yes; °C/°F/K
Analog input with oversampling	No
Standardization of measured values	No
Input ranges (rated values), voltages	
• 0 to +5 V	No
• 0 to +10 V	No
• 1 V to 5 V	Yes
— Input resistance (1 V to 5 V)	100 kΩ
• -1 V to +1 V	Yes
— Input resistance (-1 V to +1 V)	10 ΜΩ
• -10 V to +10 V	Yes
— Input resistance (-10 V to +10 V)	100 kΩ
• -2.5 V to +2.5 V	Yes
— Input resistance (-2.5 V to +2.5 V)	10 ΜΩ
-25 mV to +25 mV	No
• -250 mV to +250 mV	Yes
— Input resistance (-250 mV to +250 mV)	10 ΜΩ
• -5 V to +5 V	Yes
— Input resistance (-5 V to +5 V)	100 kΩ
• -50 mV to +50 mV	Yes
— Input resistance (-50 mV to +50 mV)	10 ΜΩ
• -500 mV to +500 mV	Yes
— Input resistance (-500 mV to +500 mV)	10 ΜΩ
• -80 mV to +80 mV	Yes
— Input resistance (-80 mV to +80 mV)	10 ΜΩ
Input ranges (rated values), currents	Yes
• 0 to 20 mA	25 Ω; Plus approx. 42 ohms for overvoltage protection by PTC
Input resistance (0 to 20 mA)-20 mA to +20 mA	Yes
- Input resistance (-20 mA to +20 mA)	25 Ω; Plus approx. 42 ohms for overvoltage protection by PTC
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	25 Ω; Plus approx. 42 ohms for overvoltage protection by PTC
Input ranges (rated values), thermocouples	25 2-, . Tab approx. 12 office for overvoiding protoction by 1 10
• Type B	Yes
— Input resistance (Type B)	10 ΜΩ
• Type C	No
• Type E	Yes
— Input resistance (Type E)	10 ΜΩ
• Type J	Yes
— Input resistance (type J)	10 ΜΩ
• Type K	Yes
— Input resistance (Type K)	10 ΜΩ
• Type L	No
• Type N	Yes
— Input resistance (Type N)	10 ΜΩ
• Type R	Yes
— Input resistance (Type R)	10 ΜΩ
• Type S	Yes
— Input resistance (Type S)	10 ΜΩ
• Type T	Yes
— Input resistance (Type T)	10 ΜΩ
• Type U	No
Type TXK/TXK(L) to GOST	No

Input ranges (rated values), resistance thermometer	Ne
• Cu 10	No
Cu 10 according to GOST	No
• Cu 50	No
 Cu 50 according to GOST 	No
● Cu 100	No
 Cu 100 according to GOST 	No
● Ni 10	No
 Ni 10 according to GOST 	No
• Ni 100	Yes; Standard/climate
— Input resistance (Ni 100)	10 ΜΩ
 Ni 100 according to GOST 	No
• Ni 1000	Yes; Standard/climate
— Input resistance (Ni 1000)	10 ΜΩ
 Ni 1000 according to GOST 	No
• LG-Ni 1000	Yes; Standard/climate
— Input resistance (LG-Ni 1000)	10 ΜΩ
• Ni 120	No
Ni 120 according to GOST	No
• Ni 200	No
Ni 200 Ni 200 according to GOST	No
Ni 500 Ni 500	No
Ni 500 according to GOSTPt 10	No No
	No No
Pt 10 according to GOST Pt 50	No
• Pt 50	No
Pt 50 according to GOST	No
• Pt 100	Yes; Standard/climate
— Input resistance (Pt 100)	10 ΜΩ
 Pt 100 according to GOST 	No
• Pt 1000	Yes; Standard/climate
— Input resistance (Pt 1000)	10 ΜΩ
 Pt 1000 according to GOST 	No
• Pt 200	Yes; Standard/climate
— Input resistance (Pt 200)	10 ΜΩ
 Pt 200 according to GOST 	No
• Pt 500	Yes; Standard/climate
— Input resistance (Pt 500)	10 ΜΩ
 Pt 500 according to GOST 	No
Input ranges (rated values), resistors	
• 0 to 150 ohms	Yes
— Input resistance (0 to 150 ohms)	10 ΜΩ
• 0 to 300 ohms	Yes
Input resistance (0 to 300 ohms)	10 MΩ
• 0 to 600 ohms	Yes
Input resistance (0 to 600 ohms)	10 MΩ
Tiput resistance (0 to 600 offins) 0 to 3000 ohms	No
0 to 6000 ohms	Yes
— Input resistance (0 to 6000 ohms)	10 MΩ Vos
• PTC	Yes
— Input resistance (PTC)	10 ΜΩ
Thermocouple (TC)	
Temperature compensation	V.
— parameterizable	Yes
 internal temperature compensation 	Yes
 external temperature compensation via RTD 	Yes
 Compensation for 0 °C reference point 	Yes; fixed value can be set
temperature	
Reference channel of the module	No
Cable length	
• shielded, max.	800 m; for U/I, 200 m for R/RTD, 50 m for TC
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	16 bit
3 (111 3 3 7, 111	

 Integration time, parameterizable 	Yes
Integration time (ms)	2,5 / 16,67 / 20 / 100 ms
 Basic conversion time, including integration time 	9 / 23 / 27 / 107 ms
(ms)— additional conversion time for wire-break monitoring	9 ms (to be considered in R/RTD/TC measurement)
additional conversion time for resistance measurement	150 ohm, 300 ohm, 600 ohm, Pt100, Pt200, Ni100: 2 ms, 6000 ohm, Pt500, Pt1000, Ni1000, LG-Ni1000, PTC: 4 ms
Interference voltage suppression for interference	400 / 60 / 50 / 10
frequency f1 in Hz	
Time for offset calibration (per module) Smoothing of managinal values.	Basic conversion time of the slowest channel
Smoothing of measured values	Yes
parameterizableStep: None	Yes
• Step: None	Yes
• Step: Nedium	Yes
Step: Medium Step: High	Yes
Encoder Encoder	165
Connection of signal encoders	Von
for voltage measurement for current measurement as 2 wire transducer	Yes
for current measurement as 2-wire transducer Purden of 2 wire transmitter, may	Yes
 Burden of 2-wire transmitter, max. for current measurement as 4-wire transducer 	820 Ω Yes
for resistance measurement with two-wire	
connection	Yes; Only for PTC
for resistance measurement with three-wire connection	Yes; All measuring ranges except PTC; internal compensation of the cable resistances
for resistance measurement with four-wire	Yes; All measuring ranges except PTC
connection	3 - 3
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.02 %
Temperature error (relative to input range), (+/-)	0.005 %/K; With TC type T 0.02 ± % / K
Crosstalk between the inputs, max.	-80 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.02 %
Temperature error of internal compensation	±6 °C
note regarding accuracy	at temperatures below 0 °C, the figures for operating error and temperature error are doubled
Operational error limit in overall temperature range	
Voltage, relative to input range, (+/-)	0.3 %
 Current, relative to input range, (+/-) 	0.3 %
 Resistance, relative to input range, (+/-) 	0.3 %
Resistance thermometer, relative to input range, (+/-)	0.3 %; Ptxxx standard: ±1.5 K, Ptxxx climate: ±0.5 K, Nixxx standard: ±0.5 K, Nixxx climate: ±0.3 K
 Thermocouple, relative to input range, (+/-) 	0.3 %; Type B: > 600 °C ±4.6 K, type E: > -200 °C ±1.5 K, type J: > -210 °C ±1.9 K, type K: > -200 °C ±2.4 K, type N: > -200 °C ±2.9 K, type R: > 0 °C ±4.7 K, type S: > 0 °C ±4.6 K, type T: > -200 °C ±2.4 K
Basic error limit (operational limit at 25 °C)	
 Voltage, relative to input range, (+/-) 	0.1 %
 Current, relative to input range, (+/-) 	0.1 %
 Resistance, relative to input range, (+/-) 	0.1 %
 Resistance thermometer, relative to input range, (+/-) 	0.1 %; Ptxxx standard: ±0.7 K, Ptxxx climate: ±0.2 K, Nixxx standard: ±0.3 K, Nixxx climate: ±0.15 K
• Thermocouple, relative to input range, (+/-)	0.1 %; Type B: $>$ 600 °C \pm 1.7 K, type E: $>$ -200 °C \pm 0.7 K, type J: $>$ -210 °C \pm 0.8 K, type K: $>$ -200 °C \pm 1.2 K, type N: $>$ -200 °C \pm 1.2 K, type R: $>$ 0 °C \pm 1.9 K, type S: $>$ 0 °C \pm 1.9 K, type T: $>$ -200 °C \pm 0.8 K
Interference voltage suppression for f = n x (f1 +/- 1 %), f1 =	
 Series mode interference (peak value of interference < rated value of input range), min. 	40 dB
Common mode voltage, max.	10 V
Common mode interference, min.	60 dB
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
Diagnostic alarm	Yes
Limit value alarm	Yes; two upper and two lower limit values in each case

Diagnoses	
5	V
Monitoring the supply voltage	Yes
Wire-break	Yes; Only for 1 to 5 V, 4 to 20 mA, TC, R, and RTD
Overflow/underflow	Yes
Diagnostics indication LED	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
 Monitoring of the supply voltage (PWR-LED) 	Yes; green LED
 Channel status display 	Yes; green LED
 for channel diagnostics 	Yes; red LED
for module diagnostics	Yes; red LED
Potential separation	
Potential separation channels	
 between the channels 	No
 between the channels, in groups of 	4
 between the channels and backplane bus 	Yes
 between the channels and the power supply of the electronics 	Yes
Permissible potential difference	
between the inputs (UCM)	20 V DC
Between the inputs and MANA (UCM)	10 V DC
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
 horizontal installation, min. 	-25 °C; From FS03
 horizontal installation, max. 	60 °C
 vertical installation, min. 	-25 °C; From FS03
 vertical installation, max. 	40 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Dimensions	
Width	25 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	210 g
Other	
Note:	Supplied incl. 40-pole push-in front connectors. Additional basic error and noise for integration time = 2.5 ms: Voltage: ±250 mV (±0.02%), ±80 mV (±0.05%), ±50 mV (±0.05%); resistance: 150 Ohms (±0.02%); resistance thermometer: Pt100 climate: ±0.08 K, Ni100 climate: ±0.08 K; thermoelement: Type B, R, S: ±3 K, type E, J, K, N, T: ±1 K