

OEM-Thermostat with external sensor

The OEM thermostats with external sensors are digital room thermostats; they can be used for room temperature regulation as well as for heating surface temperature regulation (e. g. floor heating systems). This function ensures that a minimum temperature of the heating surface is kept, even at reduced room temperature.

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 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 installation-friendly.



Features

- OEM design
- Valve protection function (only NC)
- Version: normally-open (NO) or normally-closed (NC)
- External sensor with 3 m cable
- 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
- Set value adjustment
- Direct wall mounting
- Installation on flush-type box (D/CH)
- Limitation of set temperature range (optional)

Application

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

General Information

Type

R HK 2012 2E: Version 230 V – normally closed
R HK 2112 2E: Version 230 V – normally open
R HK 4012 2E: Version 24 V – normally closed
R HK 4112 2E: Version 24 V – normally open

Scope of Supply

1 x OEM-Thermostat R ..12 2E
1 x External sensor 3m
1 x Installation instruction within 11 Languages

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

Thermostat characteristics

The OEM Thermostat is a PI thermostat for the control of thermoelectric actuators (e. g. OEM actuator), in particular for floor heating systems.

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.

Minimum floor temperature

The minimum floor temperature is determined. When set to the position "ext.", only the external sensor is used, the internal sensor remains inactive. In this case, the target floor temperature is set with the regular turning knob.

Valve protection function (only NC)

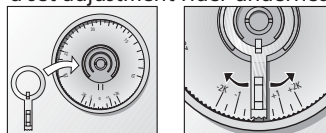
If an actuator is not triggered for more than 24 hours of normal operation, the electronic system switches the actuator for 6 minutes once every 24 hours. This prevents the thermostat valves from seizing outside the heating season.

Temperature Setback

If an external switching signal for temperature setback is given by a timer, the set temperature is reduced automatically by approximately 4K. The minimum floor temperature setting is not reduced.

Set Value Adjustment

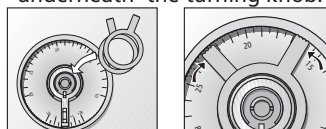
According to the given conditions of rooms, or of constructional structures, it is possible to adjust a possible control deviation to the room temperature, by -2 K ... 2 K. For this purpose, there is a set adjustment rider underneath the turning knob.



Optional

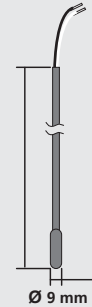
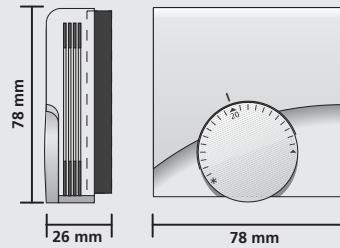
Limitation of set temperature range

The adjustment range of the turning knobs can be selected individually by using riders. The corresponding riders are inserted underneath the turning knob.



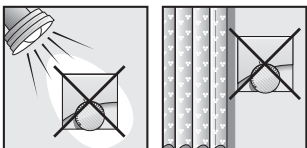
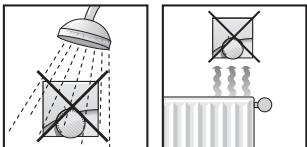
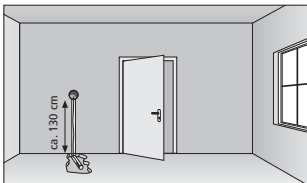
Technical data

Type	R 2x12 2E	R 4x12 2E
Operating voltage	230 V ± 10%, 50 Hz	24 V - 10 % bis +20% 50-60Hz
Switched current	0,25 A (ohmic load)	1 A (ohmic load), max.
Contact rating	5 actuators à 3W, max.	5 actuators a 3W, max.
Switching output	Relay	Triac
Fuse	2 A slow	1 A slow
Temperature setting	10 - 28°C	10 - 28°C
Adjustment of set value	±2 K/¼ degree soft clicks	±2 K/¼ degree soft clicks
Temperature setback	approx. 4 K/20°C	approx. 4 K/20°C
Max. set value deviation	approx. ± 1 K	approx. ± 1 K
Hunting		
10-17°C und 24-28°C	< 0,6 K	< 0,6 K
17-24°C	< 0,3 K	< 0,3 K
Storage temperature	-25 to +70°C	-25 to +70°C
Ambient temperature	0 to +50°C	0 to +50°C
Relative humidity	80% max., not condensing	80% max., not condensing
Degree of protection	IP 30	IP 30
Protection class	II	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	174 g	174 g



Planning and installation notes

Mounting location

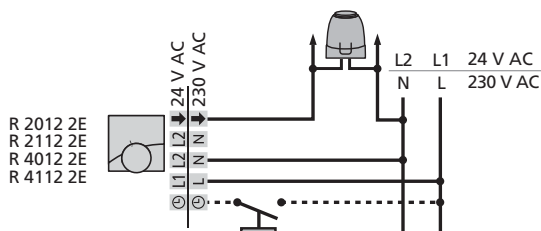


Note!
In order to ensure a flawless and optimum control operation, a room thermostat should be installed in an untroubled zone – free from environmental influences as e. g. draught, exposure to direct sunlight or other sources of heat, and humidity. Otherwise it may happen that the set temperature is exceeded or will not be achieved, depending on the environmental influences. Recommendations and advice on the installation of the remote sensor:

- Do not install the remote sensor to exterior walls of a room
- Allow 2–8 cm distance from the heating system (e. g. floor heating system tubes)
- Install remote sensors in empty tube
- Only the temperature at the position of the remote sensor is measured.

Electric installation

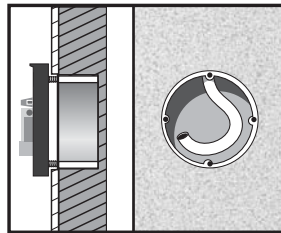
10 actuators, max. – A 2x4 and 5 Antriebe-A4x4, max.



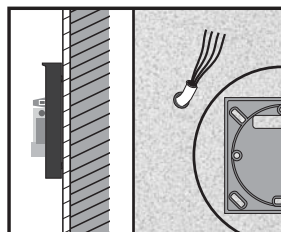
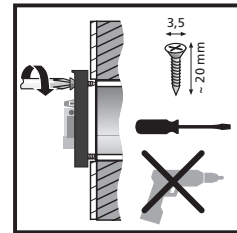
Electric connection at 5-pole screwed terminal. For the reduced operation mode and switching between heating and cooling mode a potential free contact is used.

The thermostat is connected 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.

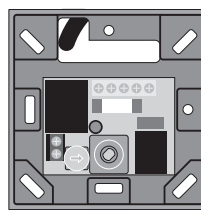
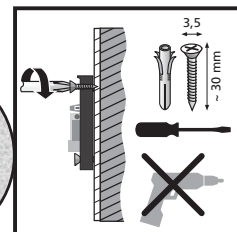
Installation



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

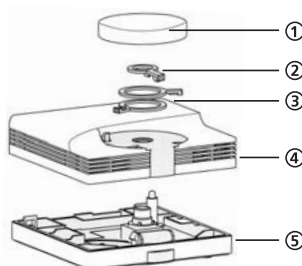


In case of direct wall mounting, the bore specifications in the bottom of the controllers must be observed.



Electrical connection of the external sensor ES 1000. The sensor is connected directly on the PCB.

Device overview



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