6ES7531-7KF00-0AB0

## **Data sheet**



SIMATIC S7-1500 analog input module AI 8xU/I/RTD/TC ST, 16 bit resolution, accuracy 0.3%, 8 channels in groups of 8; 4 channels for RTD measurement, common mode voltage 10 V; Diagnostics; Hardware interrupts; Delivery including infeed element, shield bracket and shield terminal: Front connector (screw terminals or push-in) to be ordered separately

Product type designation   HW functional status   F804  Firmware version   • FW update possible   Product function  • I&M data   • I&M	General information	
Firmware version  FV update possible  FV es  Product function  IkM data  Sectornous mode  Prioritized startup  Measuring range scalable  Scalable measured values  Adjustment of measuring range  STEP 7 TIA Portal configurable/integrated from version  FROFIBUS from GSD version/GSD revision  PROFIBUS from GSD version/GSD revision  PROFIBUS from GSD version/GSD revision  PROFIGURATION  FROFIGURATION  FROFIGURATION  Reparameterization possible in RUN  Reparameterization possible in RUN  Supply voltage  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  permissi	Product type designation	AI 8xU/I/RTD/TC ST
FW update possible  Product function  I I&M data I Scortronous mode I I&M data I Scortronous mode I I&M data I Scortronous mode I IAM Mo I I&M Mo I IAM Mo I I&M Mo I IAM Mo I I&M Mo I IAM Mo	HW functional status	FS04
Product function    I&M data	Firmware version	V2.0.0
I lâM data I sochronous mode I sochronous mode Prioritized startup Measuring range scalable Scalable measured values Adjustment of measuring range Profigurable/integrated from version STEP 7 TIA Portal configurable/integrated from version 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 Ves  CIR - Configuration in RUN Reparameterization possible in RUN Peparameterization possible in RUN Pes  Supply voltage Rated value (DC) permissible range, lower limit (DC) Permissible range upper limit (DC) Permissi	FW update possible	Yes
Isochronous mode Prioritized startup Mo Measuring range scalable Scalable measured values Adjustment of measuring range Progrig 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 PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision MSI PROFIGURED VERSION STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision V5.5 SP3 /- PROFIBUS from 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  Supply voltage  Rated value (DC) Permissible range, lower limit (DC) Permissible range, lower limit (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Permissible range, upper limit (DC) Permissible range, lower limit (DC) Permissible range (lower limit (lower limit (lower limit (low	Product function	
Prioritized startup  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 FPROFIBUS from GSD version/GSD revision PROFIBUS from GSD version/GSD revision PROFIBUS from GSD version/GSD revision PROFIRET from GSD version/GSD revision No MSI PREPARAMENT OF THE MEASURE OF THE MEASUR	● I&M data	Yes; I&M0 to I&M3
Measuring range scalable     Scalable measured values     Adjustment of measuring range     Requirement of 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     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, lower limit (DC)     Permissible range, lower limit (DC)     Reverse polarity protection     Yes  Input current  Current consumption, max.     240 mA; with 24 V DC supply  Encoder supply  24 V encoder supply     Short-circuit protection     Yes     Ond, Max. 47 mA per channel for a duration < 10 s  Power  Power available from the backplane bus     O.7 W  Power loss	<ul> <li>Isochronous mode</li> </ul>	No
Scalable measured values Adjustment of measuring range  Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 Tonfigurable/integrated from version PROFIBUS from GSD version/GSD revision PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision PVS.3 /-  Operating mode PVS.3 /-  Operating mode PVS.3 /-  CR Configuration in RUN PVS.  Supply voltage Rated value (DC) Permissible range, lower limit (DC) Permissible range, lower limit (DC) ProfInsible range, lower limit (DC) PROFINET from GSD version/GSD revision PVS.  Reverse polarity protection PVS.  Input current Current consumption, max. PVS.  Current consumption, max. PVS.  Encoder supply PVS.  24 V encoder supply PVS.  Short-circuit protection PVS. PVS.  On Mix with 24 V DC supply PVS.  POWER POWER version of the backplane bus PVS.  On Mix with 24 V DC supply PVS.	<ul> <li>Prioritized startup</li> </ul>	No
Adjustment of measuring range     Engineering with	<ul> <li>Measuring range scalable</li> </ul>	No
Engineering with  STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision  Operating mode Oversampling MSI SI SI SI CIR - Configuration in RUN Reparameterization possible in RUN Pes 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, with protection Pres Current consumption, max. 240 mA; with 24 V DC supply  Encoder supply Short-circuit protection Pes Output current, max. Power Power variable from the backplane bus O.7 W Power loss	<ul> <li>Scalable measured values</li> </ul>	No
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 PROFINET from GSD version/GSD revision  No PROFINET from GSD version/GSD revision  No MSI Pess  CIR - Configuration in RUN Reparameterization possible in RUN Pess  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) Perses polarity protection Pess  Input current  Current consumption, max.  240 mA; with 24 V DC supply  Encoder supply A V encoder supply Short-circuit protection Pess Output current, max.  Power Power available from the backplane bus O.7 W  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 • PROFINET from GSD version/GSD revision • V2.3 / -  Operating mode • Oversampling • MSI • 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 Tyes  Input current Current consumption, max.  240 mA; with 24 V DC supply  Encoder 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  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, upper limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Yes  Input current  Current consumption, max.  240 mA; with 24 V DC supply  A V encoder supply  Short-circuit protection Yes  Output current, max.  Power  Power loss  O, 7 W  Power loss		V12 / V12
PROFINET from GSD version/GSD revision  Operating mode  Oversampling  MSI  MSI  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.  240 mA; with 24 V DC supply  Encoder supply  4 V encoder supply  Short-circuit protection  Yes  Output current, max.  Power  Power loss	<ul> <li>STEP 7 configurable/integrated from version</li> </ul>	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.  240 mA; with 24 V DC supply  Encoder supply  4 V encoder supply  Short-circuit protection  Yes  Output current, max.  Output current, max.  Output current, max.  Power  Power available from the backplane bus  O.7 W  Power loss	<ul> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	V1.0 / V5.1
● Oversampling ● MSI		V2.3 / -
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)  Reverse polarity protection  Yes  Input current  Current consumption, max.  240 mA; with 24 V DC supply  Encoder supply  4 V encoder supply  Short-circuit protection  Yes  Output current, max.  Power  Power available from the backplane bus  O.7 W  Power loss	· · ·	
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.  240 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	<ul> <li>Oversampling</li> </ul>	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.  240 mA; with 24 V DC supply  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 available from the backplane bus  0.7 W  Power loss		Yes
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.  240 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  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.  240 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	Reparameterization possible in RUN	Yes
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.  240 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	Calibration possible in RUN	Yes
permissible range, lower limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Input current  Current consumption, max.  240 mA; with 24 V DC supply  Encoder supply  4 V encoder supply  Short-circuit protection  Output current, max.  Power  Power available from the backplane bus  Power loss  19.2 V  28.8 V  240 mA; with 24 V DC supply  240 mA; with 24 V DC supply  9 condition of a duration of a	Supply voltage	
permissible range, upper limit (DC)  Reverse polarity protection  Yes  Input current  Current consumption, max.  240 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	Rated value (DC)	24 V
Reverse polarity protection  Input current  Current consumption, max.  240 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  O.7 W  Power loss	permissible range, lower limit (DC)	19.2 V
Input current  Current consumption, max.  240 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.  240 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	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.	240 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	<ul> <li>Output current, max.</li> </ul>	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. 2.7 W	Power loss	
	Power loss, typ.	2.7 W

Analog inputs	
Number of analog inputs	8
For current measurement	8
<ul> <li>For voltage measurement</li> </ul>	8
<ul> <li>For resistance/resistance thermometer</li> </ul>	4
measurement	
For thermocouple measurement	8
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
Input ranges (rated values), voltages	
• 0 to +5 V	No
• 0 to +10 V	No
• 1 V to 5 V	Yes
<ul><li>— Input resistance (1 V to 5 V)</li></ul>	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
- Input resistance (-2.5 v to +2.5 v)  • -25 mV to +25 mV	No
• -250 mV to +250 mV	Yes
	10 MΩ
— Input resistance (-250 mV to +250 mV)	
• -5 V to +5 V	Yes
— Input resistance (-5 V to +5 V)	100 kΩ
• -50 mV to +50 mV	Yes
<ul><li>— Input resistance (-50 mV to +50 mV)</li></ul>	10 ΜΩ
• -500 mV to +500 mV	Yes
<ul><li>— Input resistance (-500 mV to +500 mV)</li></ul>	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
<ul><li>— Input resistance (0 to 20 mA)</li></ul>	$25\ \Omega;$ Plus approx. 42 ohms for overvoltage protection by PTC
• -20 mA to +20 mA	Yes
<ul><li>— Input resistance (-20 mA to +20 mA)</li></ul>	25 $\Omega$ ; Plus approx. 42 ohms for overvoltage protection by PTC
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	25 $\Omega$ ; Plus approx. 42 ohms for overvoltage protection by PTC
Input ranges (rated values), thermocouples	
• 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
	Yes
Type R  Input resistance (Type R)	
— Input resistance (Type R)	10 ΜΩ
Type S  Input registance (Type S)	Yes
— Input resistance (Type S)	10 ΜΩ
Type T	Yes

	40.110
— Input resistance (Type T)	10 ΜΩ
Type TXK/TXK(L) to GOST      Type TXK/TXK(L) to GOST      Type TXK/TXK(L) to GOST	No
Input ranges (rated values), resistance thermometer	No
Cu 10 according to GOST	No No
<ul><li>Cu 10 according to GOST</li><li>Cu 50</li></ul>	No No
Cu 50     Cu 50 according to GOST	No
Cu 30 according to GOS1     Cu 100	No
Cu 100     Cu 100 according to GOST	No
Ni 10	No
Ni 10     Ni 10 according to GOST	No
• Ni 100	Yes; Standard/climate
— Input resistance (Ni 100)	10 M $\Omega$
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 according to GOST	No
• Ni 500	No
<ul> <li>Ni 500 according to GOST</li> </ul>	No
• Pt 10	No
<ul> <li>Pt 10 according to GOST</li> </ul>	No
• Pt 50	No
<ul> <li>Pt 50 according to GOST</li> </ul>	No
• Pt 100	Yes; Standard/climate
— Input resistance (Pt 100)	10 ΜΩ
<ul> <li>Pt 100 according to GOST</li> </ul>	No
• Pt 1000	Yes; Standard/climate
— Input resistance (Pt 1000)	10 ΜΩ
<ul> <li>Pt 1000 according to GOST</li> </ul>	No
• Pt 200	Yes; Standard/climate
— Input resistance (Pt 200)	10 ΜΩ
<ul> <li>Pt 200 according to GOST</li> </ul>	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     Input registance (PTC)	Yes
— Input resistance (PTC)	10 ΜΩ
Thermocouple (TC)	
Temperature compensation	Yes
<ul><li>— parameterizable</li><li>— internal temperature compensation</li></ul>	Yes
	Yes
<ul><li>— external temperature compensation via RTD</li><li>— Compensation for 0 °C reference point</li></ul>	
temperature	Yes; fixed value can be set
Reference channel of the module	Yes

Cable length	
shielded, max.	800 m; for U/I, 200 m for R/RTD, 50 m for TC
Analog value generation for the inputs	300 HI, 101 G/I, 200 HI 101 K/K/L/, 30 HI 101 TG
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	9 / 23 / 27 / 107 ms
(ms)	
<ul> <li>additional conversion time for wire-break monitoring</li> </ul>	9 ms (to be considered in R/RTD/TC measurement)
<ul> <li>additional conversion time for resistance measurement</li> </ul>	150 ohm, 300 ohm, 600 ohm, Pt100, Pt200, Ni100: 2 ms, 6000 ohm, Pt500, Pt1000, Ni1000, LG-Ni1000, PTC: 4 ms
<ul> <li>Interference voltage suppression for interference frequency f1 in Hz</li> </ul>	400 / 60 / 50 / 10 Hz
Time for offset calibration (per module)	Basic conversion time of the slowest channel
Smoothing of measured values	V
parameterizable	Yes
• Step: None	Yes
<ul><li>Step: low</li><li>Step: Medium</li></ul>	Yes
•	Yes Yes
Step: High     Encoder	1 65
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	Yes; Only for PTC
connection	, <b>y</b>
• for resistance measurement with three-wire	Yes; All measuring ranges except PTC; internal compensation of the
connection  • for resistance measurement with four-wire connection	cable resistances 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	0.02 %
range), (+/-)	
Temperature error of internal compensation	±6 °C
Operational error limit in overall temperature range	
<ul> <li>Voltage, relative to input range, (+/-)</li> </ul>	0.3 %
• Current, relative to input range, (+/-)	0.3 %
Resistance, relative to input range, (+/-)	0.3 %
Resistance thermometer, relative to input range, (+/- )  Thermosourile relative to input range, (+/-)  Thermosourile relative to input range, (+/-)	Ptxxx standard: ±1.5 K, Ptxxx climate: ±0.5 K, Nixxx standard: ±0.5 K, Nixxx climate: ±0.3 K
<ul> <li>Thermocouple, relative to input range, (+/-)</li> </ul>	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 %
<ul> <li>Current, relative to input range, (+/-)</li> </ul>	0.1 %
<ul> <li>Resistance, relative to input range, (+/-)</li> </ul>	0.1 %
<ul> <li>Resistance thermometer, relative to input range, (+/-)</li> </ul>	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, (+/-)	Type B: > 600 °C ±1.7 K, type E: > -200 °C ±0.7 K, type J: > -210 °C ±0.8 K, type K: > -200 °C ±1.2 K, type N: > -200 °C ±1.2 K, type R: > 0 °C ±1.9 K, type S: > 0 °C ±1.9 K, type T: > -200 °C ±0.8 K
Interference voltage suppression for f = n x (f1 +/- 1 %), f1 =	
Series mode interference (peak value of	40 dB
interference < rated value of input range), min.	
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	
<ul> <li>Monitoring the supply voltage</li> </ul>	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
<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green LED
<ul> <li>Channel status display</li> </ul>	Yes; green LED
<ul> <li>for channel diagnostics</li> </ul>	Yes; red LED
<ul> <li>for module diagnostics</li> </ul>	Yes; red LED
Potential separation	
Potential separation channels	
<ul> <li>between the channels</li> </ul>	No
<ul> <li>between the channels, in groups of</li> </ul>	8
<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>	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)
Standards, approvals, certificates	
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
Ambient conditions	
Ambient temperature during operation	
horizontal installation, min.	0 °C
horizontal installation, max.	60 °C
• vertical installation, min.	0 °C
<ul> <li>vertical installation, max.</li> </ul>	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	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	310 g
Other	
Note:	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; thermocouple: Type B, R, S: ±3 K, type E, J, K, N, T: ±1 K
last modified:	4/29/2021 🗗