6ES7531-7QD00-0AB0





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 V10.0 FW update possible Ves Product function Island data Sechionous mode Profutzed startup Measuring range scalable Sechiolable measured values Adjustment of measuring range No Form FS01 FTP 7 TIA Portal configurable/integrated from version FTP 7 Ton FS01 FTP 7 FOR Instance FTP 7 FOR Instance FTP FOR FOR Instance FTP FOR FOR Instance FTP FOR	General information	
Firmware version FV update possible FV update possible FV es Product function IkM data Sectornous mode Prioritized startup Measuring range scalable Adjustment of measuring range Adjustment of measuring range Adjustment of measuring range No STEP 7 TIA Portal configurable/integrated from version STEP 7 Tonfigurable/integrated from version FROFIBUS from GSD version/GSD revision FROFIBUS from GSD version/GSD revision PROFIBUS from GSD version/GSD revision PROFIGURING from GSD version/GSD revision V1.0 / V5.1 V5.5 SP3 /- V1.0 / V5.1 V5.5 SP3 /- V5.5 SP3 /- V5.5 SP3 /- V5.5 SP3 /- V6.5 SP3 /- PROFIGURING from GSD version/GSD revision V5.5 SP3 /- V6.5 SP3 /- V7.0 / V5.1 V6.5 SP3 /- V7.0 / V6.1 V6.5 SP3 /- V6.5 SP3 /- V6.5 SP3 /- V6.5 SP3 /- V7.0 / V6.1 V6.5 SP3 /- V6.5 SP3 /- V6.5 SP3 /- V6.5 SP3 /- V7.0 / V6.1 V6.5 SP3 /- V7.0 / V6.1 V6.5 SP3 /- V6.5 SP3 /-	Product type designation	AI 4xU/I/RTD/TC ST
FW update possible Yes Product function I I&M data Yes; I&M0 to I&M3 I slochronous mode No Prioritized startup No Measuring range scalable No Adjustment of measuring range No Engineering with STEP 7 TIA Portal configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision PROFINET from GSD version/GSD revision MSI CIR - Configuration in RUN Reparameterization possible in RUN Calibration possible in RUN Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Tender of the properties	HW functional status	From FS01
Product function I&M data Isochronous mode Prioritized startup No Measuring range scalable Scalable measured values Adjustment of measuring range No Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PROFINST from GSD version/GSD revision PROFINST from GSD version/GSD revision PROFINST from GSD version/GSD revision No MSI CIR-Configuration in RUN Reparameterization possible in RUN Yes Calibration possible in RUN Yes Supply voltage Rated value (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Permissible range value value (DC) Permissible range value value (DC) Permissible range value	Firmware version	V1.0.0
I lâtM data I sochronous mode I sochronous mode Prioritized startup Measuring range scalable Scalable measured values Adjustment of measuring range Profiguration of measuring range Step 7 TIA Portal configurable/integrated from version Step 7 To configurable/integrated from version FROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision MSI CIR - Configuration in RUN Reparameterization possible in RUN Reparameterization possible in RUN Reparameterization possible in RUN Supply voltage Rated value (DC) permissible range, lower limit (DC) Permissible range, upper limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Product remote to the following possible in RUN Current consumption, max. 140 mA; with 24 V DC 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 O.7 W Power loss	FW update possible	Yes
Isochronous mode Prioritized startup Mo 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 PROFIBUS from GSD version/GSD revision PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision MSI PROFINET from GSD version/GSD revision WSI PROFIDED Trom GSD version/GSD revision PROFIDED Trom GSD version/GSD revision PROFIDED Trom GSD version/GSD revision V2.3 /- Operating mode Oversampling MSI Yes CIR - Configuration in RUN Reparameterization possible in RUN Yes Calibration possible in RUN Yes Calibration possible in RUN Yes Supply voltage Rated value (DC) Permissible range, lower limit (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 140 mA; with 24 V DC 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 Power loss	Product function	
 Prioritized startup Measuring range scalable Scalable measured values Adjustment of measuring range No STEP 7 TIA Portal configurable/integrated from version 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 V1.0 / V5.1 PROFIBUS from GSD version/GSD revision V2.3 / - Operating mode Oversampling No MSI Yes CIR - Configuration in RUN Reparameterization possible in RUN Yes Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, uoper limit (DC) 28.8 V Reverse polarity protection Yes Input current Current consumption, max Ind MA; with 24 V DC supply Encoder supply 4V encoder supply Short-circuit protection Yes Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power vasilable from the backplane bus 0.7 W Power loss	● I&M data	Yes; I&M0 to I&M3
Measuring range scalable Scalable measured values Adjustment of measuring range Requiremental measuring range STEP 7 TIA Portal configurable/integrated from version 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 PROFINET from GSD version/GSD revision Oversampling No MSI Yes CiR - Configuration in RUN Reparameterization possible in RUN Yes Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) 28.8 V Reverse polarity protection Yes Input current Current consumption, max. 140 mA; with 24 V DC supply 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	 Isochronous mode 	No
Scalable measured values Adjustment of measuring range Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFIBUS from GSD version/GSD revision PROFIBUT from GSD version/GSD revision PROFINET from GSD version/GSD version/GSD revision ProfINET from GSD version/GSD revision ProfINET from GSD version/GSD version/GSD revision ProfINET from GSD version/GSD revision ProfINET from GSD version/GSD revision ProfINET from GSD version/GSD version/GSD revision ProfINET from GSD version/GSD revision Prof	 Prioritized startup 	No
Adjustment of measuring range Engineering with	 Measuring range scalable 	No
Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision Press	 Scalable measured values 	No
STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision No PROFINET from GSD version/GSD revision No MSI CIR - Configuration in RUN Reparameterization possible in RUN Calibration possible in RUN Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. Late Max. 47 mA per channel for a duration < 10 s Power Power available from the backplane bus Power loss	Adjustment of measuring range	No
• 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 • MSI CIR - Configuration in RUN Reparameterization possible in RUN Reparameterization possible in RUN Yes 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. 140 mA; with 24 V DC supply • Short-circuit protection • Output current, max. Power Power available from the backplane bus 0.7 W Power loss		
PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision PROFINET from GSD version/GSD revision Operating mode Oversampling No 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. 140 mA; with 24 V DC supply Note of the form the backplane bus Power Power loss 10,7 W Power loss		V13 / V13.0.2
PROFINET from GSD version/GSD revision Operating mode Oversampling MSI Tes CIR - Configuration in RUN Reparameterization possible in RUN Yes Calibration possible in RUN Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. I40 mA; with 24 V DC supply Pencoder supply 4 V encoder supply Short-circuit protection Yes Output current, max. Power Power loss	 STEP 7 configurable/integrated from version 	V5.5 SP3 / -
Operating mode 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) Reverse polarity protection Yes Input current Current consumption, max. 140 mA; with 24 V DC supply 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 loss	 PROFIBUS from GSD version/GSD revision 	V1.0 / V5.1
● Oversampling ● MSI Pes CiR - Configuration in RUN Reparameterization possible in RUN Reparameterization possible in RUN Yes 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. 140 mA; with 24 V DC supply Encoder supply ● Short-circuit protection Yes ● Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power loss		V2.3 / -
● MSI Yes CiR - Configuration in RUN Reparameterization possible in RUN Yes Calibration possible in RUN Yes Supply voltage Rated value (DC) 24 V permissible range, lower limit (DC) 19.2 V permissible range, upper limit (DC) 28.8 V Reverse polarity protection Yes Input current Current consumption, max. 140 mA; with 24 V DC supply Encoder supply ● Short-circuit protection Yes ● Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power loss	· · ·	
CiR - Configuration in RUN Reparameterization possible in RUN Yes 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. 140 mA; with 24 V DC supply 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 available from the backplane bus 0.7 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 Fundamental current Current consumption, max. 140 mA; with 24 V DC supply 140 mA; with 24 V DC supply Short-circuit protection Yes Output current, max. Output current, max. Output current, max. Output current, max. Output fundamental current yes Output fundamental yes Output fundame		Yes
Calibration possible in RUN 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. 140 mA; with 24 V DC supply 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	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. 140 mA; with 24 V DC supply 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 available from the backplane bus 0.7 W Power loss	Reparameterization possible in RUN	Yes
Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. 140 mA; with 24 V DC supply Encoder supply 4 V encoder supply Short-circuit protection Yes Output current, max. Yes Output current, max. 20 mA; Max. 47 mA per channel for a duration < 10 s Power Power loss	Calibration possible in RUN	Yes
permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. Late of the supply 24 V encoder supply Short-circuit protection Output current, max. Power Power available from the backplane bus Power loss 19.2 V 28.8 V 140 mA; with 24 V DC supply 140 mA; with 24 V DC supply Yes 20 mA; Max. 47 mA per channel for a duration < 10 s	Supply voltage	
permissible range, upper limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 140 mA; with 24 V DC supply Encoder supply 24 V encoder supply • Short-circuit protection • Output current, max. 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	Rated value (DC)	24 V
Reverse polarity protection Input current Current consumption, max. 140 mA; with 24 V DC supply Encoder supply 24 V encoder supply • Short-circuit protection • Output current, max. Power Power available from the backplane bus 0.7 W Power loss	permissible range, lower limit (DC)	19.2 V
Input current Current consumption, max. 140 mA; with 24 V DC supply Encoder supply 24 V encoder supply • Short-circuit protection • Output current, max. Power Power available from the backplane bus 0.7 W Power loss	permissible range, upper limit (DC)	28.8 V
Current consumption, max. 140 mA; with 24 V DC supply Encoder supply 24 V encoder supply Short-circuit protection Output current, max. Power Power available from the backplane bus 140 mA; with 24 V DC supply Yes 20 mA; with 24 V DC supply Yes 20 mA; Max. 47 mA per channel for a duration < 10 s 0.7 W	Reverse polarity protection	Yes
Encoder supply 24 V encoder supply Short-circuit protection Output current, max. Power Power available from the backplane bus O.7 W Power loss	Input current	
24 V encoder supply Short-circuit protection Output current, max. Power Power available from the backplane bus O.7 W Power loss	Current consumption, max.	140 mA; with 24 V DC supply
Short-circuit protection Output current, max. Power Power available from the backplane bus O.7 W Power loss Yes 20 mA; Max. 47 mA per channel for a duration < 10 s 0.7 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	24 V encoder supply	
Power available from the backplane bus O.7 W Power loss	Short-circuit protection	Yes
Power available from the backplane bus 0.7 W Power loss	 Output current, max. 	20 mA; Max. 47 mA per channel for a duration < 10 s
Power loss	Power	
	Power available from the backplane bus	0.7 W
Power loss, typ. 2.3 W	Power loss	
	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 transmitter, typ.	150 Ohm, 300 Ohm, 600 Ohm, Pt100, Pt200, Ni100: 1.25 mA; 6 000 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	
• 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	25 Ω ; Plus approx. 42 ohms for overvoltage protection by PTC
• -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	V
• 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	
- True a M	No
Type N	Yes
— Input resistance (Type N)	Yes 10 MΩ
— Input resistance (Type N)● Type R	Yes $10 \ \text{M}\Omega$ Yes
— Input resistance (Type N)	Yes 10 MΩ

Input registance (Type S)	10 ΜΩ
— Input resistance (Type S)	Yes
• Type T	
— Input resistance (Type T)	10 ΜΩ
• Type U	No
Type TXK/TXK(L) to GOST	No
Input ranges (rated values), resistance thermometer • Cu 10	No
	No
Cu 10 according to GOST	
• Cu 50	No
Cu 50 according to GOST Cu 100	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 according to GOST 	No
● Ni 500	No
 Ni 500 according to GOST 	No
● Pt 10	No
 Pt 10 according to GOST 	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 ΜΩ
• 0 to 600 ohms	Yes
— Input resistance (0 to 600 ohms)	10 ΜΩ
• 0 to 3000 ohms	No
• 0 to 6000 ohms	Yes
 Input resistance (0 to 6000 ohms) 	10 ΜΩ
• PTC	Yes
— Input resistance (PTC)	10 ΜΩ
Thermocouple (TC)	
Temperature compensation	
— parameterizable	Yes
internal temperature compensation	Yes
- F	

 external temperature compensation via RTD 	Yes
 Compensation for 0 °C reference point temperature 	Yes; fixed value can be set
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
 Integration time, parameterizable 	Yes
Integration time (ms)	2,5 / 16,67 / 20 / 100 ms
 Basic conversion time, including integration time (ms) 	9 / 23 / 27 / 107 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 frequency f1 in Hz 	400 / 60 / 50 / 10
Time for offset calibration (per module)	Basic conversion time of the slowest channel
Smoothing of measured values	
 parameterizable 	Yes
• Step: None	Yes
• Step: low	Yes
Step: Medium	Yes
Step: High	Yes
Encoder	
Connection of signal encoders	
for voltage measurement	Yes
for current measurement as 2-wire transducer	Yes
— Burden of 2-wire transmitter, max.	820 Ω
for current measurement as 4-wire transducer	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 connection	Yes; All measuring ranges except PTC
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 ±1.7 K, type E: > -200 °C ±0.7 K, type J: > -210

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 = interference frequency • Series mode interference (peak value of 40 dB interference < rated value of input range), min. 10 V · Common mode voltage, max. • 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 Monitoring the supply voltage Wire-break Yes; Only for 1 to 5 V, 4 to 20 mA, TC, R, and RTD Overflow/underflow 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 Yes electronics 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 -25 °C; From FS03 · horizontal installation, min. · 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

 $^{\circ}$ C ±0.8 K, type K: > -200 $^{\circ}$ C ±1.2 K, type N: > -200 $^{\circ}$ C ±1.2 K, type R: >

last modified:

9/20/2021