

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 Ω ,
voltage 10 k Ω

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

Accuracy : < 0.1 %, ± 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 Ω

Characteristics : trapezoidal

Internal inductivity : 4 μ 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 μ F 0.22 μ F 0.76 μ 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

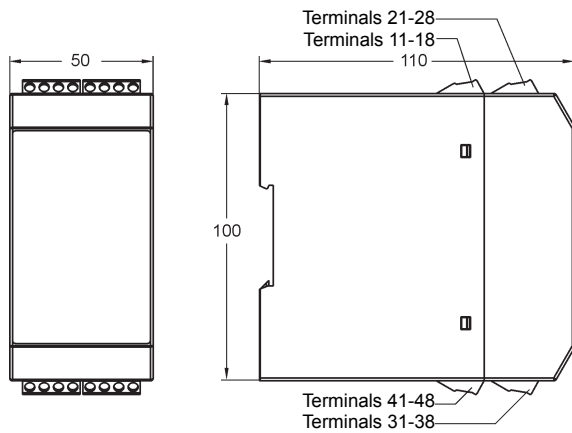
Weight : approx. 450 g

Connection : screw terminals 0.14..2.5 mm²

(AWG 26..14)

Protection class : case IP30, terminals IP20, BGV A3

Continue next page

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, $\pm 10\%$ 50-60 Hz |
| 1 | 115 V AC, $\pm 10\%$ 50-60 Hz |
| 5 | 24 V DC, $\pm 15\%$ |
| 6. Options | |
| 00 | without option |

Connection diagram
