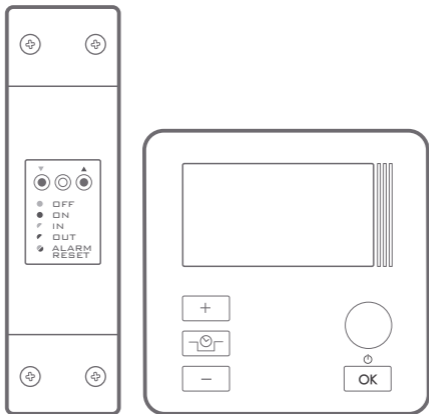


AURATON

S03 RTH



EN

USER'S MANUAL



Wireless central heating pump controller
AURATON S03 RTH

The AURATON S03 RTH controller is intended for wireless control of a central heating (CH) pump.

Before you start using the controller, please read this instruction carefully.

APPLICATION

AURATON S03 RTH is intended for automatically switching on and off circulation pumps depending on the temperature. The controller-pump assembly forces the water to circulate in the central heating system with a coal-fired boiler or a gas boiler. The controller's sensor measures the temperature of the water on the supply side of the CH system. In a CH system with a coal-fired boiler, the controller switches off the circulation pump after the flame in the boiler is extinguished. Pumping of water is not recommended when the flame is extinguished because the air draft into the chimney causes faster cooling of the water in the boiler faster than in the radiators. The optimum temperature can be set on the controller's scale (most often 40 °C).

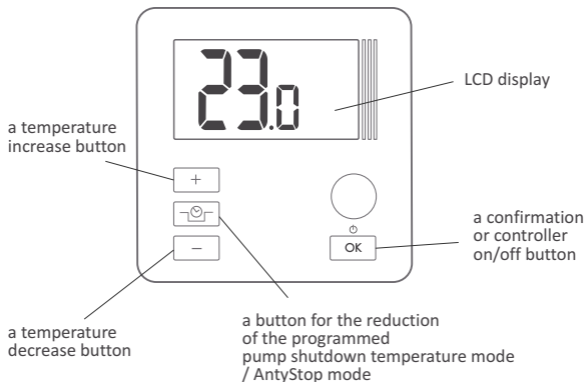
In a CH system with a gas boiler, the temperature set on the controller must be lower than the temperature set on the CH boiler. If the temperature is set on the controller above the dew point, it prevents condensation in the boiler during the heating of the water in the CH system.



AntyStop system

The AntyStop (AS) system installed in the Auraton S03 RTH controller prevents seizure of the rotor of an unused pump. Also, a built in processor starts the pump every 14 days for 30 seconds after the heating season is over. In order for the system to work after the heating season, the controller must be switched on with the AS function active at all times.

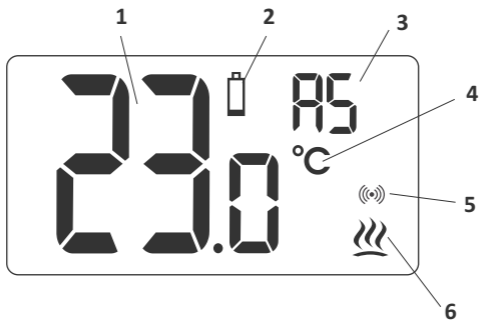
Description of the controller

On the front part of the enclosure there is a backlit LCD display and four function buttons.



- **by pressing the  button for a short time, you can confirm the temperature setting**
- **by holding the  button, you can switch the controller on/off**

Display



1. Temperature

In the normal operation mode, the controller displays the temperature in the room where it is installed.

2. Discharged battery ()

The indicator is displayed when the permissible minimum battery voltage level is exceeded. The battery must then be replaced as soon as possible.

NOTE: In order to maintain the controller settings, the battery replacement should take not more than 30 seconds.

3. AntyStop mode activation indicator

This mode prevents seizing of the rotor of an unused pump.

4. Temperature unit (°C)

This indicates that the temperature is displayed in degrees Celsius.

5. Activated pump indicator ()

A pictogram that indicates the operating status of the pump. It is displayed when the controlled device is switched on.

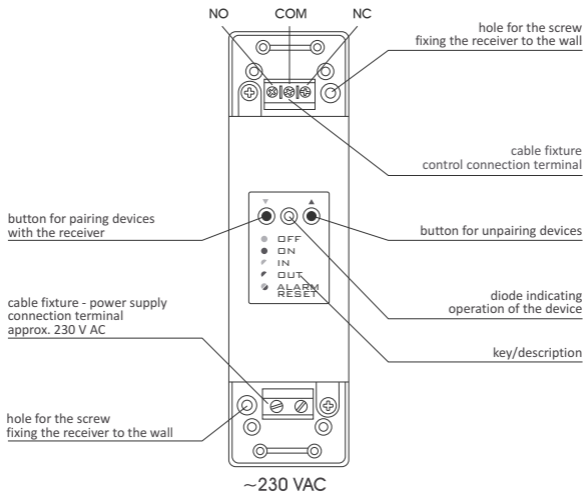
6. Transmission symbol ()

Indicates communication with the receiver.

Description of the RTH receiver

The RTH receiver works with the wireless AURATON S03 controller. It can work at the load equal to 16 A.

The receiver is installed at the CH pump.



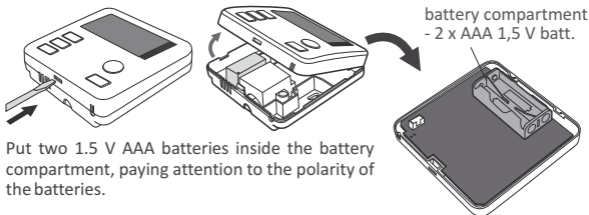
Key - description of diode signaling in the receiver

- □ FF **The diode is illuminated green** - the operating device is off (the COM and NC contacts are closed).
- □ N **The diode is illuminated red** - the operating device is on (the COM and NO contacts are closed).
- IN **The diode is blinking green** - the receiver is waiting for the device to be paired - (chapter “Pairing of a wireless controller with the receiver”).
- □ UT **The diode is blinking red** - the repeater is waiting for a device to unpair - (chapter: “Unpairing the controller from the receiver”).
- | |
|-------|
| ALARM |
| RESET |

The diode is blinking red and green alternately:
ALARM - the receiver’s connection with one of the paired devices is broken - (chapter: “Special situations”).
RESET - the receiver unpairs all the previously paired devices - (chapter: “Unpairing all devices paired with the receiver”).

Installation/replacement of batteries

The battery compartment can be found inside the controller, on the front part of the enclosure. In order to install the batteries, take off the enclosure.

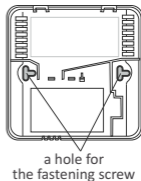


Put two 1.5 V AAA batteries inside the battery compartment, paying attention to the polarity of the batteries.

Mounting the controller on a wall

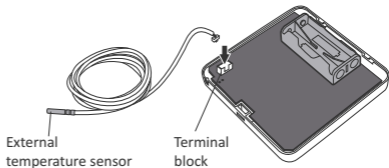
In order to mount the controller on a wall:

1. Take off the enclosure of the controller.
2. Drill two 6 mm diameter holes in the wall.
3. Put two wall plugs in the drilled holes.
4. Fasten the back part of the enclosure to the wall using the screws provided with the set.
5. Put on the controller's enclosure.





If the wall is made of wood, there is no need to use wall plugs. Only 2.7 mm diameter holes (instead of 6 mm) should be drilled and the screws should be driven directly into the wood.

External temperature sensor



As a standard, after the battery is put in, the controller without a sensor connected displays the temperature from the internal temperature sensor. When the external temperature sensor is connected, the controller automatically reads the values measured by that sensor.

If the external sensor is disconnected or defective, the controller switches into the emergency mode (dashes are shown as the temperature value) which results in switching on the relay and, consequently, the controlled device. In order to leave the emergency mode, the external temperature sensor must be reconnected or the controller must be restarted by simultaneously pressing and holding the  and  switches for at least 5 seconds. After this procedure is completed, the controller displays the temperature measured by the internal sensor.

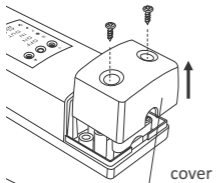


Mounting the sensor

Install the sensor on an uncovered outlet pipe connected to the CH boiler (as close to the boiler as possible). Press the sensor against the tube using a clamp. It is recommended to wrap the boiler pipe from the boiler to the sensor with an insulation material.

If a coal-fired boiler and a gas-fired boiler work in the same CH system, the sensor should be installed in a location where the two outlets merge and must be insulated.

Fastening the RTH receiver



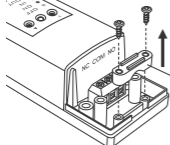
NOTE !



When installing the receiver its power supply must be disconnected. It is recommended that the installation is performed by a qualified specialist.



The permanent electrical system of a building must include a breaker and an overcurrent protection.



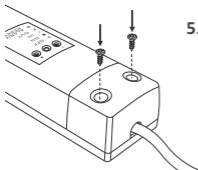
1. Take off protective covers from the lower and upper part of the receiver.

2. Take off **cable tie clamps** from the lower and upper part of the receiver.

3. Connect the heating device to the **control connection terminals** of the receiver. Proceed in accordance with the service manual of the heating device. Most commonly, the **COM** (common) and **NO** (normally open) terminals.

4. Connect power supply conductors to the power supply terminals of the receiver, observing safety rules.





5. After connecting the conductors, they must be secured with the cable tie clamps and reinstall protective covers of the receiver.

**WARNING !**

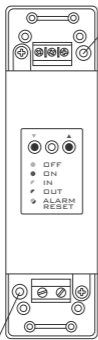
Cables supplied with the regulator are designed for conducting maximal load of 2.5 A. If devices to be connected require more power, the cables need to be replaced with cables of the appropriate cross-sectional area.

Fastening the RTH receiver to the wall

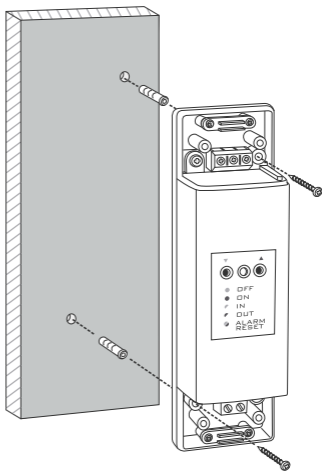
To fasten the RTH receiver to the wall:

- 1) Remove protective covers from the lower and upper part of the regulator. (See chapter: “Fastening the RTH receiver”).
- 2) On the wall, mark the location of holes for fastening screws.
- 3) In marked places, drill holes of a diameter corresponding to the bundled wall plugs (5 mm).
- 4) Insert wall plugs into the drilled holes.
- 5) Screw in the RTH receiver to the wall with screws, making sure they hold the receiver securely.

hole for fastening
the receiver to the
wall with a screw



hole for fastening
the receiver to the
wall with a screw

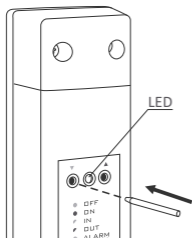


NOTE: If the wall is wooden, there is no need to use wall plugs. In such a case, drill two holes 2.7 mm in diameter instead of 5 mm, and screw the screws directly into the wood.

NOTE: The RTH receiver cannot be placed in metal containers (*e.g. an assembly box, a metal enclosure of a heater*) in order to not to interfere with its operation.

Pairing the wireless temperature regulator with the RTH receiver

NOTE: The wireless temperature regulator sold with the receiver is already paired. **Devices sold separately require “pairing”.**



1. The **process of pairing** the regulator with the receiver is initiated by pressing the left pairing button (marked with a green triangle - ▼) on the receiver and holding it for at least 2 seconds, until the LED starts flashing green, and then releasing the button.

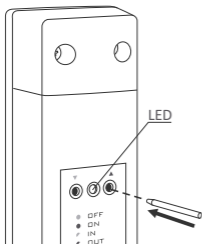
The AURATON RTH receiver waits for pairing for 120 seconds. After that time, it automatically returns back to normal operation.

2. On the regulator, press the **PROG** button and hold it for 5 seconds until the transmission symbol (📶) appears on the display. Release the button - the regulator transmits the pairing signal for 5 seconds.
3. A properly completed pairing process is signalled by the LED on the receiver no longer flashing green and the receiver reverting back to normal operation.

In the event of an error during the pairing process, repeat steps 1 and 2. Should more errors occur, deregister all devices by executing the RESET function of the receiver (see “RESET - Deregistering all devices paired with the receiver”) and attempt to pair the device again.


NOTE: One receiver can have only one temperature regulator assigned.

Deregistering the regulator from the receiver



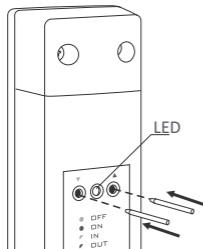
- 1. Deregistering** the temperature controller from the receiver is initiated by pressing the right deregistering button (marked with a red triangle - ▲) on the receiver and holding it for at least 2 seconds, until the LED starts flashing red, and then releasing the button.

The AURATON RTH receiver waits for deregistering for 120 seconds. After that time, it automatically returns back to normal operation.

- 2.** On the regulator, press the **PROG** button and hold it for 5 seconds until the transmission symbol () appears on the display. Release the button - the regulator transmits the pairing signal for 5 seconds.
- 3.** A properly completed deregistering process is signalled by the LED on the receiver no longer flashing red and the receiver reverting back to normal operation.

In the event of an error during the deregistering process, repeat steps 1 and 2. Should more errors occur, deregister all paired devices (see “RESET - Deregistering all devices paired with the receiver”) and attempt to pair the device again.

RESET - Deregistering all devices paired with the receiver



In order to deregister all devices paired with the receiver, simultaneously press both the pairing and the deregistering button (▼ and ▲) and hold them for at least 5 seconds until the LED flashes alternating red and green. Then release both buttons.

A properly completed process of deregistering all devices is signalled after approx. 2 seconds by the LED colour changing to green and then switching it off for a short period of time.

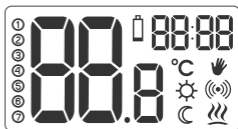
NOTE: If after executing the RESET function the RTH receiver is disconnected from power supply and then connected again, the receiver will automatically enter “pairing” mode for 120 seconds. A newly purchased RTH receiver without any factory-paired devices (i.e. not the one bundled with the regulator) will behave the same way.

Signalling operation and reception of data packet

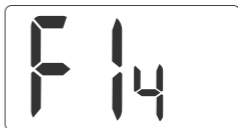
Each radio transmission received by the AURATON RTH receiver from the paired device is signalled by a temporary change of LED colour to orange. Switching on the relay is signalled by the LED lit red, whereas switching it off is signalled by the LED lit green.

Switching the controller on for the first time

After the batteries are properly installed in the battery compartment, the LCD display shows all segments for one second (a display test) and then it shows the software version.



After a moment, the current temperature in the room is displayed. Then the controller is ready for operation.






Temperature setting

NOTE: The first time any function button is pressed, the illumination is always switched on first and only then the button's function is activated.

In order to set the temperature in the normal operation mode:

1. Press the or button. The segment that shows the temperature goes into the edition mode and starts blinking.




- Use the  and  buttons to set the desired temperature in the room with the accuracy of 1°C.
- Confirm the selection by briefly pressing the  button.

Setting the “reduction of the programmed pump shutdown temperature”




The controller has the functionality of reduction of the pump shutdown temperature. When the setting is e.g. 40°C and the reduction is set to 1°C, the pump shuts down at the temperature of 39°C. If the reduction is set to 5°C, the pump shuts down at 35°C.

In order to set the reduction temperature, press the  button (the factory setting is 3°C).




Each time the button is pressed, the temperature setting changes by 1°C in a loop from 1°C to 5°C.

Confirm the selection by pressing the  button.

Note: If the  button is not pressed, the controller returns to the normal operation mode after 10 seconds.

Switching the “AntyStop” mode on/off

In order to switch the AntyStop mode on, press and hold the  button pressed for 3 seconds.



The display shows **AS** (the function is active).



The AntyStop mode prevents seizing of the rotor of an unused pump. Also, a built in processor starts the pump every 14 days for 30 seconds after the heating season is over.

In order for the system to work after the heating season, the controller must remain switched on with the AntyStop function active.

Comments

- The controller may be switched on or off at any time by briefly pressing the  button.
- The first time any function button is pressed, the illumination is always switched on first and only then the button's function is activated.
- When programming any function, if no buttons are pressed for 10 seconds, this is equivalent to pressing the  button.

Additional functions

- After batteries are installed, the controller displays the temperature from the external temperature sensor.
- When the external sensor is connected (the terminal block is located under the enclosure), the controller automatically takes the readings from that sensor.
- If the external sensor is disconnected or defective, the controller goes into the emergency mode (dashes are shown as the measured temperature), which results in the CH pump shutting down until the defect is eliminated. This is intended to protect the heating system from overheating.

In order to leave the emergency mode, connect the external temperature sensor back or reset the controller by taking out the battery until the display switches off. After this procedure is completed, the controller displays the temperature measured by the internal sensor.

Technical data

Operating temperature range:	0 – 45°C
Temperature measurement range:	0 – 99°C (<i>HI is shown when out of range</i>)
Temperature control range:	0 – 85°C
Default temperature setting:	30°C
Additional function:	AntyStop
Operation status control:	LCD display / LED diodes
Maximum load current on the relay:	approx. 16 A 250 V AC
Power supply of the S03 controller:	2 alkaline AAA 1.5 V batteries
Power supply of the RTH receiver:	230VAC, 50Hz
Radio frequency:	868MHz
Range of operation:	in a regular building with standard wall structures - approx. 30m; in an open field - up to 300 m

Disposal of the device



The device is marked with a symbol of a crossed waste bin. Pursuant to European Directive 2002/96/EC and to the Act on waste electrical and electronic equipment, such a symbol indicates that the device, at the end of its service life, must not be disposed off together with other household waste.

The user is required to deliver it to a waste electrical and electronic equipment collection point.

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