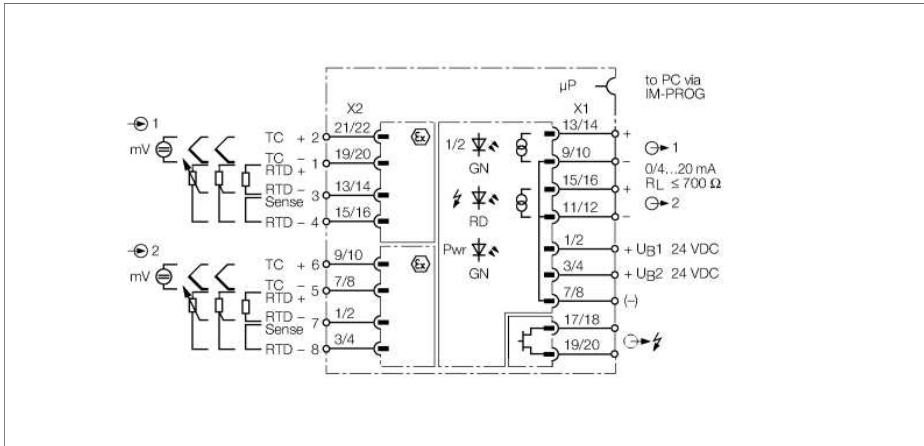


Temperature measuring amplifier 2-channel IMB-TI-TC-231Ex-HCi/24VDC



The 2-channel temperature measuring amplifier IMB-TI-TC-231Ex-HCi/24VDC is designed to evaluate the temperature-dependent changes of thermocouples acc. to IEC 60584, DIN 43710, GOST R 8.585-2001, of RTDs acc. to IEC 60751, DIN 43760, GOST 6651-94, low voltages in the range of -160...+160 mV as well as RTDs and potentiometers in 2 and 3-wire technology and to output them as temperature-linear current signals 0/4...20 mA.

The device can be parametrized and configured via PC (FDT/DTM). For this, connect the device to the PC via the 3.5 mm jack plug at the front (the matching transmission cable IM-PROG III can be ordered separately from TURCK). In addition, a basic scope of parameters can be set remotely via the current interface and HART®.

The following settings can be adjusted via DTM:

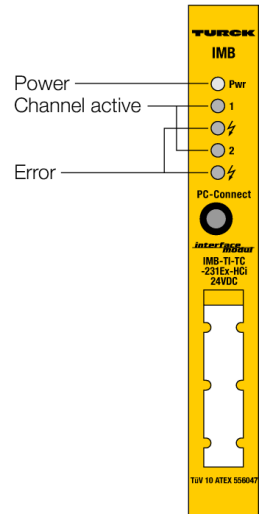
- Connection mode (2 or 3-wire technology)
- Measuring range
- Current output behaviour in the event of input circuit errors: 0 resp. > 22 mA
- Output current (0/4...20 mA)
- Temperature (°C or °K)
- Mode (resistor, thermocouples, low voltage, line compensation)

The module complies with the EMC requirements acc. to EN61326 and the NAMUR recommendation NE21.

The user can switch off a channel. In this case, the current output is set to 1 mA in order to maintain the communicability via the HART® current loop.

The module features wire-break monitoring and short-circuit monitoring of the resistance input. Short-circuit monitoring of the mV input is not available.

The module features an active alarm. The alarm message is cleared as soon as all slots are occupied and no line error is detected.



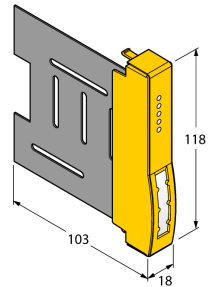
- Input thermocouples, low voltage, RTDs, potentiometers, resistors
- Intrinsically safe input circuits Ex ia-Ga IIB/IIC, Ex ia Da IIIC
- Application area acc. to ATEX: II (1) G, II (1) D
- SIL2
- Resistance transducer
- Complete galvanic separation

Temperature measuring amplifier

2-channel

IMB-TI-TC-231Ex-HCi/24VDC

Dimensions



Type code	IMB-TI-TC-231Ex-HCi/24VDC																					
Ident no.	7570009																					
Nominal voltage	24 VDC																					
Operating voltage range	20...30 VDC																					
Power consumption	≤ 2.7 W																					
Power loss, typical	≤ 2.5 W																					
Input circuits	intrinsically safe acc. to EN 60079																					
RTD	PT100 (IEC 751), NI100 (DIN 43760), 2- und 3-Leiter-Technik, nach Gost: PT100, Cu50, Cu53, Cu100, CuZn100,																					
Probe current	≤ 0.2 mA																					
Thermoelements	B, E, J, K, N, R, S, T (ITS 90/IEC 584), L (DIN 43710), acc. to Gost: L, M, A1, A2, A3																					
Potentiometer input																						
Nominal resistance	0...1 kΩ																					
Voltage input	-0.160...+0.160 VDC																					
Output circuits																						
Output current	0/4...20 mA																					
Load resistance current output	≤ 0.6 kΩ																					
Minimum load	≥ 0 Ω																					
Fault current	0 / 22 mA adjustable																					
Rise time (10-90%)	≤ 1000 ms																					
Dropout time (90...10%)	≤ 1000 ms																					
Reference temperature	23 °C																					
Accuracy current output	± 5 µA																					
Temperature drift analogue output	0.0025 %/K																					
Temperature drift RTD input	± 3 mΩ/K																					
Temperature drift TC input	3.2 µV / K (of 320mV)																					
Accuracy RTD input	± 50 mΩ																					
Accuracy TC input	± 15 µV																					
Cold junction compensation error	2-wire < 100mΩ after line compensation 3-wire < 100mΩ with asymmetrical wiring with cold junction compensation																					
Galvanic separation																						
Test voltage	2.5 kV																					
Ex approval acc. to conformity certificate	TÜV 10 ATEX 556047																					
Application area	II (1) G, II (1) D																					
Protection type	[Ex ia Ga] IIB/IIC ; [Ex ia Da] IIIC																					
Max.output voltage U _o	≤ 5 V																					
Max. output current I _o	≤ 5 mA																					
Max. output power P _o	≤ 6.2 mW																					
Rated voltage	250 V																					
Characteristic	linear																					
Internal inductance/capacitance L/C _i	Li = 73 µH, Ci negligibly small																					
External inductance/capacitance L _e /C _e	<table><tr><td>Ex ia</td><td colspan="3">IIB</td><td colspan="3">IIC</td></tr><tr><td>Lo[mH]</td><td>100</td><td>10</td><td>1</td><td>100</td><td>10</td><td>1</td></tr><tr><td>Co[µF]</td><td>10</td><td>13</td><td>21</td><td>1.8</td><td>2.4</td><td>3.4</td></tr></table>	Ex ia	IIB			IIC			Lo[mH]	100	10	1	100	10	1	Co[µF]	10	13	21	1.8	2.4	3.4
Ex ia	IIB			IIC																		
Lo[mH]	100	10	1	100	10	1																
Co[µF]	10	13	21	1.8	2.4	3.4																
Approval	SIL 2																					
MTTF	60 years acc. to SN 29500 (Ed. 99) 40 °C																					
Indication																						
Operational readiness	green																					
Error indication	red																					

**Temperature measuring amplifier
2-channel
IMB-TI-TC-231Ex-HCi/24VDC**

Protection class	IP20
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Dimensions	118x 18x 103 mm
Weight	151 g
Mounting instruction	Mounting and operation only in conjunction with the IMB backplane
Housing material	Polycarbonate/ABS

**Temperature measuring amplifier
2-channel
IMB-TI-TC-231Ex-HCi/24VDC**

Accessories

Type code	Ident no.	Description	Dimension drawing
IM-PROG III	7525111	The programming adapter IM-PROG III is used for parametrization of TURCK IM and IMB devices via FDT/DTM and for galvanic separation.	