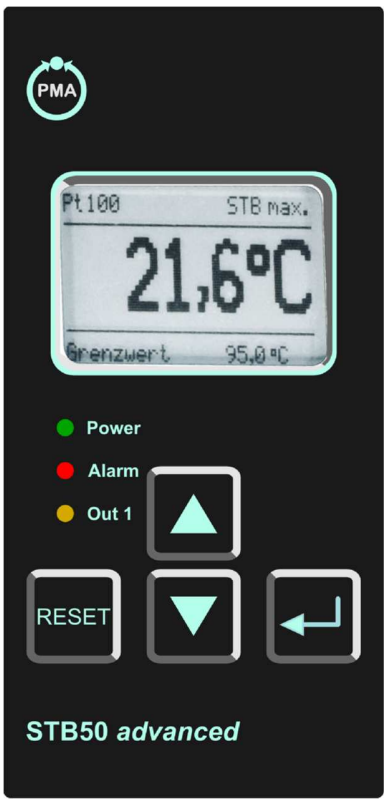


STB50
Safety Temperature Limiter
(acc. to DIN EN 14597, SIL 2)

Useable as Temperature Limiter/-Guard and Exhaust gas Temperature Limiter

Certified according to DIN EN 14597 SIL2

Inputs RTD Pt100 or double-thermocouple

Limit value and switching hysteresis programmable

Basic accuracy <0.5 %, ± 2 Digit

Reaction time ≤ 0.5 s

1. Relay for safety-relevant temperature limit, forcibly guided

2. Relay for pre-alarm

Analogue output 0/4…20 mA; 0/2...10VDC

Memory function for error message

Operator lock (password protection)

Contact input for external reset

24 V DC signal for external alarm message

advanced line

Characteristics

The STB50 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 STB50 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 10-11 for an external alarm signal.
Alternatively, the device can be reset using an external contact. In addition, the STB50 has a programmable analog output with up or downscaling function, as well as a precontact.

Description

Display
graphic-LCD-display with 128 x 64 pixel, with white LCD-backlight

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.

TECHNICAL DATA

In- and Outputs

Analog Input

Temperature sensor

When using STB50 as safety limiter -or guardaccording to EN14597, safety temperature sensors acc. to EN14597 have to be used

Depending on the order variant:

Pt100

In the range -100.0…600.0 °C
3-wire,
max. line resistance 4 Ω each line
sensor current <1 mA (non self heating)

Thermocouple

cold junktion compensation integration

Typ J
Fe-CuNi in the range -100.0…800.0 °C

Typ K
NiCr-Ni in the range -150…1200 °C

Typ N
NiCrSi-NiSi in the range -150…1200 °C

Typ S
Pt10Rh-Pt in the range 0…1600 °C

Accuracy

<0.5 %, ± 2 Digit

Temperature coefficient

0.01 % / K

Outputs

Main relays

SPDT
<250 V AC <200 VA <2 A
cos Phi ≥0.7
<250 VDC <80 W <2 A,
forcibly guided, internal fuse 2 A (slow-blow)

Pre-alarm relays

SPDT
<250 V AC <500 VA <2 A
ohmic load;
<30 VDC <60 W <2 A

Analogue output

0/4…20 mA burden ≤ 500 Ω;
0/2…10 V burden > 500 Ω, galvanically isolated, output automatically changing (burden dependent)

Accuracy (Analogue output)
0.4 %; TK: 0.01 % / K

Power supply

Depending on the order variant:

AC voltage

230 VAC ±10 %
115 V AC ±10 %
24 V AC ±10 %
Power consumption: < 4 VA

DC voltage 24 V

24 V DC ±15 %
Power consumption: < 4 VA

Ambient conditions

Protection class

Front: IP 65
DIN EN 60529 BGV A3

Permissible temperatures

Operating temperature: -10...55 °C
Storage temperature: –30...60 °C
Relative humidity: < 95 %

Condensation

not permitted

Vibrations

operation only in vibration less ambient

General

Case

Polyamide (PA) 6.6, UL94V-0

Weight

Approx. 450 g

Connection

Spring terminals 0.2...2.5 mm²
(AWG 24 .. 12)

Summary

Programming:

The unit is programmed by means of the front panel keys and the graphic display.

Temperature sensor

The unit may only be operated with temperature sensors tested to EN 14597
Moreover, it must be ensured that the unit's response time does not exceed the values specified in EN 14597 for specific media (see table below).

This means that 63,2 % of a temperature change at the tip of the temperature sensor must be detected and evaluated within a defined period (time constant T).

Values specified in EN 14597:

Water: 45 s
Oil: 60 s
Air: 120 s
Flue gas: 45 s

CE-conformity:

EN 61326-1: 2013
EN 61326-2-2: 2013

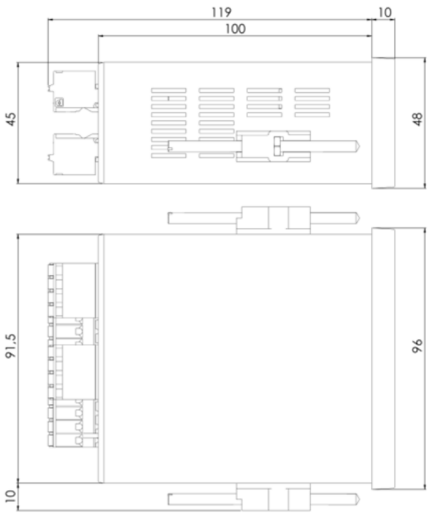
EN 14597:2012

Temperature control devices and temperature limiters for heat-generating systems

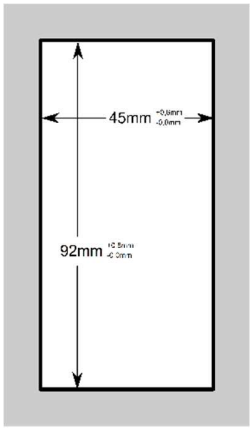
EN 61508:2011 SIL2:

Functional security safety-related electrical/electronic/programmable electronic systems

Dimensions

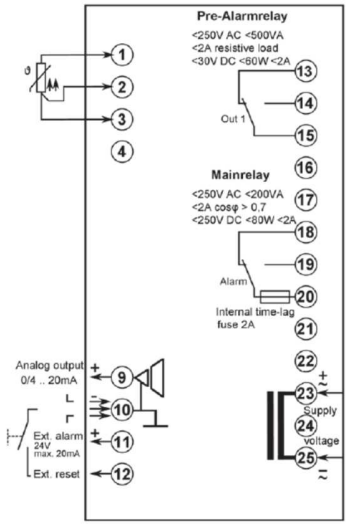


Panel cut out

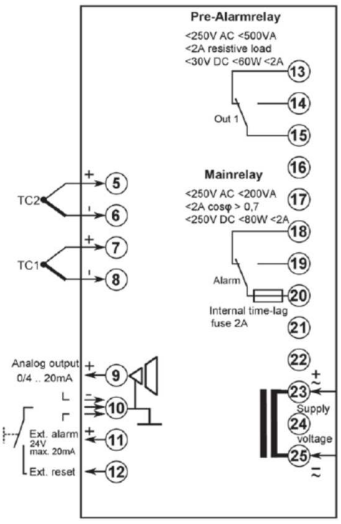


Wiring

Model Pt 100



Model thermocouple



Ordering code

STB50 - Safety Temperature Limiter

STB50 - x 2 x 0 - XX	
Device type/Input	
Pt100, 3-wire, -100.0…+600.0 °C	1
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	5
Output	
2 relays and 1 analogue output	2
Supply voltage	
230 V AC, ± 10 % 50-60 Hz	0
115 V AC, ± 10 % 50-60 Hz	1
24 V AC, ± 10 % 50-60 Hz	2
24 V DC, ± 15 %	5
Custom device / front	00

Contact

E-Mail: enquiries@west-cs.com
Website: www.west-cs.co.uk

Telephone: +44 (0)1273 606271
Fax: +44 (0)1273 609990

Address: The Hyde Business Park
Brighton, East Sussex
BN2 4JU
United Kingdom