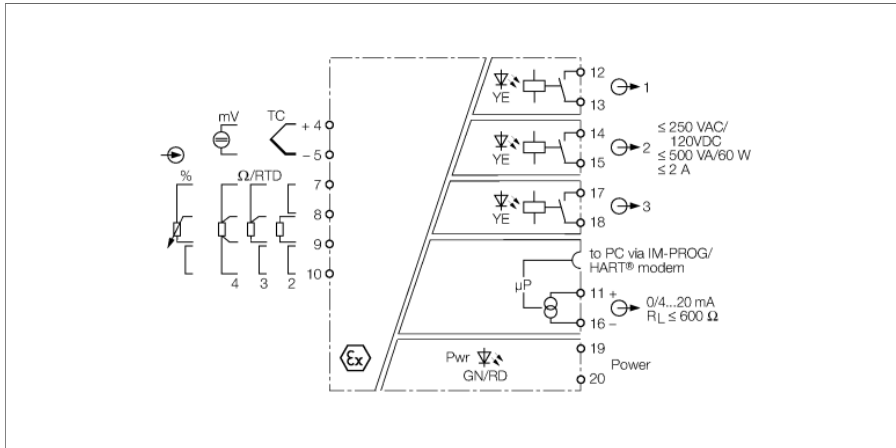


# Temperature measuring amplifier 1-channel IM34-14EX-CDRI



The 1-channel Ex-area temperature measuring amplifier IM34-14Ex-CDRI is designed to evaluate the temperature-dependent changes of Ni100/Pt100 RTDs and thermocouples types B, E, J, K, L, N, R, S, T and to output them as temperature-linear current signals 0/4...20 mA. Furthermore, resistors, potentiometers or low voltages can be mapped linearly as current signals in a range between -160...+160 mV.

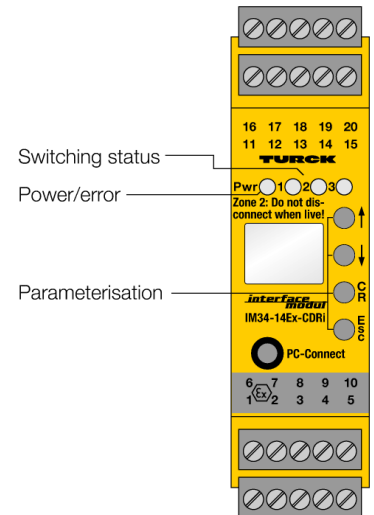
The device is equipped with an analog output of 0/4...20 mA; In addition, three relay outputs for limit values are available. The measured value can be viewed on a 2-line display.

The measured value is permanently written to a ring buffer with space for 8000 values. The writing process is stopped with a predefined trigger event, like for example "limit value exceeded". After that, the stored signal sequence can be read out.

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 on 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 via buttons and display on the front as well as via the HART<sup>®</sup> capable power interface

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

Cold junction compensation of thermocouples is either realized via an externally connected Pt100/Ni100 resistor, via temperature measured inside the amplifier or via an individually adjustable constant temperature value.



- Parameterized via PC (FDT/DTM), front-panel switch or HART
- Ring buffer for up to 8000 measured values
- Display
- Input for Pt100/ Ni100 resistors, variable resistors, thermocouples and millivolt signals
- Complete galvanic isolation
- Input reverse-polarity protected
- ATEX, IECEx, cFM<sub>US</sub>, TR CU, KOSHA
- Installation in zone 2

Type	IM34-14EX-CDRI
ID	7506634
Operating voltage	20...250 VAC
Frequency	40...70 Hz
Operating voltage	20...125 VDC
Power consumption	≤ 3 W

Input circuits	Intrinsically safe acc. to EN 60079 Thermocouple Ni100 Pt100 mV signals
Pt100	(IEC 751), 2, 3 and 4-wire technology
Ni100	(DIN 43760), 2, 3 and 4-wire technology
Probe current	≤ 0.2 mA
Thermocouples	B, E, J, K, N, R, S, T (ITS 90/IEC 584), L (DIN 43710)
Potentiometer input	
Nominal resistance	0...1.5 kΩ
Voltage input	-0.160...+0.160 VDC

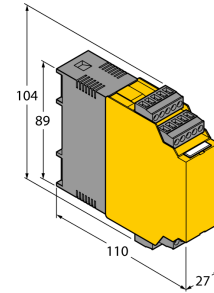
Output circuits	
Output current	0/4...20 mA
Load resistance current output	≤ 0.6 kΩ
Fault current	0 / 22 mA adjustable
Output circuits (digital)	3 x relays (NO)
Output switching voltage relay	≤ 30 VDC / ≤ 250 VAC
Switching current per output	≤ 2 A
Switching capacity per output	≤ 500 VA/60 W
Switching frequency	≤ 10 Hz

Output	Adjustable output mode
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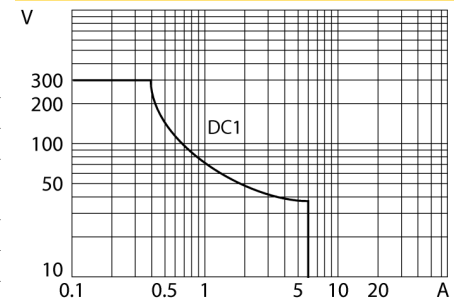
Response characteristic	
Rise time (10...90 %)	≤ 1000 ms
Fall time (90...10 %)	≤ 1000 ms
Reference temperature	23 °C
Measuring accuracy current output (including linearity, hysteresis and repeatability)	± 5 μA
Temperature drift analog output	0.0025 %/K
Measuring accuracy RTD input (including linearity, hysteresis and repeatability)	± 50 mΩ
Temperature drift RTD input	± 3 mΩ/K
Measuring accuracy TC input (including linearity, hysteresis and repeatability)	± 15 μV
Temperature drift TC input	± 3.2 μV/K (of 320 mV)
Cold junction compensation error	2-wire < 100mΩ after line compensation 3-wire < 100mΩ with asymmetrical wiring 4-wire < 50mΩ with cold junction compensation < 2 K

Galvanic isolation	
Test voltage	2.5 kV RMS

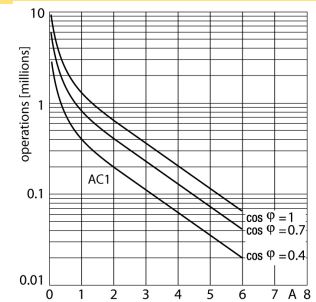
## Dimensions



## Output relay – Load curve



## Output relay – Electrical lifetime



Important note	For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply.
Ex approval acc. to conformity certificate	TÜV 05 ATEX 2877
Application area	II (1) GD
Ignition protection category	[EEx ia] IIC
Ex approval acc. to conformity certificate	TÜV 05 ATEX 2889 X
Application area	II 3 G
Ignition protection type	EEx nA nC [nL]
Characteristic	linear
<b>Displays/Operating elements</b>	
Operational readiness	Green
Switching state	Yellow
Error indication	red
<b>Mechanical data</b>	
Protection class	IP20
Flammability class acc. to UL 94	V-0
Ambient temperature	-25...+70 °C
	-25 ... +60 °C für FM
Storage temperature	-40...+80 °C
Dimensions	104 x 27 x 110 mm
Weight	248 g
Mounting instructions	DIN rail (NS35) or panel
Housing material	Polycarbonate/ABS
Electrical connection	4 × 5-pin removable terminal blocks, reverse polarity protected, screw terminal
Terminal cross-section	1 × 2.5 mm <sup>2</sup> /2 × 1.5 mm <sup>2</sup>
Tightening torque	0.5 Nm

## Accessories

Type code	Ident no.		Dimension drawing
IM-CC-5X2BU/2BK	7504031	Cage clamp terminals for IM modules (Ex-devices with 27 mm overall width); includes: 2 pcs. 5-pin blue terminals and 2 pcs. 5-pin black terminals.	
IM-PROG III	7525111	USB-compatible programming adapter for the FDT/DTM-based parametrization of HART-capable Turck devices; galvanic separation between the device to be parametrized and the PC	