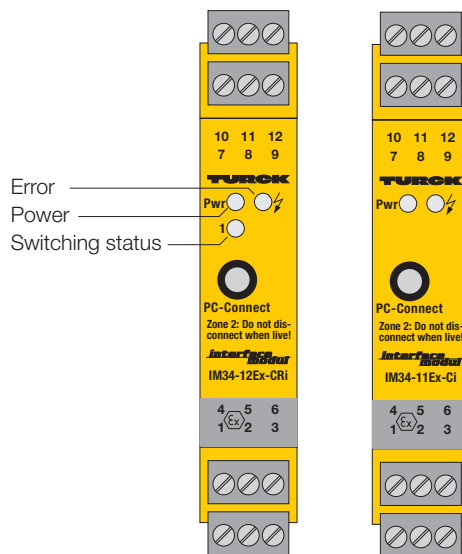


# Temperature Measuring Amplifier

## IM34-11Ex-Ci

## IM34-12Ex-CRi\*)

### 1-channel



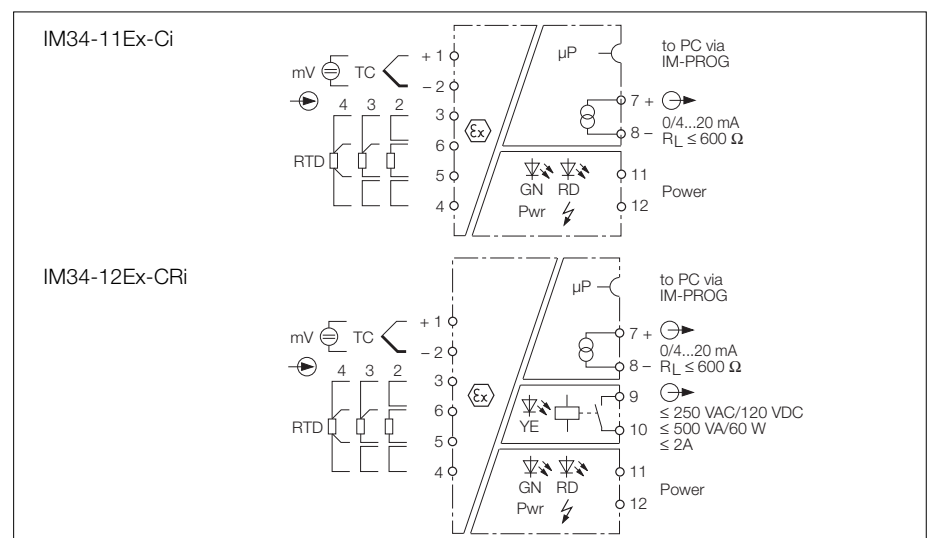
- **1-channel temperature measuring amplifier with removable terminal blocks**
- **Intrinsically safe input circuit EEx ia with wire-break monitoring function**
- **Area of application according to ATEX: II (1) GD, II 3 G**
- **Approved for installation in zone 2, however the device must be installed in a housing which complies with the requirements of EN 60079-15 with a minimum protection degree of IP54**
- **Input for Ni100/Pt100 resistance temperature detectors, thermoelements and millivolt signals**
- **Parameterisation and configuration with the software tool "Device Type Manager" (DTM) via PC**
- **Current output 0/4...20 mA, limit value relay (IM34-12Ex-CRi only)**
- **Complete galvanic isolation**
- **Adjust. analogue output performance in case of errors in the input circuit**
- **Universal supply voltage (20...250 VAC/20...125 VDC)**
- **\*) Device also available with cage-clamps, Type designation: IM34-12Ex-CRi-CC, Ident-no.: 7506640**

The single channel temperature measuring amplifier IM34-1.Ex-... is designed to evaluate the temperature-dependent variations of Ni100/Pt100 resistance temperature detectors, thermoelement types B, E, J, K, L, N, R, S and T or low voltages in a range of -160...+160 mV and to reproduce these values as temperature-linear current signals of 0/4...20 mA. The type IM34-12Ex-CRi is equipped with an additional relay output to monitor a limit value for under- and overrange conditions. The input circuit of the measuring amplifiers is also suited for connection of 2-, 3- or 4-wire Ni100/Pt100 resistors. The Ni100/Pt100 input may be used for external cold junction compensation for the thermoelements or as an independent measuring input. The software tool "Device Type Manager - DTM" is needed to configure and parameterise the devices via PC. For this, the temperature measuring amplifier is connected to the PC via the 3.5 mm front panel jack. The premou-

ded transmission cable can be ordered with TURCK under the type name IM-PROG (ident.-no. 6890422). The following settings can be made via the DTM:

- connection mode (2, 3 or 4-wire)
- lower measuring range value
- upper measuring range value
- limit value (IM34-12Ex-CRi only)
- input circuit monitoring for wire-break
- current output performance in case of errors in the inputcircuit: 0 or > 22 mA
- internal or external cold junction compensation
- output current (0/4...20 mA)
- unit of temperature (°C or °K)
- mode (RTD, thermoelement, low voltage, line compensation)

The signals are transformed according to ITS90 IEC 584 for thermoelements and IEC 751 for PT100 RTDs and provided as temperature-linear signals at the current output.



## Temperature Measuring Amplifier IM34-11Ex-Ci/IM34-12Ex-CRi

<b>Type</b>	IM34-11Ex-Ci	IM34-12Ex-CRi
Ident.-no.	7506633	7506632
<b>Supply voltage</b> $U_B$	20...250 VAC/20...125 VDC	
Line frequency (AC)	40...70 Hz	
Power consumption	≤ 3 W	
Galvanic isolation	between input and output circuit and supply voltage for 250 V <sub>rms</sub> , test voltage 2.5 kV <sub>rms</sub>	
<b>Input circuit</b>	intrinsically safe according to EN 50020 version Ni100 and Pt100 (IEC 751), 2, 3 and 4-wire technology measuring range -200...800 °C (Pt100), -60...250 °C (Ni100) thermoelements B, E, J, K, N, R, S, T (ITS 90/IEC 584), L (DIN 43710) extra-low voltages with a measuring span of -160 mV...+160 mV Resistor current Pt100/Ni100 approx. 200 µA	
<b>Output circuits</b>	0/4...20 mA (load ≤ 600 Ω)	0/4...20 mA (load ≤ 600 Ω)
current output		
Relay output	–	1 normally open contact
– Switching voltage	–	≤ 250 VAC/120 VDC
– Switching current	–	≤ 2 A
– Switching capacity	–	≤ 500 VA/60 W
– Switching frequency	–	≤ 10 Hz
– Switching hysteresis	–	programmable
– Contact materials:	–	Ag alloy + 3 µm Au
<b>Ex-approvals acc. to certificate of conformity</b>	TÜV 02 ATEX 1898 / TÜV 06 ATEX 552978 X	TÜV 02 ATEX 1898 / TÜV 06 ATEX 552978 X
Input circuit		
– Max. values		
No-load voltage $U_0$	5 V	5 V
Short-circuit current $I_0$	2 mA	2 mA
Power $P_0$	2.6 mW	2.6 mW
Internal inductances/capacitances $L_i/C_i$	0.2 mH/–	0.2 mH/–
Max. external inductances/capacitances $L_o/C_o$		
– [EEx ia] IIC	1000 mH/100 µF	1000 mH/100 µF
– [EEx ia] IIB	1000 mH/1000 µF	1000 mH/1000 µF
– Ex nL IIC	100 mH/3,6 µF	100 mH/3,6 µF
– Ex nL IIB	100 mH/18 µF	100 mH/18 µF
Marking of the Device	⊕ II (1) GD [EEx ia] IIC II 3 G Ex nA nC [nL] IIC/IIB T4	⊕ II (1) GD [EEx ia] IIC II 3 G Ex nA nC [nL] IIC/IIB T4
<b>Transfer characteristics</b>	see page 3 – 61	
Accuracy	see page 3 – 61	
Total error	see from page 3 – 62 on	
Rise time (10 %...90 %)	< 1 s	
Release time (90 %...10 %)	< 1 s	
Response time	< 1 s	
<b>LED indications</b>		
– Power	green	green
– Error	red	red
– Switching status	–	yellow
<b>Housing</b>	12 poles, 18 mm wide, Polycarbonatet/ABS, flammability class V-0 per UL94	
Mounting	snap-on hat rail (DIN 50022) or panel screw mounting	
Connection	removable terminal blocks, polarity protected screw connection, self-lifting	
Connection profile	≤ 1 x 2.5 mm <sup>2</sup> , 2 x 1.5 mm <sup>2</sup> or 2 x 1.0 mm <sup>2</sup> with wire sleeves	
Degree of protection (IEC 60529/EN 60529)	IP20	
Operating temperature	-25...+70 °C	

