# sauermann®

# TM 50

## Temperature transmitter with direct connection on terminal block

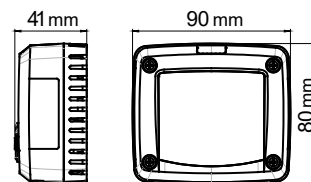**Range from 0 to 50°C [1], from -20 to +80°C [2] and from -100 to 400°C [2]**

**Pt100 2 / 3 wires output [2]**

- Transmitter with stainless steel contact tip (according to model)
- Connection on terminal block [2]
- ABS housing, IP65 [2] or IP20 [1] protection

- "¼ turn" system mounting with wall-mount plate
- Housing with simplified mounting system

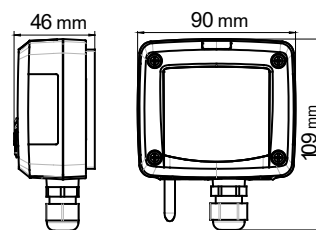## Features of the housing

| Material | ABS V0 as per UL94 wall housing |
|---|---|
| Protection index | IP65<br>Air tight model<br>IP20<br>Ambient model |
| Cable gland | For cables Ø8 mm maximum<br>Air tight models |
| Weight | 143 g |
| Operating temperature | From -20 to +80 °C |
| Storage temperature | From -20 to +80 °C |

**Ambient model**

41 mm    90 mm    80 mm

**Air tight model**
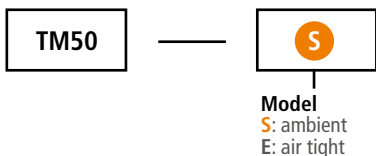
46 mm    90 mm    109 mm

## Part number

TM50 — **S**

**Model**
**S**: ambient
**E**: air tight

**Example: TM50-S**
Ambient temperature transmitter type TM50-S. ABS wall housing. Pt100 2 / 3 wires output.

## Technical specifications

| Measuring range | From 0 to 50°C (ambiant model), from -20 to +80°C and from -100 to 400 °C (terminal block model) |
|---|---|
| Accuracy [3] | Pt100 |
| Type of sensor | Pt100 Class A |
| Contact tip (duct and air tight models) | Stainless steel 316L, without welding from 3/4 to 4/4 hard |
| Environment | Air and neutral gases |

[1] Ambient model / [2] Pt100 terminal block model

[3] All the accuracies indicated in this technical datasheet were stated in laboratory conditions, and can be guaranteed for measurements carried out in the same conditions, or carried out with calibration compensation.

## Symbols used

For your safety and in order to avoid any damage of the device, please follow the procedure described in this document and read carefully the notes preceded by the following symbol:
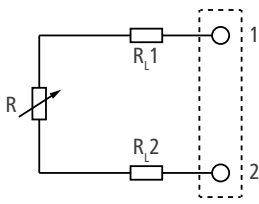
The following symbol will also be used in this document, please read carefully the information notes indicated after this symbol:
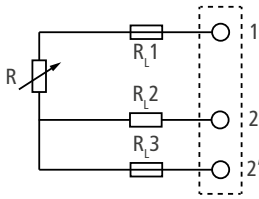
## Connections



OUT
Regulator display
or PLC/BMS

## Useful information on thermometry with platinium RESISTOR Pt100

**2-wire mounting**



This is the simplest way, but line resistors (RL1 and RL2) are connected to the sensor in a series circuit.
The addition of RL1 + RL2, leads to an off-set between measured temperature and real temperature. This connection must be avoided.

**3-wire mounting**



This connection involves identical line resistors (RL1-RL2-RL3), RL2 + RL3 allow you to measure the line resistance that will be subtracted from the measured resistance between 1 and 2-2' terminals. This is the most common connection.

### Tolerance of Pt100 probes as per IEC 751 (1993) standard

| Temperature | Tolerance Class A | |
|---|---|---|
| | ±°C | ±°Ohms |
| -50°C | 0.25 | 0.1 |
| 0°C | 0.15 | 0.06 |
| 100°C | 0.35 | 0.13 |

## Mounting

To mount the transmitter, mount the ABS plate on the wall (drilling: Ø6 mm, screws and pins are supplied).
Insert the transmitter on the fixing plate (see A on the drawing beside). Rotate the housing in clockwise direction until you hear a "click" which confirms that the transmitter is correctly installed.

⚠ **Ambient model has not any fixing plate. 4 fixing holes are inside the back housing. Use them to install the transmitter on the required location. The contact model is fixed with 2 mounting brackets supplied with the transmitter.**



**Maintenance:** please avoid any aggressive solvent. Please protect the transmitter and its probes from any cleaning product containing formalin, that may be used for cleaning rooms or ducts.
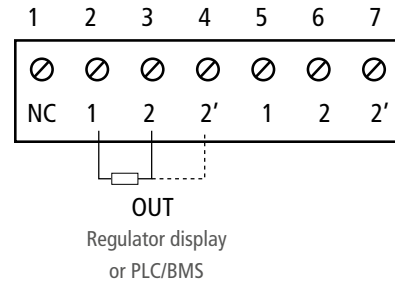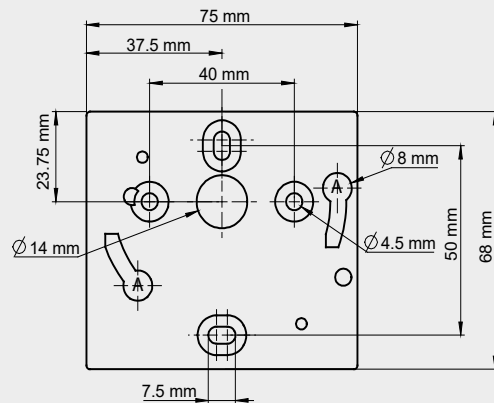
**Precautions for use:** please always use the device in accordance with its intended use and within parameters described in the technical features in order not to compromise the protection ensured by the device.

## Accessories

Pt100 temperature probes

Only the accessories supplied with the device must be used.

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