

# Monitoring Relay MR50Ex



- Input standard signals 0/4..20 mA, 0/2..10 V DC
- Measuring range programmable
- Max. 2 alarm outputs
- Isolated analog output 0/4..20 mA, 0/2..10 V DC

## Characteristics

The Monitoring Relay MR50Ex has inputs for industry standard signals 0/4..20 mA and 0/2..10 V DC. Measuring value and the programmed unit are shown in the display. The integrated transmitter supply offers direct connection of loop powered sensors. Simple programming, up to 2 alarm outputs (SPDT) and an optional available fully isolated free programmable analog output 0/4..20mA; 0/2..10 V DC meets the demand for different applications.

## Technical data

### Power supply

Supply voltage : 230 V AC  $\pm 10\%$ ,  
115 V AC  $\pm 10\%$ ,  
24 V DC  $\pm 15\%$   
 $U_m = 253$  V AC or 125 V DC  
(terminals 11 and 13)

Power consumption : max. 5 VA

Operating temperature : -10..+55 °C

CE-conformity : ATEX-directive 2014/34/EU

Standards : EN 60079-0:2006 EN 60079-11:2007  
EN 61241-0:2006 EN 61241-11:2006,

EMC-directive / standard : 2014/30/EU / EN 61326-1:2013

### Inputs

Explosion protection : Ex II (1) G [Ex ia] IIC/IIB or  
II (1) D [Ex iaD]

Approval : TÜV 08 ATEX 554329

Input : 0/4..20 mA; 0/2..10 V DC

Ri : current 10  $\Omega$ ,  
voltage 10 k $\Omega$

Fault detection : break of wire in the measuring circuit  
(terminals 45, 46 and 47)

Accuracy : < 0.1 %,  $\pm 1$  Digit

Temperature coefficient : 0.01 %/K

### Safety data

Max. no load voltage  $U_0$  : 18.9 V

Max. short circuit curr.  $I_0$  : 92.5 mA

Max. output power  $P_0$  : 580 mW

Resistance R : 272  $\Omega$

Characteristics : trapezoidal

Internal inductivity : 4  $\mu$ H

Internal capacity : 1.2 nF

Transmitter supply : approx. 16 V DC max. 20 mA  
(terminal 48)

### Explosion protection

Max. ext. inductivity : 2.3 mH 0.1 mH 5 mH

Max. ext. capacity : 0.12  $\mu$ F 0.22  $\mu$ F 0.76  $\mu$ F

At connecting of externally supplied active intrinsically safe circuits the rules for the interconnection of intrinsically safe circuits have to be observed.

Max. values  $U_i$  : 30 V

$I_i$  : 52 mA

$P_i$  : 980 mW

### Outputs

Relay SPDT : < 250 V AC < 250 VA < 2 A

$\cos \varphi \geq 0.3$ ,

< 300 V DC < 40 W < 2 A

(terminals 21, 22, 23; 25, 26, 27)

Analog output : 0/4..20 mA, burden  $\leq 500 \Omega$ ;

0/2..10 V burden  $> 500 \Omega$ , isolated,

output changes automatically

(burden dependent)

Accuracy : 0.2 %; TK 0.01 %/K

for connection at electrical equipments with supply voltage of max. 230V (terminals 17 and 18)

Fault function : break of wire in the measuring circuit:

→ analog output 0 mA,

< 3.6 mA or > 21.5 mA

→ alarm contact(s)

min. or max. programmable

Display : Graphic-LCD-Display, 128 x 64 Pixel,  
with white back-light

Case : Polyamide (PA) 6.6, UL94V-0  
acc. to DIN EN 60715

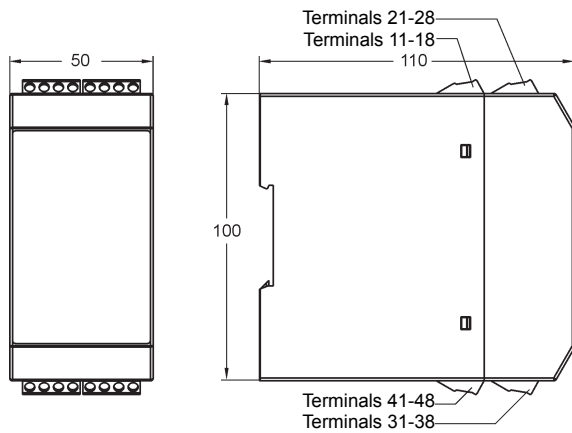
Weight : approx. 450 g

Connection : screw terminals 0.14..2.5 mm<sup>2</sup>  
(AWG 26..14)

Protection class : case IP30, terminals IP20, BGV A3

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### Dimensions



### Ordering code

MR50Ex -  1. -  2. -  3. -  4. -  5. -  6.

1. Input	
1	standard signals 0/4..20 mA, 0/2..10 V DC, transmitter supply approx. 16 V DC, max. 20 mA, inputs intrinsically safe
2. Alarm output A1, A2	
2R	2 relay SPDT
3. Alarm output A3, A4	
00	not available
4. Analog output	
00	not installed
AO	0/4..20 mA, 0/2..10 V DC
5. Supply voltage	
0	230 V AC, ± 10 % 50-60 Hz
1	115 V AC, ± 10 % 50-60 Hz
5	24 V DC, ± 15 %
6. Options	
00	without option

### Connection diagram

