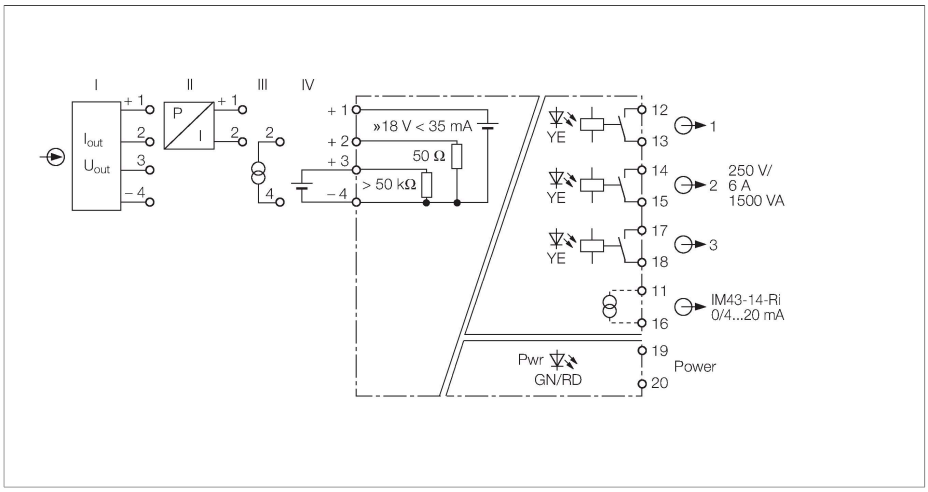
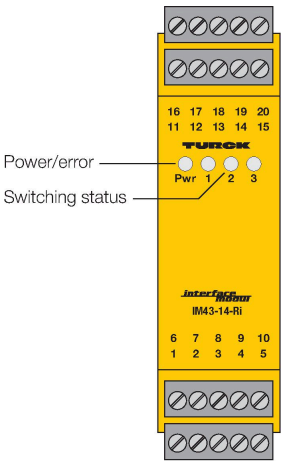
IM43-14-RI
Trip amplifier – 1-channel





The 1-channel IM43-14-RI trip amplifier monitors 0/4…20 mA currents or 0/2…10 V voltages for overshoot and undershoot of limit values.

The three limit values are set via the lateral rotary coding switches.

Additionally 18 V (at max. 35 mA) are provided for transmitters or sensors.
The measured values are transmitted via a galvanically isolated analog output to other devices.

The green LED indicates operational readiness. Three yellow LEDs indicate the switching status of the corresponding output.

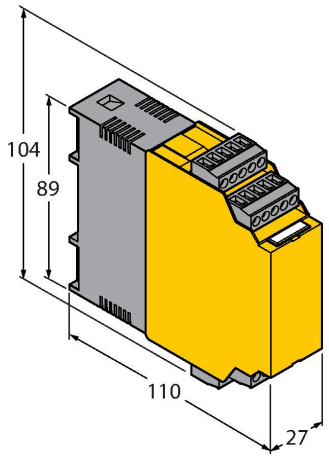
The output mode of the relays and the hysteresis are set via DIP switches.

Live-zero signals are converted into dead-zero signals via DIP switches. In live-zero mode the range between 4…20 mA is monitored. Any state outside this range (< 3.6 mA or > 24 mA) is signalled with an error message. In this case the power LED will illuminate red, the relays drop off and a fault current is output. If a faulty transmitter causes a short circuit, the relays drop off and a fault current is also output. The fault current can be 0 mA or > 22 mA, depending on the DIP switch activated.

Features

- Monitors 3 limit values at a current or voltage input
- Power supply of 2-wire or 3-wire transmitters/sensors
- Input circuit: 0/4…20 mA; 0/2…10 V
- Output circuit: 0/4…20 mA, 3 independent limit value relays
- Limit value relay adjusted via rotary coding switches
- Hysteresis and relay outputs adjusted via DIP switch
- Universal operating voltage
- Complete galvanic isolation
- Input reverse-polarity protected
- $_{c}FM_{us}$, TR CU

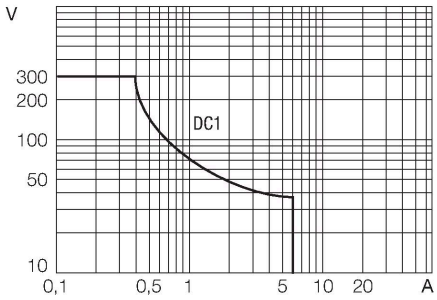
Dimensions



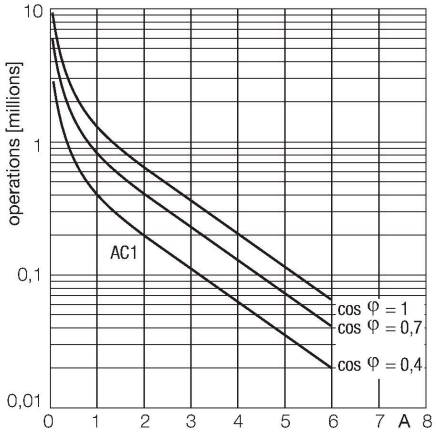
Technical data

Type	IM43-14-RI
ID	7540042
Nominal voltage	Universal voltage supply unit
Operating voltage	20…250 VAC
Frequency	40…70 Hz
Operating voltage	20…250 VDC
Power consumption	≤ 5 W
Transmitter connection	
Supply voltage	≥ 17 V / 20 mA
Current	35 mA
Voltage input	0/2…10 VDC
Input resistance (voltage)	≥ 50 kΩ
Input current	0/4…20 mA
Input resistance (current)	≤ 50 Ω
Output current	0/4…20 mA
Load resistance current output	≤ 0.6 kΩ
Output circuits (digital)	3 x relays (NO)
Output switching voltage relay	≤ 30 VDC / ≤ 250 VAC
Switching current per output	≤ 6 A
Switching capacity per output	≤ 1500 VA
Switching frequency	≤ 10 Hz
Measuring accuracy (including linearity, hysteresis and repeatability)	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.00075 % of full scale/K
Galvanic isolation	
Test voltage	2.5 kV RMS
Indication	
Power on display	Green
Switching state	Yellow
Error indication	red
Protection class	IP20
Flammability class acc. to UL 94	V-0
Ambient temperature (min.)	-25
Ambient temperature (max.)	70
Storage temperature	-40…+80 °C
Dimensions	104 x 27 x 110 mm
Weight	186 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

Output relay – Load curve



Output relay – Electrical lifetime

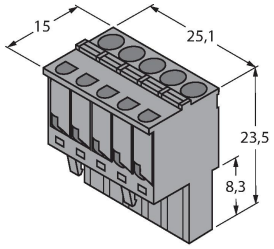


Technical data

Terminal cross-section	1 x 2.5 mm² / 2 x 1.5 mm²
Tightening torque	0.5 Nm

Accessories

IM-CC-5X2BK/2BK	7541219



Cage clamp terminals for IM modules (Ex-devices with 27 mm overall width); includes: 4 pcs. of 5-pin black terminals

Accessories

Dimension drawing	Type	ID
	IM-SC-5X4BK	7541217