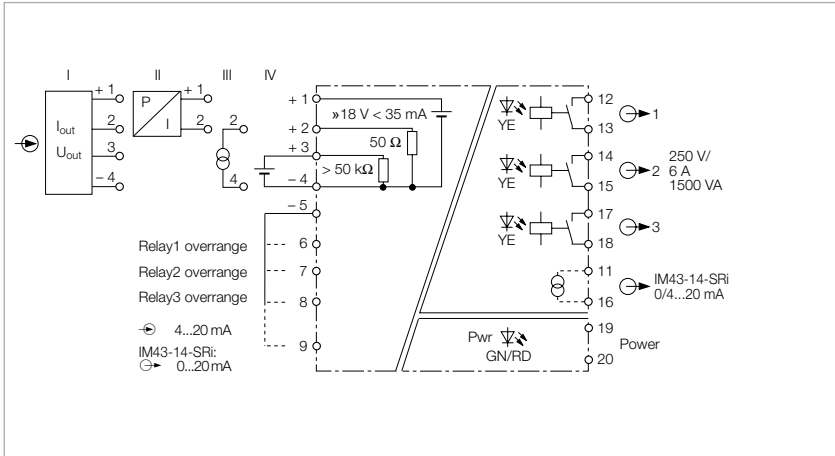


Trip amplifier, 1-channel



Features

- $c_{FM_{US}}$ TR CU
- 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 TEACH button
- Relay outputs adjusted via buttons on the front
- Universal operating voltage
- Complete galvanic isolation

The IM43-14-SRI 1-channel trip amplifier monitors 0/4...20 mA currents or 0/2...10 V voltages according to over/underrange of limit values.

The three limit values are set via teach buttons at the front.

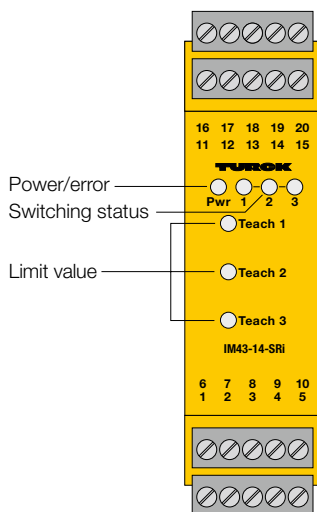
Additionally 18 V (at max. 35 mA) are provided for transmitters or sensors.

The measured values are transmitted via a galvanically isolated analog output to other devices.

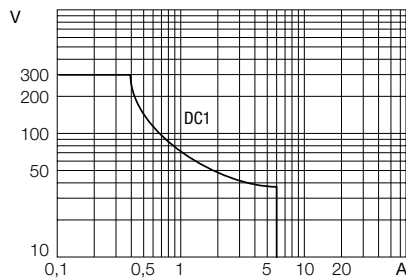
The green LED indicates operational readiness. Three yellow LEDs indicate the switching status of the corresponding output.

The output mode is adjusted via bridges at the terminals 5 to 8.

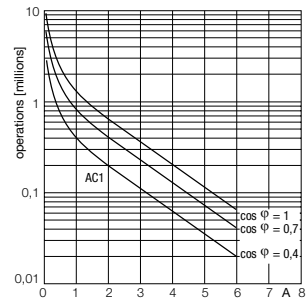
Live-zero signals are converted into dead-zero through bridging terminals 5/9. In live-zero mode the range between 4...20 mA is monitored. Any state outside this range (< 3.6 mA or > 24 mA) is signalled with an error message. In this case the power LED will illuminate red, the relays drop off and a fault current of > 22 mA is output. If a faulty transmitter causes a short circuit, the relays drop off and a fault current of > 22 mA is output.



Output relay – Load curve



Output relay – Electrical lifetime



Technical data

Type	IM43-14-SRI
Ident no.	7540043

Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	27 x 104 x 110 mm

Power supply

Nominal voltage	Universal voltage supply unit
Operating voltage range	20...250 VDC
Operating voltage range	20...250 VAC
Frequency	40...70 Hz
Power consumption	≤ 5 W

Approval Certification	c _{FM} US, TR CU
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Inputs

Supply voltage	≥ 17 V / 20 mA
Current	35 mA
Voltage input	0/2...10 VDC
Input resistance (voltage)	≥ 50 kΩ
Current input	0/4...20 mA
Input resistance (current)	≤ 50 Ω

Outputs

Load resistance, current output	≤ 0.6 kΩ
Output current	0/4...20 mA
Output circuits (digital)	3 x relays (NO)
Switching frequency	≤ 10 Hz
Relay switching voltage	≤ 250 VAC/120 VDC
Switching current per output	≤ 6 A
Switching capacity per output	≤ 1500 VA
Contact quality	AgNi, 3μ Au

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.00075 % / K

Indication

Operational readiness	green
Switching state	yellow
Error indication	red

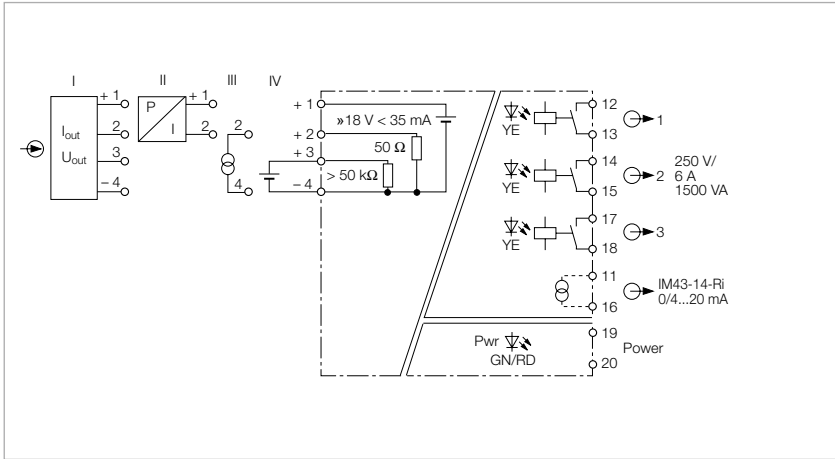
Environmental Conditions

Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV

Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 5-pin removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel

Trip amplifier, 1-channel



Features

- $c_{FM_{US}}$, TR CU
- 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

The IM43-14-RI 1-channel trip amplifier monitors 0/4...20 mA currents or 0/2...10 V voltages according to over/underrange of limit values.

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

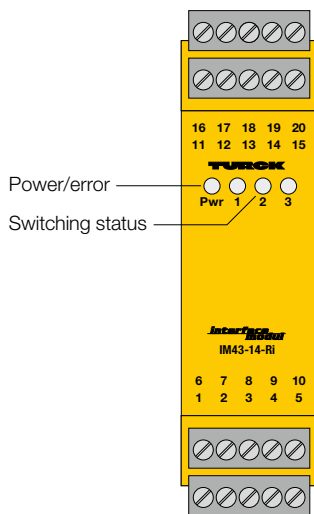
Additionally 18 V (at max. 35 mA) are provided for transmitters or sensors. The measured values are transmitted via a galvanically isolated analog output to other devices.

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

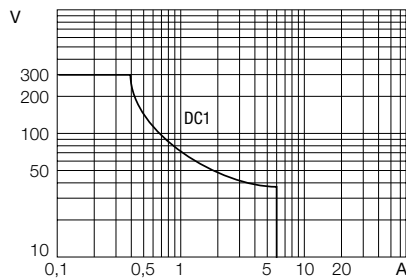
The output mode of the relays and the hysteresis are set via DIP switches.

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

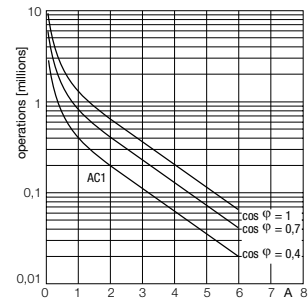
case the power LED will illuminate red, the relays drop off and a fault current is output. If a faulty transmitter causes a short circuit, the relays drop off and a fault current is also output. The fault current can be 0 mA or > 22 mA, depending on the DIP switch activated.



Output relay – Load curve



Output relay – Electrical lifetime



Technical data

Type	IM43-14-RI
Ident no.	7540042

Approval Certification	FM _{US} , TR CU
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Power supply

Nominal voltage	Universal voltage supply unit
Operating voltage range	20...250 VDC
Operating voltage range	20...250 VAC
Frequency	40...70 Hz
Power consumption	≤ 5 W

Inputs

Supply voltage	≥ 17 V / 20 mA
Current	35 mA
Voltage input	0/2...10 VDC
Input resistance (voltage)	≥ 50 kΩ
Current input	0/4...20 mA
Input resistance (current)	≤ 50 Ω

Outputs

Load resistance, current output	≤ 0.6 kΩ
Output current	0/4...20 mA
Output circuits (digital)	3 x relays (NO)
Switching frequency	≤ 10 Hz
Relay switching voltage	≤ 250 VAC/120 VDC
Switching current per output	≤ 6 A
Switching capacity per output	≤ 1500 VA
Contact quality	AgNi, 3μ Au

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.00075 % / K

Indication

Operational readiness	green
Switching state	yellow
Error indication	red

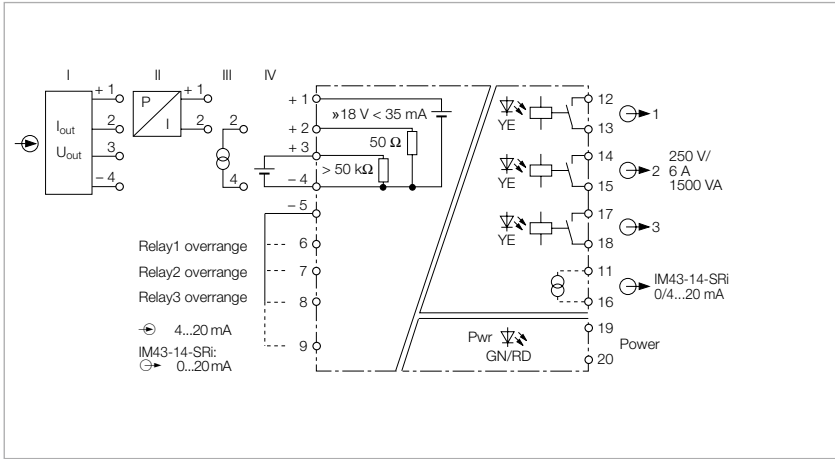
Environmental Conditions

Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV

Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 5-pin removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	27 x 104 x 110 mm

Trip amplifier, 1-channel



Features

- $c_{FM_{US}}$ TR CU
- 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: 3 independent limit value relays
- Limit value relay adjusted via Teach button
- Relay outputs adjusted via buttons on the front
- Universal operating voltage
- Complete galvanic isolation

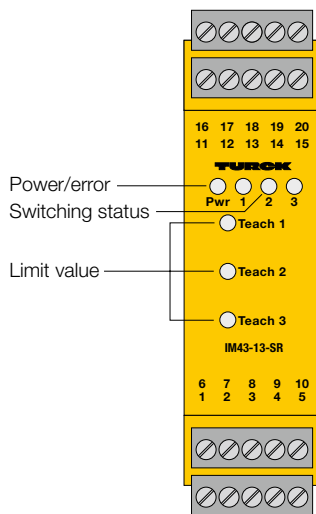
The IM43-13-SR 1-channel trip amplifier monitors 0/4...20 mA currents or 0/2...10 V voltages according to over/underrange of limit values.

The three limit values are set via teach buttons at the front.

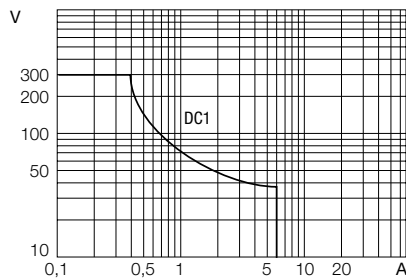
Additionally, 18 V (with max. 35 mA) are provided for transmitters or sensors.

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

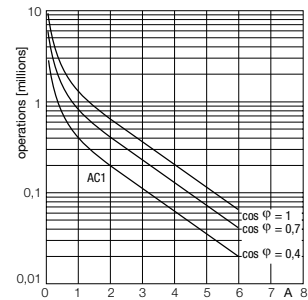
The output mode is adjusted via bridges at the terminals 5 to 8.



Output relay – Load curve



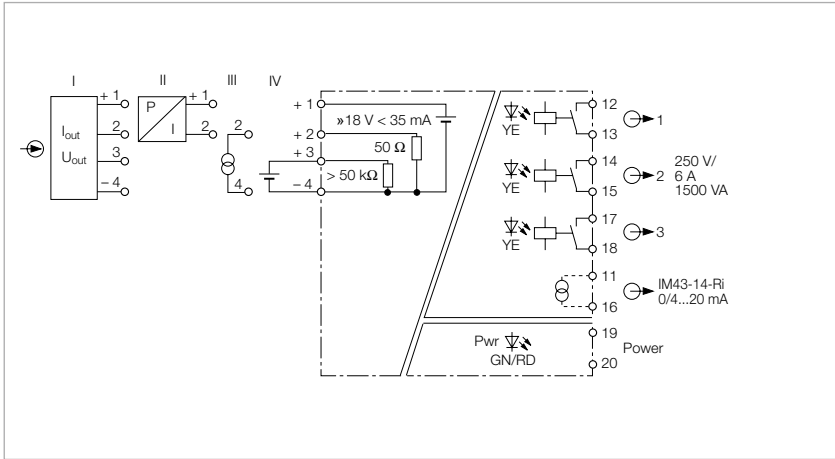
Output relay – Electrical lifetime



Technical data

Type	IM43-13-SR
Ident no.	7540041
Power supply	
Nominal voltage	Universal voltage supply unit
Operating voltage range	20...250 VDC
Operating voltage range	20...250 VAC
Frequency	40...70 Hz
Power consumption	≤ 5 W
Inputs	
Supply voltage	≥ 17 V / 20 mA
Current	35 mA
Voltage input	0/2...10 VDC
Input resistance (voltage)	≥ 50 kΩ
Current input	0/4...20 mA
Input resistance (current)	≤ 50 Ω
Outputs	
Output circuits (digital)	3 x relays (NO)
Switching frequency	≤ 10 Hz
Relay switching voltage	≤ 250 VAC/120 VDC
Switching current per output	≤ 6 A
Switching capacity per output	≤ 1500 VA
Contact quality	AgNi, 3μ Au
Response characteristic	
Reference temperature	23 °C
Temperature drift	≤ 0.00075 % / K
Indication	
Operational readiness	green
Switching state	yellow
Error indication	red
Environmental Conditions	
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV
Mechanical data	
Tightening torque	0.5 Nm
Electrical connection	4 x 5-pin removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	27 x 104 x 110 mm
Approval Certification	c _{FM} us, TR CU

Trip amplifier, 1-channel



Features

- $c_{FM_{US}}$ TR CU
- 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: 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

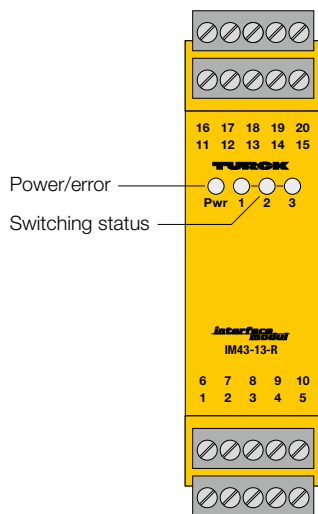
The IM43-13-R 1-channel trip amplifier monitors 0/4...20 mA currents or 0/2...10 V voltages according to over/underrange of limit values.

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

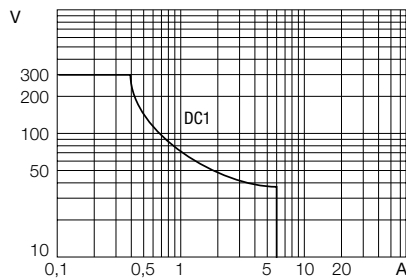
Additionally, 18 V (with max. 35 mA) are provided for transmitters or sensors.

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

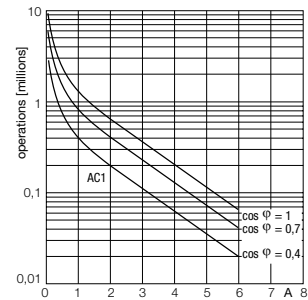
The output mode of the relays and the hysteresis are set via DIP switches.



Output relay – Load curve



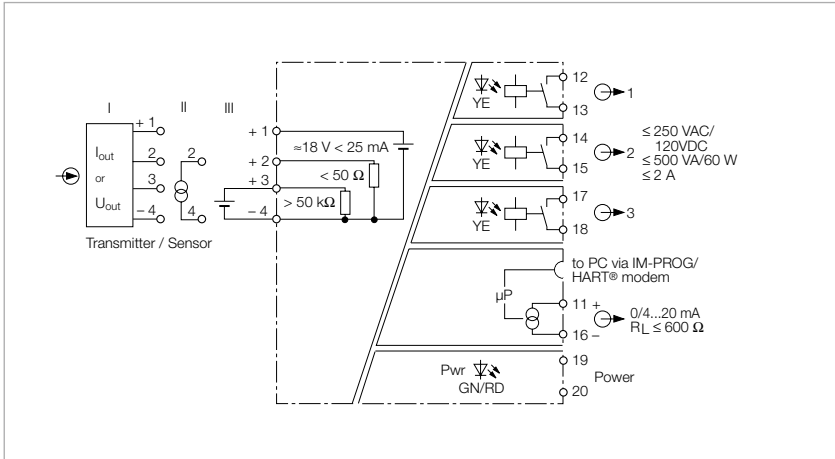
Output relay – Electrical lifetime



Technical data

Type	IM43-13-R
Ident no.	7540040
Power supply	
Nominal voltage	Universal voltage supply unit
Operating voltage range	20...250 VDC
Operating voltage range	20...250 VAC
Frequency	40...70 Hz
Power consumption	≤ 5 W
Inputs	
Supply voltage	≥ 17 V / 20 mA
Current	35 mA
Voltage input	0/2...10 VDC
Input resistance (voltage)	≥ 50 kΩ
Current input	0/4...20 mA
Input resistance (current)	≤ 50 Ω
Outputs	
Output circuits (digital)	3 x relays (NO)
Switching frequency	≤ 10 Hz
Relay switching voltage	≤ 250 VAC/120 VDC
Switching current per output	≤ 6 A
Switching capacity per output	≤ 1500 VA
Contact quality	AgNi, 3μ Au
Response characteristic	
Reference temperature	23 °C
Temperature drift	≤ 0.00075 % / K
Indication	
Operational readiness	green
Switching state	yellow
Error indication	red
Environmental Conditions	
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV
Mechanical data	
Tightening torque	0.5 Nm
Electrical connection	4 x 5-pin removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	27 x 104 x 110 mm
Approval Certification	c _{FM} , TR CU

Trip amplifier, 1-channel



Features

- TR CU
- Input circuit: 0/4...20 mA; 0/2...10 V
- Output circuit: 0/4...20 mA, 3 independent limit value relays
- Universal operating voltage
- Monitors over and under range of limit values and window limits
- Connection of passive 2-wire and active 3-wire transmitters
- Parametrized via PC (FDT/DTM), front-panel switch and HART®
- Many diagnostic functions
- Ring buffer for up to 8000 measured values
- Display
- Complete galvanic isolation

The 1-channel trip amplifier IM43-14-CDRI is designed to operate 2-wire transducers (III) and to galvanically isolate and transmit the measured signals. Alternatively, active 2-wire transmitters (II) and passive 3-wire transmitters (I) can also be operated.

The three limit values are set via teach buttons at the front.

The device features one output for analog signals 0/4...20 mA and three outputs for limit value relays. The unit of the measured value is freely selectable and indicated on a 2-line display. A green LED indicates operational readiness, 3

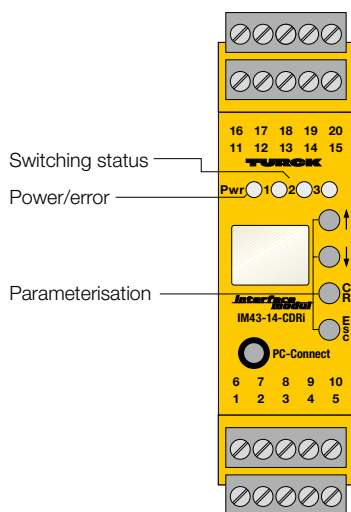
yellow LEDs indicate the switching status of the individual channels.

At each of the three outputs a predefined setpoint value can be monitored according to overshoot/undershoot. The switching hysteresis is defined by programming the switch-on and switch-off point. Furthermore, a switch-off delay can be set individually for each output.

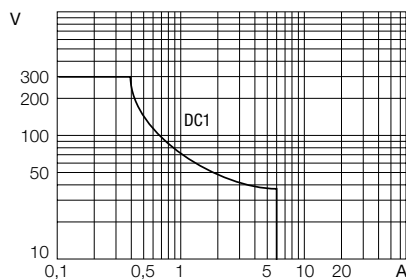
The measured value is permanently written to a ring buffer with space for 8000 values. The writing process is stopped with a predefined trigger event, like for example "excess of limit value". After

that, the stored signal sequence can be read out.

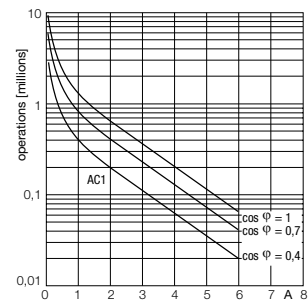
The device can be parametrized and configured via PC (FDT/DTM). For this, connect the device to the PC via the 3.5 mm jack on the front (the matching transmission cable IM-PROG III can be ordered separately from TURCK). A basic scope of parameters can be set via buttons and display on the front or remotely via the current interface and HART®.



Output relay – Load curve



Output relay – Electrical lifetime



Technical data

Type	IM43-14-CDRI
Ident no.	7540045
Power supply	
Nominal voltage	Universal voltage supply unit
Operating voltage range	20...250 VDC
Operating voltage range	20...250 VAC
Frequency	40...70 Hz
Power consumption	≤ 3 W
Residual ripple	≤ 10 mV _{ss}
Inputs	
Supply voltage	≥ 17 V / 20 mA
Current	25 mA
Voltage input	0/2...10 VDC
Current input	0/4...20 mA
Outputs	
Output current	0/4...20 mA
Output circuits (digital)	3 x relays (NO)
Switching frequency	≤ 10 Hz
Relay switching voltage	≤ 250 VAC/120 VDC
Switching current per output	≤ 2 A
Switching capacity per output	≤ 500 VA/60 W
Fault current	0 / 22 mA adjustable
Contact quality	AgNi, 3μ Au
Response characteristic	
Measuring accuracy	≤ 0.05 % of full scale
Reference temperature	23 °C
Temperature drift analogue output	0.0025 %/K
Indication	
Operational readiness	green
Switching state	yellow
Error indication	red
Environmental Conditions	
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV
Mechanical data	
Tightening torque	0.5 Nm
Electrical connection	4 x 5-pin removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	27 x 104 x 110 mm
Approval Certification	TR CU