

# Thermostats

## Frost Protection Thermostat Type 5312-2



*Fig. 1 · Type 5312-2 Frost Protection Thermostat*

## Mounting and Operating Instructions

**EB 5207 EN**

Edition September 2008



## Definitions of the signal words used in these instructions

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### **DANGER!**

*DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.*

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### **NOTICE**

*NOTICE indicates a property damage message.*

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**Note:** *Supplementary explanations, information and tips*

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## 1 General safety instructions

For your own safety, follow these instructions concerning the mounting, start-up and operation of the thermostat:

- ▶ The thermostat may only be mounted, started up or operated by trained and experienced personnel familiar with the product.  
According to these Mounting and Operating Instructions, trained personnel refers to individuals who are able to judge the work they are assigned to and recognize possible dangers due to their specialized training, their knowledge and experience as well as their knowledge of the relevant standards.
- ▶ On wiring and connecting the thermostat, you are required to observe the VDE regulations and the regulations of the local power suppliers. Therefore, this type of work must only be performed by trained personnel.

To avoid damage to any equipment, the following also applies:

- ▶ Proper shipping and appropriate storage are assumed.

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**Note:**

*The device with a CE marking fulfills the requirements of the Directives 89/336/EEC.  
The Declaration of Conformity is available on request.*

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## 2 Design and principle of operation

The Type 5312-2 Frost Protection Thermostat fulfills the function of a temperature monitor:

The double-throw switch is triggered if the temperature at the sensor rises above the adjusted set point. When the temperature falls below the set point, the switch is automatically reset.

### 2.1 Technical data

Type	5312-2
Set point range	-10 to +12 °C
Function	Temperature monitor (TM)
Sensor	Copper capillary, approx. 6 m in length, already sensitive in partial ranges of approx. 0.3 m
Switching differential	Approx. 1 K
Switching point accuracy	±0.12 K
Temperature	
Medium	Max. +200 °C
Housing	-15 to +55 °C
Switching element	Microswitch, 1 changeover contact
Contact rating	
At 24-250 V~	15 (8) A with resistive load 2 A with $\cos \varphi = 0.6$
At 24 V~	Min. 150 mA
Housing	Sheet steel, degree of protection IP 40

### 2.2 Ambient temperature

The thermostat is calibrated for an ambient temperature of 22 °C.

At higher ambient temperatures, the switching point is reduced by 0.08 %/K.

The switching points are raised at lower ambient temperatures.

### 3 Installation

#### NOTICE!

On installing the thermostat, follow the instructions described below to prevent damage to the thermostat and to ensure it can function properly:

- Only use with non-corrosive media.
- Do not bend the capillary. The smallest bending radius must not be smaller than 5 mm.
- The temperature at the housing must be at least as high as the adjusted value, but must not be higher than 55 °C.
- Mount the housing as close to the point of measurement as possible since the capillary is sensitive along its entire length.

**Note:** A broken capillary is indicated when the temperature falls below the set point.

To position the capillary properly at the outlet of the heater battery, mounting clamps are required (not included in the scope of delivery).

Any mounting position can be chosen.

### 4 Electrical connection

#### Risk of electric shock!



On connecting the thermostat, you are required to observe the relevant regulations, especially VDE 0100.

1. Open the housing.
2. Route the connecting lead (Ø5 to 10 mm, max. 2.5 mm<sup>2</sup> wire cross-section) through the cable gland in the housing and connect it to the terminals according to the wiring plan (Fig. 2).
3. Route the ground wire to the PE terminal of the housing.
4. Close the housing.

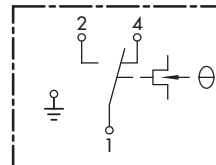
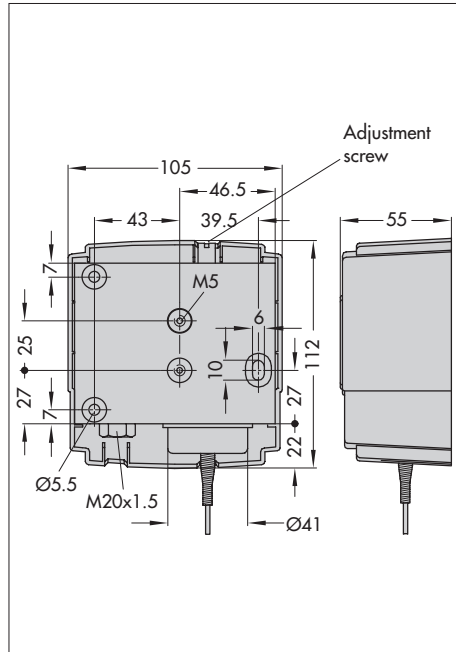


Fig. 2 · Wiring plan

## 5 Set point adjustment

Use a screwdriver to adjust the required set point temperature at the adjustment screw according to the scale.

## 6 Dimensions in mm







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