

**Product information**

**Temperature**

# Safety Temperature Limiter STL50Ex

(acc. to DIN EN 14597, SIL 2)



- Useful as Temperature Limiter/-Guard and Exhaust gas Temperature Limiter
- Certified according to DIN EN 14597 SIL 2
- Inputs RTD Pt100 or double-thermocouple
- Alarm output 1 relay SPDT
- Programming via backlit LCD-graphic-Display

## Characteristics

The STL50Ex safety temperature limiter is used where ever thermal processes must be monitored and the system must be transferred into a safe operational state in case of fault. If the permissible temperature limit value is reached, or if a fault occurs within the permissible temperature range on the monitoring equipment (sensor open, sensor short-circuit, failure of a component part in the device, fault in the software, failure or inadmissible value of the supply voltage etc.), the STL50Ex switches off without delay.

The alarm contact is activated, the LED ALARM on the front panel and the back-lighting of the display light up, and the error cause is indicated as plain text on the display. In addition, there is a 24 V DC signal present on the terminals 17-18 for an external alarm signal.

## Description

### Programming

The device is programmable via front side buttons in connection with the graphic display.

### Operating modes

The device can be used as:

- STB → Maximum- or minimum-monitoring with hold. Reset possible after omission of the fault with the external or internal button.
- ASTB → as before, but monitoring the exhaust gas temperature
- STW → Maximum- or minimum-monitoring without hold. Automatic reset after leaving the dangerous range.

Switching hysteresis always acts in the direction of safe range. The last fault is stored as plain text and can be called up in the working level and deleted.

### Temperature sensor

The device may operate only with temperature probes which are certified according to DIN EN 14597!

## Technical data

### Power supply

Supply voltage : 230 V AC ±10 %  
 115 V AC ±10 %  
 24 V DC ±15 %

### Power consumption

: < 4 VA

### CE-conformity

: EN 61326-1: 2013

: EN 61326-2-2: 2013

### Ambient conditions

Operating temperature : -10..+55 °C

Storage temperature : -30..+60 °C

Relative humidity : < 95 %

Condensation : not permitted, operation only in vibration less ambient

### Approvals

EN 14597:2005 : temperature control devices and temperature limiters for heat-generating systems

EN 61508:2001 SIL2 : Functional security safety-related electrical/electronic/programmable electronic systems

### Input

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

Approval : TÜV 07 ATEX 554295

Pt100 : -100.0..+600.0 °C, 3-wire, 3-wire, max. line resistance 4 Ω each line, sensor current < 1 mA (non self heating)

### Data in case of an error

Max. voltage no load  $U_0$  : 1.4 V

Max. short circuit current  $I_0$  : 6 mA

Max. power loss  $P_0$  : 7 mW

Min. internal resistor R : 1.6 kΩ (curve trapezoidal)

**Explosion protection Ex ia/IIC ia/IIB**

Max. external inductivity : 100mH 20mH

Max. external capacity : 110µF 28 µF

Internal capacity : negligible

Internal inductivity : negligible

### Thermocouple

Type J : Fe-CuNi, -100.0..+800.0°C

Type K : NiCr-Ni, -150..+1200 °C

Type N : NiCrSi-NiSi, -150..+1200°C

Type S : Pt10Rh-Pt, 0..1600 °C cold junction compensation integrated

### Data in case of an error

Max. voltage no load  $U_0$  : 0.7 V

Max. short circuit current  $I_0$  : 2 mA

Max. power loss  $P_0$  : 1.5 mW

Min. internal resistor R : 5 kΩ (curve trapezoidal)

**Explosion protection Ex ia/IIC ia/IIB**

Max. external inductivity : 100mH 50mH

Max. external capacity : 240µF 54 µF

Internal capacity : negligible

Internal inductivity : negligible

Accuracy : < 0.5 %, ±2 Digit

Temperature coefficient : 0.01 %/K

Display : graphic LCD-display 28 x 64 Pixel, with white LCD-backlight

### Output

Relay : SPDT  
 < 250 V AC < 200 VA < 2 A  
 cos Phi ≥ 0.7  
 < 250 VDC < 80 W < 2 A,  
 internal fused 2 A (slow-blow)

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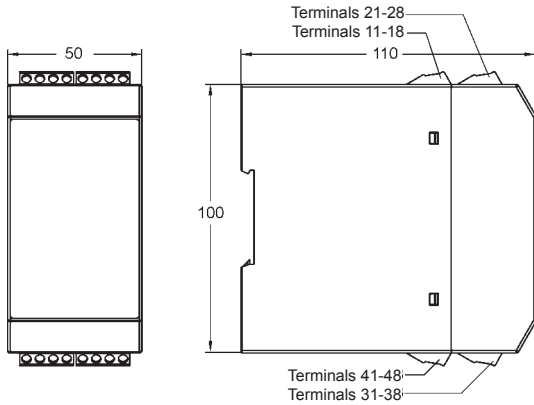
**Case** : Polyamide (PA) 6.6 , UL94V-0, TS35 acc. to DIN EN 60715  
**Weight** : approx. 450 g  
**Connection** : screw terminals 0.14..2.5 mm<sup>2</sup> (AWG 26 .. 14)  
**Protection class** : IP20, DIN EN 60529, BGV A3

**Temperature**

**Ordering code**

1. 2. 3. 4.  
**STL50Ex** -  -  -  -

**Dimensions**



<b>1. Device type/input</b>	
1	Pt100, 3-wire, -100.0..+600.0 °C
5	Thermocouple J (Fe-CuNi), -100.0..+800.0 °C K (NiCr-Ni), -150..+1200 °C N (NiCrSi-NiSi), -150..+1200 °C S (Pt10Rh-Pt), 0..1600 °C
<b>2. Output</b>	
1R	1 alarm output relay
<b>3. 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>4. Options</b>	
00	without option

**Connection diagrams**

