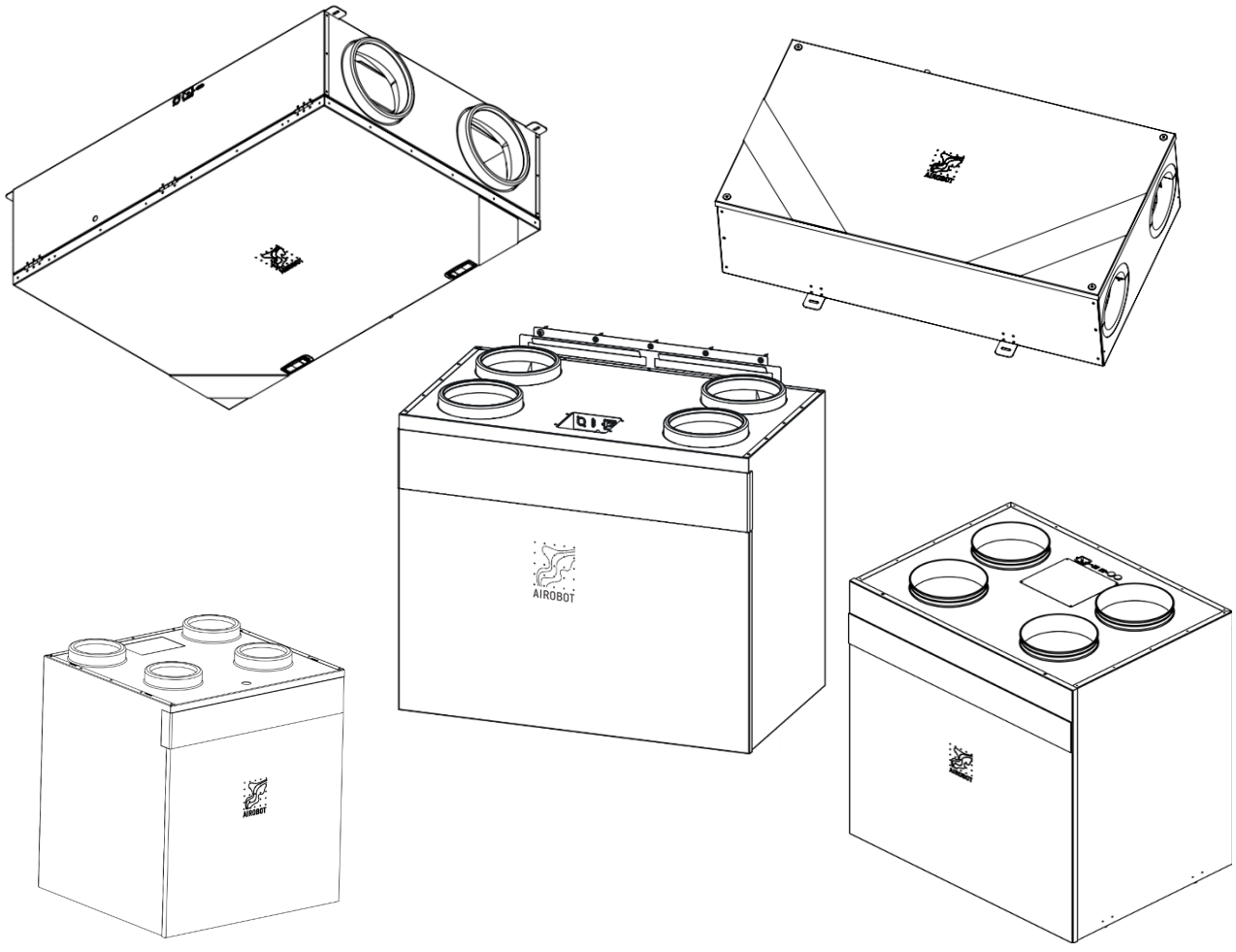
User, installation, and maintenance manual

Ventilation units Airobot L L5 S1 S2 V3 V4 V6 V8



Contents

Installation Guide

Important Conditions for Installing the Airobot Ventilation Device

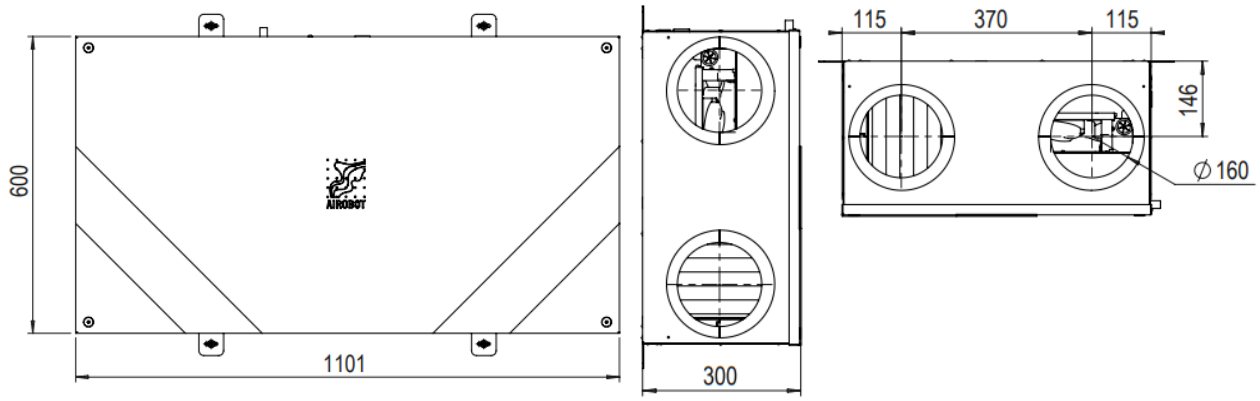
1. **Installation according to project requirements:**
    - The device must be installed according to the ventilation project, and the system's construction must comply with all established standards and local regulations.

2. **Provie necessary connections:** At the installation location, there must be:
    - Electrical connection: power socket with separate circuit breaker.
    - Condensate Drainage:
        - For HRV models (with heat recovery): Required.
        - For ERV models (with heat and moisture recovery): Optional, if normal conditions are ensured. Normal conditions are considered as a situation where, in winter (outdoor temperature below 5 °C), extract air humidity does not exceed 45% (a temporarily higher humidity level is allowed for a few hours). In new buildings, where humidity may be high during the first heating period, it may rarely be necessary to ensure condensate drainage even for ERV models.
3. **Conditions at the installation location:**
    - The device must be installed in a dry and insulated room where the ambient temperature ranges from +5 °C to +40 °C and relative humidity does not exceed 80%. The device must not be installed outdoors.
    - Exceptionally, models with moisture recovery (marked ERV) may be installed in a cold, uninsulated but dry space isolated from outdoor conditions (e.g., a closed attic), provided normal conditions are met (explained in the previous point 2). When installing in a cold room, it is mandatory to install fail-safe motorized dampers in the extract and supply ducts, which automatically close when the device stops (including during power interruptions).
4. **Noise level:**
    - The device generates noise during operation, which can be disturbing. It is recommended to install the device in a technical room or another auxiliary room. The unit should be mounted in a way that prevents any vibration noise from transferring to the wall or ceiling it is attached to.
    - Noise suppressors should be installed between the extract and supple ducts to prevent the spread of fan noise into living areas. Installing the silencer immediately after the device helps to reduce not only the noise from the ducts but also the noise generated by the device through the casing in the room where the device is located.
    - It is recommended to add a silencer to the exhaust air duct to prevent the spread of fan noise outside.
5. **Connecting and insulating ducts:**
    - Ensure that ventilation duct connections are properly secured and airtight.
    - The ducts must be insulated to prevent the formation of condensate on the duct surface, which can damage both the ventilation device and the house structures. The exhaust and outdoor air ducts must be insulated when installing in a warm room. If the ducts run through an unheated space, they must also be insulated. When installing in a cold room, all ducts located in the cold room must be insulated.
6. **Dampers:**
    - It is recommended to install spring or motor-operated dampers in the outdoor air and exhaust ducts, which mechanically close upon device shutdown. This prevents cold air from flowing into a standing device, which in some cases can create condensation inside the device and damage it.
    - It is **mandatory** to install fail-safe (spring) motorized dampers in the extract and suppy ducts when installing the device in an unheated cold room (e.g., attic), which mechanically close upon device shutdown (including during power interruptions). This prevents warm air from flowing through the piping into the device, preventing the formation of condensation and mold both inside the device and in the ducts.
7. **Accessibility for maintenance:**
    - The device must be installed in a location easily accessible for maintenance. Follow the requirements established in the chapter “Required Space for Device Maintenance”. Ignoring maintenance requirements may make device servicing (maintenance and repair) difficult, and the manufacturer or distributor reserves the right to refuse device servicing until the required conditions are met.

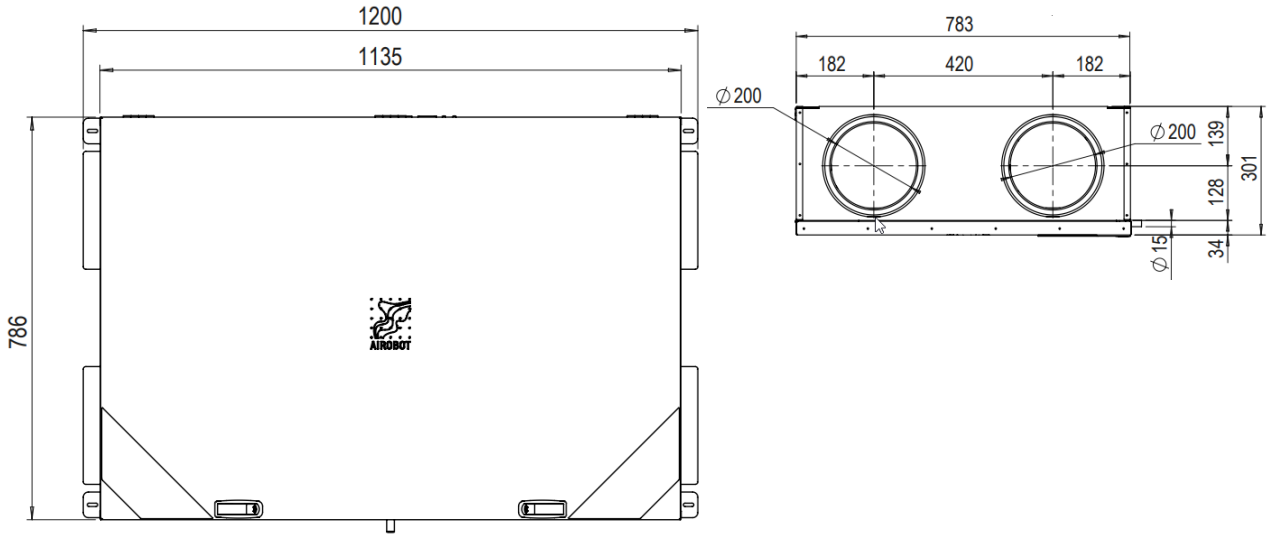
Installing Airobot L and L5

Dimensions

Airobot L



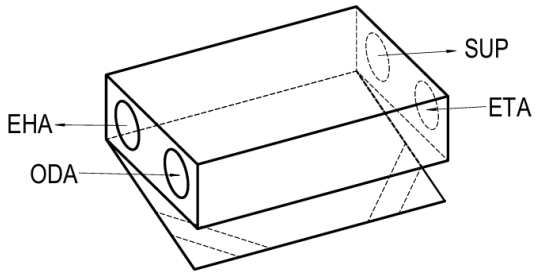
Airobot L5



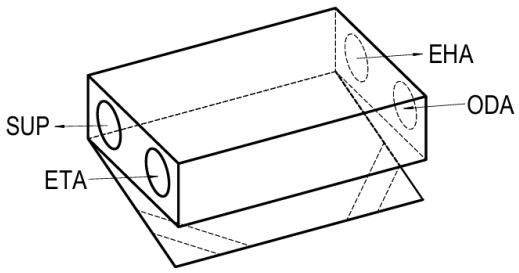
Location of ducts connections

The type of device (location of the ducts) is marked on the type label located on top of the device.

Type L



Type R



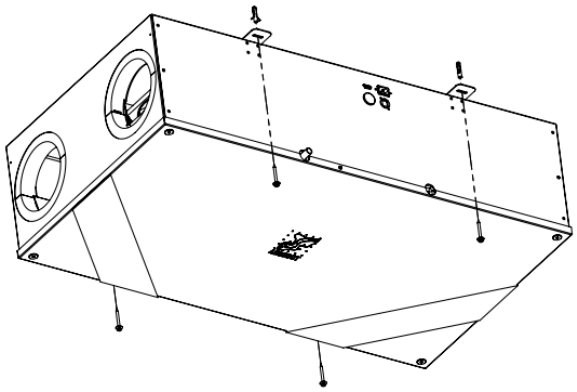
SUP	Supply air into the room	**ODA**	Outside air from outdoors
ETA	Extract air from the room	**EHA**	Exhaust air to outdoors

Installation

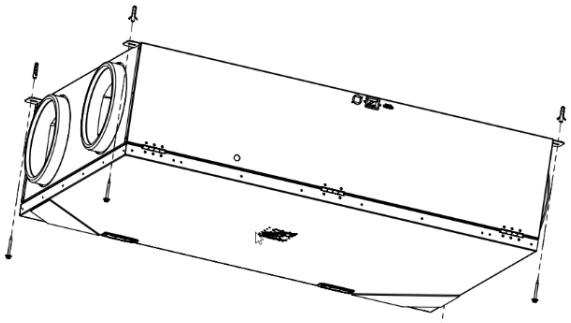
The device is installed on the ceiling using mounting brackets, with dowels and screws or other suitable fasteners. Under normal conditions, the ERV (energy recovery ventilation) model can also be installed in other positions (contact the dealer for additional information).

When installing on a ceiling, pay attention to the following:

- Ensure the load-bearing ceiling is sufficiently strong.
- Use fasteners suitable for the type of ceiling, as the fasteners included in the package may not fit.
- Ensure that the device remains level.
- When installing below a suspended ceiling, a service hatch must cover the entire external dimensions of the device (for example, L model: 800x1200 mm service hatch, L5 model: 1000x1200 mm).
- Ensure there is enough space for connecting the device and ventilation ducts.
- Install rubber damper between the mounting brackets and the ceiling to reduce noise and vibration to the structure.
- Follow all the instructions in the chapter "Important conditions to be followed when installing any Airobot ventilation device model."



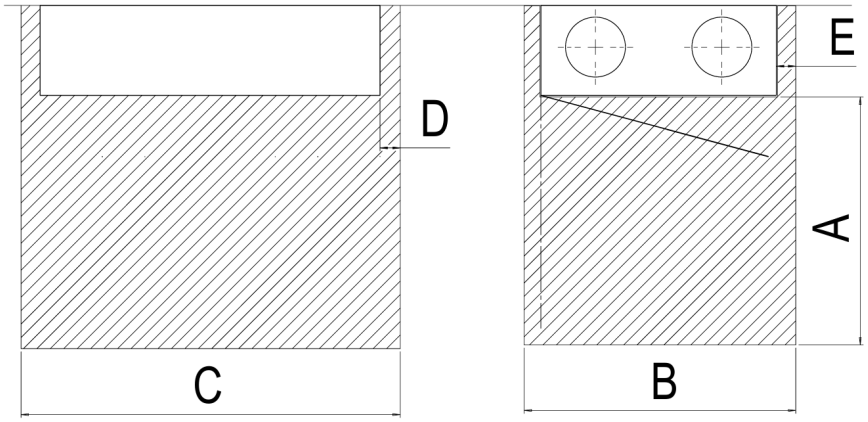
Airobot L ceiling mount



Airobot L5 ceiling mount

Required space for servicing the device

	A	B	C	D	E
Airobot L	1100 mm	640 mm	1140 mm	20 mm	20 mm
Airobot L5	1100 mm	925 mm	1175 mm	20 mm	70 mm

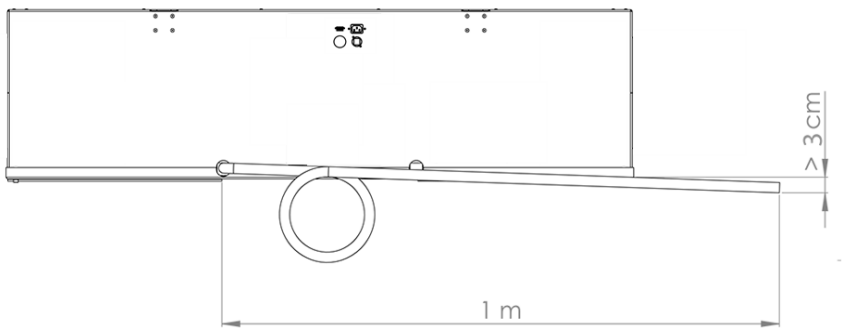


Connecting condensation water drainage

ERV model with heat and moisture recovery: The device is not equipped with a condensate outlet. Under normal conditions, no condensation water is formed. If necessary, a condensate connection kit can be ordered separately.

HRV model with heat recovery: ensuring condensate drainage is mandatory

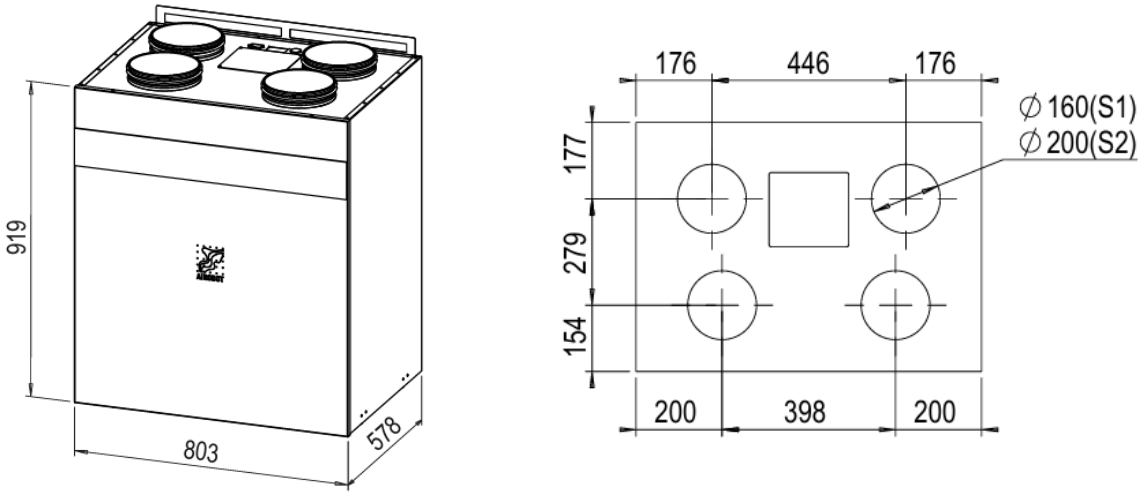
- A copper tube with an external diameter of 15 mm exits the device, to which a condensate drain pipe must be connected.
- The drain hose must **create an O-shaped siphon** (water trap), and the pipe must be installed with a slope of at least 3% (i.e., at least 3 cm drop per meter).
- The minimum diameter of the O-shaped siphon (water trap) must be 10 cm.
- It is important to ensure that no kinks are formed in the hose during siphon installation, which would impede drainage. The siphon may be placed in any position, but it is important that no part of the pipe is higher than the bottom of the device.
- Without a water trap, condensate water cannot flow out of the device, which may cause water damage to both the device and the surrounding environment.



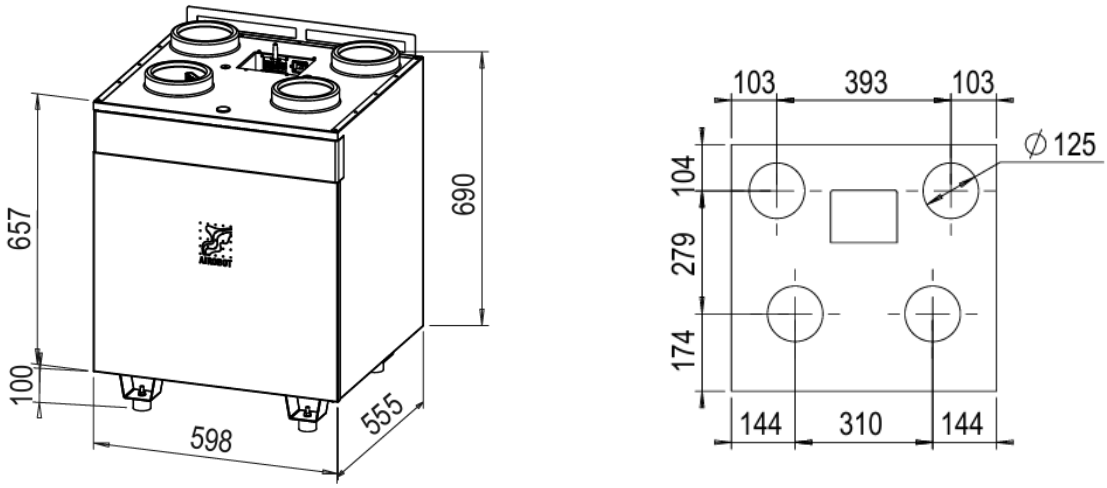
Installation of Airobot S1, S2, V3, V4, V6 and V8

Dimensions

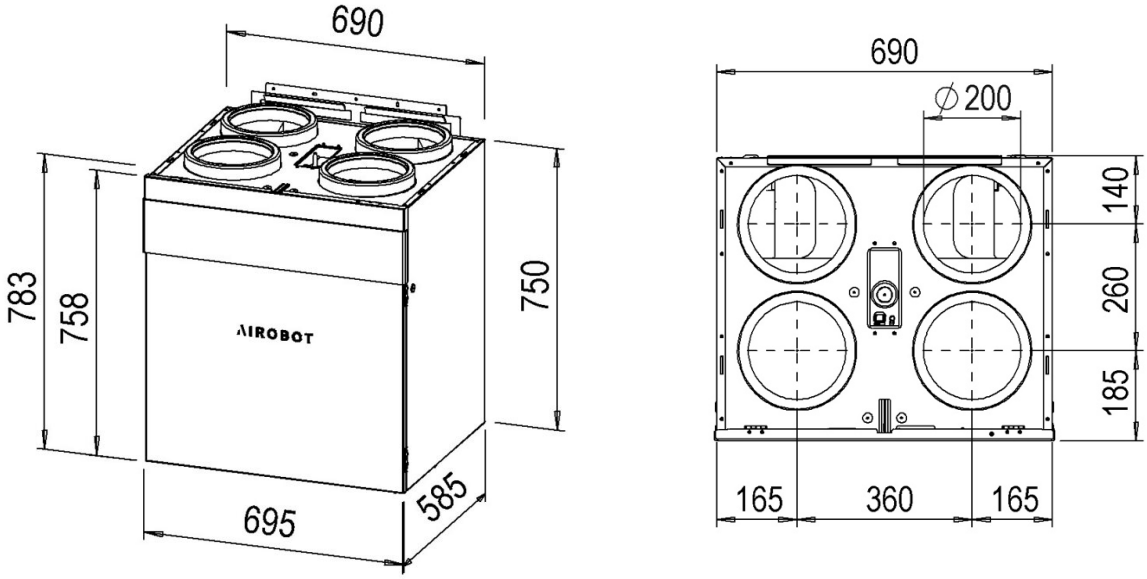
Airobot S1 and S2



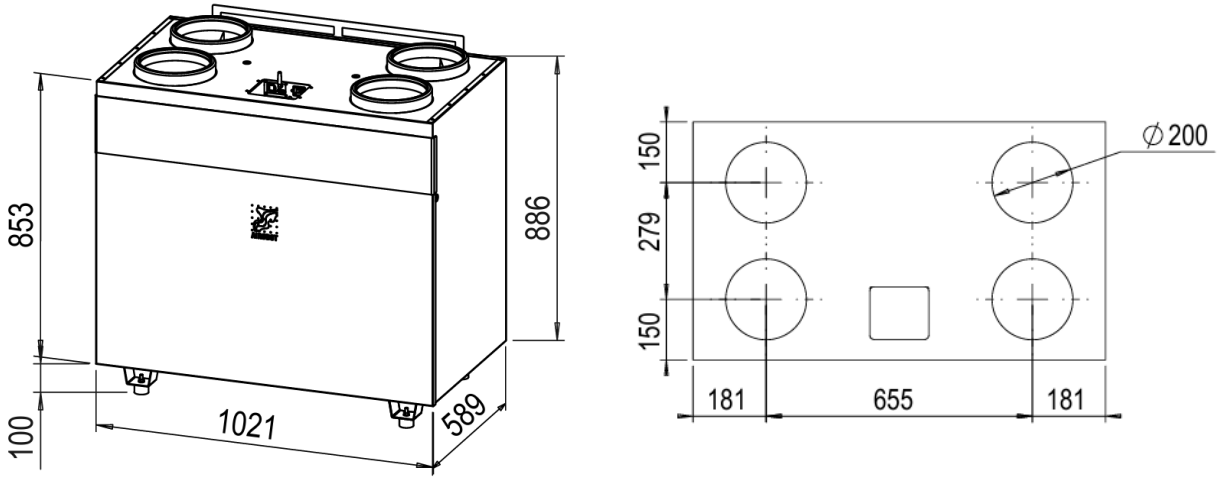
Airobot V3



Airobot V4 and V6



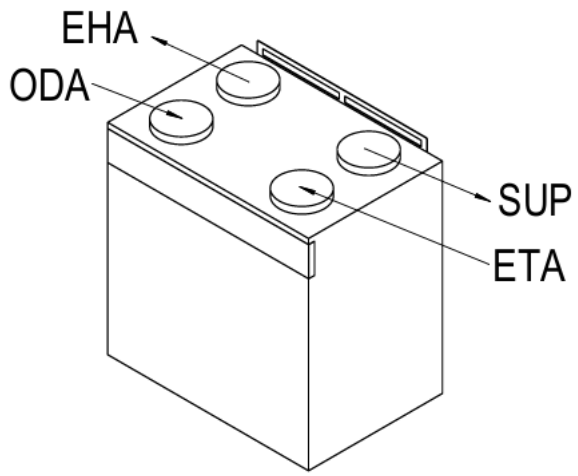
Airobot V8



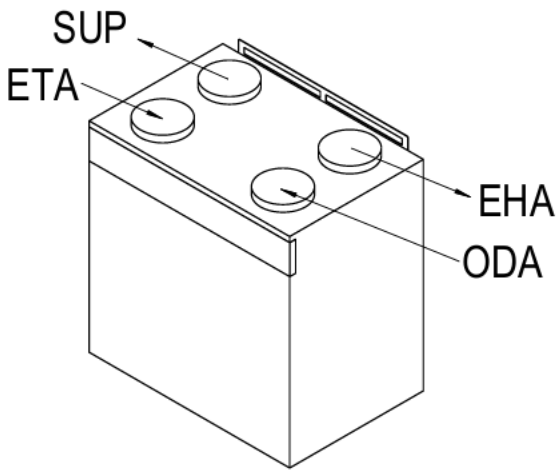
Location of duct connections

- Airobot V4 and V6 models are factory-configured as Type R (Right) by default. These can be converted to Type L (Left) by following the instructions provided in the next section.
- All other Airobot models must be ordered from the factory with the required duct type (Type R or Type L) specified.

Type L



Type R



SUP Supply air into the room

ETA Extract air from the room

ODA Outside air from outdoors

EHA Exhaust air to outdoors

Changing device type (V4 and V6 only)

To change the device type from R (Right) to L (Left), follow the steps below. These steps are only applicable for V4 and V6 models.

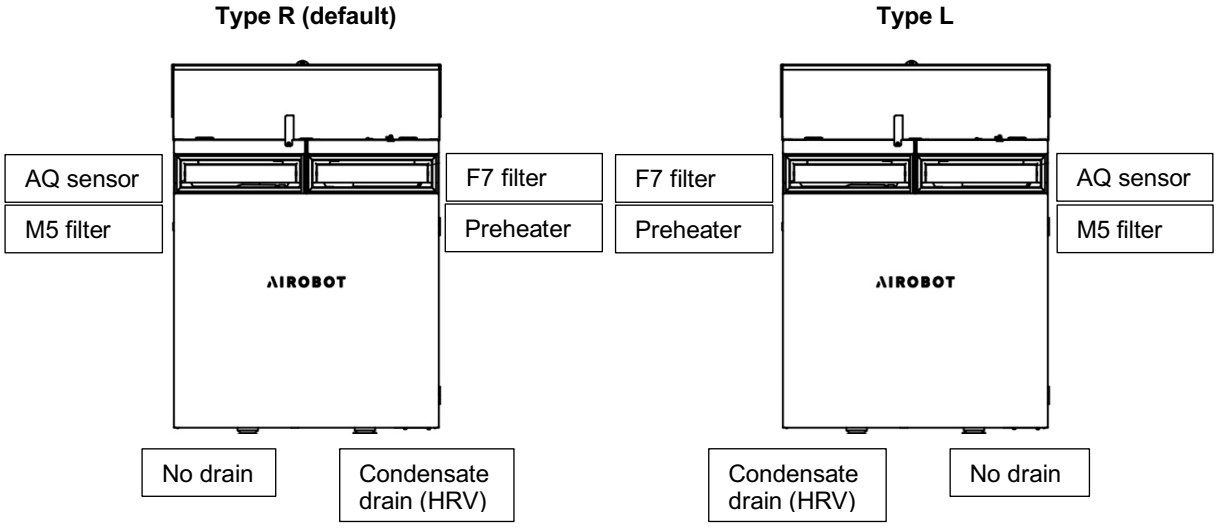
Make the following adjustments when switching from R to L type:

- Remove ventilation unit from the power supply
- Preheater: Move from right side to left side
- Air Quality Sensor: Move from left side to right side
- Condensate Drain (HRV models only): Connect to the left side
- Filters: Mode F7 filter to the left side, M5 to the right side

Reconnect power supply and configure type. There 2 options how to do it:

- Connect device to network: Add device to Airobot app and in the main view it should display error when clicked you can configure the type
- VE1 remote controller: when powered on then controller should ask for the type. If type needs to be changed later then type selection can also be accessed from Expert menu. Hold down OK button for 3 seconds on Expert menu item and it should reveal option "Device type".

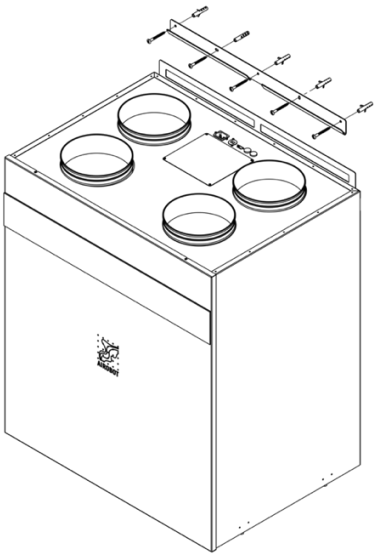
Component Positioning Table



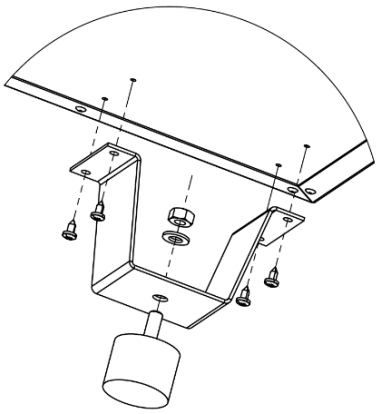
Installation on the wall or floor

Pay attention to the following during installation:

- Observe the dimensions of the "Required space for servicing the device" to ensure the device can be serviced if needed.
- Follow all the instructions in the chapter "Important conditions to be followed when installing any Airobot ventilation device model."
- **For wall installation:**
    - The wall mount is included with the device package
    - Ensure the load-bearing wall is sufficiently strong.
    - Attach the wall mount to the wall. Use fasteners suitable for the type of wall, as the fasteners included in the package may not fit.
    - Ensure that the device remains level.

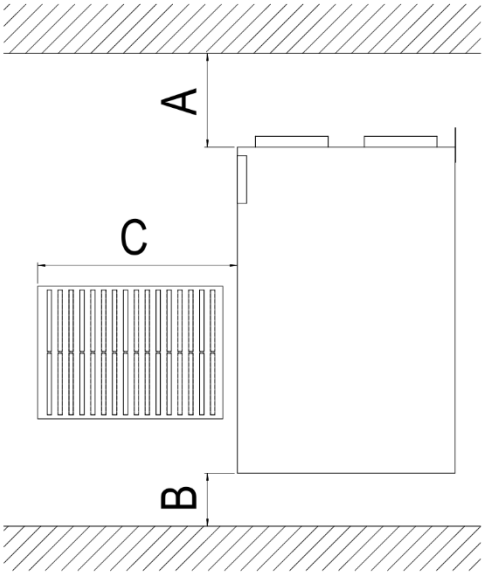


- **For floor installation:**
  - Floor stands are not included with the device package; they are available as an additional purchase.
  - Ensure the load-bearing floor surface is suitable.
  - Attach the legs to the bottom of the device
  - Ensure that the device remains level.



Required space for servicing the device

	A	B	C
Airobot S1 and S2	300 mm	275 mm	600 mm
Airobot V3, V4, V6	100 mm	120 mm (HRV only)	700 mm
Airobot V8	100 mm	120 mm (HRV only)	600 mm



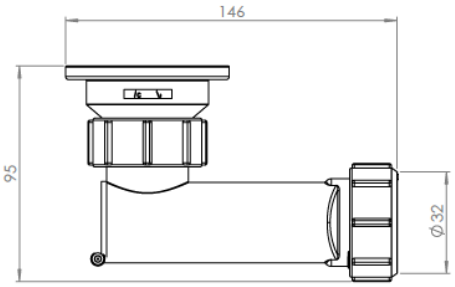
Connecting condensation water drainage

ERV model with heat and moisture recovery:

- The device is not equipped with a condensate outlet. Under normal conditions, no condensation water is formed. If necessary, a condensate connection kit can be ordered separately.

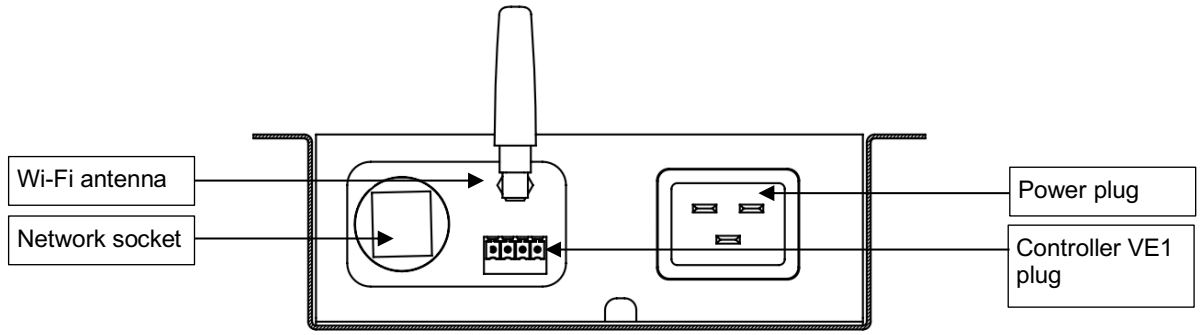
HRV model with heat recovery:

- Condensate drainage is mandatory.
- A 32 mm drain exits the device, to which the condensate siphon (water trap) included in the set must be connected.
- For condensate connection, screw the condensate seal to the fitting at the bottom of the device, ensuring the connection is properly and tightly secured.
- Without a water trap, condensate water cannot flow out of the device, which may cause water damage to the device and the surrounding environment.
- A 32 mm pipe can be used to extend the condensate drainage.
- For the proper drainage of condensate water, the device must be level. The condensate drain from the device should be removed and cleaned of accumulated dirt once a year.



- Only the condensate drainage specified by the manufacturer should be used. The condensate drainage valve is equipped with a negative pressure valve, ensuring airtightness during dry periods.

Connections on the casing



Installing the VE1 controller

The controller is available as an add-on and is not included in the set. The VE1 controller is compatible with all Airobot ventilation devices manufactured since 06.2021 (ventilation device serial code starting with V02..).
If you choose a controller with air quality measurement (-AQ indication in the model), it is recommended to install it in the living space, as it allows controlling the ventilation based on air quality.

Installing the controller:

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

- The ambient air temperature ranges from 5 °C to 40 °C and the humidity up to 80
- The controller is not exposed to steam or liquids
- It must not be located near devices that generate radio waves (such as a Wi-Fi router)

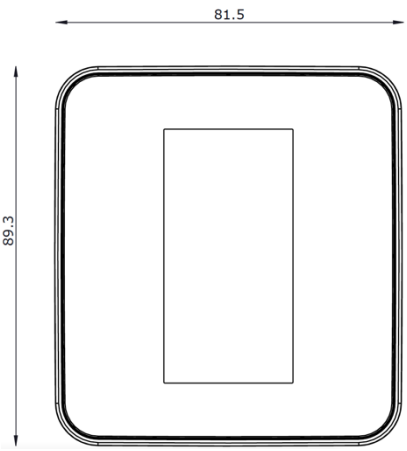
Planning the placement:

It is recommended to plan a suitable location for the controller already during the design phase, to allow the cable to be routed through the wall to the desired location in another room.

Connecting to the ventilation device:

- The controller is connected to the ventilation device with a 4-core (max. 0.75 mm²) low-voltage cable, which must be connected to the side or top connection socket of the device. If it is missing, it must be connected to the LCD plug in the electrical panel of the device.

- If you order the controller with the device, it is usually factory-connected to the device. The controller comes with a 3-meter cable, marked as follows: 5V/+Ve – brown; A – yellow; B – white; GND/-Ve – green



Controller	+Ve	5V / +Ve	Ventilation device
	A	A	
	B	B	
	-Ve	GND / G / -Ve	

Installation methods:

- **With magnets to the device case:** Magnets are integrated into the remote control.
- **Installation to a wall socket or a smooth wall:** The wall mounting frame for the remote control is included in the package.

Remote control models	Explanation
VE1-W-AQ	White, with air quality measurement including air temperature, humidity, and CO_2

VE1-B-AQ	Black, with air quality measurement including air temperature, humidity, and CO_2
VE1-W	White, with air temperature and humidity measurement
VE1-B	Black, with air temperature and humidity measurement

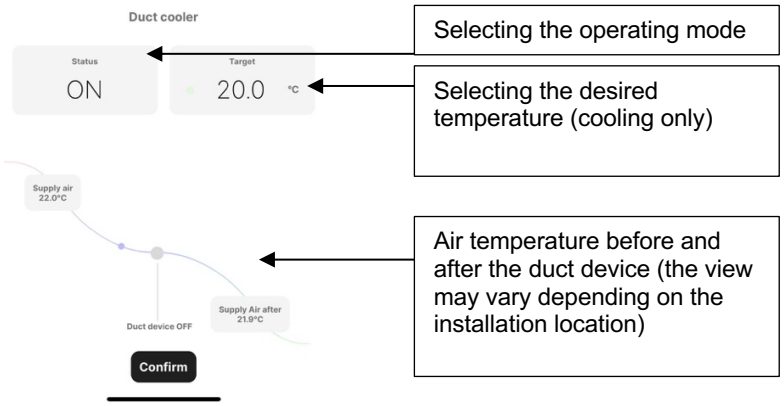
Installation, connection, and control of accessories

Additional module for duct heater and cooler (duct device) control (VC-EXT)

The Airobot ventilation system can add control capability for a duct heater or cooler (hereinafter duct device), using an extension module (VC-EXT). The extension module is available separately and its installation instructions are included in the product package or available on the Airobot customer support website. The duct device can only be controlled via the Airobot mobile app. To control, check the location of the duct device in the system:

- Menu: Settings > Ventilation device > Expert > "Position of the duct cooler/heater."

The system should be monitored regularly, as each building is different and may require adjusting the temperature of the duct cooling or heating water, circulation capacity, etc., for optimal results. The Airobot ventilation device only regulates the circulation of the duct device; more detailed settings are performed by a heating specialist.



Duct device in the outdoor air duct:

- **Cooling (summer period):**
  - The outside temperature must be over 6 °C.
  - The desired temperature must be lower than the exhaust air temperature.
  - If the outside temperature is lower than the exhaust air, the bypass valve opens.
  - ON/OFF valve: If the supply air temperature drops below "Minimum permitted supply air temperature", the duct device switches off for at least 3 minutes.
  - 0-10V valve: The system automatically adjusts the valve, pump, or actuator to maintain the supply air temperature at a minimum level.
- **Heating (heating period):**
  - If the outside temperature is below 3 °C, the valve, pump, or actuator switches on for at least 5 minutes.
  - The purpose of this function is to heat the outdoor air before electric pre-heating to reduce electricity consumption.
- **Off**: The duct device is not used.

Duct device in the supply air duct:

- **Cooling (summer period):**
  - The outside temperature must be over 6 °C.
  - The desired temperature must be lower than the exhaust air temperature.
  - ON/OFF valve: If the supply air temperature drops below "Minimum permitted supply air temperature", the duct device switches off for at least 3 minutes.

    - 0-10V valve: The system automatically adjusts the valve, pump, or actuator to maintain the supply air temperature optimally.
- **Heating (heating period):**
    - The desired supply air temperature must be higher than the actual temperature after heat exchange.
    - ON/OFF valve: If the supply air temperature before the heating element is lower than desired, the duct device switches on, with a minimum switching interval of 3 minutes.
    - 0-10V valve: The system automatically adjusts the valve, pump, or actuator to maintain the desired supply air temperature.
- **Off**: The duct device is not used.

The minimum permitted supply air temperature can be configured through the Expert Settings in the mobile application. Two options are available:

- **AUTO -** The minimum supply air temperature is automatically calculated based on the dew point formula. This helps prevent condensation in the ductwork. The system uses extract air temperature and humidity values to determine the appropriate minimum supply air temperature.
- **Manual** - When a specific value is selected manually, the minimum supply air temperature is fixed to the chosen setting, regardless of dew point calculations.

Note: Using the AUTO setting is recommended in humid environments to avoid condensation risks.

Connection with automatic fire alarm system

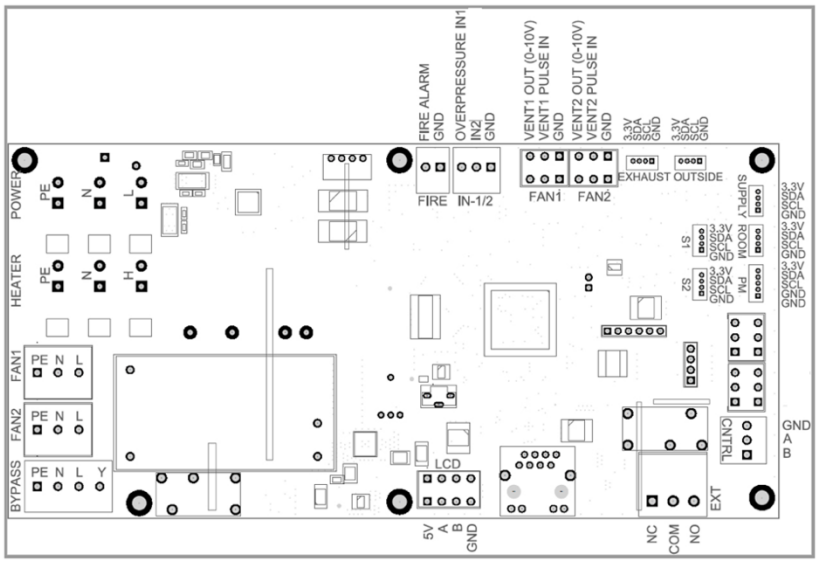
The Airobot ventilation unit can be connected to the building's ATS system. When a fire signal is received, the ventilation unit stops (Normally open contact).
Connection: FIRE (FIRE ALARM and GND) contact.

Connection of the pressure switch (EXT-PRSW)

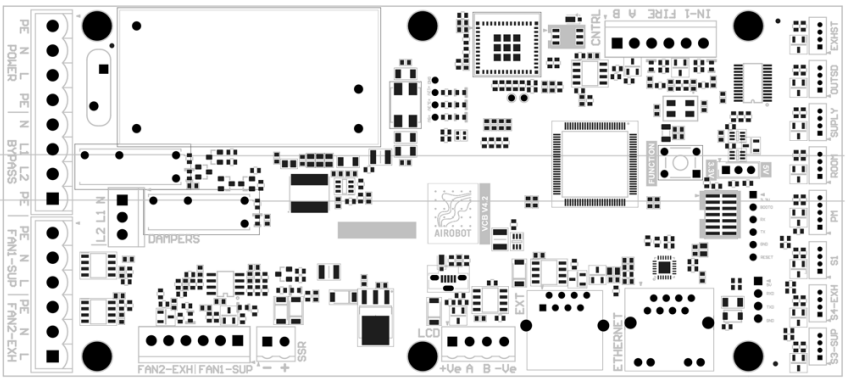
The kitchen hood can create temporary negative pressure in the rooms, which may damage building structures. To prevent this, a pressure switch is available as optional equipment, to be installed in the kitchen hood duct. The pressure switch allows the ventilation unit to automatically switch to an overpressure mode when the hood activates. To connect the pressure switch to the ventilation unit, use a 2-core low-voltage cable. The overpressure mode activates when the contact is closed for at least 10 seconds, and remains active until the contact opens.
Connection: IN-1 (OVERPRESSURE IN and GND) contact.

Electrical diagram

On devices produced until 06.2024



For devices manufactured from 06.2024



Explanation	Contacts	Description
Automatic fire alarm input	FIRE (GND and FIRE ALARM)	Normally open (NO) contact. The device stops ventilating when the contact closes (in case of alarm). Maximum cable diameter: 0.75 mm².
VC-EXT add-on module (for devices manufactured from 07.2022)	EXT Board (black RJ45 plug)	Connecting the VC-EXT add-on module to the ventilation unit
Modbus TCP	LAN socket	Connect the internet cable to the LAN socket of the device. LAN socket is placed next to the power socket. Additional information on Modbus TCP configuration is on Airobot support website.
Pressure switch or other contact for activating overpressure	IN-1 (GND and OVERPRESSURE)	Normally open (NO) contact. The device switches to overpressure mode when the contact closes. Maximum cable diameter 0.75mm^2.
LCD / control panel / Modbus RTU	5V/+Ve A B GND/-Ve	Connect the control panel according to the contact markings. For Modbus RTU, connect the cable to contacts A and B. The control panel and Modbus RTU cannot be used simultaneously.
DAMPERS Connector for fail-safe dampers	N L2	L2 supplies 230V power to the actuator when ventilation is active. When ventilation is turned off, L2 power is disconnected. L1 230V is always supplied.

Special rubber cable grommets are provided on the housing for connecting accessories. Before installing the cable, cut a hole in the rubber grommet of the appropriate diameter to fit the cable tightly and securely through the grommet.

Connecting the device to the power supply

- **Airobot S1 / S2 / V3 / V4 / V6 / V8 / L5** models operate at 230 VAC, 50 Hz, 16 A. The power cable is of plug connection type (IEC C19, 3x1.5 mm², 1.8 m in length) and included in the package. A separate automatic circuit breaker must be installed for each device.

- **Airobot L** model works with 230 VAC, 50 Hz, 10 A current. The power cable is a plug connection type (IEC C13, 3x1 mm², length 1.8 m) and is included in the package. A separate circuit breaker must be installed for the device.

Connecting the device to the power grid is only allowed if it is properly installed according to the instructions.

The power, LAN and controller connectors that are located on the device's casing and are not protected from harsh external environmental conditions. If necessary, cover these connection points to protect them from dust, water, or other harmful environmental conditions.

Maintenance guide

Maintenance tips

- **Filter inspection during the summer period:** It is recommended to inspect the device's filters more frequently during the summer months, as pollen, insects, leaves, and other debris can quickly clog the filters. Clogged filters may reduce the amount of ventilated air and increase power consumption. Larger dirt can be removed, for example, with a vacuum cleaner.
- **Checking insect screens:** If the outdoor air intake grille is equipped with a separate insect screen, it may become clogged during the summer period. Therefore, it's important to visually inspect the grille and clean it regularly if necessary.

General maintenance requirements and recommended period. Recommended maintenance periods may vary depending on external environmental conditions, so device maintenance should be adjusted according to the actual situation.

Action	Action interval
Cleaning filters from dust, insects, or other debris (e.g., with a vacuum cleaner)	1 time a month. During the summer period, it is advisable to do this more regularly if a lot of insects, pollen, and other debris accumulate in the device
Replacing filters	2 times a year recommended, at least 1 time a year mandatory
Cleaning the heat exchanger	1 time a year. Irregular cleaning reduces the efficiency of heat and moisture recovery.
Cleaning inside the device	1 time a year. If the device is not dirty, cleaning can be done every 2 years subsequently.
Checking and cleaning the condensate drain (if installed)	1 time a year. Visually check for blockages and clean if necessary.
Prefilter (filter cassette) in the outdoor air duct	2 times a year, at least 1 time a year. If your device is equipped with a duct unit (heater), a prefilter may also be located in the outdoor air duct.

Air filters

Replacement frequency: Filters must be replaced at least once a year, but it is recommended to do so twice a year – before and after the heating period.

Why is it important to change filters?

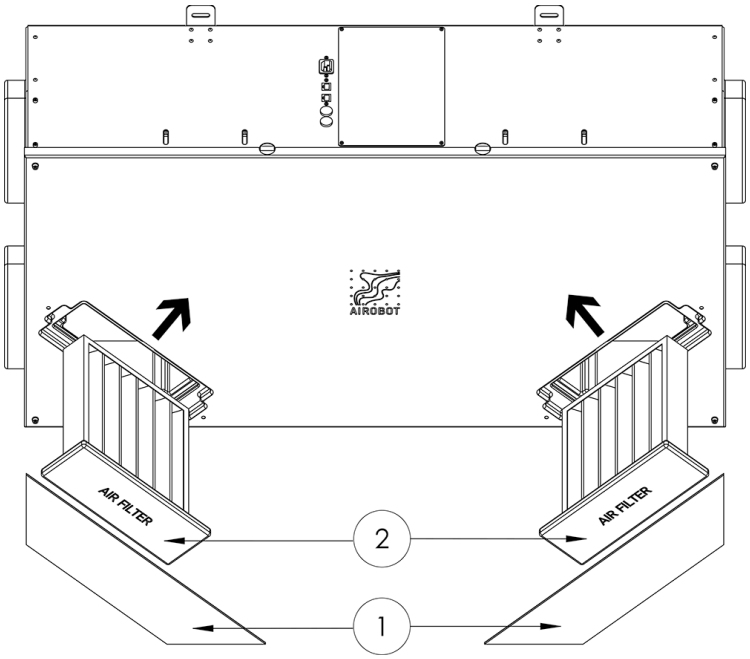
- **Healthy indoor climate:** Filters older than a year can collect bacteria and fungi, which can spread to living spaces and harm health.
- **Energy efficiency:** Devices operate more efficiently with clean filters, reducing power consumption. Clogged filters increase energy consumption and shorten the lifespan of the device.
- **Air quality:** Clean filters ensure the circulation of fresh and clean air, which is crucial for a healthy living environment.

The need to change filters is indicated by a notification on the remote control or mobile application.

The Airobot device's **manufacturer's warranty** and **extended warranty** are valid only if original filters, which can be ordered from www.airobothome.com, are used.

Airobot L maintenance

Changing air filters

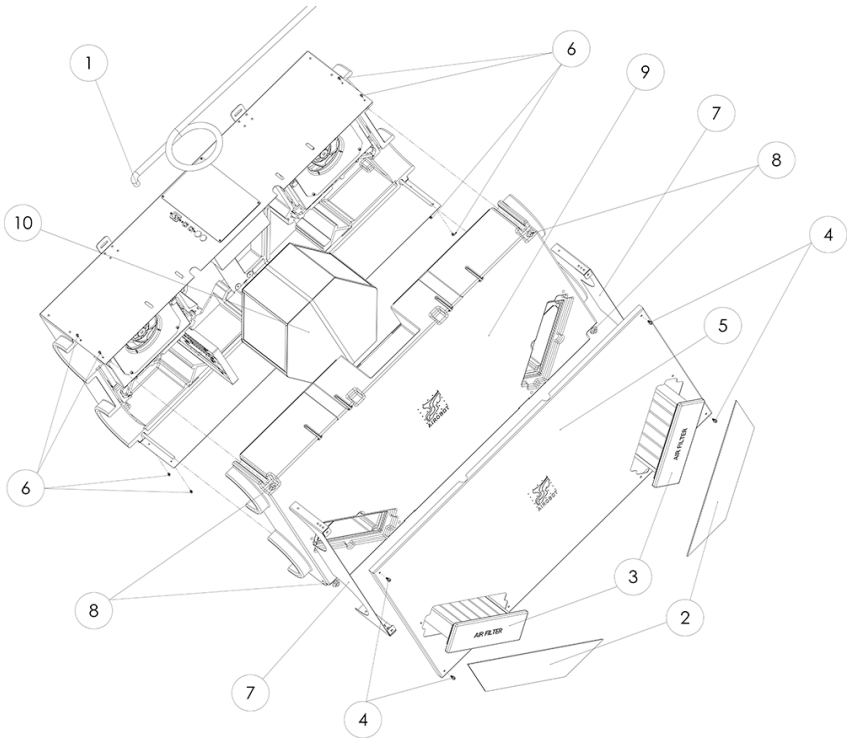


- Disconnect the device from the power supply by unplugging the power cable or switching off the circuit breaker.
- Remove the blue filter strips (1).
- Remove the filter covers. If necessary, use a flat tool to dismantle them (2).
- Remove the dirty filters.
- Install a new filter, ensuring the arrow direction is correct.
- Reinstall the filter covers and blue filter strips.
- Set a new filter change reminder from the remote control or mobile application.

Risk of electric shock! There is a heater located in the external air filter duct, disconnect the device from the power supply.

Cleaning the heat exchanger and device

- Disconnect the device from the power supply by unplugging the power cable or switching off the circuit breaker.
- Disconnect the condensate drain pipe (1)
- Remove the blue filter strips (2)
- Remove the filter covers along with the filters (3)
- Unscrew the bolts securing the front panel of the device
- Remove the front panel of the device (5)
- Unscrew 8 bolts M4x6mm (6) from the side of the device with a hex key (only models manufactured before 2022). produced models)
- Unscrew 4 nuts M8 (8) along with washers that tighten the device's EPP shells together.
- Carefully pull apart the lower EPP housing of the device evenly from each corner (9). Be careful! There is a risk of the heat exchanger falling down.
- Take out the heat exchanger and clean it and the interior surfaces of the device with a damp cloth.

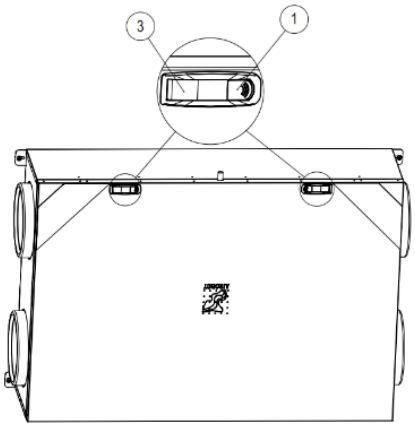


- The heat exchanger can be washed with warm soapy water and rinsed with clean water. Tilt out the remaining water and let it dry.

It is recommended to lubricate seals with silicone grease.

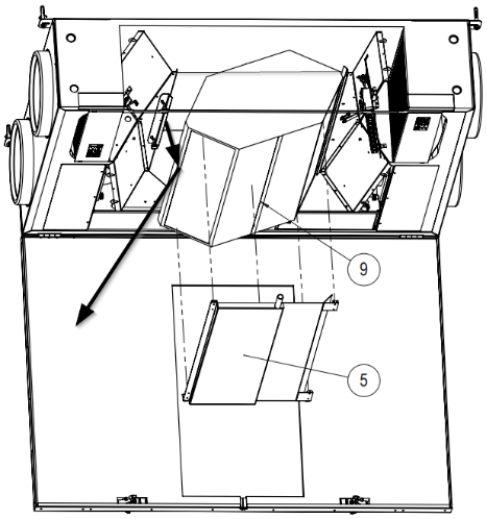
Airobot L5 maintenance

Replacing air filters

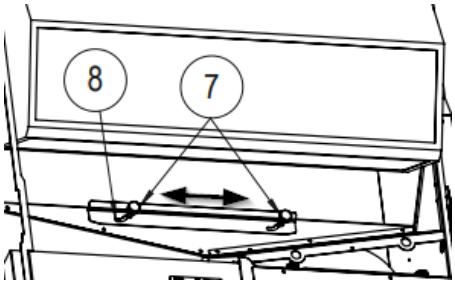


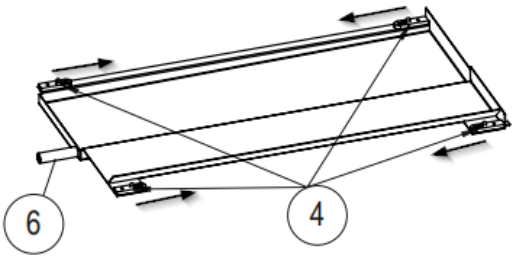
- Remove the device from the power supply by unplugging the power cord or switching off the circuit breaker from the electrical panel.
- Open the device cover by pressing the smaller parts of the locks simultaneously. Support the cover and open it smoothly, letting it hang down.
- Remove the old filters and install the new ones, ensuring the arrow marked on the filters is pointing towards the heat exchanger.
- Close the device cover by pushing the cover upward and securing the locks by pressing the larger part of the lock with your thumb.
- After replacing the filters, set a new reminder from the control panel.

Cleaning the heat exchanger and the device



- Remove the device from the power supply by unplugging the power cord or switching off the circuit breaker from the electrical panel.
- Open the device cover by pressing the smaller parts of the locks simultaneously. Support the cover and open it smoothly, letting it hang down.
- If the device has a condensation tray (5), remove it by releasing the locking clips (4) and disconnecting the condensate drain pipe.
- To remove the heat exchanger, loosen the mounting screws (7), push the retainer aside (8), and remove the heat exchanger (9). Support the heat exchanger during removal as the seals may hold it in place. There might be water inside the heat exchanger.
- Clean the heat exchanger chamber with a damp cloth. The heat exchanger can be washed with warm soapy water and rinsed with clean water. After cleaning, tilt out the remaining water from the heat exchanger.
- Lubricate the seals with silicone grease to simplify future maintenance.





Airobot S1, S2, V3, V4, V6 and V8 maintenance

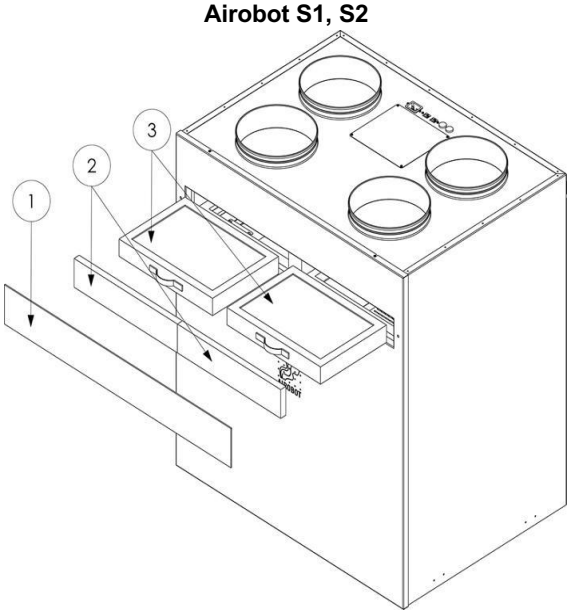
Replacing air filters

- Remove the device from the power supply by unplugging the power cord or switching off the circuit breaker from the electrical panel.
- Remove the blue cover.
- Remove filter covers.
- Pull out the dirty filters and replace them with new ones, placing the F7 (ePM1) filter in the outside air and the M5 (ePM10) filter in the extract air, noting that most units have a sticker marking while V4 and V6 units do not due to their exchangeable design, and remembering that the outside air side is always where the preheater is located, identifiable by the heater element inside the unit.
- Ensure that the arrow marked on the filters is directed correctly (downwards)
- Set a new reminder for the next filter replacement from the remote control or mobile app.

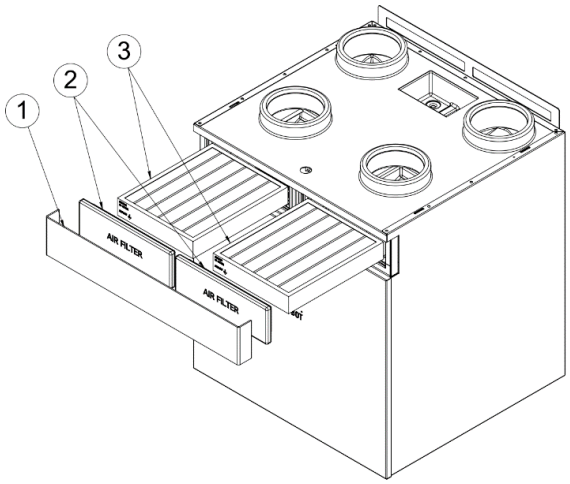
Risk of electric shock There is a heater located in the outdoor air filter duct, disconnect the device from the power supply.

Drawing of air filter removal according to the model:

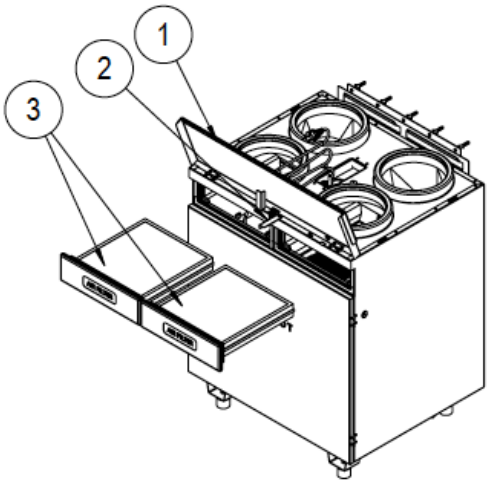
Airobot S1, S2



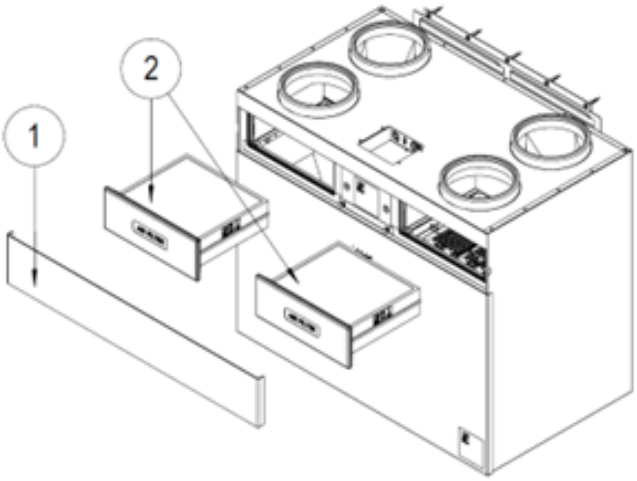
Airobot V3



Airobot V4 and V6



Airobot V8

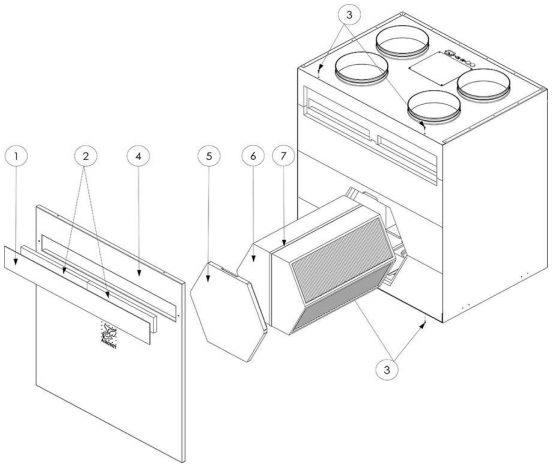


Cleaning the heat exchanger

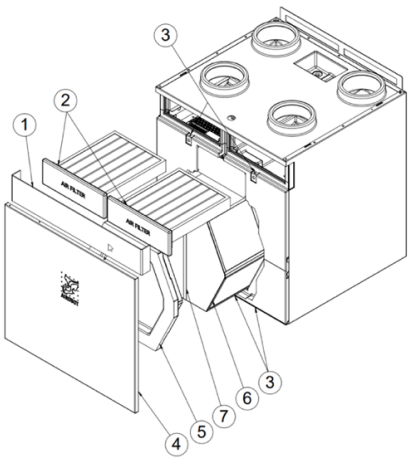
- Disconnect the device from the power supply by unplugging the power cable or switching off the circuit breaker from the electric panel.
- Remove the blue filter strip
- Remove the filter lids covering the filters
- Open the panel:
    - S1, S2, and V3: remove 4 bolts securing the front panel.
    - V8: unscrew by hand two screws between the filters.
    - V4 or V6: open door by pulling it gently from the left side
- Remove the front panel
- Remove the heat exchanger cover:
    - S1, S2, and V3: pull the cover towards yourself simultaneously with both hands from the finger holes
    - V4, V6 or V8: remove 4 bolts with the hex key attached to the cover and pull the cover towards yourself from the finger holes.
- Remove the heat exchanger by gently pulling it out using the heat exchanger strap, while with the other hand pressing against the device.
- Clean the heat exchanger and its chamber – use a damp cloth. The heat exchanger can be washed with warm soapy water and rinsed with clean water. Tilt out the remaining water and allow it to dry before reinstalling.
- If possible, lubricate the heat exchanger seals with silicone grease to facilitate the next maintenance.
- **Reinstall the heat exchanger** and reassemble the device in the same order

Drawing of heat exchanger removal according to the model:

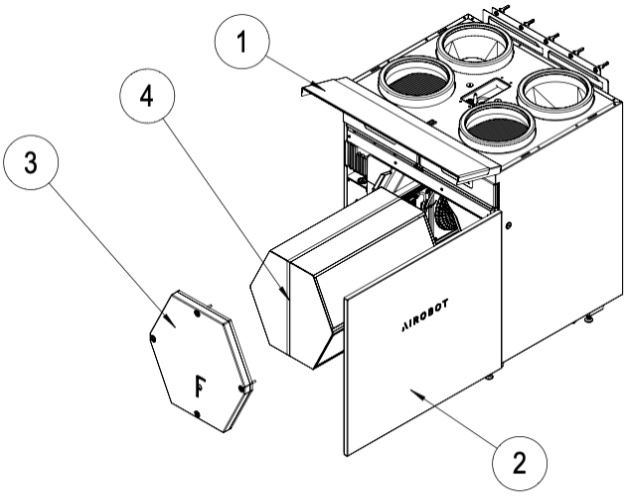
Airobot S1, S2



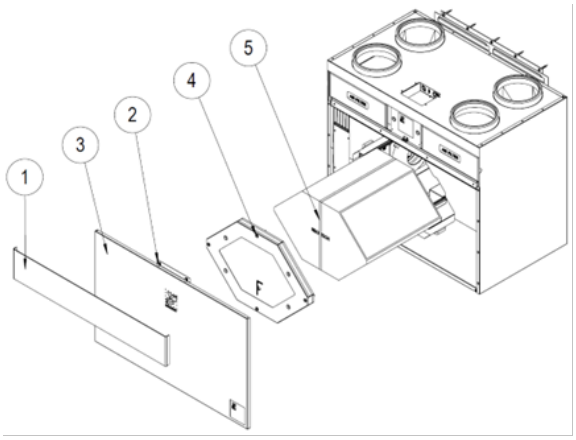
Airobot V3



Airobot V4 and V6



Airobot V8



Changing or replacing the heat exchanger type

If you change the heat exchange type in the device, the appropriate setting must be changed. There are 2 options:

- On the remote control: open expert settings and select the new heat exchanger type
- In the mobile app: open expert settings and select the new heat exchanger type

Options:

- **HRV – for a standard heat recovery plate heat exchanger.**
- **ERV – for a heat and moisture recovery plate heat exchanger.**

Incorrect settings can damage the device, as these settings affect frost protection and automatic balancing. The default setting is correct and needs to be changed only if you replace the heat exchanger type.

Technical data and kit

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 (HRV model only)
- Documentation

The Airobot S1 / S2 / V3 / V4 / V6 / V8 kit includes:

- 1 Airobot ventilation unit
- 1 plug-in power cord C19, 1.8 meters
- 1 wall mounting frame with 5 pcs of 5x70 mm dowels and mounting screws
- 1 condensate drain valve (HRV model only)
- Documentation

	Airobot L	**Airobot L5**	**Airobot S1**	**Airobot S2**	**Airobot V3**	**Airobot V4**	**Airobot V6**	**Airobot V8**
Maximum airflow 100 Pa	HRV: 250 m3/h 69 l/s ERV: 200 m3/h 55 l/s	500 m3/h 139 l/s	396 m3/h 110 l/s	462 m3/h 128 l/s	300 m3/h 83 l/s	400 m3/h 111 l/s	550 m3/h 153 l/s	750 m3/h 208 l/s
Maximum airflow 150 Pa	HRV: 250 m3/h 69 l/s ERV: 200 m3/h 55 l/s	500 m3/h 139 l/s	365 m3/h 110 l/s	430 m3/h 119 l/s	300 m3/h 83 l/s	400 m3/h 111 l/s	550 m3/h 153 l/s	705 m3/h 195 l/s
Maximum airflow 200 Pa	HRV: 250 m3/h 69 l/s ERV: 200 m3/h 55 l/s	500 m3/h 139 l/s	340 m3/h 94 l/s	410 m3/h 113 l/s	300 m3/h 83 l/s	400 m3/h 111 l/s	550 m3/h 153 l/s	660 m3/h 183 l/s
Heat exchangers	HRV – heat recovery ERV – heat and moisture recovery							
Heat exchanger type	Counterflow plate heat exchanger							
Heat recovery efficiency	HRV: 89%	HRV: 85.6%	HRV: 92.6%	HRV: 92.2%	HRV: 88.4%	HRV: 90%	HRV: 89%	HRV: 85.4%

70% speed (EN 13141-7)	ERV: 77%	ERV: 84.7%	ERV: 83%	ERV: 81.1%	ERV: 77.4%	ERV: 77.4%	ERV: 74.3%	ERV: 80.5%
Moisture recovery efficiency 70% speed (EN 13141-7)	ERV: 48%	ERV: 66%	ERV: 53%	ERV: 54%	ERV: 66%	ERV: 61%	ERV: 60%	ERV: 61%
Sound power level through the casing 70% speed (EN13141-7)	HRV: 37dB(A) ERV: 43 dB(A)	49 dB(A)	49dB(A)	50 dB(A)	47 dB(A)	42 dB(A)	46 dB(A)	48 dB(A)
Summer bypass	Automatic partial	Automatic partial	Automatic 100%	Automatic 100%	Automatic partial	Automatic 100%	Automatic 100%	Automatic 100%
Filters	Exhaust: ePM10 55% (M5), outdoor air: ePM1 55% (F7) (S1/S2 ePM10 55% M5)							
Material	Expanded Polypropylene (EPP)		Expanded Polystyrene (EPS)		Expanded Polypropylene (EPP)			
Housing	Sheet metal, powder-coated white or black							
Ducting (mm)	160	200	160	200	125	200	200	200
Condensate drainage	HRV: hose 15 mm x 3 meters, ERV: not equipped, available on order		HRV: 32 mm, water trap included ERV: not equipped, available on order					
Power supply (VAC)	1~230, EU plug							
Maximum current (A)	10	16	16	16	16	16	16	16
Fan maximum power (W)	2 x 83	2 x 170	2 x 118	2 x 163	2 x 83	2 x 83	2 x 170	2 x 170
Pre-heater	Integrated, 0-100% controllable PTC heater							
Nominal power of pre-heater (varies depending on external temperature) (kW)	1.1	1.5	1.35	1.35	1.35	1.5	1.5	2.7
Maximum power without pre-heating kW	0.17	0.35	0.25	0.34	0.17	0.17	0.35	0.35
Maximum power with preheat (kW)	1.9	2.2	2.2	2.2	2.1	2.7	2.7	3.6
Compliance with standards	EN 60335-1, EN 61000-6-3, EN 61000-6-1, Ecodesign Directive 2009/125/EC							
Warranty	2-year standard, 2 additional years under special conditions							
Ventilated air	-20 °C to +50 °C, maximum relative humidity 80%							
Ambient temperature	+5 °C to +40 °C (HRV), -20 °C to +40 °C (ERV)							

Dimensions (mm)	300 x 606 x 1170	301 x 786 x 1200	578 x 800 x 952	578 x 800 x 952	554 x 600 x 690	590 x 699 x 783	590 x 699 x 783	589 x 1021 x 886
Weight (kg)	40	70	60	60	50	50	50	90

User manual

The user manual for the device is continuously updated, and changes may occur according to the software version. You will always find the latest version of the user manual online. If the device is connected to the internet, the software updates automatically.

> During the initial startup of the device, the supply and exhaust airflows must be balanced according to the ventilation project. An unbalanced system may create underpressure or overpressure in the rooms, which in turn reduces the efficiency of heat and moisture recovery during the cold season.

Starting the device

When the device is connected to the power supply for the first time, it begins operation in manual mode at speed 5. Each time it is connected to the power supply, the device checks all sensors and functions. Fans may momentarily go to maximum speed for fan calibration, which may last up to a minute. In the case of a power failure, all user settings are retained, and the device continues to operate with the previous configuration.

Stopping or turning off the device

There are two options for temporarily stopping ventilation:

- MANUAL mode: Turn the device to manual mode using the remote control or mobile app and set the fan speed to 0.
- Turning off: Select "Turn off" on the remote control or in the mobile app. The device will go into standby mode.

To completely turn off the device:

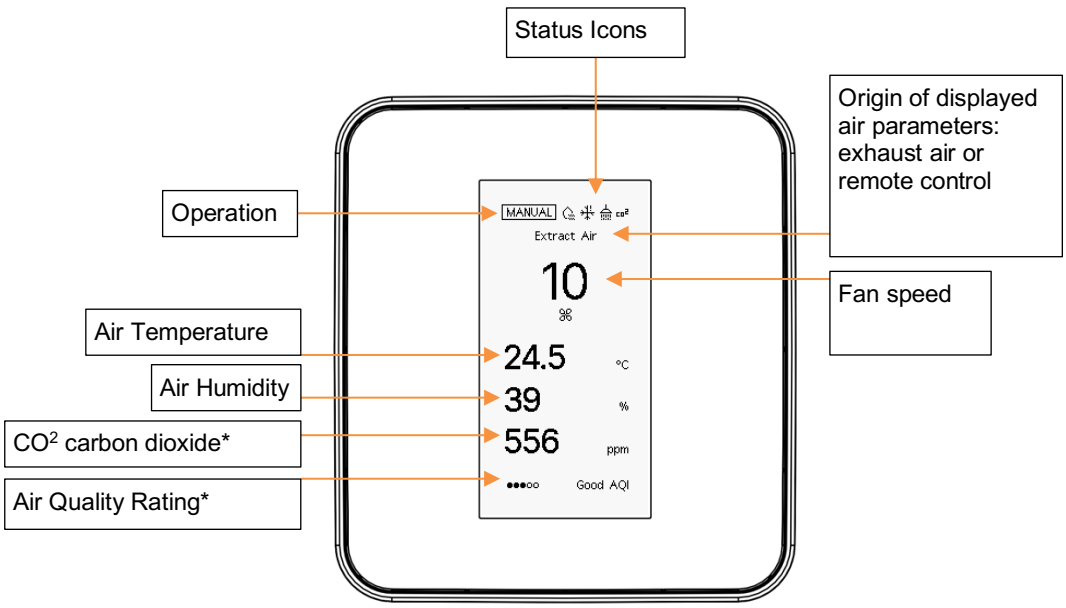
- Stop the device operation using the remote control or mobile app.
- Turn off the ventilation unit's automatic switch from the electric panel or unplug the device's power cable from the electrical outlet.

Important information about turning off

Do not stop or turn off the ventilation unit for more than a few hours, even if you plan to be away for an extended period. A stationary ventilation system can cause excessive humidity and stagnant air in the ducts, and cold outside air can damage the device. For a long absence, set the device to the lowest speed.

If there are automatic dampers in the outdoor and exhaust air ducts and/or extract and supply air ducts (if cold attic installation) that close when the ventilation unit stops, the device can be left stationary for a longer duration regardless of the outside temperature. If the device remains stationary for more than a few days, remove the heat exchanger and dry it (only in the case of an HRV model during the heating period).

Remote control VE1



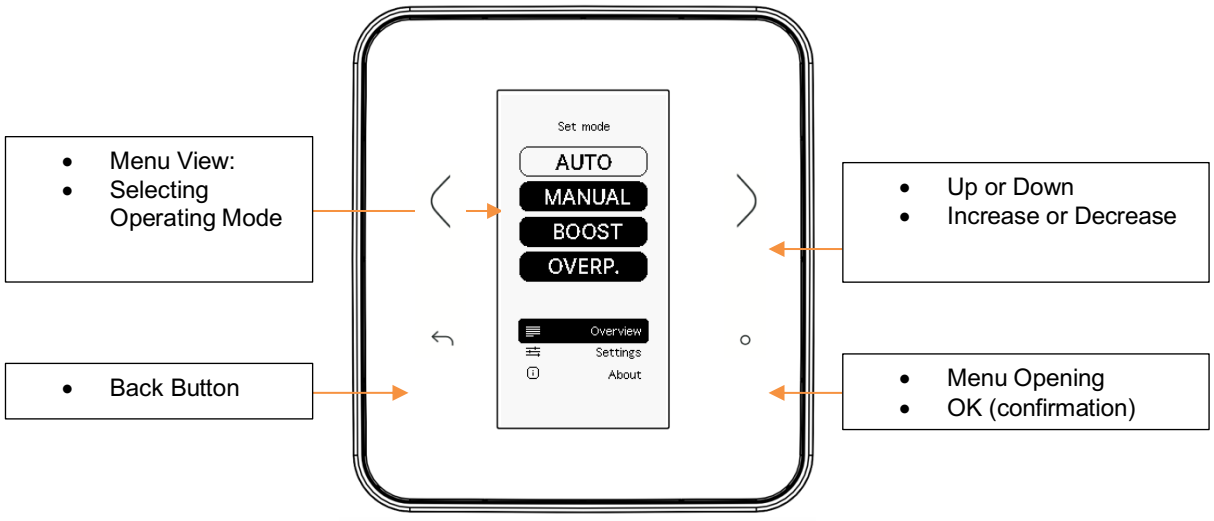
Displaying CO_2 levels and air quality is available only on controllers with an integrated CO_2 sensor (model marking - AQ). Air quality rating is on a scale from 1 to 5. The rating is primarily based on the CO_2 level: 5 indicates very good and 1 indicates poor air quality.

Air parameters are displayed on the controller from two possible sources:

1. **Extract Air / Väljatõmbeõhk** – sensors measure extraction air coming from the ventilation system.
2. **Controller / Juhtpult** – sensors measure the air quality directly in the room where the controller is located.

Explanation of status icons:

Device stopped (frost protection error): Frost protection turned off or malfunctioning	Bypass valve open: air moves directly, bypassing the heat exchanger.	CO2 tase kõrge: ventilatsioon on kiirendatud CO_2 taseme alandamiseks.	Energy-saving mode: Device operates in energy-saving mode.	High humidity: Ventilation is accelerated to reduce humidity.	Humidity rise detected: Automatic humidity rise detection activated.



Connecting the device to a network is recommended, as the mobile application provides access to additional features and advanced settings. Some functions can only be configured through the app.

	OPTION	DESCRIPTION
MAIN MENU	AUTO	Starting Automatic Mode. Next, the CO^2 upper level option will be displayed. Confirm by pressing OK.
	MANUAL	Starting Manual Mode. Next, the ventilation speed is displayed on a scale from 0 to 10. Confirm by pressing OK.
	BOOST	Starting Boost Mode. Next, display the duration selection for the mode from 5 minutes to 6 hours. Confirm by pressing OK
	OVERPRESSURE	Starting Overpressure Mode. Next, display the duration selection for the mode from 5 minutes to 6 hours. Confirm by pressing OK
	OVERVIEW	Opens the view of the device's general parameters, displaying various air parameters and device fan information. Open by pressing OK
	SETTINGS	Opens the view of the device settings. Open by pressing OK
	INFORMATION	Opens the device info view. Open by pressing OK
SUB-MENU		
	OVERVIEW	

	Exhaust Air	Various air parameters of the exhaust air are displayed, such as: temperature, humidity, CO^2, VOC, PM1 (additional), PM10 (additional)
	Supply air, exhaust air, outdoor air	Various air parameters such as temperature and humidity are displayed.
	Filter age	The age of the filters is displayed in days
	Bypass	Closed / open – displays the status of the bypass
	Frost protection operation	Device operation hours since last power interruption or restart
	Supply fan / Exhaust fan	Device fan speed on a scale from 0 to 10 and revolutions
SETTINGS	**FILTER**	
	Filter age in days	The age of the filters is displayed in days
	Filter reminder interval in months	Filter reminder interval can be set – the default recommendation is always 6 months. Press OK to select
	Reset reminder	Current filter age can be reset. Press OK to confirm
	AUTO MODE	The following settings apply when the device operates in automatic mode
	Min. fan speed	1 - 5 Minimum operating speed in automatic mode
	Max. fan speed	6 - 10 Maximum operating speed in automatic mode
	Bypass open min. speed	1 - 10 Minimum operating speed when automation opens the bypass valve
	Energy saving mode	AUTO / ON / OFF
	Excess humidity min. speed	1-10 Minimum operating speed when a sharp rise in humidity is detected
	Max. humidity	40-100% If the humidity in the extract air is higher than the set threshold, the ventilation speed is increased
	OTHER	
	Bypass Mode	AUTO / OFF – operating mode of the bypass valve
	Modbus TCP	OFF / ON - Home automation protocol Modbus TCP
	Language	ESTONIAN / ENGLISH – user interface language of the remote control
	Screen	NORMAL / BLACK – in the black option, the screen background is black and text is white
	Screensaver	ON – after 5 minutes without pressing a button, the screen turns off to save the screen OFF – the screen always stays on, but after 5 minutes from the last button press, the data on the screen is updated once per minute.
	HUMIDIFIER	
	-	
	EXPERT	
	Fan Balance	Allows you to set the operating balance of the fans. Only specialists with the appropriate qualifications may change the balance
	Heat Exchanger Type	HRV/ ERV - The type of heat exchanger is always correctly selected in the factory, this setting needs to be changed if the type of heat exchanger is replaced
	Smart. Heater Control	Smart heater control (BETA) makes preheating or frost protection stepwise from 0-100% which can reduce power consumption for frost protection by 5-25%
	TURN OFF	Shuts down the device and puts it in standby mode. When servicing the device or replacing filters, it must be disconnected from the power supply.
	INFO	
	SN/ID	Unique ID serial code of the device
	Model	Device model
	Firmware	Device software version number
	Hardware	Device controller board number
	Network – Status	Connected / Not connected – displays network status
	IP	Network address when network is connected

Operating Modes

Automatic Mode (control according to air quality)

In automatic mode, the ventilation device operates according to air quality sensor readings. The device measures the quality of the extract air and adjusts the ventilation speed to improve room air quality, or if the quality is good, reduce speed to save energy. In automatic mode, the upper setpoint for humidity, CO_2, VOC, and PM (air quality sensors) levels in the extract air, as well as CO_2 levels in room sensors and thermostats, can be set (if equipped with CO_2 sensor). If any sensor level exceeds the setpoint, the device will attempt to reduce these levels. VOC, PM, and humidity setpoint control are disabled by default but can be enabled in the device settings via the mobile app.

Setting the minimum and maximum operating speed for automatic mode

- **Minimum air flow speed**: The speed at which the device operates when air quality sensor readings remain below the set threshold and no air quality events are detected.
- **Maximum air flow speed**: The highest allowable ventilation speed when air quality sensor readings exceed the set threshold or an air quality change is detected.

Settings can be adjusted according to preferences or designed air flow requirements.

- Control panel VE1: Settings – Automatic mode settings – Min. fan speed / Max. fan speed
- Mobile app: Settings – Minimum air flow speed / Maximum air flow speed

Bypass valve open minimum operating speed

In the summer period, a higher ventilation speed may be desired when outside air is cooler than room air to bring more fresh air into rooms. When the bypass valve opens, the device immediately switches to the selected speed.

Setup:

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

Automatic humidity detection mode

The device can detect a rapid rise in humidity. If the humidity level rises sharply, the device switches to the selected speed to remove excess humidity. This mode usually activates during shower or sauna use and lasts at least 15 minutes or up to 2 hours, depending on humidity level recovery.

Setup:

- Control panel VE1: Settings – Automatic mode settings - Excess humidity min. speed
- Mobile app: Settings – Humidity detection min. speed

Occupancy detection and energy saving mode

Energy-saving mode activates when the device detects that no one is indoors. By default, this occurs when CO_2 levels drop below 550 ppm and no air quality events are detected. The activation threshold for CO_2 levels can be adjusted via the mobile app. The primary purpose of this mode is to reduce energy consumption by lowering ventilation speed when fresh air demand is minimal. This is especially beneficial in winter, as it helps reduce energy usage needed for frost protection.

The effectiveness of this function depends on the average CO_2 concentration in the room, which varies based on the number of occupants and room size. If the system includes Airobot heating control sensors or thermostats that transmit CO_2 data to the ventilation unit, these readings are also taken into account. To enable this feature, it must be activated in the device settings (see “Connecting Thermostats and/or Room Sensors to the Ventilation Device”).

In energy-saving mode, the device switches to speed 1. This is useful when the minimum speed in automatic mode is set to a higher value (e.g., speed 3). If the room is unoccupied, running the system at speed 3 is unnecessary, so the device automatically reduces airflow to speed 1, optimizing energy efficiency.

- ON / On: Energy-saving mode is enabled.
- OFF / Off: Energy-saving mode is disabled and does not activate.

Settings:

- Control panel VE1: Settings – Automatic mode settings – Energy-saving mode
- Mobile app: Settings – Energy-saving mode and occupancy detection

Changing CO_2 threshold (default 550 ppm)

- Mobile app: Settings - Presence detection CO_2 level

Connecting thermostats and/or room sensors to the ventilation device (for air quality control)

Connection is possible with Airobot devices manufactured from 07.2021 (ID/SN starts with V02..). To transmit CO_2 data from room sensors or thermostats, they must be connected to the ventilation device. If the room's CO_2 level exceeds the set point, the ventilation device increases speed. The sensors must have a CO_2 sensor (model designation "-AQ"). The function operates via the Airobot server, so an internet connection is required.

Requirements:

- In the mobile app, the ventilation device, room controller, and/or thermostats must be added to the same home group.

To activate:

- Mobile app Settings – Transmit room sensors' or thermostats' CO2 readings to the ventilation device for air quality-based control

Manual mode

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

Ventilation mode

In ventilation mode, the device operates temporarily at maximum speed (10) and then returns to the previous mode (automatic or manual). This mode is suitable for short-term ventilation of rooms and lasts for the selected duration upon activation (from 5 minutes to 6 hours).

Overpressure mode (fireplace mode)

Overpressure mode creates temporary overpressure by reducing the exhaust fan speed compared to the intake fan and then returns to the previous mode. Useful, for example, when lighting a fireplace or using a kitchen hood to compensate for negative pressure. The duration can be set from 5 minutes to 6 hours. Activation: mobile app, remote control, or pressure switch (EXT-PRSW)

Configuration:

- Mobile app: Settings - Airflow speed in overpressure mode

Important to know:

- In overpressure mode, the airflows are not balanced, resulting in a temporary drop in heat exchange efficiency and supply air temperature.
- A kitchen air hood can create a greater air volume than the ventilation unit can compensate for, which may still create underpressure.
- For heat exchange to function, both supply and exhaust fans must operate; therefore, exhaust cannot be completely stopped.

Air quality sensors in the device

Carbon dioxide (CO_2) sensor

Indoor air quality is primarily assessed based on CO_2 levels. CO_2 is mainly generated by human respiration and the burning of gas or wood (e.g., gas stove, fireplace). Studies show that CO_2 levels reflect human well-being well – affecting sleep, energy levels, and work capacity. High CO_2 levels make it difficult to concentrate and reduce work performance. High CO_2 concentration also indicates poor ventilation, which can increase the risk of virus spread. CO_2 content in the air is measured in units of ppm (parts per million), indicating the number of particles of the substance being examined per million particles.

CO_2 levels are evaluated as follows:

- Good (400–800 ppm) – High air quality.
- Moderate (800–1200 ppm) – Moderate air quality.
- Poor (over 1200 ppm) – Air quality may have a negative impact.

The Airobot ventilation unit measures CO_2 levels with a sensor located in the extract air, providing an averaged value from all ventilated rooms. This helps assess room occupancy and reduce energy consumption if necessary.

Automatic calibration
CO_2 sensors, including the Airobot sensor, require regular calibration, which occurs automatically. For calibration, the sensor requires exposure to clean air levels (400 ppm), assuming the rooms are unoccupied once a week. If windows are often left open during summer, the CO_2 readings may differ from winter, as rooms have a consistently lower CO_2 level. If necessary, the sensor can be manually calibrated under "Expert settings" in the mobile app.

Volatile organic compounds (VOC) sensor

Volatile organic compounds (VOCs) are organic pollutants found in indoor and outdoor air. VOCs originate from various sources, including building materials, furniture, cleaning products, paints, dust, and fragrances. High VOC levels are particularly common in new or newly renovated buildings. VOCs can cause health issues such as irritation of the eyes, nose, and throat, headaches, and dizziness.

The Airobot ventilation device's VOC algorithm monitors the VOC events detected by the sensor and assigns them a VOC index (on a scale of 0–500). The VOC index indicates how the indoor air VOC level has changed, focusing specifically on temporary sources of pollution. The sensor does not distinguish between different gases, so high VOC does not always indicate poor air quality. The sensor measures the content of VOCs and hydrogen (H_2) in the air.

Safe and harmful VOC sources

- Safe VOCs: exhaled moisture, cosmetics, perfumes, beverages, foods.
- Harmful VOCs: carpets, furniture, building materials, paints, varnishes, solvents, cleaning agents, cooking, plastics, adhesives.

VOC index scale and air quality relationship:

- Below 100: VOC content is decreasing in the rooms.
- 100: Default VOC level, no events occurring.
- 150–250: Low-impact VOC event.
- 250–500: High-impact VOC event.

Index 100 is the baseline value for VOC content. When the value falls below 100, the VOC level has decreased compared to the average of the previous 24 hours; if the value rises, the VOC level has increased.

Setup:
The ventilation device can be configured to change speed according to the VOC level. By default, this control is turned off.

- To activate: Mobile App - Settings – VOC Sensor Control
- To set the threshold: In the main view of the mobile app, press the VOC indicator and select the appropriate threshold.

Particulate Matter (PM) Sensor

The PM sensor monitors fine particles (PM 2.5) in the air, which may come from sources such as candles, dust, smoke, and traffic. High PM levels can deteriorate indoor air quality and directly affect health, causing respiratory problems and irritation.

The Airobot ventilation device allows setting the ventilation speed according to PM2.5 levels. The device automatically adjusts the ventilation intensity to reduce the amount of particles in indoor air and keep it at a healthy level. By default, management is turned off.

Recommended thresholds:

- Good (0–12 µg/m³) – The air is clean and of high quality.
- Average (12–35 µg/m³) – Slight air pollution, moderate ventilation may be needed.

- Poor (over 35 µg/m³) – High particulate level, intensive ventilation recommended.

Setup

- To activate: Mobile app > Settings > PM sensor management
- To set the threshold: In the main view of the mobile app, press the PM reading and select the suitable threshold.

Features

Automatic bypass damper (summer cooling)

Airobot ventilation units have a fully automatic summer bypass damper, allowing cooler outdoor air to be directed straight indoors, bypassing the heat exchanger. This helps bring cooler air indoors during the summer period but may not always reduce the indoor room temperature.

- **Models V3, L5, L**: the damper allows partial stop of heat recovery.
- **Models S1, S2, V4, V6, V8 (V8 manufactured from 01.2025)**: the damper allows full (100%) stop of heat recovery.

Bypass modes:

- **OFF / Closed**: The damper is always closed, heat recovery is not stopped.
- **AUTO**: The damper opens or closes automatically when the following conditions are met for at least 15 minutes:
    - The outdoor air temperature is higher than 13°C, preventing condensation accumulation on the ductwork, which may damage building structures.
    - The outdoor air temperature is lower than the extract air temperature from the room. When the outdoor air is warmer than indoors, reverse heat recovery occurs.

Setup:

- **Control VE1**: Settings - Other - Bypass mode
- **Mobile app**: Settings - Summer bypass

Damper position check:

The damper position can be viewed from the control panel in the "INFO" menu or from the mobile app "Device info: Summer bypass".

- **OPENED / Open**: The damper is open, heat recovery does not occur or occurs partially.
- **CLOSED / Closed**: The damper is closed, heat recovery occurs.

Preheating and frost protection

When the outdoor air temperature drops below zero, the device has automatic electric preheating that preheats the air, preventing the heat exchanger from freezing. The device can adjust the freezing threshold based on air volume, humidity, and temperature:

- Standard heat exchanger (HRV): The threshold is 1°C to -2°C.
- Humidity recovery heat exchanger (-ERV model): The threshold is -5°C to -7°C. Humidity recovery devices consume less energy for frost protection and are well-suited for cold climate.

The device maintains normal airflow even in very cold temperatures. In extreme cold, it may gradually reduce airflow or temporarily pause operation to protect itself.

Settings:

- Mobile App: Settings - Expert Settings - Frost Protection ON / OFF
    - ON / On: Preheating is allowed and operates as needed.
    - OFF / Off: Preheating is prohibited (not recommended). The device ventilates for 10 minutes, stops when the outside air is below 0°C, and repeats the cycle every 3 hours. In summer, it is not necessary to turn off preheating because automation applies it only during freezing temperatures.

Filter settings and setting up reminders

Filter replacement is time-based, and a reminder is shown on the control panel or mobile app. The condition of the filters should be checked regularly.

Checking the condition of filters:

- Control Panel VE1: Settings - Filter - Filter Age in Days
- Mobile App: Settings - Current Filter Age

Changing the filter reminder interval (default 6 months):

- Control Panel VE1: Settings - Filter - Filter Reminder Interval in Months
- Mobile App: Settings - Filter Replacement Reminder Interval

Resetting and setting a new filter reminder:

- Control Panel VE1: Settings - Filter - Reset Reminder
- Mobile App: Settings - Reset Filter Reminder

Humidity recovery

Airobot ventilation devices are available with two types of heat exchangers:

- HRV (heat recovery) – returns heat only.
- ERV (energy recovery) – returns moisture in addition to heat. The ERV model features a special membrane that captures the moisture of the exhaust air and partially directs it back into the rooms.

Humidity recovery depends on the moisture production of the rooms. The ERV heat exchanger does not add moisture, and its output cannot be adjusted. If your device is an HRV model, it is possible to replace the heat exchanger with an ERV; contact your dealer for more information.

Balancing airflows and commissioning of the device

Note! The balancing of airflows should be carried out only by qualified specialists and with clean filters. For the HRV model, it is recommended to perform measurements at an outside temperature above 10°C as condensate in the device can affect measurements.

Devices with regular fan control (manufactured before 04.2025)

When connecting the ventilation system, the device must be balanced because the pressures in the supply and exhaust ducts are often different. An unbalanced system can reduce the efficiency of heat and humidity recovery and create overpressure or underpressure in the rooms.

Changing the fan speed ratio:

- Control Panel VE1: Settings - Expert Settings - Fan Balance
- Mobile App: Settings - Expert Settings - Fan Balance
    - +% increases the speed of the exhaust fan.
    - -% increases the speed of the supply fan.

Automatic balancing - In winter, the device continuously monitors humidity, air temperatures, and heat recovery efficiency and adjusts the operation ratio of the fans. During automatic balancing, the operation ratio of the motors is adjusted if necessary, which is deactivated for 30 minutes if the operation ratio is manually changed.

Devices with constant airflow control (manufactured after 04.2025)

Devices equipped with constant airflow control automatically maintain a balanced ventilation system, eliminating the need for manual balancing. These units continuously measure real-time airflow for both supply and extract fans, ensuring that airflow remains stable at a fixed level. If external factors, such as filter clogging, increase resistance, the system automatically adjusts fan speed to maintain balanced ventilation.

Commissioning: Although commissioning is not required, it allows for additional configuration options:

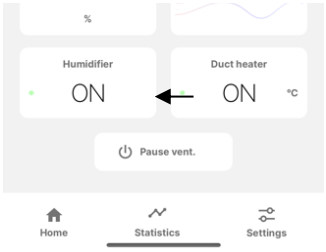
- Setting minimum and maximum airflow limits
- Defining the project-specific airflow rate
- Adjusting the device to a specific airflow level for ventilation valve balancing.

Commissioning is performed via the mobile app by connecting to the device over Bluetooth. You can access the commissioning setup from:

- Settings menu (if logged in): Ventilation: Connect Wi-Fi or Configure
- Signup/Login screen (if not logged in): Configure Device

Simply follow the on-screen instructions in the mobile app to complete the process.

Central humidifier

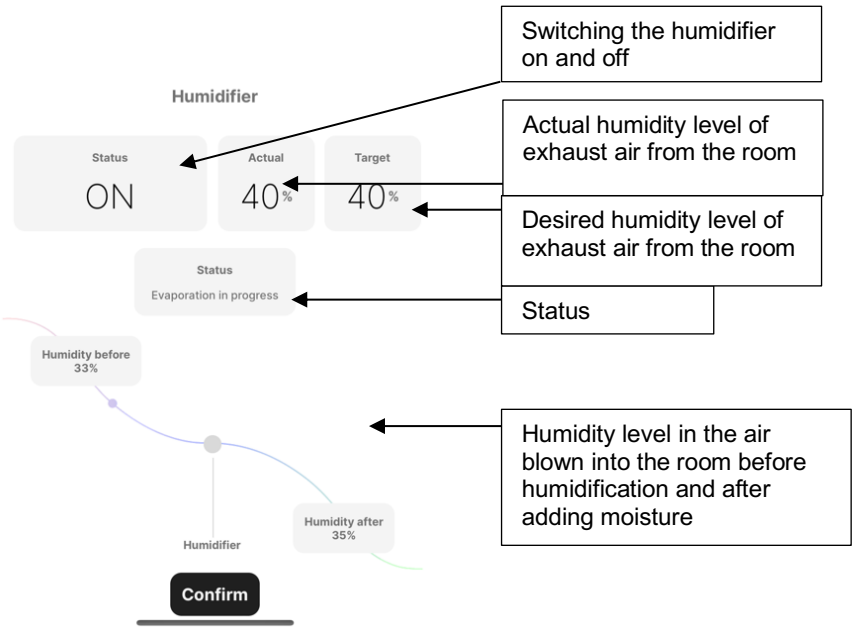


If a humidifier (the humidifier must be connected to the power supply) is connected to the ventilation device with an internet connection, a separate section for controlling the humidifier will appear in the mobile application view of the ventilation device. The purpose of the humidifier is to maintain the user's desired humidity level within the capabilities of the device.

Humidity setting: The user sets the desired humidity level, which the ventilation device monitors and automatically adjusts by measuring the exhaust air humidity. The maximum adjustable exhaust air humidity level is 40%. The humidifier's output is up to 3 kg/h, but the maximum achievable humidity level depends on the building size, air flow, and other factors.

Automatic humidifier regulation

- If the humidity rises above the set level (+3%), the humidifier temporarily stops and resumes operation when the humidity falls 3% below the desired level.
- The humidifier automation keeps the humidity level of the supply air below 75% to prevent moisture in the ductwork.



Humidifier on and off

- ON – Humidifier is allowed to operate.
- OFF – Humidifier is in standby mode and not operating.

Energy efficiency mode

When the ventilation unit is in automatic mode and presence detection is active, the humidifier will be turned off when the energy-saving mode is activated to conserve energy.

Setting up the home automation protocol Modbus

Airobot devices can be controlled using the ModBus RTU or ModBus TCP/IP protocol.

- **ModBus RTU:** Connect the wires to terminals A and B of the LCD remote control as per the installation guide. With a ModBus RTU connection, the ventilation unit cannot be controlled via the remote control.
- **ModBus TCP/IP:** To connect the ventilation unit via ModBus TCP, it must be connected to the local network with LAN connection. By default, ModBus TCP is turned off and can be activated via the remote control or, if necessary, through remote management by Airobot customer support. To activate:
    - Remote VE1: Settings > Other > Modbus TCP (select ON)
    - Airobot remote support: contact Airobot customer support to activate the feature

The ModBus parameter table is available on the Airobot customer support website. Home automation setup should only be performed by qualified professionals. Incorrect configuration may damage the device or its surrounding environment.

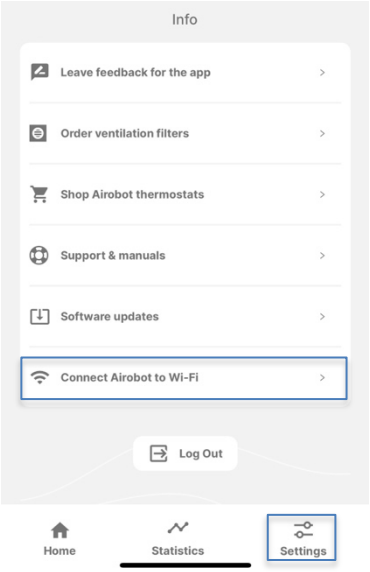
Connecting to the internet network

There are two options for establishing an Internet connection for the Airobot ventilation unit:

- Wired connection: Connect the Internet cable to the device's network socket located next to the power cable.
- Wireless Wi-Fi connection (only 2.4 GHz):
    - Wi-Fi connection is available only on devices manufactured from 09.2024 onwards. Wi-Fi capability can be identified if there is an external antenna near the device's power cable.
    - Wired and Wi-Fi connection cannot be used simultaneously.

Setting up Wi-Fi connection from the mobile app:

- Settings menu (if logged in): Ventilation: Connect Wi-Fi or Configure
- Signup/Login screen (if not logged in): Configure Device



Mobile Application

The Airobot ventilation unit can be conveniently controlled via the Airobot 2 mobile app, when the device is connected to the internet. Each device has a unique identification number (SN/ID), which can be found on the product label or front panel of the device. With this ID and password, the device can be paired with the mobile app.

The "Airobot 2" mobile app can be downloaded from the Google Play Store or App Store. When using the app for the first time, you must create a user account and follow the on-screen instructions to connect the device to the app.

iOS mobile app App Store

Android mobile app Google Play Store

Security and Privacy

Information between the device, server, and mobile app is transmitted securely and encrypted. With an internet connection, the device sends data every 30 seconds to the server (e.g., air temperature, humidity), based on which relevant information and statistics are displayed to the user in the mobile app. Data may be used anonymously for product improvement and analysis.

Remote Control and User Support

Airobot devices can also be managed remotely. By contacting user support and providing your device ID, you enable user support to access the device data to offer a better user experience and faster assistance. To protect privacy, there is no link between the user and the device - Airobot support identifies devices only based on the transmitted device ID. Transmitting the device ID gives user support permission to view device data, which helps identify and resolve issues.

Identifying Errors and Problems

ERROR	Error Code	CAUSE	SOLUTION
Fan Alarm	FAN1_SUPPLY FAN2_EXTRACT	The motor software may need to be restarted. Another possible cause is a physical failure of the fan.	Disconnect the device from the power supply for 5 minutes and reconnect it. If the error message appears again immediately, it may be a physical failure – contact the distributor.
Sensor Alarm	SENSOR1_EXTRACT SENSOR1_EXTRACT_CO2 SENSOR2_SUPPLY SENSOR3_OUTSIDE SENSOR4_EXHAUST SENSOR5_EXTRA	Sensor software failure. Another possible cause is a physical failure of the sensor	Disconnect the device from the power supply for 5 minutes and reconnect it. If the error message appears again immediately, it may be a physical failure – contact the distributor.
Filter Alarm	FILTER_OVERDUE	The filters' lifespan has expired, and new filters need to be installed.	Install new filters and reset the reminder. If you have already replaced the filters, manually reset the reminder as the device does not do it automatically.
Fire alarm	FIRE_ALARM	The alarm may be triggered by the ATS system or the device's internal fire alarm (if the air temperature in some duct is > 50 °C).	Check if the alarm was caused by the ATS system or the device's internal alarm. If there is no danger, reset the alarm by pressing the button on the control panel, selecting 'RESTART' in the mobile app, or disconnecting the device from the power for 5 minutes.
Supply air temperature too low.	LOW_SUPPLY_TEMP	Supply air temperature is below 5 °C	Identify the cause of the problem (see table 'Problem - Supply Air Temperature is Too Low') and restart the device by disconnecting it from the power. If the problem persists, contact the dealer.
Heat exchanger type not set in configuration	EXCH_CNFG_NOT_SET	Due to a software update, part of the settings may be erased from memory	Go to Settings - Expert and set the heat exchanger type according to the device: either HRV (standard) or ERV (moisture recovery). The type is indicated on the product label.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Device is operating, but speed is 0 (fans are not running)	Anti-freeze protection is activated because preheating is turned off.	Turn anti-freeze protection back on: Mobile App > Settings > Expert Settings > Anti-freeze ON. Restart the device by disconnecting it from the power.
	Anti-freeze protection activated due to preheater failure	If the settings are correctly set (preheater is enabled) and the problem persists, contact the dealer.
There is constant negative pressure in the rooms, or heat recovery	Supply and exhaust air volumes are imbalanced	The fan duty cycle should be balanced by a professional, including ceiling outlets of the ventilation system.
	Ducts or filters are blocked, supply air is not working correctly.	Check and, if necessary, replace the outdoor air filter. You can also try operating temporarily without a filter (put the filter covers back on) and observe heat recovery efficiency. Also

efficiency is too high (over 95%)		check system components (such as pre-filter or outdoor air intake grille) to ensure they are not obstructed.
Supply air temperature is too low or heat recovery is very low (below 70%)	Supply and exhaust air volumes are unbalanced	The operating ratio of the fans must be balanced by a professional, including the ventilation system plenums.
	The exhaust duct is not properly insulated, causing the air to cool in the duct.	If the exhaust temperature of the unit is significantly lower than the room air temperature, it may indicate poorly insulated ductwork. If the ductwork is uninsulated, stop using the device and insulate the ductwork to prevent condensate accumulation.
	Blockage in ductwork or filters, extraction is not working properly	Check the exhaust filter and replace if necessary. You can also try temporarily operating without the filter (put the filter covers back) and monitor the heat recovery efficiency.
	The heat exchanger is frozen.	Remove and defrost the heat exchanger, contact the dealer if necessary, as the device may require more precise configuration.
	The bypass valve is open (failure), and cold air is entering the supply air.	Contact the dealer
The device does not connect to the internet network (the app shows no network connection)	Internet network problem Problem with the network cable or cable connector	Check that there is an internet connection in the building. Check if the connecting cable has an internet connection (test with a laptop by turning off Wi-Fi).
	Configuration problem	Ensure that Modbus TCP is off (Controller VE1 - Settings - Other - Modbus TCP - OFF).
	Problem with the internet socket on the device casing	Connect the network cable directly to the "ETH" slot on the device's motherboard and remove the extension cable. Restart the device by unplugging it from the power supply.
	Other local network issues	Try connecting the device to an external 3G/4G router to rule out potential home network configuration issues.

Warranty conditions

Warranty duration: A manufacturer warranty of 2 years from the date of purchase applies to Airobot ventilation devices and accessories. If more than three months have passed since the device's manufacturing date by the date of purchase, the warranty is valid from the third month after the manufacturing date. The warranty period is meant to cover any material or manufacturing defects that may occur during normal use. To ensure the validity of the warranty, a proof of purchase is required, or in its absence, the product's manufacturing date based on the serial number. To keep the warranty valid, the ventilation device must be maintained in accordance with the user manual

Manufacturer’s Extended Warranty

To receive a 2-year extended warranty (total of 4 years), the ventilation device must meet both of the following conditions:

- It must be permanently connected to the internet within 6 months of the manufacturing date.
- The end-user must create an account in the Airobot mobile app and link the ventilation device to their account.

The start of the entire 4-year warranty period will be counted according to the conditions listed under Warranty Duration.

Additionally, to maintain the validity of the extended warranty, the device must be maintained according to the user manual, and only original Airobot filters must be used throughout the entire warranty period. Filters must be replaced every 6 months, or more frequently if indicated by the device or usage conditions. Use of non-original filters or failure to perform regular maintenance may void the extended warranty.

Coverage: During the warranty period, the manufacturer or an authorized service partner will, at their discretion, repair or replace any component or part identified as defective due to materials or other failure. Manufacturer's warranty does not cover:

- Damages caused by misuse, negligence, accidents, or improper handling.
- Any modifications made to the product without the manufacturer's permission.
- Normal wear and tear, including scratches, dents, and cosmetic damage.
- Consumable parts, such as filters, unless otherwise specified.
- Damage caused by liquids, extreme temperatures, or environmental factors beyond normal operating conditions.
- Software-related issues, including but not limited to data loss or corruption.
- Accessories or components not included with the original product.

Presence of defects: In case of warranty claim, the owner must contact the dealer or manufacturer's customer support through the manufacturer's website. The owner may be required to provide proof of original purchase, a description of the issue, and any other required 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 manufacturer's discretion. Repaired or replaced products will have the remaining original warranty period or 6 months, whichever is longer.

Important reminder
The device must be regularly maintained, so it must be placed in an easily accessible location, and the conditions for the space required for maintenance established for each model must be followed. Failure to comply with the conditions may hinder servicing (maintenance and repair) of the device, and the manufacturer or dealer has the right to refuse servicing until the necessary conditions are met.

Customer support and contact

Connect the device to the internet to receive software updates.

Software updates may result in changes to the user manual; the updated version is always available on the customer support page www.airobothome.com/abi.

We appreciate any feedback on device usage, features, etc., at info@airobothome.com.

Manufacturer information
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Customer support and manuals
www.airobothome.com/abi

Ordering filters
www.airobothome.com/filtrid

User manual version 06.2025