LCT

Room Thermostat

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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Application

The electronic room thermostat is designed for controlling temperature in commercial, industrial and residential buildings and also underfloor heating applications. LCD temperature display, dial set point and relay on/off output. Additional input is available for an external temperature sensor if required.

Security Advice – Caution

The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

CAUTION! Risk of electric shock due to live components within the enclosure, especially devices with mains voltage supply (usually between 90..265 V).

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

Notes on Disposal

As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

Remarks to Room Sensors

Location and Accuracy of Room Sensors

The room sensor should be mounted in a suitable location for measuring accurate room temperature. The accuracy of the temperature measurement also depends directly on the temperature dynamics of the wall. It is important, that the back plate is completely flush to the wall so that the circulation of air occurs through the vents in the cover. Otherwise, deviations in temperature measurement will occur due to uncontrolled air circulation. Also the temperature sensor should not be covered by furniture or similar devices. Mounting next to doors (due to draught) or windows (due to colder outside wall) should be avoided.

The temperature dynamics of the wall will influence the temperature measurement. Various wall types (brick, concrete, dividing and hollow brickwork) all have different behaviours with regards to thermal variations.

Surface and Flush Mounting

The temperature dynamics of the wall influence the measurement result of the sensor. Various wall types (brick, concrete, dividing and hollow brickwork) have different behaviours with regard to thermal variations. A solid concrete wall responds to thermal fluctuations within a room in a much slower way than a light-weight structure wall. Room temperature sensors installed in flush boxes have a longer response time to thermal variations. In extreme cases they detect the radiant heat of the wall even if the air temperature in the room is lower for example. The quicker the dynamics of the wall (temperature acceptance of the wall) or the longer the selected inquiry interval of the temperature sensor is the smaller the deviations limited in time are.

Technical Data

Measuring values	temperature
Output switching contact	heating: 250 V ~ , max. 16 A | 30 V =, max. 10 A
Power supply	100..240 V ~
Measuring range temp.	0..+40 °C
Accuracy temperature	±1 K (typ. bei 21 °C)
Operating temperature range	0..50 °C
Sensor	bimetal
Inputs	input for NTC100K
Control function	heating ON/OFF
Functions	setpoint
Set point range	+5..+30 °C
Switching values	max. permissible temperature change rate 4 K/h
Display	LCD for temperature and set point
Enclosure	PC, pure white brilliant
Protection	IP20 according to EN 60529
Cable entry	rear entry
Connection electrical	terminal block, max. 1,5 mm²
Ambient condition	max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=60 mm)
Notes	set point adjustment for room temperature: +5..+30 °C, set point adj.t for floor temperature: +5..+40 °C

Declaration of conformity

The declaration of conformity of the products can be found on our website https://www.thermokon.de/.

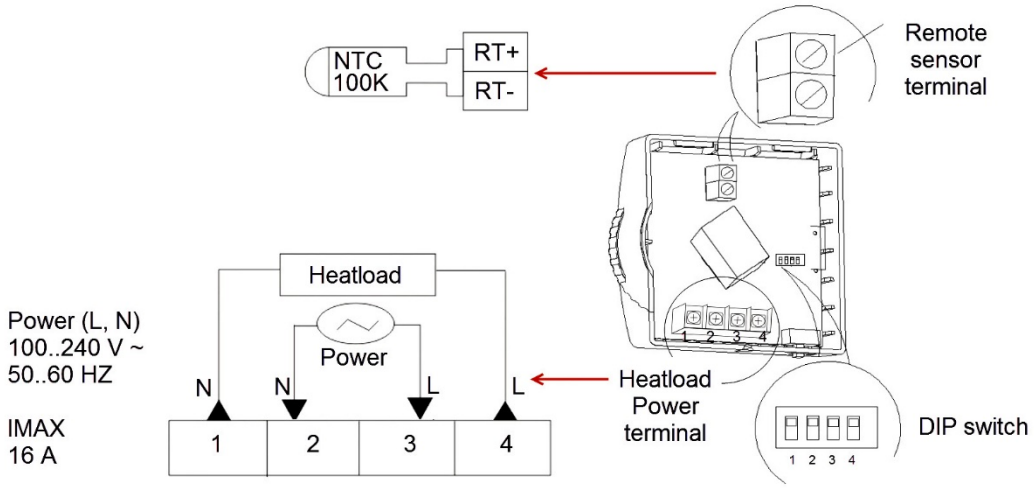
Mounting Advices

The device is able to resist to the types of dirt or dust that normally occur in offices and living spaces. Excessive volumes of dust and dirt produced during installation or during renovation works may soil the contacts and can lead to a breakdown of the device.

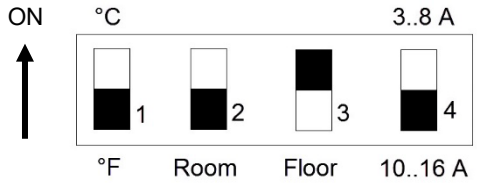
Always turn off power at the main power source by unscrewing fuse or switching circuit breaker to the off position before installing, removing, cleaning, or servicing this thermostat.

Installation has to be done at a suitable place within the range of validity of the local electrical installation laws and regulations.

Terminal Connection Plan



DIP switch settings



DIP switch 1 defines, whether temperature in the display will be shown in °C (default) or °F.

DIP switch 2 and 3 defines the type of heating and which sensors should be used.

DIP switch 4 defines the load compensation. It can be switched between 3..8 A and 10..16 A (default).

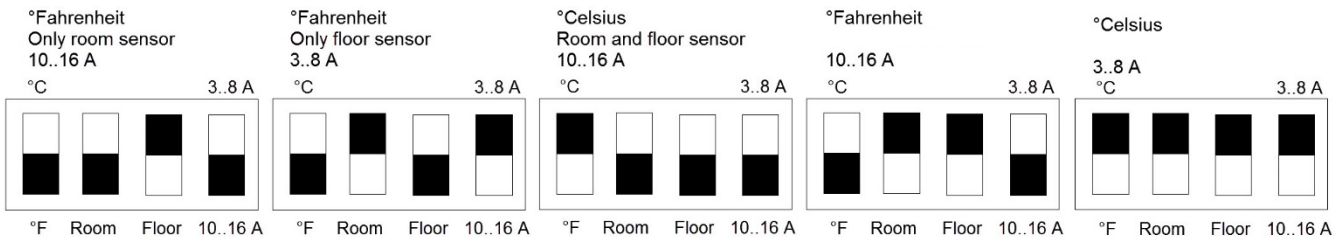
When setting DIP switch 2 to “Room enabled” and DIP switch 3 to “Floor disabled” (default), the product is used as Room Thermostat. This setting is used, if a external floor temperature sensor is not installed or cannot be installed. The unit will be controlled the integrated room sensor and the thermostat will determine to activate/deactivate heating mode, comparing set point temperature with the room temperature. When the room temperature is reached or is lower than the set point temperature, the thermostat will go into heat mode. When room temperature is reached or higher than set point heating mode will be deactivated.

When setting DIP switch 2 to “Room disabled” and DIP switch 3 to “Floor enabled”, the product is used as under floor Thermostat. This setting is used where constant temperature is required for underfloor heating where a comfortable warm surface is required. The unit will be controlled via external floor temperature sensor. It will determine to activate/deactivate heating system by comparing set temperature with actual floor temperature. When floor temperature reached or lower than setting temperature, the thermostat will start heat mode. When floor temperature reached or higher than setting temperature, heat mode will be deactivated.

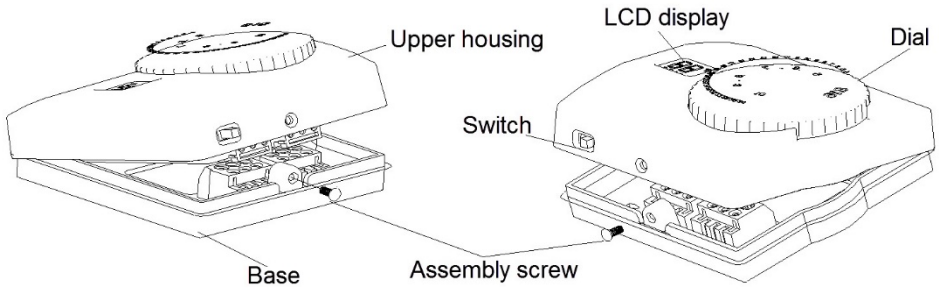
When setting DIP switch 2 and 3 to the same position, the product is used as Room Thermostat with Floor Limitation (e.g. as it could be used in living rooms). The thermostat activates or deactivates heating system by comparing set temperature with the actual room temperature When floor temperature is ≤5 °C (≤41 °F) the thermostat will start heating until the temperature is >5 °C (>41 °F). When floor temperature is ≥40 °C (≥99 °F) the thermostat will stop heating until the temperature is <40 °C (<99 °F). Within the limitation it is working smoothly in normal operating conditions. When room temperature reached or lower than setting temperature, the thermostat will start heat mode. When room temperature is higher than setting temperature, it will stop heating.

Using DIP switch 4 the offset for temperature compensation because of self-heating is set. The value of the display will be decreased with a different value based on the setting of the switch, when the thermostat has operated. If load is shut off, this change will be slowly cancelled.

Configuration examples:



Installation



Remove assembly screws from the base of thermostat. Gently remove the cover. Forcing or prying on the thermostat will cause damage to the unit.

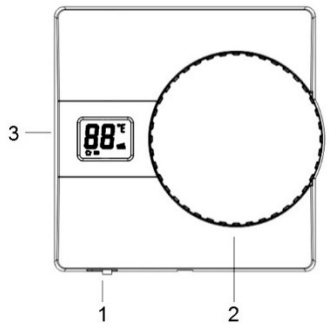
Connect wires (see Terminal Connection Plan).

The floor sensor cable must be installed to the terminal block. DIP switch 3 has to be set to enable floor sensor. Otherwise product will shut down heating output and display will show E3 indicating a floor sensor problem.

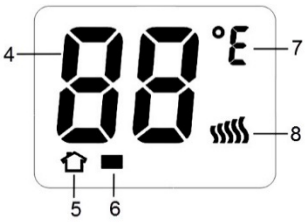
Push power base into.

Mount the back plate to the wall using mounting screws and replace the cover.

Commissioning



1 ON/OFF switch
2 Temperature setting knob
3 LCD display area
4 Current temperature - when flashing: set temperature
5 Shows room temperature mode
6 Shows floor temperature mode
7 °C / °F readout
8 Heating output indication



Setting Temperature Mode:

Turn on the thermostat, rotate the setting knob entering the temperature setting mode. The LCD starts flashing showing the current setting. No rotation within 5s, thermostat switches between room and floor temperature automatically. Rotate the setting knob to set the temperature.

Error Codes (with showing an error code the product will shut down every output)**:**

E1 flashing in display:	Room sensor short circuit.	E2 flashing in display:	Room sensor broken.
E3 flashing in display:	Floor sensor short circuit.	E4 flashing in display:	Floor sensor broken.

Dimensions (mm)