

EUROSTER Q1/Q1TX

Wired, daily room thermostat for all types of heating and air-conditioning devices.



MANUFACTURER: P.H.P.U. AS, Chumiętki 4, 63-840 Krobia, Poland

In order to take full advantage of the thermostat capabilities please read this installation and operation manual carefully.

This manual is intended for V0.3 version of thermostat

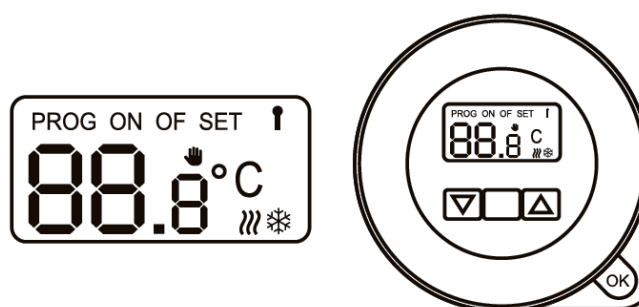
1. THERMOSTAT APPLICATION

Euroster Q1 is a state-of-the-art thermostat designed for controlling temperature in living and utility rooms within temperature range of: 5°C... 45°C. It is used to control the operation of a CH boiler and other components of a heating system. It controls electrical equipment, floor heating and air-conditioning systems. The thermostat is equipped with a wide range of useful functions, innovative daily programming and temperature control with an accuracy of 0.2°C. It enables easy control of ambient and floor temperature. If needed, **Euroster Q1** may control a heating device in the following three options of temperature measurement:

- ambient temperature measurement if only the internal sensor is used,
- floor temperature measurement if only the floor sensor is connected,
- ambient temperature measurement with floor temperature limitation if both temperature sensors are connected.

2. VISIBLE ELEMENTS

2.1. Displayed signs and icons



- 21.3°C – current temperature measured by a temperature sensor
- “>>>” or “❄” – turning on of an output, adequately in a heating or cooling mode
- PROG ON the programming mode is active
- PROG OFF escape from the programming mode
- PROG operation with stored program
- 🖐 operation with a temporary temperature setting
- SET setting mode active
- OFF turning the thermostat off
- LO – discharged batteries indication
- “i” – floor sensor connection

2.2. Functions of the buttons

- “▼”, “▲” – increase/decrease of temperature and preset values
- OK – selection of settings and escape from modes

3. INSTALLATION

3.1. Safety rules

ATTENTION

- **Please read this manual carefully prior to installing the thermostat.**
- **Voltages hazardous to life may be present on the thermostat output cables, therefore only qualified technicians may install the thermostat.**
- **Do not install any thermostats showing signs of mechanical damage.**

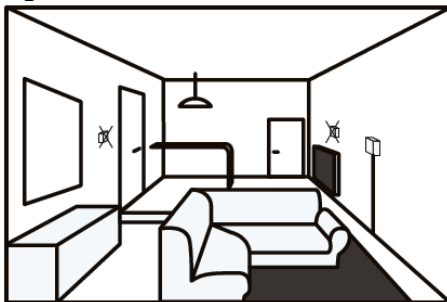
3.2. Proper place of installation

In order to ensure fully efficient operation of the thermostat please make sure to observe the following recommendations regarding the location of the thermostat:
the thermostat is designed for indoor wall mounting at a height of approximately 1.5 m above the floor

avoid places with strong sunlight, near heating or cooling devices, directly by the doors, windows and other similar locations, where the temperature measurement could be easily disturbed by external conditions

avoid places with poor air circulation, e.g. behind furniture

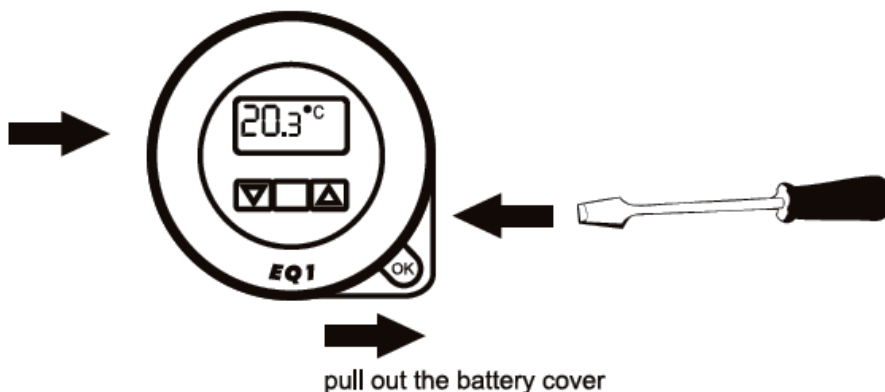
avoid moist places due to the negative effect of moisture on the service life of the device.



3.3. Opening the thermostat

The thermostat housing consists of two main parts – a base with a connector for cables and a front panel with a battery cover. The thermostat components are joined together with two latches.

Pull out the battery cover in order to open the thermostat and press one of the hooks on the edge of the thermostat with a flat screwdriver, then press the other one. Carefully separate the front panel and the base.



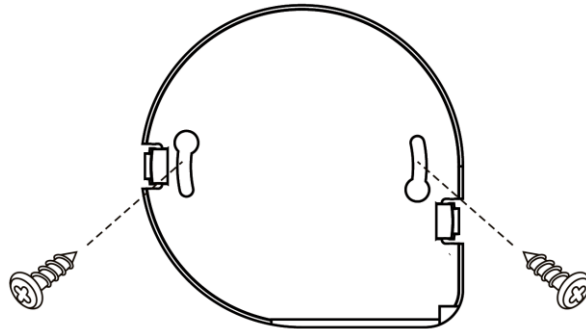
3.4. Installation of the thermostat and batteries

Lead all necessary cables prior to mounting the thermostat. Connect the thermostat with a stranded wire with a diameter adequate to the switched load (minimum 0.75 mm²). Mounting holes of the thermostat enable the installation in standard Ø60 flush mount back boxes or directly on walls using screw anchors. There is a mounting template for surface mounting provided in a kit. In order to insert the cables through the base break off a blind

plate located between the connection ports and screw the base to the wall possibly most horizontally. Connect the cables to the connectors according to the description and sketch. Slip a surplus of the cable back into the wall. In case of draft fill the space with inflammable material. Then install the front panel and insert the batteries while observing the correct polarity.

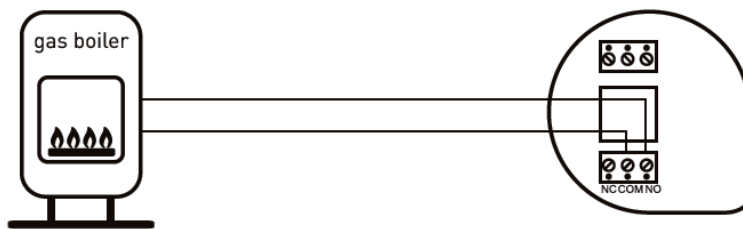
ATTENTION!

Use only AA batteries to power the thermostat. Do not use rechargeable batteries because their voltage is lower and their effective time is shorter (due to self-discharge).

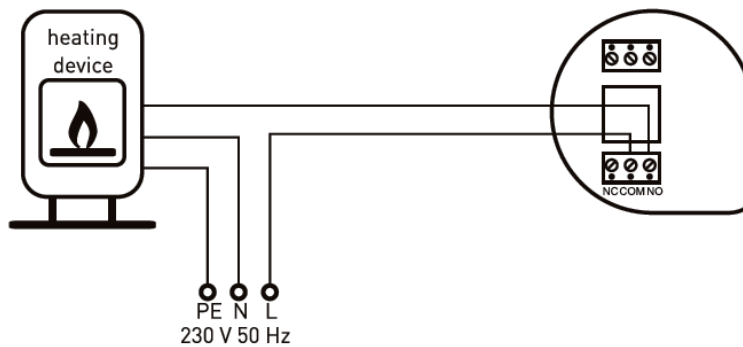


3.5. Sample Connection Diagrams

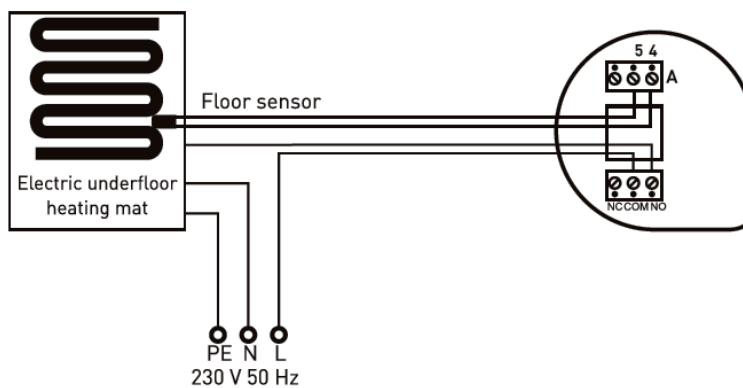
In arrangement with a gas boiler



In a heating/cooling arrangement



In a floor heating arrangement



3.6. Floor sensor connection

Screw the floor sensor to connector A (No. 4 and 5 terminals) according to the above sketch. It is not necessary to keep the cable polarization. After selecting S1 or S2 operation mode the

floor sensor connection icon "I" will be displayed.

ATTENTION!

The floor sensor with the connector is not included in the basic kit. Please order it separately.

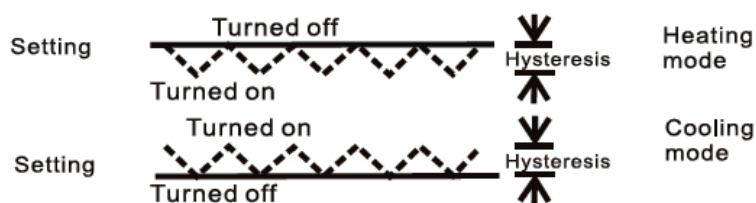
4. THERMOSTAT CONFIGURATION

4.1. Setting mode

Press and hold OK and "▼" buttons for approximately 3 seconds to enter the setting mode. Configure the thermostat in the following way: choose a required parameter with "▼", "▲" buttons, enable changes with OK button and change the value with "▼", "▲", then confirm the changed value with OK button. The following parameters may be changed:

1. Hysteresis – H

It is a difference between current and preset temperature allowed by the thermostat. It determines the accuracy of room temperature control. Euroster Q1 enables selecting the following values of hysteresis: 0.2°C/0.5°C/1°C/2°C or 5°C. The sketch depicts the effect of hysteresis



2. Sensor calibration – C

This is a value added to or subtracted from the measured temperature value. It enables correction of the displayed temperature. Calibration range: -5°C... +5°C with 0.2°C step of the change.

3. Operation mode – t

It enables to choose the thermostat operation in heating (">>>") icon) or cooling ("❄") icon) mode.

4. Selection of sensor – S

This option enables to select a temperature sensor to cooperate with the thermostat. There are three operation modes available:

"S 0" – the thermostat measures and maintains the temperature based only on internal sensor operation

"S 1" – the thermostat measures and maintains the temperature based only on external sensor (the one with cable) operation

"S 2" – the thermostat measures the temperature of both sensors; maintains the temperature of an internal sensor, and the external sensor acts as a temperature limit.

5. Floor temperature limit value (active only in S2 mode) – L

This parameter enables to set the maximum safe floor temperature. When this temperature is reached, the relay is switched off.

6. ESC

Choosing this preset and confirming it with OK button enables to leave the setting mode and restore the operation according to the settings. After 15 seconds of idleness the thermostat leaves the test mode automatically.

All the settings are listed below:

Icon	Meaning	Minimum value	Maximum value	Default value
H	Hysteresis	0.2	5	0.2
C	Sensor calibration	-5	5	0.0
t	Operation mode	Cooling ❄	Heating >>>	Heating >>>
S	Sensor	0	2	0
L	Temperature limit	5	45	45
ESC	Escape the setting mode	-	-	-

5. THERMOSTAT OPERATION

5.1. Setting of temperature

Use "▼", "▲" buttons to set the desired temperature value. Pressing one of the buttons for the first time will make the current temperature preset blink, and further pressing will cause the temperature value decrease or increase adequately with 0.2°C step of the change. The longer the button remains pressed, the quicker the values will change. Confirm the temperature change with OK or wait until the set value stops blinking and is stored.

5.2. Programming and program canceling mode

One or two temperatures entered by the user may be stored daily in a program. The preset values are stored with an accuracy of one minute. When operating with a program, the thermostat switches the stored temperatures regularly at their setting times.


Enter the programming mode by pressing OK for approximately one second, PROG ON sign appears on the display and then enter the temperatures at the adequate times. This mode is leaved after:

- entering two temperature values. The preset temperatures with their setting times are stored as a program. The displayed PROG sign signals the end of the programming mode. The program is then implemented regularly in all days of the week.
- a lapse of 24 hours. If one temperature value is entered, the thermostat maintains this temperature. If no temperature is entered, the programming mode is canceled.
- holding OK for 1 second twice. Pressing it for the first time enables to turn on programming mode again and pressing it for the second time enables to leave the programming mode and erase the previous program. Leaving the programming mode is signaled by displaying PROG OFF sign for approximately one second.

Example:

First temperature is entered at 8.00 am, e.g. 19°C, the second one is entered at 4.00 pm, e.g. 21°C. The next day the thermostat will maintain the temperature of 19°C from 8.00 am to 4.00 pm and 21°C from 4.00 pm to 8.00 am.

5.3. Temporary change of temperature

During the thermostat operation with the stored program, it is possible to introduce changes of temperature with "▼" and "▲" buttons. However, the changed temperature value will be valid only until the next hour stored in the program. For the time of operation with the changed temperature the  message is displayed.

5.4. Operation with two temperature sensors

The function of floor temperature limitation is active when two sensors are connected and S2 mode is selected. If the preset temperature is reached at any sensor, the receiver is turned off. The floor temperature limit control operates with fixed hysteresis of 5°C. The device is turned on again when the temperature drop reaches the hysteresis value. Overview of the current temperature of the floor sensor is possible in test mode.

5.5. Turning the thermostat off

In order to turn the thermostat off hold "▼", "▲" buttons for 5 seconds. OFF sign is displayed. The relay is turned off.

Hold the same buttons for 3 seconds again in order to turn the thermostat on.

5.6. Discharged batteries indication

When the voltage of the batteries drops to the level of 2.6 V, the LO message is displayed instead of the temperature value. Despite that the temperature is not displayed, the thermostat operates according to the settings until the voltage drops to the level of 2.4 V. After reaching this level, the relay is turned off (the COM and NO contacts are opened) and the temperature measurement is stopped.

5.7. Replacement of batteries

The supplied batteries guarantee the correct operation of the thermostat for one heating season, therefore it is recommended to replace the batteries before each heating season. When LO message is displayed, replace the batteries as soon as possible. In order to do so pull out the battery cover carefully, remove the used batteries, replace them with new ones while

observing the correct polarity. If the thermostat was working with a program, it is necessary to enter the programming mode and set the temperatures again, however the setting mode parameters are not deleted.

5.8. Indication of sensor damage

According to the type of damage there is a "Sh" or "OP" sign displayed for shortage and opening (break) of the sensor. If the floor sensor is damaged, then blinking "i" icon is displayed additionally.

6. TEST MODE

Test mode enables to check the main parameters of the thermostat. In order to enter the test mode press and hold OK and "▲" buttons for approximately 3 seconds. Choose the desired test with "▼", "▲" buttons and in case of relay test change its status with OK button. The following tests are available:

1. LCD test

It enables to check if all icons used in the thermostat are displayed correctly.

2. relay test

It enables to check the operation of the switching element (relay).

3. internal sensor test

It indicates the current temperature measured by the ambient temperature sensor. Temperature is read on an ongoing basis.

4. external sensor test

Indicates the current temperature measured by the floor temperature sensor. Temperature is read on an ongoing basis. The absence of sensor is indicated by displaying "---" icon.

5. software version

The record shows the number of the software installed in the thermostat, e.g. 01.3.

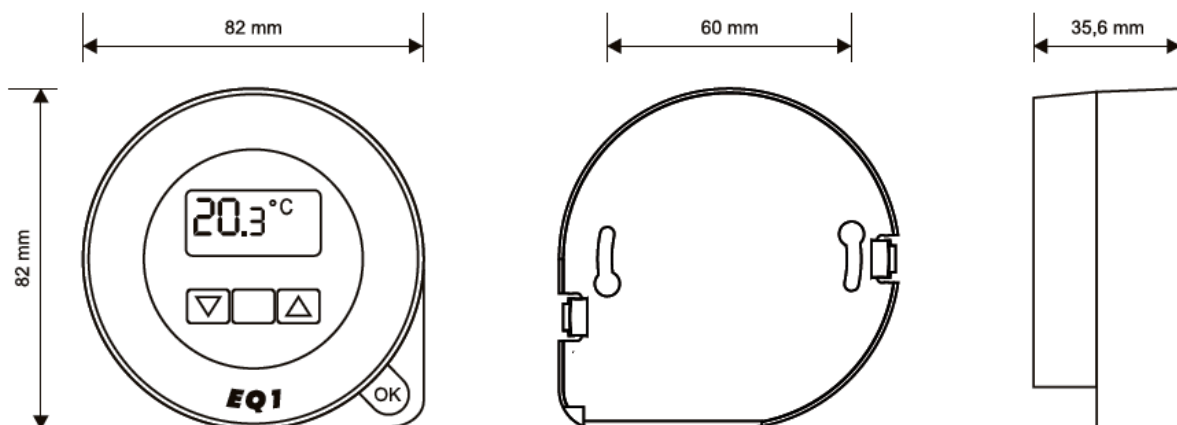
6. ESC

Choosing this preset and confirming it with OK button enables to leave the test mode and restore operation according to the settings. After 15 seconds of idleness the thermostat leaves the test mode automatically.

7. MAINTENANCE

Do not use solvents and aggressive detergents to clean the thermostat, since they may damage the surface of the housing and the display. Clean the thermostat housing with a soft cloth (dry or slightly moistened with a mild detergent). Please remember to change the batteries, since leakage of the electrolyte may cause an irreversible damage to the thermostat.

8. DIMENSIONS



9. TECHNICAL DATA

Controlled device	air conditioning/ heating systems
Supply voltage	3V, 2 pieces of AA batteries
Thermostat output	relay, voltage-free type, SPDT
Maximum load	5A 230 V 50 Hz (1,100 W)
Temperature measurement range	-9.9°C...+99°C
Temperature control range	+5°C...+45°C

Temperature control accuracy	0.2°C
Temperature reading accuracy	0.1°C
Hysteresis range	0.2°C/0.5°C/1°C/2°C/5°C
Visual signalization	LCD
Operating temperature	+5°C...+45°C
Storage temperature	+0°C...+55°C
Ingress protection rating	IP20, class II
Color	white
Mounting method	wall-mounted, screw anchors
Thermostat weight without batteries	98.6g
Standards, approvals, certificates	conformity to EMC, LVD and RoHS
Warranty period	2 years
Dimensions (W/H/D) mm	82/82/35.6

10. KIT CONTENTS

- **Euroster Q1** thermostat
- AA batteries
- screw anchors
- Installation and Operation Manual with Warranty Certificate
- mounting template

11. STANDARDS AND CERTIFICATES

Euroster Q1 thermostat conforms to the following EU Directives: EMC, LVD and ROHS.
The EC Declaration of Conformity is available at:

<http://www.euroster.com.pl>

WIRELESS TEMPERATURE CONTROLLERS

Important: Any guarantee claims will be processed only if both the transmitter and receiver have been delivered to the point of sale, accompanied with the guarantee certificate.

Euroster with wireless technology – TX RX

A. Overview

The basic difference between wired and wireless thermostat consists in the method of turn on/off signal transfer.

EUROSTER TXRX utilises wireless technology, thus eliminating the need for routing of cables between the transmitter unit EUROSTER TX and the appliance, which is controlled by receiver unit EUROSTER RX.

The operating range of the transmitter/ receiver pair depends to a large extent on the materials used for construction of the building. In the open the operating range is ca. 100 m. With up to 30 m range inside buildings the signal will pass several storeys. In reinforced concrete enclosures signal attenuation is very high and consequently the operating range drops.

IMPORTANT! The low battery lamp LED will come on when the voltage has dropped below the minimum admissible level. Then the batteries must be replaced and EUROSTER TX must be programmed anew.

B. First start-up

1. Insert new alkali batteries
2. Fully extend the telescopic antenna of the RX unit
3. Green LED indicates that the receiver unit is in the range of the transmitter. For the first minute upon connection of the TX/ RX pair the green lamp comes on every 3 seconds to indicate communication between the units. After that time communication is tested every minute for ca. 1 second. When the green LED does not light up the receiver unit is beyond the range.
4. Red LED indicates that the heating/ cooling appliance has been switched on.

C. Protections

1. If due to external interference such as strong electromagnetic pulse or low battery in EUROSTER TX confirmation of switch on/ off signal has not been received by EUROSTER RX for seven subsequent cycles the heating appliance will be switched off to prevent potential overheating. When communication has been restored the system automatically returns to the current program. EUROSTER TX must be programmed anew after each replacement of batteries.
2. The RX receiver is additionally equipped with a protection system which is active only in case of loosing or lack of communication between the transmitter and the receiver (run down batteries, interference). Such state occurs after not receiving 7 signals from the transmitter and is signaled with fast flashing of green LED. If this state lasts longer the receiver is turned on automatically every three hours for 20 minutes in order to avoid cooling of the rooms. At the time of retrieving the communication (changing of batteries, disappearance of interference) the receiver turns off the system and automatically restarts working with the TX transmitter.
3. Coded digital transmission technology, as used in EUROSTER TX allows for operation of several units in a limited area without any disturbance. A minimum distance of 0.5 m should be kept between two RX units. Modules are not interchangeable as the transmitter and receiver form a pair with the same unique code. The code is given both on the RX unit (sticker at the plug side) and on the TX unit (on the left-hand side in the battery compartment).

For any doubts or queries, please do not hesitate to contact us or your local distributor.

D. Operation

As it is required due to one-way transmission of signal and as a protection of the controlled heating/ cooling appliance every minute a momentary coded signal is sent by EUROSTER TX to verify the status of the relay of EUROSTER RX, which is signalled by green LED. For this reason the on/ off lamp on the controller may come on before the appliance has been actually switched on. This difference should not exceed 1 minute. Similarly, this may happen during switching off the appliance. Taking into account the heat capacity of buildings this has no effect on the energy efficiency and, consequently, on the heating cost.

Note: The controller may be connected to an electrical, gas-fired or oil-fired appliance with rated power exceeding the contact rating only through an intermediate switch with load rating and performance appropriate for the controlled appliance parameters.

Note: High inductive and capacitive loads should be avoided as they shorten the life of relay contacts.

Note: Green LED on the receiver unit confirms receiving of signal from the transmitter. Normally it lights up at ca. 1 second intervals.

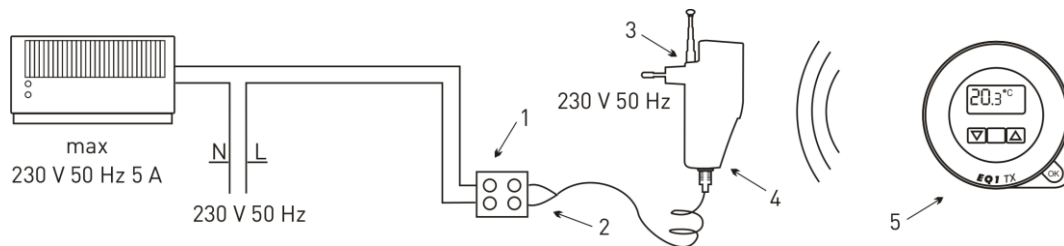
If it does not, do the following:

1. **Reduce the transmitter/ receiver distance**
2. **Check the battery charge status, and replace with new alkaline type ones, if required. With low batteries the operating range will be reduced and replacement is recommended.**

Red LED signals switching on of the heating or other controlled appliance.

Danger! Hazardous voltage is present inside the enclosure. Any tampering with the unit may result in a life-threatening electrical injury!

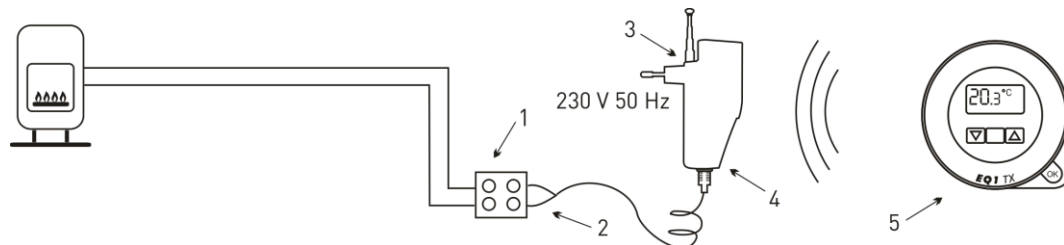
S1. Wiring example: EUROSTER TX RX connected to a heating/cooling appliance



Legend:

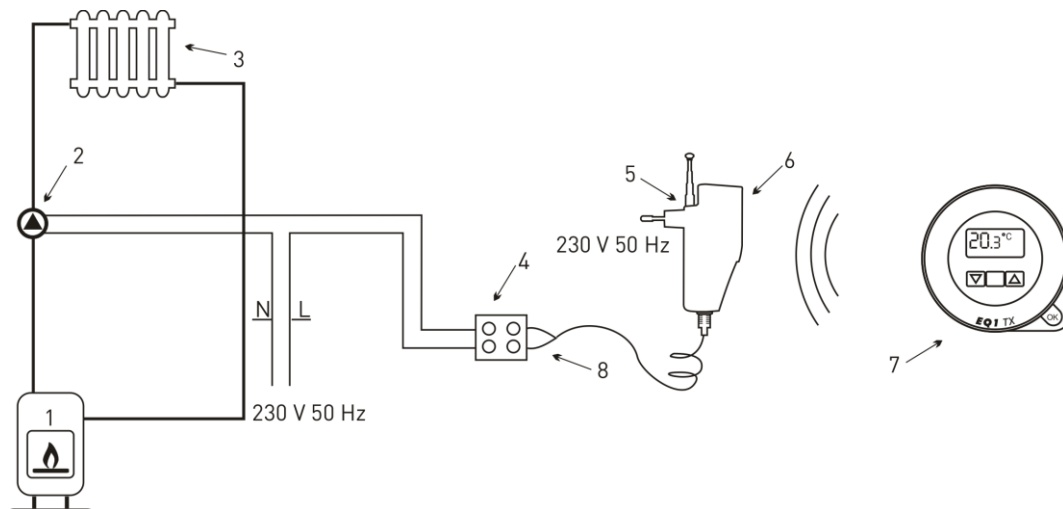
1. Terminal block
2. Two-conductor cable, voltage-free relay output of EUROSTER RX, normally open, contact rating: 5A, 230 V AC
3. Antenna
4. EUROSTER RX (receiver)
5. Euroster TX installed at a preferred location

S2. Wiring example: EUROSTER TX RX connected to a gas-fired boiler



Legend:

1. Terminal block
2. Two-conductor cable, voltage-free relay output of EUROSTER RX, normally open, contact rating: 5A, 230 V AC
3. Antenna
4. EUROSTER RX (receiver)
5. Euroster TX installed at a preferred location

S3. Wiring example: EUROSTER TX RX connected to a heating water circulating pump**Legend:**

1. Heating boiler
2. Heating water circulating pump
3. Heating unit – radiator
4. Terminal block
5. Antenna
6. Euroster RX (receiver unit)
7. Euroster TX (transmitter unit)
8. Two-conductor cable, voltage-free relay output of EUROSTER RX, normally open, contact rating: 5A, 230 V AC

E. Troubleshooting list**The controller does not switch on the heating appliance**

- replace the batteries - use only new alkaline batteries;
- move the controller to another place;
- verify the operation of LEDs on the receiver unit (green and red);
- verify connection between the receiver and the controlled appliance;
- disconnect the receiver unit from the controlled appliance and check the operation of the latter;
- check if the code given on the transmitter is the same as on the receiver;
- fully extend the antenna.

Blinking battery charge indicator on the LCD display:

- replace the batteries - use only new alkaline batteries;
- make sure the battery contacts are clean.

Lack of heat icon on the LCD display, which indicates that the appliance is switched off::

- verify the setting of DIP switches on the controller;
- verify the settings of operating parameters

ELECTRONIC WASTE MANAGEMENT INFORMATION

We made every effort to ensure that this controller lifetime is as long as possible.

However, the device is subject to natural wear. If the device would not meet your requirements any more, you are kindly requested to have it brought in to an electronic waste management facility. Cardboard boxes must be disposed at a paper recycling facility. Used batteries are hazardous waste and must be disposed of in an electronic waste management facility or any retail establishment selling batteries.

**WARRANTY CERTIFICATE
EUROSTER Q1/Q1TX**

Warranty terms:

1. The warranty is valid for 24 months from the device sale date.
2. Claimed controller together with this warranty certificate must be supplied to the seller.
3. Warranty claims shall be processed within 14 business days from the date the manufacturer has received the claimed device.
4. The device may be repaired exclusively by the manufacturer or by other party clearly authorized by the manufacturer.
5. Warranty becomes invalidated in case of any mechanical damage, incorrect operation and/or making any repairs by unauthorized persons.
6. This consumer warranty does not exclude, restrict nor suspend any right of the Buyer ensuing if the product would not meet any of the sale contract terms.

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sale date	serial number / date of stamp	service:
	manufacture	and signature
		tel. 65-57-12-012

Business entity that issued this warranty certificate is:

P.H.P.U. AS Agnieszka Szymańska-Kaczyńska, Chumiętki 4, 63-840 Krobia, Poland