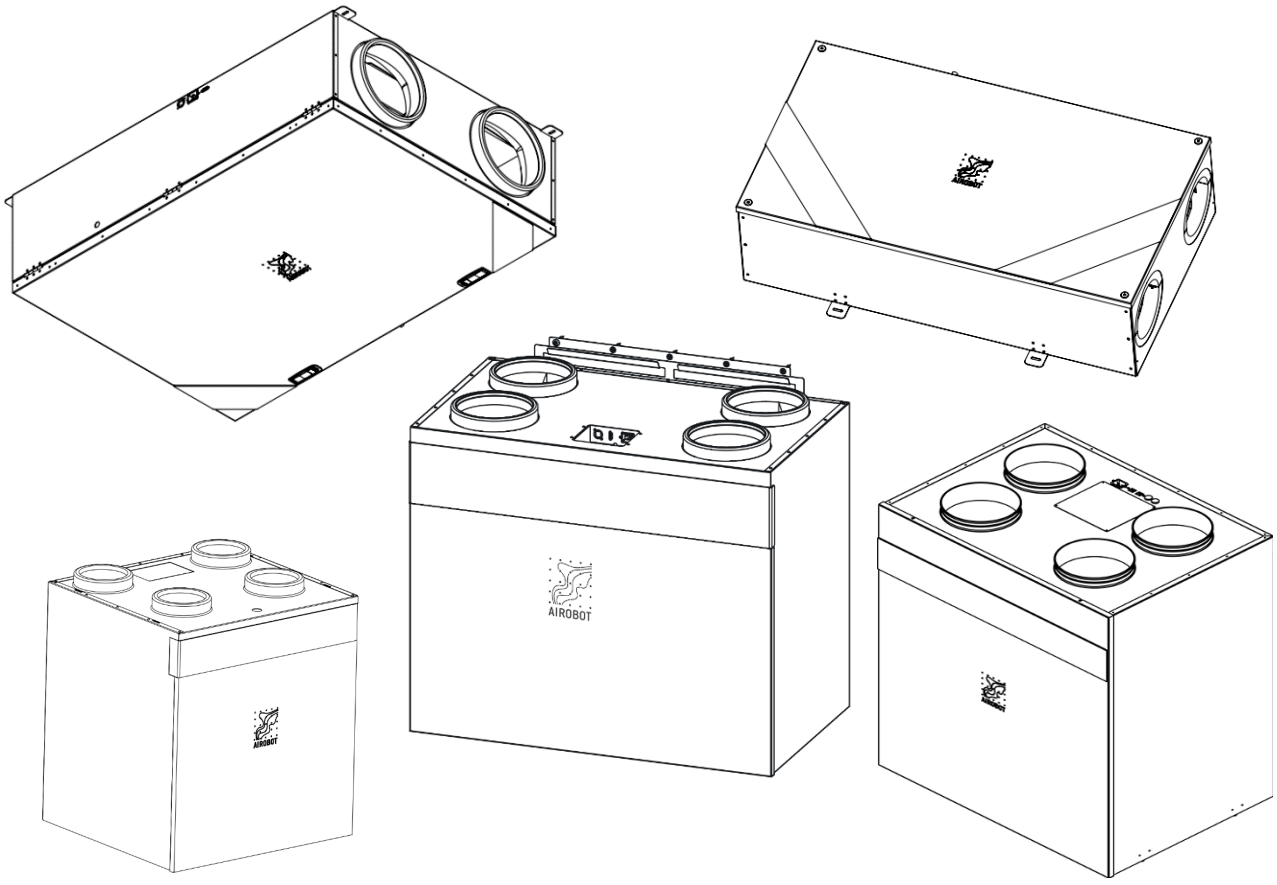
Instructions for use, installation and maintenance

Ventilation unit Airobot L L5 S1 S2 V3 V8



Contents

Installation instructions

Important conditions that must be observed when installing each model of Airobot ventilation unit

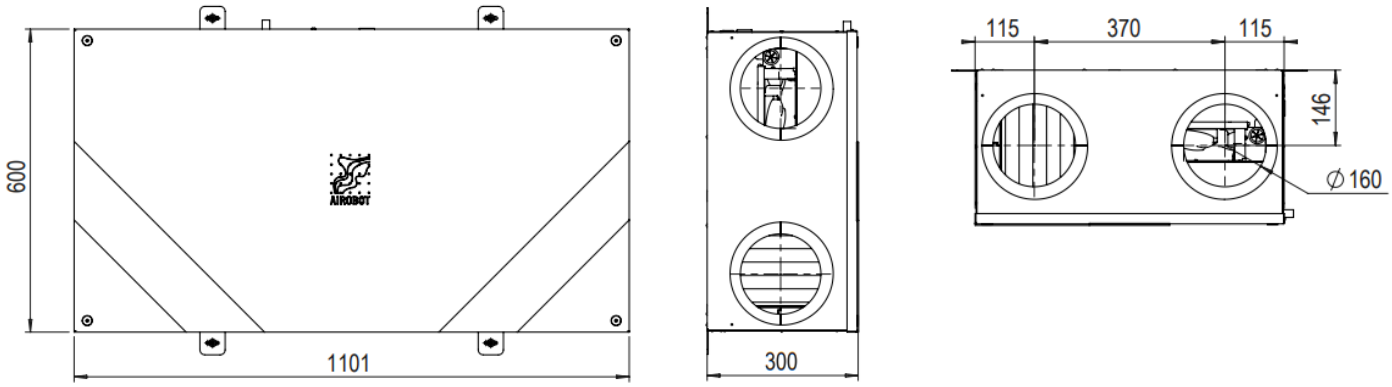
- The device must be installed according to the ventilation design and all established norms must be taken into account during the construction of the ventilation system.
- At the location where the equipment is installed, it must be ensured:
    - plug-in power supply (16A separate automatic protection)
    - Internet network cable for mobile application control and software updates (recommended)
    - ensuring the drainage of condensate water:
        - Required for models with HRV (heat recovery) marking.
        - Optional for models with ERV (heat and moisture recovery) marking if normal conditions are ensured. In ERV models, condensate water is not formed under normal conditions. Normal conditions are considered to be a situation when, during winter (outdoor air temperature below 5 °C), the humidity in indoor spaces (pull-out average humidity that reaches the ventilation unit) does not exceed 50% (temporarily higher allowed for a few hours). In general, during the heating season, in constantly ventilated dwellings, the humidity of the air is never more than 50%. Sometimes in the case of newly built new buildings (for example, fresh concrete works), the humidity level in the first heating period can be very high - in this case, condensate drainage must be ensured even in the case of the ERV model. Airobot ventilation units are equipped with condensate drainage (except L ERV and L5 ERV) or except by special agreement.
- The device must be installed in a dry insulated room. The ambient air temperature at the installation location of the device must remain from +5 °C to +40 °C and the relative humidity up to 80%. It is not allowed to install the device outdoors. As an exception, it is allowed to install models with moisture recovery (ERV designation) in a cold non-insulated but dry room insulated from outdoor conditions (for example, a closed attic) - under normal conditions. Otherwise, it will be difficult to ensure the drainage of condensate, which can freeze.
- The device makes noise through the shell when working, and this can interfere with living. It is recommended to install the device in the utility room or elsewhere in the auxiliary room.
- The equipment must be regularly serviced, so the equipment must be in an easily accessible place and the conditions of the maintenance room set for each model must be monitored . If the conditions are not observed, servicing (maintenance and repair) of the equipment may be prevented, and the manufacturer or distributor has the right to refuse to service the device until the required conditions are met.
- Noise attenuators must be placed between the supply and exhaust air ducts and the device, otherwise the noise from the fans will reach the living quarters through the piping. Noise attenuators must be selected according to the noise characteristics of each appliance in order to ensure that the noise level is normally permitted.
- We recommend installing noise attenuators immediately after the device, then in addition to noise suppression of the ducts, the best possible damping of noise generated through the shell in the room where the device is located will be ensured.
- It is also recommended to put the noise suppressor on the exhaust air pipe, otherwise the noise of the fan will spread to the throw out of the yard.
- When connecting the device to the ventilation ducts, make sure that the connections are correctly fixed and airtight.

- Piping must be insulated: Condensate water may form on the inner or outer surface of an insulated pipe, which in turn can damage the ventilation unit or the structures of the house. When installing the ventilation unit in a warm room, there must be insulated exhaust air and outdoor air intake pipes. If pipes of warm air run through an unheated room, then they must also be insulated. When installing a device for a cold room, it is necessary to insulate all pipes that are located in a cold room.
- It is recommended to put non-return valves in the ambient air and exhaust air ducts: this ensures that when the device stops, cold air does not enter the stationary device. If the device is installed in a cold unheated room (for example, a cold attic), it is mandatory to install non-return valves in the exhaust and supply pipes from the room immediately in the location where the pipes move from a warm room to a cold room or immediately before the device: otherwise the warm cold in the room will reach the ventilation unit standing in the attic, and condensate water will form in the device, which will damage it.

Airobot L/L ERV installation

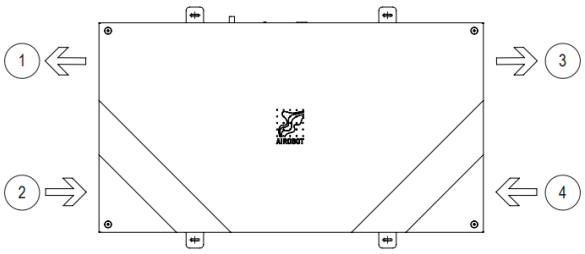
When installing the device, please note:

- The device must be installed horizontally on the ceiling and be level. It is allowed to install the ERV (moisture recovery) model in other positions under certain conditions (ask the dealer for more).
- Be sure to make an O-ring (water lock) on the condensate drain hose - otherwise condensate water will not be able to drain from the device and will damage the device.



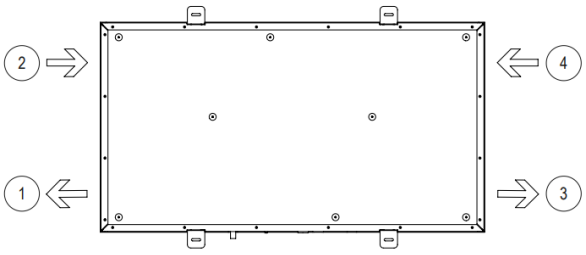
Location of ducts connections

The type of equipment (piping location) is indicated on the type sticker on top of the device. The names of the channels are referenced in numbers in the figure next to it.



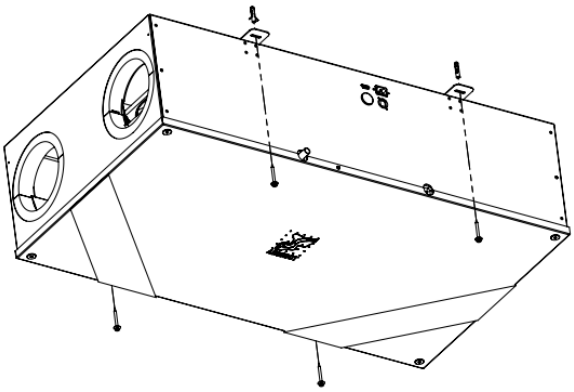
Airobot L ceiling mounted device in bottom-up view

Type R		Type L	
1.	Exhaust air	1.	Supply air
2.	Ambient air	2.	Exhaust air
3.	Supply air	3.	Exhaust air
4.	Exhaust air	4.	Ambient air



Airobot L device in top-down view

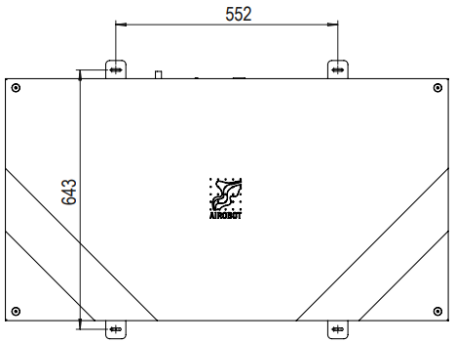
Installation on the ceiling

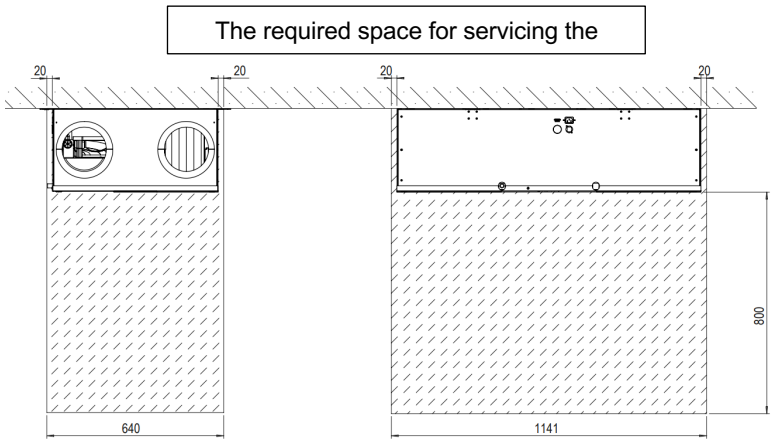


The device is installed on the ceiling with the help of mounting corners with dowels and screws.

When installing on the ceiling, please note that:

- The load-bearing ceiling would be strong enough.
- used screws and dowels would correspond to the type of ceiling, the screws included in the package may not be suitable.
- the device would remain level.
- When installing under a suspended ceiling, the necessary space for maintenance with a service hatch must be ensured throughout the external dimensions of the device (for example, an 800x1200mm service hatch)
- sufficient space would be provided for making connections between the device and the ventilation pipes.
- Installing rubber bushings between the mounting corners and the ceiling with a screw reduces noise and vibration to the structure
- **all the mentioned points in the chapter** "Important conditions to be observed when installing each Airobot ventilation unit model**" must be complied with**





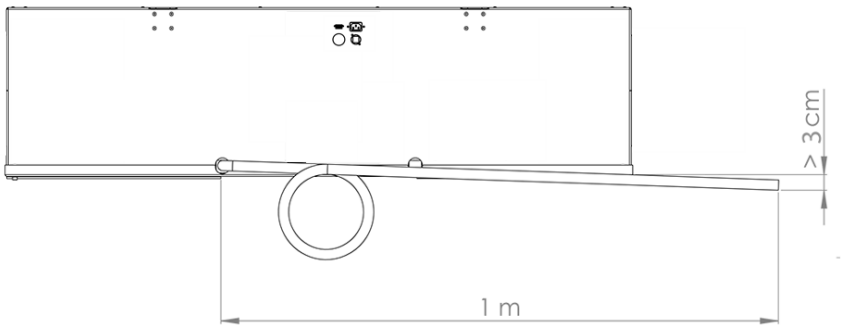
Connection of condensation water drain

During the cold period, condensation water is formed in the device, which must be discharged from the device through the exit of the condensate.

ERV heat and humidity recovery model: The device is not equipped with a condensate outlet, if necessary, it is possible to order more and must be specified from the seller. If there are rooms with a constant high level of humidity (permanently more than 50% humidity during the winter period, for example, sauna or pool rooms, etc.), then it is mandatory to ensure the drainage of condensate.

PRC heat recovery model: ensuring condensate drainage is a must

- A copper pipe with a field diameter of 15 mm comes out of the device, to which a condensate drain pipe must be installed.
- **A water lock in the shape of an O-circle must be made on the drain pipe** and the pipe must be installed under a minimum inclination of 3%, i.e. there must be at least 3 cm of drop for every 1 meter!
- The minimum diameter of the water lock in the shape of an O-circle is 10 cm, care must be taken to ensure that no fold forms on the hose when forming the water lock, which would prevent drainage. It is allowed to make a water lock in any location, it is important that no part of the hose is higher than the lower part of the device.
- **In the absence of a water lock, condensate water cannot get out of the device and may result in water damage to the device and the surrounding environment.**



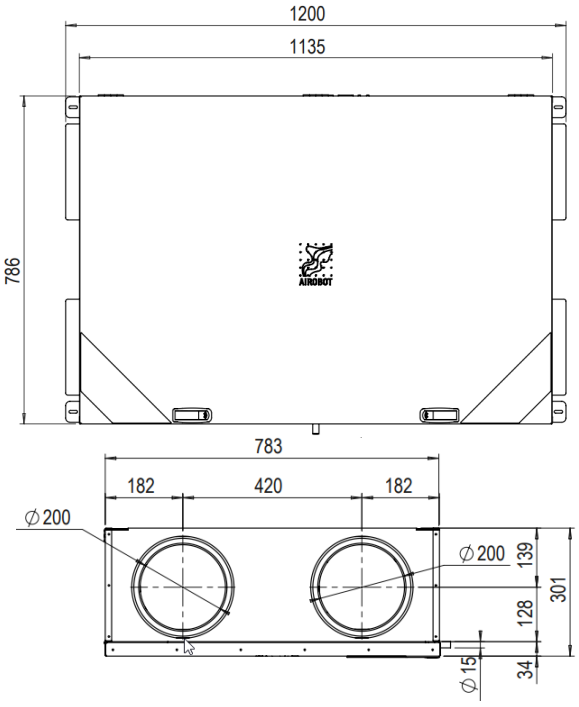
Airobot L5/L5 ERV Installation

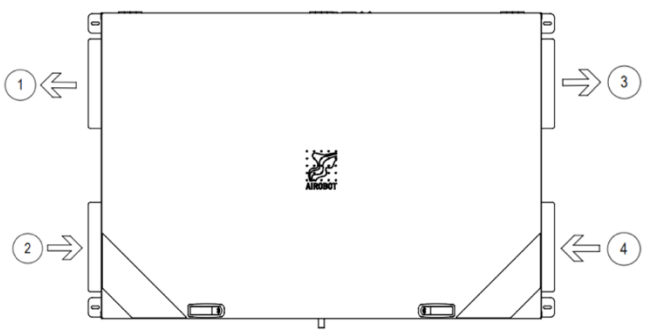
When installing the device, please note:

- The device must be installed horizontally on the ceiling and be level.
- Be sure to make an O-ring (water lock) on the condensate drain hose - otherwise condensate water will not be able to drain from the device and will damage the device.

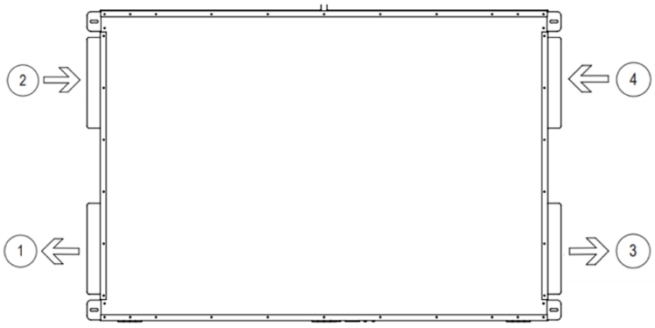
Location of ducts connections

The type of equipment (piping location) is indicated on the type sticker on top of the device. The names of the channels are referenced in numbers in the figure next to it.





Airobot L5 ceiling mounted device in bottom-up view



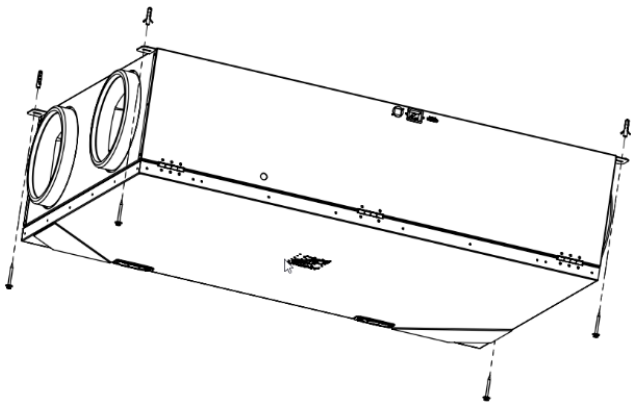
Airobot L5 device in top-down view

	Type R		Type L
1.	Exhaust air	1.	Supply air
2.	Ambient air	2.	Exhaust air
3.	Supply air	3.	Exhaust air
4.	Exhaust air	4.	Ambient air

Installation on the ceiling

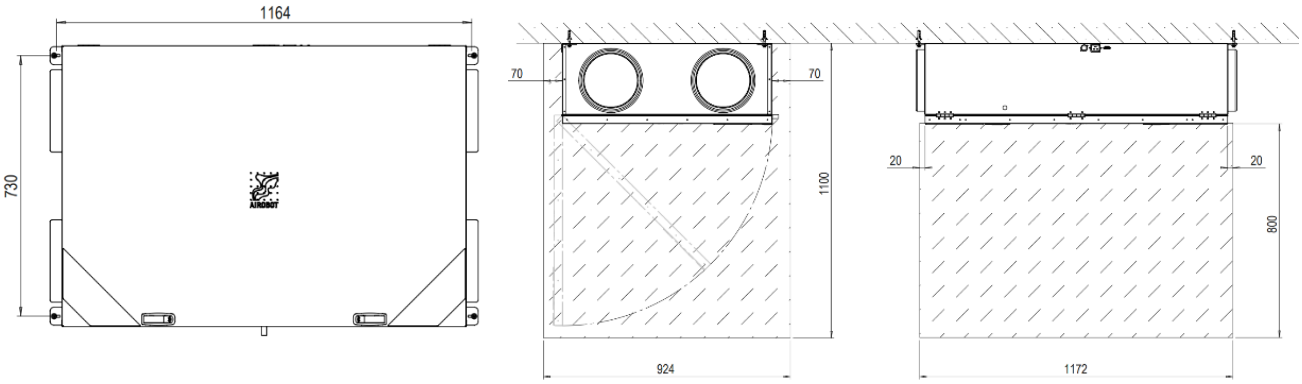
The device is installed on the ceiling with the help of mounting corners with dowels and screws.

When installing on the ceiling, please note that:



- The load-bearing ceiling would be strong enough.
- used screws and dowels would correspond to the type of ceiling, the screws included in the package may not be suitable.
- the device would remain level.
- When installing under a suspended ceiling, the necessary space for maintenance with a service hatch must be ensured throughout the external dimensions of the device (for example, a 1000x1200mm service hatch)
- sufficient space would be provided for making connections between the device and the ventilation pipes.
- Installing rubber bushings between the mounting corners and the ceiling with a screw reduces noise and vibration to the structure
- **all the mentioned points in the chapter** "Important conditions to be observed when installing each Airobot ventilation unit model**" must be complied with**
- **The hatch of the device is not removable from the hinges. The device can be ordered with a removable hinged hatch**, for this you need to order an article in addition (900459) at the moment of order. In the case of removable hinges, the hatch can be removed completely from the ceiling in a closed position, and there is no need for so much free space to service the device.

The required space for servicing the device



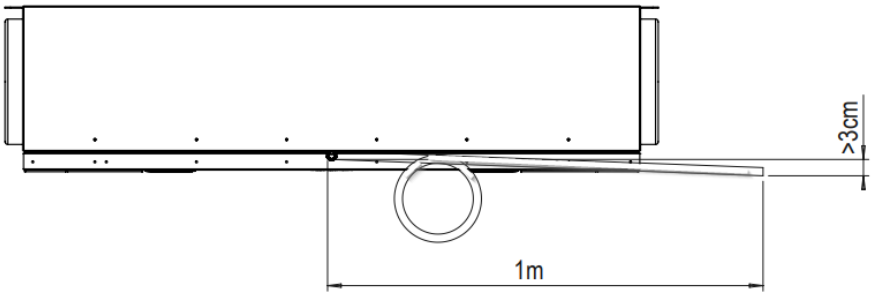
Connection of condensation water drain

During the cold period, condensation water is formed in the device, which must be discharged from the device through the exit of the condensate.

ERV heat and humidity recovery model: The device is not equipped with a condensate outlet, if necessary, it is possible to order more and must be specified from the seller. If there are rooms with a constant high level of humidity (permanently more than 50% humidity during the winter period, for example, sauna or pool rooms, etc.), then it is mandatory to ensure the drainage of condensate.

PRC heat recovery model: ensuring condensate drainage is a must

- A copper pipe with a field diameter of 15 mm comes out of the device, to which a condensate drain pipe must be installed.
- **A water lock in the shape of an O-circle must be made on the drain pipe** and the pipe must be installed under a minimum inclination of 3%, i.e. there must be at least 3 cm of drop for every 1 meter!
- The minimum diameter of the water lock in the shape of an O-circle is 10 cm, care must be taken to ensure that no fold forms on the hose when forming the water lock, which would prevent drainage. It is allowed to make a water lock in any location, it is important that no part of the hose is higher than the lower part of the device.
- **In the absence of a water lock, condensate water cannot get out of the device and may result in water damage to the device and the surrounding environment.**

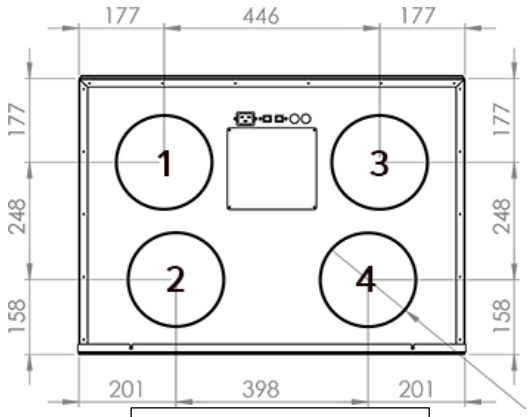


Installation of Airobot S1 / S2

Location of ducts connections

The type of device is indicated on the type sticker on top of the device. The names of the channels are referenced in numbers in the preceding figure.

Type R		Type L	
1.	Supply air	1.	Exhaust air
2.	Exhaust air	2.	Ambient air
3.	Exhaust air	3.	Supply air
4.	Ambient air	4.	Exhaust air



Piping diameter:
Airobot S1 – 160mm
Airobot S2 – 200mm

Installation on the wall

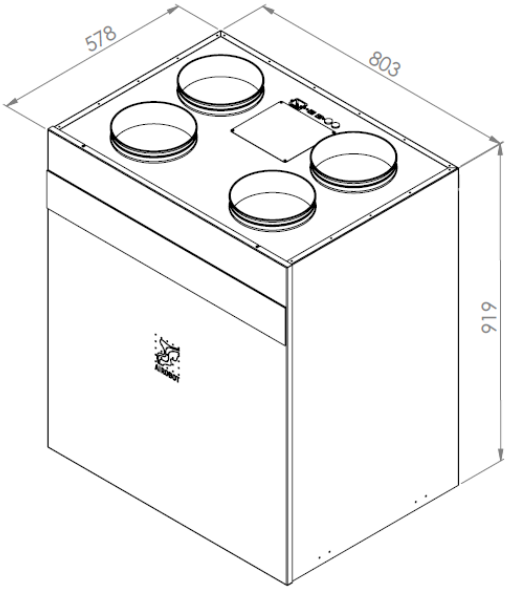
The device is installed on the wall using a wall mount. Wall mount fastened to the wall with 3 screws.

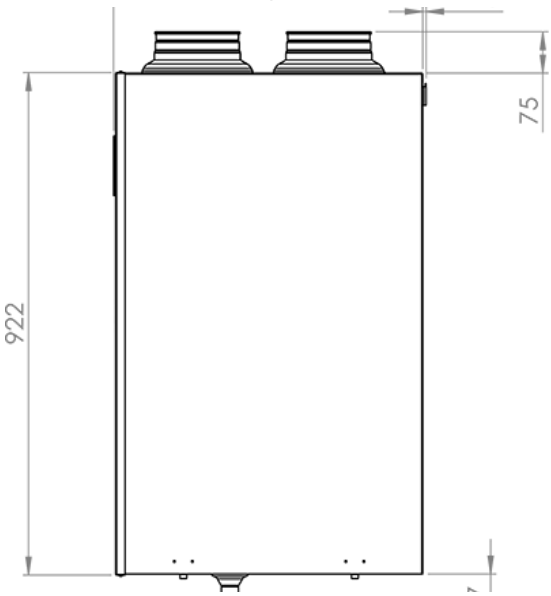
When installing a wall mount, please note that:

- the carrying wall would be strong enough.
- used screws and dowels would be appropriate to the wall type, the screws included in the package may not be suitable.
- The minimum distance between the wall mount and the ceiling is 300 mm, and between the bottom and floor of the device is 275 mm (necessary for servicing the device).
- the wall mount would be level.
- enough space would be provided for making connections between the device and the ventilation pipes.
- At the location of the installation of the device must be ensured: plugged into the mains, a network cable (recommended) and the possibility of condensate drainage (not necessary for the ERV model under certain conditions).

Installing:

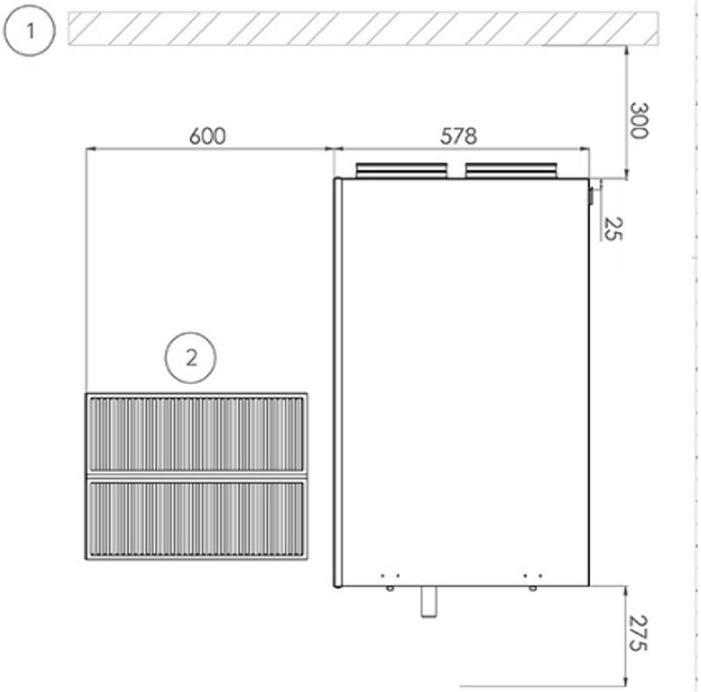
- **all the mentioned points in the chapter** "Important conditions to be observed when installing each Airobot ventilation unit model**" must be complied with**
- the device must be level.

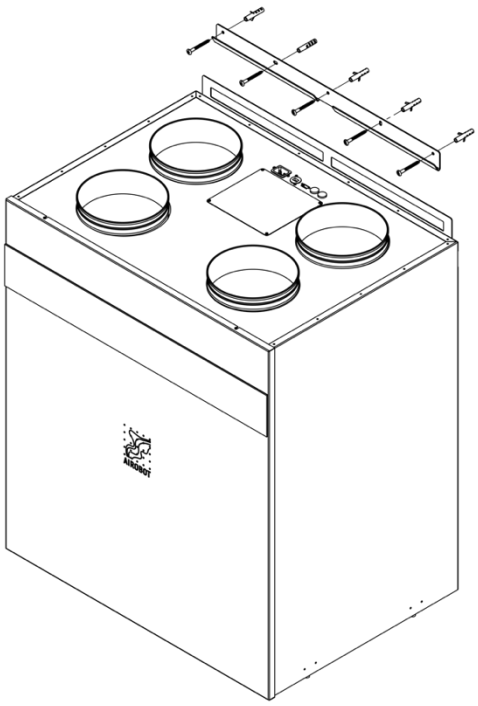




Taking into account the space required for installation and maintenance (side view). The required space is required to service the device.

1. Ceiling
2. Exchanger

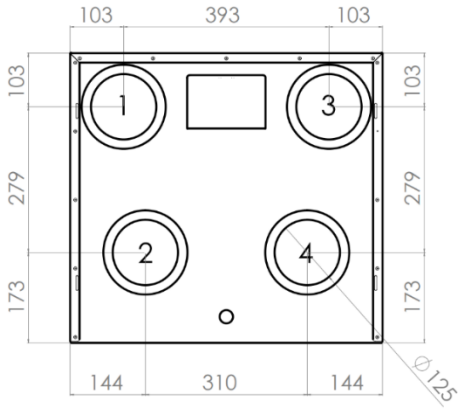




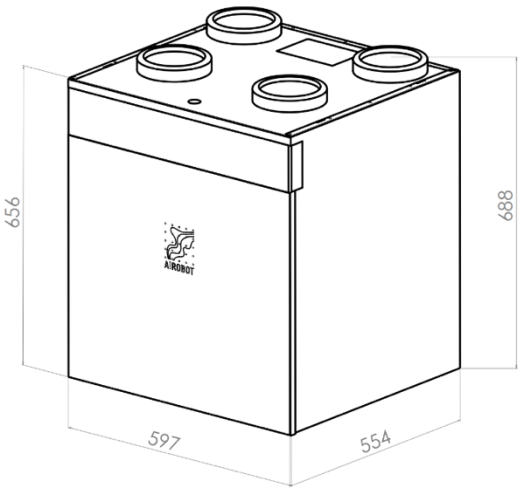
Installing Airobot V3

Location of ducts connections

The type of device is indicated on the type sticker on top of the device.



Type R		Type L	
1.	Supply air	1.	Exhaust air
2.	Exhaust air	2.	Ambient air
3.	Exhaust air	3.	Supply air
4.	Ambient air	4.	Exhaust air

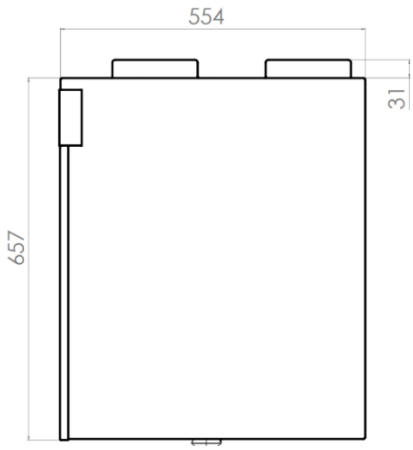


The names of the channels are referenced in numbers in the preceding figure.

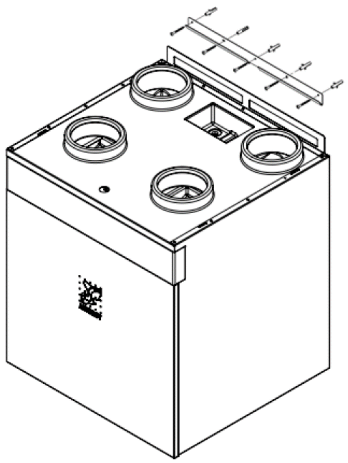
Installation on the wall

The device is installed on the wall using a wall mount. Wall mount fastened to the wall with 3 screws.

When installing a wall mount, please note that:

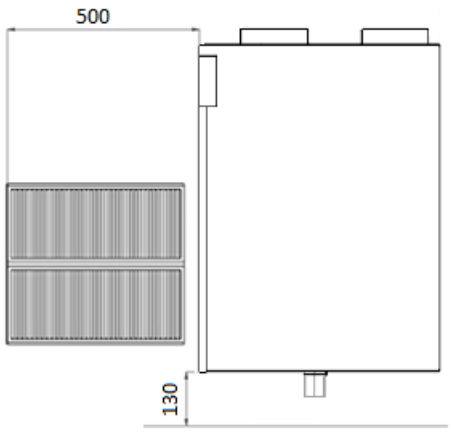


- the carrying wall would be strong enough.
- used screws and dowels would be appropriate to the wall type, the screws included in the package may not be suitable.
- The minimum distance between the bottom and floor of the device is 130mm (necessary for the installation of a condensate pipe).
- there would be a service space in front of the device for at least 500 mm.
- the wall mount would be level.
- enough space would be provided for making connections between the device and the ventilation pipes.
- At the location of the installation of the device must be ensured: plugged into the mains, a network cable (recommended) and the possibility of condensate drainage (not necessary for the ERV model under certain conditions).



When installing, the following requirements must be observed:

- **all the mentioned points in the chapter** "Important conditions to be observed when installing each Airobot ventilation unit model**" must be complied with**
- the device must be level.

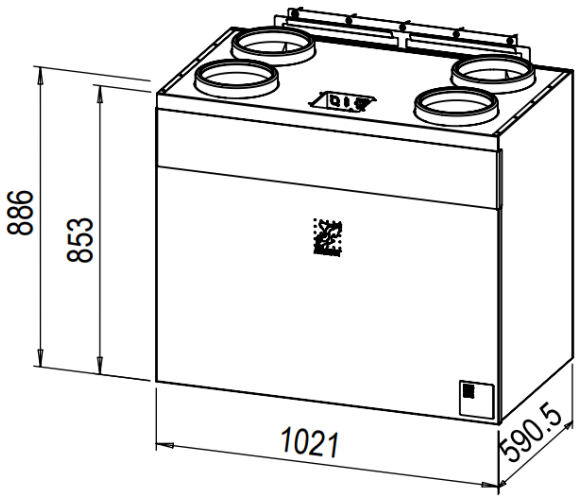


Taking into account the space required for installation and maintenance (side view). The required space is required to service the device.

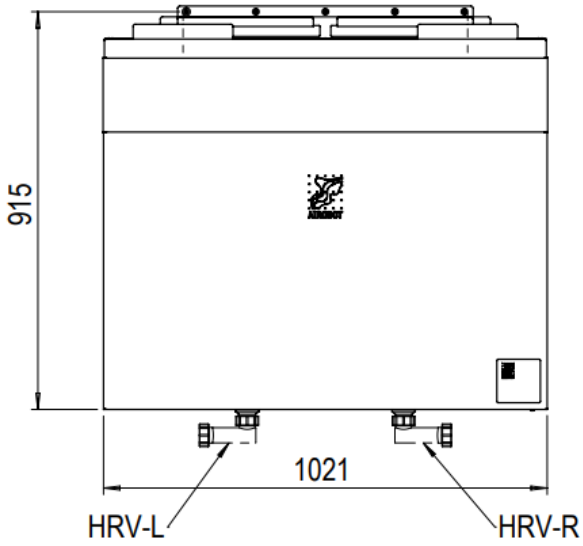
Installing Airobot V8

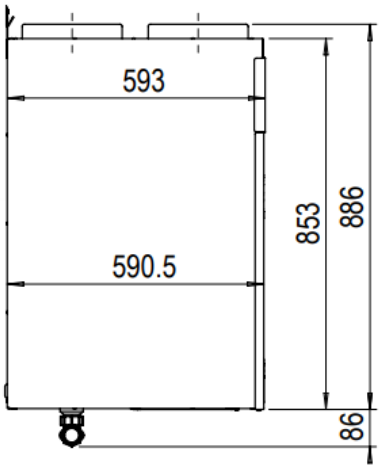
When installing, the following requirements must be observed:

- **all the mentioned points in the chapter** "Important conditions to be observed when installing each Airobot ventilation unit model**" must be complied with**
- the device must be level.

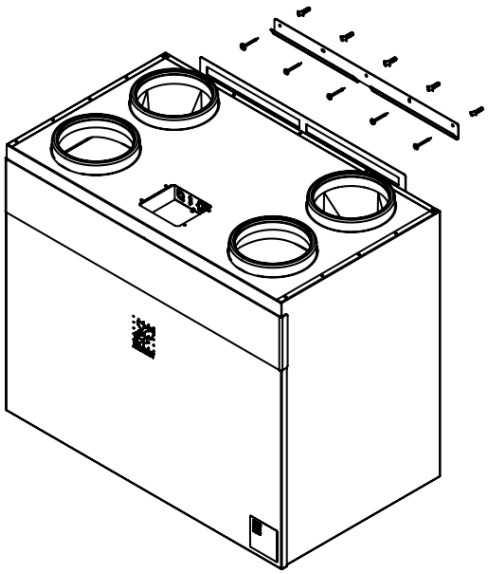


Dimensions





Location of ducts connections

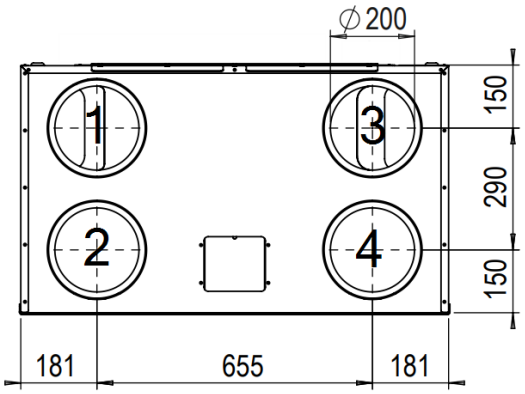


The type of device is indicated on the type sticker on top of the device. The names of the channels are referenced in numbers in the preceding figure.

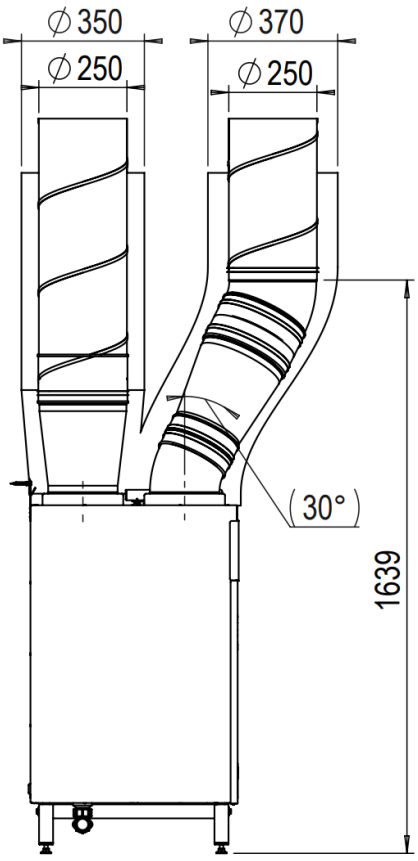
Type R		Type L	
1.	Supply air	1.	Exhaust air
2.	Exhaust air	2.	Ambient air
3.	Exhaust air	3.	Supply air
4.	Ambient air	4.	Exhaust air

Installation on the wall

The device is installed on the wall using a wall mount. Wall mount fastened to the wall with 3 screws.



When installing a wall mount, please note that:



Põhitorustikuga ühendamine

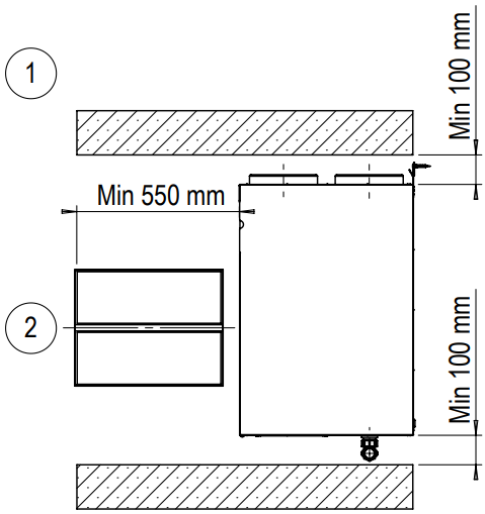
- the carrying wall would be strong enough.
- used screws and dowels would be appropriate to the wall type, the screws included in the package may not be suitable.
- The minimum distance between the wall mount and the ceiling is 300 mm, and between the bottom and floor of the device is 140 mm (necessary for connecting the condensation water drain).
- the wall mount would be level.
- enough space would be provided for making connections between the device and the ventilation pipes.
- At the location of the installation of the device must be ensured: plugged into the mains, a network cable (recommended) and the possibility of condensate drainage (not necessary for the ERV model under certain conditions).

When installing, the following requirements must be observed:

- The device must be connected to the ventilation system according to the project.
- The kitchen hood throw-out must be connected to a separate exhaust system.
- The device must be level.

Taking into account the space required for installation and maintenance (side view). The required space is required to service the device.

1.Ceiling
2.Exchanger

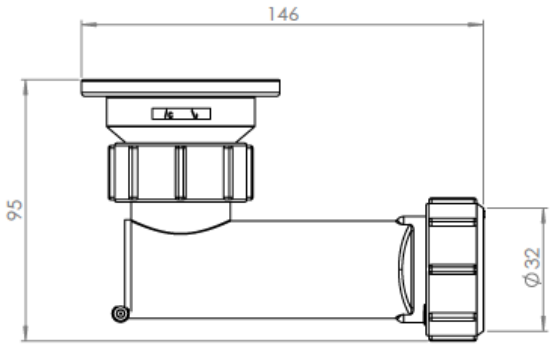


Connection of condensation water drain Airobot S1/S2/V3/V8

In the cold period, condensation forms in the device, which must be discharged from the device through the exit of the condensate. If a heat exchanger with moisture recovery is in use (a model with ERV marking), then under normal conditions condensate water will not be generated, but it is still recommended to connect.

- To connect the condensate, screw the condensate lock to the penetration at the bottom of the device. Make sure that the connection remains properly and tightly.

Condensate drainage is included with each device in the standard. To continue the condensate drainage, you can use a 32 mm tube. In order for condensation water to be discharged normally, the device must be level. Once a year, condensate drainage should be removed from the device and cleaned of accumulated dirt. Only condensate drain specified by the manufacturer should be used. The condensate drain valve is equipped with an underpressure valve that provides airtightness in the dry period.



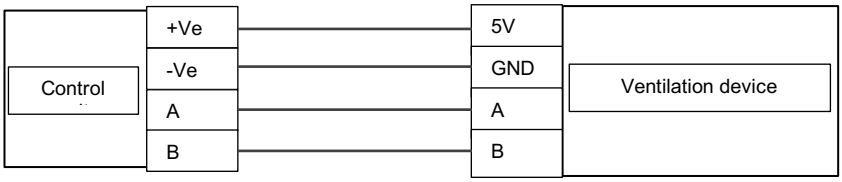
Installation of the control unit VE1

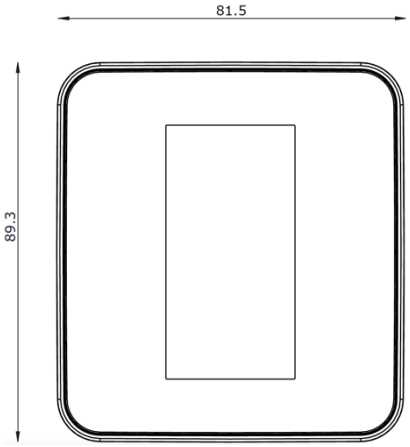
The control unit is installed in a room where the following conditions are ensured:

- The ambient air temperature ranges from 5 °C to 40 °C and humidity up to 80%.
- The control unit is not exposed to steam or liquids.

It is recommended to plan a suitable location for the control unit in the room during the design phase so that the cable can be transported through the wall to the desired location. The control unit is connected to the ventilation unit to the side or top of the device with a 4-groove (max. 0.75 mm2) low-current cable or, in the absence thereof, to the LCD connector in the electrical switchboard of the device.

If you order a control unit with a device, then, as a rule, it is connected to the device at the factory. The remote control comes with a 3-meter cable. The factory cable is designated: 5V/+Ve - brown, A - yellow, B - white, GND/-Ve - green. In the event that you use another cable (for example, transported from the wall of another room), then unplug the factory cable and connect the new cable according to the designation.





The control unit is available as an add-on and is not included in the kit. VE1 control unit is compatible with all Airobot models produced since 06.2021 (serial code of the ventilation unit starting with V02..). If a control unit with air quality measurement (-AQ designation in the model) has been selected, it is recommended to install the control unit in the living space as this allows ventilation to be controlled according to air quality. There are 2 possible methods for installing the remote control:

- With magnets to the device housing: magnets are integrated into the control unit.
- Installation on a wall chair or smooth wall: the wall mounting frame of the control unit is included in the package.

Controller models	Explanation
VE1-W-AQ	White, with air quality including air temperature, humidity and CO2 measurements
VE1-B-AQ	Black, with air quality including air temperature, humidity and CO2 measurements
VE1-W	White, with measurement of air temperature and humidity
VE1-B	Black, with air temperature and humidity measurement

Installation, connection and control of attachments

Additional Module for Channel Heater and Cooler (Calorifer) Control (VC-EXT)

By connecting the duct heater and cooler of the ventilation system (hereinafter referred to as the duct unit), it is possible to control it by connecting an additional module to the Airobot ventilation unit**.** An additional module is available as an option. The installation instructions for the additional module can be found in the packaging with a separate product or can be found on the web's helpdesk page.

The channel device can only be controlled through a mobile application. Depending on the location of the installation of the duct device, control is carried out according to: if necessary, the location of the duct device in the system can be checked from the mobile application Settings – Ventilation device – Expert – "Position of the duct cooler / heater".

When using the system, it should be monitored regularly. Every building is different and it may be necessary to regulate, for example, cooling or heating water temperature, circulation capacity, etc., in order to achieve the best cooling and heating capabilities. The Airobot ventilation unit can only adjust the circulation in the duct unit, a more accurate setting can be made by a heating specialist.

The duct unit is located in the ambient air pipeline:

- Cooling activated: designed for use only during the summer period.
    - The outside temperature must be higher than 6 °C
    - The desired temperature must be set lower than the temperature of the exhaust air from the room
        - The bypass valve is opened if the outside temperature is lower than the room exhaust temperature

        - In the case of an ON/OFF valve, pump or drive, it is turned on and the system tries to cool the supply air: if the temperature drops below the "Minimum allowable supply temperature", the duct unit is turned off for a minimum of 3 minutes.
        - In the case of a 0-10V valve, pump butter, it is turned on, and the system tries to cool the supply air: the automation adjusts the position of the valve, pump or drive as accurately as possible to maintain the supply air temperature "Minimum allowable supply temperature.
- Heating activated: designed for use only during the heating season. The purpose of the function is to heat the ambient air temperature before electric pre-heating within its capabilities in order to reduce the use of electric pre-heating.
    - If the outside temperature is lower than 3 °C, the valve, pump or drive shall be switched on. The minimum running time is 5 minutes.
- Outdoors: Channel device not in use

The duct unit is located in the supply air pipeline:

- Cooling activated: intended for use only in the summer period
    - The outside temperature must be higher than 6 °C
    - The desired temperature should be lower than the temperature of the exhaust air from the room
    - In the case of an ON/OFF valve, pump or drive, it is turned on and the system tries to cool the supply air: if the temperature drops below the "Minimum allowable supply temperature", the duct unit is turned off for a minimum of 3 minutes.
    - In the case of a 0-10V valve, pump or drive, it is turned on, and the system tries to cool the supply air: the automation adjusts the position of the valve, pump or drive as accurately as possible to maintain the supply air temperature "Minimum allowable supply temperature.
- Heating activated: designed for use only during the heating season. The function is used when it is desired to increase the temperature of the supply air after heat exchange.
    - The desired supply temperature is set higher than the actual supply temperature (after heat exchange).
    - In the case of an ON/OFF valve, pump or drive, it is turned on and the system tries to heat the supply air: if the supply temperature before the calorifer drops below the desired supply temperature, then the duct unit is turned on. The minimum interval between switches is 3 minutes.
    - In the case of a 0-10V valve, pump or drive, it is turned on, and the system tries to cool the supply air: the automation adjusts the position of the valve, pump or drive as accurately as possible to maintain the supply air temperature at the desired supply temperature level.

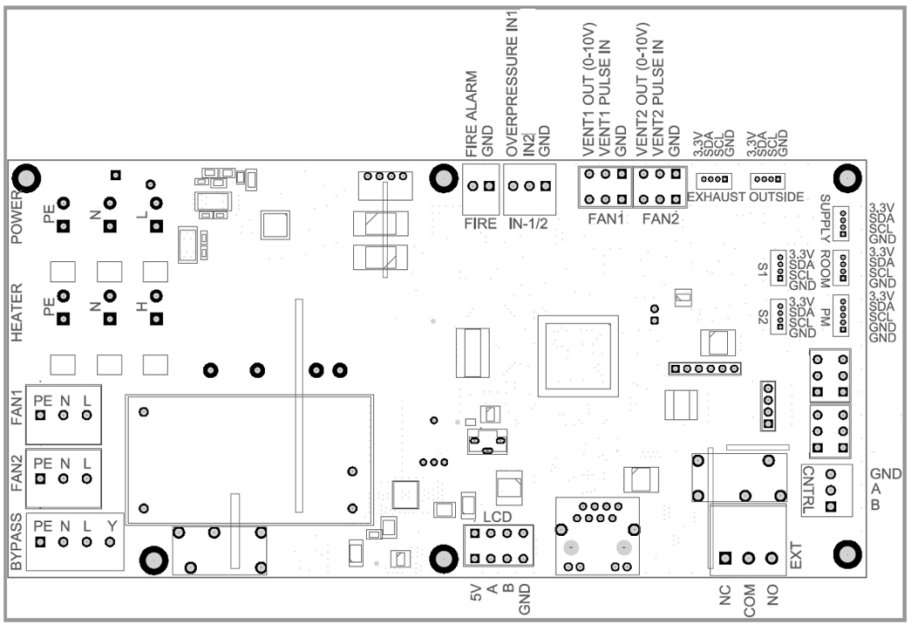
Connection to the Automatic Fire Alarm System (ATS)

The device can be connected to the ATS system in the house from which, when receiving a signal in the event of a fire, the device automatically turns itself off (NO - normally opened contact). The ATS is connected to the FIRE output under the GND and STOP contacts. The capabilities of the ATS system are present in the standard with each device. The connection of outdoor equipment, building automation and other similar systems to the ventilation unit must be performed by a qualified specialist!

Connecting a pressure switch (EXT-PRSW)

Air purifiers in the kitchen create a temporary underpressure in the premises, which is not beneficial for building structures. Optionally, a pressure switch is available, which is installed near the ducts of the kitchen hood so that when the air purifier is started, the ventilation unit automatically switches to overpressure mode. It is also possible to connect another contact that signals the start of the air purifier – the contact must be open normally open. Overpressure mode is activated when the contact is closed for at least 10 seconds and remains active until the contact opens again.

Electrical diagram: scheme for connecting attachments



System	Contacts	Description
ATS system	GND	Normally opened contact. The device switches to a standstill when you close the contact (in case of an alarm). Max cable 0.75mm2.
Replacing filters	STOP	
EXT control or external circulation pump control connection (equipment manufactured until 07.2022)	C NO	Connect the circulation pump L (phase) cable to C and continue the L cable to the pump via NO. Normally opened contact. The power supply to the circulation pump goes externally, not from the ventilation unit. Max cable 1.5mm2.
EXT (produced from 07.2022)	EXT (black RJ45 connector)	Connecting the VC-EXT add-on module
Modbus TCP	ETH	Connect the Internet cable (Cat5e or later) to the ETH slot on the device. More information about setting up Modbus TCP can be found in the user manual.
Pressure switch or other contact to activate overpressure	GND OVERPRESSURE IN-1	Connect the cables coming from the pressure switch to the connector on the GND and OVERPRESSURE IN-1 device. Normally opened contact. Liver. cable 0.75 mm^2.
LCD / Control Unit / Modbus RTU	5V/+Ve A B GND/-Ve	Connect the control unit according to the designations. In the case of Modbus RTU, connect cable A and B to contacts.

To connect the inserts, rubber cable penetrations are provided on a separate case. Inside the penetration you need to cut a hole of the corresponding diameter.

Connecting the device to an electric power supply

The Airobot S1 / S2 / V3 / V8 / L5 model operates with a current of 230 VAC 50 Hz 16 A. Power cable is of the connector type (IEC C19, 3x1.5 mm², length 2 m) and included in the package. A separate automatic circuit breaker must be placed on the device.

The Airobot L / L ERV model operates with a current of 230 VAC 50 Hz 10 A. Power cable is of the connector type (IEC C13, 3x1 mm², length 1.8 m) and included in the package. A separate automatic circuit breaker must be placed on the device.

Connecting the device to the electrical network is allowed only if the device is properly installed.

The power connector and Internet connectors are located on top of the device case and are not protected from external severe environmental conditions. If necessary, cover these connections to protect against dust, water or other harmful environmental conditions.

Care manual

Care tips

- During the summer period, it is recommended to check the filters of the device more regularly, since pollen, insects, tree leaves or sod can clog the filters of the device. Due to clogged filters, the amount of ventilated air is reduced. Larger dirt can be removed, for example, with a vacuum cleaner.
- If the outdoor air intake grille is equipped with a separate insect screen, then it can become clogged in the summer, and the grille should be visually inspected and, if necessary, cleaned regularly.

General care requirements and recommended period. The recommended period may vary from reality depending on the conditions of the external environment.

Activity	Action interval
Physical cleaning of filters from dust, insects or other sod (for example, with a vacuum cleaner)	1 time per month. In the summer period, it is recommended to more regularly than the device accumulates a lot of insects, pollen and other sods
Replacing filters	2 times a year, minimum mandatory 1 time per year
Heat exchanger cleaning	1 time per year. Non-regular cleaning reduces the effect of heat and moisture recovery
Cleaning the device from the inside	1 time per year. If the device is not dirty it can be repeated every 2 years in the future
Inspection and cleaning of condensate outlet (if installed)	1 time per year, visually inspected and there are no blockages, and clean

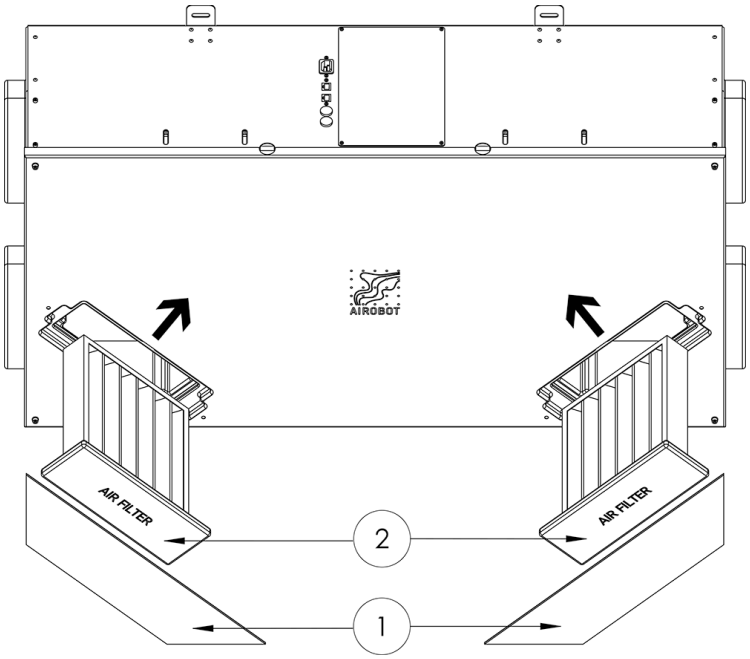
Air filters

It is mandatory to change the filters at least once a year, but it is strictly recommended to change them at least 2 times a year – before the start of the heating season and after the end of the heating season. Filters older than a year may cause other fungi, bacteria, etc., that degrade the indoor climate air quality, which enter the living through the pipeline and can be harmful to health. It is not recommended to replace the filters if the outside air is at minus degrees, as it may be difficult to remove the filter. To ensure the energy-efficient and effective operation of the device, filters must be changed regularly. If it is necessary to change the air filters, the message "CHANGE FILTER" will come to the control unit or a corresponding message will be displayed in the mobile application.

Airobot manufacturer's warranty and extended warranty are valid only when using the original filters of the Airobot ventilation unit. Air filters can be ordered www.airobothome.com/filtrid.

Airobot L / L ERV Care

Replacing air filters

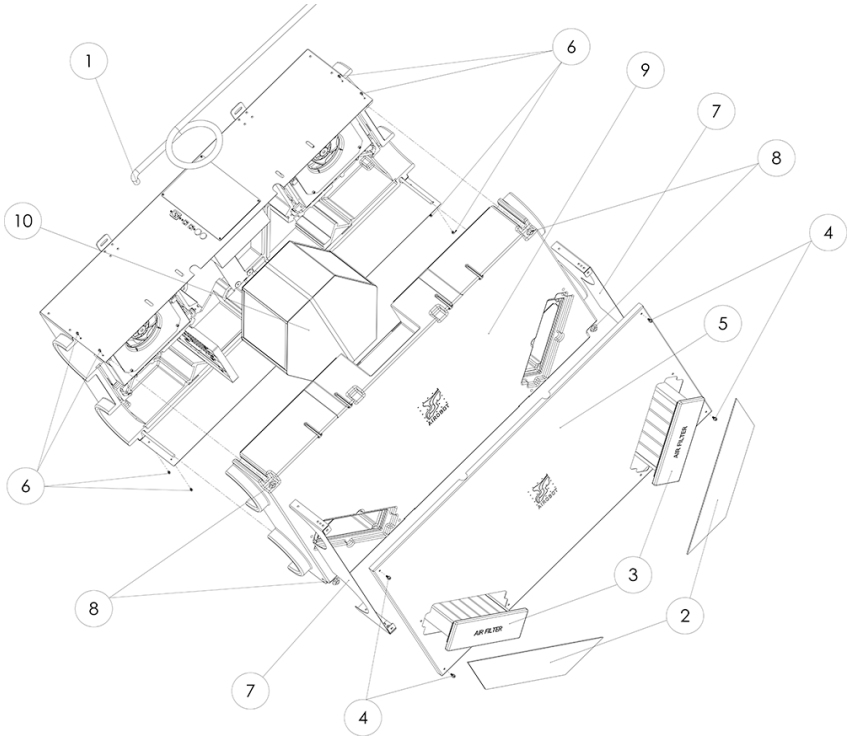


1. Unplug the device by unplugging the power cable or turning off the automatic fuse from the switchboard.
2. Remove blue filter slats (1)
3. Remove the filter hatches (2) that hold the filters. In the event that the filter hatches are tightly closed, some flat tools can also be used to help with their removal.
4. Pull out blackened filters.
5. When inserting a new filter, observe the direction of the arrow on the filter so that it is the same (follow the figure)
6. Push the new filter into the filter hatch and install a filter with a filter hatch and filter strips in the device.
7. After replacing the filters, a new reminder must be set from the control unit or in the mobile application.

Risk of electric shock! A heater is located in the duct of the outdoor air filter, unplug the device.

Cleaning the heat exchanger and device

The order of work according to the drawing:



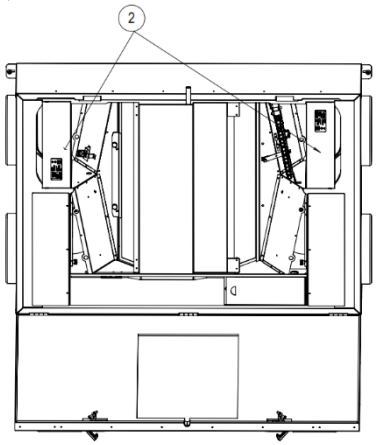
1. Unplug the device by unplugging the power cable or turning off the automatic fuse from the switchboard.
2. Disconnect condensate drain pipe (1)
3. Remove blue filter strips (2)
4. Remove filter hatches with filters (3)
5. Unscrew 4 bolts with M5x10mm hexagon key (4)
6. Remove the front panel of the device (5)
7. Unscrew 8 bolts M4x6mm (6) from the side of the device with a hexagon key.
8. Remove the end of the case covers (7)
9. Unscrew 4 nuts M8 (8) with washers that tighten the EPP shells of the device among themselves.

10. Carefully disassemble the lower EPP housing (9) from each corner of the device. Make sure that the heat exchanger remains in the part to be pulled away. Otherwise, there may be a risk that the heat exchanger will fall down.
11. Remove the heat exchanger (10) and clean, as well as clean the inner surfaces from dirt with a damp cloth.

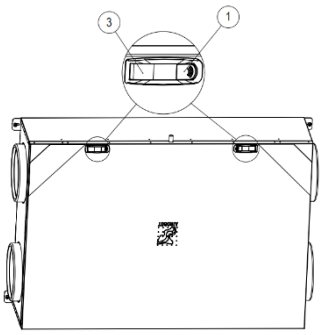
Caution! When removing the front panel, the risk of falling down.

When the heat exchanger is removed, carefully and gently clean the chamber of the heat exchanger with a damp cloth. The heat exchanger can be washed with warm soapy water (for example, in a bath) and rinsed with clean water. After cleaning, the remaining water must be tilted out of the heat exchanger. If more water has flowed out of the heat exchanger, then it is allowed to reinstall the heat exchanger in the unit.

The grease of the seals decreases over time, to put the heat exchanger back smoother, and for the next maintenance in mind, it is recommended to lubricate the seals with silicone grease.



Airobot L5 maintenance



Replacing air filters

Unplug the device.

1. Unplug the device by unplugging the power cable or turning off the automatic fuse from the switchboard.
2. Open the device hatch by pressing on the smaller parts of the locks at once (1) Support the hatch and open smoothly letting it hang down.
3. Remove old filters and replace them with new ones (2) The arrow marked on the filters must face the heat exchanger.
4. Close the device door. To close the hatch, push the hatch up at once from two sides of the hatch housing next to the locks against the device and fix the locks with the bladder by pushing the lock to a larger part (3).

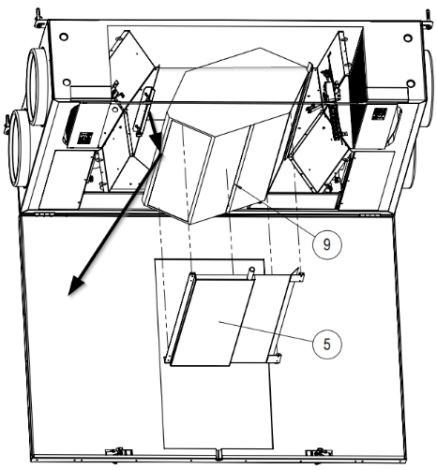
After replacing the filters, you need to set a new reminder from the control unit.

Risk of electric shock! A heater is located in the duct of the outdoor air filter, not touched when the device is plugged in!

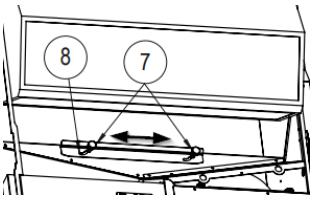
Heat exchanger cleaning

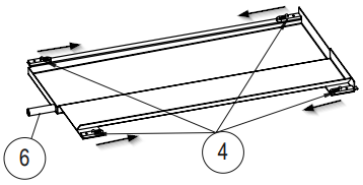
For effective operation of the device, it is necessary to clean the heat exchanger and the inside of the device every 1-2 years. To clean the heat exchanger and the unit:

1. Unplug the device by unplugging the power cable or turning off the automatic fuse from the switchboard.
2. Open the device hatch by pressing on the smaller parts of the locks at once (see "Replacing the air filter in item 1). Support the hatch and open him smoothly, letting him hang down.
3. If there is a condensate bath, remove it (5). NB! There may be water in the condensate bath! To remove the bath, release 4 locking latches (4) and disconnect the condensate drain pipe (6)



4. To remove the heat exchanger, support the heat exchanger from below, release the mounting screws (7) and set aside the retainer (8). Remove the longer edge of the heat exchanger (9) first by the retainer and then remove it completely downwards. NB! The heat exchanger may be stuck between the seals. In this case, the heat exchanger must be calmly pulled from the strap. When removing the heat exchanger, when tilting it, water may come out of the heat exchanger! When the heat exchanger is removed, carefully and gently clean the chamber of the heat exchanger with a damp cloth. The heat exchanger can be washed with warm soapy water (for example, in a bath) and rinsed with clean water. After cleaning, the remaining water must be tilted out of the heat exchanger. If more water has flowed out of the heat exchanger, then it is allowed to reinstall the heat exchanger in the unit.



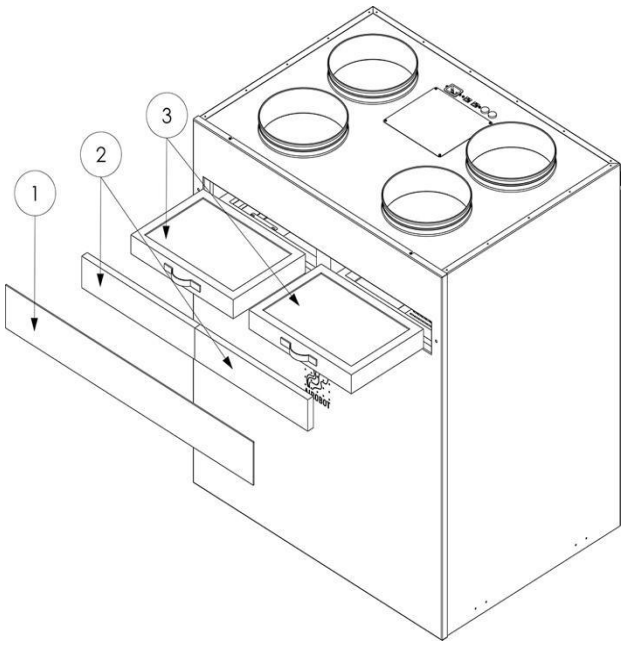


The grease of the seals decreases over time, to put the heat exchanger back smoother, and for the next maintenance in mind, it is recommended to lubricate the seals with silicone grease.

5. The heat exchanger is installed in exactly the opposite sequence with removal. Throughout the process, support the heat exchanger with one hand from below (for certainty, it is also good to hold on to the strap). With a slightly upward direction, first push the opposite edge of the heat exchanger retainer into place. Then push up the retainer-side edge of the heat exchanger into place. Hold the heat exchanger up with your hand.
6. Push the retainer into the locking position and fix with the fixing screws.
7. Install a condensate bath – connect the condensate drain pipe, lift the bath into place and fix it with locking latches (4pcs).
8. Close the device door. To close the hatch, push the hatch up from two sides of the hatch housing on two sides at once from the hatch housing and fix the locks with the bladder by pushing the lock to a larger part.

Airobot S1 / S2 Maintenance

Replacing air filters



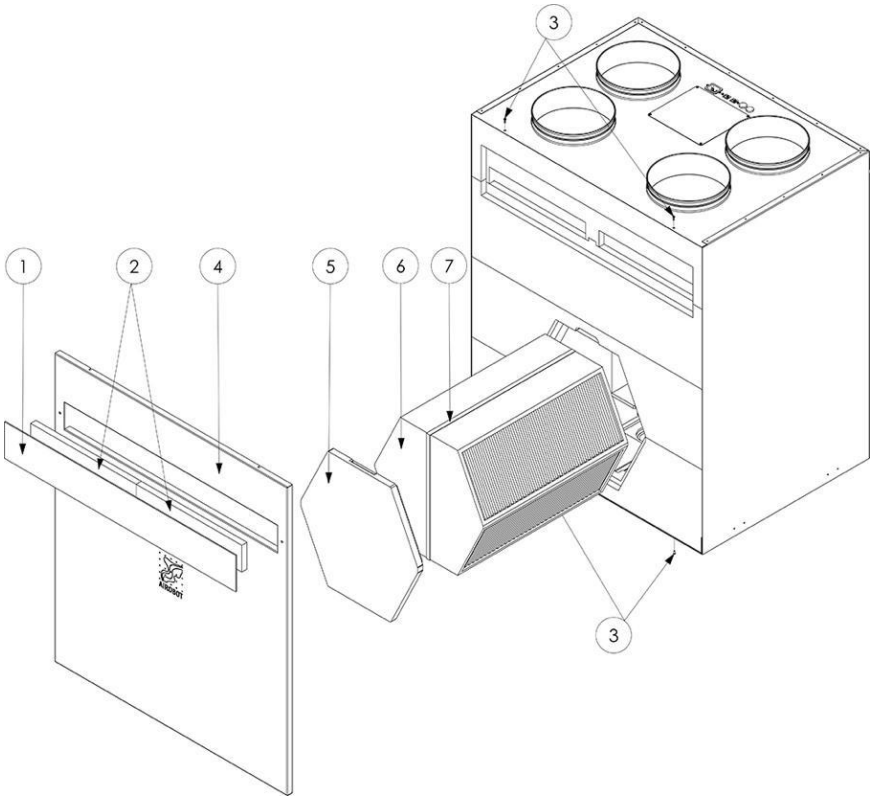
1. Unplug the device by unplugging the power cable or turning off the automatic fuse from the switchboard.
2. Remove the blue filter strip (1)
3. Remove filter foams that cover the filters (2)
4. Pull out the blackened filters and replace them with new ones. The arrow marked on the filters must face down.
5. After changing the filters, a new reminder must be set from the control unit or mobile application.

Filter foams must be installed airtightly, otherwise condensate water will form in it. If your filter foam is no

longer airtight and sits weakly in the filter drawer, then they need to be replaced. Snuggle up to the dealer.

Risk of electric shock! A heater is located in the duct of the outdoor air filter, unplug the device.

Heat exchanger cleaning



For effective operation of the device, it is necessary to clean the heat exchanger and the inside of the device every 1-2 years. To clean the heat exchanger and the unit:

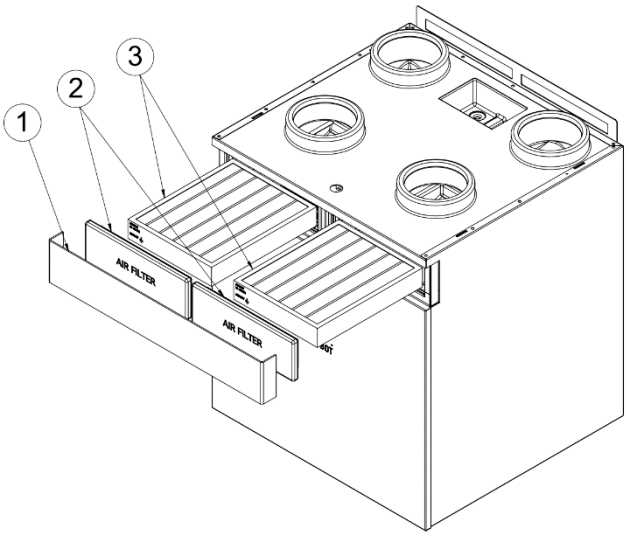
1. Unplug the device by unplugging the power cable or turning off the automatic fuse from the switchboard.
2. First remove the filter strip (1)
3. Remove filter foams (2) that cover the filters
4. Next, you need to remove 4 bolts (3) that fix the front panel.
5. Remove the front panel (4)
6. Remove the heat exchanger hatch (5) Be careful when removing the heat exchanger hatch, the edges of the hatch may be easily broken, and it is necessary to use the opening of both hands when removing it.
7. Remove the heat exchanger (6) by calmly pulling it out with the appropriate strap (7), pressing against the device with the other hand.

When the heat exchanger is removed, carefully and gently clean the chamber of the heat exchanger with a damp cloth. The heat exchanger can be washed with warm soapy water (for example, in a bath) and rinsed with clean water. After cleaning, the remaining water must be tilted out of the heat exchanger. If more water has flowed out of the heat exchanger, then it is allowed to reinstall the heat exchanger in the unit.

The grease of the seals decreases over time, to put the heat exchanger back smoother, and for the next maintenance in mind, it is recommended to lubricate the seals with silicone grease.

Airobot V3 maintenance

Replacing air filters



1. Unplug the device by unplugging the power cable or turning off the automatic fuse from the switchboard.
2. Remove the blue filter strip (1).
3. Remove black filter covers
4. Pull out the blackened filters and replace them with new ones (2). The arrow marked on the filters must face down.
5. After replacing the filters, you need to set a new reminder from the control unit.

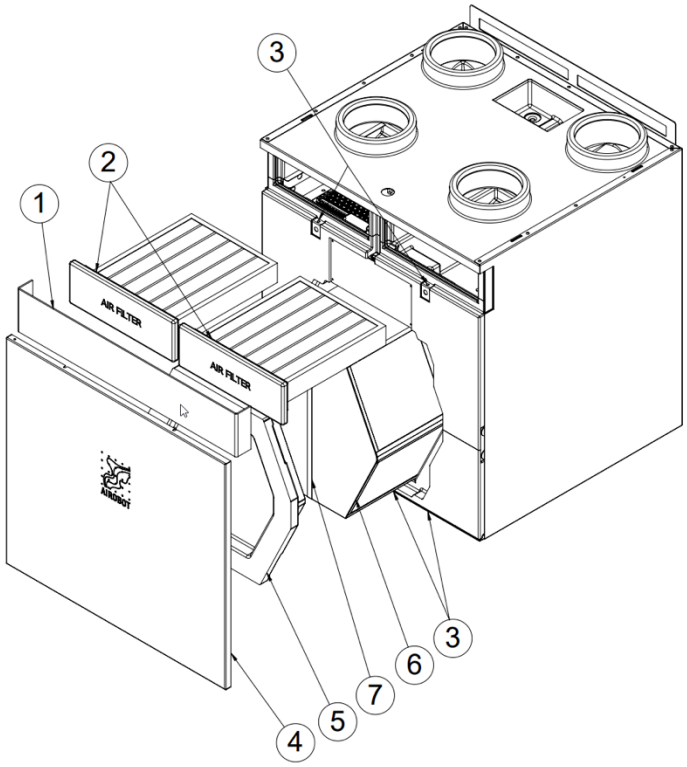
Risk of electric shock! A heater is located in the duct of the outdoor air filter, unplug the device.

Heat exchanger cleaning

For effective operation of the device, it is necessary to clean the heat exchanger and the inside of the device every 1-2 years. To clean the heat exchanger and the unit:

1. Unplug the device by unplugging the power cable or turning off the automatic fuse from the switchboard.
2. First remove the blue filter strip (1)
3. Remove filter hatches (2). In case the filter hatches are tightly closed, some flat tools can also be used to help with their removal).
4. Next, you need to remove 4 bolts (3) that fix the front panel.
5. Remove the front panel (4)
6. Remove the heat exchanger hatch (5). Be careful when removing the heat exchanger hatch. It is necessary to use the opening of both hands when removing.
7. Remove the heat exchanger (6) by calmly pulling it out with the appropriate strap (7), pressing against the device with the other hand.

   When the heat exchanger is removed, carefully and gently clean the chamber of the heat exchanger with a damp cloth. The heat exchanger can be washed with warm soapy water (for example, in a bath) and rinsed with clean water. After cleaning, the remaining water must be tilted out of the heat exchanger. If more water has flowed out of the heat exchanger, then it is allowed to reinstall the heat exchanger in the unit.

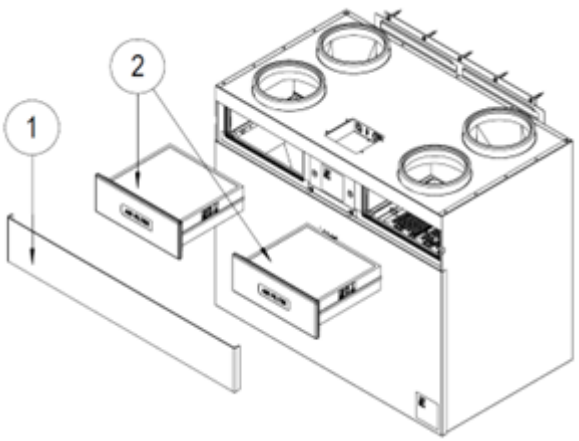


The grease of the seals decreases over time, to put the heat exchanger back smoother, and for the next maintenance in mind, it is recommended to lubricate the seals with silicone grease.

Airobot V8 maintenance

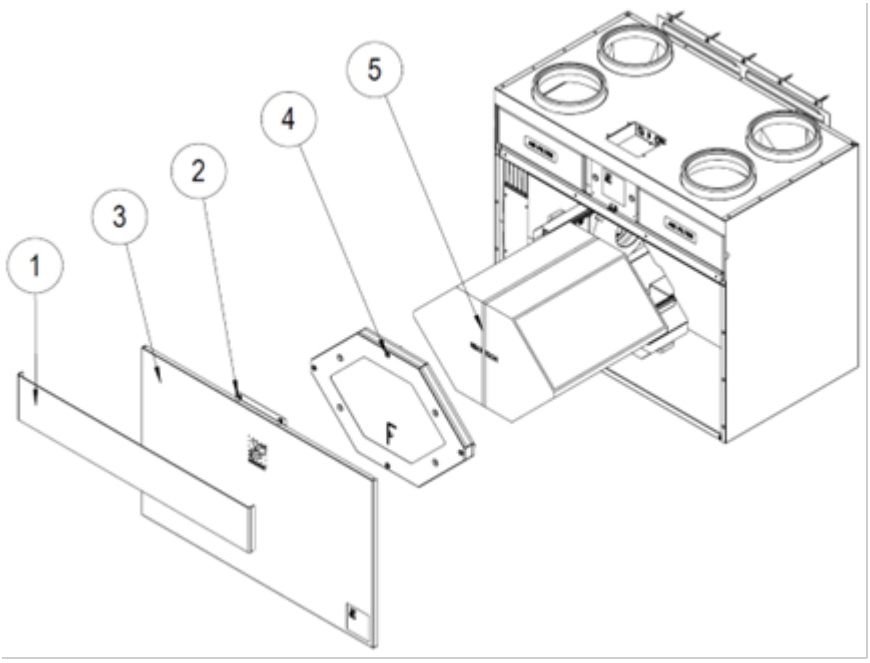
Replacing air filters

1. Unplug the device by unplugging the power cable or turning off the automatic fuse from the switchboard.
2. The blue filter strip must first be removed (1).
3. Remove black filter covers
4. Pull out the blackened filters and replace them with new ones (2). The arrow marked on the filters must face down.
5. After replacing the filters, you need to set a new reminder from the control unit.



Risk of electric shock! A heater is located in the duct of the outdoor air filter, unplug the device.

Heat exchanger cleaning



For effective operation of the device, it is necessary to clean the heat exchanger and the inside of the device every 1-2 years. To clean the heat exchanger and the unit:

1. Unplug the device by unplugging the power cable or turning off the automatic fuse from the switchboard.
2. First remove the blue filter strip (1)
3. Next, you need to remove 2 bolts with a black tip that fix the front panel (2)
4. Remove the front panel (3)
5. Remove 4 bolts from the corners of the heat exchanger hatch, the hexagon key is located on the heat exchanger hatch (4)
6. Remove the heat exchanger by calmly pulling it out with the help of the appropriate strap, pressing against the device with the other hand. (5)

   When the heat exchanger is removed, carefully and gently clean the chamber of the heat exchanger with a damp cloth. The heat exchanger can be washed with warm soapy water (for example, in a bath) and rinsed with clean water. After cleaning, the remaining water must be tilted out of the heat exchanger. If more water has flowed out of the heat exchanger, then it is allowed to reinstall the heat exchanger in the unit.

The grease of the gaskets decreases over time, for smoother repositioning of the heat exchanger and for the next maintenance, it is recommended to lubricate the seals with silicone grease.

Replacing the type of heat exchanger

It is also possible to install a heat exchanger with moisture recovery on an existing device. In the event that you decide to install a new type of heat exchanger, then in the control unit of the device you need to make a separate setting according to which type of heat exchanger is used in the device. MENU -> SYSTEM -> HEAT EX. TYPE (HRV / ERV) – to change the setting, you need to hold down the OK button for 3 seconds.

- HRV – the device uses a conventional heat recovery plate heat exchanger.
- ERV – the device uses a plate heat exchanger with heat and moisture recovery.

In the default factory setting, the correct choice is always made. It is allowed to change the given parameter only when changing the type of heat exchanger. Making the wrong setting can damage the device. This setting uses different parameters for frost protection and automatic balancing.

Specifications and kit

	Airobot L	Airobot L ERV	Airobot L5	Airobot S1	Airobot S2	Airobot V3	Airobot V8
Depth (mm)	300	300	301	578	578	554	589
Width (mm)	606	606	786	800	800	600	1021
Height (mm)	1170	1170	1200	952	952	690	886
Weight (kg)	40	40	70	60	60	50	90
Weight without tin shell (kg)	20	20	-	-	-	-	-
Power supply (VAC)	1~230	1~230	1~230	1~230	1~230	1~230	1~230
Maximum power (A)	10	10	16	16	16	16	16
Power connection	Plug-in, C13	Plug-in, C13	Plug-in, C19	Plug-in, C19	Plug-in, C19	Plug-in, C19	Plug-in, C19
Piping connection (mm)	4 x 160	4 x 160	4 x 200	4 x 160	4 x 200	4 x 125	4 x 200
Condensate connection (mm)	15, hose	15, hose	15, hose	32, sewer pipe	32, sewer pipe	32, sewer pipe	32, sewer pipe
Maximum engine power (W)	2 x 83	2 x 83	2 x 170	2 x 118	2 x 163	2 x 83	2 x 170
Nominal pre-heating power (varies depending on the outside temperature) kW	1.1	1.1	1.5	1.35	1.35	1.35	2.7
Maximum total power of the device	1.9	1.9	2.2	2.2	2.2	2.1	3.6

The Airobot L/L5 kit includes:

- 1 Airobot ventilation unit
- 1 plug-in power cord C13, 1,8 meters (L) or C19, 2 meters (L5)
- 1 set of ceiling mounting screws 4pcs 5x70 mm with dowels
- 14 x 18 mm condensate hose, length 3 meters (PRC model only)

The Airobot S1/S2/V3/V8 kit includes:

- 1 Airobot ventilation unit
- 1 plug-in power cord C19, 2 meters
- 1 wall mounting frame with 5pcs 5x70mm dowels and mounting screws
- 1 condensate drain valve (PRC model only)
- Documentation

- Documentation

Manual

The instruction manual for the device is constantly updated. Changes to the manual may occur depending on the software version of your device. On the web, you will always find a user manual that matches the latest software version. If your device is connected to an Internet network, you always have the latest software version.

When the device is first started, the supply and exhaust airs of the device must be balanced according to the ventilation design – otherwise there may be under- or overpressure in the rooms, and heat and humidity recovery during the cold period may be significantly lower.

Starting the device

The first time you connect the device to the mains, the device immediately starts working in manual mode at a speed of 5.

Each time the device is connected to the mains, the device checks the operation of all sensors and functions. The device can carry out the calibration of the fans, momentarily putting them to work at maximum speed. The maximum duration of actions is 3 minutes. After the actions, the device will continue its normal operation. When the supply current is interrupted and restored, the device repeats the previous actions. The settings entered by the user are stored in memory, and the device continues to work with the previous settings.

Pause or turn off the device

When maintaining, replacing filters or other operations related to the device, the device must always be removed from the electrical network!

There are two ways to temporarily stop ventilation:

1. Switch the device from the control unit or mobile application MANUAL to the operating mode and set the fans to 0.

2. In the control unit or mobile application, select the "Turn off" function. In the off state, the device is in standby mode.

To turn off the device:

- Step 1: Stop the operation of the ventilation unit from the control unit or mobile application

- Step 2: Turn off the automatic fuse of the ventilation unit from the switchboard or unplug the power cable of the device from the electrical network.

If the outside temperature is below 10 °°C, the **ventilation unit must not be stopped or switched off for more than a few hours,** or even if it is planned to be away for a longer period of time – stationary ventilation may damage the building (excessive humidity, stagnant air piping, etc.) and cold ambient air may enter the stationary device, which may damage the stationary device. When staying away for a long time, it is recommended to switch the device to the minimum speed.

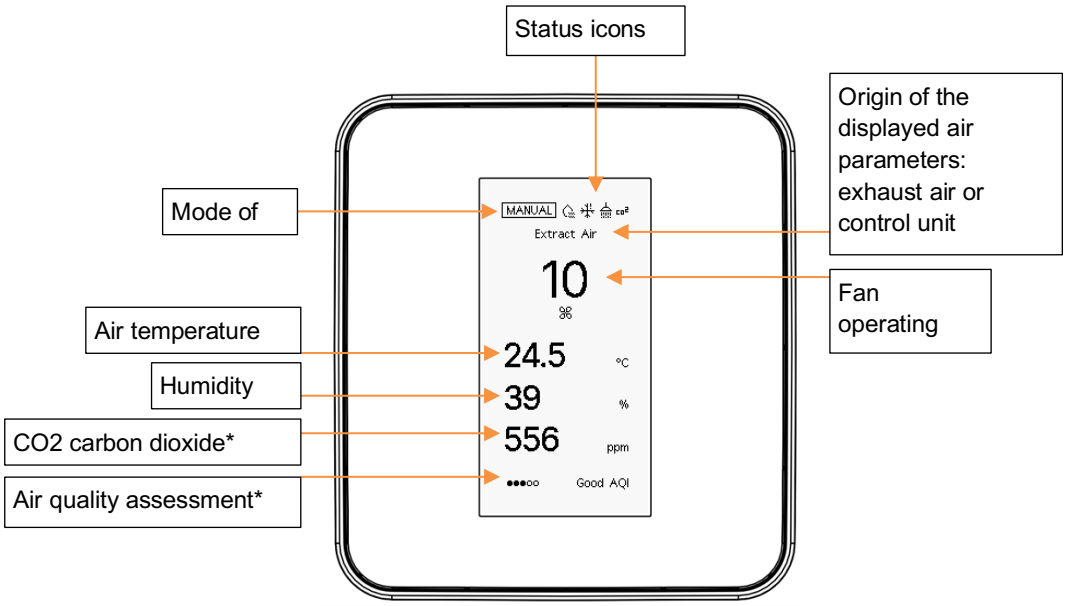
In the event that it is necessary to stop the device for a longer period of time, then it is necessary to act as follows - only in the period when the ambient temperature is lower than 10 °C, otherwise these steps do not need to be performed:

- Only for the PRC model: remove the heat exchanger from the device and check if there is moisture or condensate water in the device. Leave the heat exchanger in a dry place. Close the hatch of the device's heat exchanger again (only during the period when the outside air temperature drops below 10 °C), otherwise moisture can damage the heat exchanger.

- Ensure that cold outside air does not get into the device through the exhaust air and ambient air ducts - for example, check valves or manually close the ducts.
    - If the device is located in a cold unheated room, then it should be ensured that the warm air in the room through the exhaust and supply pipes also does not get into the device, otherwise moisture will form in the device, which can damage the device.

Control unit VE1

The VE1 control unit is available as an add-on. The VE1 control unit is only compatible with devices that have been produced since 07.2021 (serial code of the ventilation unit starting with V02..). If the device was manufactured earlier than 2023, then it is necessary to update the software of the device, otherwise the remote control will give an error message that it cannot connect to the device. To update the software, connect the ventilation unit to the Internet, and this is done automatically within a few minutes.

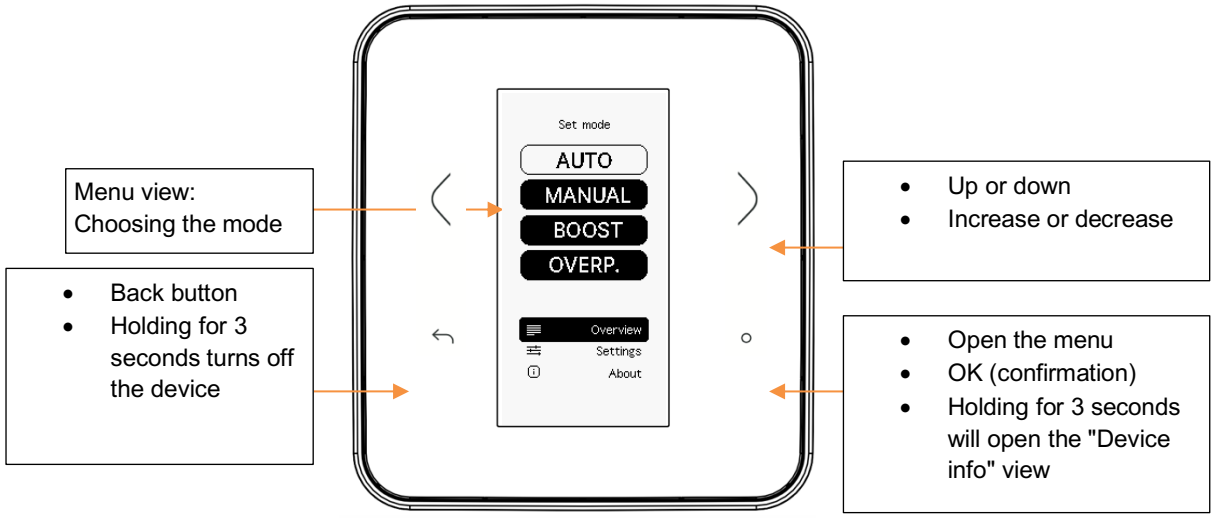


*CO2 level and air quality readings are only for controllers with a CO2 sensor integrated (in the model designation - *AQ*).

The air quality assessment scores the overall exhaust air quality on a scale from 1 to 5, where 5 is very good and 1 is very bad. The air quality rating is mainly based on the level of CO2. The origin of the air parameters can be two: Extract Air / Exhaust Air and Controller / Control Unit. This refers to the air from which the temperature, humidity and CO2 level are displayed. For example, a control unit can be installed in the living space, which then allows you to measure the air quality and control it according to a particular room. In the case of exhaust air, readings are measured from the exhaust duct of the ventilation unit.

Explanation of status icons:

The device has stopped because frost protection is turned off or is malfunctioning (read more in the "Errors and problems" section)	The bypass valve is in the open position	The actual CO2 level is above the setting point and ventilation has been accelerated	The device is in automatic power saving mode	The actual humidity level is higher than the setting point and ventilation is accelerated	A sharp increase in humidity has been detected and the function of automatic moisture rise detection has been activated



	CHOICE	EXPLANATION
MAIN MENU	CAR	Start automatic mode. Next, the choice of the upper level of CO2 is displayed. Confirm by pressing OK.
	MANUAL	Starting manual mode. Next, the choice of the rate of ventilation is displayed on a scale from 0 to 10. Confirm by pressing OK.
	AERATION	Starting aeration mode. Next, the mode duration option is displayed from 5 minutes to 6 hours. Confirm by pressing OK
	OVERPRESSURE	Starting overpressure mode. Next, the mode duration option is displayed from 5 minutes to 6 hours. Confirm by pressing OK
	OVERVIEW	Opens the general parameters view of the device, where various air parameters and information about the device fans are displayed. Open by pressing OK
	SETTINGS	Opens the device settings view. Open by pressing OK
	INFORMATION	Opens the device information view. Open by pressing OK
SUB-MENU		
	OVERVIEW	
	Exhaust air	Displays different air parameters from the exhaust air such as: temperature, humidity, CO2, VOC, PM1 (annex), PM10 (annex)
	Supply air, exhaust air ambient air	Various air parameters such as temperature and humidity are displayed.
	Filter age	Shows the age of filters in days
	Heat recovery efficiency	Heat recovery efficiency in percent, should be in the range from 75% to 95%, depending on the model and airflow rate
	Bypass	Closed/Open – Past status is displayed
	Device operation	Operating hours of the device from the last power outage or reboot
	Frost protection work	Operating hours of the device from the last power outage or reboot
	Supply Fan/Exhaust Fan	The speed of the fans of the device on a scale from 0 to 10 and revolutions
SETTINGS	**FILTER**	
	Filter age in days	Shows the age of filters in days
	Filter reminder interval in months	You can set a reminder interval for filters – by default, the recommended is always 6 months. Press OK to select
	Reset reminder	It is possible to reset the age of the current filters. Press OK to confirm
	AUTOMATIC MODE	The following settings apply if the device is operating in automatic operation mode
	Min. fan speed	1 - 5 Minimum speed of operation of the automatic mode
	Liver. fan speed	6 - 10 Maximum operating speed of the automatic mode
	Bypass open min. speed	1 - 10 Minimum operating speed when automation opens the bypass valve
	Power saving mode	CAR / ON / OFF
	Excess moisture min. speed	1-10 minimum operating speed when a sharp increase in humidity is detected

Liver. humidity	40-100% if the humidity in the exhaust air is higher than the set limit then the ventilation rate is increased
OTHER	
Bypass mode	AUTO / OFF – bypass valve operation mode
Modbus TCP	OFF/ON – House Automation Protocol Modbus TCP
Language	ENGLISH / ENGLISH – Control Panel User Interface Language
Screen	NORMAL / BLACK – with the black option, the screen background is black and the text is white
Screensaver	ON – after 5 minutes of the last push of the button, the screen is turned off, saves the screen OFF – The screen always stays working, but after 5 minutes from the last push of the button, the data on the screen is updated 1 time per minute.
NIISUTI	
-	
EXPERT	
Fan balance	Allows you to set the working balance of the fans. Only suitably qualified specialists can change the balance
Type of heat exchanger	HRV/ ERV - The type of heat exchanger has always been made at the factory with the right choice, this setting must be changed when replacing the type of heat exchanger
Wise. Heater control	Smart heater control (BETA) makes the control of pre-heating or frost protection incremental 0-100% and through this, the current consumption for frost protection can be reduced by 5-25%
TURN OFF	Leaves the device standing and puts it on standby. When servicing the device or replacing filters, the device must be unplugged.
INFORMATION	
SN/ID	Unique device ID serial code
Model	Device model
Firmware	Device software version number
Hardware	Device control board number
Network – Status	Connected/Not Connected – Network status is displayed
IP	Network address when the network is connected

Modes of operation

Automatic mode (air quality control)

The ventilation unit in automatic mode works on the basis of readings from air quality sensors. The device measures the air quality of the rooms from the exhaust air and can react to various events by reducing or increasing the rate of ventilation, thereby trying to improve the air quality in the rooms within its capabilities or, in the case of good air quality, on the contrary, reduce the rate of ventilation, thereby reducing energy consumption. In automatic mode, you can enter the upper setting point **for air humidity** and **CO2** level at the exit of the ventilation unit and the CO2 level in room sensors or thermostats. If any of these indicators exceed the setting point you want, the device will try to move these levels down.

Setting the minimum and maximum operating speeds for automatic mode

The minimum air flow rate setting determines the speed at which the device ventilates if the humidity and CO2 levels are not above the setting point and there are no air quality events.

The maximum airflow rate is the maximum permissible ventilation level if any of the actual air quality values are above the setting point or if there have been air quality change events.

These settings can be selected according to preferences or preferably according to the requirements of the air flow to be designed.

Control unit VE1	Settings – Automatic mode settings – Min. fan speed / Max. fan speed
Mobile app	Settings – Minimum airflow rate / Maximum airflow rate

Overtaking valve open minimum operating speed

In the summer period, there may be a desire to ventilate at a higher operating speed in the event that the outside air is cooler than the air in the room and there is a desire to get more ambient air into the rooms. The device switches to the selected speed as soon as the bypass valve opens.

Control unit VE1	Settings – Automatic mode settings – Bypass open min. speed
Mobile app	Settings – Summer bypass open min. speed

Automatic moisture detection mode

The device can detect a sharp increase in air humidity. If the air humidity rises sharply in a short period of time, then the device switches to the selected speed in order to drain the resulting moisture. This mode is usually activated when a shower or sauna room is used. The duration is a minimum of 15 minutes or up to 2 hours depending on how quickly the previous humidity level is reached.

Control unit VE1	Settings – Automatic mode settings - Excessive humidity min. speed
Mobile app	Settings – Humidity detection min. speed

On-premises detection and energy-saving mode

The energy-saving mode is activated when the device detects that no one is indoors using data from different air parameters (in general, if the CO_2 level < 550PPM and other events of air quality change do not occur). The purpose of the energy-saving mode is to reduce the power consumption of the device by reducing ventilation at moments when the need for ventilation is small. This can be especially useful in the winter period – the lower the air flow rate, the less energy is spent on frost protection. It is important to note that this function may not always work as expected since a lot depends on the average CO2 content in the air that reaches the device over the entire ventilated surface: it ultimately depends on the number of inhabitants and the size of the ventilated surface. Recommended is

If space sensors or thermostats of the Airobot heating control system are also added, which also receive CO2 readings to the ventilation unit, then their readings will also be taken into account.

In energy-saving mode, the device switches to the minimum speed, that is, 1. The mode will come in handy when the minimum speed of operation in automatic mode is set, for example, 3. If no one is in the rooms, it is not necessary to ventilate at a speed of 3 and the device automatically switches to the minimum speed (speed 1). There are three modes to choose from.

- AUTO (default) – The device automatically detects the summer period, and during this period the power saving mode is turned off. It is often necessary to ventilate more during the summer period even if no one is in the rooms.
- ON / On – The power saving mode is activated regardless of the period.

- OFF – Power saving mode is turned off and not activated.

Control unit VE1	Settings – Automatic mode settings – Power saving mode
Mobile app	Settings – Power Saving Mode

Connection of thermostats and/or room sensors to the ventilation unit (to control air quality)

Connection is only possible with Airobot devices produced from 07.2021 (ID/SN number starting with V02..) By connecting the room controller or thermostats 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 received room sensors, and if somewhere in the room the reading rises above the set limit, then the ventilation unit increases the ventilation rate in order to bring the CO2 level down to the limits of its capabilities. Room sensors must be equipped with a CO2 sensor (in the model designation -AQ). The functionality works through the Airobot server, which makes it necessary to connect the ventilation device, room controller and / or thermostats to the Internet network. To activate the function:

- The software version of the ventilation unit must be at least 531
- In the mobile app, add a ventilation unit, room controller and/or thermostats to the same homegroup
- In the mobile application, open the settings of the ventilation device - "Allow the transfer of CO2 readings from room sensors or thermostats to the ventilation unit". Activation can take up to 10 minutes, after which CO2 readings from each room will appear in the mobile application to the ventilation unit. It is possible to set one upper limit for CO2, above which the ventilation rate will be increased.

Manual mode

In manual mode, the user can set the fan speed to a fixed speed (0 – 10).

Aeration mode

In aeration mode, temporarily switches the device to maximum speed (10), and after a while switches the device back to the previous (automatic or manual) mode. The mode can be useful if there is a desire to temporarily ventilate rooms by increasing the rate of ventilation. The duration of the mode depends on the choice made during activation: from 5 minutes to 6 hours. The mode can be activated from the mobile application and the control unit.

Overpressure mode (fireplace mode)

The overpressure mode creates a temporary overpressure in the room by reducing the exhaust fan speed relative to the supply fan and switching back to the previous (automatic or manual) mode after a certain time. The mode can be helpful, for example, when lighting a fireplace or stove, or to partially compensate for the underpressure created by the kitchen hood. The duration depends on the choice made during activation: from 5 minutes to 6 hours. The operating speed depends on the setting, which can only be set in the mobile application "Settings - Air flow rate of overpressure mode". The mode can be activated from a mobile application, from the control unit or using a pressure switch (EXT-PRSW)

It is important to know:

- Since in the case of an overpressure regime, the air volumes are no longer in balance, the heat recovery efficiency drops significantly, and the supply air temperature temporarily decreases.
- Often, the amount of air in the kitchen hood may be higher than the ventilation unit, so there will still be an underpressure in the rooms, which the ventilation unit cannot compensate.
- In order to ensure heat recovery, both supply and exhaust fans must always be operated on the ventilation unit, the exhaust cannot be stopped completely.

Air quality and sensors in the device

Carbon dioxide (CO2) sensor

Indoor air quality is assessed primarily on the basis of carbon dioxide or CO2 levels. In living quarters, the main sources of CO2 are the person himself and the burning of gas (gas stove) or wood (fireplace, oven).

Various studies also confirm that it is CO2 that is most often a reflection of human well-being. It depends on how well you sleep, how rested you are when you wake up in the morning, how energetic you feel and how busy you are during the day. The high amount of CO2 in the surrounding air makes it difficult to concentrate and work, due to which work performance decreases. In addition, the concentration of CO2 is associated with the spread of viruses - a high level of CO2 suggests that this is a poorly ventilated room, and in this room there are a lot of particles exhaled by people.

The amount of CO2 in the air is expressed as a unit denoted by ppm (parts per million). That is, how many particles of the test substance are in the considered unit of space per million particles. The level of CO2 in the air can be estimated and measured as follows: the starting value is considered to be 400, which is the concentration of CO2 in clean ambient air, green or good is between 400 and 800 ppm; yellow or average between 1000 and 1600 ppm, red or bad if it is more than 1600 ppm and this is the limit from which air quality has a negative impact on a person.

Principle of operation: Airobot ventilation units measure the level of CO2 through the exhaust pipe - the sensor is located inside the device. Thus, the averaged value of all rooms reaches the device - the larger the size of the ventilated building, the more inaccurate the indicated value of the device may be relative to a particular room. The biggest advantage of an in-device CO2 sensor is that the device has the ability to assess the presence in the premises in cooperation with other sensors. Airobot's unique on-premises detection feature is one that can reduce your device's power consumption (especially during winter periods).

When working in the automatic mode of the ventilation unit, the user can choose a CO2 limit that suits him, above which the ventilation speed is increased. Depending on the season, it may be necessary to adjust this limit, as the CO2 sensor constantly calibrates itself.

CO2 and air quality scale considering Airobot ventilation unit

400-700 ppm	800 - 1200 ppm	1200 - 2000 ppm
Good	Average	Bad

*The Airobot ventilation unit analyzes the exhaust air so the scale may vary depending on the size of the ventilated rooms, sensor calibration and season.

Automatic calibration: All CO2 sensors (including the Airobot sensor) need constant re-calibration. Re-calibration of easy-to-use CO2 sensors is carried out automatically and does not require user intervention. The automatic self-calibration algorithm assumes that the sensor is exposed at least once a week to a clean air CO2 concentration of 400 ppm, which is considered to be clean ambient air. In the case of rooms, it is assumed that at least once a week the rooms should be completely empty for half a day, so that the CO2 concentration can go close to the outside air, and then the sensor can use it as a new starting value. During summer periods, when windows are often kept open, the CO2 sensor reading may be different from that of the winter period due to the persistently low CO2 concentration in the rooms and the sensitivity of the sensor has changed. Sometimes, rarely, the sensor calibration can also go out of place, in which case a new calibration of the sensor can be done manually by contacting the helpdesk. The CO2 sensor assumes that the premises are permanently in use. If the rooms are not in permanent use (for example, a sauna house), sometimes the CO2 reading may go out of place and manual calibration may be required.

Flying Organic Particulate Matter (VOC) Sensor

Volatile Organic Compound (VOC) are organic compounds that are considered to be the main polluters of indoor and outdoor air. VOCs come from many different sources, such as building and interior materials, chemicals used in everyday items, cleaning products, paints, dust, fumes, perfumes. High VOC content is usually found in newly built or newly renovated buildings. VOCs directly affect human health and cause dryness and irritation of the eyes, nose and throat, headache and dizziness.

The VOC algorithm of the Airobot ventilation unit analyzes the VOC events detected by the sensor and maps them to a VOC index on a scale of 0-500. The VOC index shows the extent to which indoor air quality has deteriorated or improved, with the main purpose of the sensor being precisely to highlight VOC events and momentary polluters – for example, when using perfumes, cleaning agents, alcohol-containing chemicals or the like in rooms, the VOC reading generally increases, which indicates that a source of pollution has been identified in the rooms.

less than 100	100	150-250	250-500
VOC content decreases in rooms	Default, VOC events do not occur	Medium, Low Impact VOC Event	Bad, High Impact VOC Event

VOC index scale on Airobot ventilation unit and air quality relationship:

Index 100 is the silent value of the VOC content. If the sensor reading drops below 100, this indicates that the number of VOC particles has decreased compared to the previous 24H period. If it rises, then indicates that the number of VOC particles has increased compared to the previous 24H period.

Principle of operation: At the moment, the Airobot ventilation unit does not increase the ventilation speed by detecting VOC events. As part of the software update, this functionality is coming soon. Sensor readings are displayed in the mobile application or on the control unit. When the ventilation unit starts, the VOC readings will be displayed after 1h.

The VOC sensor is integrated into devices with an SN/ID code starting V02XXXXXX (produced since 07.2021).

Features

Automatic bypass valve (summer cooling)

Airobot ventilation units are equipped with a fully automatic summer bypass valve. The bypass valve allows you to partially stop heat recovery (V3, L5, V8, L models) or completely (100% S1,S2 models) and direct the air coming from the outside partially or completely along the heat exchanger directly into the room. It is important to know that the ventilation unit is not a cooling device, and this function allows cooler outdoor air to be blown into the room during the summer period, but it does not always bring down the temperature inside the rooms.

The bypass has two modes:

- OFF / Off – always closed. The bypass flap is never opened.
- AUTO – opening / closing the bypass valve is carried out automatically according to the following conditions - all conditions must be met for a minimum of 15 minutes:
    - The ambient (or supply air) temperature is higher than 13°C. A lower temperature is not allowed, since otherwise condensate water may form on the surface of the pipeline, which, in turn, can damage the structures of the building.
    - The outside air temperature is lower than the temperature of the exhaust from the room – if it is warmer outside than in the room, the heat recovery is reversed, i.e. the cooler air in the room is used to cool the warmer air coming from outside.

Control unit VE1	Settings – Other – Bypass mode
Mobile app	Settings – Summer bypass (if enabled, switches to AUTO mode)

The position of the valve from the moment can be checked from the INFO menu of the control unit or in the mobile application "Device Information: Summer Bypass: Open/Closed"

- OPEN / Open – the bypass is currently open and there is no or partial heat exchange.
- CLOSED / Closed – the bypass is currently closed and heat exchange is taking place.

Pre-heating and frost protection

If the ambient air drops to minus degrees, under certain conditions, the heat exchanger may freeze. To avoid this, electric pre-heating is integrated into the unit, which ensures that the air entering the device from the outside is at least 0°C to -2°C. The exact freezing limit is calculated by the device itself taking into account various parameters (air volume, air humidity, air temperature). In the case of a heat exchanger with moisture recovery, the limit is from -5 °C to -7 °C. The control of the heating element is carried out on a demand-driven basis. The device generally operates without air volume restrictions up to -20 °C outside air temperature (may vary depending on the conditions and amount of airflow), then the device can gradually limit the amount of air and, if necessary, remain temporarily stationary. Moisture recovery devices (-ERV model) consume significantly less energy for frost protection and are a recommended choice for any device.

Control unit VE1	-
Mobile app	Settings – Expert Settings – Frost Protection ON / OFF

- ON / On – pre-heating is allowed – use is demand-driven.
- OFF / Off – the use of pre-heating is prohibited (not recommended). The device ventilates for 10 minutes and stops the fans if the air drawn from the outside is lower than 0 °C. After 3 hours, it recovers and the device repeats the same cycle. To turn it off, hold the OK button for less than 3 seconds. **In the off state, the heat exchanger may freeze, which may damage the device. In the summer period, it is not necessary to turn off pre-heating, since automation uses it only based on the outside air temperature (at minus degrees).**

Filter settings and reminder setting

The need to change the filter works with a time-based reminder. The corresponding message is displayed on the control unit or in the mobile application. It is important to check the filters and clean them of larger dirt regularly, at least six times – the device does not signal the need for this separately.

To check the condition of the filters:

Control unit VE1	Settings – Filter – Filter age in days
Mobile app	Settings – Age of current filters

Change filter reminder interval – 6 months recommended by default:

Control unit VE1	Settings – Filter – Filter reminder interval in months
Mobile app	Settings – Filter change reminder interval

Reset the filter reminder and set up a new one:

Control unit VE1	Settings – Filter – Reset reminder
Mobile app	Settings – Reset filter reminder

Moisture recovery

Ventilation units are available with two different types of heat exchanger HRV (heat recovery) and ERV (heat and humidity recovery). In the case of an ERV heat exchanger, in addition to heat, pull-out air humidity is returned. Moisture recovery occurs only from the air extracted from the rooms, i.e. that the special membrane of the plate heat exchanger partially traps the moisture of the extracted air and directs it back into the supply air. The amount of moisture to be returned ultimately depends on how much moisture is generated in the premises during vital activity. The heat exchanger with moisture recovery does not produce additional moisture itself and its productivity cannot be regulated. Moisture recovery does not threaten the ventilation ducts in any way, since at the supply the humidity never rises very much higher than the humidity of the exhaust (rooms).

If your current device is only a heat recovery (HRV) model, then the heat exchanger can be replaced with a moisture-returning model. Contact your dealer for this.

Balancing air volumes

Each ventilation unit must be balanced by connecting the ventilation system. As a rule, the pressures of the supply and exhaust pipes are always different, which due to which the heat and humidity recovery of an unbalanced device can be significantly less, and in addition, it creates an overpressure or underpressure in the premises.

Changing the speed ratio of fans:

Control unit VE1	Settings – Expert settings – Fan balance
Mobile app	Settings – Expert settings – Fan operation

- By increasing the value (+%), the exhaust fan speed is reduced
- By reducing the value (-%) the supply fan speed is reduced

Automatic balancing - during the winter period, the device constantly monitors air humidity, air temperatures and heat recovery efficiency, and according to the information received, the operating ratio of the engines can be corrected, as well as increase exhaust and reduce supply. In the event that the operating ratio of the engines is changed, this function is automatically turned off for 30 minutes.

When starting surveying, it is recommended to change the operating ratio of the engines to any value for a moment, and then back to deactivate automatic balancing for 30 minutes. And then, if necessary, repeat it.

Air volume balancing should be carried out only by qualified specialists! Balancing air volumes must be done with clean filters. In the case of the HRV model, it is recommended to carry out surveying if condensate water has not formed in the heat exchanger and in the device (generally if the outside temperature exceeds 10 degrees).

Central humidifier

When connecting the central humidifier according to the ventilation unit, the device automatically detects it, and the corresponding humidifier section is displayed in the mobile application, where it can be controlled. By choosing the desired humidity, the ventilation unit automatically regulates the productivity of the humidifier by trying to achieve the selected humidity (the humidity of the exhaust air is measured) within its capabilities. The maximum adjustable exhaust air humidity level is 40%.

If the ventilation unit operates in automatic mode, and if the detection of being in the rooms is on, then when the device's energy-saving mode is activated, the humidifier is turned off to save energy.

Control of geothermal preheating and cooling calorifer

Only on devices manufactured until 06.2022: If the Airobot device has an optional calorifer control capability, then in the mobile application you will be shown 2 functions in the "Settings – External heating and cooling" section:

- Ext. Heating / Heating inside – During the winter period, it acts as pre-heating, which allows to preheat the air coming from the outside to some extent. Electric pre-heating is still used if the calorifer is not enough. The

circulation pump is switched on when the outside air temperature drops below 1 degree. Otherwise, the circulation pump is turned off.

- Ext. Cooling / Cooling inside – During the summer period, a calorifer can be used to cool the supply air. When the function is activated, the function "Automatic bypass valve (summer cooling)" is turned off, since then the cooling function begins to control the bypass valve.
    - By activating the function, after 5 minutes the bypass valve is opened and the circulation pump is turned on, and the supply air temperature should decrease.
    - The device takes into account the "desired temperature" chosen by the user, and when this is reached (exhaust temperature), the pump is turned off until the indoor temperature rises again above the desired temperature.
    - The device automatically monitors the minimum allowable supply air temperature, which the device automatically calculates taking into account the air temperature and humidity in the rooms (calculating the dew point). If the supply temperature drops too low, the circulation pump shall be stopped until the supply temperature rises again and then reactivated. If the supply temperature is too low, condensate water may form on the surface of the non-insulated pipeline, which can damage the structures of the house.
- Off/Off – features are turned off

The functioning of the functions can be checked from the mobile application "Device information – Control of the external pump: On / Off"

Ext. Heating and Ext. Cooling cannot be turned on at the same time. Seasonally, these features need to be switched manually. The heating function is automatically turned off in the setting when the ambient temperature rises above 13°C, Ext. Cooling case when the ambient temperature drops below 6°C.

On equipment produced from 06.2022: description to be added

Setting up the house automation protocol Modbus

Airobot devices can be controlled using ModBus RTU or ModBus TCP/IP protocol. **Modbus RTU** – enabled by default. Connect the A and B wires according to the installation instructions to the LCD (controller) contact. In the case of an RTU connection, it is not possible to use the control unit of the ventilation unit (VE1 or VB2) at the same time. **To establish a Modbus TCP/IP** connection, the ventilation unit must be connected to the Internet network. Modbus TCP is turned off by default. It can be activated from the control unit or, in its absence, by contacting the Airobot helpdesk, who can activate it remotely.

Control unit VE1	Settings – Other – Modbus TCP (select ON)
Mobile app	-

ON – ModBus is turned on. **OFF** – ModBus is turned off.

A table of ModBus parameters (registers) can be found on the web's helpdesk page. The setting of control with house automation should be carried out only by qualified specialists. Incorrect setup can damage the device or the surrounding environment.

Mobile app

iOS mobile app Apple App Store	**Android mobile app** Google Play Store

It is possible to control the Airobot ventilation unit through a mobile application, provided that the device is connected to the Internet network. In the event that the network connection problem icon is displayed on the control unit, the connection is missing, and you can try restarting the device and the network device.

Each Airobot device is assigned an identification number (SN/ID). Your device ID and password can be found on the device's product sticker or on the front panel of the device. You can use your device ID and password to link your device in the Airobot mobile app. A mobile application called "Airobot 2" can be downloaded from the Google Play Store or App Store environment. When you first open the application, you must create a user account and follow the further instructions on the screen.

Security and privacy

The movement of information between the device – the server – mobile application takes place in an encrypted manner. When connecting the device to the Internet network, every 30 seconds indicators (for example, air temperature, humidity, etc.) are stored on the server, on the basis of which data and statistics are displayed to the user in the mobile application. The data may be used for impersonal analysis and to improve the product.

If possible, connect the device to the Internet network. Airobot equipment software is constantly being developed and it is possible to enjoy improvements and new functionalities. If you do not want to keep the device constantly in the Internet network, it is recommended to connect the device to the Internet network for a minimum of one hour at least once a year – during this period, the device will automatically pull down the latest software.

Airobot devices can be managed remotely, and by contacting the helpdesk (saying your device ID), the Airobot helpdesk may have access to the data of your devices. This allows us to provide the user with the best experience and faster assistance. In order to ensure privacy, the Airobot remote management system does not establish links between the user and the device - the helpdesk can only identify the devices by the device ID in case the user says this when contacting the helpdesk. By saying the device ID, the user gives permission to view their device data.

Identifying errors and problems

MISTAKE	POSSIBLE CAUSE	SOLUTION
Fan Alarm (Fan) Error	The main reason: the engine software may require a reboot: Another possible cause: Physical failure of the device fans.	Unplug the device for 5 minutes (important!) and reconnect. If the error message reappears immediately, there may be a physical malfunction: contact the dealer.
Sensor error	The main reason: failure of the sensor software Another possible cause: Physical failure of the device sensor	Unplug the device for 30 seconds and reconnect. If the error message reappears immediately, there may be a physical failure: contact your dealer.
Filter error	Reason: the service life of filters has passed, and the installation of new filters is necessary in order to continue using the device.	The maximum allowable lifespan of filters is 1 year. To eliminate the alarm, install new filters in the device and set a new reminder.
Fire alarm (Fire sub)	The ATS system input gave the device an alarm or triggered a fire alarm inside the device (if the air temperature in the duct > 50 degrees)	Make it clear whether the alarm was caused by the ATS system (if connected) or by an internal fire alarm of the device. If there is no danger, reset the alarm either by pressing the marked button on the control unit, RESTART in the mobile application, or unplug it for 30 seconds.
Change filters	The filter reminder interval has come to an end.	Install new filters and reset the reminder from the mobile application from the settings menu or control unit. Pressing OK will delay the reminder by 1 week.

Too low a supply stamp. (Low supply temp)	Supply air temperature is lower than 5 degrees	Identify the nature of the problem (see table "Problem - Supply air temperature is too low") and restart by unplugging the device. If an error message occurs again, contact your dealer.

PROBLEM	POSSIBLE CAUSE	SOLUTION
The device works, but the speed is 0 (fans are stationary)	Anti-freezing protection is applied to the device, because the pre-heating is turned off.	Turn on the frost protection again. In the mobile application From Settings -> Expert Settings -> Frost Protection ON. Restart the device by unplugging it.
	The device has anti-freezing protection in place due to pre-heating failure	If PREHEATER or FROST PROTECTION is enabled in the settings and the device still stops, contact your dealer
The rooms have constant underpressure or the heat recovery efficiency is too high (more than 95%)	Supply and exhaust air volumes may be unbalanced.	The working relationship of the fans of the ventilation unit must be balanced by a professional, including the ventilation system plaphons.
	Blockage of ducts or filters, blow-in does not work properly.	Check the outside air filter and, if necessary, replace. Temporarily, you can also try without a filter (filter covers must be put back) and monitor whether the heat recovery efficiency changes. Check if there are any other obstacle-generating elements in the system somewhere, such as a pre-filter for an external calorifer that can create resistance Check if the outdoor air intake grate is free and not clogged (insects, ice, etc.)
The supply air temperature is too low or the heat recovery is very low (less than 70%)	Supply and exhaust air volumes may be unbalanced.	The working relationship of the fans of the ventilation unit must be balanced by a professional, including the ventilation system plaphons.
	The exhaust pipe is not properly insulated and the air cools down in the pipeline	If the exhaust temperature of the device (look at the exhaust temperature of the device from the control unit) is significantly lower than the air temperature in your rooms, then this indicates a poorly insulated piping system, and the air in the pipeline can cool off before reaching the unit. If the piping is completely insulated, stop using the equipment until the piping is insulated (condensate water may form inside the piping)
	Blockage of ducts or filters, exhaust does not work properly.	Check the exhaust filter from the room and, if necessary, replace with a new one. Check ducts blockages. Temporarily, you can try without a filter (filter covers must be put back) and monitor whether the heat recovery efficiency improves.
	The heat exchanger is frozen	Remove the heat exchanger and defrost and contact your dealer – your device may need a more precise setup to prevent future freezing. (may only occur for HRV model/heat exchanger)
	The bypass valve is open (malfunction) and cold air escapes into the supply air	Airobot S - remove the filter on the right side, as well as visually check whether the valve is properly closed. In the event of a breakdown, contact the dealer.
The device does not connect to the	Internet network problem	Make sure that the building has internet access.

Internet network – the app shows that there is no network connection	Network cable or cable nozzle problem	Make sure that the cable that connects to the device has an Internet connection, for example, by connecting to a laptop computer (turn off Wi-Fi on your laptop at that moment)
	Setup problem	Activated house automation Modbus TCP. In the control unit (VE1) go to Settings – Other – Modbus TCP – make sure it is in the "OFF" setting.
	The problem with the Internet connector on the body of the device	Connect the network cable directly to the motherboard to the socket marked "ETH". Unplug the device and open the electrical switchboard. The network jack on the body of the device is extended from the motherboard, the extension cable is removed from the "ETH" slot at that moment.
	Other local network problems	If possible, try to connect a device with an external 3G/4G router to the network to try outside the home network – helps to eliminate possible problems with home network setup

Warranty terms

Warranty duration: Airobot ventilation equipment and accessories are covered by the manufacturer's warranty for 2 years from the date of purchase. If more than three months have passed since the date of production of the device on the date of purchase, the warranty is valid from the third month after the production date. 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, proof of purchase is required, in its absence, the date of production of the product by serial number.

Additional warranty from the manufacturer: In order to receive an additional 2-year warranty (4 years in total), the ventilation unit must be permanently connected to the Internet network for 6 months from the date of production, in addition to which the end user must create a user account in the mobile application and link the ventilation device to their own account. The entire beginning of the 4-year warranty period will be counted according to the conditions listed in the warranty duration. **Additional warranty term may vary depending on the country.**

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 components, such as filters, 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.

Important checklist

The equipment must be regularly serviced, so the equipment must be in an easily accessible place and the conditions of the maintenance room set for each model must be monitored . If the conditions are not observed, service (maintenance and repair) of the equipment may be prevented, and the manufacturer or distributor has the right to refuse to service the device until the necessary conditions are ensured.

Support and contact

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

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

We are grateful for any feedback on the use, characteristics, etc. of the device info@airobothome.com.

Manufacturer details

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Customer support and guides

www.airobothome.com/abi

Ordering filters

www.airobothome.com/filtrid

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