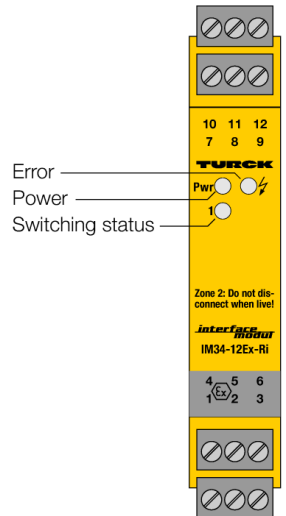
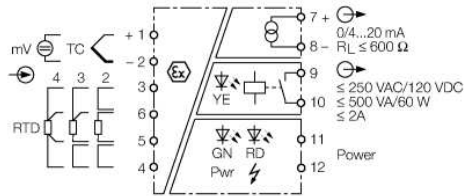


Ex-Temperature measuring amplifier
1-channel
IM34-12EX-RI



The 1-channel Ex-temperature measuring amplifier IM34-12EX-RI 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 -100... +160 mV and to output them as linear temperature current signals 0/4...20 mA.

Alternatively, Ni100/Pt100 in 2, 3 or 4-wire-technology can be operated at the measuring amplifier's input circuit. The Ni100/Pt100 input can either be used as external cold junction compensation for the thermocouple or as independent measuring input.

The device has an additional relay output to monitor over or underrange of a limit value.

The measuring range and the device functions are set via rotary coding switches or slide switches (located on the right side of the device). Version IM34-12EX-RI additionally enables the adjustment of a limit value via the rotary coding switch.

The following settings are available:

- Type of probe
- Connection of the Ni100/Pt100 resistor in 2, 3 or 4-wire technology
- Measuring range, lower limit -100... -1 °C in 1-K steps, upper limit 0...990 °C in 10-K steps
- Limit value
- Measuring rang upper limit 0...1990 °C in 10-K steps
- Input circuit monitoring for wire-break
- Current output adjustable in the event of input circuit errors: 0 resp. > 22 mA
- Internal or external cold junction compensation
- Relay output mode

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.

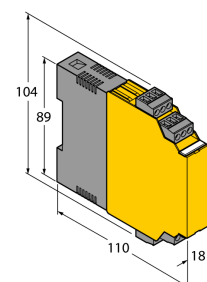
- Intrinsically safe input circuits Ex ia
- Application area acc. to ATEX: II (1) G; II (1) D
- Installation in zone 2
- Input for Pt100/ Ni100 resistors, thermocouples and millivolt signals in 2, 3 or 4-wire technology
- Output circuit: 0/4...20 mA, limit value relay
- Upper and lower limit adjustable via rotary coding switch
- Removable terminal blocks
- Complete galvanic separation

Ex-Temperature measuring amplifier

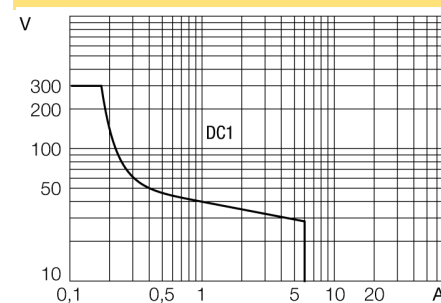
1-channel

IM34-12EX-RI

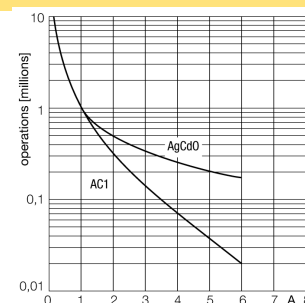
Dimensions



Load curve



Output relay electrical lifetime



Type code	IM34-12EX-RI
Ident no.	7506631
Operating voltage	20...250 VAC
Frequency	40...70 Hz
Operating voltage range	20...125 VDC
Power consumption	≤ 3 W
Input circuits	thermocouple
Pt100	(IEC 751), 2, 3 and 4-wire technology
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)
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
Output circuits (digital)	1 x relays (NO)
Relay switching voltage	≤ 250 VAC/120 VDC
Switching current per output	≤ 2 A
Switching capacity per output	≤ 500 VA/60 W
Switching frequency	≤ 10 Hz
Contact quality	AgNi, 3μ Au
Output	adjustable output mode
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 4-wire < 50mΩ with cold junction compensation with IM-3-CJT < 1K
Galvanic separation	
Test voltage	2.5 kV

Ex-Temperature measuring amplifier

1-channel

IM34-12EX-RI

Ex approval acc. to conformity certificate

Application area
 Protection type
 Max.output voltage U_o
 Max. output current I_o
 Max. output power P_o
 Characteristic
 Internal inductance/capacitance L/C_i
 External inductance/capacitance L_o/C_o

TÜV 02 ATEX 1898

II (1) G, II (1) D
 [Ex ia Ga] IIC ; [Ex ia Da] IIIC ;
 $\leq 5 \text{ V}$
 $\leq 2.5 \text{ mA}$
 $\leq 3 \text{ mW}$
 linear
 negligibly small

	EEx ia IIC	EEx ia IIB
Lo [mH]	1000	1000
Co [μ F]	100	1000

Ex approval acc. to conformity certificate

Application area
 Protection class for belonging equipment
 Max.output voltage U_o
 Max. output current I_o
 Max. output power P_o
 Internal inductance/capacitance L/C_i
 External inductance/capacitance L_o/C_o

TÜV 06 ATEX 552978 X

II 3 G
 Ex nA nC [ic Gc] IIC T4
 $\leq 5 \text{ V}$
 $\leq 2.5 \text{ mA}$
 $\leq 3 \text{ mW}$
 negligibly small

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

Ex approval acc. to conformity certificate

IS-1.106

MTTF

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

Indication

Switching state
 yellow

Protection class

Ambient temperature
 Storage temperature
 Dimensions
 Weight
 Mounting instruction
 Housing material
 Electrical connection
 Terminal cross-section
 Tightening torque

IP20
 $-25...+70 \text{ }^{\circ}\text{C}$
 $-40...+80^{\circ}\text{C}$
 104x 18x 110 mm
 156 g
 For mounting on DIN rail or mounting panel
 Polycarbonate/ABS
 4 x 3-pole removable terminal blocks, reverse polarity protected, screw connection
 $1 \times 2.5 \text{ mm}^2 / 2 \times 1.5 \text{ mm}^2$
 0.5 Nm

Ex-Temperature measuring amplifier
1-channel
IM34-12EX-RI

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.	