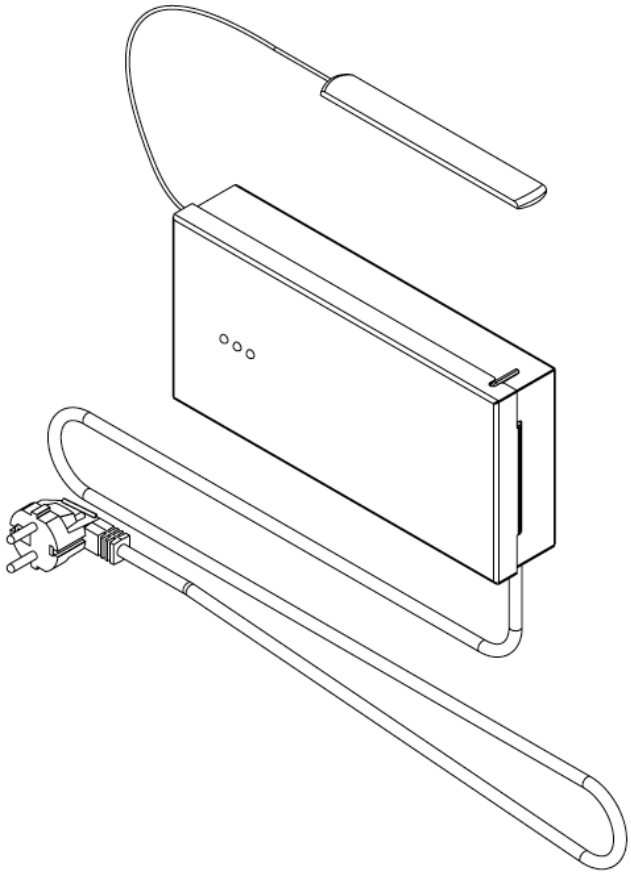
Installation and user manual

Airobot underfloor heating and cooling control automation 24 V

Room controller A-HC-RC1

Room sensor SE1



Contents

Features and capabilities

Applications:

- Water underfloor heating control
- Water underfloor cooling control
- Control of electric floor heating*
- Combined control of electric and water floor heating: simultaneous use with both water and electric floor heating
- Management of water underfloor heating during the heating period; when switching to cooling in summer, water underfloor heating is automatically turned off and electric underfloor heating is activated

Features:

- Air temperature and humidity measurement
- CO_2 carbon dioxide measurement (only for room sensors marked -AQ)
- Control via air temperature or floor sensor
- Home and away mode of operation: different temperature setting points can be set for each mode. Remote operation mode can only be activated from the mobile application
- Network connection: Wi-Fi and LAN cable
- Mobile application control (network connection required)
- Circulation pump control
- Boiler control
- House automation compatibility: Modbus TCP (coming over the air in 2025 with an upgrade)
- Transmission of carbon dioxide CO_2 readings to Airobot ventilation unit for air quality control of air flow
- Automatic or manual change of heating and cooling mode
- Prohibition of floor cooling by room
- Automatic shutdown of floor cooling when the humidity in the room rises above the permissible limit (to prevent dew point)
- Deactivation of floor cooling in away operation mode by room
- Possibility to calibrate the temperature reading of the room sensor

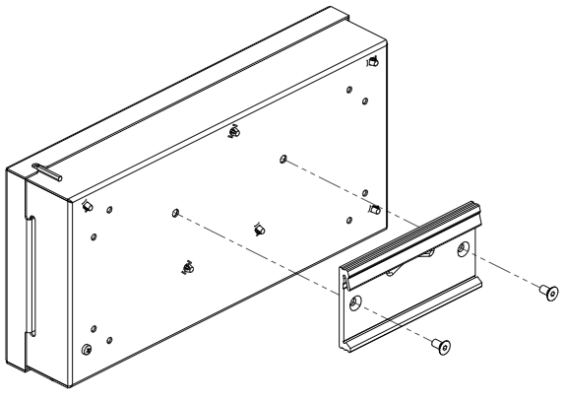
*A separate relay A-HC-R2416 is required to control electric floor heating

Installation

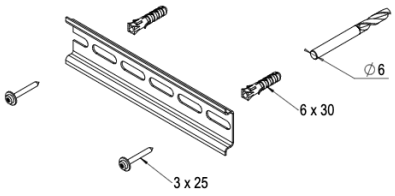
Room controller

The room controller is usually installed in the manifold cabinet, is attached to the DIN rail, and can be installed both vertically and horizontally. Make sure that the room controller is not exposed to liquids, high humidity or hot sources. For attaching the DIN rail to the wall, select the appropriate means of fastening according to the type of wall, they are not included.

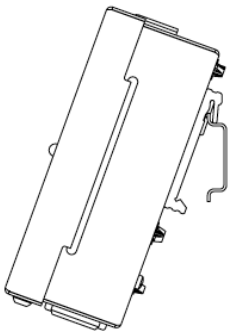
Step 1: attach the DIN clamp included in the package to the room controller with 2 screws



Step 2: attach the DIN rail to the wall with a suitable fastener (not included)



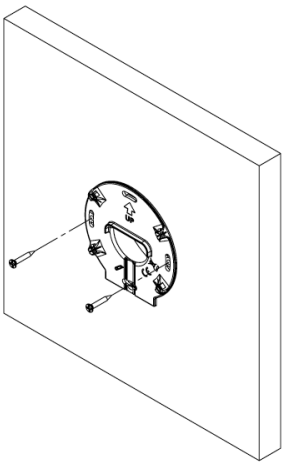
Step 3: Place the room controller DIN on the rail and push the top of the room controller to the rail with little force until it locks.

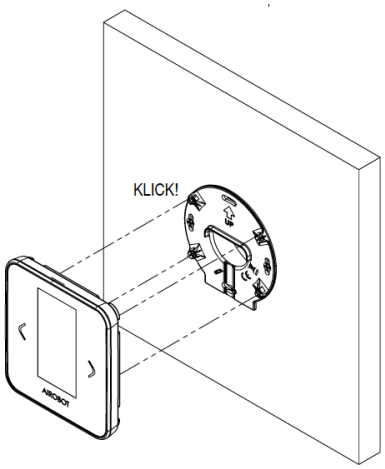


Room sensors

When choosing the location of the room sensor, it is necessary to take into account the following points to ensure accurate measurement of air temperature and effective control of the heating mode:

- Avoid heat sources: The room sensor should not be near the heat source (e.g. TV, router).
- Avoiding solar radiation: Do not install the sensor in direct sunlight because:
    - Solar radiation can heat the thermostat and cause an incorrect temperature reading.
    - Solar radiation can damage the display of the thermostat.





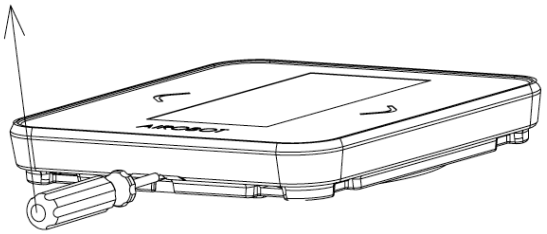
Installation:

- Attach the wall adapter to the wall with 2 screws
- Connect the wires, floor sensor and electric floor heating relay according to the scheme given in the section "Connecting room sensors".

- Attach the room sensor to the wall adapter

Remove:

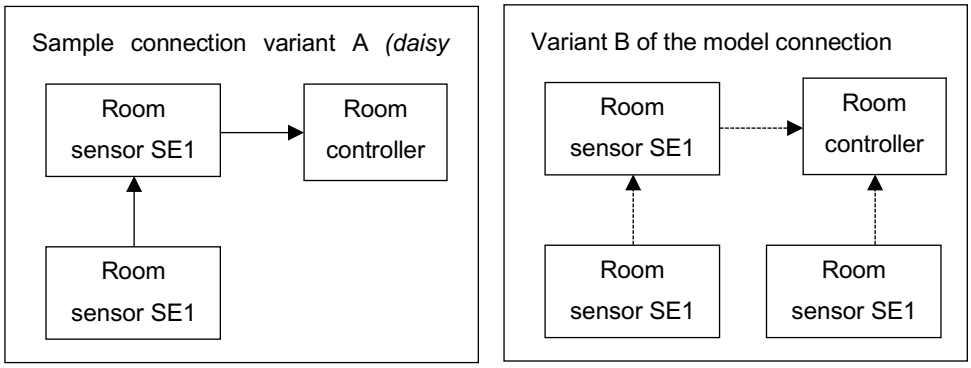
If it is necessary to remove the panel, then insert the end of the thin screwdriver between the wall adapter and the front panel (the hole is located in the bottom center) to a depth of about 2-3 cm and, gently bending, it should deattach.



Connect

Connecting room sensors

- Connect the wires according to the markings behind the room sensor: +Ve, B, A, -Ve.
- It is allowed to combine different connection variants, for example, variants A and B of the sample connection.
- Each room sensor has a unique ID address that allows them to be identified by the system, even if several room sensors are connected to the room controller with a single cable.
- The total length of one circuit should not exceed 100 meters.



Connecting a floor sensor

Room sensors allow you to control heating through the temperature of the floor. Connect:

- Connect the NTC 10 kΩ sensor to the NTC marked connector behind the room sensor.
- At the initial setup, select that the control method is floor sensor, since by default the air temperature is controlled using air sensor.

Connecting room sensors to the room controller

- Connect the room sensors to the connectors of the room controller according to the designation: +Ve, B, A, -Ve. On the room controller, connectors from T1 to T4 (T6) are provided.
- It is allowed to connect several room sensors to one connector, if the lack of room requires it. If necessary, the connection can also be made externally in a separate electrical supply from the room controller

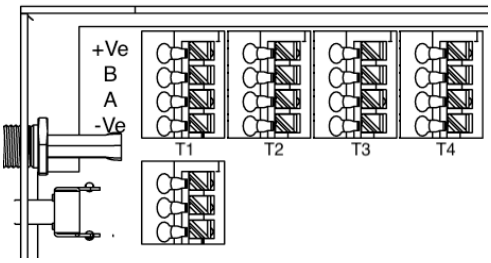
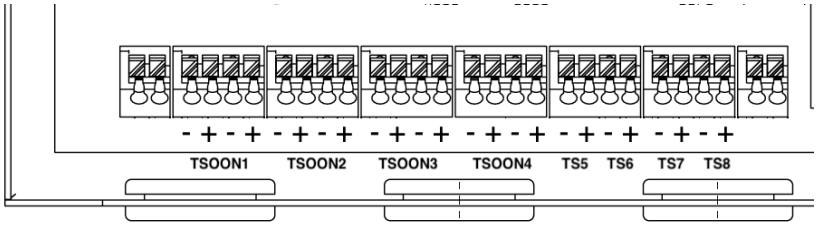


Figure 1 Version A-HC-1.0

- The order of the connection does not matter, since the room sensors are later identified by the system, assigning a unique ID number to each room sensor.

Connecting actuators

24 V NC (normally closed) type actuators shall be used. **Connect:**



- Connect the brown wire to the "+" connector of the room controller
- Blue wire to the "–" connector of the room controller.
- It is allowed to connect only one actuator under one connector.

Placement of the actuator should be carried out in accordance with the planned zones. The designation of the zones is marked on top of the room controller. Zones 1 to 4 can be connected to each of the 2 actuators, zones 5 to 8 can be connected to each 1 actuator. Later in the setup process, it will be possible to specify that several zones will be controlled by one room sensor.

Circulation pump control

Warning! 230V electrical work can only be performed by a specialist with the appropriate qualifications.

With a room controller, it is possible to control the operation of the circulation pump as needed. The circulation pump shall be switched on when at least one of the room sensors requires heating or cooling. The pump is started with a delay of 3 minutes. **Connect:**

- Connect the pump control cables to the contacts "L" (phase) and "N" (neutral).
- The maximum power of the pump can be up to 100 W.
- Supply current: 230 V.

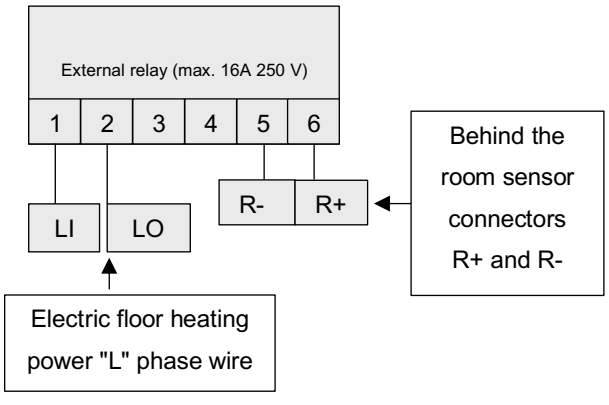
Control of electric floor heating with an external relay

It is possible to control electric underfloor heating with a room controller using an external relay. The optional external relay (A-HC-R2416) is installed behind the room sensor in the wall box.

Requirements for using electric floor heating:

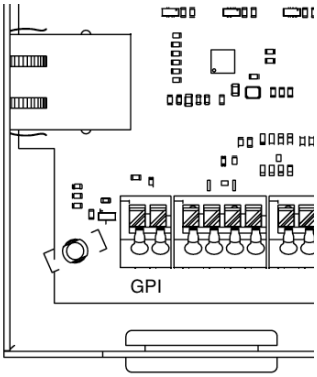
- The room sensor must be connected to the floor temperature sensor
- The phase (line) wire of the electric floor heating "L" must be behind room sensor

Connect:



- Place the external relay behind the room sensor in the wall box.
- Connect the relay to the connectors marked R+ and R.
- Carry the power supply of electric floor heating "L" through the phase wire through the relay (on the principle of normally open).
- **If the room has only electric underfloor heating:** assign the room sensor to a specific zone when setting, but the actuator will not be connected to this zone.
- **If the room has both water and electric underfloor heating**: connect the actuator to the corresponding zone.

General GPI input (automatic activation of floor cooling)



The room controller can be switched to floor cooling mode automatically by sending a potential-free signal (normally open) from the heat pump.

- Carry a 2-core cable (max. 0.75 mm²) from the heater to the room controller and connect it to the GPI input in the room controller.
- Connect the part coming out of the heater in accordance with the manufacturer's instructions for the heat pump.
- Check that the GPI green LED light is on when you receive a signal from the heat pump.
- Make sure that "Floor cooling activation" is selected in the setting. method" – "Auto GPI".
-

Connecting the A-HC-EXTC Expansion Module to Control the Cooling Fan

Connecting to the Room Controller:

1. At the time of connecting the expansion module**, the room controller must not be connected to the mains**.
2. Remove the connector cover from the connector marked "EXTENSION" in the room controller
3. Connect the extension module connection cable to the connector marked "EXTENSION" on the room controller
4. In case of a successful connection, the green POWER LED light on the expansion module will light up.

Instructions for making connections to the expansion module can be found in the instructions for the expansion module.

Connection to the power grid

The connection of the room controller to the electrical network is allowed only if the room controller and accessories connected to it, such as room sensors and actuators, are properly installed and the electrical connections are made correctly:

- Check that all electrical connections are made correctly, as improper cabling can damage the equipment.
- Put the power cord of the room controller in the wall socket to power it up.

Initial setup

Pairing room sensors and creating zones

Once the connection between the room sensors and the room controllers is established, follow these steps and create zones that each room sensor will control. Before setting up, it is recommended to fill in the "Setup table", which can be found at the end of the instruction manual.

Step 1 – activate the pairing mode

- Connect the room controller to the power supply.
- **Activate the pairing mode:**
    - Press and hold the FUNCTION button on the room controller for 3 seconds.
    - The pairing mode is activated, the LED light starts flashing red-green.
    - In the setup mode, the room controller begins to actively search for room sensors connected to it.

The next step is to set up each connected room sensor separately.

Step 2 – repeat for each room sensor

Language	English Estonian
Screen	Normal Black
Control input	Air temperature: control is carried out by air temperature Floor temperature : control is carried out according to a external floor sensor. To use this option, it is necessary to connect the floor sensor to the room sensor.
Sensor ID	Select **a unique number for each room sensor separately**, which will be connected according to this specific room control. Press the left or right button to select the ID. To confirm, hold the OK button for 3 seconds. It is recommended that the ID number be written physically behind the sensor to make it easier to identify and replace in the event of a possible sensor failure.

Step 3 – These options will only appear when setting up the first room sensor. For the following room sensors, these options will no longer be displayed.

Set up floor cooling?	• No: Floor cooling feature is not enabled • Yes: The floor cooling feature is enabled globally.
Floor cooling activ. method	• Auto GPI: floor cooling mode is activated when GPI input receives a signal • Manual: The floor cooling mode can be manually activated by the user from the room controller menu
Set up electrical floor heating?	• No: Electric floor heating is not used in any zone, only water underfloor heating is used. • Yes: Setting up electric floor heating is allowed. If you choose this, in the future, when setting up each room sensor, where a floor sensor is used as the control input, you will be asked what the control method (water or electricity) is.

Step 4 – Select the zone control method and zones

The option is displayed only if in step 3 "Set up electric floor heating" the option was "Yes" and the control method was "Floor sensor" Heat. method?	**Water *(Hydronic):*** • The zone has only water underfloor heating • Control is carried out with heating actuators **Electricity *(Electric):*** • the zone has only electric underfloor heating • an external relay must be connected to the room sensor, which switches the electric floor heating • The room sensor must be equipped with a floor sensor • By activating the cooling mode, electric underfloor heating still acts on the principle of heating **Water and electricity *(*Hydro and electric*):*** • If the room has water underfloor heating and electric underfloor heating at the same time. • When activating cooling mode, water underfloor heating is turned off, and only electric underfloor heating remains in operation. • **The end-user can manually choose which type of heating to use from the menu Settings -> System -> Floor heating**: hydronic, electric or hydronic and electric heating simultaneously. **Auto *switch:*** • If the room controller is in heating mode, water underfloor heating is used. • When in cooling mode, electric underfloor heating is automatically switched on and water turned off. • **The end-user cannot choose which heating method to use**, the switching between them occurs automatically
Zones	Select the zones that a particular room sensor will control. There may be several of them. 1. Select the zones that a particular room sensor will control. There may be several of them. 2. To dial the zone number on the screen, press the left or right button. 3. To select a zone, press the OK button. 4. Once the zone(s) are selected, confirm the final selection by holding down the OK button for 3 seconds.

Step 5 – Repeat the previous steps for each room sensor, except for Step 3.

Step 6 – Complete the pairing mode when all the room sensors are set up and paired.

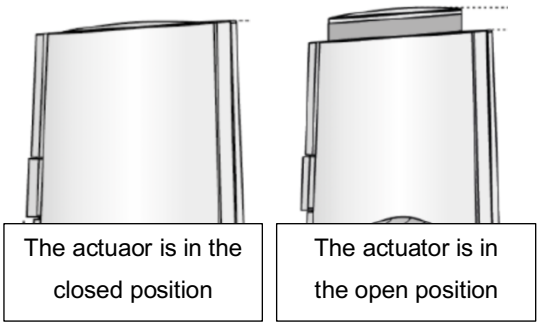
- When all the room sensors are set up, press the FUNCTION button 1 time in the room controller to complete the pairing mode.
- The LED light will remain permanently on green.

Example 1: The bedroom has 2 heating circuits under the floor, so 2 actuators are required. 2 actuators for zone 1 are connected to the room controller. When setting up a room sensor, select 1 from the zone option.

Example 2: In the living room and kitchen, you want to control with one room sensor, in total there are 5 heating circuits under the floor, so 5 actuators are required. 5 actuators are connected to the room controller by the following zones: zone 1 (2 actuators), zone 2 (2 actuators) and zone 5 (1 actuator). When setting up a room sensor, select 1, 2, 5 from the zone option.

If there are problems with connecting, please refer to the chapter "Error messages and emergency situations".

Actuator Testing

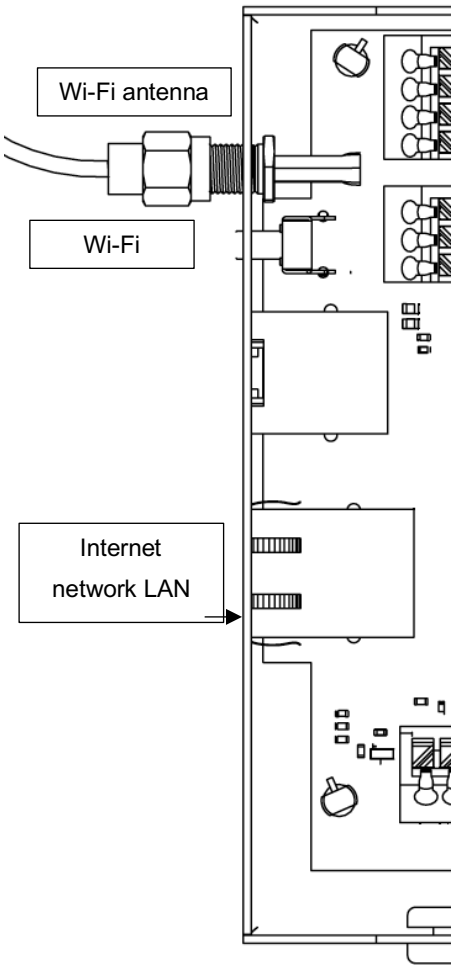


The actuaor is in the closed position | The actuator is in the open position

When all zones are created and set up, it is necessary to check whether each room sensor opens the actuators assigned to it. To do this, raise the temperature setpoint of the room sensor higher than the room temperature to create a demand for heating. Visually check whether the actuators have opened (opening can take up to 10 minutes). If the demand for heating is generated in several room sensors at once, the system can create a queue when the actuators open, which can increase the opening time. The figure shows the open position of the Airobot actuators. If you are using actuators from another manufacturer, read their instructions to understand if the actuator is open. If the actuator does not open, see the section "Error messages and emergency situations" for more information.

Connect to the Internet network

Attention! Upon initial connection to the network, the room controller and room sensors can automatically start a software update. The room controller may take a few minutes to upgrade, depending on the version. The update of the room sensors can take up to 10 minutes per sensor – when the update occurs, a corresponding message will be displayed on the screen. During the update, the power supply must not be removed until the update is fully completed.



Connecting to the Internet network is recommended that:

- Control the room controller and room sensors through a mobile app.
- Receive regular software updates.

Networking options:

- **Wired connection (LAN):** recommended connection method: connect the Internet connector to the network socket on the left
    - With the correct connection, the orange light on the network socket of the room controller should start flashing.
    - If the light does not flash, check if the network cable is correctly connected to your router and there is an Internet connection.
    - In case of a successful connection, the LED green light will remain permanently on.
- **Wireless connection (Wi-Fi)** - a computer or smartphone is required to connect to a wireless Internet network:
    1. Connect the Wi-Fi antenna to the room controller.
    2. Place the Wi-Fi antenna in a location where the Wi-Fi coverage area is stronger (for example, outside a metal collector cabinet)
    3. Press the Wi-Fi button on the room controller 1 time to activate the local area network. The LED red light will start flashing.
    4. Open the WI-FI settings on your phone or computer and search for a network called "Airobot-Room-Controller-XXXXX" and connect your smart device to this network.
    5. Once the connection is established, open a web browser and type in the address bar: http:// *airobot-room-controller.local or http://192.168.4.1 or scan the QR code:*
    6. The room controller setup page should open
        - Press "Search Wi-Fi network"
        - Click on "Choose a suitable Wi-Fi network from the list" and select your home wireless Internet network
        - Enter the password for the home wireless Internet network in the "Password" input field and press connect.

In case of a successful connection, the LED green light will remain permanently on

If the Wi-Fi setup page of the room controller does not open:

Often the problem can occur with smartphones, where the phone does not want to stay connected to the Wi-Fi network of the room controller.

- Turn off mobile Internet
- Check how many times if the phone still stays inside the network created by the room controller
- Try setting up with a laptop or a smartphone from another manufacturer

If the network name "Airobot-Room-Controller-XXXXX" is not displayed:

- Maybe the room controller's Wi-Fi network isn't visible – press the Wi-Fi button to make the network visible.
- If you have already established a LAN connection, the Wi-Fi connection cannot be made.
- If the Wi-Fi setting is done, but the application says that there is no Internet connection, try the setup again and restore the network connection settings by holding down the Wi-Fi button for 5 seconds.

If the home wireless Internet network is not displayed in the list:

Heating manifold cabinets can reduce Wi-Fi coverage due to the metal coating. Try to find a better location for the Wi-Fi antenna and perform a new search.

Mobile app

Adding to a homegroup:

The room controller must be connected to the Internet network, otherwise it cannot be added to the mobile application. To add a room controller to the mobile application:

- In the room sensor, open Menu – Mobile app (QR code will be displayed)
- In the mobile app, open the homegroup settings and add a new device
- In the mobile application, add a name to the room controller (for example, "1st floor")
- Using your phone's camera, scan the QR code displayed on the room sensor or enter the code manually

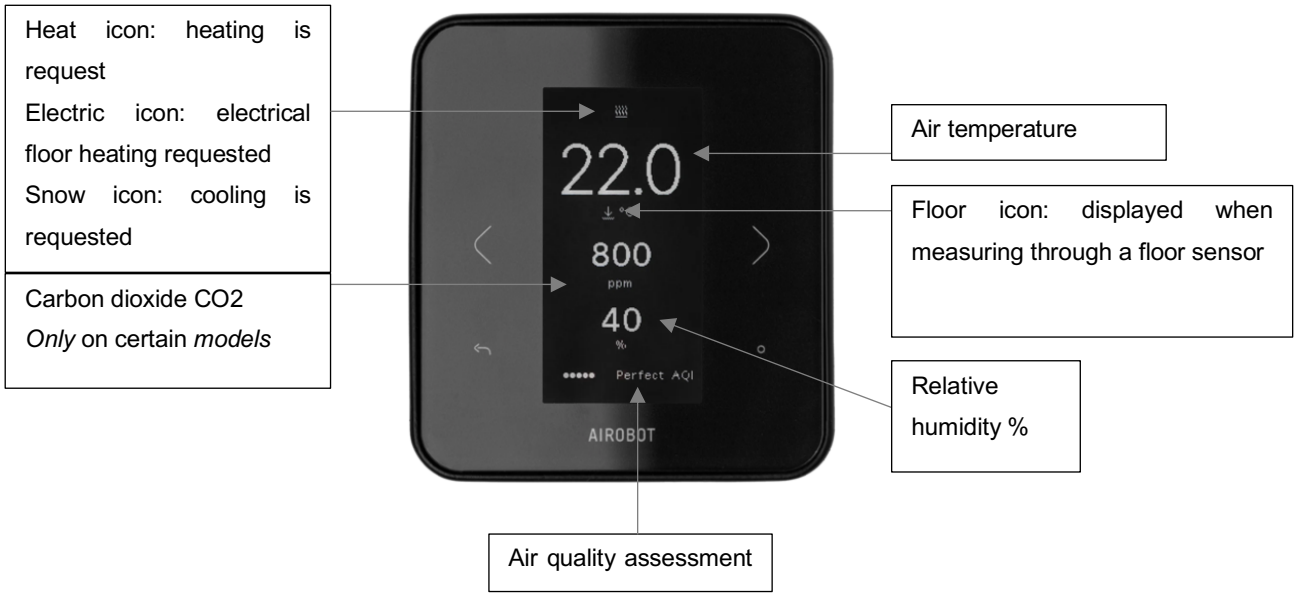
When you add a room controller to the mobile app, you will instantly see the data of all the room sensors (zones) connected to it. If you have multiple room controllers, add it to the same homegroup in the mobile app as well.

Add a name to zones in the mobile app

In the mobile application, it is possible to assign a unique name to each zone (for example, living room, bedroom, etc.). To do this, open the Settings page in the mobile application and select the corresponding room controller from the list. After that, the list will display the created zones and room sensors, to which you can assign names. To identify a room sensor, it's best to compare the sensor ID displayed in the mobile app with the ID in the About room sensor menu to make sure they match.

Use

Main view:



Select a setting point

In heating mode: When the actual air temperature drops below the setpoint, the thermostat begins to request heating.

In cooling mode: When the actual air temperature rises above the setting point, the thermostat begins to request cooling.

The setpoint can be selected from +5°C to +35°C. By default, the setpoint is 22 °C, which is the recommended limit between energy efficiency and comfort. Using the mobile app, you can set up two different setpoints: at home and away. When away mode is active, the holiday icon will be displayed on the screen.

Setup and room sensor menu

To access installer menu, it is required to hold OK button for 3 seconds on the „Installer“ menu item.

Mobile app			QR code to add to the room controller mobile app is displayed
Settings	**Display**	Language	English Estonian
		Display	Regular Black
	System	Floor	It shows the mode in which the room controller is running. If manual mode switching is selected, then you can switch between modes manually with the Ok button. If automatic, then user cannot change the mode. Cooling Heater
		Floor heating	Hydronic - water underfloor heating activated Electric - electric underfloor heating activated Hydronic and electric - water and electric underfloor heating simultaneously
		Sensor temp. calibration	Allows you to change the displayed temperature value to higher or lower
	Installer – Global	Floor cooling	No - floor cooling feature is not enabled Yes - the floor cooling feature is enabled globally.
		Block. Cooling humidity	Allows you to choose the level of air humidity, above which floor cooling will be turned off in a particular zone. Default 75%. The selected level applies to all room sensors and zones.
		Cooling activation	Auto GPI – floor cooling mode is activated when the GPI input receives a signal Manual – gives the user the ability to switch between heating or cooling modes manually from the Settings – System – Mode menu.
		Enable electric floor	No – electric floor heating is not used in any zone, only water underfloor heating Yes – setting up electric underfloor heating in room sensors by zone is also allowed. In the case of electric floor heating, a floor heating sensor must be used.
		Hysteresis	Hysteresis is a setting that avoids turning heating on and off too often. For example, if the set temperature is 22 °C and the hysteresis value is 0.2 °C, the heating actuator opens at 21.8 °C and closes at 22.2 °C.

	Installer - Zone	Control input	Air temperature control is carried out by air temperature Floor temperature : control is carried out according to a separate external floor sensor. To use this option, it is necessary to connect the floor sensor to the room sensor.
		Floor application	Water *(Hydronic):* • The zone has only water underfloor heating • Control is carried out with heating actuators Electric: • the zone has only electric underfloor heating • an external relay must be connected to the room sensor, which switches the electric floor heating • The room sensor must be equipped with a floor sensor • By activating the cooling mode, electric underfloor heating still acts on the principle of heating Water and electricity *(*Hydro and electric*):* • If the room has water underfloor heating and electric underfloor heating at the same time. • By activating the cooling mode, water underfloor heating is turned off, and only electric underfloor heating remains in operation. • **The end-user can manually choose** which type of heating to use: underfloor water heating, electric underfloor heating or water and electricity underfloor heating simultaneously. Auto *switch:* • If the room controller is in heating mode, water underfloor heating is used. • When in cooling mode, electric underfloor heating is automatically switched on. • **The end-user cannot choose** which heating method to use, but the switching between them occurs automatically
		Disable floor cooling	No – floor cooling is allowed in cooling mode

	Yes – no floor cooling in cooling mode
Restore sensor	Allows you to perform factory reset on the room sensor

Features

Underfloor heating and cooling

Switching between the underfloor heating and cooling modes occurs automatically or manually. If manual activation is allowed, you can switch it from the Menu -> System -> Mode.

Home, Away and Boost (boost) modes

For home and away modes of operation, it is possible to set different temperature setpoints. The away mode of operation can be used only through the mobile application.

- **At home: The** default setting is 22°C, which is the recommended limit between energy efficiency and comfort.
- **Away:** Allows you to switch all room sensors connected to the room controller to the "Away" setpoint at the same time. The default setting is 18 °C. This feature is only available through the mobile app.
- **Boost:** A temporary mode of operation that opens the actuators of all zones at once for 30 minutes, regardless of the temperature setting set by the user. As time passes, the previous mode of operation is restored (at home or away). This feature is only available through the mobile app.

Connection to the ventilation unit (for air quality control)

Connection is only possible with Airobot devices produced from 07.2021 (ID/SN number starting with V02..). By connecting the room controller to the Airobot ventilation unit, it is possible to transmit the CO2 reading of the room sensors to the ventilation unit. The ventilation unit monitors the CO2 readings of the room sensors and increases the ventilation rate if in some rooms the reading rises above the set limit to bring the CO2 level down. Room sensors must be equipped with a CO2 sensor (in the model designation -AQ). The functionality works through the Airobot server, which is why it is necessary that the ventilation unit and the room controller are connected to the Internet network. To activate the function:

- In the mobile application, add the room controller and ventilation unit to the same home group.
- In the mobile application, go to the settings of the ventilation unit and select "Transfer the CO2 readings of room sensors or thermostats to the ventilation unit for air quality control". Activation can take up to 10 minutes, after which CO2 readings from each room will appear at the ventilation unit. It is possible to set one upper limit for CO2, above which the rate of ventilation will be increased.

Restoring network settings

When restoring the network setting, the existing wireless Internet network (Wi-Fi) setup is deleted from the room controller's memory, allowing the room controller to be connected to a new network. To recover, press and hold the Wi-Fi button for 5 seconds. In case of successful recovery, the LED light will turn red for 15 seconds.

Factory reset

Warning! Restoration of the factory setting should be carried out only by specialists with the appropriate qualifications. Upon recovery, all previous settings, including already created zones, will be deleted, and the entire setup process will have to be redone. During the restoration, all pre-set room sensors associated with the room controller must be connected to the room controller, since they are also subject to factory reset. If the room sensor was not connected to the room controller, a separate factory restoration must be performed on the room sensor. In case of restoration, you should always restore the room controller as well as all the room sensors and

Restoring the factory settings of the room controller:

To restore, press and hold the FUNCTION button on the room controller for 15 seconds. In case of successful recovery, all LED lights will turn red for a while, and the language option or the Airobot logo will reappear on the screen of the room sensors connected to the room controller. After that, the setting must be done again according to the instructions. If the language selection or the Airobot logo does not appear on the screen of any room sensor, and the temperature and humidity view is still displayed, the factory settings of these room sensors must be restored separately.

Restoring the factory settings of the room sensor:

Open the room sensor menu:

- Software version 1.0:
    - Open the room sensor menu
    - In the "Settings" menu, navigate to (but do not open it).
    - Hold down the OK button at the "Settings" menu item for 5 seconds until the settings view opens with an additional option.
    - Select the "Reset sensor" option and confirm
- Software version 1.1 and higher:
    - Open the room sensor menu
    - In the "Settings" menu, navigate to > "Installer" (but do not open it).
    - Press and hold the OK button on the "Installer" menu item for 5 seconds until the settings view opens with an additional option.
    - Select the "Reset sensor" option in the menu and confirm

Room sensor replacement

If the existing room sensor is malfunctioning, it must be replaced with a new one. When replacing, it is important to determine which ID number was on the previous room sensor in order to assign the same ID to the new room sensor. The room sensor ID is visible in the About room sensor view. If you cannot view the ID from a faulty room sensor, follow these steps:

- When connected to the Internet: In the mobile app, open the room controller information view and see what Sensor ID is assigned (for example, the zone "Living room, sensor ID 1").
- Sticker behind the room sensor: See if there is an "ID-X" marking sticker behind the room sensor (not all sensors may have a sticker).

Once the room sensor ID has been established:

- Connect a new room sensor and plug in the room controller.
- Activate the pairing mode on the room controller by holding down the FUNCTION button for 3 seconds.
- Reset the new room sensor and specify the room sensor ID. For example, if the faulty room sensor ID was 1, then enter the number 1 on the new room sensor.
- End the pairing mode by pressing the FUNCTION button once.

Error messages and emergency situations

Initial setup: The room sensor cannot connect to the room controller at the first pairing

Possible causes:

- Pairing mode: Check if the room controller is in pairing mode. The LED light must flash red-green.
- Cabling error: Check the connections of the A and B wires between both the room sensor and the room controller.
- Setup Error: Make sure that the specified room sensor ID is unique. Each room sensor connected to the room controller must have a unique ID number.

Error message: The room sensor is not connected to the room controller

Possible causes:

- Cabling error – Check the connections of the A and B wires between both the room sensor and the room controller.
- Factory Settings: In rare cases, when restoring factory settings, the factory settings of the room sensor may remain. In this case, perform a separate restoration of factory settings for the room sensor:
    - Open the room sensor menu and navigate to "Settings" (but do not open it).
    - Press and hold the OK button for 5 seconds until the settings view opens with an additional option.
    - Select "Restore to factory settings."

The room sensor does not have an image or the image is not updated or responsive to touches

Possible causes:

- Cabling error: Check the connections of the wires between both the room sensor and the room controller (+Ve and -Ve connectors). If possible, measure with a multimeter whether the power supply reaches the room sensor.
- Reboot of the room controller: Unplug the room controller, in general, the easiest way is to turn off the corresponding automatic fuse from the switchboard for 30 seconds.
- Room sensor failure: If the supply current is sure to reach the room sensor, the room sensor may be malfunctioning. Contact your dealer.

The actuator does not open

- Room sensor demand: Check if the room sensor has generated demand to open – the setpoint must be higher than the actual temperature and there must be a heating or cooling icon on the display.
- LED light: Visually check with the room controller actuator connector that the LED light with the appropriate designation is on (Z1 to Z8, where, for example, Z1 stands for zone 1). If the LED light is not on, then the room sensor has not created a demand for heating. Double-check the setting. When activating several zones at once, a queue may occur on the switches, each subsequent zone is switched on after 2 minutes.
- Faulty actuator: If the LED light is on at the designation of the corresponding zone, but the actuator still does not open, the actuator may be faulty. Temporarily try another known working actuator in the same connector or measure with a multimeter whether there is a 24V DC power supply.

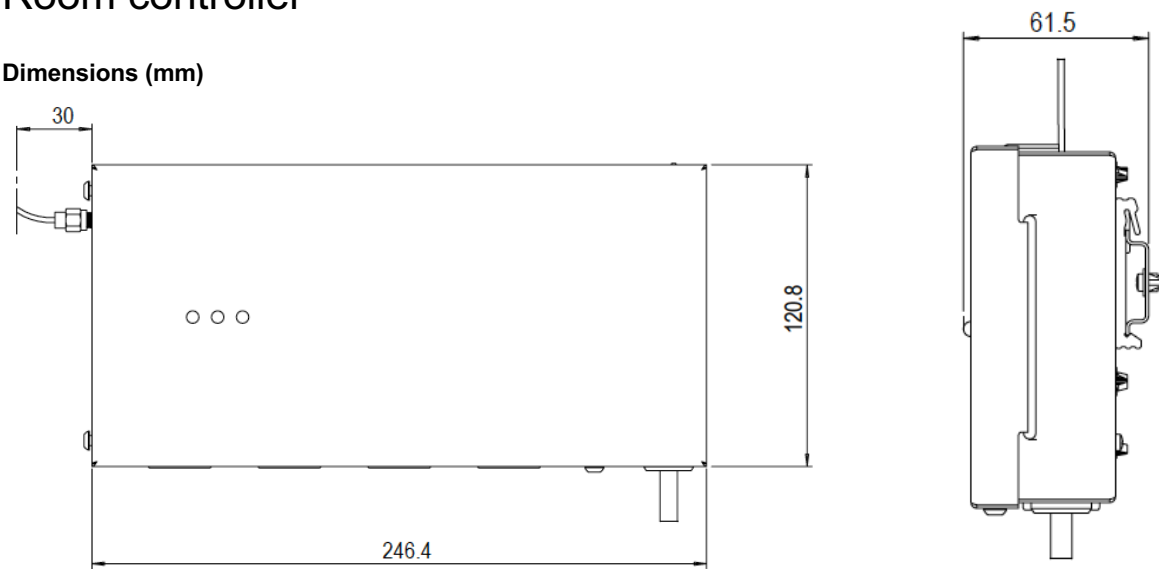
The room controller's network connection (from the app) disappears from time to time

The specifics of the building and the locations of the installation of the room controller can affect the Wi-Fi coverage area. The included Wi-Fi antenna is on top of a 3-meter cable – try to place it in another location and check if the coverage is better. Often, manifold cabinets are made of metal, which can reduce the range of coverage. The antenna should be placed outside the cabinet.

Specifications, dimensions and annexes

Room controller

Dimensions (mm)



Annexes:

Product	Description
A-HC-SPT10K	Pipe temperature sensor for room controller, length 1 meter, NTC 10 kΩ
A-HC-A24	Actuator for underfloor heating room controller with 24 V, M30 x 1.5 adapter

Specifications:

Model	A-HC-RC1
Maximum number of room sensors	8
Tax on heating zones. number	8
Connectivity to room sensors	4-core low-current cable, from 0.22 mm^2 to 0.75 mm^2, max. length 100 m. It is recommended to use a data cable.
Maximum number of actuators	12
Actuator output	24 V DC, NC normally closed, max. switching voltage 0,2 A
Power supply	230 VAC 50 Hz (3 A)
Power	Max. 45 W
Power connection	1 meter cord with EU connector
Ambient temperature and humidity when working	From 0 °C to 45 °C, max. 80% relative humidity (non-condensing)
Output relay 2, boiler (RELAY)	Potential-free NC/NO, tax. 3 A resistive or 1 A inductive
Network connection	Wi-Fi 2.4 GHz or LAN with internet wire

Compatibility	iOS and Android mobile app
Compliance with standards	EN 60730-1, EN 60730-2-9, EN 61000-6-2, EN 61000-6-4
Dimensions	244 x 55 x 120 mm
Weight	1.25 kg
Package dimensions	30 x 30 x 5.5 cm
Package weight	1.6 kg

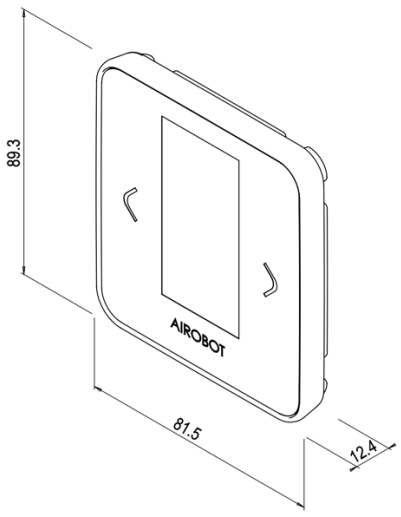
Electrical diagram of the room controller

On the room controller, the exact markings are indicated, in which locations exactly each plug is located.

Connecting terminals	Designation	Explanation
+Ve (24 V) **B** **A** **-Ve**	T1, T2, T3, T4, T5, T6	AIROBOT room sensors A-SE1-*
+ **-**	ZONE1, ZONE2, ZONE3, ZONE4, ZN5, ZN6, ZN7, ZN8	Actuators 24 V DC NC (normally closed)
NTC1	NTC1	10kΩ NTC pipe temperature sensor
NTC2	NTC2	10kΩ NTC pipe temperature sensor
GPI	GPI	Potential-free input contact NO (normally open), cooling mode can be started when activated
LAN	LAN	Network cable input
COM **NO**	RELAY	Potential-free relay, tax. 3 A resistive or 1 A inductive
L N PE	POWER 230V	Room controller power supply 230 V, max. 3 A. The room controller is equipped with a plug-type power cord in the standard, can be removed.

Room sensors

Dimensions (mm):



Models:

Model	Connection	Air quality measurement with a CO2 sensor	Colour
SE1-W	Wired	No	White
SE1-W-AQ	Wired	Yes	White
SE1-B	Wired	No	Black
SE1-B-AQ	Wired	Yes	Black

Extras to the room sensor

Product	Description
A-HC-SFL10K	Floor sensor for room sensor or thermostat, length 3 meters, NTC 10 kΩ
A-HC-R2416	External relay (24V) for controlling electric floor heating. Max. 16A 250V, dimensions 48 x 48 mm, height 25mm.

Specifications

Supply voltage	From the room controller 24 V
Connectivity between the room sensor and the room controller	4-groove low-current cable 0.22 mm^2 – 0.75 mm^2, max. length 100 m. It is recommended to use a data cable.
IP protection class	IP20
Ambient temperature and humidity when working	+5 °C to 40 °C, max. 80% relative humidity (non-condensing)
Floor sensor	10 kΩ NTC, max 0.75 mm^2
Installation	Wall adapter included, EU wall case D68 mm or smooth wall, 60 mm gap between mounting screws
Temperature sensor	Digital, accuracy ±0.2 °C
Air humidity sensor	Digital, accuracy ±2%
Carbon dioxide (CO2) sensor, *only on a model marked -AQ*	Photoacoustic, accuracy ±50 ppm + 5% reading
Screen	E-paper display technology. To save energy, the reading is updated on the screen every 5 minutes. The screen occasionally turns all black to cleaning mode from time to time
Compliance with standards	EN 60730-1, EN 60730-2-9, EN 61000-6-2, EN 61000-6-4
Product dimensions	82 x 89 x 11 mm
Product weight	60 g
Package dimensions	14 x 12.5 x 5 cm
Package weight	125 g

Setup table

We recommend filling in the table below at the moment of connecting the actuators and room sensors. The product packaging comes with stickers with the appropriate marking to help you fill the table. The table will later make it easier to perform the initial setup and monitor the correctness of the settings.

Write the name of the zone here, for example, kitchen	**Set sensor ID (unique for each zone)**		**Mark which zones and actuators are connected in a room controller, for example, A1 = Actuator 1**	
	☐ ID1	☐ ID5	☐ ZONE1 – A1 A2	☐ ZONE5 – A9
	☐ ID2	☐ ID6	☐ ZONE2 – A3 A4	☐ ZONE6 – A10
	☐ ID3	☐ ID7	☐ ZONE3 - A5 A6	☐ ZONE7 – A11
	☐ ID4	☐ ID8	☐ ZONE4 - A7 A8	☐ ZONE8 – A12
	☐ ID1	☐ ID5	☐ ZONE1 – A1 A2	☐ ZONE5 – A9
	☐ ID2	☐ ID6	☐ ZONE2 – A3 A4	☐ ZONE6 – A10
	☐ ID3	☐ ID7	☐ ZONE3 - A5 A6	☐ ZONE7 – A11
	☐ ID4	☐ ID8	☐ ZONE4 - A7 A8	☐ ZONE8 – A12
	☐ ID1	☐ ID5	☐ ZONE1 – A1 A2	☐ ZONE5 – A9
	☐ ID2	☐ ID6	☐ ZONE2 – A3 A4	☐ ZONE6 – A10
	☐ ID3	☐ ID7	☐ ZONE3 - A5 A6	☐ ZONE7 – A11
	☐ ID4	☐ ID8	☐ ZONE4 - A7 A8	☐ ZONE8 – A12
	☐ ID1	☐ ID5	☐ ZONE1 – A1 A2	☐ ZONE5 – A9
	☐ ID2	☐ ID6	☐ ZONE2 – A3 A4	☐ ZONE6 – A10
	☐ ID3	☐ ID7	☐ ZONE3 - A5 A6	☐ ZONE7 – A11
	☐ ID4	☐ ID8	☐ ZONE4 - A7 A8	☐ ZONE8 – A12
	☐ ID1	☐ ID5	☐ ZONE1 – A1 A2	☐ ZONE5 – A9
	☐ ID2	☐ ID6	☐ ZONE2 – A3 A4	☐ ZONE6 – A10
	☐ ID3	☐ ID7	☐ ZONE3 - A5 A6	☐ ZONE7 – A11
	☐ ID4	☐ ID8	☐ ZONE4 - A7 A8	☐ ZONE8 – A12
	☐ ID1	☐ ID5	☐ ZONE1 – A1 A2	☐ ZONE5 – A9
	☐ ID2	☐ ID6	☐ ZONE2 – A3 A4	☐ ZONE6 – A10
	☐ ID3	☐ ID7	☐ ZONE3 - A5 A6	☐ ZONE7 – A11
	☐ ID4	☐ ID8	☐ ZONE4 - A7 A8	☐ ZONE8 – A12
	☐ ID1	☐ ID5	☐ ZONE1 – A1 A2	☐ ZONE5 – A9
	☐ ID2	☐ ID6	☐ ZONE2 – A3 A4	☐ ZONE6 – A10
	☐ ID3	☐ ID7	☐ ZONE3 - A5 A6	☐ ZONE7 – A11
	☐ ID4	☐ ID8	☐ ZONE4 - A7 A8	☐ ZONE8 – A12
	☐ ID1	☐ ID5	☐ ZONE1 – A1 A2	☐ ZONE5 – A9
	☐ ID2	☐ ID6	☐ ZONE2 – A3 A4	☐ ZONE6 – A10
	☐ ID3	☐ ID7	☐ ZONE3 - A5 A6	☐ ZONE7 – A11
	☐ ID4	☐ ID8	☐ ZONE4 - A7 A8	☐ ZONE8 – A12

Warranty terms

Warranty duration: Airobot room controller, sensors and accessories are covered by the manufacturer's warranty for 2 years from the date of purchase. The warranty period is designed to cover any defects in materials or workmanship that may occur during normal use. To ensure the validity of the warranty, a proof of purchase is required, in its absence, the date of production of the product.

Coverage: During the warranty period, the manufacturer or an authorized service partner, at its sole discretion, will repair or replace any component or part of the product that has been identified as a result of defective materials or other malfunction. The manufacturer's warranty does not cover the following:

- Damage caused by misuse, negligence, accident or improper handling.
- Any changes that are made to the product without the permission of the manufacturer.
- Normal wear and tear, including scratches, dents and cosmetic damage.
- Consumable parts, such as batteries, unless otherwise noted.
- Damage caused by liquids, temperature extremes or environmental factors outside normal operating conditions.
- Software-related issues, including but not limited to data loss or corruption.
- Accessories or components not included with the original product.

Occurrence of defects: In the event of a warranty claim, the owner must contact the dealer or the manufacturer's customer support via the dedicated channels provided on the manufacturer's website. The holder may be required to provide a preliminary proof of purchase, a description of the problem and other relevant information.

Repair or replacement: If the mentioned defect is confirmed by the manufacturer, the product will either be repaired or replaced with a similar model at the discretion of the manufacturer. Repaired or replaced products are subject to the remaining duration of the original warranty period or 6 months, whichever is longer.

Additional information: For more information or questions about this warranty, please visit the manufacturer's website or contact the manufacturer. Keep a copy of this warranty for your documents along with proof of purchase, as it is required for all warranty claims. This warranty is in addition to the rights provided by applicable laws and regulations.

Support and contact

Connect your device to the Internet network to receive software updates.

Due to software updates, changes may occur in the manual. You can always find the updated version on the helpdesk page: www.airobothome.com/abi.

We are grateful for any feedback on the use and characteristics of the device. Please send your opinions and questions to: info@airobothome.com.

Manufacturer details

AIROBOT TECHNOLOGIES AS

Reg. No. 16405978

Suur-Sõjamäe 37a, Rae vald, 75322, Estonia

info@airobothome.com

Customer support and guides

www.airobothome.com/abi

Version 08.2024