B.
Berker

Operating Instructions

Floor
Temperature Controller
Order No. 2034 ..

U 468 931 002 786-5 9709210000

Please note!
The device may only be opened and installed according to the circuit diagram on the device or these instructions by a qualified electrician. The existing safety regulations must be observed. Appropriate installation measures must be taken to achieve the requirements of protection class II. This independently mountable electronic device is de-signed for controlling the temperature in dry and en-closed rooms only under normal conditions. The device confirms to EN 60730, it works according operating principle 1C.

Applications:

In buildings for controlling electrical floor heating systems and floor temperature regulating systems.

Functional description:

The floor heating controller consists of two components:

1. Control unit for setting the desired floor temperature.
2. Remote sensor in floor for monitoring the set temperature.

1. Control unit:

The adjustment knob is used to set the desired floor temperature. The ❄ - 5 number scale on the knob corresponds to a temperature range of 10 °C to 50 °C. Please observe the corresponding setting specifications of the floor heating manufacturer. If the floor temperature falls below the set temperature, the control unit requests heat. This state is indicated by the red LED located above the adjustment knob enabling you to see when your heating system is using energy. The range can also be narrowed down with the adjustment knob. The 0-I power switch is used to switch your floor heating system on or off. You also have the option of programming a temperature set-back, e.g. at night, via an external timer. If such a timer is installed in your system, the beginning of the temperature set-back is indicated by the green LED located above the adjustment knob. The temperature set-back is approx. 5°C.

2. Sensors:

The sensor is installed in the floor. It monitors the floor temperature set on the control unit and issues the commands to switch the floor heating on or off.

3. Installation:

- Control unit on commercially available flush-type boxes Ø 55 mount. **CAUTION!** The device must always be mounted with its retaining ring on the wall paper!
- Remove casing cover. Pull off the adjustment knob.
- Electrical connection:
  Connect according to circuit diagram; solid conductor - cross section 1 mm2 to 2.5 mm² No protective conductor required. Protective conductor terminal is only used for looping through. Safety Class II can be achieved using the appropriate installation measures.
- Mount the controller onto the socket using the thread-forming tapping screws for flush-type boxes.
- Put the casing cover back on. The cover must latch into the bottom part of the casing on the top left. Push the adjustment knob back on.
- The sensor must be routed through a conduit. to protect it against humidity and facilitate replacement in case of a required repair.

4. Notes for the installer:

- The 0-I switch on the control unit isolates the unit from the power supply single-pole and interrupts the circuit to the floor heating resistor.
- When carrying out work on the load circuit, the power supply must be disconnected, e.g. by removing the fuse.
- If the sensor circuit is interrupted, the relay contact is closed. In the case of a sensor short-circuit, the relay contact is open.
- **CAUTION!** In case of failures, there sensor might not be completely isolated.

4. Technical data:

Controller

Rated voltage at 50 Hz:	230 V
Tolerance range:	195 V to 253 V
Temperature range:	(=10 °C to 50 °C) *... 5
Switching current:	10 A (resistive load/p.f. = 1)
Switching capacity:	2.3 kW
Switch/single-pole:	On/Off
LED:	Heating On "red" Night set-back On "green"
Contacts (relays):	1 NO contact (for "heating") non-floating
Temp. set-back:	approx. 5 K
Switching temp. diff.:	approx. 1 K
Degree of protection for casing:	IP 30 to EN 60529
Permiss. operating temp.:	0 °C to 40 °C
Permiss. storage temp.:	-25 °C to 70 °C
Pollution degree:	2
Rated impulse voltage:	4 kV
Ball pressure test temperature:	75 ± 2 °C
Voltage and Current for the for purposes of interfernce measurements:	230 V, 10 A

Temperature sensor

Sensor element:	NTC
Sensor cable:	PVC (2 x 0.50 mm²)
Length:	4 m
Sensor dimensions (Ø x L):	8.5 mm x 40 mm
Degree of protection:	IP 68 to DIN VDE 0470T1
Operating temperature:	-20 °C to +70 °C
Ambient temperature:	-25 °C to +70 °C

If required, the sensor cable can be extended with a 2-wire cable with a cross section of 1.5 mm². This has no influence on the accuracy of the controller. When routing in cable ducts or in the vicinity of power lines, a shielded line should be used.

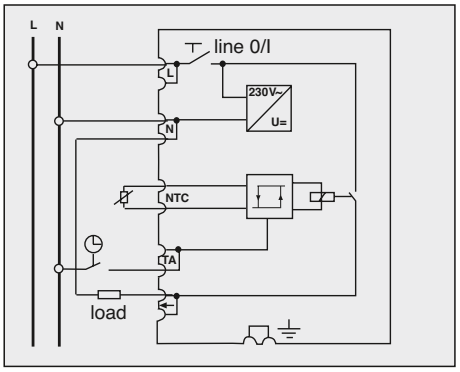
Sensor characteristics:

Measuring device $R_i > 1$ MΩ

Temperature	Resistance
°C	kΩ
5	85.279
10	66.785
15	52.330
20	41.272
25	33.000
30	26.281
35	21.137
40	17.085
45	13.846
50	11.277

The resistance values can only be measured when the sensor is disconnected.

Circuit diagram:



Narrowing down the temp. setting range:

The controller is factory-set to a maximum setting range of d to 5. There are 2 ring gauges in the adjustment knob with a setting range of 5 °C to 30 °C. To narrow down the range, please carry out the settings according to the table below.

Knob position	Floor temperature	Scaling in knob
d	10	5
2	20	11
3	30	18
4	40	24
5	50	30

Warranty:

We reserve the right to make technical and formal changes to the product in the interest of technical progress.
Our products are under guarantee within the scope of the statutory provisions.
If you have a warranty claim, please contact the point of sale or ship the device postage free with a description of the fault to the appropriate regional representative.

This product should not be disposed of with household waste. Please recycle the products where facilities for electronic waste exist. Check with your local authorities for recycling advice.