

USER'S MANUAL

TwinFresh Expert RA1-50
TwinFresh Expert RM1-50
TwinFresh Expert Duo RA1-30



Single-room reversible energy recovery ventilator

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This user's manual is a main operating document intended for technical, maintenance, and operating staff.

The manual contains information about purpose, technical details, operating principle, design, and installation of the TwinFresh Expert (Duo) RA/M1 unit and all its modifications.

Technical and maintenance staff must have theoretical and practical training in the field of ventilation systems and should be able to work in accordance with workplace safety rules as well as construction norms and standards applicable in the territory of the country.

The information in this user's manual is correct at the time of the document's preparation.

The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time in order to incorporate the latest technological developments.

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SAFETY REQUIREMENTS

- Please read the user's manual carefully prior to installing and operating the unit.
- All user's manual requirements as well as the provisions of all the applicable local and national construction, electrical, and technical norms and standards must be observed when installing and operating the unit.
- The warnings contained in the user's manual must be considered most seriously since they contain vital personal safety information.
- Failure to follow the rules and safety precautions noted in this user's manual may result in an injury or unit damage.
- After a careful reading of the manual, keep it for the entire service life of the unit.
- While transferring the unit control, the user's manual must be turned over to the receiving operator.

UNIT INSTALLATION AND OPERATION SAFETY PRECAUTIONS



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



- Unpack the unit with care.



- The unit must be grounded!



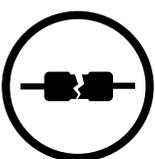
- While installing the unit, follow the safety regulations specific to the use of electric tools.



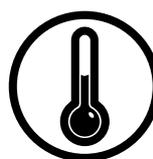
- Do not change the power cable length at your own discretion.
- Do not bend the power cable.
- Avoid damaging the power cable.
- Do not put any foreign objects on the power cable.



- Do not lay the power cable of the unit in close proximity to heating equipment.



- Do not use damaged equipment or cables when connecting the unit to power mains.



- Do not operate the unit outside the temperature range stated in the user's manual.
- Do not operate the unit in aggressive or explosive environments.



- Do not touch the unit controls with wet hands.
- Do not carry out the installation and maintenance operations with wet hands.



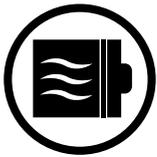
- Do not allow children to operate the unit.



- Do not store any explosive or highly flammable substances in close proximity to the unit.



- Do not open the unit during operation.



- Do not block the air duct when the unit is switched on.



- Do not sit on the unit and avoid placing foreign objects on it.



- Do not wash the unit with water.
- Protect the electric parts of the unit against ingress of water.



- Disconnect the unit from power mains prior to any technical maintenance.



- When the unit generates unusual sounds, odour, or emits smoke, disconnect it from power supply and contact the Seller.



- Do not direct the air flow produced by the unit towards open flame or ignition sources.



- In case of continuous operation of the unit, periodically check the security of mounting.



- Use the unit only for its intended purpose.



**THE PRODUCT MUST BE DISPOSED SEPARATELY AT THE END OF ITS SERVICE LIFE.
DO NOT DISPOSE THE UNIT AS UNSORTED DOMESTIC WASTE.**

PURPOSE

The ventilator is designed to ensure continuous mechanical air exchange in flats, cottages, hotels, cafés and other domestic and public premises. The ventilator is equipped with a regenerator that enables supply of fresh filtered air heated by means of extract air heat energy recovery. The ventilator is designed for wall flush mounting.

The unit is rated for continuous operation without disconnection from the power supply.



THE UNIT SHOULD NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL, OR SENSORY CAPACITIES, OR THOSE WITHOUT THE APPROPRIATE TRAINING.

THE UNIT MUST BE INSTALLED AND CONNECTED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE BRIEFING.

THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORIZED ACCESS BY UNATTENDED CHILDREN.

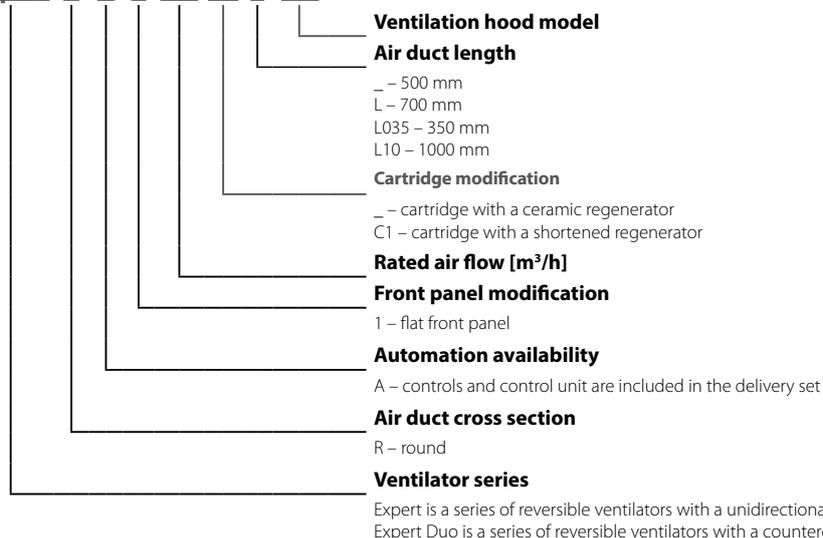
Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

DELIVERY SET

Name	TwinFresh Expert RA/M1	TwinFresh Expert Duo RA1
Indoor unit of the ventilator	1 pc.	1 pc.
Air duct	1 pc.	1 pc.
Air flow distributor	–	3-6 pcs.
Sound-absorbing material	1 pc.	–
Assembled cartridge	1 pc.	1 pc.
Outer ventilation hood	1 pc.	1 pc.
Remote control	1 pc.	1 pc.
Cardboard template	1 pc.	1 pc.
Fastening set	2 packs	2 packs
Foam wedges	1 set	1 set
User's manual	1 pc.	1 pc.
Mounting hood installation instruction	1 pc.	1 pc.
Packing box	1 pc.	1 pc.

DESIGNATION KEY

TwinFresh Expert R A 1 -50 C1 L -14



TECHNICAL DATA

The unit is rated for indoor application with the following conditions:

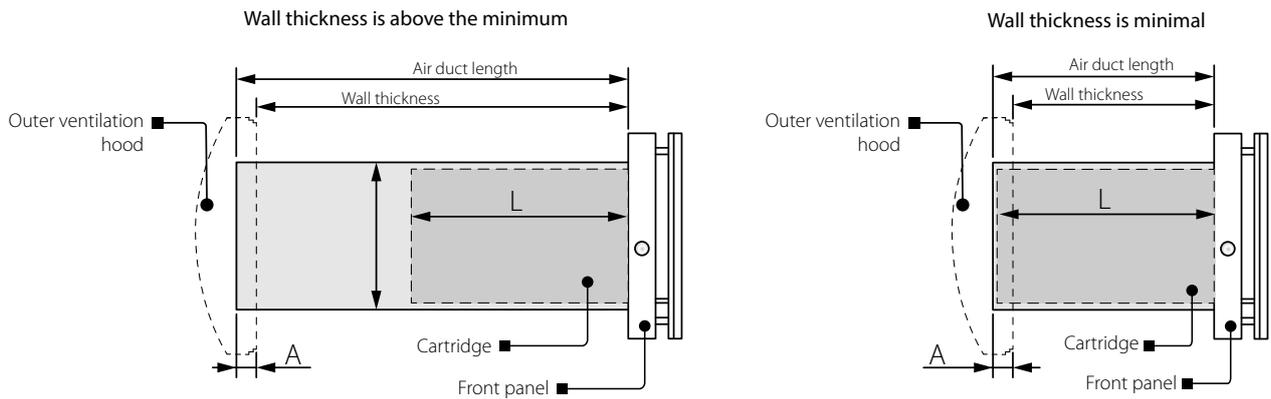
- Temperature ranging from -15 °C (5 °F) up to +40 °C (104 °F) and relative humidity to 50 % are for the TwinFresh Expert RA/M1 units.
- Temperature ranging from -15 °C (5 °F) up to +40 °C (+104 °F) and relative humidity to 65 % are for the TwinFresh Expert Duo RA1 units.

The unit is rated as a class II electric appliance.

Ingress protection rating against access to hazardous parts and water ingress is IP24.

The unit design is constantly being improved, thus some models may be slightly different from those described in this manual.

Technical specifications of the particular model are indicated on the unit casing.



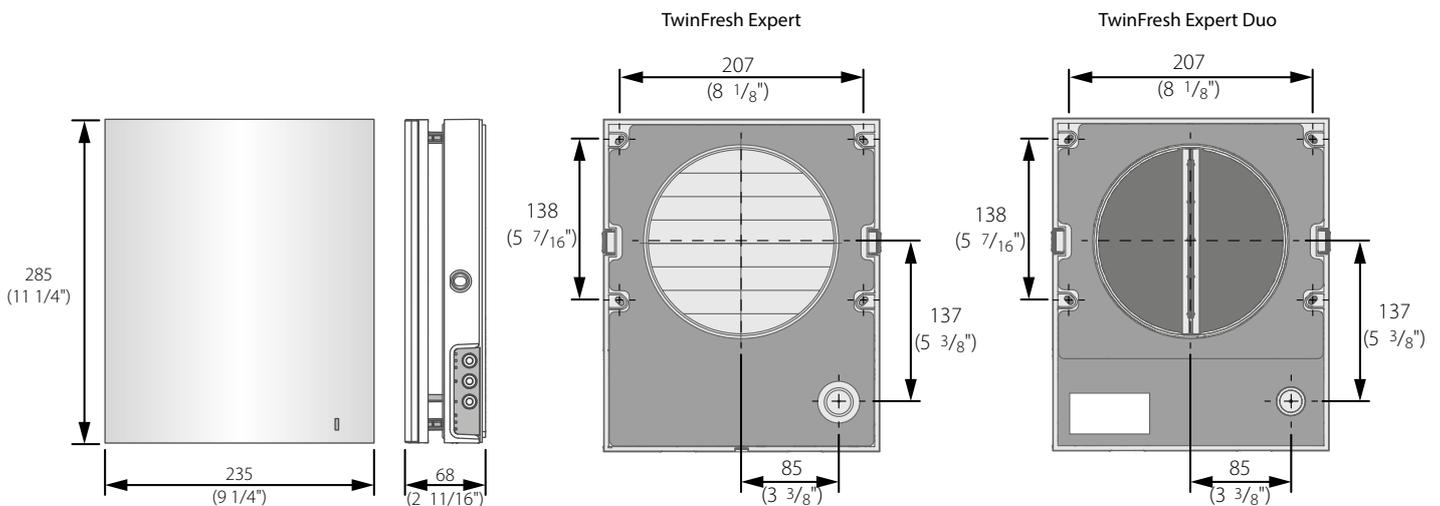
The air duct length depends on the unit model, refer to the Designation Key section, page 6.

The supplied ventilation hood model depends on the ventilator model.

The overall dimensions of the outer ventilation hood, the required outside protrusion length of the air duct **A** and the mounting sequence of the hood are stated in its mounting instruction.

The overall dimensions of the front panel are stated below.

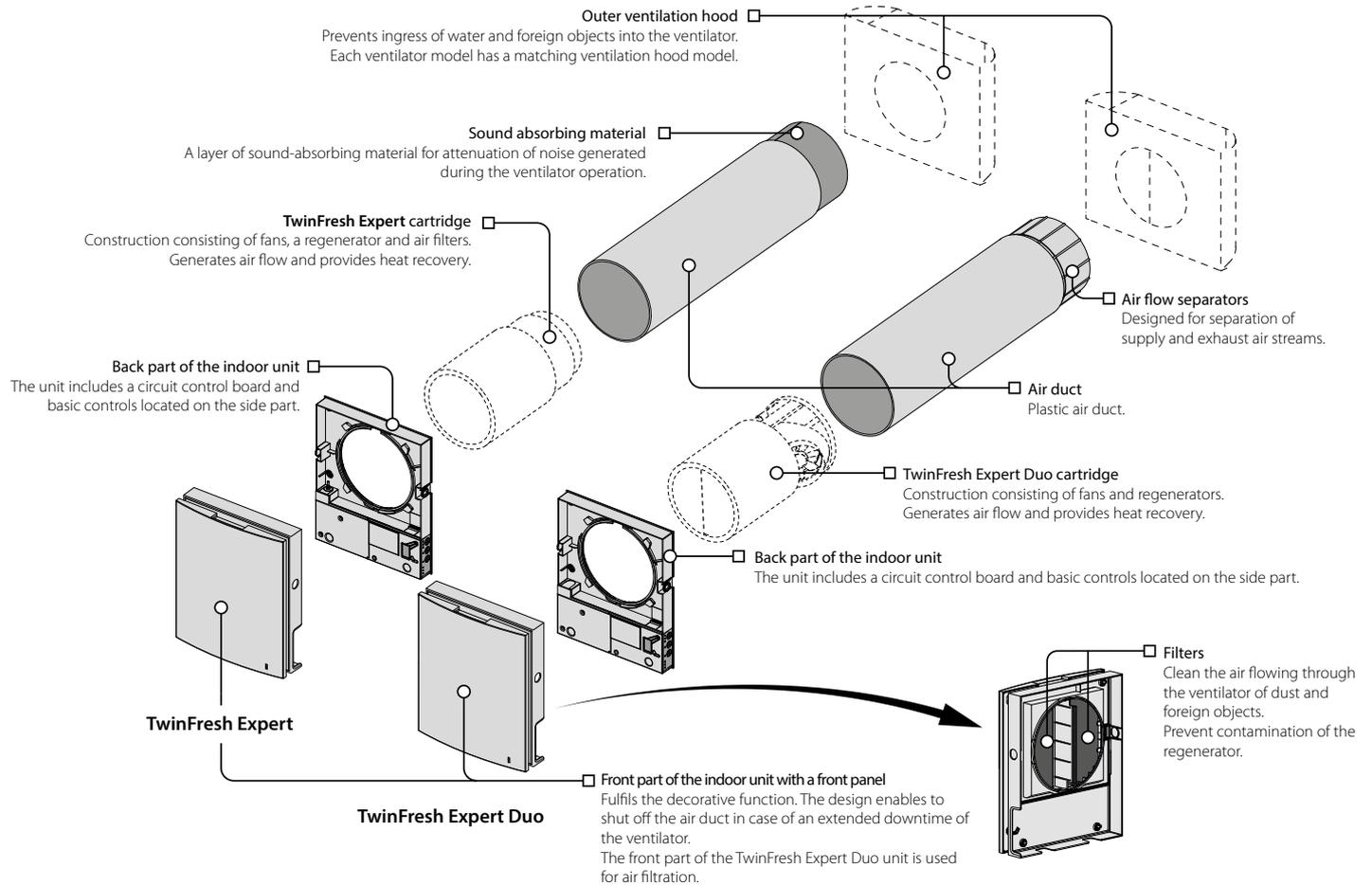
OVERALL DIMENSIONS OF THE INDOOR UNIT [mm] (inch)



DESIGN AND FUNCTIONING

The ventilator consists of an indoor unit with a decorative front panel, a cartridge, an air duct and an outer ventilation hood. The cartridge is a basic functioning part of the ventilator. The cartridge consists of the fan, the regenerator and two filters that ensure rough air filtration and prevent ingress of dust and foreign objects into the regenerator and the fan. The indoor assembly unit is equipped with automatic shutters that close during the ventilator standstill and prevent air backdraft. The TwinFresh Expert Duo RA1 units are equipped with a set of air flow separators. The design of the supplied ventilation hood ensures opposite direction of extract and supply air flows. The outer ventilation hood is used to prevent direct ingress of water and other objects to the ventilator.

VENTILATOR DESIGN

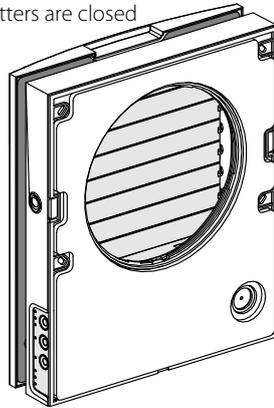


TwinFresh Expert RA1 LOUVER SHUTTERS OPERATION PRINCIPLE

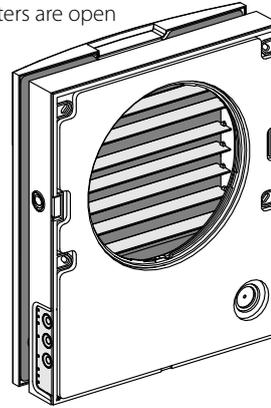
RA1 version is equipped with automatic shutters. During the ventilator operation the automatic shutters open and let the air flow freely through the ventilator. The automatic shutters are closed for 2 minutes at the ventilator shut down.

WARNING! In case of supplying power to the ventilator when the frontal part of the indoor unit is removed, no power is supplied to the actuator and its rod is not lifted to avoid damage. After installing the front part of the indoor unit into place, the louver actuator will start operating normally.

The shutters are closed



The shutters are open



VENTILATOR OPERATION MODES

TwinFresh Expert RA/M1	TwinFresh Expert Duo RA1
<p>Ventilation: the ventilator runs either in extract or supply mode at a set speed. In this mode, when two ventilators are installed, one of them supplies and the other one extracts the air.</p> <p>Boost: the ventilator goes to the maximum speed without changing the operation mode.</p> <p>Regeneration: the ventilator runs in two cycles, 70 seconds each, with heat and humidity regeneration.</p> <ul style="list-style-type: none"> • Cycle I. Warm stale air is extracted from the room and flows through the ceramic regenerator, which gradually absorbs heat and humidity. In 70 seconds, as the ceramic regenerator gets warmed, the ventilator is switched to supply mode. • Cycle II. Fresh intake air from outside flows through the ceramic regenerator, absorbs accumulated moisture and is heated up to the room temperature. In 70 seconds, as the ceramic regenerator gets cooled down, the ventilator is switched to air extract mode and the cycle is renewed. If two ventilators are installed, they operate with opposite rotation directions in this mode. While one ventilator supplies air, the other one extracts it. 	<p>Ventilation: one of the ventilator fans operates in the air extract mode and the other one operates in the air supply mode at a set speed. The fans do not change their rotation direction.</p> <p>Boost: if the sensor is actuated, the ventilator follows one of two functioning algorithms set via the DIP switch during the ventilator setup. For details, see page 14. The DIP switch is set to OFF: the ventilator runs in the extract mode at the third speed (both fans run in the extract mode). The DIP switch is set to ON: the ventilator switches to maximum speed without changing the operation mode.</p> <p>Regeneration: one of the ventilator fans operates in the air extract mode and the other one operates in the air supply mode. The fans change their rotation direction every 70 seconds.</p>

MOUNTING AND SET-UP

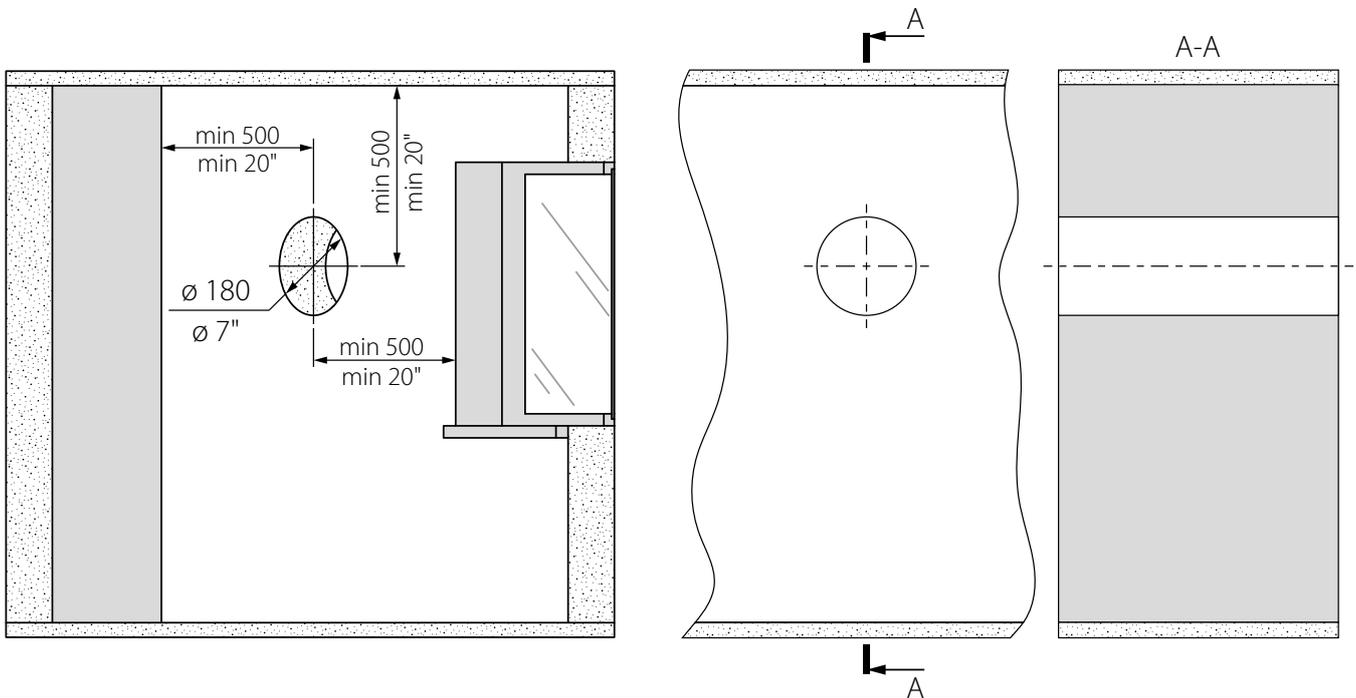


READ THE USER'S MANUAL BEFORE INSTALLING THE UNIT.

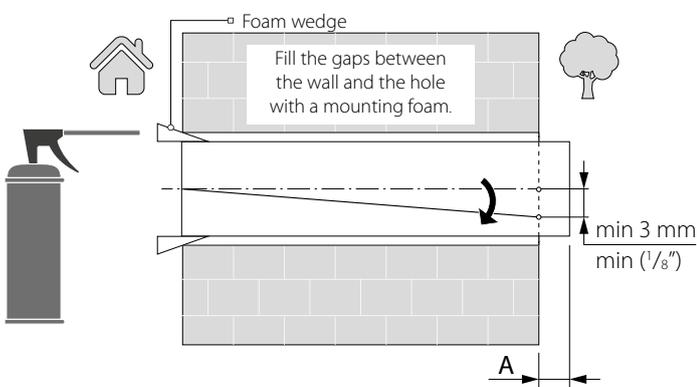


DO NOT BLOCK THE AIR DUCT OF THE INSTALLED VENTILATOR WITH DUST ACCUMULATING MATERIALS, SUCH AS CURTAINS, CLOTH SHUTTERS, ETC. AS IT PREVENTS AIR CIRCULATION IN THE ROOM.

1. Prepare a round core hole in the outer wall. The hole size is shown in the figure below. While preparing core holes it is recommended to make preparations for layout of the power cable and other required cables.

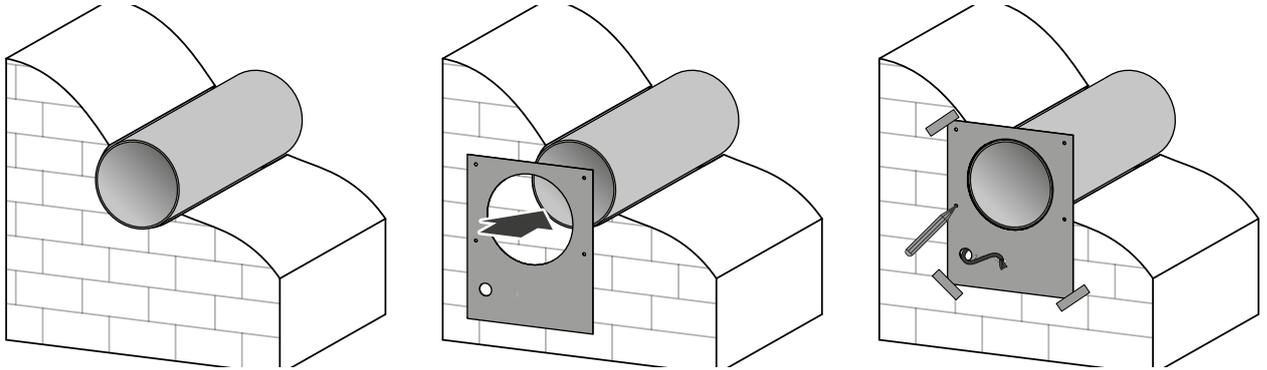


2. Install the air duct in the wall and fix it with mounting foam. The air duct end must protrude for the distance that enables installation of the outer ventilation hood (see the User's manual for the outer ventilation hood).

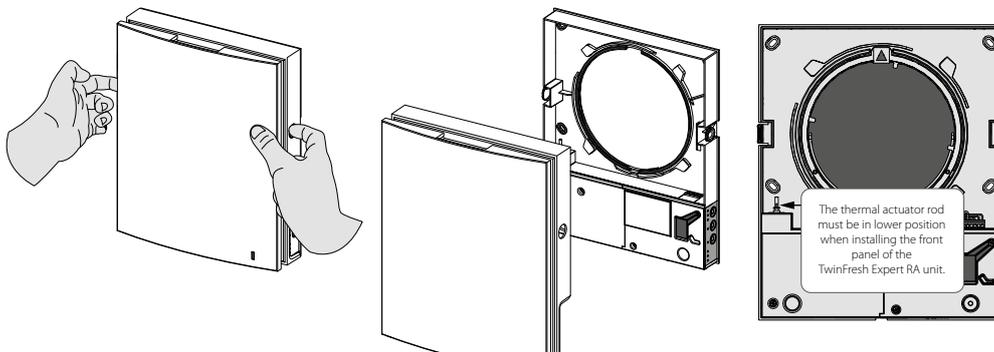


Install the air duct in the wall in such a way so it protrudes from the wall surface for maximum 3 mm or is flush with the wall. Install the air duct with the minimum slope 3 mm downwards. On the outer wall side the air duct end must protrude to a distance that enables installation of the outer ventilation hood. Distance A is stated in the installation instruction for the ventilation hood.

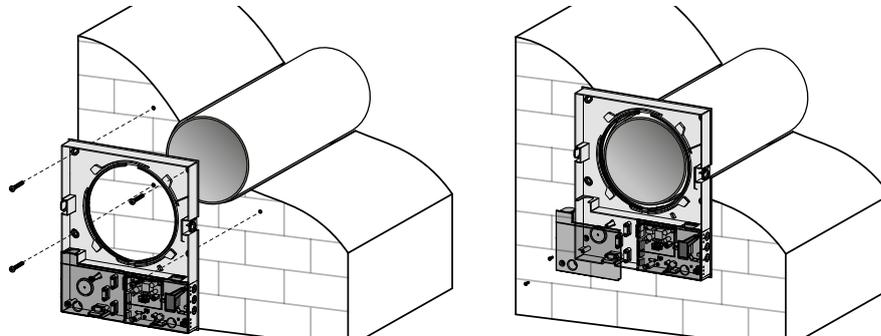
3. Stick the delivered cardboard master plate on the indoor wall using a mounting tape. The large opening in the master plate must be axially aligned with the air duct. For aligning the master plate with respect to the horizon line it is recommended to use a builder's level. Then mark the fastening holes for installation of the supplied dowels and drill the holes to a required depth. Route the power cable from the wall outside through the specially marked opening on the master plate.



4. Unlatch and detach the front part of the indoor unit from its back part.

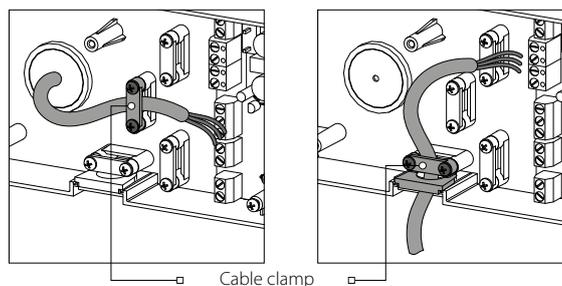


5. Fix the back part of the indoor unit on the wall with the screws supplied with the mounting kit of the ventilator. Remove the two retaining screws from the left transparent cover to enable access to the terminals.

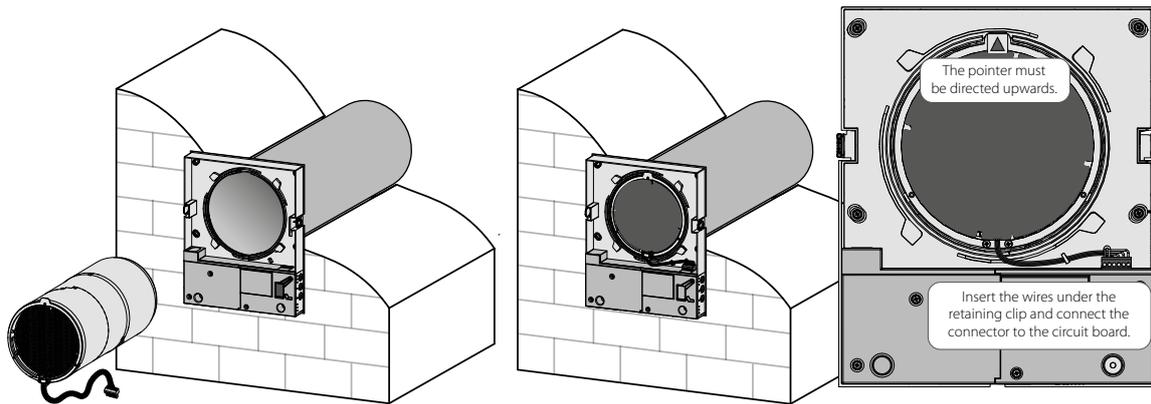


6. Route the power cable as figured below and connect the ventilator to power mains in compliance with the external wiring diagram, refer to page 13.

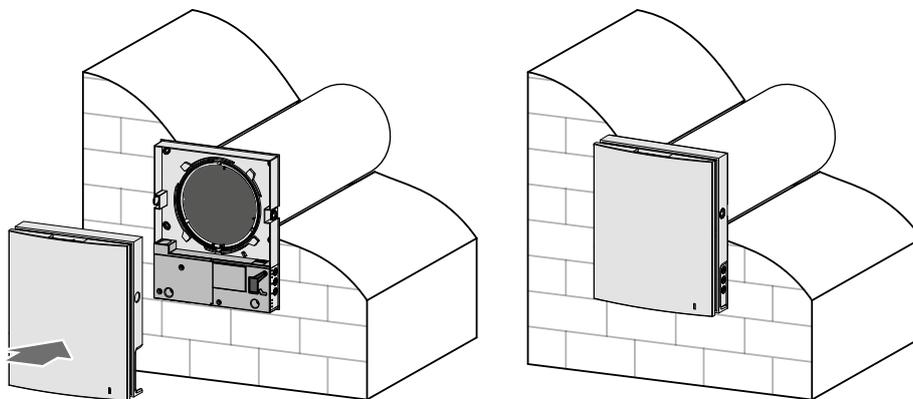
Fix the power cable and the signal cables with cable clamps. After completion of the electrical connection re-install the transparent cover to its place.



7. Install the cartridge into the air duct as figured below. The pointer must be directed upwards. Then fix the wire with the protruding clamp and connect the socket connector to the circuit board.

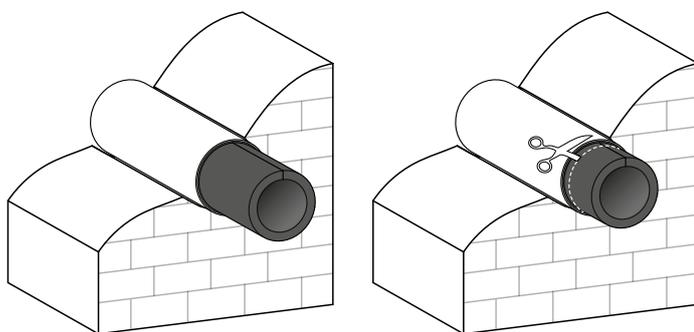


8. Install the front part of the indoor unit. The thermal actuator rod must be in lower position when installing the front panel, as shown in the figure in Section 4 on page 11.



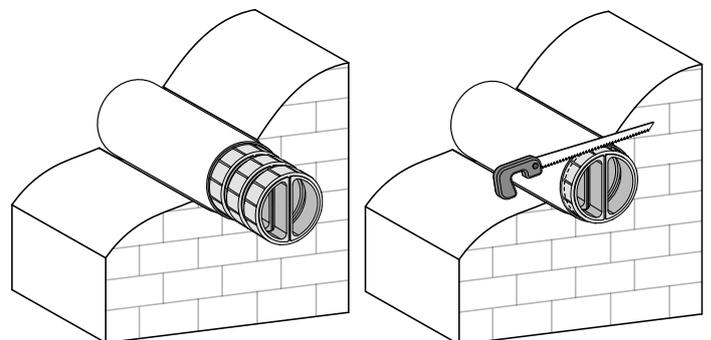
TwinFresh Expert RA/M1

9. Insert the sound absorbing material into the air duct from the outside.
 Roll the layer of the sound absorbing material to match the air duct diameter. The protecting paper layer must be outside.
 Insert the sound absorbing roll into the cartridge against stop.
 Make a mark at the end of the air duct, remove the material and cut the roll as marked.
 After that insert the ready roll into the air duct.



TwinFresh Expert Duo RA1

9. Install the sectional air flow separators from the outside. Insert a required number of the air flow separators in the air duct until they reach the cartridge. Mark the last air flow separator to be flush with the air duct face, remove it from the air duct and cut the excessive part of the last air flow separator. Tighter fixation is provided if the air flow separator protrudes to some distance. Install the adjusted air flow separators in the air duct.



10. Install the outer ventilation hood. For this, see the user's manual for the hood.

CONNECTION TO POWER MAINS



**POWER OFF THE POWER SUPPLY PRIOR TO ANY OPERATIONS WITH THE UNIT.
THE UNIT MUST BE CONNECTED TO POWER SUPPLY BY A QUALIFIED ELECTRICIAN.
THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE GIVEN ON THE
MANUFACTURER'S LABEL.**

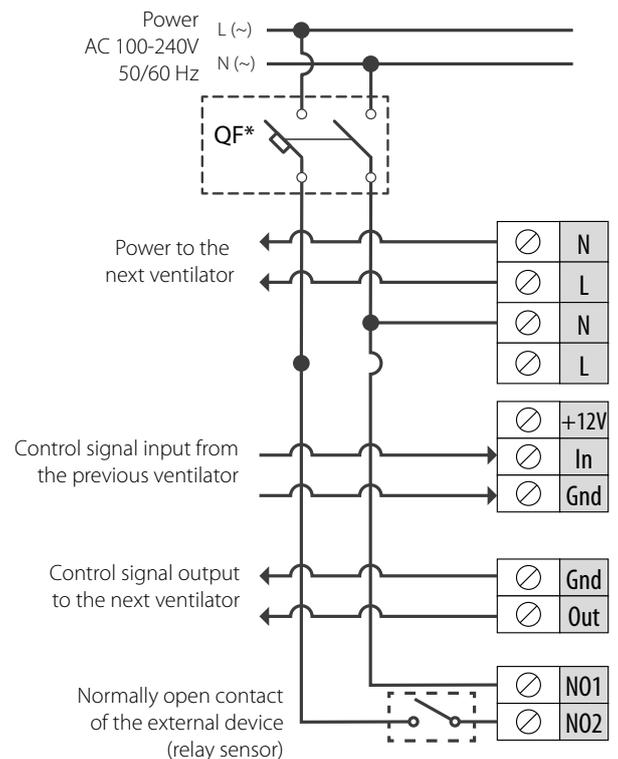
The ventilator is rated for connection to single-phase AC 100-240V 50/60 Hz power mains.

Connect the unit to power mains through the external automatic switch with a magnetic trip integrated into the fixed wiring system. The tripping current of the circuit breaker is selected based on the electrical characteristics shown on the label of the fan casing.

For electric installations use insulated, durable and heat-resistant electric leads (cables, conductors) with the minimum cross section 0.5 up to 0.75 mm² for the power cable and 0.25 mm² for the control cables. The cable cross-section is given for reference only. The actual conductor cross-section selection must be based on its type, maximum permissible heating, insulation, length and installation method. Use copper wires for all the electric connections!

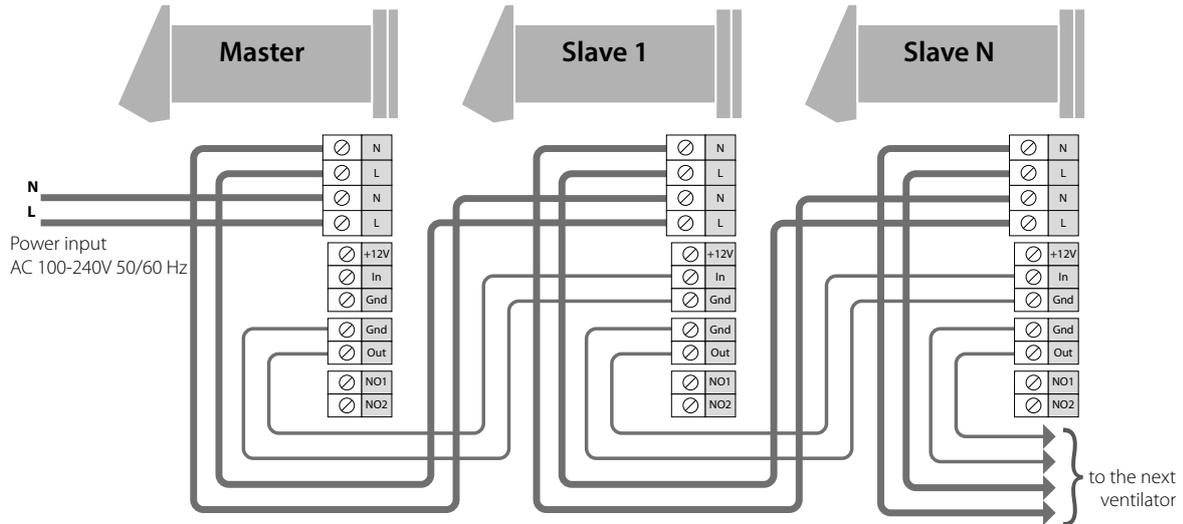
Connect the ventilator to power mains in compliance with the wiring diagram.

EXTERNAL CONNECTIONS DIAGRAM

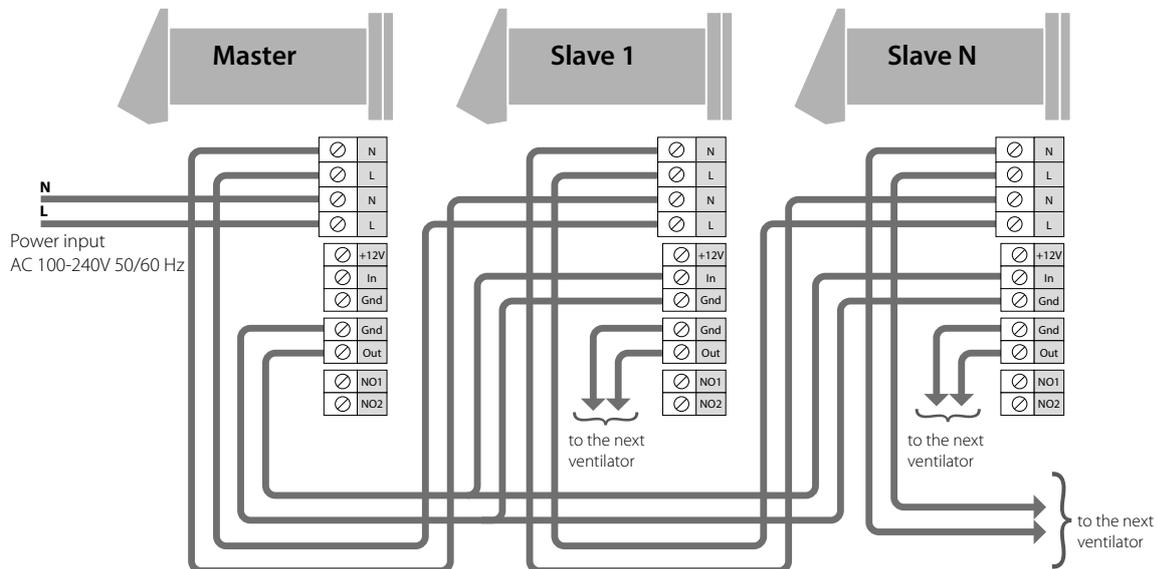


* The units are not included in the delivery set

WIRING DIAGRAM FOR IN SERIES CONNECTION

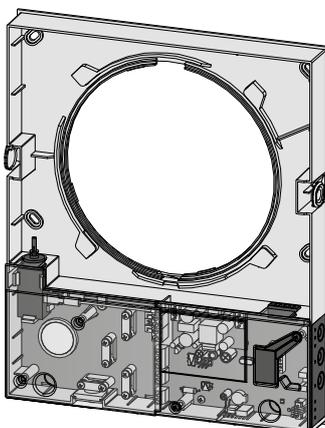


WIRING DIAGRAM FOR IN PARALLEL CONNECTION

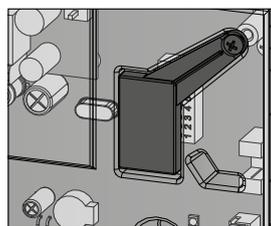


VENTILATOR SET-UP

Prior to operating the ventilator set it up using the DIP switch. It is located on the controller circuit board. To access the DIP switch, take off the front panel of the indoor unit and uplift the rubber plug that covers the switch.



Open the rubber plug



DIP switch
under the plug

POSITIONING OF THE DIP SWITCHES

 1	Turning the ventilator off is allowed. The switch position enables switching the ventilator off with the button on the side control panel.		
 1	Turning the ventilator off is not allowed. The switch position disables switching the ventilator off with the button on the side control panel.		
TwinFresh Expert RA/M1		TwinFresh Expert Duo RA1	
Fan rotation direction. For controlled ventilation it is recommended to install the ventilators pairwise and integrate them in a group using a signal cable. Set one half of the connected units into supply mode and the other half into extract mode.		Boost mode setup. When the humidity sensor or the external relay is triggered, one of two operation algorithms starts.	
 2	In the Ventilation mode the ventilator supplies the air to the room. In the Regeneration mode the ventilator starts operating first in supply mode.	 2	OFF: the ventilator runs in the extract mode at the third speed (both fans run in the extract mode).
 2	In the Ventilation mode the ventilator extracts the air from the room. In the Regeneration mode the ventilator starts operating first in extract mode.	 2	ON: the ventilator switches to maximum speed without changing the operation mode.

Humidity sensor set value. The humidity sensor measures the extract air humidity. If the extract air humidity is above the set point, the ventilator switches to Speed III. As humidity drops down to the set point, the ventilator changes to pre-set speed after elapsing of the time set on the turn-on delay timer.

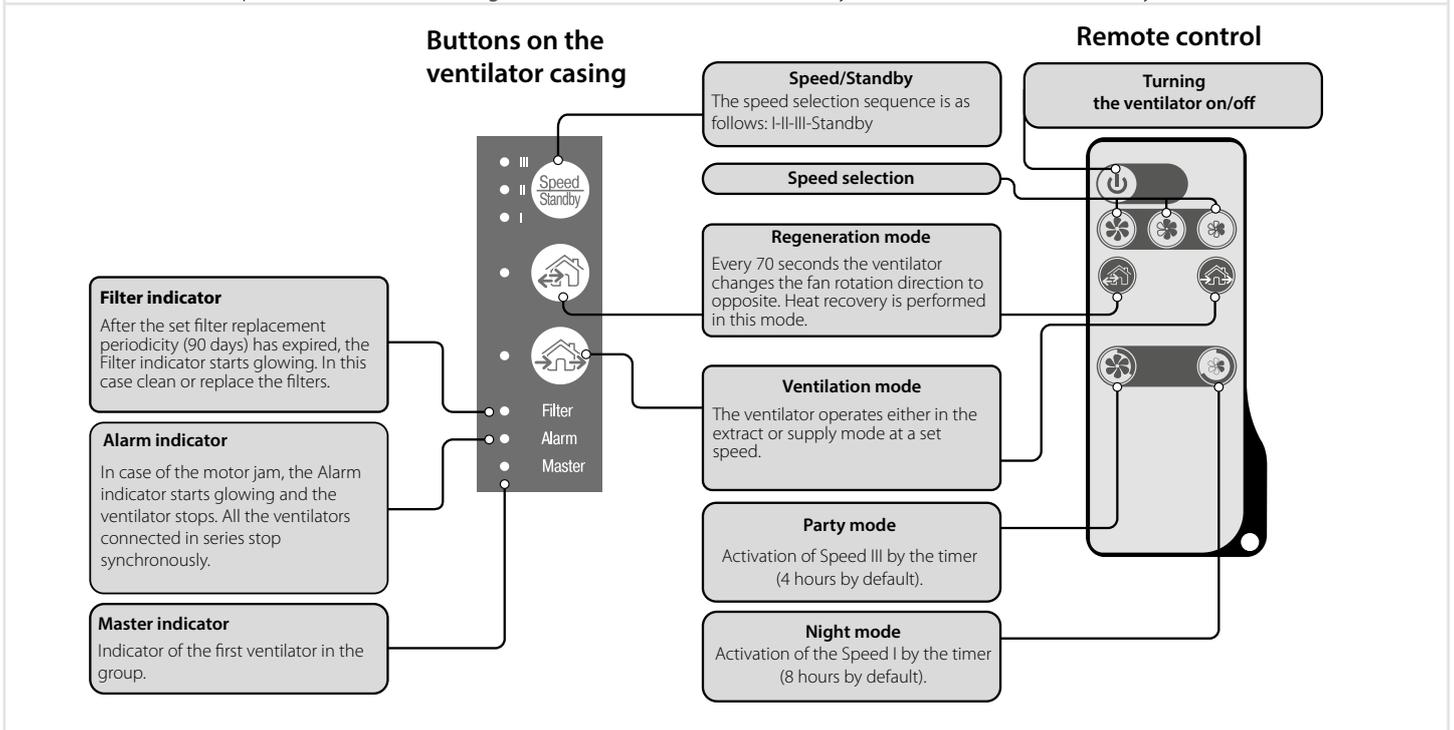
Humidity control is disabled	Set value 40 %	Set value 50 %	Set value 60 %	Set value 70 %	Set value 80 %
 5	 5	 5	 5	 5	 5
 4	 4	 4	 4	 4	 4
 3	 3	 3	 3	 3	 3

Delay timer. During activation of the humidity sensor or any other external device the ventilator switches to higher speed. After normalization of the indoor humidity level or any other air parameters the ventilator will switch to the previous mode after the set time.

Time delay 0 min	Time delay 5 min	Time delay 15 min	Time delay 30 min
 7	 7	 7	 7
 6	 6	 6	 6

VENTILATOR CONTROL

The ventilator can be operated with the remote control or the control buttons on the side part of the indoor unit, as figured below. In case of in series or in parallel connection, the signal from a control unit is received by the first ventilator (Master) only.



VENTILATOR CONTROL WITH THE BUTTONS ON THE INDOOR UNIT

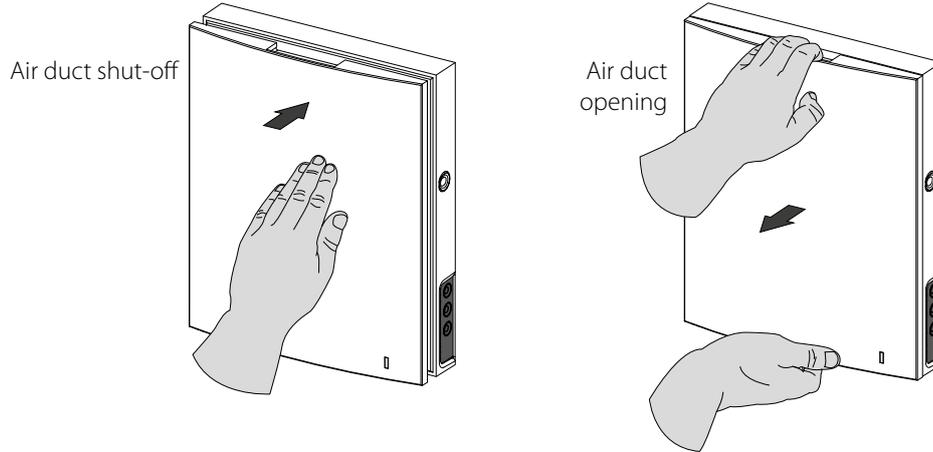
	<p>The speed selection sequence is as follows: I-II-III-Standby. All the units integrated in a single network operate according to the speed settings of the Master unit.</p> <p>I: permanent indicator glowing indicates operation of the unit at Speed I. The indicator blinks when the first speed timer is activated.</p> <p>I and II: permanent glowing of the indicators I and II indicates operation of the unit at Speed II.</p> <p>I, II and III: permanent glowing of the indicators I, II and III indicates operation of the ventilator at Speed III. Blinking of the indicators I, II and III indicates activation of the timer for Party mode or the turn-off delay timer triggered by any connected external sensors or the integrated humidity sensor.</p>
	<p>Regeneration mode <u>TwinFresh Expert RA/M1</u> The rotation direction of the fan changes to opposite every 70 seconds. Heat recovery is performed in this mode.</p> <p><u>TwinFresh Expert Duo RA1</u> The rotation direction of both fans changes to opposite every 70 seconds. Heat recovery is performed in this mode.</p>
	<p>Ventilation mode <u>TwinFresh Expert RA/M1</u> The ventilator operates in permanent supply or extract mode at a set speed. The air flow direction depends on positioning of the DIP switch (set to air extract by default).</p> <p><u>TwinFresh Expert Duo RA1</u> One fan operates in the air extract mode and the other fan operates in the air supply mode at a set speed. The fans do not change their rotation direction.</p>
<p>Filter</p>	<p>Contamination indicator of filters. 90 days (continuous operation) after installation of the cartridge the Filter contamination indicator starts glowing. In this case, clean or replace the filters (see the "Technical maintenance" section).</p> <p>In case of in-series connection, the Master ventilator indicator has a steady glow and the indicator of the ventilator requiring filter replacement blinks.</p> <p>To reset the filter timer, turn the DIP switch No. 8 on for not less than 3 seconds and then turn it off.</p>
<p>Alarm</p>	<p>Alarm indicator for emergency shutdown of the unit. Permanent glowing of the Alarm indicator of the Master unit indicates an alarm in the network of the connected ventilation units. Its blinking indicates shutdown of a specific ventilation unit in the network.</p> <p>In case of an emergency shutdown of a TwinFresh Expert RA/M1 unit in the network the defective ventilation unit is marked with the blinking Alarm indicator. All the connected TwinFresh Expert RA/M1 ventilation units are also stopped.</p> <p>In case of an emergency shutdown of the TwinFresh Expert Duo RA1 unit, the defective ventilation unit is marked with the blinking Alarm indicator. The defective ventilation unit shuts down and the other connected ventilation units continue their operation.</p>
<p>Master</p>	<p>Master unit indicator. Permanent glowing of the indicator shows the leading unit in the network (Master unit). Indicator blinking indicates the driven unit (Slave unit) and no connection to the Master unit.</p> <p>No glowing of the lamp indicator means that this ventilation unit is a Slave ventilation unit and it is connected to a Master unit.</p>

REMOTE CONTROL OF THE VENTILATION UNIT

	<p>Turning the ventilator on/off. The unit may be turned off only if it is enabled by the settings. Reset of alarm and timer settings.</p>
	<p>Ventilator speed selection: III-II-I speeds respectively.</p>
	<p>Regeneration mode <u>TwinFresh Expert RA/M1</u> The rotation direction of the fan changes to opposite every 70 seconds. Heat recovery is performed in this mode.</p> <p><u>TwinFresh Expert Duo RA1</u> The rotation direction of both fans changes to opposite every 70 seconds. Heat recovery is performed in this mode.</p>
	<p>Ventilation mode <u>TwinFresh Expert RA/M1</u> The ventilator operates in permanent supply or extract mode at a set speed. The air flow direction depends on positioning of the DIP switch (set to air extract by default).</p> <p><u>TwinFresh Expert Duo RA1</u> One fan operates in the air extract mode and the other fan operates in the air supply mode at a set speed. The fans do not change their rotation direction.</p>
	<p>Timer buttons:</p> <p> Party mode: 4 hours at the Speed III. Night mode: 8 hours at the Speed I</p> <p>Upon expiration of the set time period the ventilator reverts to a pre-set speed. Press any button of the manual speed setting to deactivate the timer.</p>

AIR FLOW BLOCKING FOR TwinFresh Expert RA/M1

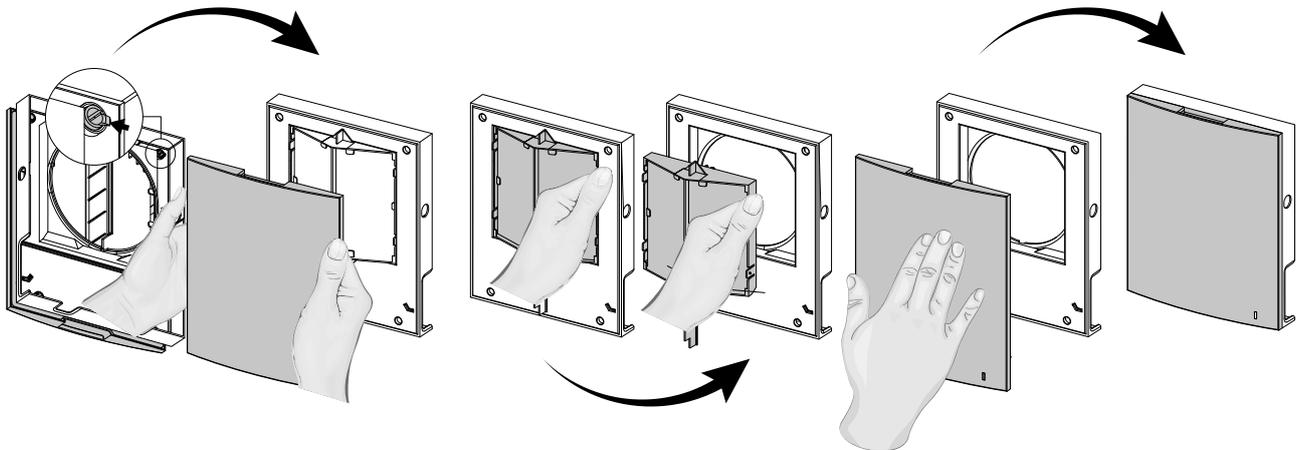
Press the front panel to close the air duct. The fan turns off automatically. The unit functionality is not changed. To open the air duct, pull the front panel while holding the special recesses. The fan starts operating according to the actual speed setting.



The front panel incorporates an operating LED indicator. During the dark time the indicator light intensity drops down.

AIR FLOW BLOCKING FOR TwinFresh Expert Duo RA1

Press the side tabs to detach the front part of the indoor unit from its back part and close the air duct. Then gently unlatch and remove the front panel from the front part of the indoor unit. Remove the air flow separator by pulling one of the side clamps. Install the front part of the indoor unit into place. Install the front panel on the front part of the indoor unit and press it gently to close the air duct. The fans of the ventilator will stop automatically. The unit functionality is not changed. Open the air duct in the reverse order. The fans start operating according to the actual speed setting.



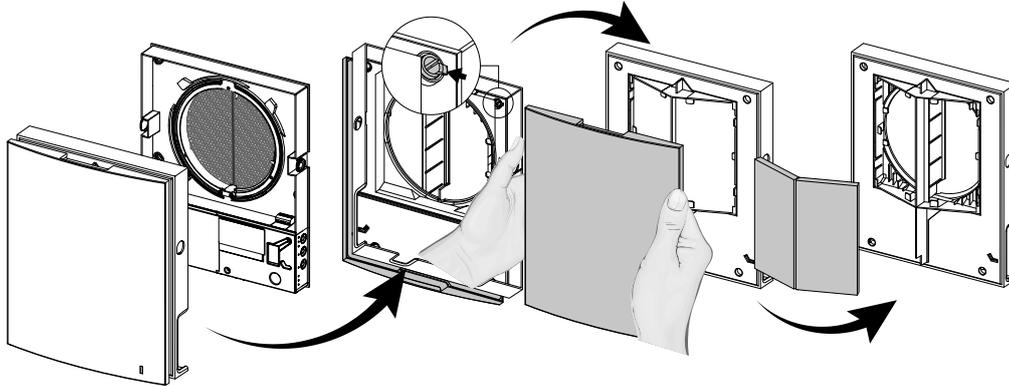
The front panel incorporates an operating LED indicator. During the dark time the indicator light intensity drops down.

TECHNICAL MAINTENANCE

Maintenance of the ventilator means regular cleaning of the ventilator surfaces of dust and cleaning and/or replacement of the filters. After the set filter replacement periodicity (90 days) has expired the **Filter** indicator starts glowing. Before performing technical maintenance turn off the ventilator using the remote control or the buttons on the indoor unit. Then disconnect it from the power supply using the circuit breaker. After doing so, act as follows:

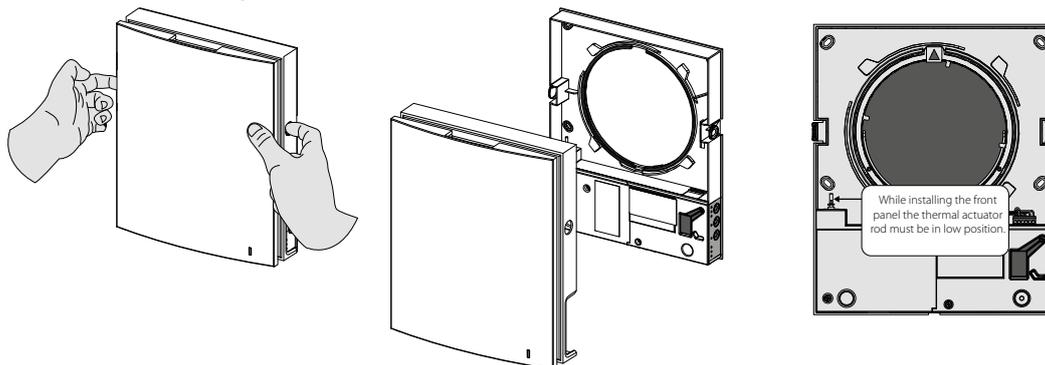
TwinFresh Expert Duo RA1

1. Press the latches on the side of the indoor control unit to take off the front part. Then open the latches and remove the front panel. Remove the filters for cleaning. Perform all the above operations in the reverse order after cleaning.



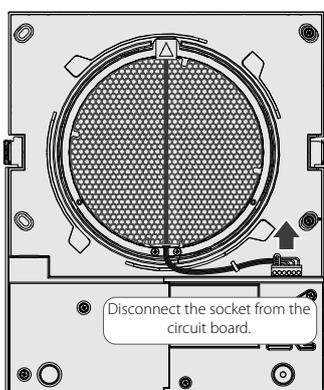
TwinFresh Expert RA/M1

1. Press the latches on the side of the indoor control unit to take off the front part. Please make sure the louver actuator rod is in lower position during re-installation of the front panel. If the thermal actuator rod is up, please wait for about 2 minutes until it goes down.

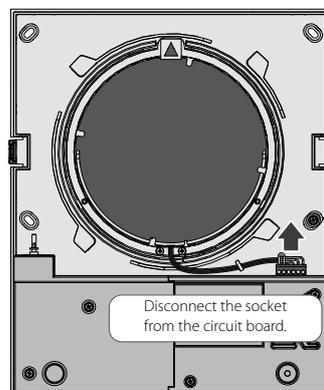


2. Disconnect the connector from the circuit board. Do not remove the connector by pulling the wires. Use a flat screwdriver to uplift it, if required.

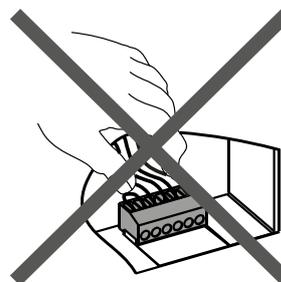
TwinFresh Expert Duo RA1



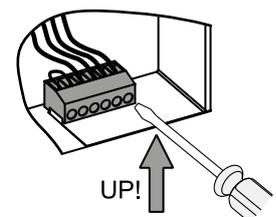
TwinFresh Expert RA/M1



Do not pull on the electric cable!

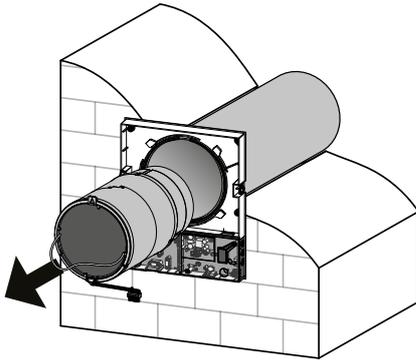


Use a flat screwdriver to disconnect the socket.

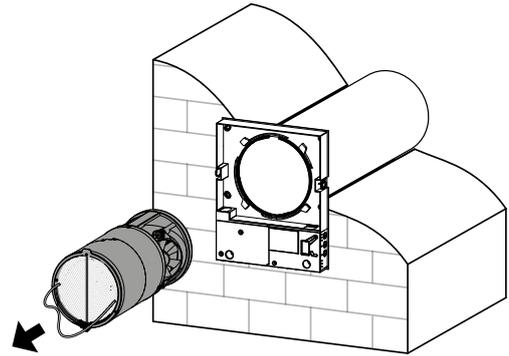


3. Remove the cartridge from the air duct by pulling the cord.
Clean the filters as they get clogged, but not less than once in three months.

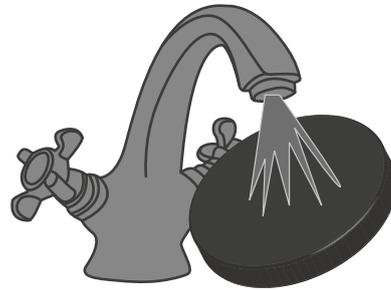
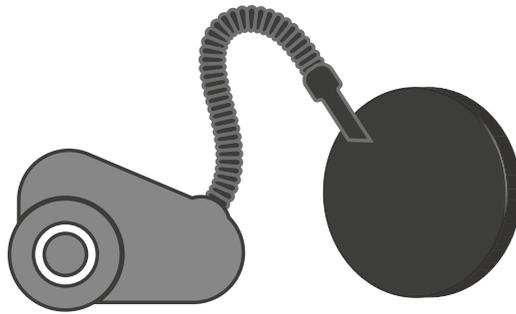
TwinFresh Expert RA/M1



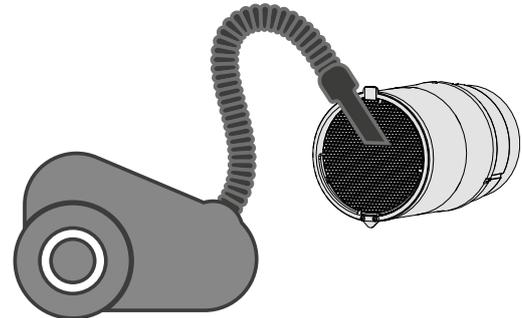
TwinFresh Expert Duo RA1



4. Wash the filters and let them dry out completely. Install the dry filters back and reassemble the unit. Vacuum cleaning is allowed.
The filter rated service life is 3 years.
For new filters contact the Seller.

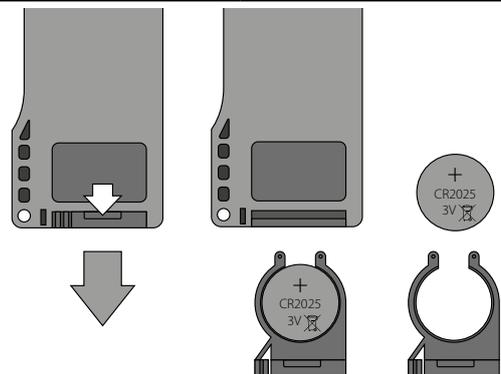


Some dust may accumulate on the regenerator block even in case of regular maintenance of the filters.
For effective heat recovery clean the regenerator with a vacuum cleaner at least once a year.



To reset the filter timer, connect the ventilator to the power supply using the circuit breaker before installing the front panel of the indoor unit into its place. After that turn the DIP switch No.8 on for not less than 3 seconds and then turn it off. For details, see page 14.

If necessary, the remote control battery may be replaced.
In case of a long usage of the remote control, the battery must be replaced.
No response of the unit for pressing the remote control buttons indicates the need to replace the battery.
The battery type is CR2025.
Remove the holder with the battery from the lower part of the remote control.
Replace the battery and install the holder with a new battery back to the remote control.



TROUBLESHOOTING

POSSIBLE REASONS AND TROUBLESHOOTING

Problem	Possible reasons	Troubleshooting
When switching on the ventilator, the fan does not start.	No power supply.	Make sure the power supply line is connected correctly, otherwise troubleshoot the connection error.
	The motor is jammed, the impeller blades are soiled.	Turn the ventilator off. Troubleshoot the motor jam and impeller clogging. Clean the blades. Restart the ventilator.
Circuit breaker tripping during the ventilation unit start-up.	Overcurrent as a result of short circuit in the electric line.	Turn the ventilator off. Contact the Seller for further information.
Low air flow.	Low set fan speed.	Set higher speed.
	The filters, the fan or the regenerator are clogged.	Clean or replace the filter. Clean the fan and the regenerator.
Noise, vibration.	The impeller is clogged.	Clean the impeller.
	Loose screw connection of the unit casing or the outer ventilation hood.	Tighten the screws of the ventilator or the outer ventilation hood.

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range from +5 °C to + 40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapors and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures, allow the unit to warm up at operating temperature for at least 3-4 hours.

MANUFACTURER'S WARRANTY

Production meets standard operating requirements in the USA and Canada.

Vents US warrants to the original purchaser of the unit that it will be free from defects in materials or workmanship for a period of 24 months from the date of original purchase. The Vents US warrants to the original purchaser of the unit that the integrated control unit will be free from defects in materials and workmanship for a period of 24 months from the date of original purchase.

THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

During the stated warranty period, Vents US will, at its option, repair or replace, without charge, any product or part which is found to be defective under normal use and service. This warranty does not cover (a) normal maintenance and normal service or (b) any products or parts which have been subject to misuse, negligence, accident, improper maintenance or repair (other than by Vents US), faulty installation or installation contrary to recommended installation instructions. Labor to remove and replace products is not covered. The duration of any implied warranty is limited to the time period specified for the express warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

VENTS US OBLIGATION TO REPAIR OR REPLACE, AT VENTS US OPTION, SHALL BE THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY. VENTS US SHALL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH PRODUCT USE OR PERFORMANCE.

Some states do not allow the exclusion or limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. This warranty supersedes all prior warranties. If proof of sales date is absent, warranty period is calculated from the production date. The unit can be exchanged at the following address:

Vents-US
400 Murray Road, Cincinnati, OH 45217, USA
Tel: 1-888-640-0925, 513-583-5786, Fax: 513-268-4597
E-mail: support@ventsus.com
www.vents-us.com

Please follow guidelines in this manual for product problem-free operation.



FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.



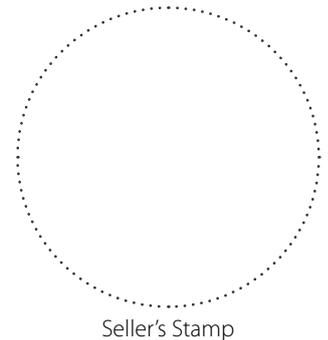
USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

CERTIFICATE OF ACCEPTANCE

Unit Type	Single-room reversible energy recovery ventilator
Model	TwinFresh Expert _____
Serial Number	
Manufacture Date	
Quality Inspector's Stamp	

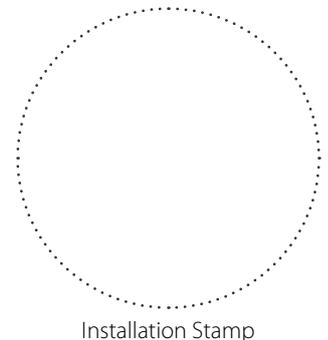
SELLER INFORMATION

Seller	
Address	
Phone Number	
E-mail	
Purchase Date	
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.	
Customer's Signature	



INSTALLATION CERTIFICATE

The TwinFresh Expert _____ unit is installed pursuant to the requirements stated in the present user's manual.	
Company name	
Address	
Phone Number	
Installation Technician's Full Name	
Installation Date:	Signature:
The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.	
Signature:	



WARRANTY CARD

Unit Type	Single-room reversible energy recovery ventilator
Model	TwinFresh Expert _____
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	

