# OEM-Thermostat 24 V

The OEM-Thermostat is an electronic room temperature thermostat for an optimal control of thermal actuators. The range of application is mainly focussed on individual room control of floor heating systems.

The OEM-Thermostat has been specially designed for the customer-specific use in OEM businesses. Apart from a precise controlling behaviour by pulse width modulation, it is characterised by a straight and modern design. A further differentiation can be obtained by customised versions. The product can be extended with a switching output indicator per LED, as well as with a range limitation of the adjustable set temperature.

Installation may be performed on a flush-type box as well as directly to the wall. The connection and mounting works is intuitively and installation-friendly.

## Features

- OEM design
- Versions in 24 V for actuators – normally-closed
- Rotary temperature control with 1/4 degree soft clicks
- Automatic temperature setback (4K at 20°C) by external switching signal
- Quick and easy installation
- Precise control response
- Patented set value adjustment
- Direct wall mounting
- Installation on flush-type box (D/CH)
- Limitation of set temperature range (optional)
- Indication of the switching output per LED (optional)

## Application

The OEM-Thermostat serves for the control of thermal actuators in surface and radiator heating systems.

## General Information

### Type
R 4012:     Version 24 V – normally closed
R 4022:     Version 24 V – normally closed, with switching output indicator

### Scope of Supply
1 x OEM-Thermostat R4...
1 x Installation instruction

### Customer-specific Version
Following differentiations are possible:
- Own article number
- Logo (also multicoloured)
- Own casing colour
- Own casing
- Own scaling

### Ordering Information
Our staff will be glad to assist you in finding the OEM-Thermostat fitting your application.
Call us at: +49 - 53 41 - 84 75 - 0

## Function

### Standard

**Control Response**
The FB-Thermostat is an electronic on/off controller, offering an optimal control of thermoelectric actuators on the basis of pulse width modulation.

Output pulses are adapted depending on the difference between the room temperature measured by the thermostat (actual value) and the desired temperature (set value). The bigger the difference between set value and actual value, the longer the actuator is switched on. When the room temperature approaches the set temperature, the pulses become shorter and shorter due to a thermal feedback.

Pulse width modulation in combination with a thermal feedback guarantees precise control response and prevents excessive overshoot during the heat-up phase. In settled condition, few switch-on pulses per hour will be sufficient to maintain the desired temperature.

**Temperature Setback**
If an external switching signal for temperature setback is given by a timer, the set temperature is reduced automatically by approximately 4K.

**Set Value Adjustment**
According to the given conditions of rooms, or of constructional structures, it is possible to adjust a possible control deviation to the room temperature, by -2 K … 2 K. For this purpose, there is a set adjustment rider underneath the turning knob.
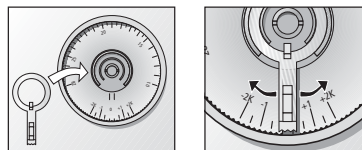
### Optional

**Limitation of set temperature range**
The adjustment range of the turning knobs can be selected individually by using riders. The corresponding riders are inserted underneath the turning knob.
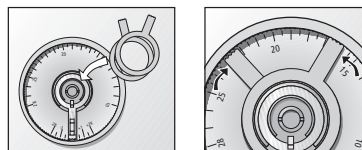
**LED for switching output**
The status of the switching output can be indicated by an LED. If the LED is on, it indicates that the switching output "HEATING" is active.

**Room Thermostats**

## Technische Daten

| Typ | R 4012 | R 4022 |
|---|---|---|
| Operating voltage | 24 V±20%, 50/60 Hz | 24 V±20%, 50/60Hz |
| Switched current | max. 1 A (ohmic load) | max. 1 A (ohmic load) |
| Contact rating | max. 5 actuator a 3W | max. 5 actuator a 3W |
| Switching output | Triac | Triac |
| Fuse | 2 A, slow | 2 A, slow |
| Temperature setback | approx. 4 K / 20°C | approx. 4 K / 20°C |
| max. set value deviation | ± 0.5 K | ± 0.5 K |
| Storage temperature | -20 to +70°C | -20 to +70°C |
| Ambient temperature | 0 to +50°C | 0 to +50°C |
| Relative humidity | max. 80%, not condensing | max. 80%, not condensing |
| Degree of protection | IP 30 | IP 30 |
| Protection class | III | III |
| CE conformity according to | EN 60730 | EN 60730 |
| Housing material | ABS | ABS |
| Housing color | pure white | pure white |
| Connection terminal | 5-pole screwed terminal | 5-pole screwed terminal |
| Weight | 62 g | 63 g |
| Adjustment of set value | ±2 K / ¼ degree soft clicks | ±2 K / ¼ degree soft clicks |
| Indication of switching output (LED) | no | yes |

78 mm

26 mm · 78 mm
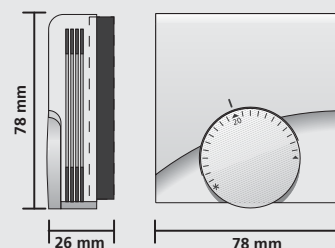
## Planning and Installation Notes

### Mounting Location



ca. 30cm

ca. 150cm
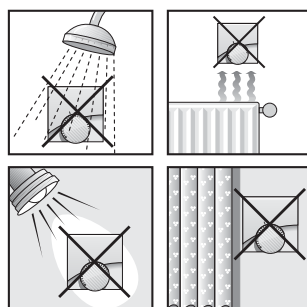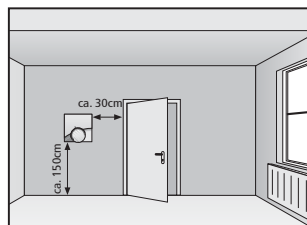


**Note!**
In order to ensure a trouble-free and thus optimal operation of the thermostat, this device should be located behind a door in a calm zone – free of ambient influences as e. g. draught, direct sunlight or other sources of heat; it must not be covered by curtains nor be exposed to humidity. Otherwise, there is a danger of not reaching or exceeding the adjusted room temperature, depending on the respective ambient condition.

### Installation



3,5
~ 20 mm
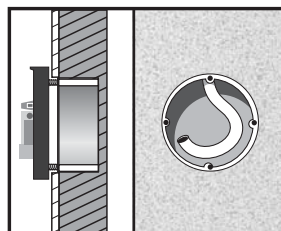
Installation can be performed on a common flush-type box (D/CH) with a bore spacing of 60 mm.



3,5
~ 30 mm
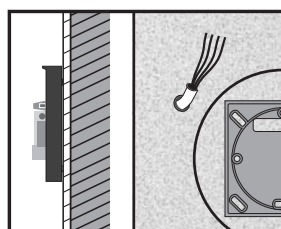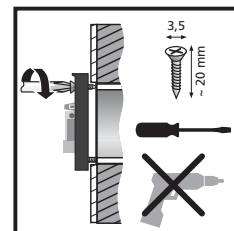
In case of direct wall mounting, the bore specifications in the bottom of the controllers must be observed.

### Electric Installation



L1/L
L2/N

| L2 N | L2 N | L1 L |
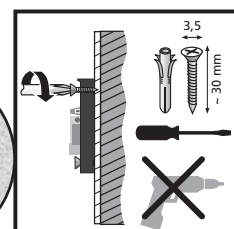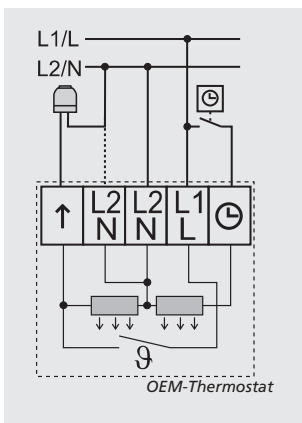
*OEM-Thermostat*

Electric connection at 5-pole screwed terminal for "automatic temperature setback" with external timer.

The thermostat is connected to a 5 x1,5² NYM line, via the 5-pole screwed terminal, directly to the thermal actuators, or to a special cabling unit in the heating circuit distribution cabinet of a floor heating system. For this, only one of the N- or L2-terminals is needed (these are provided 2 times each). The protective conductor is not used.

### Device Overview
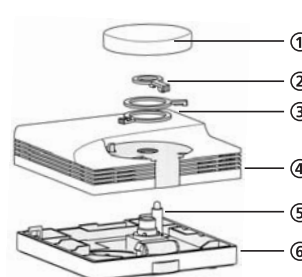


① 1-Temperature turning knob
② 2-Set value balance
③ 3-Range limitation rides (optional)
④ 4-Upper part of casing
⑤ 5-Switch Indicator Heating (optional)
⑥ 6-Lower part of casing