

LK Receiver Unit Cq 1 (NC)

MODELS

LK Wireless Room Temperature Controller Cq NC 1 consists of a LK Room Thermostat Cq (transmitter) and a LK Receiver Unit Cq 1 (a receiver device for one channel).

Also included in the wireless assortment is a receiving device for eight channels; for more information see separate instructions for LK Receiver Unit Cq 8.

The LK Repeater Cq HW (signal repeater) is available as an accessory for difficult sending conditions; see more about this in separate instructions for the LK Repeater-HW.

FUNCTIONAL DESCRIPTION

The LK Room thermostat Cq-n regulates the temperature of the room via transmission of radio signals to the LK Receiver Unit Cq 1. The receiver unit transforms the radio signals into control signals which activate the LK Controlling Device. Since the communication between the LK Receiver Unit Cq 1 and the LK Controlling Device occurs via cable, it is most suitable to place the receiver unit in direct connection to the circuit distributor.

LK ROOM THERMOSTAT CQ-N



LK Room Thermostat Cq-n is available in two different models: polar white or silver grey.

The LK Room Thermostat Cq-n regulates the temperature of the room via transmission of radio signals to the LK Receiver Unit Cq 1. Regulation occurs via pulse width modulated (PBM) regulation which is especially adapted to thermoelectric



controlling devices. The control signal, which is calculated from the difference between the real and set temperatures, is emitted in the form of a signal with different pulse and rest conditions. The total of the signal and rest times is always 10 minutes. In the event of large differences in temperature, the thermostat is constantly coupled on or off.

Assembly of LK Room Thermostat Cq-n

Take apart the room thermostat by lifting the dial at the temperature scale upwards and loosening the screws which are visible. Unfold the upper piece towards the left until it loosens. Install in place according to the installation drawing.

To ensure proper functionality of the room thermostat, the following points should be observed:

- Install the thermostat on an inner wall with free ventilation, approximately 1.5 metres above the floor.
- Avoid exposing the thermostat to direct sunlight or other heat sources.
- Do not install the thermostat close to a radio, TV or other senders.
- Installation of the thermostat in the vicinity of metal doors, metal cabinets or similar is unsuitable.

LK RECEIVER UNIT CQ 1

LK Receiver Unit Cq 1 can address 1 LK room thermostat Cq-n.

It is possible to connect two controlling devices directly to Cq 1. With the help of an outer terminal, a total of eight devices can be connected.

The unit is complemented with a LK Transformer 230/24V AC (article order separately)

The controlling device moves once a day in order to prevent valves from sticking in a closed position. If no valve movement is wanted, the function can be disconnected by removing jumper 1 on the thermostat. Remove the dial of the thermostat, loosen the screws and remove the cover. Remove jumper 1, marked BR1 on the circuit board.

INSTALLATION

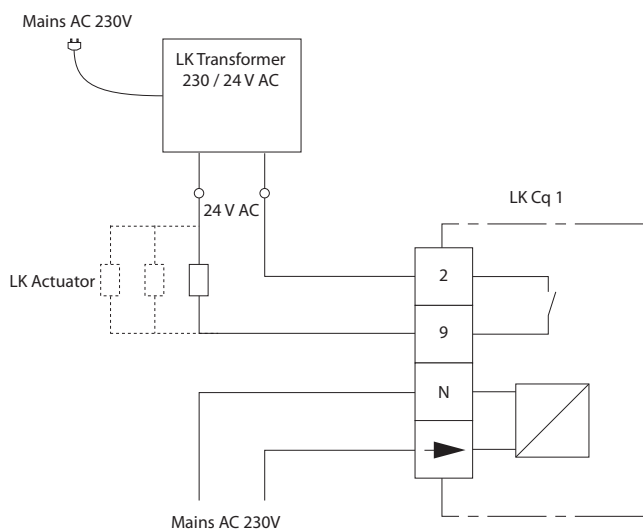
A 230 Volt wall outlet should be available nearby the receiver unit. The receiver unit may only be installed by a suitably qualified professional according to the wiring diagram and in accordance with valid safety regulations. In order to achieve protective level 2, the necessary installation measurements must be taken.

Connect 230 V to terminals N and

Coupling of controlling devices

Controlling devices are coupled between terminal 9 on Cq 1 and one of the 24 Volt cables of the LK Transformer.

If many controlling devices are to be connected, they are coupled parallel to each other and in series with the transformer, see wiring diagram. Then connect the second 24 Volt cable of the transformer to terminal 2 on the Cq 1.



Electric wiring diagram for Cq 1

Programming / commissioning

1. Activate the receiver unit

Always begin programming by erasing all eventual previous programming according to the below:

- Press the "Reset" button simultaneously as the button.
- Then release the "Reset" button first, followed by .
- Press reset again.
- Activate receiver unit Cq 1 by pressing once on .

A weak signal sounds and an indicating light turns on.

2. Activate the thermostat



- Open the lid of the room thermostat and remove the transport protection from the batteries.
- Check that the current switch (A) is set to the bottom position facing the heat symbol, according to image 3
- Activate the room thermostat by holding the lower button (B) down, press briefly on the upper black button (C).
- When the green LED on the thermostat lights, the lower black button (B) may be released.
- The thermostat is now activated for programming.

3. Confirm chosen channel

When the thermostat has "found" its channel the sound signal from Cq1 becomes silent and the indication light on Cq1 shuts off. Confirm by pressing once on the upper black button of the thermostat (C). The LED on the thermostat shuts off and the diode on the receiver unit will flash a few times. The programming is now complete.

Functional control

Test the connection by turning the knob of the thermostat up/down. When the thermostat is at the maximum position, the indication light on Cq1 should be on and when the thermostat is at the minimum position, the indication light of the Cq1 should be off.

FAULT FINDING / OPERATIONAL INTERRUPTIONS

Problems with signal transmissions

If the signals between the thermostat and receiver unit are not transmitting correctly, the signal light on the receiver unit will flash. During the ongoing signal interruption, the output of the channel concerned will produce a 30% effect. If the receiver unit receives signals from thermostat concerned, the alarm is stopped immediately.

If the problem remains for more than 10 hours, an alarm signal will sound in addition to the signal light. The problem can be attended to by pressing on the reset button (button C) of the thermostat, see heading "Programming/Commissioning". If the problem returns, the batteries of the thermostat concerned may require changing; see heading "Battery Exchange" for more information. If the problem returns despite battery exchange, it may be necessary to strengthen the signal, which can be suitably done with the help of a LK Repeater. See more in separate instructions for the LK Repeater.

The controlling devices do not shut off

Check that there is power supplied to the outlet. Check the fuse of the transformer. Remove the plug before changing the fuse. Change to the same type of fuse as is already present, 250 V 6.3 A.

Power failure

If power failure occurs, no data is lost, all programming is saved. When the power returns, it may take up to ten minutes before the unit has reverted to normal operation. The process can be hastened by pressing on the upper black button (C) of the room thermostat.

Battery exchange of room thermostat

LK Room Thermostat Cq is delivered with two 1.5 V batteries (LR03). The batteries have an estimated working life of two years. The signal light on the thermostat flashes at 15-second intervals when it is time to change the batteries. The batteries should be exchanged within the next few days; the batteries are located under the lid of the thermostat cover. The thermostat reverts to the chosen mode of operation after battery exchange. Press on the reset-button of the thermostat to hasten return to the chosen mode of operation (button C), see image under heading "Programming/Commissioning". Uncharged batteries yield a 30 % heat effect on the receiver unit.

CE-COMPLIANCE

This regulating equipment can be used in all EU and EFTA-countries. The manufacturer hereby indicates that the equipment fulfills those basic requirements and other relevant requirements indicated by directive R&TTE 1999/5/EC. The manufacturer's declaration may be downloaded from www.funk868mhz.de

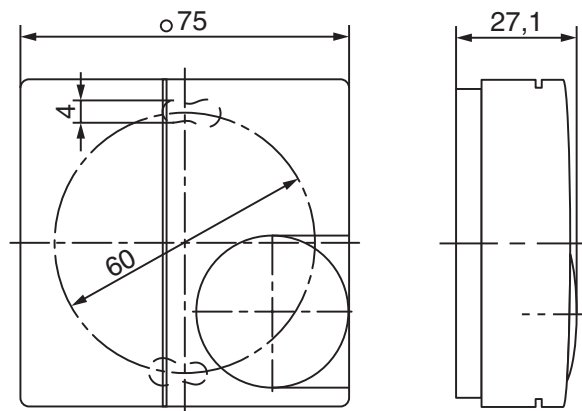
TECHNICAL DATA

Article name	LK Reception Unit Cq 1
Article no.	241 81 28
Power supply	230 V 50 Hz
Effect requirements	c:a 12 VA
Operating temperature	0 - + 50
Storage temperature	- 20 + 60
Antenna	Integrated
Signal out	1 relay with potential-free contact
Dimensions	71 x 71 x 27 mm
Weight	0,144 kg
Capping class	IP 40
Max. no. controlling devices	Max 8 pcs

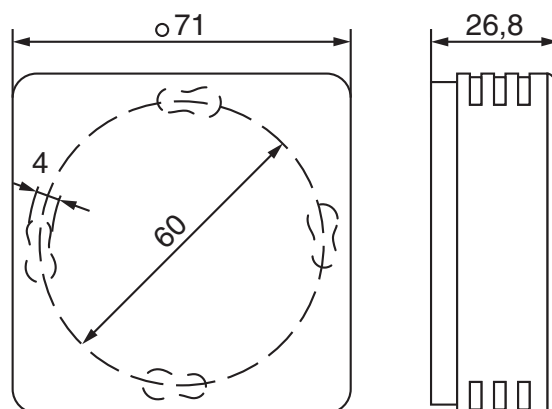
Article name	LK Room Thermostat Cq-n
Article no.	241 88 50 (Polar white) 241 88 51 (Silver grey)
Setting area	+5 - +30 °C
Power supply	2 x 1.5 V = 3 V alkaline batteries (LR03)
Battery life	Approx. 2 years
Control function	PBM (optional 2-point)
Cycle period	Approx. 10 minutes (total on/off time)
Measurement interval	Approx. 10 minutes
Type-dependent	Heat/cold
Valve movement	Once per day for 3 minutes (can be disconnected, BR 1)
Temperature sensor	NTC
Transmission frequency	868 MHz
Modulation	FM
Antenna	Internal
Sending interval/transmission interval	< 10 minutes
Range (typical)	100 metres ventilation or 2 levels alt. 3 walls
Capping class	IP 40
Protection level	2
Working temperature	-25 - +40 °C
Storage temperature	-25 - +70 °C
Temperature limits	One dial selector

NOTES

Completely disturbance-free operation cannot always be guaranteed with the technology available today, which does not allow free use of frequency bands. Installation should therefore be tested individually.



LK Room Thermostat Cq-n



LK Reception Unit Cq 1