

# **COMPUTHERM Q3RF**

**wireless (radio-frequency) digital  
room thermostat**

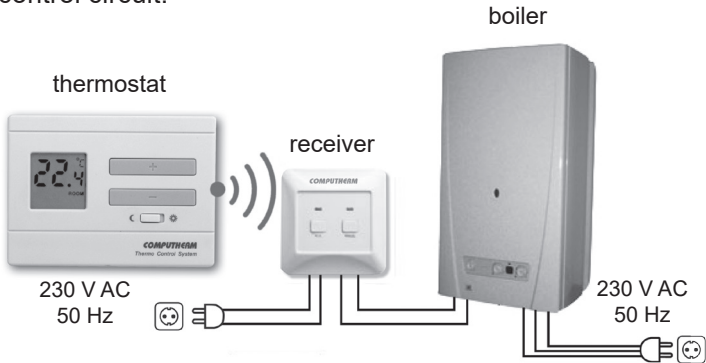


## ***Operating Instructions***

You can watch the most important aspects of the usage of this thermostat on our video presentation at [www.computherm.info](http://www.computherm.info).

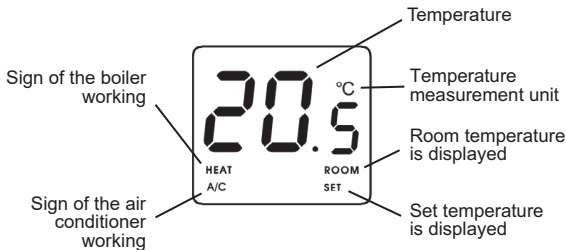
## GENERAL DESCRIPTION OF THE THERMOSTAT

The **COMPUThERM Q3RF** type switched-mode room thermostat is suitable to regulate the overwhelming majority of boilers and air conditioners. It can be easily connected to any gas boiler having a two-wire thermostat connection point and to any air conditioning apparatus or electrical apparatus, regardless of whether they have a 24 V or 230 V control circuit.



Temperature can be measured and set more precisely as compared to simple, conventional thermostats. In heating mode, in accordance with the selected switching sensitivity, the thermostat switches the boiler or any other appliances on and off below and above the adjusted temperature, respectively, and contributes to reduce energy costs while maintaining comfort. In cooling mode it switches exactly the opposite way.

***The information shown on the liquid crystal display of the thermostat includes the following:***



The device consists of two units. One of them is the portable control unit (thermostat), while the other unit is the receiver that controls the boiler. Because there is a wireless (radio-frequency) connection between the two units, no cable is required between the thermostat and the boiler. The two units have been tuned in the factory. The trouble-free operation is ensured by its own security code. The installation and connection of the receiver unit is described in **Chapter 7**.

To increase the lifetime of the batteries, the thermostat will not transmit signals continuously. Instead it will repeatedly transmit the actual signal every 5 minutes. Therefore, the regulation of the heating or cooling will continue even after a blackout.

**The portability of the thermostat offers the following advantages:**

- no need to lay a cable, which is especially advantageous when old buildings are being modernized,
- the optimal location of the device can be selected during operation,

- it is also advantageous when you intend to locate the thermostat in different rooms in the course of the day (e.g. in the living room during the day but in the bedroom at night).

The effective range of the transmitter incorporated in the thermostat is approximately 50 m in open terrain. This distance may become considerably shorter within a building, especially when a metal structure, reinforced concrete or adobe wall stands in the way of radio waves.

This wireless (radio-frequency) thermostat can also be easily extended with the **COMPUTHERM Q1RX** socket if needed, with which the thermostat is able to control any electrical device (e.g. fan heaters, pumps, zone valves, etc.) operating on 230 V (50 Hz; max. 16 A) according to the room temperature. (Detailed description of the **COMPUTHERM Q1RX** socket and usage suggestions can be found on our website [www.computherm.info](http://www.computherm.info).)

The **COMPUTHERM Q3RF** thermostat can be used as an extension to the **COMPUTHERM Q5RF** or **Q8RF** multi-zone devices.

The simultaneous use of several **COMPUTHERM** room thermostats and one **COMPUTHERM Q4Z** zone controller provides the possibility for the thermostats to also control a pump or a zone valve in addition to starting the heater or cooler. This way it is easy to divide a heating / cooling system into zones, thanks to which the heating / cooling of each room can be controlled separately, thus greatly increasing comfort. Furthermore, the zoning of the heating / cooling system will greatly contribute to the reduction of energy costs, as due to this only those rooms will be heated / cooled at any time where it is required.

## 1. LOCATION OF THE DEVICE

The thermostat of the **COMPUTHERM Q3RF** type device can be freely moved in your residence. It is reasonable to locate it in a room used regularly or for many hours per day so that it is in the direction of natural ventilation in the room but protected from draught or extreme heat (e.g. direct sunlight, refrigerator, chimney, etc). Do not use in wet, chemically

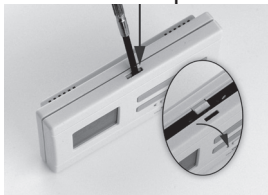
aggressive or dusty environment. Its optimal location is 0.75-1.5 m above floor level. It can be placed on its own stand or can be mounted on a wall.

***IMPORTANT WARNING!*** *If the radiator valves in your flat are equipped with a thermostatic head, adjust it to maximum temperature or replace the thermostatic head of the radiator valve with a manual control knob in the room where the room thermostat is to be located, otherwise the thermostatic head may disturb the temperature control of the flat.*

## **2. PUTTING THE THERMOSTAT INTO OPERATION**

To put the thermostat into operation, detach the rear panel of the thermostat from the front panel by pressing the lock on the upper side of the housing of the thermostat, as shown in the figure.

The battery compartment is in the inner side of the front panel of

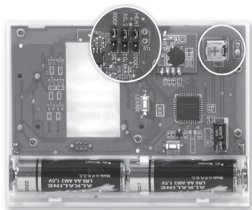


the housing. Insert 2 AA **alkaline** batteries (LR6 type) in accordance with the diagram in the battery compartment. **Warning! Alkaline batteries may only be used** for this appliance. Carbon-zinc batteries known as durable or long life batteries and chargeable accumulators are not suitable for the operation of this appliance. Icon **BA** appearing on the display to indicate low battery voltage warns reliably that the batteries should be replaced only when **alkaline batteries** are used.

After the batteries have been inserted, the display flashes the measured room temperature. (If this information fails to appear on the display, press the „**RESET**” button located on the main panel of the thermostat.

### **3. BASIC SETTINGS**

After removing the rear panel of the device, the following factory default settings can be modified by relocating the jumpers (black





plugs and/or changing the position of the orange-colored potentiometer) located on the main panel.

### 3.1 Selecting the Displayed Temperature

The temperature(s) to be shown on the display can be selected and set by the left jumper.

With factory default settings the jumper is located on the central and uppermost pins, in which case the display shows the currently measured room temperature value, while the notice “**ROOM**” appears in the bottom right corner of the display. In this case, the adjusted temperature is visible only during the adjustment process, for approximately 6 seconds after the last button has been pushed.

By relocating the plug onto the bottommost and central pins the displayed temperature can be modified so that the display alternately shows the current room temperature and the adjusted temperature for 3-3 seconds, respectively. In this mode, the notices “**ROOM**” and “**SET**” are alternately shown under the currently displayed temperature in the bottom right corner

of the display, indicating whether the display shows the room temperature or the adjusted temperature value.

### **3.2 Selecting the Switching Sensitivity (Accuracy)**

The switching sensitivity of the thermostat can be selected by the central jumper, which determines how much below/above the set temperature the thermostat switches on/off the device connected to it.

With factory default settings the jumper is located on the central and uppermost pins, resulting in a switching sensitivity of  $\pm 0.2$  °C. It can be modified to  $\pm 0.1$  °C by relocating the jumper onto the bottommost and central pins. A smaller switching sensitivity results in steadier room temperature and therefore in higher comfort. The heat loss of the room (building) does not depend on the switching sensitivity.

If higher comfort is needed, the switching sensitivity should be set so that it provides a steadier room temperature. On the other hand, please also take into account that the boiler should not switch on and off multiple times in an hour's time except at low outside temperatures (e.g.  $-10$  °C), since the

frequent on and off switches of the boiler reduce its efficiency and hence increases the gas consumption. We recommend using the  $\pm 0.1$  °C switching sensitivity for heating systems with high thermal inertia (e.g. underfloor heating), and the  $\pm 0.2$  °C switching sensitivity (factory default setting) for heating systems with low thermal inertia (e.g. flat panel radiators). You can read more about switching sensitivity in **Chapter 4**.

### **3.3 Switching between the Heating and Cooling Mode**

The heating or the cooling mode of the thermostat can be selected by the right jumper.

With factory default settings the jumper is located on the central and uppermost pins, which selects the heating mode. By relocating the jumper onto the bottommost and central pins, the cooling mode can be selected. The output terminals **1 (NO)** and **2 (COM)** of the receiver unit **are closed below the set temperature in heating mode, and they are closed above the set temperature in cooling mode** (taking the switching sensitivity into account).

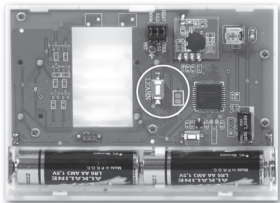
### 3.4 Calibration of the thermometer of the thermostat

You can calibrate the thermometer of the appliance (to correct measured temperature). To this end all you have to do is change the position of the orange-colored potentiometer by a Phillips screwdriver. When you adjust the potentiometer clockwise then the displayed temperature will be lower than that measured initially, and when you adjust it anticlockwise the displayed temperature will be higher than that. The displayed temperature can be adjusted within a range of approx.  $\pm 4$  °C. Correction of the displayed temperature takes place a few seconds after the adjustment.

***ATTENTION!*** *If the modification of the basic settings was done after inserting the batteries and the modifications did not take effect, please press the “**RESET**” button located on the main panel of the thermostat.*

### 3.5 Synchronising the Thermostat and the Receiver Unit

In order to have a safe, reliable and trouble-free wireless (radio-frequency) connection, both the thermostat and the receiver unit have their own safety codes. After installing the receiver unit, the two units should be synchronised by pressing the “**LEARN**” button located on the main panel of the thermostat. Therefore do not replace the rear panel of the thermostat onto the front panel before synchronisation. The process of synchronisation is described in **Chapter 7.2**.







## 4. OPERATION OF THE INSTALLED THERMOSTAT

The thermostat controls the device connected to it (e.g. gas boiler or pump) based on the temperature measured by it and

the currently set temperature, taking into account the switching sensitivity of the thermostat (factory default  $\pm 0.2$  °C). This means that if the thermostat is set to heating mode and 22 °C, then with a switching sensitivity of  $\pm 0.2$  °C the connection points **1** (NO) and **2** (COM) of the receiver output relay are closed below 21.8 °C (heating is turned on) and opened at temperatures above 22.2 °C (heating is turned off). In cooling mode, the relay switches exactly the opposite way.

The closed status of the output relay terminals **1** (NO) and **2** (COM) is indicated by the „**HEAT**” or „**A/C**” icon in the lower left corner of the display, depending on the selected operating mode.

Below the temperature adjustment buttons (  and  ) a switch is located. For both the economy (  ) and the comfort (  ) positions of the switch a different temperature can be set between 5 °C and 40 °C, in steps of 0.5 °C. After setting the economy and comfort temperatures, the temperature desired at the moment can be selected using the switch.



**4.1 Economy Mode (☾)** (left hand position of the switch)  
In the left hand position of the switch, the thermostat provides the set economy temperature (e.g. night temperature) to be maintained at the place where the thermostat has been installed.



**4.2 Comfort Mode (☀)** (right hand position of the switch)  
In the right hand position of the switch, the thermostat provides the set comfort temperature (e.g. daytime temperature) to be maintained at the place where the thermostat has been installed.

## **5. SETTING THE DESIRED TEMPERATURE**

After putting the thermostat into operation and adjusting the basic settings the thermostat is ready for operation and the adjustment of the temperature can be started.



For energy efficiency it is recommended that the comfort temperature is only used those times, when the room or building is in use, because every 1 °C decrease of temperature saves approximately 6% energy during a heating season.

The factory default temperature is 18 °C for the economy (☾) position and 20 °C for the comfort (☼) position. These default temperatures can be changed as follows:



- Move the switch according to the temperature you would like to change (economy (☾) or comfort (☼)).
- Press the  or  button, after which the notice “ROOM” disappears, the notice “**SET**” (adjusted value) appears in the bottom right corner of the display. Meanwhile, the temperature value shown on the display switches from room temperature to the default temperature (18.0 °C/20.0 °C) or to the last set temperature (this temperature is blinking on the display). By pressing the buttons repeatedly or continuously (the change in values is accelerated), the desired temperature to be maintained at the place where the thermostat has been installed can be set in steps of 0.5 °C.
- Approximately 6 seconds after setting the room temperature to be maintained, the device automatically switches to normal mode. The notice “**SET**” disappears from the




bottom right corner of the display, and once again the current room temperature and the notice “**ROOM**” are displayed.

- The previously set temperature can be freely changed any time using the  and  buttons. Always the last set temperatures are in effect.

## 6. BATTERY REPLACEMENT

The average lifetime of the batteries is 1 year. The  icon alternately replacing the temperature value on the display indicates low battery voltage. Replace the batteries whenever the  icon indicating low battery voltage appears on the display (see **Chapter 2**). After battery replacement, the desired temperature should be adjusted again, because during the battery replacement the thermostat is reset to factory default settings.

**Warning! Alkaline batteries may only be used** for this appliance. Carbon-zinc batteries known as durable or long life batteries and chargeable accumulators are not suitable for the operation of this appliance. Icon  appearing on the display

to indicate low battery voltage warns reliably that the batteries should be replaced only when **alkaline batteries** are used.

## **7. THE RECEIVER UNIT**

### **7.1 Installation and connection of the receiver unit**

**WARNING!** The device must be installed and connected by a qualified professional. Before installing, make sure that that neither the thermostat nor the device to be controlled is connected to the 230 V mains voltage. Modifying the thermostat can cause electric shock or product failure.

The receiver unit should be mounted on the wall in a place protected against moisture, dust, chemicals and heat, in the vicinity of the boiler. When choosing the location of the receiving unit you should remember that bulky metal objects (e.g. a boiler, buffer tank, etc.) and metal building structures may have an adverse effect on propagation of radio waves. If it is possible, in order to ensure trouble-free RF connection, we recommend that you install the receiving unit at a height of 1.5 to 2 m and at a distance of 1 to 2 m from the boiler

or other bulky metal constructions. We recommend that you check reliability of RF connection at the place selected before installing the receiving unit.

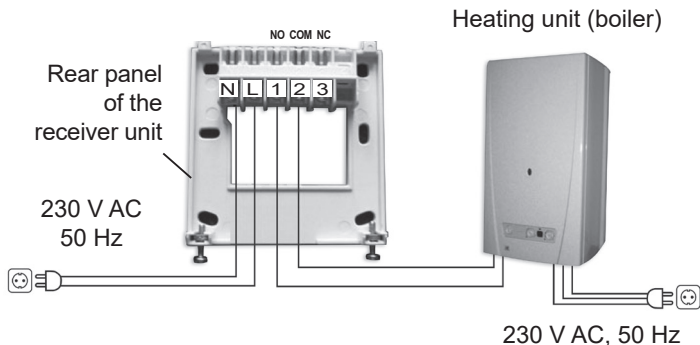
**ATTENTION!** *Do not install the receiver unit under the housing of the boiler or near hot pipes because it may damage the parts of the device or compromise wireless (radio-frequency) connection. To avoid electric shock, entrust a specialist with connecting the receiver unit to the boiler!*

Unscrew the two screws at the bottom of the receiver unit without removing them. Following this, remove the front panel of the receiver unit then fix the back panel to the wall in the vicinity of the boiler with the screws provided. Remove the protective carton from the contacts to ensure perfect contact. The marks of the connections are pressed into the plastic above the connection points: **N**, **L**, **1**, **2** and **3**.

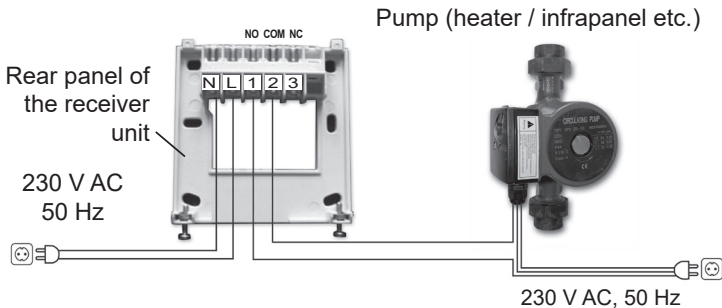
230 V mains voltage should be supplied to the receiver unit. This provides the power supply for the device, but this voltage does not appear on the terminals **1** and **2**. We propose to connect the neutral wire of the network to point **N**, while the

phase conductor to point **L**. We recommend using a fork type connection including a switch for mains connection. There is no need for grounding as the product is double insulated.

The receiver unit controls the boiler or air conditioner through a potential-free alternating relay whose connection points are: **1** (NO), **2** (COM) and **3** (NC). Connect the two connection points of the heating or cooling equipment to be controlled to the normally open **1** (NO) and **2** (COM) terminals of the relay, as shown on the below figure.



If you would like to operate an old boiler or any other device that has no connection points for thermostats, then the **1** (NO) and **2** (COM) connection points of the thermostat should be connected to the mains cable of the device, similarly as a switch would be connected.




**ATTENTION!** Always consider the loadability of the receiver unit and follow the manufacturer's instructions of the heating or cooling equipment. The device must be installed and connected by a qualified professional!

*The voltage appearing at terminals 1 (NO) and 2 (COM) depends only on the system being controlled, therefore the dimensions of the wire are determined by the type of the device to be controlled. The length of the wire is of no significance, the receiver unit may be installed either near the boiler or far away from it, but do not install it under the housing of the boiler.*

*If the distance between the transmitter and receiver units is too large due to local circumstances and it makes the wireless (radio-frequency) connection unreliable, install the receiver unit nearer to the place of thermostat or use a **COMPUTHERM Q2RF** signal repeater to increase the communication distance of the **COMPUTHERM Q3RF** thermostat.*

## **7.2 Putting the receiver unit into operation**



Turn on the power supply to the receiver unit. After a few seconds have elapsed, the wireless (radio-frequency) system (thermostat and receiver unit) tunes itself to the operating frequency. To try the system in heating mode, press the

 button of the thermostat several times, until the set temperature is at least 0.5 °C higher than the temperature of the room. Following this, the **“HEAT”** icon indicating that the heating is turned on should appear on the display of the thermostat within a few seconds. At the same time, the red LED light on the receiver unit should switch on to indicate that the receiver unit has received the command of the transmitter (thermostat).

If it does not happen, the system should be retuned. For this purpose press the **“M/A”** button of the receiver unit and keep it depressed (for approximately 10 seconds) until the green LED starts flashing. Then press the **“LEARN”** button located on the main panel of the thermostat, and keep it depressed (for approximately 10 seconds) until the green LED stops flashing and goes out, so that the receiver unit “learns” the safety code of the transmitter (thermostat). The safety code will not be lost even during a power outage, the device memorizes it automatically.

**ATTENTION!** Pressing the “**LEARN**” button for 10 seconds generates a new safety code for the thermostat, and the receiver will recognize it only after a repeated tuning. With this in mind, do not keep the “**LEARN**” button of the thermostat or the “**M/A**” button of the receiver unit depressed without any reason after the two units have been tuned successfully.

### **7.3 Transmission distance inspection**

With the help of the  and  buttons you can check whether the two units are within the transmission distance of the wireless (radio-frequency) connection. In order to do so, set the desired temperature above room temperature by more than 0.2 °C, then reduce it below room temperature by more than 0.2 °C. When detecting the ON and OFF control signals, the red LED light on the receiver unit switches on and off, respectively. When the receiver unit fails to receive signals sent by the thermostat, then the receiver unit is outside the transmission distance of the wireless (radio-frequency) transmitter, thus they have to be placed closer to each other.



***ATTENTION!*** *If the two parts of the device can only be placed on the edge of the wireless (radio-frequency) range or out of it (due to the floor-plan of the house or the shading effect of its structure), to guarantee the safe wireless connection, place a **COMPUTHERM Q2RF** wireless repeater between the two parts.*

## **7.4 Manual control of the receiver unit**

Pressing the “**MANUAL**” button separates the thermostat from the receiver unit. In this case, the boiler or air conditioner connected to the receiver unit can only be turned on and off manually, without any temperature inspection. The continuously illuminated green LED indicates “**MANUAL**” mode. Pressing the “**M/A**” button turns on or off the boiler. (The red LED is illuminated when the boiler is turned on). By pressing the “**MANUAL**” button again, the device quits manual control and resumes automatic (thermostat-controlled) operation (the green LED goes out).

## **FREQUENTLY ASKED QUESTIONS**

When you think that your appliance is operating incorrectly or encounter any problem while the appliance is being used then we recommend that you read Frequently Asked Questions (FAQ) available on our website, where we collected the problems and questions that most frequently occur while our appliances are being used, along with the solutions thereto:

[\*\*https://www.computherm.info/en/faq\*\*](https://www.computherm.info/en/faq)



The vast majority of the problems encountered can be solved easily by using the hints available on our website, without seeking professional help. If you have not found a solution to your problem, please pay a visit to our qualified service.

**Warning! The manufacturer does not assume responsibility for any direct or indirect damages and loss of income occurring while the appliance is being used.**

## PRODUCT INFORMATION DATA SHEET:

- Trademark: **COMPUTHERM**
- Model identifier: **Q3RF**
- Temperature control class: **I. class**
- Contribution to the efficiency of seasonal space heating: **1%**

### Remark:

In addition to using modern temperature regulators, the following up-to-date regulation methods also contribute significantly to the improvement of the comfort provided by the heating network, the energy efficiency of the heating network and the coefficient of performance:

- By dividing the heating network into sections or zones (e.g. by means of **COMPUTHERM Q4Z** zone controller and the associated **COMPUTHERM** zone valves) and with their separate regulation we can ensure that every room (zone) is heated only when it is necessary. (You can obtain information on the establishment of the heating network and apparatuses and fittings needed for division into zones in our publication titled „Energy Savings and Comfort“ which is also available on our website [www.computherm.info](http://www.computherm.info)).
- Using programmable thermostats you can ensure that every room (zone) is just heated according to a timetable preset in accordance with the demands. (You can obtain information on the services provided by **COMPUTHERM Q7**; **Q7RF** and **Q8RF** programmable room thermostats on our website).
- Using modern modular heating devices equipped with an external temperature sensor the boiler can be operated at a higher efficiency.
- Using low temperature heating networks (e.g. 60/40 °C) and condensing boilers the temperature of the flue gas leaving the boiler can be reduced, and this way fuel efficiency can be improved significantly.

## TECHNICAL DATA

### Technical data of the thermostat (transmitter):

- temperature measurement range: 3 to 45 °C (in 0.1 °C increments)
- adjustable temperature range: 5 to 40 °C (in 0.5 °C increments)
- temperature measurement accuracy:  $\pm 0.5$  °C
- thermometer calibration range: approx.  $\pm 4$  °C
- selectable switching sensitivity:  $\pm 0.1$  °C;  $\pm 0.2$  °C
- battery voltage: 2 x 1.5 V **ALKALINE** batteries  
(LR6 type; AA size)
- power consumption: 1.5 mW
- battery lifetime: approx. 1 year
- storage temperature: -10 °C to +40 °C
- operating humidity: 5% - 90% (without condensation)
- protection against environmental impacts: IP30
- operating frequency: 868.35 MHz
- transmission distance: approx. 50 m in open terrain
- dimensions: 110 x 80 x 23 mm (W x H x D)  
(without holder)
- weight: 80 g
- temperature sensor type: NTC 3435 K 10 k $\Omega$   $\pm 1\%$  at 25 °C

## Technical data of the receiver unit:

- power supply voltage: 230 V AC, 50 Hz
- power consumption: 0,01 W
- switchable voltage: max. 30 V DC / 250 V AC
- switchable current: 6 A (2 A inductive load)
- storage temperature: -10 °C to +40 °C
- operating humidity: 5% - 90% (without condensation)
- protection against environmental impacts: IP30
- weight: 150 g
- dimensions: 85 x 85 x 37 mm (W x H x D)  
(without holder)

**Total weight of the device: approx. 265 g (thermostat+receiver+holder)**





The **COMPUTHERM Q3RF** type thermostat  
complies with the requirements of directives  
RED 2014/53/EU and RoHS 2011/65/EU



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**Origin:** designed in the EU, manufactured in China

**Please watch our video presentation of the most important aspects  
of the usage of this thermostat at our websites!**

