

USER'S MANUAL

TwinFresh Expert RW1-50 V.2

TwinFresh Expert RMW1-50 V.2

TwinFresh Expert RW1-85 V.2

TwinFresh Expert RMW1-85 V.2

TwinFresh Expert RW1-100 V.2

TwinFresh Expert RMW1-100 V.2

TwinFresh Expert Duo RW1-30 V.2



Single-room reversible energy regeneration 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) R(M)W1-30/50/85/100 V.2 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

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.

Disconnect the unit from power supply prior to any connection, servicing, maintenance, and repair operations.

Only qualified electricians with a work permit for electrical units up to 1000 V are allowed for installation and maintenance. The present user's manual should be carefully read before beginning works.

- Single-phase power mains must comply with the acting local electrical norms and standards.
- Fixed electrical wiring must be equipped with an automatic circuit breaker.
- The unit must be connected to power mains through a double pole circuit breaker of suitable rating integrated into the fixed wiring system with opening of contacts at all poles. The gap between the circuit breaker contacts at all poles must be not less than 3 mm.
- Check the unit for any visible damage of the impeller, the casing, and the grille before starting installation. The casing internals must be free of any foreign objects that can damage the impeller blades.
- While mounting the unit, avoid compression of the casing! Deformation of the casing may result in motor jam and excessive noise.

- Misuse of the unit and any unauthorized modifications are not allowed.
- Do not expose the device to adverse atmospheric agents (rain, sun, etc.).
- 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.
- Transported air must not contain any dust or other solid impurities, sticky substances, or fibrous materials.
- Do not use the unit in a hazardous or explosive environment containing spirits, gasoline, insecticides, etc.
- For effective functioning of the unit, it is necessary to ensure an appropriate fresh air supply into the room. Do not close or block the intake or extract vents in order to ensure the efficient air flow.
- Do not sit on the unit and do not put objects on it.
- The unit is allowed to be used by children aged from 8 years old and above and persons with reduced physical, sensory, or mental capabilities or no experience and knowledge provided that they have been given supervision or instruction regarding safe use of the unit and understand the risks involved.
- Do not allow children to play with the unit.
- Cleaning and user maintenance shall not be made by children without supervision.
- The information in this user's manual was 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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WARNING! Similar to the use of any other household electrical appliances when operating this fan, the following basic rules must be followed:

- Never touch the fan with wet or damp hands.
- Never touch the fan when barefoot.



**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 power mains.

DELIVERY SET

NAME	NUMBER	
	TwinFresh Expert	TwinFresh Expert Duo
Indoor unit of the ventilator	1 pc.	1 pc.
Air duct	1 pc.	1 pc.
Air flow separator	-	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 packings	2 packings
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 M W 1 -50 L -2 V.2

Unit version

V.2: Wi-Fi controllable, connection to PC is not required

Outer ventilation hood model

Air duct length

_ : 500 mm

L: 700 mm

L035: 350 mm

L10: 1000 mm

Rated air capacity [m³/h]

Front panel modification

1: flat control panel

Control system type

W: Wi-Fi connection of ventilators

Availability of protective shutters

_ : model with automatic protective shutters

M: model without automatic shutters, with manual blocking of air flow

Air duct section shape

R: round

Ventilator series

Expert: series of reversible ventilators with unidirectional air flow

Expert Duo: series of reversible ventilators with bidirectional air flow

TECHNICAL DATA

The unit is designed for indoor application at the following conditions:

- for TwinFresh Expert: outside air temperature from -15 °C (5 °F) up to +40 °C (104 °F) and relative indoor humidity up to 50 %
- for TwinFresh Expert Duo: outside air temperature from -15 °C (5 °F) up to +40 °C (104 °F) and relative indoor humidity up to 65 %

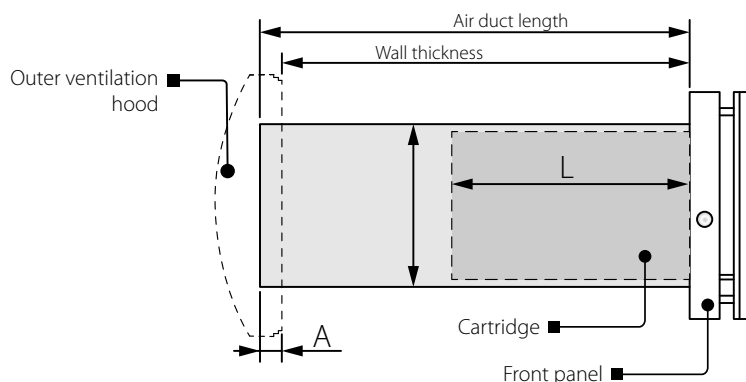
The unit has Class II of protection against electric shock and must not be grounded.

Hazardous parts access and water ingress protection rating is IP24.

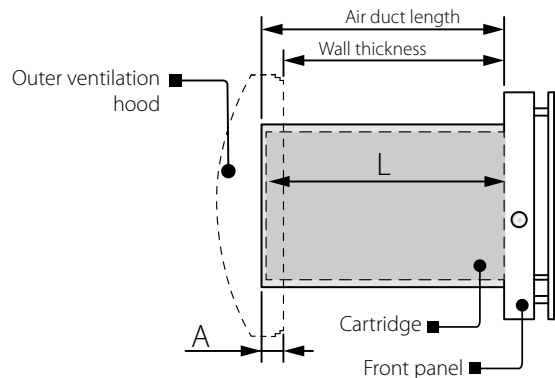
The unit design is constantly being improved, so some models may be slightly different from those ones described in this manual.

Technical data are stated on the rating plate on the casing individually for each ventilation unit.

Wall thickness is above the minimum



Wall thickness is minimal



A: protruding part of the air duct on the outer wall. Depends on the used ventilation hood type.

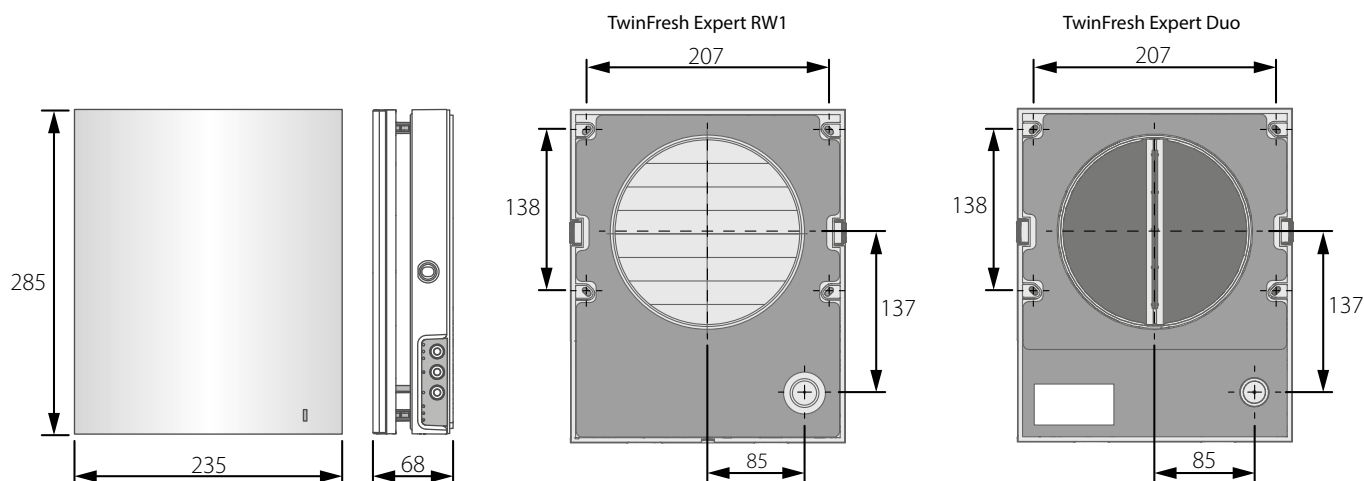
L: cartridge length. Depends on the ventilator model.

The air duct length and the supplied ventilation hood model depend on the ventilator model (refer to Designation key, page 5).

The overall and connecting dimensions of the outer ventilation hood, the value of the protruding part of the air duct on the outside A and installation steps for the outer hood are stated in the mounting instruction for the outer hood.

Ventilator model	L [mm]
TwinFresh Expert R(M)W1-50/85 V.2	250
TwinFresh Expert R(M)W1-100 V.2	355
TwinFresh Expert Duo RW1-30 V.2	280

Overall dimensions of the front panel are shown below



Wi-Fi technical data

Standard	IEEE 802.11, b/g/n
Frequency band [GHz]	2.4
Transmission power [mW] (dBm)	100(+20)
Network	DHCP
WLAN safety	WPA, WPA2

DESIGN AND FUNCTIONING

The ventilator consists of an indoor unit with a decorative front panel, a cartridge, an air duct with a sound absorbing mat and an outer ventilation hood.

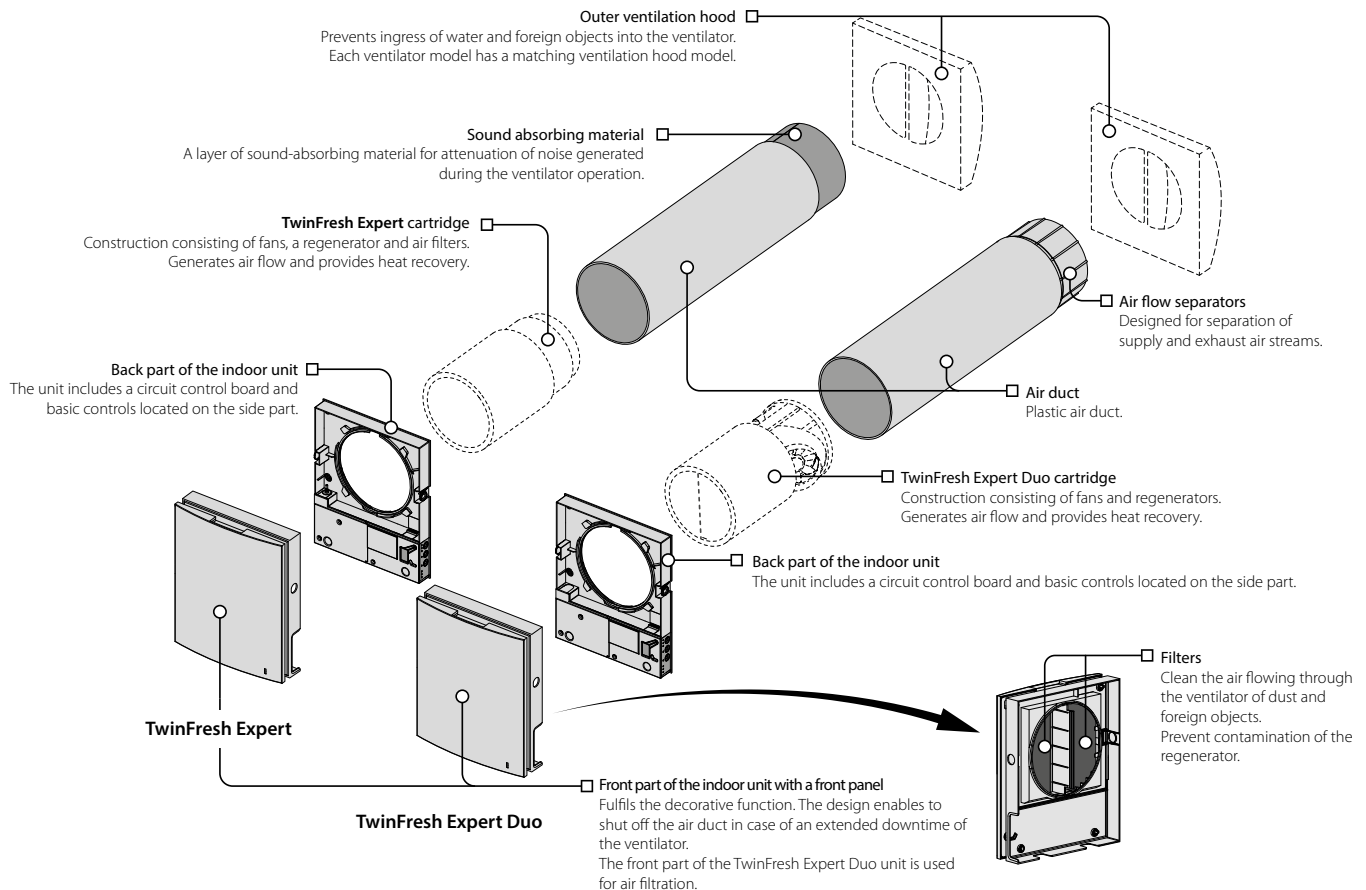
Cartridge is the basic functioning part of the ventilator. The cartridge consists of fans, a regenerator and two filters that ensure rough air filtration and prevent ingress of dust and foreign objects into the regenerator and the fan.

The indoor unit is equipped with an automatic air shutters that close during power-off of the ventilator and prevents air backdraft.

TwinFresh Expert Duo is 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 ventilation hood must be installed on the outer wall to prevent ingress of water and foreign objects into the unit.

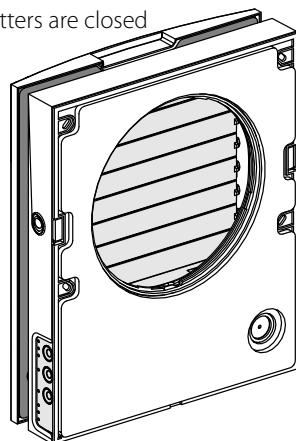
VENTILATOR DESIGN



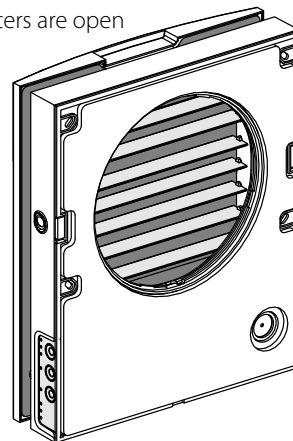
FUNCTIONING OF THE AIR SHUTTERS FOR TwinFresh Expert RW1

The TwinFresh Expert RW1 indoor unit is equipped with automatic air shutters. During operation of the ventilator the air shutters open to let air flow through the ventilator. After the unit shutdown the shutters close within 2 minutes.

The shutters are closed



The shutters are open



OPERATION MODES

TwinFresh Expert	TwinFresh Expert Duo
<p>Ventilation: the ventilator runs either in extract or supply mode at a set speed. In this mode one group of the ventilators run in the supply mode and the other in the extract mode, depending on position of the DIP switch No. 3 (refer to page 12).</p> <p>Boost: the ventilator goes to the maximum speed with the same operation mode.</p> <p>Regeneration: the ventilator runs in two cycles, 70 seconds each, with heat and humidity regeneration.</p> <p>Cycle I. Warm stale air is extracted from the room and flows through the ceramic regenerator, which gradually absorbs heat and humidity. 70 seconds after the ceramic regenerator starts to get warm, the ventilator goes to the supply mode.</p> <p>Cycle II. Fresh cold intake air from outside flows through the ceramic regenerator, absorbs accumulated moisture and is heated up to the room temperature by heat accumulated in the regenerator. In 70 seconds after the regenerator cools down, the ventilator goes again to the extract mode and the cycle starts from the beginning. In this mode in case of installation of two ventilators they operate with opposite rotation directions. While one ventilator supplies air, the other one extracts air.</p> <p>Air supply: the ventilator operates in the supply mode irrespective of position of the DIP switch No. 3 (refer to page 12).</p>	<p>Ventilation: one fan runs in the air extract mode and the other fan runs in the air supply mode at set speed. The fans do not change the rotation direction.</p> <p>Boost: in case of a sensor activation the ventilator follows one of two functioning algorithms to be set during setup of the ventilator with the DIP switch. For details, refer to the page 12. DIP switch is set to OFF: the ventilator runs in the extract mode on the third speed (both fans run in the extract mode). DIP switch is set to ON: the ventilator goes to the maximum speed in the same operation mode.</p> <p>Regeneration: one fan runs in the extract mode and the other one in the supply mode. Each 70 seconds the fans change the rotation direction.</p>

MOUNTING AND SET-UP

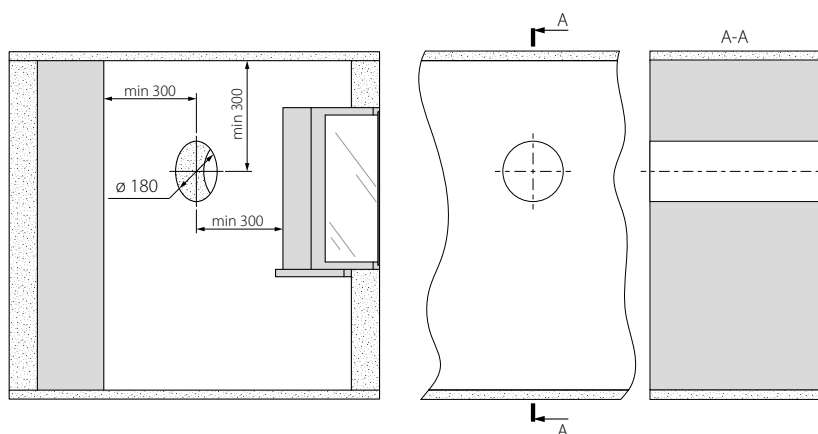


READ THE USER'S MANUAL BEFORE INSTALLING THE UNIT.

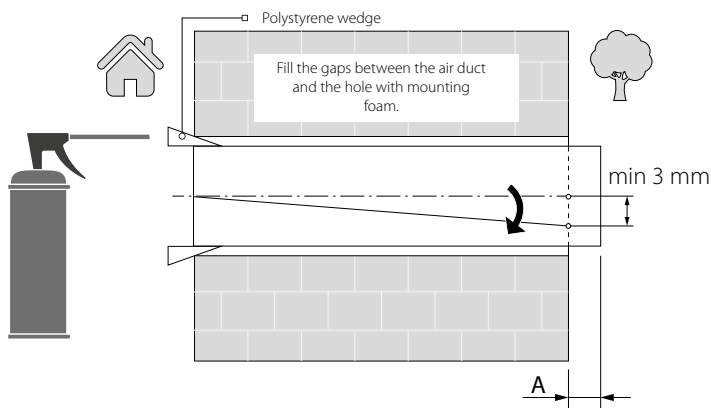


DO NOT BLOCK THE AIR DUCT OF THE INSTALLED VENTILATOR WITH DUST ACCUMULATING MATERIALS, SUCH AS CURTAINS, CLOTH SHUTTERS, ETC. AS IT PREVENTS AIR CIRCULATION IN THE ROOM.

1. Prepare a round core hole in the outer wall. The hole size is shown in the figure below.



2. Insert the air duct in the wall hole. For ease of installation use the polystyrene wedges included in the delivery set. The air duct end must protrude for the distance A that enables installation of the outer ventilation hood. The distance A is stated in the installation instruction for the ventilation hood.

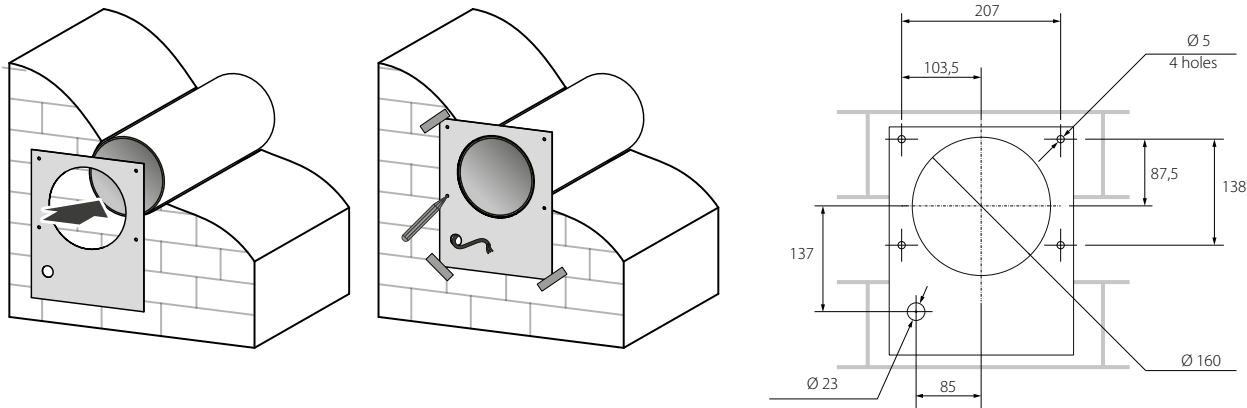


Install the air duct with the minimum slope of 3 mm downwards to the outer wall side.

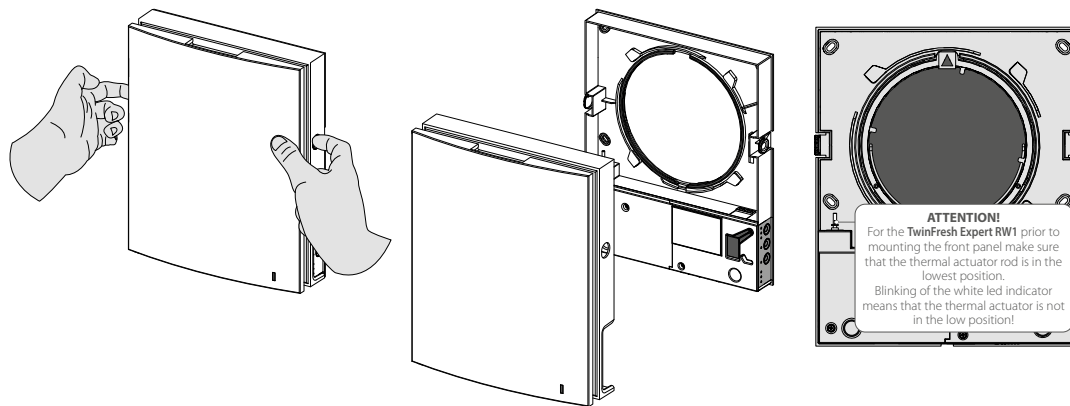
To cut the air duct either make preliminary calculations of the required duct length or make sure to have access to the outer wall after fixation of the air duct.

3. Fasten the supplied mounting template to the indoor wall using the adhesive tape. The large opening in the template must be coaxial with the air duct. For aligning the template 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 of the ventilator from the wall through the marked opening on the template.

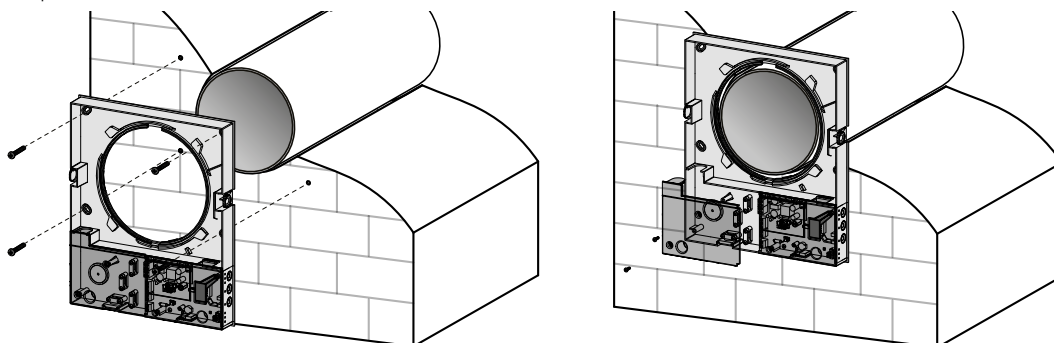
Hole marking for fasteners



4. Press the side tabs to detach the front part of the indoor unit from its rear part.

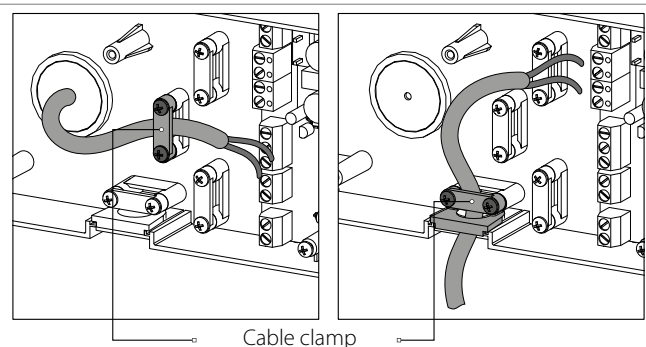


5. Fix the rear part of the indoor unit on the wall using the screws supplied with the mounting kit of the ventilator. Remove the two screws that retain the transparent cover to enable access to the connection terminals.

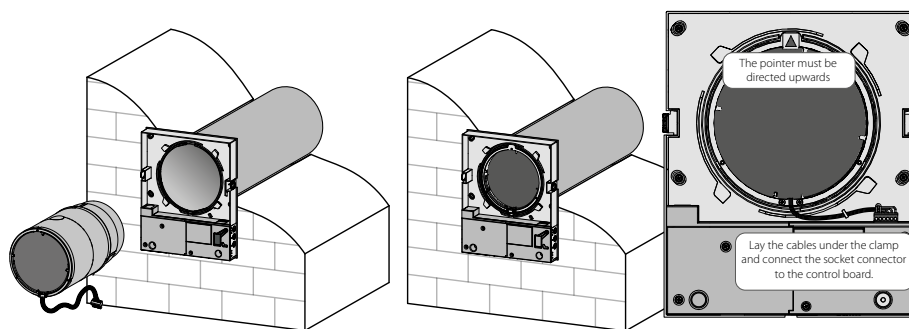


6. Route the power cable as figured below and connect the ventilator to power mains in compliance with the external wiring diagram (refer to page 12).

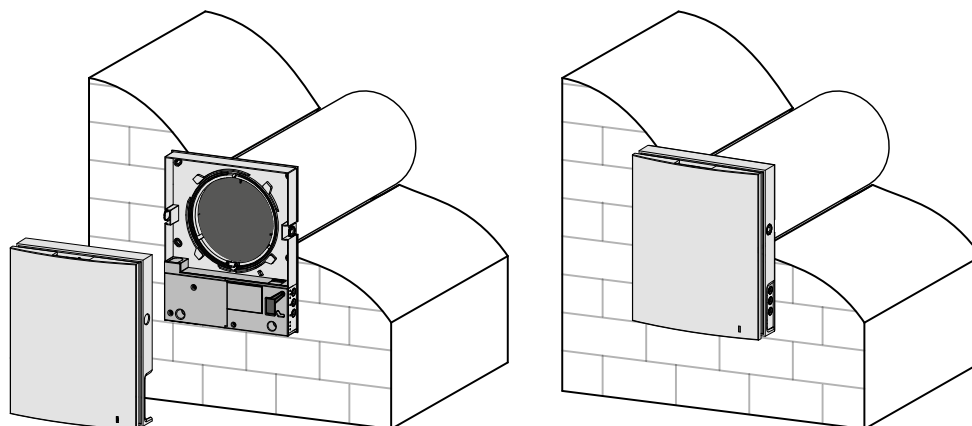
Fix the power cable and the signal cables with a cable clamp. After completion of the electrical connection re-install the transparent terminal cover in site.



7. Insert the cartridge in the air duct as shown below. During mounting make sure the pointer is directed upwards. Then fix the cable with a clamp and connect the socket connector to the control board.

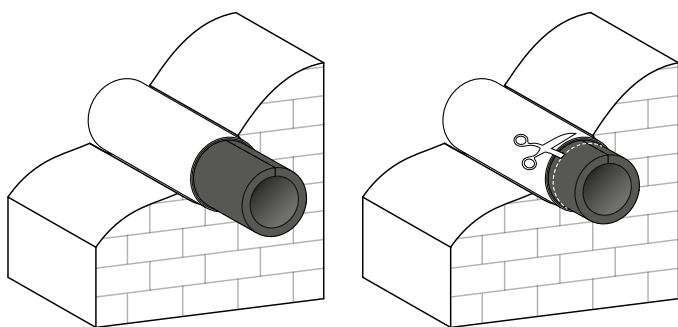


8. Install the front part of the indoor unit.



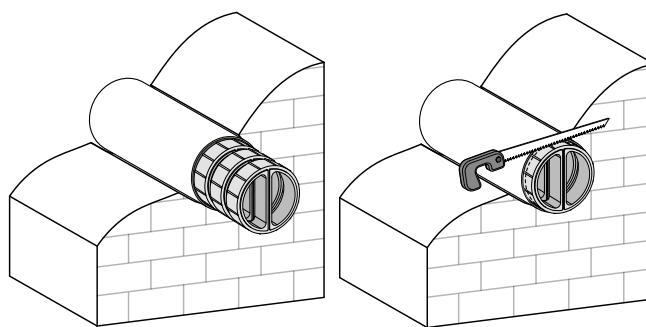
TwinFresh Expert

9. Insert the sound absorbing mat into the air duct. Roll the sound absorbing mat to match the air duct diameter with the protecting paper layer outside. Insert the roll in the air duct against stop to the cartridge. Make a mark at the end of the air duct, remove the sound absorbing mat and cut the roll according to the marking. After that insert the ready roll into the air duct.



TwinFresh Expert Duo

9. Install the sectional air flow separators from outside. Install a required number of the air flow separators in the air duct against stop to the cartridge. Mark the last air flow separator to be flush with the air duct face, remove the last air flow separator from the air duct and cut it according to the marking. Install the adjusted air flow separators to the air duct.



10. Install the outer ventilation hood. For mounting guidelines of the ventilation hood please refer to the installation instruction for the outer 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.**



**ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED
AND WILL VOID THE WARRANTY.**

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

The installation of power and signal cables is described in the Installation and set-up section.

Connect the unit to power mains using durable, insulated and heat-resistant conductors (cables and wires). The total minimum cross section for the power cable must be not less than 0.5 up to 0.75 mm² and 0.25 mm² for the signal cables. The above wire cross section value is tentative. The signal cable must be shielded. The actual conductor cross section selection must be based on the wire type, maximum wire temperature, insulation, length and installation method.

Use copper wires only for all the electric connections!

Connect the unit to power mains via the terminal block in compliance with the wiring diagram and terminal designation.

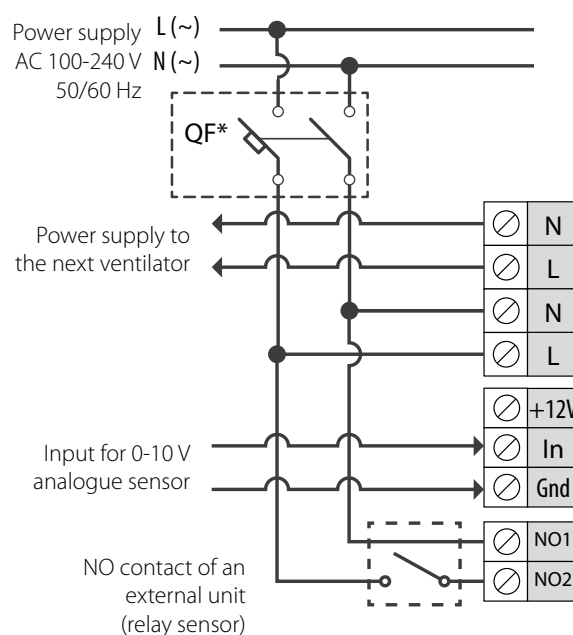
Connect the ventilator to power supply through an automatic circuit breaker with electromagnetic trip integrated into the home wiring system. The rated trip current of the automatic circuit breaker must exceed the maximum current consumption of the unit, refer to the rating plate on the unit casing.

The ventilator design enables connection of the external units with NO contact, such as external CO₂ sensor, humidity sensor, switch, etc.

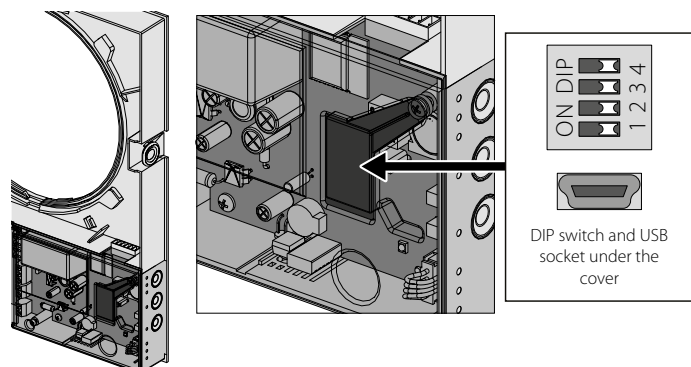
When the NO contact of the external device is closed, the ventilator switches to the maximum speed.

It is possible to connect an analogue sensor with output voltage 0-10 V to the ventilator.

EXTERNAL WIRING DIAGRAM













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 part of the indoor unit, then uplift the rubber cover that closes the switch.

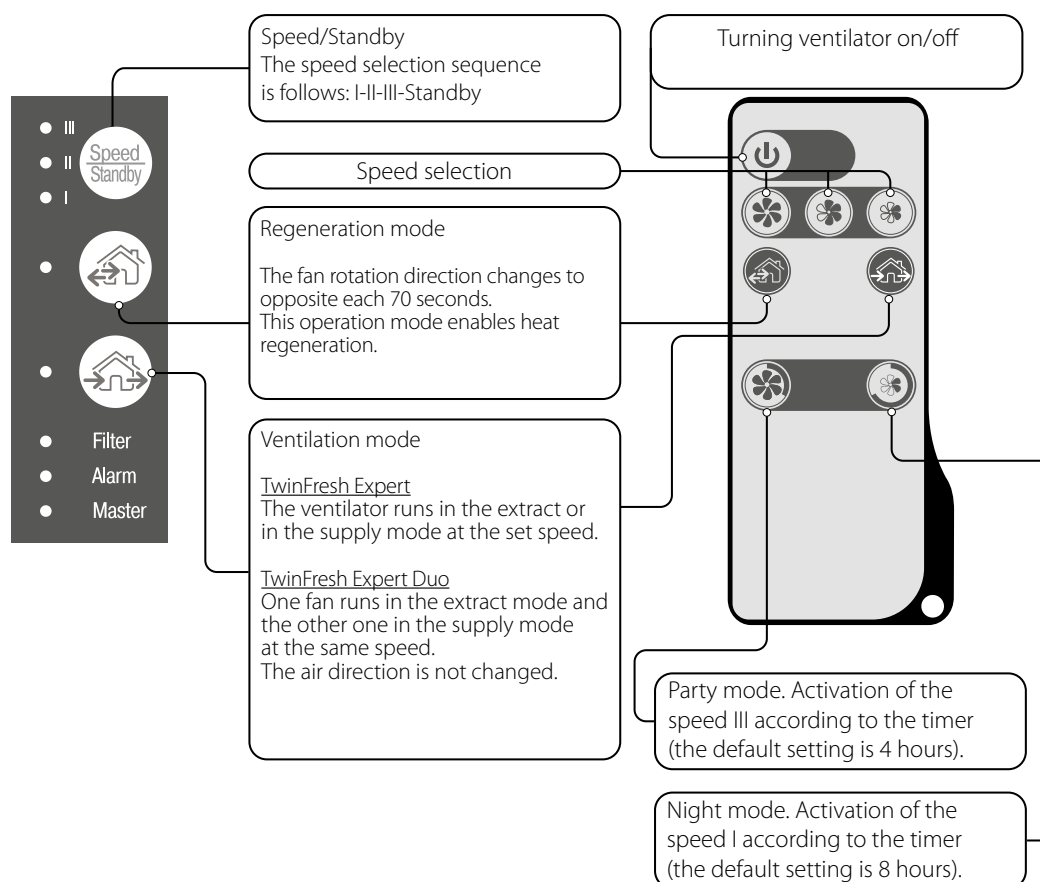
POSITIONING OF THE DIP SWITCH

Setup of ventilator operation mode		
	1	OFF: Master unit.
	1	ON: Slave unit.
Standby mode setup		
	2	OFF: the ventilator is off in the Standby mode.
	2	ON: the ventilator is running at the first speed in the Standby mode.
Setup of air flow direction in Ventilation mode with running ventilators for TwinFresh Expert		
	3	OFF: the ventilator runs in the extract mode.
	3	ON: the ventilator runs in the supply mode.
Setup of Boost mode (actuation of any sensor) for TwinFresh Expert Duo		
	3	OFF: after sensor actuation the ventilator runs in the extract mode at the third speed
	3	ON: after sensor actuation the ventilator runs in the current mode at the third speed
Reset to factory settings		
	4	OFF: standard operation mode
	4	ON: reset to factory settings. Turn the switch to the position ON while the ventilator is running. After the sound signal turn the switch to the position OFF.



VENTILATOR CONTROL

The ventilator may be controlled with the following controls:








- infra-red remote controller
- the buttons located on the side of the indoor unit (see the figure below)
- the mobile application «Vents TwinFresh V.2» installed on a smartphone or a tablet



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 network run with the speed set with the Master unit.</p> <p>I: permanent glowing of the indicator indicates operation of the unit with the first speed. Blinking of the indicator indicates activation of the Night mode timer.</p> <p>I and II: permanent glowing of the indicators I and II indicates running of the ventilator at the speed II.</p> <p>I, II and III: permanent glowing of the indicators I, II and III indicates running of the ventilator at the speed III. Synchronous blinking of the indicators I, II and III indicates activation of the timer in the Party mode or the turn-off delay timer in the Boost mode in case of actuation of the connected external sensors or integrated humidity sensor.</p> <p>Alternate blinking of the indicators I, II and III indicates running of the ventilator at the speed set with the mobile application using the slider selector for manual speed setting or activation of the scheduler.</p>
	<p>Regeneration mode <u>TwinFresh Expert</u> Rotation direction of the fan changes once in 70 seconds. Heat regeneration is accomplished in the Regeneration mode. To enable operation of the ventilators in opposite directions change the position of the DIP switch No. 3.</p> <p><u>TwinFresh Expert Duo</u> Rotation direction of the fans change once in 70 seconds. Heat regeneration is accomplished in the Regeneration mode.</p>
	<p>Ventilation mode <u>TwinFresh Expert</u> The ventilator runs in the extract or in the supply mode at the set speed. The fan rotation direction depends on the position of the DIP switch 3.</p> <p><u>TwinFresh Expert Duo</u> One fan runs in the air extract mode and the other fan runs in the air supply mode at set speed. The fans do not change the rotation direction.</p>
<p>No glowing of the indicators “Regeneration” and “Ventilation” indicates forced activation of the supply ventilation mode of the ventilator. This mode may be activated via the mobile application only.</p>	
<p>Filter</p>	<p>The filter clogging indicator starts blinking 90 days after installation of the cartridge. In this case clean or replace the filters (see the “Technical maintenance” section).</p> <p>After replacement of the filters reset the filter timer using the mobile application or press and hold the button on the indoor unit of the Master unit for 5 seconds, until a signal beeps.</p> 
<p>Alarm</p>	<p>Alarm indicator. In case of a failure the Alarm indicator on the indoor unit glows or blinks.</p> <p>Reasons of alarm blinking:</p> <ul style="list-style-type: none"> • Battery charge is below the allowable limit • No connection between the Master unit and the router • Alarm shutdown of a ventilator. <p>If several interconnected ventilators are running in the same network, in case of alarm shutdown of one TwinFresh Expert ventilator all the other ventilators of this series also stop. The alarm indicator on the defective ventilator blinks and glows on other stopped connected ventilators. All the ventilators of the TwinFresh Expert Duo series in the network continue to run.</p> <p>In case of an emergency shutdown of the TwinFresh Expert Duo ventilator in the network the defective ventilator does not influence the operation of other connected ventilators in the network.</p> <p>In case of communication loss of the Master unit with the router longer than 20 seconds the Master unit goes to the Standby mode (blinking Alarm indicator) and the Slave units will communicate communication loss with the Master unit (refer description of the Master indicator). After resumption of the connection the Slave units automatically get synchronised with the Master unit.</p>
<p>Master</p>	<p>Permanent glowing of the indicator indicates the Master unit.</p> <p>Blinking of the indicator indicates the Slave unit and no connection with the Master unit.</p> <p>No glowing of the indicator means that this ventilator is a Slave unit and it is connected to the Master unit.</p>
<p>Synchronous blinking of all the indicators on the casing of the ventilator indicates activated Setup Mode.</p>	

REMOTE CONTROL OF THE VENTILATOR

	Turning on/Standby. The Standby mode depends on positioning of the DIP switch No. 2 (refer to page 13). The same button is used to reset alarms (Alarm) and turn off the timers.
	Speed selection: III-II-I speeds respectively.
	<p>Regeneration mode</p> <p><u>TwinFresh Expert</u> Rotation direction of the fan changes once in 70 seconds. Heat regeneration is accomplished in the Regeneration mode. The fan rotation direction depends on the position of the DIP switch 3.</p> <p><u>TwinFresh Expert Duo</u> Rotation direction of the fans changes once in 70 seconds. Heat regeneration is accomplished in the Regeneration mode.</p>
	<p>Ventilation mode</p> <p><u>TwinFresh Expert</u> The ventilator runs in the extract or in the supply mode at the set speed. The fan rotation direction depends on the position of the DIP switch 3.</p> <p><u>TwinFresh Expert Duo</u> One fan runs in the extract mode and the other one in the supply mode at the same speed. The air direction is not changed.</p>
	<p>Timer control buttons:</p> <p> Party mode: the timer activates operation of the ventilator with the speed III, 4 hours by default. The time setting may be edited with the mobile application.</p> <p> Night mode: the timer activates operation of the ventilator with the speed I, 8 hours by default. The time setting may be edited with the mobile application.</p> <p>The ventilator reverts to operation with a previous speed setting upon the timer countdown. Press any speed setting button to deactivate the timer or press the timer control button once again.</p>

VENTILATOR CONTROL WITH MOBILE APPLICATION

To enable ventilator control with a mobile device install the Vents TwinFresh V.2.

[Vents TwinFresh V.2 - App Store](#)

[Vents TwinFresh V.2 Play Market](#)



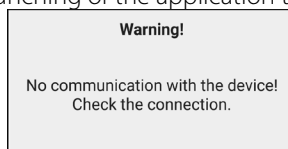
Your mobile device must have the operation system matching the following parameters:

- iOS: 8 or later. Compatible with iPhone, iPad, iPod.
- Android: 4 or later.

CONNECTION OF MOBILE APPLICATION TO THE VENTILATOR

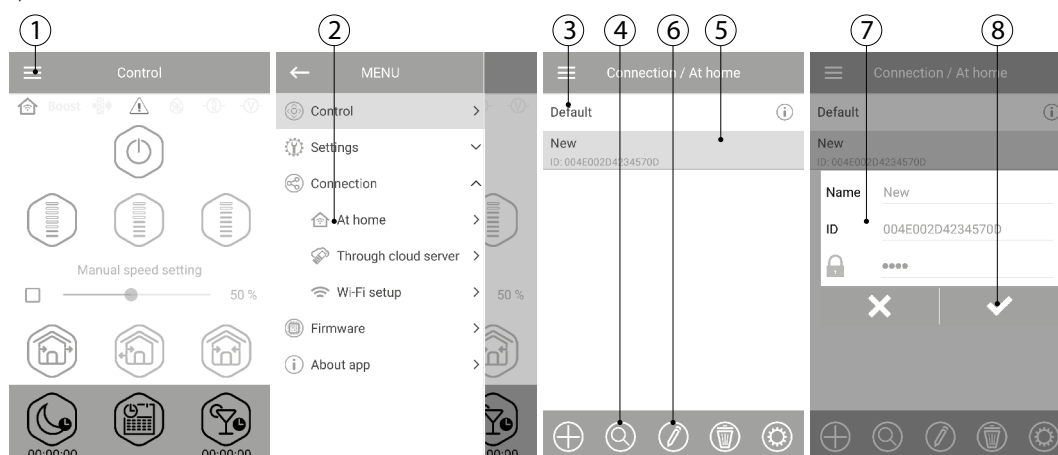
Download the Vents TwinFresh V.2 application and install it on the mobile device.

If there is no connection with the ventilator during launching of the application the mobile device displays the following message:



By default, the ventilator operates as a Wi-Fi access point. Connect the mobile device to the Wi-Fi access point with the name (FAN: + 16 ID Number characters) stated on the ventilator casing under the front panel.

Wi-Fi access point password: 11111111.



Enter the Vents TwinFresh V.2 app and create a new connection as follows:

1. Enter the app menu.
2. Select **Connection - At home**.
3. If mobile device is connected to the Wi-Fi access point without router, select the **default connection**.
4. In case of connection via router start searching for ventilators in the network.
5. Find the new connection in the list and highlight its ID.
6. Edit the connection details.
7. If necessary, re-name the connection and enter the ventilator password.


By default the ventilator password is 1111 (is highlighted in the entry line automatically).


WARNING! At this stage the password for the ventilator cannot be changed.

8. Validate the entered data.

Once the connection has been established, go to the app menu and select Control.

DESCRIPTION OF MOBILE APPLICATION CONTROL BUTTONS

 ON/Standby. The **Standby** mode is determined by the DIP switch No. 2 position (see page 12).

 Selection of the pre-set speed: first, seconds, third speed respectively.

 Manual speed setting. Check the scroll bar to activate it.

Ventilation

TwinFresh Expert

The ventilator operates either in the extract or supply mode at the set speed. The fan rotation direction depends on the position of the DIP switch 3.

TwinFresh Expert Duo

One fan runs in the extract mode and the other one in the supply mode at the same speed. The air direction is not changed.

Regeneration mode

The fan rotation direction changes to opposite each 70 seconds. This operation mode enables heat regeneration.

Supply mode

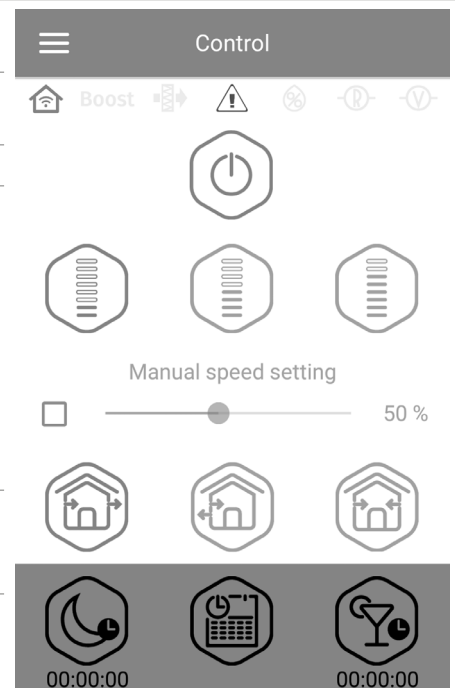
In this mode the TwinFresh Expert ventilator runs exclusively in the supply mode. The ventilator TwinFresh Expert Duo goes to the **Ventilation mode**.

Night mode. Activation of the first speed timer (the default setting is 8 hours, adjustable in the menu **Settings - Timers**).


Scheduler.

Activation of the week scheduled operation.

Party mode. Activation of the third speed timer without changing the ventilator operation mode (4 hours by default, adjustable in the menu **Settings-Timers**).




DESCRIPTION OF MOBILE APPLICATION INDICATORS


 Current type of connection to the ventilator.
Home connection or connection via a cloud server through Internet respectively.

boost Indicator of activation of the third speed after actuation of any sensor.
When this mode is active, all the other modes are disabled. After countdown of the turn-off delay timer (default setting 30 minutes) the ventilator reverts to previous mode. Press the **Power button** to deactivate this operation mode.

 Humidity indicator. It indicates humidity above the set point.

 External relay sensor indicator. It indicates actuation of the external relay sensor.

 External analogue 0-10V sensor indicator. It indicates exceeding the set point on the external sensor.

 Alarm indicator. In case of alarm glows the indicator with two colours:
The indicator glows red in case of alarm shutdown of the ventilator.
The indicator glows orange if battery is not available or the battery charge is low.

 Filter replacement indicator. To reset the filter timer go to **Menu - Settings - Filter**.

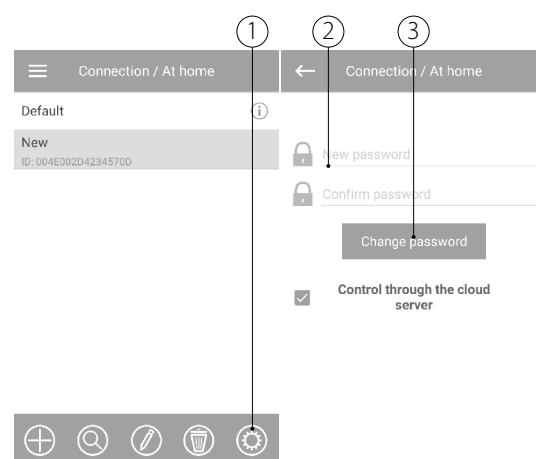
When simultaneously activating several operation modes that exclude each other, the operation mode selection is done according to the following priority:

1. Night mode timer or Party mode timer.
2. Standby.
3. Boost.
4. Schedule
5. Regular mode.

VENTILATOR PASSWORD CHANGE

To change the ventilator password in the mobile application go to **Menu – Connection – Home**.

1. Select the connection type and press the Settings button.
2. Enter and confirm the password.
3. Press the **Change Password** button.



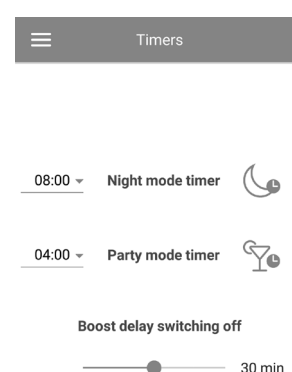
TIMER SETUP

To set the **"Night mode"**, **"Party mode"** timer and the turn-off delay timer for the **"Boost"** mode, go to **Menu – Settings – Timers** in the mobile application.

The **"Night mode"** timer sets transition time to the low speed after activation of the Night mode (8 hours by default).

The **"Party"** timer sets transition time to the high speed after activation of the Party mode (4 hours by default).

The **turn-off delay timer for the "Boost"** mode defines switch delay to the high speed after actuation of any sensor and reset of the sensor to the standard status.



SENSOR SETUP

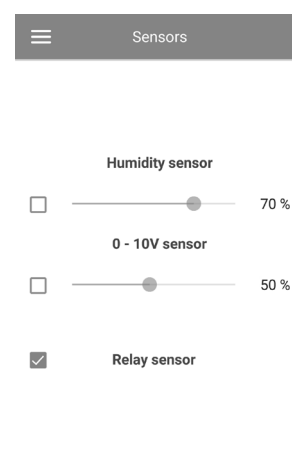
To set up sensor operation via the mobile application go to **Menu - Settings -Sensors**.

Humidity sensor: actuation of the humidity sensor. When the indoor humidity exceeds the set point, the ventilator goes to the third speed. When the indoor humidity drops down below the set point, the turn-off delay timer for the "Boost" mode is activated. After the delay timer countdown, the ventilator reverts to the previous speed setting. Sensor 0-10 V: actuation of the analogue 0-10V sensor. If the 0-10 V control signal exceeds the set value, the ventilator goes to the maximum speed. After decrease below the set value the Boost delay timer is activated. After its operation is completed the ventilator reverts to the previous speed.

Relay sensor: actuation of the external relay sensor. As the NO contact of the external relay sensor is closed, the ventilator goes to the high speed. As the NO contact opens, the turn-off delay timer for the "Boost" mode is activated. After the ventilator operation in the Boost mode comes to the end, the ventilator reverts to the previous speed setting.

Note: for activation/deactivation of the sensors and setup of the sensor threshold points for TwinFresh Expert Duo ventilators in the Slave mode follow the steps:

- turn the ventilator to the Master mode using the DIP switch No. 1 (refer to page 12)
- set the ventilator into the special setup mode (refer to page 21)
- connect to the unit via a mobile device (refer to page 15)
- set the sensors using the mobile application
- exit the special setup mode
- turn the ventilator to the Slave mode using the DIP switch No. 1



DATE AND TIME SETUP

To set up the ventilator date and time, go to **Setting – Date and time**.

Current time: set the current time.

Current date: set the current date.

Date and time

Current time

00:11:53

Current date

08.05.2017

Sync with a mobile device

WEEKLY SCHEDULE SETUP

To set up the weekly schedule in the mobile application go to **Menu – Settings – Scheduler**.

The weekly schedule can be set by means of 4 time intervals available for each day of the week.

You can select one of the three fan speeds or **Standby** for each time interval.

To receive the current settings for the selected day of the week press the **Receive** button.

To apply the selected settings for the selected day of the week press the **Apply** button.

For proper operation of the week scheduler make sure of the correct settings for the date and time.

Schedule

<

Monday

>

Speed:

Period:

1

00:00 - 06:00

1

06:00 - 09:00

1

09:00 - 19:00

1


19:00 - 23:59

Receive

Apply

FILTER TIMER RESET

The ventilator filters must be serviced after every 90 hours of continuous operation.

The need to replace the filters is communicated by the indicator  in the upper section of the **Control** menu. Replace the filter and reset the filter timer.

To reset the filter timer via the mobile application go to **Menu – Settings – Filter**. Then press the **Reset filter timer** button.

The 90 days are counted on the Master ventilator only. The filter replacement indication is replicated on all the Slave units. In this case replace the filters on all the ventilators in the network. After filter timer reset, the filter replacement indicator goes off on all the connected ventilators.

The filter timer can also be reset by means of the button on the indoor unit (see page 14).

Filter

Time left to filter maintenance

Days:	Hours:	Minutes:
52	6	45

Reset the filter timer

Total operation time

Days:	Hours:	Minutes:
37	17	24

RESET TO FACTORY SETTINGS

To reset to the factory settings via the mobile application go to **Menu - Setting - Factory settings**. Then press the **Reset to factory settings** button.

WARNING!

Reset to the factory settings may result in losing Wi-Fi connection with the device.

Factory settings

Reset to factory settings

WIRELESS CONNECTION OF SEVERAL VENTILATORS

The ventilator has two operation modes.

Master unit mode. The ventilator acts as a Master unit. The Slave units and the mobile devices are connected to the Master unit via the Wi-Fi connection. The Master unit is controlled via the mobile application, remote control or the sensor buttons on the ventilator casing. The control signal is automatically transmitted to all the Slave units in the network. In this mode the ventilator receives signals from the sensors (humidity sensor, external discrete sensor, external 0-10 V analogue sensor) and goes to a respective operation mode.

Slave unit mode. The unit acts as a Slave unit in the network. The ventilator responds to the control signals from the Master unit only. Any other signals from other controls are ignored. In this mode the TwinFresh Expert ventilators ignore signals from the sensors. In case of communication loss with the Master unit longer than 20 seconds the ventilator goes to the Standby mode.

Sensor-actuated operation. The TwinFresh Expert ventilators respond to the signal from the sensors in the Master mode only.

The TwinFresh Expert Duo ventilators respond to the signal from the sensors in any mode (Master or Slave).

In case of actuation of any sensors for TwinFresh Expert, all the connected TwinFresh Expert ventilators go to the maximum speed. The TwinFresh Expert Duo ventilators continue to run with the same speed.

In case of actuation of any sensors for TwinFresh Expert Duo only the affected ventilator goes to the maximum speed according to the humidity control scenario. The rest of the ventilators continue to run with the same speed.

WI-FI PARAMETER SETUP

Setup of the Wi-Fi parameters is only possible on Master units. To set up ventilator Wi-Fi parameters via the mobile app go to **Menu - Connection - WI-FI** setup.

Press the **Receive** button to display the current Wi-Fi settings.

Select one of the Wi-Fi operation modes:

Access point: access point mode without a home router.

Select the desired security level for the **Access point** mode:

- **Open:** open network, not password-protected.
- **WPA PSK:** password-protected. The encryption technology based on the WPA protocol does not ensure full security.
- **WPA2 PSK:** password-protected. The encryption technology is for modern networks.
- **WPA/WPA2 PSK:** password-protected (recommended). This combined technology activates WPA and WPA2 and provides compatibility with any electronic devices.

Enter your access point password and press the **Apply** button.

Client: client mode. The ventilator operates in the home router network.

Enter the home router details and the IP address type for the **Client** mode.

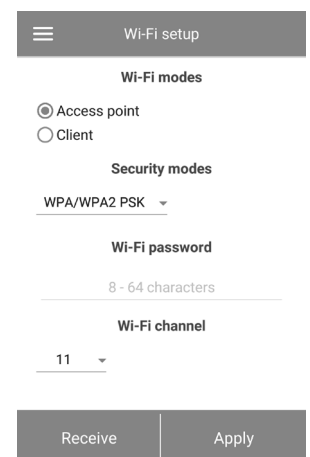
- Enter the name of the Wi-Fi home router access point.
- Enter the password for the Wi-Fi home router access point.

Select IP address type:

DHCP: the IP address is set up automatically upon connection to the home router (recommended).

Static: enables manual entry of the IP address, subnet mask and default gateway. These settings are recommended for expert users only. Select this IP address type at your own risk.

Then press the **Apply** button.



Wi-Fi setup

Wi-Fi modes

☒ Access point

☐ Client

Security modes

WPA/WPA2 PSK

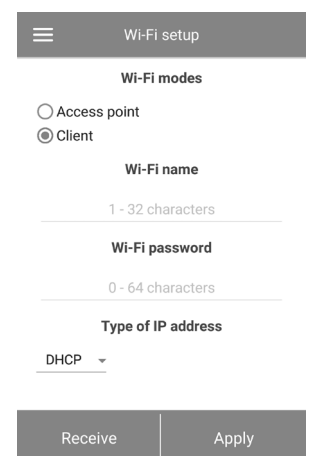
Wi-Fi password

8 - 64 characters

Wi-Fi channel

11

Receive Apply



Wi-Fi setup

Wi-Fi modes

☐ Access point

☒ Client

Wi-Fi name

1 - 32 characters

Wi-Fi password

0 - 64 characters

Type of IP address

DHCP

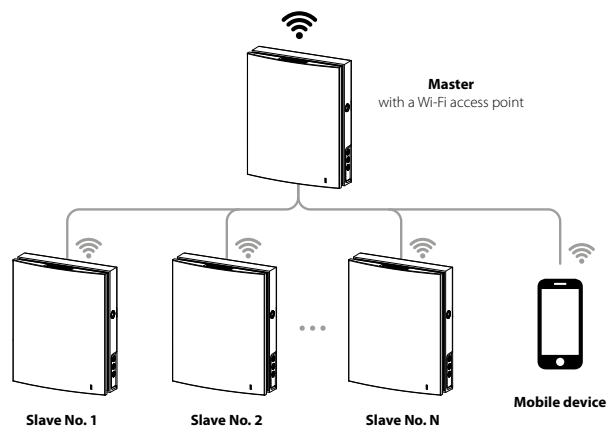
Receive Apply

VENTILATOR WIRELESS CONNECTION DIAGRAMS

Wiring diagram 1

Connection of up to 8 Slave units or mobile devices to the Master unit with its own wireless access point.

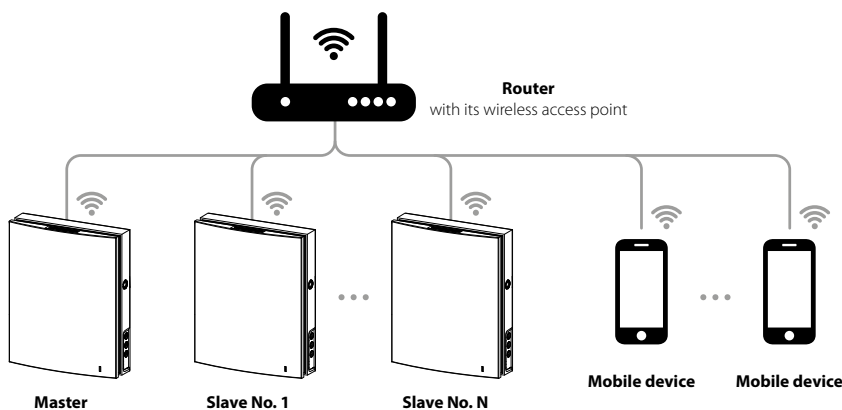
In case of connection of eight Slave units to the Master unit with its own wireless access point a mobile device may not be connected.



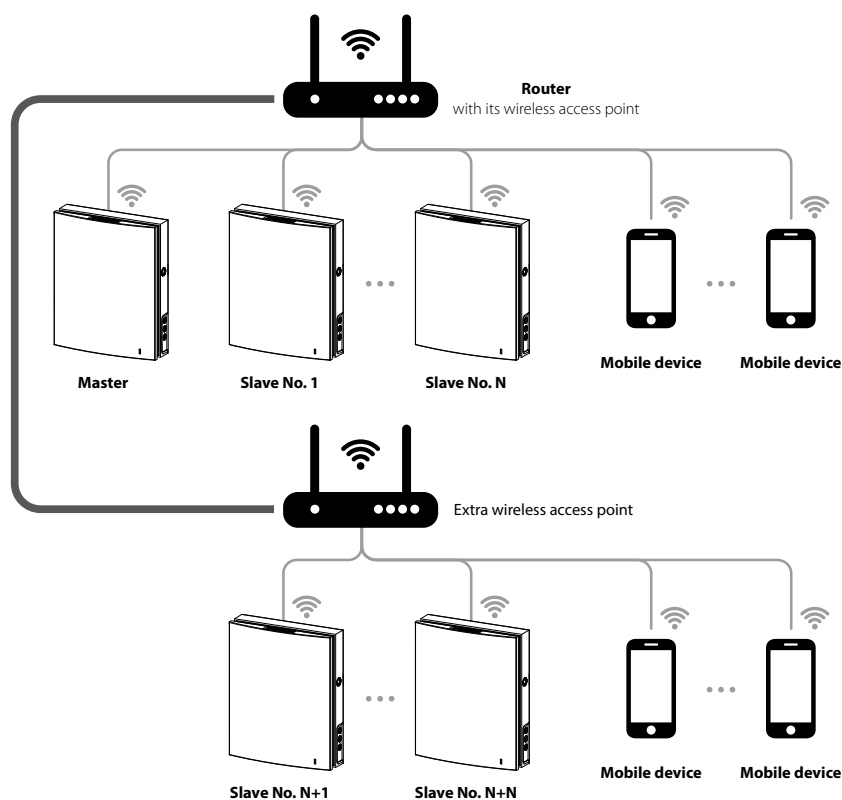
Wiring diagram 2

The Master units, the Slave units and the mobile devices are connected to a Wi-Fi access point of the router.

In this case, the Master unit can operate with the number (N) of Slave units, limited by the technical characteristics of the router.



If the Wi-Fi router sufficient is not enough to connect a required number of the ventilators, it is possible to use an extra wireless access point to connect the other units. Optionally connection of several Master units to the network for arranging a zone control is also possible.



CONNECTING MASTER AND SLAVE VENTILATORS





WHILE COMPLETING THE CONNECTION MAKE SURE THAT THE SLAVED VENTILATORS ARE WITHIN WI-FI COVERAGE OF THE MASTER VENTILATOR

To connect a Master and a Slave unit, set the DIP switches on each ventilator to Master or the Slave position (see page 12). Then set up the Wi-Fi parameters of the master unit (see page 19).





AFTER CHANGING THE WI-FI PARAMETERS OF THE MASTER VENTILATOR REPEAT THE CONNECTION STEPS!

Press and hold the **Ventilation**  button on the Master unit casing. Wait for the beep and the blinking of all the LED lights on the unit casing. Repeat the steps with all the Slave units and wait for the beep when all the LED lights go down on each Slave unit. Set the Master unit to the standard operation mode. Press and hold the **Ventilation**  button. Wait for the beep and going down of all the LED lights.

Note: If the home router works in conjunction with several Wi-Fi access points and the ventilators require connection to different access points:

- Connect the Master unit to the first Wi-Fi access point.
- Complete the connection with the first group of Slave units.
- Connect the Master unit to the second Wi-Fi access point.
- Complete the connection with the second group of Slave units.


SPECIAL SETUP MODE

In the event of losing the Wi-Fi password or the Master unit password or in other cases use the recovery Setup mode to restore access to the ventilator functions. To enter the special setup mode, press and hold the **Ventilation**  button on the ventilator casing for 5 seconds, until the beep and blinking of all the LED lights. The ventilator continues in this mode for 3 minutes and then automatically revert to the previous settings. To exit the Setup mode immediately, once again press and hold the **Ventilation**  button on the ventilator casing for 5 seconds, until the beep and shutdown of all the LED lights.

In this mode the following settings are available:

- **Wi-Fi network name:** Setup mode.
- **Wi-Fi password:** 11111111.
- **The unit password cannot be read.**

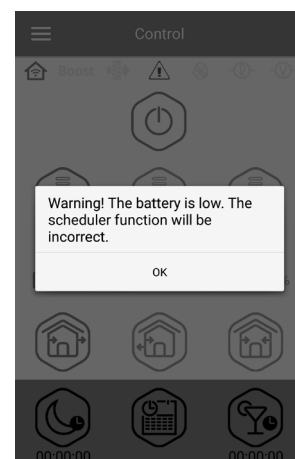
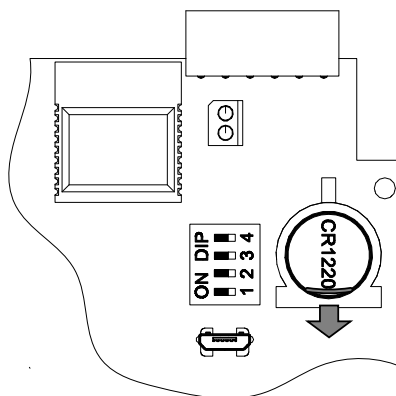
BATTERY REPLACEMENT

The **Alarm** indicator on the ventilator casing blinks, when the battery charge is low. The mobile app will also display the  warning and show the following message on pressing the indicator icon.

Low battery power may cause disruptions in the weekly schedule operation. Power off the unit before replacing the battery. After replacing the battery re-set the time and date.

The battery is located on the control circuit board. Power off the ventilator to replace the battery, remove the front panel and the cover protecting the control circuit board. Remove the battery and install the new one.

Battery type: CR1220.



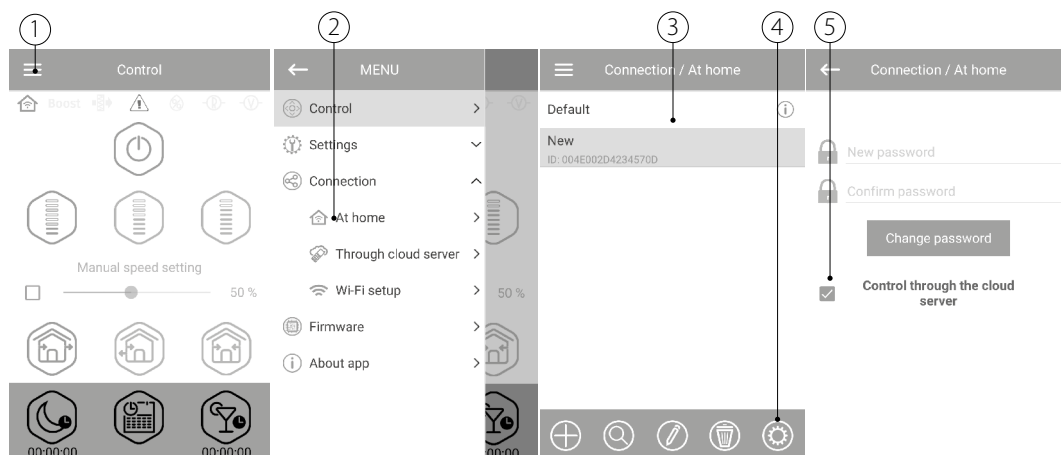
CLOUD SERVER CONNECTION

The ventilators can be controlled using the mobile app via a cloud server connection. This functions enables control of a single or multiple ventilators connected according to Diagram 2 over any distance using the mobile app connected to the Internet.

By default the Control via cloud server function is disabled.

To enable the function:

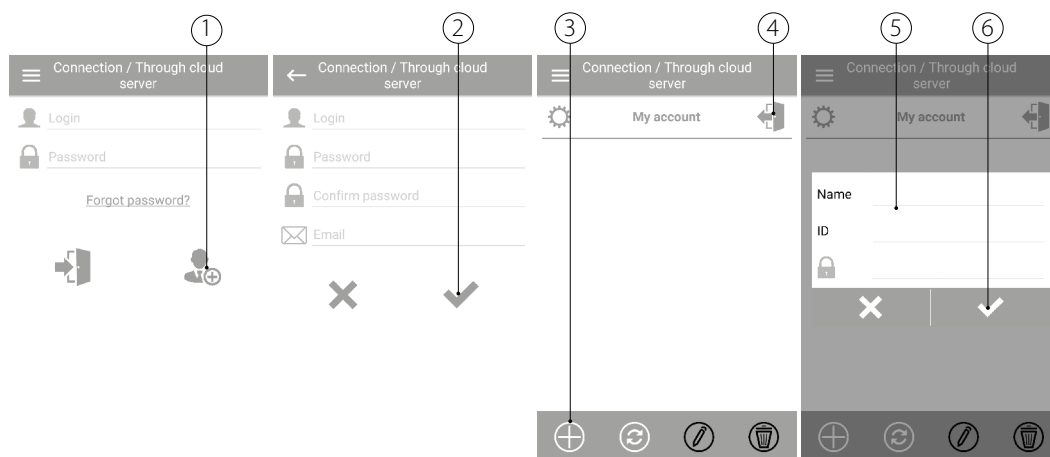
1. Enter the app menu.
2. Select **Connection - At home**.
3. Select the desired ventilator connection.
4. Enter the connection settings menu.
5. Enable **Control via cloud server**.



Note: When this function is activated, any loss of Internet connection provided by the home server may result in temporary loss of communication with the ventilator.

Create a new account for control of the Master ventilator. For that open the mobile app and go to **Menu - Connection - Through cloud server**:

1. Press the Add new account button.
2. Enter a login, a password and an e-mail address for password recovery. Then press the Apply button.
3. The app will log into the account automatically. Add a new Master unit.
4. To exit the account press the respective button (if necessary).
5. Enter a ventilator name on your choice, the ventilator ID as stated on the control circuit board and the unit password (1111 by default).



6. Confirm the entries.

To log into the account via the mobile app go to **Menu - Connection - Through the cloud server**.

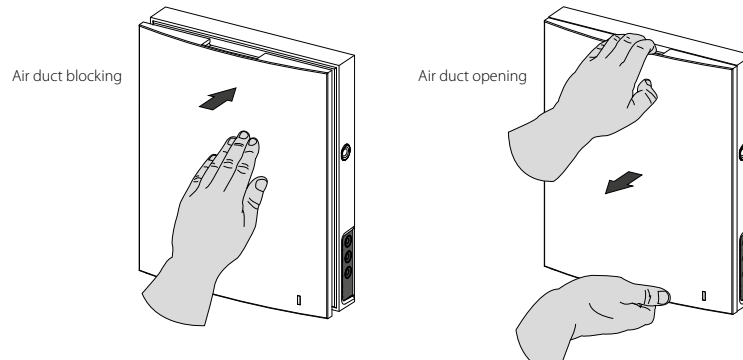
Then enter the login and password and press the **Enter** button.

AIR FLOW BLOCKING FOR TwinFresh Expert

Press the front panel to close the air duct completely. The fan of the ventilator is stopped.

Meanwhile the unit functionality is not changed.

To open the air duct pull the front panel through the specially designed recessions. The fan automatically starts operating according to the actual speed setting.



The light operating indicator is located on the front panel. In the night time the indicator glowing goes down.

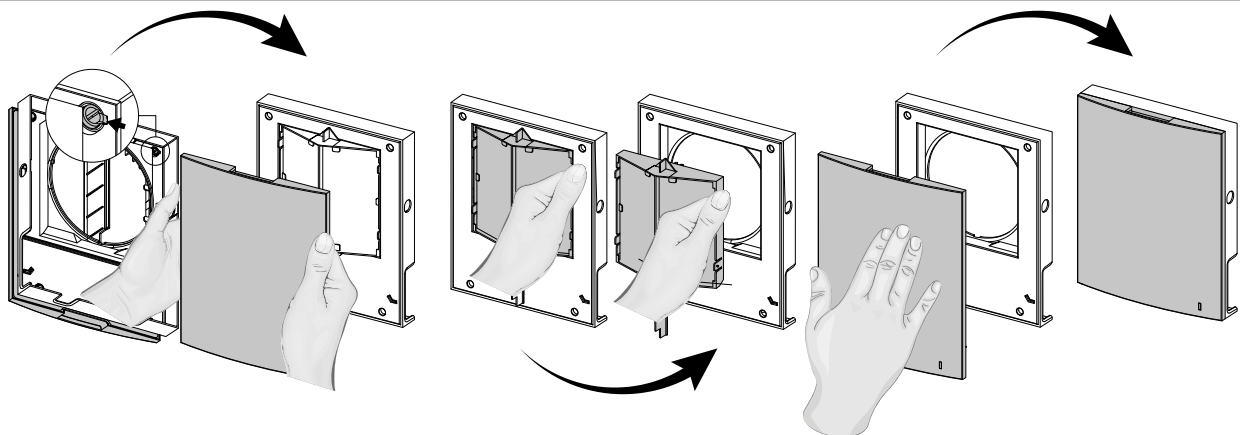
AIR FLOW BLOCKING FOR TwinFresh Expert Duo

Press the side tabs to detach the front part of the indoor unit from its back part and close the air duct.

Then open the latches and remove the front part of the front panel. Remove the air flow separator by pulling one of the side clamps. Install the front part of the front panel and press it gently to close the air duct.

The fan of the ventilator is stopped. Meanwhile the unit functionality is not changed.

Open the air duct in the reverse order. The fan starts operating according to the actual speed setting set with the current mode.



The light operation indicator is located on the front panel. In the night time the indicator glowing goes down.

TECHNICAL MAINTENANCE



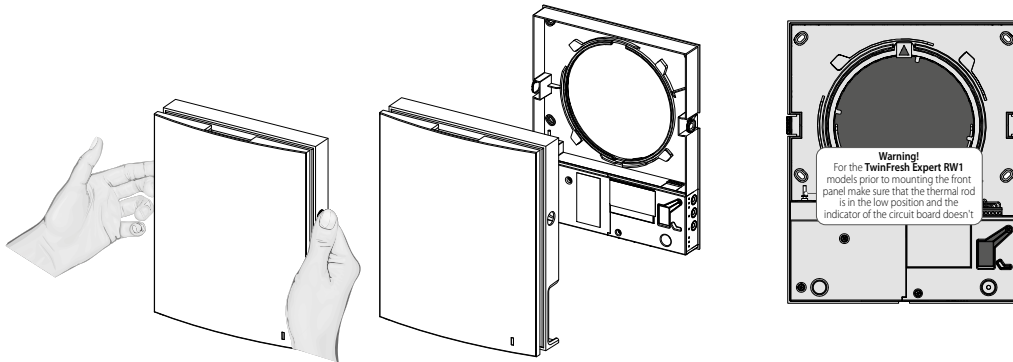
**DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE
ANY MAINTENANCE OPERATIONS!**

Maintenance of the ventilator means regular cleaning of the ventilator surfaces of dust and cleaning and replacement of the filters. To enable access to the main serviced units turn off the ventilator using the remote control or the buttons on the indoor unit, then turn off power supply completely.

TwinFresh Expert

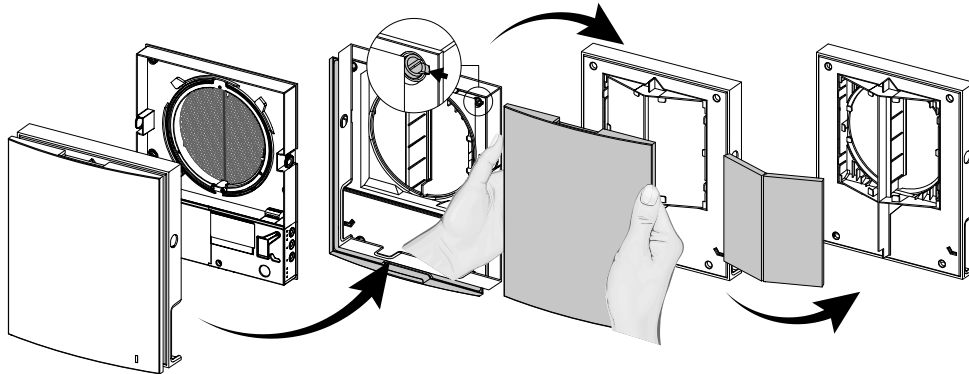
1. Press the side tabs on the indoor unit to take off the front part.

At the re-assembly of the front panel make sure that the thermal rod is in the low position. If it is uplifted, wait until it goes down (up to 2 minutes).

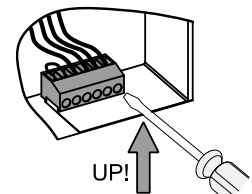
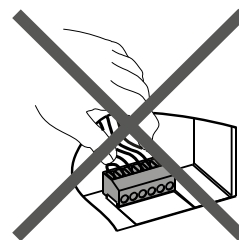
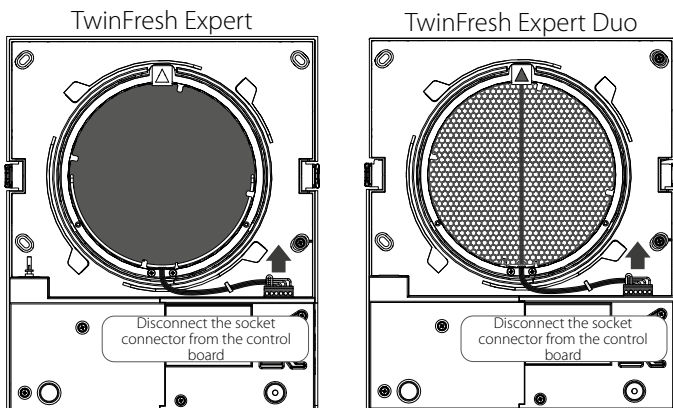


TwinFresh Expert Duo

1. Press the side tabs on the indoor unit to take off the front part. Then open the tabs and disconnect the front panel from the indoor unit. Remove the filters for cleaning. Assemble all the parts in the reverse order.

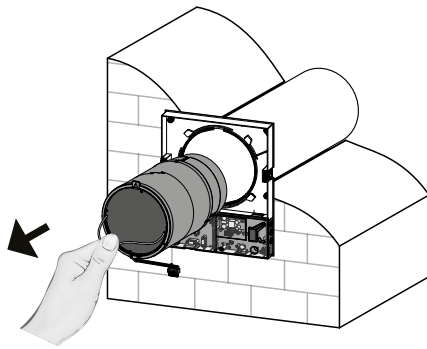


2. Remove the socket connector from the control board. Do not remove the socket connector by pulling the wires. Use a flat screwdriver to uplift it, if required.

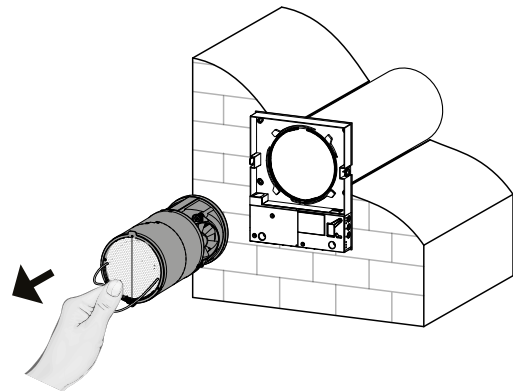


3. Pull the band to remove the cartridge.

TwinFresh Expert

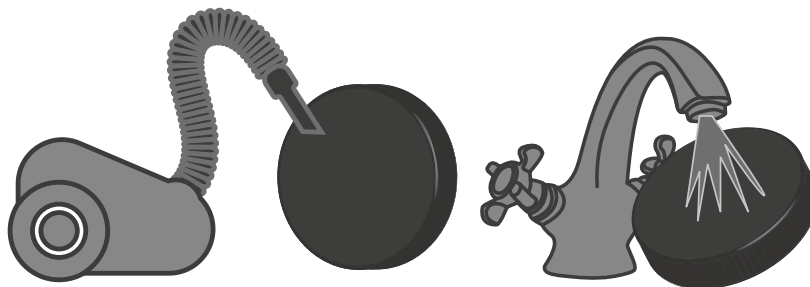


TwinFresh Expert Duo



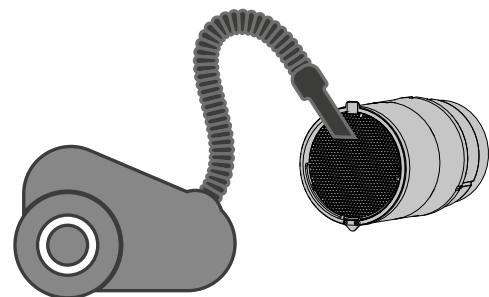
Clean the filters as required, but not less than once in three months.

- In 90 days of non-stop operation the filter replacement indicator (Filter) starts glowing. Reset the filter timer using the mobile application.
- Wash and let the filters dry out completely. Install the dry filters in the air duct.
- Vacuum cleaning is allowed.
- The filter rated lifetime is 3 years.



Even regular technical maintenance may not completely prevent dirt accumulation on the regenerator and the fans.

- Clean the regenerator regularly to ensure its high regeneration efficiency.
- Clean the regenerator with a vacuum cleaner not less than once a year.



4. Battery replacement in the remote control (as required).

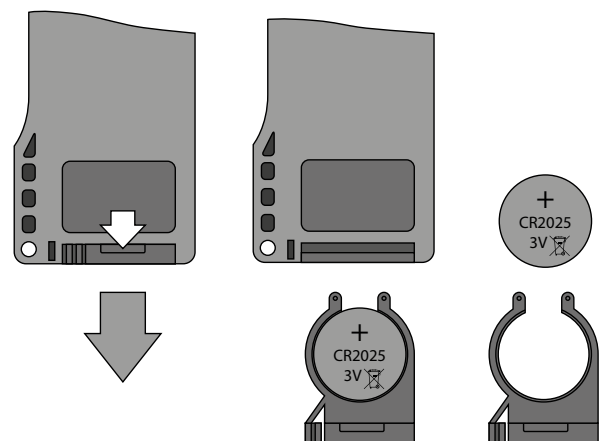
In case of a long operation of the remote control the battery must be replaced.

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.

Then replace the battery and re-install the holder with a new battery in site.



FAILURES AND TROUBLESHOOTING

Failure	Possible reasons	Troubleshooting
The fan does not get started during turning on.	No power supply.	Make sure the power supply is connected correctly, otherwise eliminate the connection error.
	The motor is jammed, the impeller blades are contaminated.	Turn the ventilator off. Troubleshoot the motor jam and the impeller clogging. Clean the blades. Turn the ventilator on.
Tripping of the circuit breaker during turning of the ventilator on.	Overcurrent as a result of a short circuit in the electric circuit.	Turn the ventilator off. Contact the Seller for further information.
Low air flow.	Low set fan speed.	Set the higher speed.
	The filters, the fan or the regenerator are contaminated.	Clean or replace the filter. Clean the fan and the regenerator.
Noise, vibration.	The impeller is contaminated.	Clean the impeller.
	Loose screw connection in the ventilator casing or in 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

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Compatibility (EMC) Directive 2014/30/EU of the European Parliament and of the Council, Low Voltage Directive (LVD) 2014/35/EU of the European Parliament and of the Council and CE-marking Council Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above.

The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user's manual. Contact the Seller for warranty service.

The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismounted by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.



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



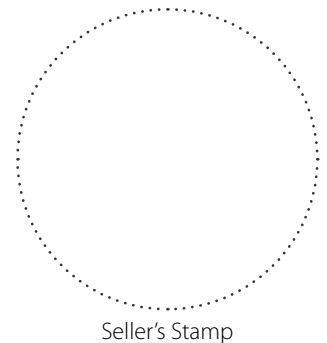
USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

CERTIFICATE OF ACCEPTANCE

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

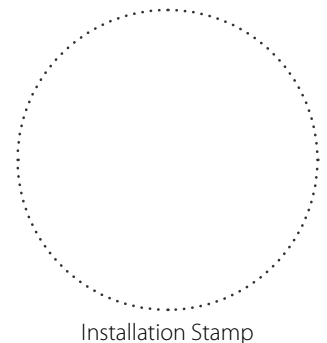
SELLER INFORMATION

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 regeneration ventilator
Model	TwinFresh Expert _____
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	

