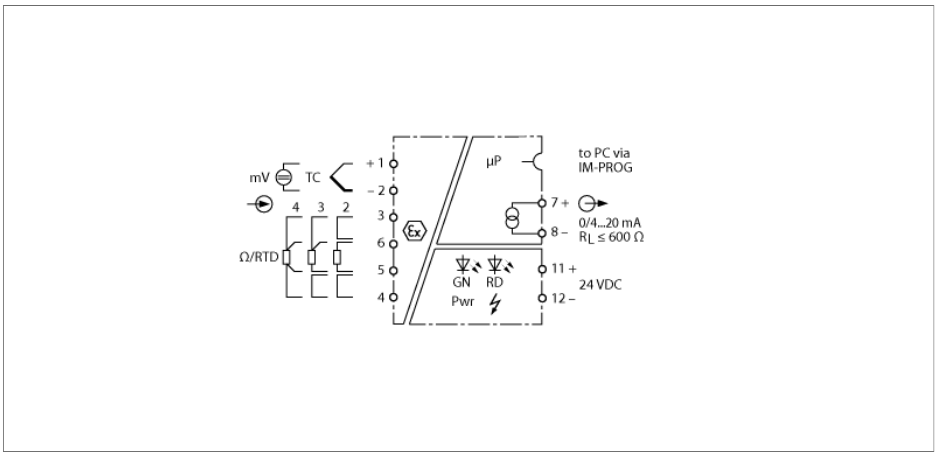
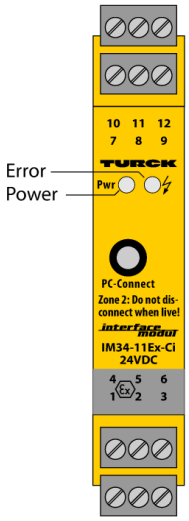
interface modul

Temperature measuring amplifier
1-channel
IM34-11Ex-Ci/24VDC

TURCK
Industrial Automation





The temperature measuring amplifier M34-11Ex-Ci/24VDC is designed to evaluate the temperature-dependent variations of resistance thermo detectors (RTD) Ni100/Pt100, thermoelement types B, E, J, K, L, N, R, S and T or low voltages in a range of -160… +160 mV and to output them as linear temperature current signals.

Resistance thermo detectors Ni100/Pt100 in 2, 3 or 4-wire-technology can be operated alternatively at the input circuit of the measuring amplifier. The Ni100/Pt100 input can either be used as external cold junction compensation for the thermoelement or as independent measuring input.

PC parametrization and configuration via the software tool „Device Type Manager“ (DTM). For this purpose, the temperature measuring amplifier is connected to the PC with a 3.5 mm front panel jack. The ready-made transmission cable can be ordered from TURCK under the type name IM-PROG III (ident no. 7525111).

The following settings can be adjusted via DTM:

- Connection mode (2, 3 and 4-wire technology)
- Lower limit
- Upper limit
- Input circuit monitoring for wire-break
- Current output adjustable in the event of input circuit errors: 0 resp. > 22 mA
- Internal, external or constant cold junction compensation
- Output current (0/4…20 mA)
- Temperature unit (°C or °K)
- Mode (resistance, thermoelement, low voltage, line compensation)

The signals are transformed according to ITS 90/IEC 584 for thermoelements and IEC 751 for Pt100 RTDs and provided as temperature linear signals at the current output.

- **Intrinsically safe input circuits Ex ia**
- **Application area acc. to ATEX: II (1) G; II (1) D**
- **Installation in zone 2**
- **Input for Pt100/ Ni100 resistors, thermocouples and millivolt signals in 2, 3 or 4-wire technology**
- **Parametrization via PACT*ware*™**
- **Output: 0/4…20 mA**
- **HART®**
- **Removable terminal blocks**
- **Complete galvanic separation**

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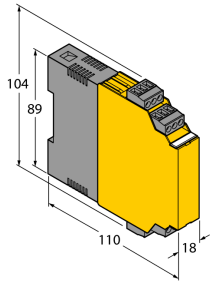
Dimensions



Type code	IM34-11Ex-Ci/24VDC
Ident no.	7506637
Nominal voltage	24 VDC
Operating voltage range	20…30 VDC
Power consumption	≤ 1.5 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,
Ni100	(DIN 43760), 2, 3 and 4-wire technology
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
Voltage input	-0.160…+0.160 VDC
Output circuits	
Output current	0/4...20 mA
Load resistance current output	≤ 0.6 kΩ
Fault current	0 / 22 mA adjustable
Reference temperature	23 °C
Accuracy current output	± 20 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 4-wire < 50mΩ with cold junction compensation with IM-3-CJT < 1K
Galvanic separation	
Test voltage	2.5 kV
Ex approval acc. to conformity certificate	TÜV 02 ATEX 1898
Application area	II (1) G, II (1) D
Protection type	[Ex ia Ga] IIC ; [Ex ia Da] IIIC ;
Max.output voltage U_o	≤ 5 V
Max. output current I_o	≤ 2.5 mA
Max. output power P_o	≤ 3 mW
Rated voltage	250 V
Characteristic	linear
Internal inductance/capacitance L_i/C_i	negligibly small
External inductance/capacitance L_o/C_o	

Ex ia	IIC	IIB
Lo [mH]	100	100
Co [µF]	2	9,1

Ex approval acc. to conformity certificate	TÜV 06 ATEX 552978 X
Application area	II 3 G
Protection class for belonging equipment	Ex nA [ic Gc] IIC T4
Max.output voltage U_o	≤ 5 V
Max. output current I_o	≤ 2.5 mA
Max. output power P_o	≤ 3 mW
Rated voltage	250 V
Internal inductance/capacitance L_i/C_i	negligibly small
External inductance/capacitance L_o/C_o	

Ex ic	IIC	IIB
Lo [mH]	100	100
Co [µF]	3.6	18

MTTF	200 years acc. to SN 29500 (Ed. 99) 40 °C

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Temperature measuring amplifier
1-channel
IM34-11Ex-Ci/24VDC

Indication	
Operational readiness	green
Error indication	red

Protection class	IP20
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80°C
Dimensions	104x 18x 110 mm
Weight	137 g
Mounting instruction	For mounting on DIN rail or mounting panel
Housing material	Polycarbonate/ABS
Electrical connection	4 x 3-pole removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm^2 / 2 x 1.5 mm^2
Tightening torque	0.5 Nm

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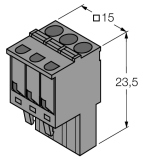
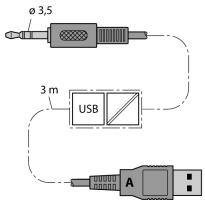
Accessories

Type code	Ident no.	Description	Dimension drawing
IM-CC-3X2BU/2BK	6900475	Cage clamp terminals for IM modules (Ex devices; width 18 mm): 2 blue/2 black, 3-pin, included in delivery.	
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.	

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