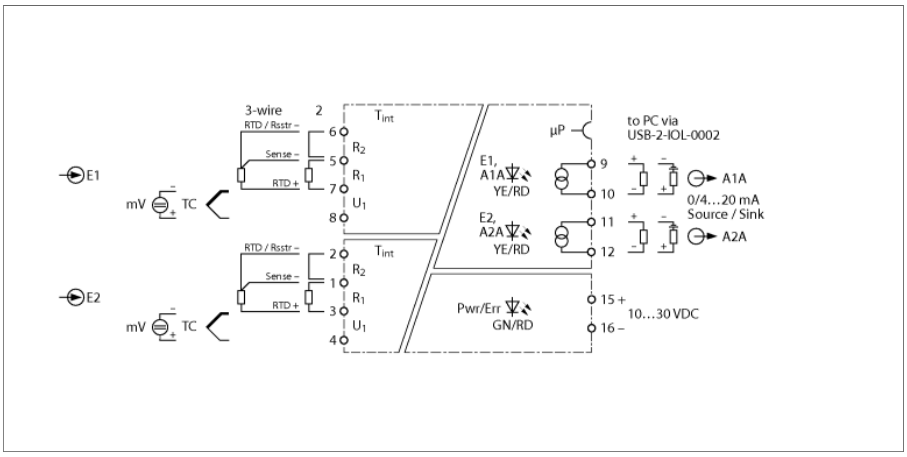
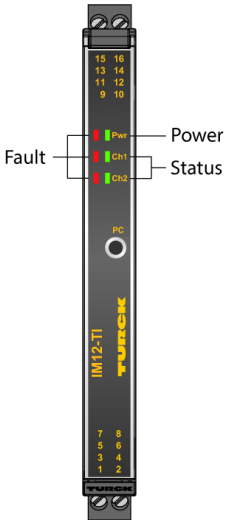
Temperature measuring amplifier 2-channel IM12-TI02-2TCURTDR-2I-C0/24VDC





The temperature transducer IM12-TI02-2TCURTDR-2I-C0/24VDC transmits temperature-dependent measured values galvanically isolated. The devices are suitable for operation in zone 2.

The 2-channel device has two inputs for thermocouples acc. to IEC 60584, DIN 43710, GOST R 8.585-2001, low voltages (-150… +150 mV), RTDs acc. to IEC 60751, DIN 43760, GOST 6651-94 (2-, 3-wire) and resistors 0…5 kΩ (2-, 3-wire). Two 0/4 … 20 mA current outputs are available on the output side.

The device is parameterized via FDT and IODD with a PC. The cold junction compensation can be set to internal, external, or to a constant value. The current outputs can be set to source or sink 0/4…20 mA. The inputs can be freely assigned to the outputs. In accordance with the parameterization (E1, E2, E1 - E2 or E2 - E1), the input signals are provided as a 0/4…20 mA standard current signal.

The devices have a green power LED (Pwr) and a red LED to indicate internal faults. For each input circuit there is a yellow and a red status LED. A fault in the input circuit leads to a flashing red LED according to NE44, an internal error to a steady red LED. The fault current can be adjusted to < 3.5 mA or > 21.5 mA.

The device can be used in safety circuits up to SIL2 (high and low demand according to IEC 61508) and meets the requirements of the NE21. It is equipped with removable screw terminals.

The device is equipped with removable screw terminals.

- Input circuits monitored for wire-break and short-circuit
- Parameterized via PC
- Complete galvanic isolation
- Removable screw terminals
- ATEX use in Zone 2, cUL
- SIL 2

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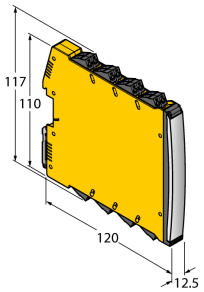
Dimensions



ID	7580532
Nominal voltage	24 VDC
Operating voltage U_B	10…30 VDC
Power consumption	≤ 2.7 W
Power dissipation, typical	≤ 1.6 W
Input circuits	RTD Type DIN EN 60751 Pt50, Pt100, Pt 500, Pt1000 RTD Type DIN EN 43760 Ni50, Ni100, Ni500, Ni1000 RTD Type Gost 6651-94 Pt50, Pt100, Pt 500, Pt1000, CU50, Cu53, Cu100, CU500, CuZn100 TC Type DIN EN 60584 Type A, Type B, Type C, Type E, Type J, Type K, Type N, Type R, Type S, Type T TC Type DIN 43710 Type L TC Type Gost 8.585-2001Type A1, Type A2, Type A3, Type L, Type M Low voltage input -150…150 mV Resistance input 0…5000 ohms
Reference temperature	23 °C
Output circuits	
Output current	2 × source/sink (15…28 V) 0/4…20 mA
Load resistance current output	≤ 0.8 kΩ
Response characteristic	
Reference temperature	23 °C
Measuring accuracy current output (including linearity, hysteresis and repeatability)	± 10 µA
Temperature drift analog output	0.0025 %/K
Accuracy, RTD input, 0…500 ohm	± 50 mΩ
Temperature drift, RTD input, 0…500 ohm	± 5 mΩ/K
Accuracy, RTD input, 500…5000 ohm	± 500 mΩ
Temperature drift, RTD input, 500…5000 ohm	± 30 mΩ/K
Measuring accuracy TC input (including linearity, hysteresis and repeatability)	± 15 µV
Temperature drift, TC input	± 3.2 µV/K
Cold junction compensation error	with cold junction compensation < 2 K
Note	With a 3-wire connection, the errors double
Galvanic isolation	
Test voltage	2.5 kV RMS
E1,E2-A1A,A2A	375 V peak value acc. to EN 60079-11
E1,E2 supply voltage	375 V peak value acc. to EN 60079-11
A1A supply voltage	300 V RMS acc. to EN 50178 and EN 61010-1
A2A supply voltage	300 V RMS acc. to EN 50178 and EN 61010-1
Important note	The values provided below indicate the relevant markings associated with the product's Ex certificates.
Important note	If the device is used in applications to achieve functional safety according to IEC 61508, the safety manual must be used. Information in the data sheet are not valid for functional safety.
Use in SIL safety circuits	SIL 2 acc. to IEC 61508

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Displays/Operating elements	
Operational readiness	Green
Switching state	Yellow
Error indication	red

Mechanical data	
Protection class	IP20
Flammability class acc. to UL 94	V-0
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80 °C
Dimensions	120 x 12.5 x 117 mm
Weight	163 g
Mounting instructions	DIN rail (NS35)
Housing material	Plastic, Polycarbonate/ABS
Electrical connection	Removable screw terminals, 2-pin
Terminal cross-section	0.2…2.5 mm² (AWG: 24…14)
Tightening torque	0.5 Nm
Tightening torque	4.43 LBS-Inch
Environmental conditions	

Operating height	Up to 2000 m above sea level
Pollution degree	II
Surge/Overvoltage category	II (EN 61010-1)
Standards used	
Voltage resistance and insulation	
	EN 50178
	EN 61010-1
	EN 50155
	GL VI-7-2
Shock	
	EN 61373 class B
	EN 50155
	GL VI-7-2
	EN 60068-2-6
	EN 60068-2-27
Temperature	
	EN 60068-2-1 Ad
	EN 50155
	GL VI-7-2
	EN 60068-2-2 Bd
	EN 60068-2-1
Air humidity	
	EN 60068-2-38
EMC	
	EN 50155
	GL VI-7-2
	NE21
	EN 61326-1
	EN 61326-3-1
	EN 61000-4-2
	EN 61000-4-3
	EN 61000-4-4
	EN 61000-4-5
	EN 61000-4-6
	EN 61000-4-11
	EN 61000-4-29
	EN 55011
	EN 55016
	EN 50121-3-2
	EN 61000-6-2

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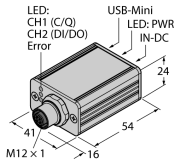
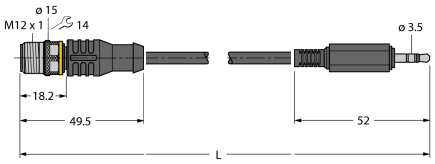
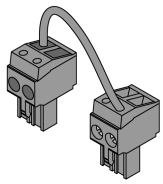
Accessories

Type code	Ident-No.		Dimension drawing
USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port	
IOL-COM/3M	7525110	IO-Link communication line for connecting IO-Link devices to an IO-link master via a 3.5-mm jack plug	
IMX12-SC-2X-4BK	7580940	Screw terminals for IM(X)12 modules; included in delivery: 4 pcs. of 2-pin black terminals	
IMX12-CC-2X-4BK	7580942	Spring terminals for IM(X)12 modules; included in delivery: 4 pcs. black terminals, 2-pin	
IMX12-2-CJT	100003646		

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