

The 1-channel 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.

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

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.

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

The following settings can be made:

- Type of probe
- Connection of Ni100/Pt100 resistance temperature detector in 2, 3 or 4-wire technology
- Lower measuring range -100...- 1°C in increments of 1 K, 0...990 °C in increments of 10 K
- Limit value
- Upper measuring range 0...1990 °C in increments of 10 K
- Input circuit monitoring for wire-break
- Current output performance in case of errors in the input circuit: 0 or > 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.

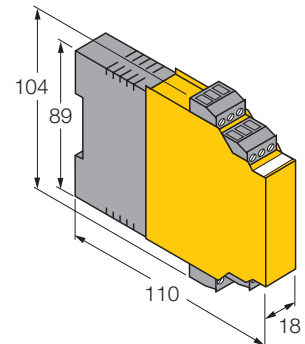
- **Intrinsically safe input circuits EEx ia**
- **Application area according to ATEX : II (1) GD**
- **Input for Pt100/ Ni100 resistors, thermoelements and millivolt signals in 2-, 3- or 4-wire technology**
- **Upper and lower measuring range limits adjustable via coded rotary switch**
- **Outputs: 0/4...20 mA, limit value relay**
- **Selectable line monitoring for wire-break/short-circuit (ON/OFF mode)**
- **Removable terminal blocks**
- **Universal operating voltage (20...250VAC/ 20...125VDC)**
- **Galvanic isolation of input circuits to output circuits and supply voltage**

# temperature measuring amplifier

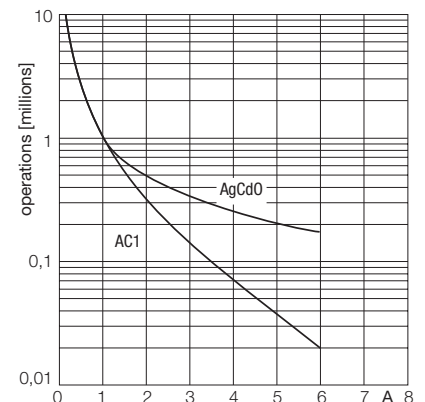
## IM34-12EX-RI

<b>Type</b>	IM34-12EX-RI	
Ident-No.	7506631	
<b>Operational voltage range:</b>	20 ... 250 VAC	
Frequency	≥ 40 ... ≤ 70 Hz	
Operational voltage range:	20 ... 125 VDC	
<b>Input circuits</b>	Thermoelement Pt100	
Pt100	(IEC 751), 2, 3 and 4-wire technology	
Ni100	(IEC 751), 2, 3 and 4-wire technology	
Thermoelements	B, E, J, K, N, R, S, T (ITS 90/IEC 584), L (DIN 43710)	
Probe current	≤ 0,2 mA	
Voltage	-0,160...+0,160 VDC	
<b>Output current</b>	0/4...20 mA	
Output circuits (digital)	1 x relay (NO)	
Relay switching voltage	≤ 250 VAC/120 VDC	
Switching current per output	≤ 2 A	
Switching capacity per output	≤ 500 VA/60 W	
Switching frequency	≤ 1 Hz	
Contact quality	AgNi, 3μ Au	
Output	adjustable output mode	
<b>Ex approval acc. to conformity certificate</b>		
Ex approval acc. to conformity certificate	TÜV 02 ATEX 1898	
Application area	II (1) GD	
Protection type	[EEx ia] IIC	
Max.output voltage $U_o$	≤ 5 V	
Max. output current $I_o$	≤ 2 mA	
Max. output power $P_o$	≤ 2.6 mW	
Characteristic	Linear	
External inductance/capacitance $L_i/C_i$		
External inductance/capacitance $L_o/C_o$		
	EEx ia IIC	EEx ia IIB
$L_o$ [mH]	1000	1000
$C_o$ [μF]	100	1000
Ex approval acc. to conformity certificate	TÜV 06 ATEX 552978 X	
Application area	II 3 G	
Max.output voltage $U_o$	≤ 5 V	
Max. output current $I_o$	≤ 2 mA	
Max. output power $P_o$	≤ 2.6	
External inductance/capacitance $L_o/C_o$		
	EEx ia IIC	EEx ia IIB
$L_o$ [mH]	1000	1000
$C_o$ [μF]	100	1000
Ex approval acc. to conformity certificate	IS-1.106	
Ex approval acc. to conformity certificate	IECEX TUN 06.0010 X	
Application area	II 3 G	
max.Output voltage $U_o$	≤ 5 V	
max. Output current $I_o$	≤ 2 mA	
max. Output power $P_o$	≤ 2.6 mW	

### Dimensions



### Output relay electrical lifetime



**temperature measuring amplifier****IM34-12EX-RI**

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<b>Degree of protection</b>	IP20
Ambient temperature	-25 ...+ 70 °C
Housing length	104 mm
Housing width	18 mm
Housing height	110 mm
Weight	145 g
Mounting instruction	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 <sup>2</sup> / 2 x 1.5 mm <sup>2</sup>