

**Product Information****Temperature****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 %, $\pm 1$ Digit
Temperature coefficient	: 0.01 %/K

**Safety data**

Max. voltage no load U <sub>0</sub>	: 1,4 V
Max. short circuit curr. I <sub>0</sub>	: 2.5 mA
Max. output power P <sub>0</sub>	: 3 mW
Resistance R	: 5600 $\Omega$
Characteristic curve	: trapezoidal
Internal inductivity	: 4 $\mu$ H
Internal capacity	: 135 nF

**Explosion protection**

	Ex ia/IIC	ia/IIB
Max. external inductivity	: 100 mH	100 mH
Max. external capacity	: 25 $\mu$ F	120 $\mu$ F

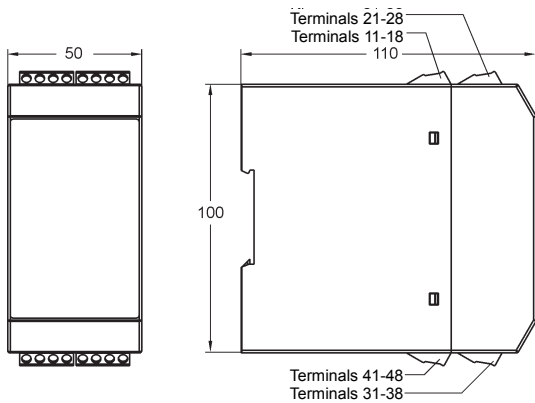
**Outputs**

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 $\Omega$ , 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
<b>Display</b>	: graphic-LCD-display, 128 x 64 Pixel with white LCD backlight
<b>Case</b>	: Polyamide (PA) 6.6, UL94V-0 TS35 acc. to DIN EN 60715
Weight	: approx. 450 g
Connection	: screw terminals 0.14..2.5 mm <sup>2</sup> AWG 26..AWG14
Protection class	: case IP30, terminals IP20 acc. to BGV A3

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**Product Information**

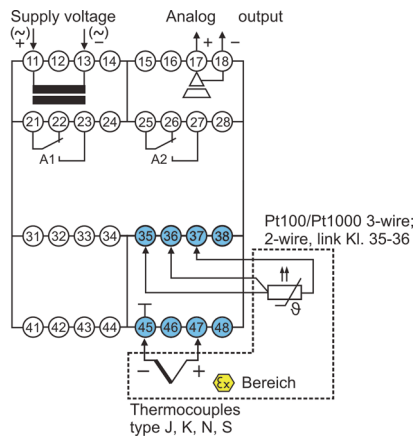
**Dimensions**



**Ordering code**

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

**Connection diagram**



<b>1. Device type/input</b>	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]	
<b>2. Alarm outputs A1, A2</b>	2R 2 relay SPDT	
<b>3. Alarm outputs A3, A4</b>	00 not available	
<b>4. Analog output</b>	00 not installed AO 0/4..20 mA, 0/2..10 V DC, isolated	
<b>5. Supply voltage</b>	0 230 V AC, ± 10 % 50-60 Hz 1 115 V AC, ± 10 % 50-60 Hz 5 24 V DC, ± 15 %	
<b>6. Options</b>	00 without option	