LK Room Thermostat S2, 24 V NO

LK Room Thermostat S2 is an electronic room thermostat with a triac output specially adapted for the LK Floor Heating System. The room thermostat is used together with electrothermal actuators of normally open (NO) type. To achieve maximum energy efficiency the thermostat uses so-called self-modulating technology via signal pulses to the valve actuator. The self-modulating technology adjusts the output of the underfloor heating to the set temperature. Once the room temperature approaches the set temperature, the output of the heating is gradually reduced to prevent overheating.

LK Room Thermostat S2, 24V NO is available in two different designs, S2 and S2 EXT, where S2 EXT can be connected to LK Remote Sensor ICS/S2 for controlling e.g. floor temperature. The room thermostat is also used in so-called public environments, where the temperature setting of the thermostat can be locked by pressing buttons in combination.

Product range

- LK Room Thermostat S2 NO (Article no. 243 43 99): Basic thermostat for controlling room temperature
- LK Room Thermostat S2 EXT NO (Article no. 243 44 01): Thermostat for controlling room temperature or for controlling e.g. floor temperature via LK Remote Sensor ICS/S2 (Article no. 241 73 23).

Accessories

- LK Remote Sensor ICS/S2, matches room thermostat S2 EXT (Article no. 241 73 23)

Spare parts

- LK Pattress S2, comes supplied with the thermostat, (Article no. 33454)

Particular benefits to note:

- Self-modulating technology via signal pulses for maximum energy efficiency.
- Modern design with polished vitreous surface and touch temperature setting.
- Intended for mounting directly on a wall, or on an electrical installation box.
- Option of connecting a remote temperature sensor for model S2 EXT.
- The room thermostat settings can be locked by pressing buttons in combination.
- The temperature can be reduced via a separate timer (timer not included).
- Silent thermostat function.
- Easy functional check via LED.

Functional description

Normal mode for the room thermostat when in operation is displaying current room temperature.

The temperature setting of the room thermostat can be changed using the “arrow up” or “arrow down” touch buttons. When the buttons are touched, the temperature display shows more brightly. The thermostat is then displaying the set/desired room temperature. Once changes have been made with the “arrow up” or “arrow down” buttons, the thermostat returns to a reduced brightness level, once again displaying the current room temperature.

The thermostat comes with a function LED which shows whether the set temperature has been reached or not. If the LED is off, the set temperature has been reached.

Installation

When fitting, bear the following in mind:

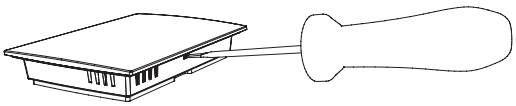
- Fitting height, approx. 1.5 m above floor level.
- Best installed on an inner wall.
- Make sure there is circulation of air.
- Avoid secondary heat from other heat sources, such as sunlight, lighting, etc.

Electrical connection

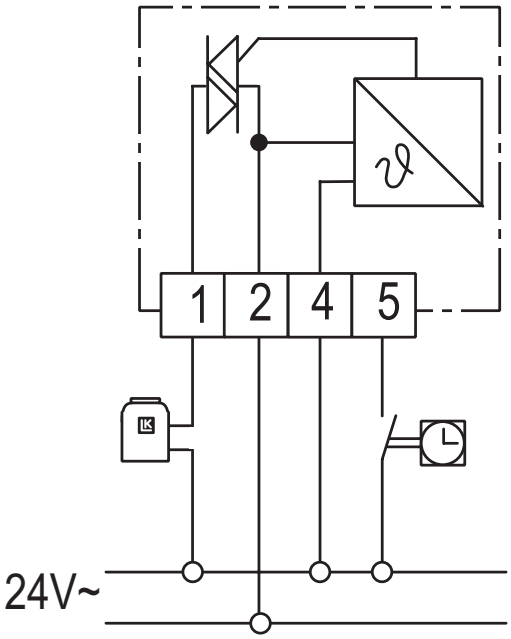
1. Remove the back cover of the thermostat.
2. Fit the back cover to the wall. If the back cover is to be fitted to an electrical box, the pattress which comes supplied with the thermostat should be used.
3. Electrical installation must be performed as per the circuit diagram below.

LK Systems

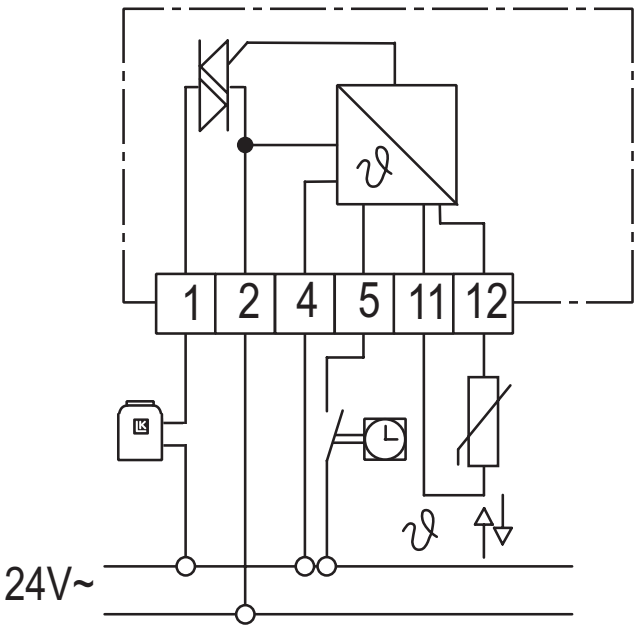
Note: If LK Connection box NO or LK Connection Box 1 is used, follow the circuit diagram of the product in question instead.



Removal of the thermostat back cover



Connecting LK Room Thermostat S2



Connecting LK Room Thermostat S2 EXT with option of connecting a remote sensor

Temperature locking

For installation in e.g. a public environment, locking of the thermostat's temperature setting may be needed.

- Locking is performed by pressing buttons in combination. Hold both buttons, i.e. "arrow up" and "arrow down" down for approximately 20 seconds. When the function is active, the thermostat displays "LOC" for lock, i.e. the thermostat is locked. The room thermostat will then return to displaying the current room temperature. If someone tries to change the temperature, the thermostat will display "LOC" to show that the thermostat is locked.
- Unlocking is performed in the same way as locking, i.e. hold both buttons (i.e. "arrow up" and "arrow down") down together for approximately 20 seconds. The room thermostat shows that the function has been deactivated by displaying "OPn" for open.

Text message for locked temperature setting

Unlocked temperature setting, displayed on unlocking

Switching off the temperature display and LED

The temperature display and function LED on the room thermostat can be switched off. The thermostat is still active after the temperature display and LED have been switched off. To read off or change the temperature, the temperature display comes on once one of the touch buttons is touched. The thermostat then returns to unlit mode. Switching off the temperature display is ideal for bedrooms.

- The temperature display of the room thermostat is switched off by holding down the right arrow button for approximately five seconds. When the function is active, the thermostat shows “doF” for display off.
- To return to normal temperature display (on), hold the right arrow button down for approximately five seconds. When the function is deactivated, the thermostat will show “don” for display on.

Text message for switch-off of temperature display

Text message for return to temperature display “on”

Connection of LK Remote Sensor ICS/S2

LK Remote Sensor ICS/S2 is designed to be used together with LK Room Thermostat S2 EXT when e.g. floor temperature is to be controlled. The sensor is connected to terminal 11 and 12 of the thermostat, see circuit diagram. If necessary, the remote sensor can be connected by extension cable up to 50 metres. For extension purposes, use the same cable area as the sensor, or a larger one. Note: Avoid routing in parallel with a high voltage installation, e.g. on cable tray.

Position the remote sensor as follows:

Concrete & screed encapsulated systems

Before applying the concrete or screed, a conduit is normally positioned approximately 1.5 metres into the room. Note that positioning should be at a point which is representative of the surface/zone which is to be controlled. The end of the sensor must terminate centrally between two floor heating pipes. Seal the end of the conduit with tape or similar so that concrete cannot enter it. Try to position the conduit as high as possible in the structure, as this will result in better performance when controlling the floor surface temperature. Insert the remote sensor in the conduit before applying concrete or screed and connect to the thermostat as described above.

LK HeatFloor 22, LK EPS 30/50/70 or LK Silencio

Cut a slot in the top of the slotted board. Position a conduit in the cut slot, terminate the conduit centrally between two heat distribution plates. Note that positioning should be at a point which is representative of the surface/zone which is to be controlled. Insert the remote sensor in the conduit before laying the floor and connect to the thermostat as described above.

Underfloor heating in secondary spaced boarding

Position a conduit between two heat distribution plates and secure the conduit in the edge of the secondary spaced boarding using conduit clamps. Note that positioning should be at a point which is representative of the surface/zone which is to be controlled. Insert the remote sensor in the conduit before laying the floor and connect to the thermostat as described above.

LK EPS 16

Position a conduit along the long side of the floor heating installation so that it is pointing towards the nearest short side. At the short side cut a jack approximately 2 metres long in the EPS board measured from the short side. The conduit is positioned in this jack. Insert the remote sensor in the conduit before laying the floor and connect to the thermostat as described above. Note that positioning should be at a point which is representative of the surface/zone which is to be controlled.

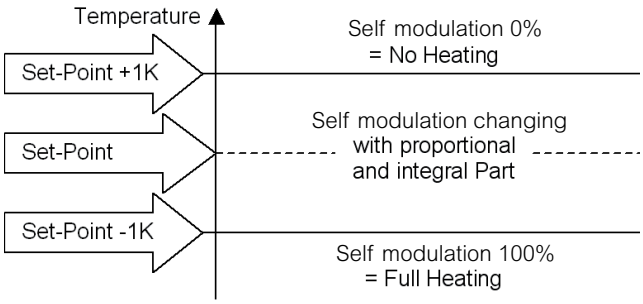
LK Clip Rail 8/ LK Clip Rail 12

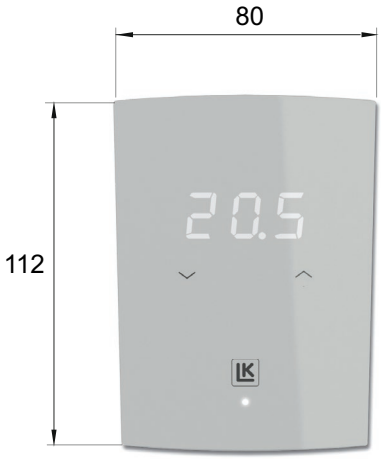
Position a conduit along the long side of the floor heating installation so that it is pointing towards the nearest short side. At the short side, route the conduit in the centre between two floor heating pipes and connect as normal approximately 1.5 metres in. Seal the end of the conduit with tape or similar so that concrete/flooring compound cannot enter it. Insert the remote sensor in the conduit before applying concrete or screed and connect to the thermostat as described above. Note that positioning should be at a point which is representative of the surface/zone which is to be controlled.

Technical Data LK Room Thermostat S2

Voltage 24 V AC (20….30 V, 50….60 Hz) NO normally open
Switching capacity max 22 W (625 mA)
Intrinsic power 2 W
Maximum of five LK Actuator 24 V NO items per room thermostat
Temp. range 5–45 °C
Input for temperature reduction -3 K
Cycle time for self-modulation 42 min
Range for self-modulation 2 K
Colour: housing and pattress – white RAL 9003; cover glass – polished white/ice grey
Protective class III
Protection class IP30
Storage temperature -25 to + 80 °C
Rel. humidity (warehouse) <80 % non-condensing
Operating temperature 0 to + 50 °C
Remote sensor, length 3 m, type NTC 10 kΩ (option)
Dimensions 80x112 x 16 mm Overall dimensions with pattress fitted 80 x 112 mm Overall dimensions without pattress fitted 65 x 98 mm

Temperature range for self-modulation



Temperature range for self-modulation, cycle time 42 min.

Dimensions