

Temperature Guard TG50Ex



Characteristics

The Temperature Guard TG50Ex offers intrinsically safe inputs for direct connection of temperature probes RTD (Pt100, Pt1000) and thermocouples type J, K, N or S, which are installed in the explosion endangered area.

Simple programming, 2 alarm outputs (SPDT) and an optional available fully free programmable isolated analog output 0/4...20 mA; 0/2...10 V DC offers a lot of solutions for temperature monitoring. The peak value indication for minimum and maximum measured temperature are stored in the background and can be read out from the display at any time.

Technical data

Power supply

Supply voltage : 230 V AC $\pm 10\%$
115 V AC $\pm 10\%$
24 V DC $\pm 15\%$
Um = 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
EN 60079-0:2006 EN 60079-11:2007
EN 61241-0:2006 EN 61241-11-0:2006

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

Inputs

Explosions protection : II (1) G [Ex ia] IIC/IIB or
II (1) D [Ex iaD]
Approval : TÜV 08 ATEX 554329
Fault detection : broken line (Pt100/1000 and thermo-
couple) and short circuit (only
Pt100/1000)

Input RTD : Pt100 (3-wire) -100.0...+600.0 °C
Pt1000 (3-wire) -100.0...+300.0 °C
(terminals 35, 36, 37)

Input TC : Thermocouple
type J -100.0...+800.0 °C
type K -150...+1200 °C
type N -150...+1200 °C
type S -50...+1600 °C
cold junction compensation integrated
(terminals 45 and 47)

Accuracy : <0.1 %, ± 1 Digit

Temperature coefficient : 0.01 %/K

Safety data

Max. voltage no load U_0 : 1,4 V

Max. short circuit curr. I_0 : 2.5 mA

Max. output power P_0 : 3 mW

Resistance R : 5600 Ω

Characteristic curve : trapezoidal

Internal inductivity : 4 μ H

Internal capacity : 135 nF

Explosion protection Ex ia/IIC ia/IIB

Max. external inductivity : 100 mH 100 mH

Max. external capacity : 25 μ F 120 μ F

Outputs

Alarm outputs : relay SPDT
< 250 V AC < 250 VA < 2 A
cos $\Phi \geq 0.3$
< 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 Ω , isolated
output changes automatically
(burden depending)

- Accuracy : 0.2 %; TK 0.01 % / K
(terminals 17 and 18)

Fault function : for broken line or short circuit detection
→ analog output (programmable)
0 mA, < 3.6 mA or > 21.5 mA
→ alarm relays

min. or max. function programmable
Display : graphic-LCD-display, 128 x 64 Pixel
with white LCD backlight

Case : Polyamide (PA) 6.6, UL94V-0
TS35 acc. to DIN EN 60715

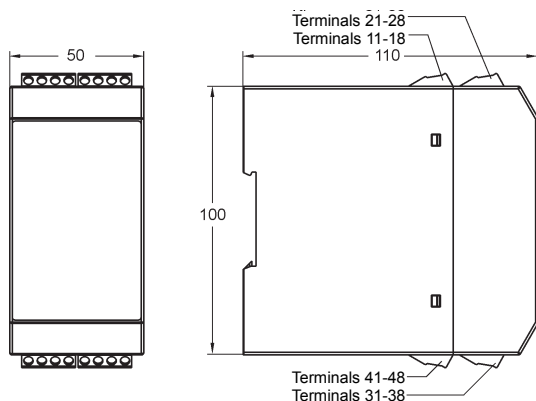
Weight : approx. 450 g

Connection : screw terminals 0.14...2.5 mm²
AWG 26...AWG14

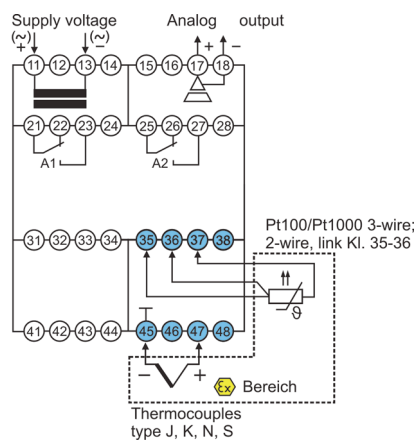
Protection class : case IP30, terminals IP20 acc. to
BGV A3

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Dimensions



Connection diagram



Ordering code

1. 2. 3. 4. 5. 6.
TG50Ex - - - - - -

1. Device type/input	
3	RTD Pt100, 3-wire, -100.0..+600.0 °C RTD Pt1000, 3-wire, -100.0..+300.0 °C Thermocouple J (Fe-CuNi), -100.0..+800.0 °C K (NiCr-Ni), -150..+1200 °C N (NiCrSi-NiSi), -150..+1200 °C S (Pt10Rh-Pt), -50..+1600 °C
Inputs intrinsically safe	EX II (1) G [Ex ia] IIC/IIB EX II (1) D [Ex iaD]
2. Alarm outputs A1, A2	
2R	2 relay SPDT
3. Alarm outputs A3, A4	
00	not available
4. Analog output	
00	not installed
AO	0/4..20 mA, 0/2..10 V DC, isolated
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