



AlphaFreshbox 60

Manual

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Version: 01

Scope of contents

1	Introduction.....	4
2	Safety notes.....	4
2.1	Unit mounting safety precautions.....	5
2.2	Unit operating safety precautions.....	7
3	Intended use.....	10
4	Scope of delivery	11
5	Technical data.....	12
6	Dimensions	13
7	Design and operating logic	14
8	Mounting and operating	16
8.1	Mounting.....	16
8.2	Speed switch.....	23
8.3	Operating.....	27
9	Maintenance.....	28
10	Troubleshooting	29
11	Transport and storage	31
12	Disposal	32
13	Two-year warranty	32
14	Support and Contact	33
14.1	Troubleshooting/FAQ.....	33
14.2	Contact Us	33

1 Introduction

The single-room unit is designed for efficient energy saving supply and exhaust ventilation of flats, houses, cottages and other small premises.

2 Safety notes



Read the user's manual carefully prior to the operation and installation of the single-room heat recovery unit, hereinafter the unit.

Read the manual carefully and keep it as long as you use the unit.

While transferring the unit control the user's manual must be turned over to the receiving operator.



Installation and operation of the unit shall be performed in accordance with the present user's manual as well as the provisions of all the applicable local and national construction, electrical and technical codes and standards.



The warnings contained in the present user's manual must be considered most seriously since they contain vital personal safety information.



Failure to follow the safety regulations may result in an injury or unit damage.

2.1 Unit mounting safety precautions



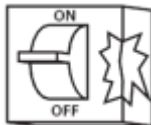
The unit must be disconnected from the power supply prior to every installation or repair operation.



The unit must be grounded!



The unit must not be operated outside the temperature range stated in the user's manual or in aggressive or explosive environments.



Do not use damaged equipment or conductors to connect the unit to power mains.



While installing the unit follow the safety regulations specific to the use of electric tools.



Unpack the unit with care.



Do not change the power cord length at your own discretion. Do not bend the power cord. Avoid damaging the power cord.



Do not position any heating devices or other equipment in close proximity to the unit power cord.



All mounting and servicing operations are allowed for duly qualified electricians with valid electrical work permit for electric operations at the units up to 1000 V after careful study of the present user's manual.

Make sure the impeller and the casing are not damaged before connecting the unit to power mains. The casing internals must be free of any foreign objects which can damage the impeller blades.

Take measures to prevent contact with the fan to avoid physical damages during the unit test and start-up.

Misuse of the product or any unauthorized modification are not allowed.

Take steps to prevent ingress of smoke, carbon monoxide and other combustion products into the room through open chimney flues or other fire-protection devices. Sufficient air supply must be provided for proper combustion and exhaust of gases through the chimney of fuel burning equipment to

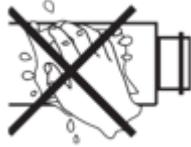
prevent back drafting. The maximum permitted pressure difference per living units is 4 Pa.

The transported air must not have an aggressive effect on steel at the temperature stated in the table 1 of the section “Technical data”.

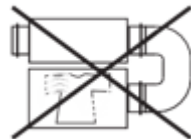
2.2 Unit operating safety precautions



Do not touch the controller or the remote control with wet hands. Do not carry out the unit maintenance with wet hands.



Do not wash the unit with water. Protect the unit electric parts from water ingress.



Use the unit only as intended by the manufacturer. Do not connect clothes dryers or similar equipment to the unit or the ventilation system!



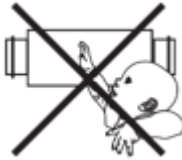
Do not put any containers with water, for example vases on the unit.



Do not sit on the unit and do not put any objects on it.



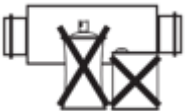
All operations related to the unit electrical connections, servicing and repair works are allowed only after the unit is disconnected from power mains.



Do not let children operate the unit.



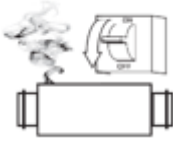
Do not damage the power cable while operating the unit. Do not put any objects on the power cable.



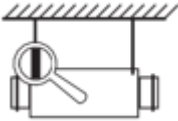
Keep explosive and inflammable products away of the unit.



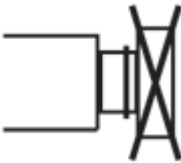
Do not open the operating unit.



In case of unusual sounds, smoke disconnect the unit from power supply and contact the service centre.



In case of long lasting operation of the unit check the mounting reliability periodically.



Do not close or block the unit intake or exhaust vent not to disturb the normal air passage.



Do not let air flow from the unit be directed to the open flame devices or candles.



The unit is not intended to be used by children, physically or mentally disabled persons, persons with sensory disorder, persons with no appropriate qualification.



Installation and connection operations must be performed only by properly qualified personnel after the appropriate safety briefing.



The unit installation place must prevent access by unattended children.

3 Intended use

The unit complies with the requirements according to the EU norms and directives, to the relevant EU-Low Voltage Equipment Directives, EU- Directives on Electromagnetic Compatibility.

The single-room heat recovery air handling unit is an energy saving appliance based on heat recovery technology. It is one of the energy saving components used in buildings and premises. The unit is a component part of a ventilation system and is not designed for stand-alone operation.

The unit is designed to arrange permanent controllable air exchange in flats, cottages, hotels, cafes and other domestic and public premises. The filtered air is warmed up by means of the recovered extract air heat energy.

The unit is designed for wall surface mounting. The unit is rated for continuous operation.

The unit is designed for connection to AC single-phase power mains, see "Technical Data". The unit is rated for permanent operation during non-stop power supply.

The unit is designed for indoor application with the ambient temperature ranging from +1 °C up to +40 °C and relative humidity up to 80%.

The transported air temperature must be from -20 °C up to +50° C. The unit is classified as a class I electric appliance. Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, coarse dust, soot and oil

particles, sticky substances, fibrous materials, pathogens or any other harmful substances.

Ingress Protection (IP) rating from solid objects and liquids: IP 44 for the unit motors;

IP 22 for the assembled unit integrated into air ductworks.

The unit design is regularly improved, so some models may slightly differ from those ones described in this manual.

4 Scope of delivery

Please check the completeness of the scope of delivery using the following parts list:

1x AlphaFreshbox 60 ventilation unit

1x Sensor speed switch

1x Power cable

2x Screw 5.0x50

6x Dowel 8x40

1x Operation manual

1x Master plate

1x Speed Switch

Mounting kit:

2x Plastic ventilation pipe \varnothing 125 mm, 500 mm long

1x Paper template

1x External ventilation bonnet

5 Technical data

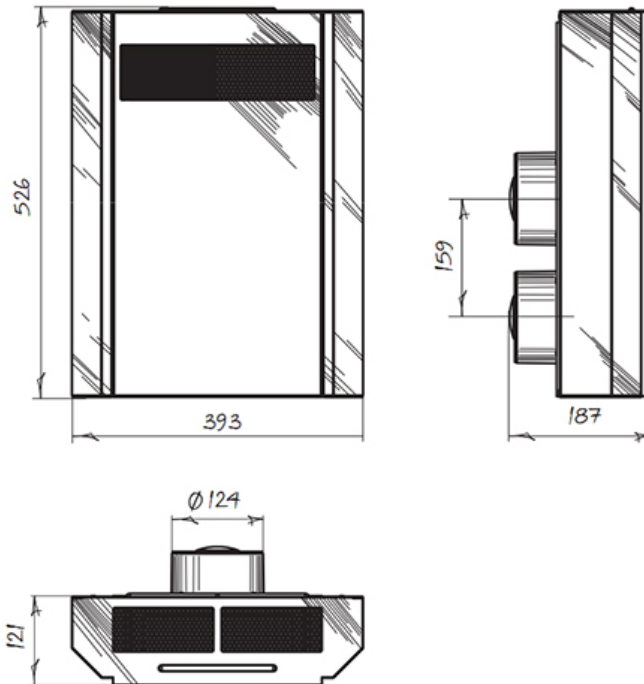
Unit voltage	100-240 V		
Frequency	50-60 Hz		
Speed	min	med	max
Power	4.2 W	9.6 W	15.4 W
Current	0.02 A	0.04 A	0.07 A
Max. air flow	30 m ³ /h	45 m ³ /h	60 m ³ /h
RPM	1165	1720	2685
Sound pressure level at 3 m distance	22 dBA	25 dBA	29 dBA
Max. medium temperature	-20° C up to +50° C		
Filter: extract/supply	G2		
Heat recovery efficiency	79 %	74 %	70 %

Heat exchanger type counter-flow

Heat exchanger material polystyrene

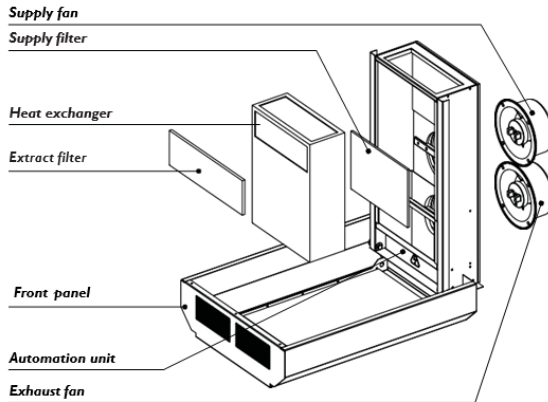
Ingress Protection Rating IP22

6 Dimensions



Weight: 10.3 kg

7 Design and operating logic



The unit casing is made of painted steel, internally filled with a layer of heat- and sound-insulating material.

The unit casing incorporates a plate heat exchanger, a supply and an extract fan.

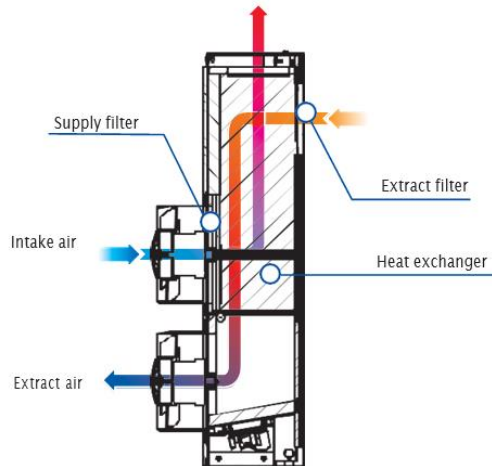
The front panel is installed on the rotating sleeves to enable quick access for the unit servicing.

The casing bottom is equipped with a protecting service panel to enable service access to the automation unit.

The G4 supply filter is installed between the fan and the heat exchanger to provide supply of filtered air to the room. The G4 extract filter is installed in the upper part of the front panel.

The temperature sensor downstream of the heat exchanger in the exhaust air duct provides the heat exchanger freezing protection. If the exhaust air temperature drops down below +3 °C the heat exchanger

freezing danger is registered. In this case the supply fan is turned off and the unit operates in the extract mode only. After the heat exchanger is warmed up and the freezing danger is no longer imminent the unit reverts to the standard operation mode.



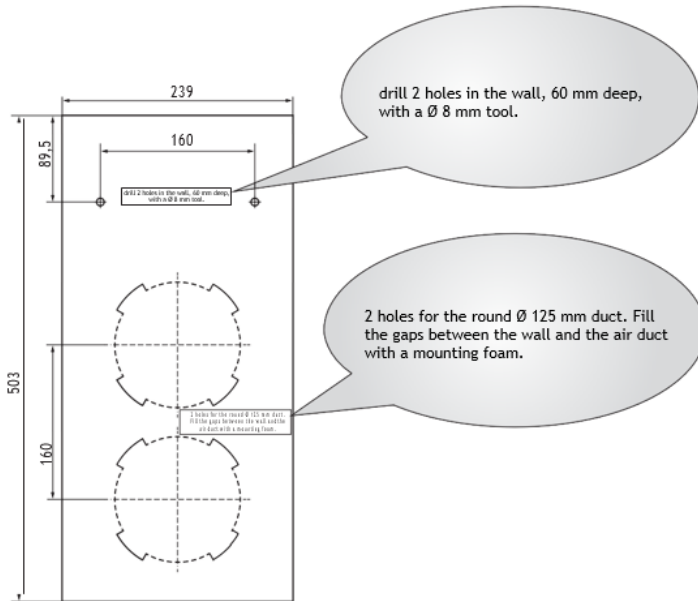
Warm stale extract air from the room flows through the air ducts to the unit, is purified in the extract filter, then it is moved to the heat exchanger and exhausted outside by the extract fan. Clean cold air from outside is moved by supply fans to the unit where it is purified through the supply filter. Then clean air flows through the heat exchanger and is supplied to the room.

Heat energy contained in the warm extract air is transferred to the fresh intake inside of the heat exchanger. Heat recovery minimizes heat energy losses and operating heating costs.

8 Mounting and operating

8.1 Mounting

The unit mounting is carried out with the master plate from the delivery set and two air ducts of required length.



Paper master plate for hole marking

The MK-Freshbox 60 mounting kit is specially designed for installing the unit in a finished room. It contains two plastic air ducts with a length of 500 mm, a master plate for marking drill

holes and an outer ventilation bonnet that prevents foreign bodies from entering the interior of the unit.

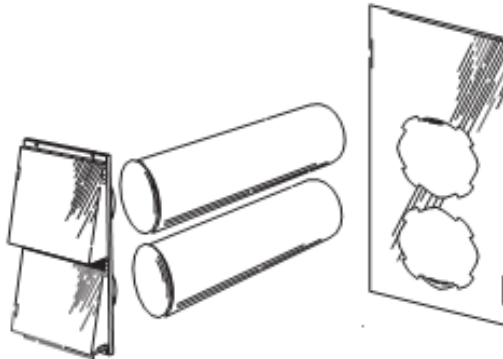
The MK-Freshbox 60 mounting set includes:

2x plastic air duct \varnothing 125 mm (\varnothing 5"), 500 mm (19 11/16") long

1x paper master plate

1x outer ventilation hood

4x 8x40 screw and dowel



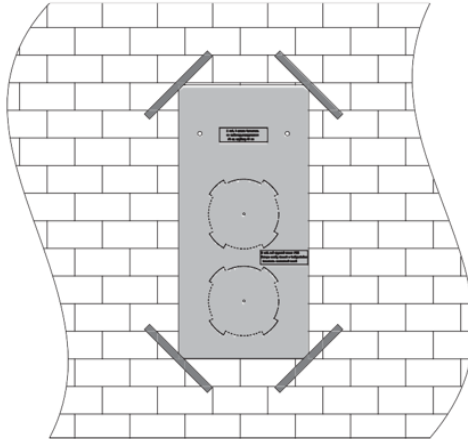
If the building's wall thickness is above 500 mm prepare two extra \varnothing 125 mm air ducts of required length.



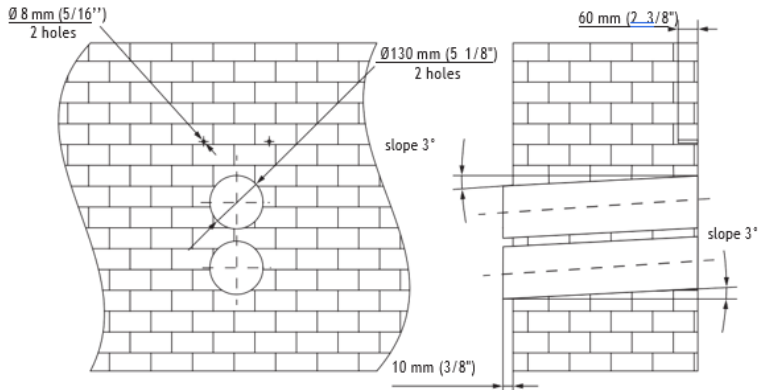
The set is optionally included in the scope of delivery.

The AlphaFreshbox 60 is mounted as follows:

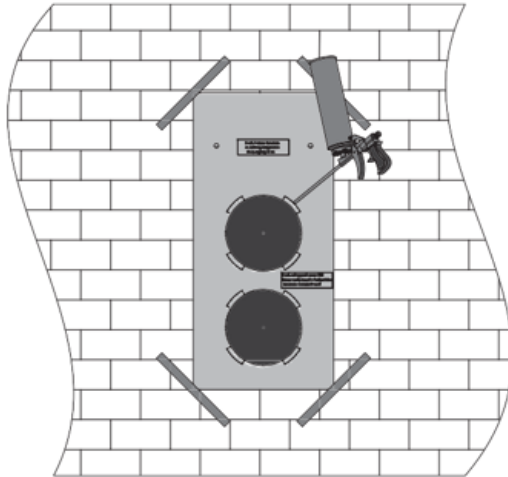
1. Fix the master plate from the delivery set on the wall with a sealing tape on a required level.



2. Use a master plate to mark two \varnothing 130 mm holes for the air ducts and two \varnothing 8 mm holes for the dowels.
3. Remove the master plate and drill through holes for the air ducts and the 60 mm deep holes for the dowels. Drill the holes for the air ducts sloped down by 2-3°. Then insert the dowels (included into delivery set) into respective holes.



4. Re-install the master plate with a sealing tape back. Fix the master plate from the MK-Freshbox 60 mounting kit on outer wall side to align the air ducts with respect to each other. Fix the master plate from the mounting kit somewhat lower to ensure the minimum required slope 3°. Before mounting the master plate press the perforated holes to remove the master plate fragments and prepare holes for the air ducts.
5. Insert the air ducts inside the holes in the master plate designed for the air ducts and seal those with a mounting foam through the holes in the master plate. Install the air ducts sloped down by 2-3° to ensure the condensate drainage from the unit.
6. After the mounting foam gets hard (see the solidification time in the product specification) remove the master plate and cut off the protruding parts of the air ducts to be flush with the inner wall. On outer wall side, the air ducts must protrude for 10 mm to prevent condensate dropping on the wall.



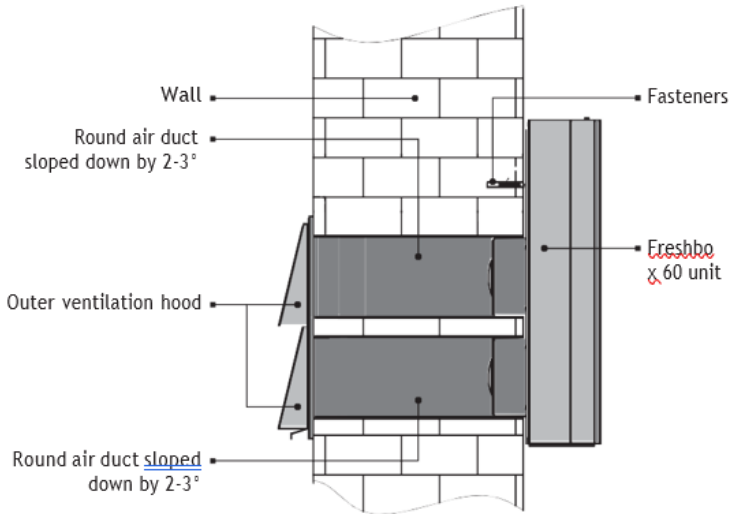
7. Unit installation sequence:

Open the front panel and remove the heat exchanger.
Connect the unit spigots to the plastic air ducts.

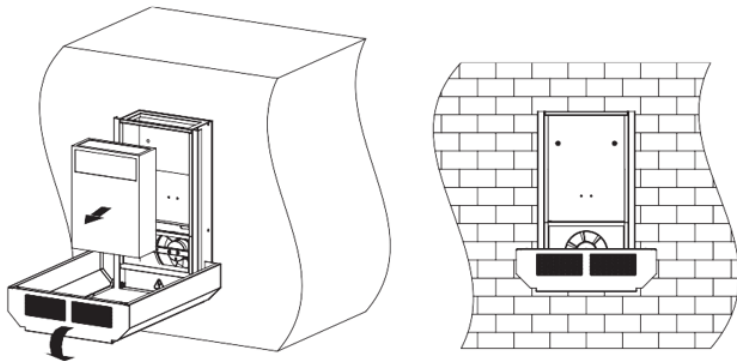
Fix the unit to the wall with the screws 5,0x50 from the delivery set by inserting those to the $\varnothing 8$ mm holes.

Install the heat exchanger and close the front panel.

Install the outer ventilation hood on outer side of the building to prevent ingress of large foreign objects into the air ducts.

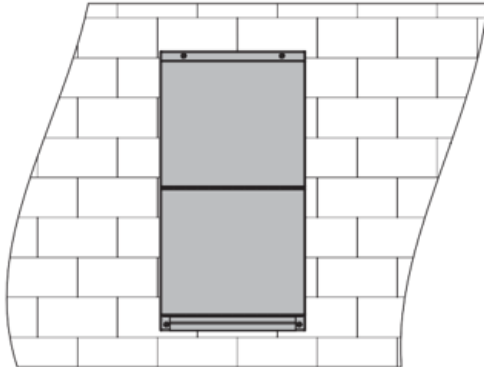


You may use other ventilation grilles and hoods of the matching size.



Installation of the outer hood is carried out with four 8x40 screws and dowels and is carried out as follows:

1. Lean the outer ventilation hood against the wall
2. Mark fastening holes
3. Drill four \varnothing 8 mm holes, 40 mm deep
4. Install 8x40 dowels
5. Install the ventilation outer hood
6. Fix the outer hood with screws



8.2 Speed switch



Make sure that the speed switch is not damaged.



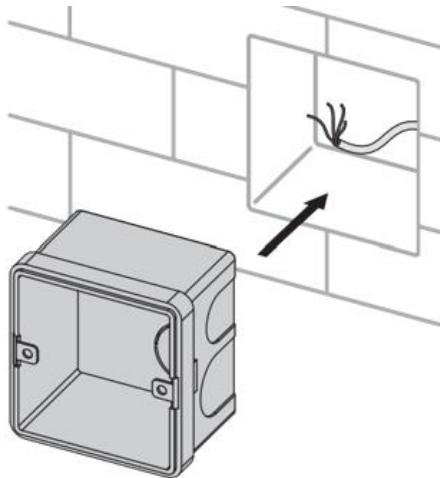
Do not operate a damaged speed switch.



Do not install the speed switch on an uneven surface!

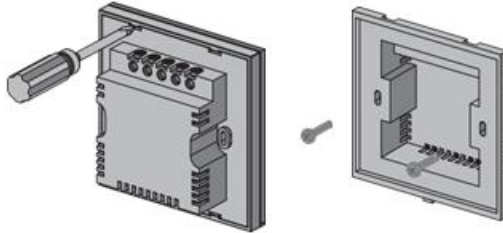
The speed switch is mounted as follows:

1. Route all the required cables and wires to the speed switch installation place.
2. Insert the junction box from the delivery set inside the wall.

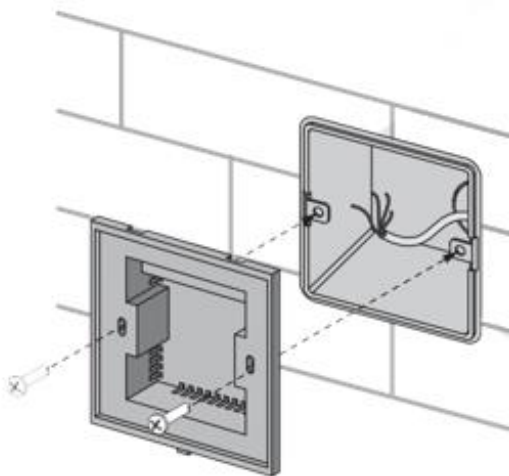


3. Undo gently the switch front panel latches.

4. Remove the back panel.



5. Fix the back panel to the wall through the fastening openings.



6. Connect the control cable to the sensor speed switch following the wiring diagram.



Disconnect the unit from power mains prior to any electric installation operations.

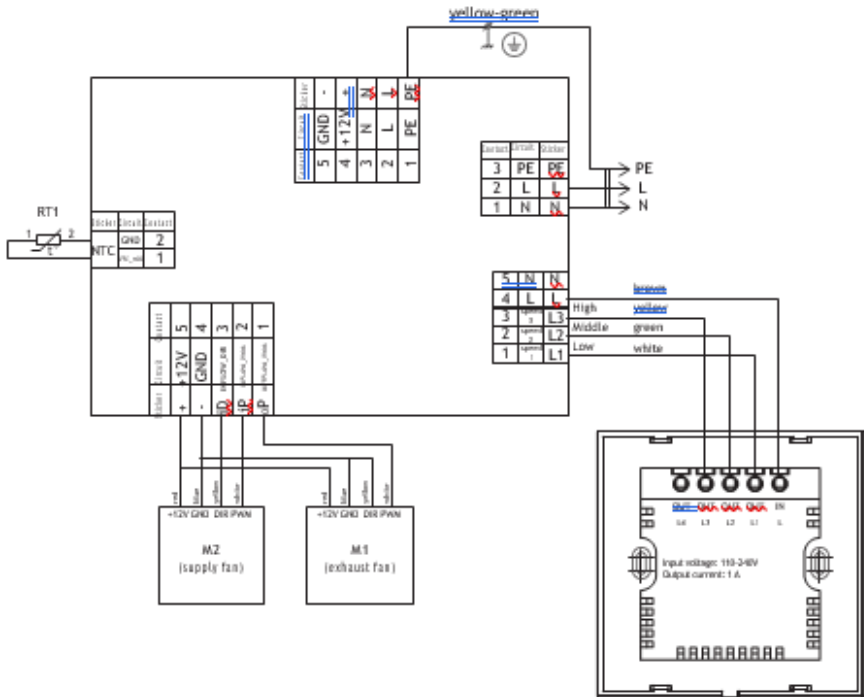


Work on 230 volts may only be carried out by a qualified person!



Connect the unit to a correct installed socket with a grounded terminal.

- The unit is rated for connection to single-phase ac 1~100-240 V/ 50-60 Hz power mains.
- The control unit is installed under the unit protecting panel.
- The unit is connected to the control unit via a 3 m long four-wire cable from the delivery set.
- Each wire cross section is min. 0.25 mm².
- The maximum length of the cable from the unit to the control unit is 30 m.



7. Install the front panel of the speed switch on the latches



Do not apply excessive forces while tightening the screws to avoid the speed switch casing deformation.

8.3 Operating

The sensor speed switch is designed for switching on/off and operation mode selection:

1. Air flow 30 m³/h
2. Air flow 45 m³/h
3. Air flow 60 m³/h

Touch a respective speed button to activate a required speed of the connected air handling unit.

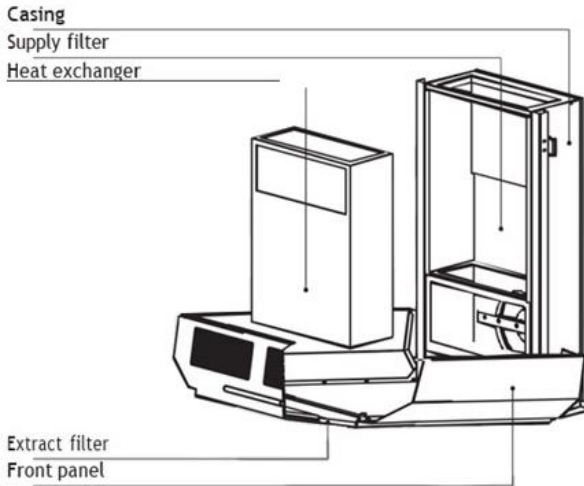
Touch a respective speed button to change the selected speed. The respective speed button has blue highlighting. Touch a current fan speed button once again to turn the air handling unit off.

The sensor panel has no light indication when the unit is off. Every time the sensor panel is touched a sound signal is generated.

9 Maintenance



Disconnect the unit from power supply before any maintenance operation with the unit.



The recommended unit maintenance periodicity is 3-4 times per year.

Maintenance of the unit means regular cleaning of the surfaces of dust and cleaning or replacement of the filters.

To remove dust use a soft brush, cloth or a vacuum cleaner. Do not use water, abrasive detergents, solvents, sharp objects. The impeller blades must be cleaned once in year.

Clogged filters increase air resistance and impair the unit air capacity. Clean the filters with a vacuum cleaner or flush under running water. The filters must be cleaned at least 3-4 times

per year. You can find replacement filters for both supply and exhaust air in our RadonShop.

Clean the heat exchanger regularly to maintain its high heat recovery efficiency. Remove the heat exchanger of the unit prior to the cleaning operation. Clean the heat exchanger with a vacuum cleaner or flush it under running water.

10 Troubleshooting

Problem	Possible reasons / handling
	No power supply. Make sure that the unit is properly connected to the power mains and make any corrections, if required.
The fan does not start up.	The motor is jammed, the impeller blades are clogged. <ul style="list-style-type: none"> • Turn the unit off. Troubleshoot the motor jam. • Clean the blades. • Restart the unit.
Automatic switch tripping.	Overcurrent resulted from short circuit in the electric circuit. <ul style="list-style-type: none"> • Turn the unit off. • Contact the service centre.
Low supply air temperature.	The extract filter is clogged. Clean or replace the extract filter.

The heat exchanger is frozen.
 •Check the heat exchanger for icing.
 •Turn the unit off and let ice melt.

Filter oder Gitter der Rohrblenden verstopft.
 Reinigen oder ersetzen Sie die beiden Filtermatten. Möglicherweise hat sich das Gitter der äußeren Rohrblende mit angesaugtem Staub verstopft und muss gereinigt werden.

Low set fan speed.
 Set higher speed.

Low air flow.
 The filters, the fans or the heat exchanger is (are) soiled.
 •Clean or replace the filters.
 •Clean the fan and the heat exchanger.

The impeller is soiled.
 Clean the impeller(s).

High noise, vibration.
 Loose screw connection.
 Tighten the screws.

No anti-vibration connectors are installed.
 Install the anti-vibration connectors (not included into the delivery set).

11 Transport and storage

Transportation of the unit is allowed by any vehicle provided the unit is transported in the original package and is protected against weather and mechanical damages.

Use hoist machinery for handling and transportation to prevent possible mechanical damages of the unit. Fulfil the requirements for transportation of the specified cargo type during cargo-handling operations.

Store the unit in a dry and cool place in the original packing.

The storage environment must not be subjected to any aggressive and/ or chemical evaporations, admixtures, foreign objects that may provoke corrosion and damage connection tightness.

Store the unit in an environment with minimized risk of mechanical damages, temperature and humidity fluctuations.

Do not expose the unit to the temperatures below +5°C and above +40 °C .

Connection of the unit to power mains is allowed after the unit has been kept indoor for minimum two hours.

12 Disposal



WARNING

Do not dispose in domestic waste.

The unit contains in part material that can be recycled and in part substances that should not end up as domestic waste.

Dispose of the unit once it has reached the end of its working life according to the regulations valid where you are.

13 Two-year warranty

We warrant this unit for a period of two years from the date of sale. If a material or manufacturing defect occurs within the 2-year warranty period, the unit will be repaired or replaced at our expense.

The warranty service requires that sufficient proof, e.g. a proper invoice, is provided and that the warranty claim is made within the warranty period.

The warranty does not cover parts of the device that are subject to normal wear and tear (e.g. filters) and can therefore be considered wear parts.

The warranty is void if the device has been damaged, improperly used or maintained.

In the event of a warranty claim, we recommend that you first contact us.

To obtain this warranty service, please contact us at:

info@radontec.de

14 Support and Contact

14.1 Troubleshooting/FAQ

You will find answers to the most frequently asked questions on our website:

<https://www.radontec.de>

14.2 Contact Us

Should you have any further questions or require further help and technical support, please do not hesitate to contact us.

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