

Fresh-r Compac In-the-wall FFB



Installation Manual

Preface

This manual contains essential information for the correct and safe assembly and commissioning of the Fresh-r Compac. Before starting assembly, please read this manual carefully. The manufacturer Vaventis B.V. is not liable for the installation of the Fresh-r or incorrect operation of the Fresh-r as a result of an incorrect installation. The Fresh-r complies with all applicable CE directives. If you have any questions, please contact your supplier or Fresh-r via support@fresh-r.eu.

Content

1. Symbols	3
2. Safety regulations	3
3. Main components.....	3
4. Tools needed for the installation	3
5. Installation Fresh-r.....	4
6. Preparation of electricity	4
7. Fresh-r unit preparation	5
8. Fresh-r connection to electricity	6
9. Mounting the Fresh-r unit	6
10. Mounting the outside grill	7
11. Commissioning.....	7
12. Connecting to Wi-Fi	8
13. Installation checklist	9
14. Manual operation	9
15. Maintenance.....	11
16. Technical specifications.....	12
17. Declaration of conformity.....	14
18. Drawings and dimensions.....	15

1. Symbols

Symbols are used in this manual for additional explanation.



Commentary

The comment symbol indicates additional information that is useful when performing a task.



Caution

The 'Caution' symbol is used for procedures which, if not followed, may cause damage to the equipment or the entire machine.



Warning

The warning symbol is used for certain procedures or actions which, if not performed correctly, may result in an injury and/or property damage.



Electrical tension

This safety symbol indicates a situation or action that poses a safety risk.

2. Safety regulations

- The Fresh-r requires a fused 220V mains supply with proper grounding.
- Connecting the Fresh-r to the mains must be done by a licensed electrician.
- Risk of electric shock or electrocution. Switch off the mains electricity supply in the central distribution box before preparing the electricity.
- The person responsible for installing the Fresh-r should be familiar with local building regulations.

3. Main components

- Fresh-r Compac In-the-wall unit
- 4 screws including 4 plugs for mounting the Fresh-r unit
- 2 pieces of pipes
- Insulating sleeves for the pipes
- Fresh-r Compac In-the-wall drilling template
- Optional: 1 combi grille including mounting plate, 6 screws and 4 plugs, or
- Optional: 2 separate grids including 8 screws and 8 plugs

4. Tools needed for the installation

Before starting the installation, make sure that the following preparations have been made and tools are available:

- Equipment to make a hole in the inside of the cavity wall
- Equipment to drill 2 round holes (\varnothing 130 mm) in the wall, typically an optionally water-cooled diamond core drill. Use the right drill and drill depending on the material the wall is made of

- For the fixing screws of the Fresh-r, use 8 mm drill bits for a stone wall. Wood should be pre-drilled with a 3 mm drill bit. In the case of thin sheet material such as plasterboard, wooden beams with sufficient load-bearing capacity must be placed behind these sheets.
- For the installation of the outer grille(s), use 6 mm drill bits for a stone wall. Wood should be pre-drilled with a 2.5 mm drill bit.
- Torx screwdriver
- Spirit level
- EPP glue, e.g. Polymax mounting kit
- Expanding Pur foam
- Hacksaw

5. Installation Fresh-r

- Determine the correct location. For efficient ventilation, place the Fresh-r centrally in the room, ideally 120 cm from the floor, but at least 10 cm from the floor and ceiling. Please note that you can still remove the door and access the controls. Do not place the Fresh-r behind a curtain or directly above a chair or sofa.



Warning

Make sure that there are no cables or pipes in the wall in the chosen location.

- The Fresh-r may only be mounted vertically and not horizontally. Use the drilling template to mark the two holes for the supply and exhaust duct, including the centers of both holes, and for the four mounting holes.
- Drill the four mounting holes. For a stone wall, drill holes with a diameter of 8 mm. Wood should be pre-drilled with a 3 mm drill bit. In the case of thin sheet material such as plasterboard, wooden beams with sufficient load-bearing capacity must be placed behind these sheets.
- Make a 646 mm high and 292 mm wide recess in the inner wall. The required depth for the Fresh-r including electrical cable is 175 mm.
- To mark the drill holes for the two air ducts, reduce the size of the drilling template by cutting the dotted lines. Then fold the ends inwards. Then mark the two drill holes and the center of each drill hole on the inner outside of the cavity wall.
- Drill the two holes in the outside wall with a drill diameter of 130 mm.

6. Preparation of electricity



Electrical tension

A licensed electrician must connect the electricity. Fresh-r is not responsible for incorrect connection. Risk of electric shock or electrocution. Switch off the mains voltage in the meter cupboard before preparing the connection.

- Make sure that the electricity is prepared before you mount the Fresh-r into the wall. Prepare an grounded 220V connection with sufficient excess length in the recess in the wall. The Fresh-r's power cord is 300 cm, which can be shortened as needed. The cord is supplied without a plug.

7. Fresh-r unit preparation

- Remove the door from the Fresh-r by pulling the bottom end a few centimeters towards you and then sliding it upwards.
- Cut both pipes to size. The required length is the entire wall thickness (inner wall + cavity + outer wall) + 10 mm – 114 mm. With a wall thickness of 300 mm, the correct length for the pipes is $300 + 10 - 114 = 196$ mm.



Commentary

Use a piece of tape or two sheets of paper taped together to mark the pipes and make a perpendicular cut.



Commentary

The 10 mm extra length is for protruding on the outside of the wall. This ensures that condensation water is drained off the outer grille via the drip tray and does not run away via the outer wall.

- Deburr and sand the ends of the pipes.
- Push the pipes into the two connection points at the rear of the Fresh-r. The pipes are correctly placed when they are pushed 20 mm into the Fresh-r until they can go no further.
- Apply the insulation sleeve completely all around to both pipes. Do this to the point where the tube exits the Fresh-r. See the image below.
- Seal the connection between the insulation tube and the rear wall of the Fresh-r completely around with sealant, for example with Bison Kit Polymax or with silicone sealant. See the image below.



8. Fresh-r connection to electricity

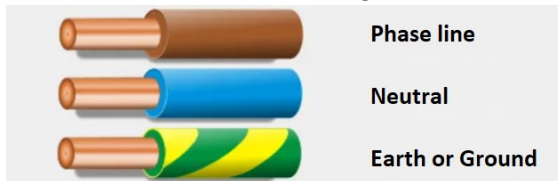


Electrical tension

A licensed electrician must connect the Fresh-r to electricity. Fresh-r is not responsible for incorrect connection. Risk of electric shock or electrocution. Switch off the mains voltage in the central distribution box before connecting the Fresh-r.

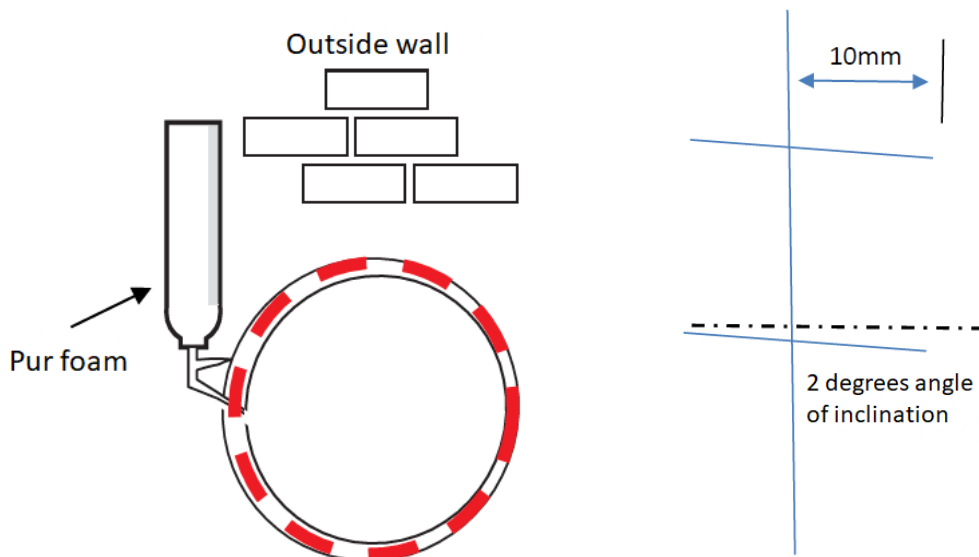
- Connect the Fresh-r's power cord to the grounded power outlet.

Color codes of electrical wiring:



9. Mounting the Fresh-r unit

- In the case of a stone wall, first place the raw plugs in the drill holes.
- Take the Fresh-r and carefully slide it with the two tubes through the two holes all the way in.
- When screwing the Fresh-r in place, make sure that the four screw holes are at the height of the drill holes. Tighten the screws all with the same force.
- On the outside of the wall, seal the space in the wall between the pipes and the drill hole with polyurethane foam. Make sure that the bottom tube slopes slightly downwards, e.g. by using slightly more polyurethane foam at the top than at the bottom.



Commentary

The two-degree angle of downward inclination ensures that condensation water in the drain pipe is drained to the outside. When the tube is inclining upward, condensed water will accumulate in the pipe and there is a risk of it entering the Fresh-r or wall.



10. Mounting the outside grill

Follow these steps below to install the combi grille:

- Use the mounting plate of the outer grille to mark the four drill holes. Make sure that the marking is done level.
- For a stone wall, use a 6 mm drill bit. Wood should be pre-drilled with a 2.5 mm drill bit.
- In the case of a stone wall, first place the plugs in the drill holes and mount the mounting plate with the four screws supplied.
- Where the lower pipe comes out of the wall, seal the lower half of that pipe with sealant between the pipe and the wall. This prevents condensation from running away between the mounting plate and the wall.
- Hang the grille on the mounting plate and screw it on the sides with the two screws supplied.

Follow the steps below for mounting two separate grilles

- Use the grille to mark the four drill holes. The grille should be facing down with the two drip holes. Make sure that the marking is done level.
- For a stone wall, use a 6 mm drill bit. Wood should be pre-drilled with a 2.5 mm drill bit.
- In the case of a stone wall, first place the plugs in the drill holes and mount both grilles using the screws supplied.

11. Commissioning

- The Fresh-r is now ready for use. If necessary, switch the power back on in the central distribution box, the electricity meter closet.
- Switch on the Fresh-r using the on/off switch at the top right on the inside, behind the door.
- After about one minute, three lights will light up on the control panel at the top left on the outside, see the adjacent image. If the Fresh-r does not start up and no lights come on, check the power supply. If, after checking, you are sure that the Fresh-r is correctly connected to the power supply, but still does not work, switch off the Fresh-r and contact your supplier.
- Place the door on the Fresh-r by lowering it slightly diagonally at the top over the two fixing points. Press it towards the wall at the bottom and secure the door with the fixing screw.
- **From now on, the Fresh-r will ventilate fully automatically** for a healthy air quality while saving as much energy as possible in both winter and summer. The degree of ventilation is automatically determined by the measured level of CO₂ and humidity.



12. Connecting to Wi-Fi

Connecting your Fresh-r to Wi-Fi provides a number of benefits; you can view the data of the Fresh-r at any time via the web app, software updates can be received automatically, remote service is possible, and you can extend the warranty period by an extra year to a total of three years.

Before you start, make sure you have the Wi-Fi password with you. The duration during which the Fresh-r is in connection mode (AP mode) is limited. We advise to establish the connection using a laptop/tablet/PC and not using a mobile phone due to the small size of the screen.

1. To connect the Fresh-r to Wi-Fi, first switch the Fresh-r off and on again. This can be done via the on/off button that is located on the inside at the top left. Then go to your laptop/tablet/PC.
2. Go to Settings and select Wi-Fi.
3. In the list of Wi-Fi Connections, select Fresh-R AP..... or Vaventis AP Your device will now connect to the
 - a. Fresh-r Wi-Fi.
4. If connecting the Fresh-r was not successful, repeat steps 1 to 3.
5. Once connected, there are a number of options.
 - a. The ESP settings page opens automatically, see first image below.
 - b. In the top bar you will receive a notification to open the Settings. Click this.
 - c. If the ESP Settings do not open automatically or you do not receive a notification, go to the address
 - d. 192.168.4.1 via your browser.
6. If only the left image below is displayed, click Configure at the bottom. Continue at step 7.

The image displays two screenshots of the Fresh-r web interface. The left screenshot shows the 'Edit' configuration page with the following fields: Serial Number (e:230609/150899), Hostname (fresh-r-7b208 -), Interface (WiFi), Network (Fiwihex (Strength: **)), Password (*****), Address Assignment (DHCP (auto-assign IP)), Fallback DNS Server, and NTP Server (pool.ntp.org). An 'Apply' button is at the bottom. The right screenshot shows the 'Settings' page with the Fresh-r logo and the following information: Serial Number (e:230609/150997), Firmware Version (2439:2440M), Current System Time (1970-01-01 00:01:43), Current Configuration (Hostname: fresh-r-7b208 -, Interface: WiFi, Network: FreshR, IP Address: DHCP, Netmask: DHCP, Default Gateway: DHCP, DNS Server: pool.ntp.org, NTP Server: pool.ntp.org), and Current Connection (IP Address: 192.168.0.174, Netmask: 255.255.255.0, Default Gateway: 192.168.0.1, DNS Server(s):). A 'Configure' button is at the bottom.

7. In the image above at the right, click on the field behind Network. A list of available access points is now displayed.
8. Select your own router by clicking on the name of your router.
9. Enter your Wi-Fi password in the Password field. You may need to tilt your screen to enter the password.
10. After entering the password, click Apply at the bottom. If this is not possible, tilt the screen, click Configure again, and then click Apply.

11. Now wait for the text "Your configuration was applied successfully".
12. The Fresh-r is now connected. After approximately 60 minutes, the data from your Fresh-r will be visible on the web app. The data can only be viewed by yourself or the manufacturer.
13. To view the data, go to www.fresh-r.me. Log in with the username and password provided by Fresh-r. Don't have a username and password yet? Request it at support@fresh-r.eu
14. After the connection is established, you will no longer find Fresh-R AP..... or Vaventis AP in the list of Wi-Fi connections on your laptop/tablet/PC.

13. Installation checklist

Inspection items	Completed		
	Yes	No	n/a
Seal the connection between the insulation sleeve and the rear wall of the Fresh-r with sealant.			
Sealing the space between the pipes and wall holes with polyurethane foam on the outside wall.			
To the outside, the lower pipe has an angle of inclination of 2 degrees downwards.			
Where the lower pipe protrudes on the outside, the lower half is sealed with sealant between the pipe and the wall.			
After switching on, the 3 lights on the control panel at the top left on the outside are lit.			
Blows air out from the bottom of the door.			
CO2 indicator led lights up green. If not, check if it lights up green after half an hour.			
Connect Fresh-r to Wi-Fi.			
Secure the door with the fixing screw.			

14. Manual operation

Fresh-r ensures healthy indoor air, comfort and minimal energy loss:

- automatically enough fresh air
- the sensors measure CO2 and humidity
- the fans will run faster when necessary so that the air quality remains good
- the heat exchanger ensures energy savings and comfort:
 - in winter, the cold outside air enters preheated
 - on hot summer days, the warm outside air enters cooled
- if desired, insight into air quality and energy savings via web app

Automatically demand-driven

- the Fresh-r is set to automatic by default and works completely independently
- humidity and carbon dioxide are measured continuously and determine the ventilation volume
- the air quality is indicated by a colored face and a colored LED
- the green lights show the amount of ventilation

Operate manually (temporarily)

- the ventilation speed can be manually increased or decreased. First press button A, after which the speed can be adjusted with the buttons with the large and small fan icon.

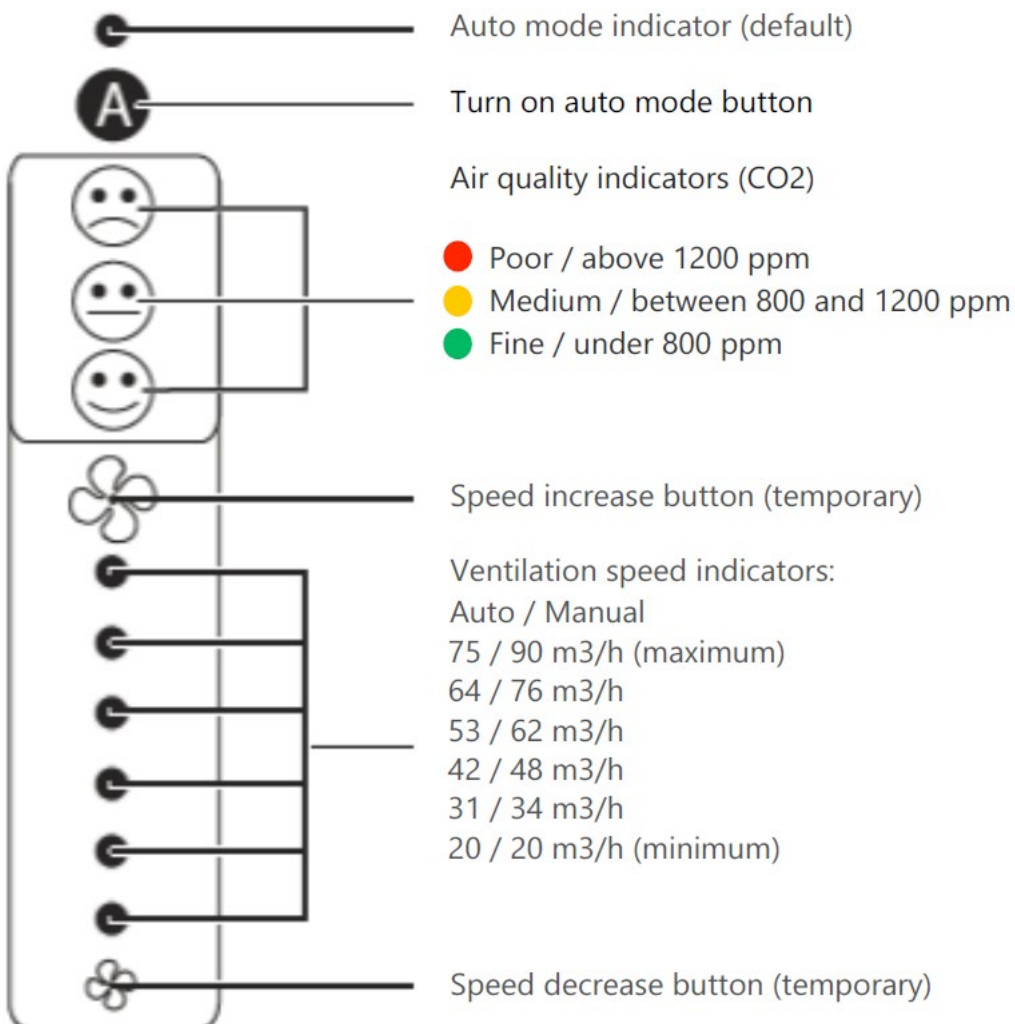
- by pressing button A again, the Fresh-r returns to automatic mode. After an hour and a half, the Fresh-r automatically returns to automatic mode.

On/Off switch

- This switch should only be used before cleaning or maintenance to switch off the Fresh-r.

Ventilation speed

- in the automatic mode, the Fresh-r regulates the required ventilation speed itself, which is limited to 75 m³/h. In this position the lower indicator light equals 20 m³/h and the upper indicator light equals 75 m³/h.
- in manual mode the maximum ventilation speed is 90 m³/h. In this position the lower indicator light equals 20 m³/h and the upper indicator light equals 90 m³/h.
- if desired, you can have the maximum ventilation speed increased from 75 m³/h to 90 m³/h for the automatic mode. Your Fresh-r must be connected to Wi-Fi for this. To request this adjustment, please contact Fresh-r.



15. Maintenance

- For optimum operation and a long service life, the heat exchanger should be cleaned every six months. See the maintenance manual for this.
- For further technical details and maintenance see www.fresh-r.eu.
- If you have any questions about operation and maintenance, please contact us at support@fresh-r.eu. For the best support, your Fresh-r should be connected to Wi-Fi. Always include the serial number of the Fresh-r with contact. This can be found on the silver sticker on the inside of the Fresh-r and starts with E232.

Congratulations on the installation of your Fresh-r Compac, the installation is complete and the Fresh-r is ready to use. We wish you a very good time with the Fresh-r and enjoy the clean air, the comfortable indoor climate and the energy savings.



Fresh-r

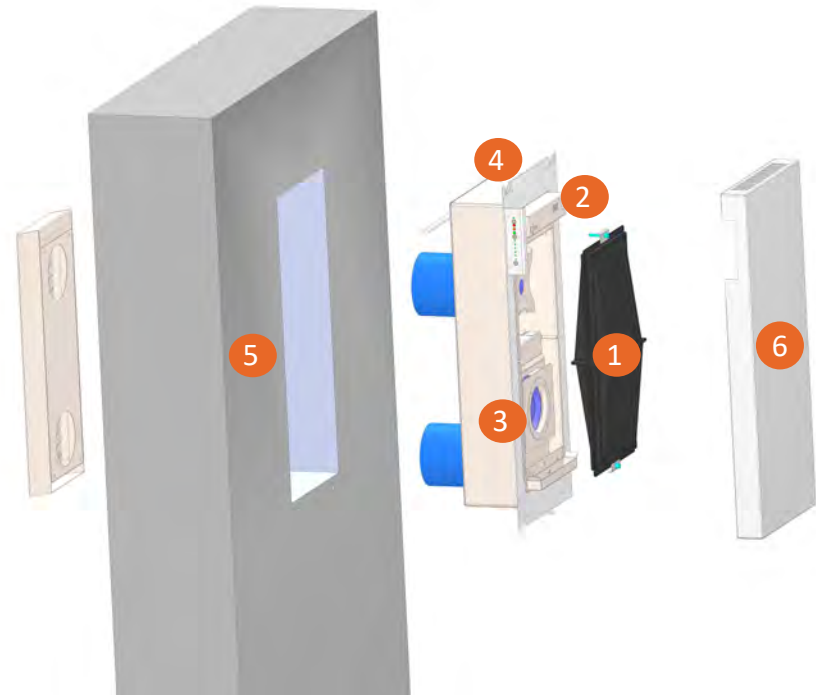
Smart indoor
air care

Fresh-r Compac In-the-Wall Specifications and Data

Smart measurement and control technology that reuses heat in the winter and coolness in the summer.

Keeps it comfortable indoors and the air healthy, without losing energy.

Demand-driven and balanced HR ventilation without ducts.



Key Features

- 1 The heat exchanger is made of copper, that conducts heat 1000 times better than polyethylene, of which other heat exchangers are made. Therefore temperature is exchanged from the outgoing air to the incoming air in a much shorter air path, which has multiple advantages:
 1. Keeps the unit compact;
 2. Low pressure drop, resulting in low fan energy usage and very low noise levels;
 3. Sub-zero °C efficiency;
 4. A thermal efficiency of 90% at 60 m³ / hour.


- 2 Air quality is monitored by CO₂ sensor and humidity sensor. Dust sensors are optional.

- 3 Ventilators refresh the indoor air, with a capacity of up to 125 m³ per hour.

- 4 Runs on 220 Volt, with average use below 7 Watt, the same as one led lamp.

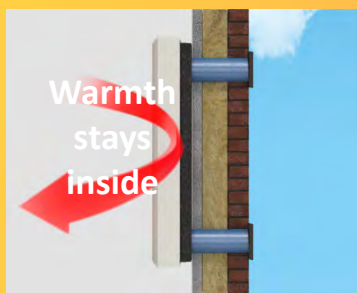
- 5 The outside wall. Fresh-r can be installed both on as well as in the wall. For on the wall installation, only two holes of 130 mm need to be drilled.

- 6 Easy to maintain with low maintenance costs. All parts are easily accessible through a sound-insulated door.

-  3 year warranty when connected to Wi-Fi or LTE.
2 year warranty when not connected to Wi-Fi or LTE.



World champion
in ventilation



Fresh-r is like a breathing window

Technical Data

Heat exchanger	Copper wire
HE efficiency	90 % *
ErP label	A+
Controls	CO ₂ / RH / Temp.
Balanced	Yes
Mounting	In the wall or On the wall
Outside duct diameter	100 mm duct, 120 mm incl. insulation sleeve
Extract duct connection	In next model
Condensate discharge	Integrated in exhaust
Electricity supply	230v/1ph/50Hz
Max power consumption	25 Watt
Average power consumption	7 Watt
Wi-Fi inside / LTE inside	Yes / Optional
Filter class	M5 standard F8 in next model
Dimensions (H x W x D in mm)	
- On the wall	716 x 284 x 192
- In the wall body	638 x 284 x 134
- In the wall door	725 x 326 x 58

* Test at norm volume of 60 m³/hr and 87 % at 80 m³/hr performed by BRE UK

Flow & electricity

25 m ³ / hr (7 l/s)	5.3 Watt
53 m ³ / hr (15 l/s)	11.7 Watt
76 m ³ / hr (21 l/s)	17.6 Watt

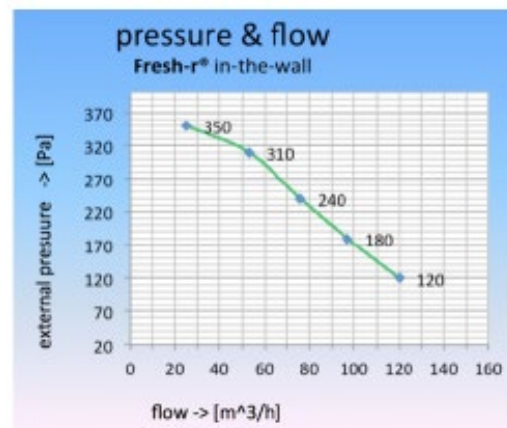
Testing by BRE planned for SAP Appendix F. To be certified as Passive House component.

Flow & sound

35 m ³ / hr (7 l/s)	25 dB(A)
65 m ³ / hr (15 l/s)	30 dB(A)
80 m ³ / hr (21 l/s)	35 dB(A)

NEN-EN-ISO 3741 tested by Cauberg-Huygen

Pressure Flow Graph



Air flow control

The Fresh-r saves 35% (avg.) on the overall ventilation energy by only ventilating when needed. The air flow rate is automatically adjusted to keep air quality good (1200 PPM CO₂ level). CO₂ and RH sensors with its smart control are always included in the Fresh-r and are situated in outgoing air stream. The automatic mode can manually be overruled for 90 minutes by increasing / decreasing fan speed. The user interface indicates the air quality level in 3 steps with icons for good, medium and bad.

Air balance control

Two backward curved fans are continuously balanced using smart controls combined with 4 temperature sensors. This worldwide patented system enables very direct balance control, also with strong winds.

Minimised cold bridge

The cold side of the Fresh-r is completely separated from the warm side.

Circular Design

The design of the Fresh-r takes into account the different technical lifespans of various components. Repair and reuse of all used parts - for other Fresh-r's or a completely different product - is easy because the Fresh-r is designed for disassembly for a circular economy.

Fresh-r, Vaventis BV reserve the right, in the interests of continuous development, to alter specifications without prior notice. All orders are accepted subject to our conditions of sale which are available on request.



Fresh-r

Smart indoor air care

www.fresh-r.eu

Fresh-r is a brand name of Vaventis BV



17. Declaration of conformity

As required by EC Directive

We

The manufacturer: Vaventis B.V.
Address: Weleweg 417
7548 PK Enschede
The Netherlands

Declare under our sole responsibility that the following product

Equipment: Air handling unit with heat recovery
Brand name: Fresh-r
Model/type: Compac In-the-wall

Is in conformity with the following Directives

2006/95/EC Low Voltage (LVD)

The product bears the CE label



Woen van Andel (Managing Director)
Enschede, August 1st, 2021

