



• -50 mV to +50 mV	Yes
— Input resistance (-50 mV to +50 mV)	1 M $\Omega$
• -500 mV to +500 mV	Yes
— Input resistance (-500 mV to +500 mV)	1 M $\Omega$
• -80 mV to +80 mV	Yes
— Input resistance (-80 mV to +80 mV)	1 M $\Omega$

#### Input ranges (rated values), currents

• 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	50 $\Omega$
• -10 mA to +10 mA	Yes
— Input resistance (-10 mA to +10 mA)	50 $\Omega$
• -20 mA to +20 mA	Yes
— Input resistance (-20 mA to +20 mA)	50 $\Omega$
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	50 $\Omega$
• -5 mA to +5 mA	Yes
— Input resistance (-5 mA to +5 mA)	50 $\Omega$

#### Input ranges (rated values), thermocouples

• Type B	Yes
— Input resistance (Type B)	1 M $\Omega$
• Type E	Yes
— Input resistance (Type E)	1 M $\Omega$
• Type J	Yes
— Input resistance (type J)	1 M $\Omega$
• Type K	Yes
— Input resistance (Type K)	1 M $\Omega$
• Type L	Yes
— Input resistance (Type L)	1 M $\Omega$
• Type N	Yes
— Input resistance (Type N)	1 M $\Omega$
• Type R	Yes
— Input resistance (Type R)	1 M $\Omega$
• Type S	Yes
— Input resistance (Type S)	1 M $\Omega$
• Type T	Yes
— Input resistance (Type T)	1 M $\Omega$
• Type U	Yes
— Input resistance (Type U)	1 M $\Omega$

#### Input ranges (rated values), resistance thermometer

• Ni 100	Yes
— Input resistance (Ni 100)	1 M $\Omega$
• Ni 1000	Yes
— Input resistance (Ni 1000)	1 M $\Omega$
• Pt 100	Yes
— Input resistance (Pt 100)	1 M $\Omega$
• Pt 1000	Yes
— Input resistance (Pt 1000)	1 M $\Omega$
• Pt 200	Yes
— Input resistance (Pt 200)	1 M $\Omega$
• Pt 500	Yes
— Input resistance (Pt 500)	1 M $\Omega$

#### Input ranges (rated values), resistors

• 0 to 48 ohms	Yes
— Input resistance (0 to 48 ohms)	1 M $\Omega$
• 0 to 150 ohms	Yes
— Input resistance (0 to 150 ohms)	1 M $\Omega$
• 0 to 300 ohms	Yes
— Input resistance (0 to 300 ohms)	1 M $\Omega$
• 0 to 600 ohms	Yes
— Input resistance (0 to 600 ohms)	1 M $\Omega$
• 0 to 6000 ohms	Yes; Usable up to 5000 Ohm

— Input resistance (0 to 6000 ohms)	1 MΩ
<b>Thermocouple (TC)</b>	
Temperature compensation	
— parameterizable	Yes
— external temperature compensation with Pt100	Yes
— external temperature compensation with compensations socket	Yes
— dynamic reference temperature value	Yes
Characteristic linearization	
● parameterizable	Yes
— for thermocouples	Type B, E, J, K, L, N, R, S, T, U
— for resistance thermometer	Pt100, Pt200, Pt500, Pt1000, Ni100, Ni1000
Cable length	
● shielded, max.	200 m; 50 m with thermocouples and input ranges ≤ 80 mV
<b>Analog value generation for the inputs</b>	
Integration and conversion time/resolution per channel	
● Resolution with overrange (bit including sign), max.	16 bit; 16 / 16 / 16
● Integration time, parameterizable	Yes
● Basic conversion time (ms)	6 / 20,1 / 23,5 ms
● Integration time (ms)	2,5 / 16,7 / 20 ms
● Interference voltage suppression for interference frequency f1 in Hz	400 / 60 / 50 Hz
<b>Encoder</b>	
Connection of signal encoders	
● for voltage measurement	Yes; possible
● for current measurement as 2-wire transducer	Yes
● for current measurement as 4-wire transducer	Yes
● for resistance measurement with two-wire connection	Yes; Line resistances are also measured
● for resistance measurement with three-wire connection	Yes
● for resistance measurement with four-wire connection	Yes
<b>Errors/accuracies</b>	
Temperature error (relative to input range), (+/-)	0.004 %/K
Operational error limit in overall temperature range	
● Voltage, relative to input range, (+/-)	0.3 %; ±0.3 % at ±250 mV, ±500 mV, ±1 V, ±2.5 V, ±5 V, 1 to 5 V, ±10 V; ±0.31 % at ±80 mV; ±0.32 % at ±50 mV; ±0.35 % at ±25 mV
● Current, relative to input range, (+/-)	0.3 %; at 0 to 20 mA, ±5 mA, ±10 mA, ±20 mA, 4 to 20 mA
● Resistance, relative to input range, (+/-)	0.3 %; ±0.3% at 0 to 48 Ohm (4-conductor measurement), 0 to 150 Ohm (4-conductor measurement), 0 to 300 Ohm (4-conductor measurement), 0 to 600 Ohm (4-conductor measurement), 0 to 5000 Ohm (4-conductor measurement, in range of 6000 Ohm); ±0.4% at 0 to 300 Ohm (3-conductor measurement), 0 to 600 Ohm (3-conductor measurement), 0 to 5000 Ohm (3-conductor measurement, in range of 6000 Ohm);
● Resistance thermometer, relative to input range, (+/-)	0.4 %
● Thermocouple, relative to input range, (+/-)	TC Type B (±11.5 K), TC Type R (±7.3 K), TC Type S (±8.3 K), TC Type T (±1.7 K), TC Type E (±3.2 K), TC Type J (±4.3 K), TC Type K (±6.2 K), TC Type U (±2.8 K), TC Type L (±4.2 K), TC Type N (±4.4 K)
Basic error limit (operational limit at 25 °C)	
● Voltage, relative to input range, (+/-)	0.15 %; ±0.15% at ±250 mV, ±500 mV, ±1 V, ±2.5 V, ±5 V, 1 V to 5 V, ±10 V; ±0.17% at ±80 mV; ±0.19% at ±50 mV; ±0.23% at ±25 mV
● Current, relative to input range, (+/-)	0.15 %; at 0 to 20 mA, ±5 mA, ±10 mA, ±20 mA, 4 to 20 mA
● Resistance, relative to input range, (+/-)	0.15 %; ±0.15 % at 0 to 48 ohms (4-conductor measurement), 0 to 150 ohms (4-conductor measurement), 0 to 300 ohms (4-conductor measurement), 0 to 5000 ohms (4-conductor measurement, in range of 6000 ohms); ±0.3 % at 0 to 300 ohms (3-conductor measurement), 0 to 600 ohms (3-conductor measurement), 0 to 5000 ohms (3-conductor measurement, in range of 6000 ohms)
● Resistance thermometer, relative to input range, (+/-)	0.3 %
● Thermocouple, relative to input range, (+/-)	TC Type B (±7.6 K), TC Type R (±4.8 K) TC Type S (±5.4 K), TC Type T (±1.1 K), TC Type E (±1.8 K), TC Type J (±2.3 K), TC Type K (±3.4 K), TC Type U (±1.7 K), TC Type L (±2.3 K), TC Type N (±2.6 K)
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes; Parameterizable
Alarms	
● Diagnostic alarm	Yes; Parameterizable
● Limit value alarm	Yes; Parameterizable
● Hardware interrupt	Yes; Parameterizable

<b>Diagnoses</b>	
• Diagnostic information readable	Yes
<b>Diagnostics indication LED</b>	
• internal fault INTF (red)	Yes
• external fault EXTf (red)	Yes
<b>Potential separation</b>	
<b>Potential separation analog inputs</b>	
• Potential separation analog inputs	Yes; internal/external
• between the channels	No
• between the channels and backplane bus	Yes
• Between the channels and load voltage L+	Yes
<b>Isolation</b>	
Isolation tested with	2 120 V DC between bus and L+/M; 2 120 V DC between bus and analog section; 500 V DC between bus and local ground; 500 V DC between analog section and L+/M; 2 120 V DC between analog section and local ground; 2 120 V DC between L+/M and local ground
<b>Dimensions</b>	
Width	25 mm
Height	290 mm
Depth	210 mm
<b>Weights</b>	
Weight, approx.	500 g

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