



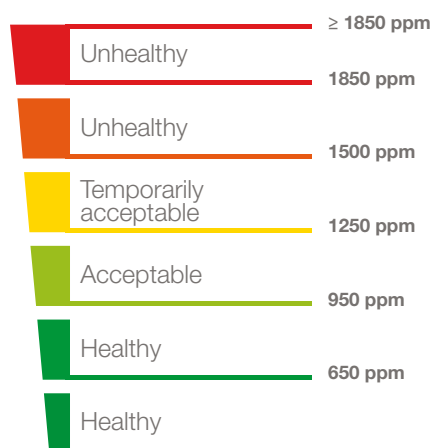
WHY VENTILATE?

Contrary to what many people think, the inside air quality is on average 10 times worse than the outdoor air quality. Cooking, showering, heating, cleaning and even breathing and sweating ensure polluted air. Too much moisture inside also leads to odours, condensation and mould, especially in well insulated or insufficiently ventilated houses. And then there is the house itself, that, with volatile organic compounds [such as formaldehyde] in the building materials used, also has a bad effect on indoor air quality.

GOOD FOR THE OCCUPANT AND THE HOME

Many people are convinced that occasionally opening the windows is enough to provide the necessary ventilation. However, the effect achieved is temporary and local. Moreover, ventilation through open windows is not controlled, resulting in costly energy loss. Open windows are also accompanied by noise nuisance and are an invitation to burglars and annoying insects.

Continuous and controlled ventilation is your only guarantee of a healthy indoor climate. The polluted inside air is discharged and continuously replaced by fresh outside air. The house will, as a result, be 'rinsed' with fresh air.



In the long run, a poor indoor climate can damage the residents' health. Respiratory problems, dry throat, eye irritation, headache, allergies, concentration loss, energy shortage or drowsiness are just some of the possible consequences. That is why it is extremely important to maintain thorough ventilation on a regular basis.

CO₂ MONITOR

The CO₂ concentration is an important indicator for good indoor air quality and can be measured with the Renson® CO₂-monitor. The air quality becomes expressed in CO₂ particles per million air particles. [ppm = parts per million].

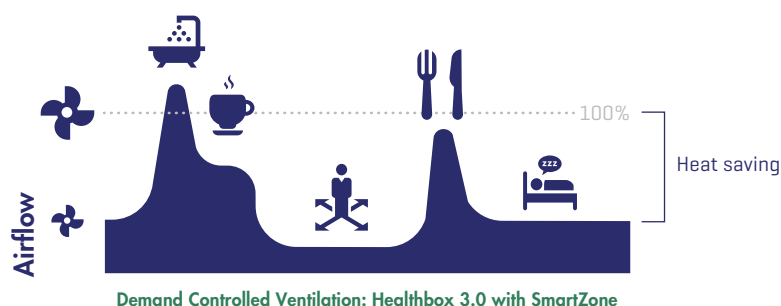
The maximum assumed value is 1200 ppm CO₂. Above this value, people may suffer headache, drowsiness, fatigue or irritation of the mucous membranes at a CO₂ concentrations above 1000 ppm the concentration ability decreases.





DEMAND CONTROLLED VENTILATION CENTRAL VS ZONE CONTROL

Each type C ventilation system in a home consists of at least a ventilation unit with an integrated fan. However, Renson® will keep innovating to raise this type of ventilation to a higher level to an intelligent, demand-controlled system, where the ventilation system adapts the discharge rate according to the needs and living pattern of the residents and the measured air quality.



ZONE CONTROL: VENTILATE WHERE YOU LIVE

In this type of demand-control, the air flow is adjusted locally per room, according to the measured air quality [CO₂, H₂O and/or odour (VOC)]. The ventilation system will, if the air quality allows it, minimise ventilation and only extract more when necessary and then only in the specific rooms where pollution occurs. This type of ventilation gives you additional advantages over a ventilation system with **central control**:

1] Adjusting the ventilation intensity is completely automatic and only in the room where the pollution occurs.

a. Additional acoustic comfort:

The ventilation level is only adjusted in the room where pollution occurs. Unlike a centrally controlled system, there is no additional noise nuisance in one room when ventilation is activated in another.

b. Additional limitation of heating leak:

More than a centrally controlled ventilation system, a zone-controlled system will reduce heating leaks to a minimum. The total air flow from the home is therefore even lower than with a centrally controlled system.

c. Additional limitation of electrical consumption:

In analogy to the heating leak, electrical consumption of a zone-controlled system will also be lower, as the fan can run on a lower regime.

2] There are no sensors visible in the room. All sensors are integrated in the control valves of the ventilation system and no additional sensors need to be installed in the room.



Each control module is equipped with specific sensors for each type of room:



Symbol	Advice for the room to connect	Detection possibilities
	Laundry room <i>Shower room, bathroom (without toilet)</i>	H ₂ O
	Bathroom (with toilet) <i>Wellness, garage, cellar</i>	H ₂ O, VOC
	Toilet <i>Storage/technical area, workshop, dressing, hall/ corridor</i>	VOC
	Kitchen (open/closed)	CO ₂
	Bedroom <i>Living room, office, practice area, workspace, study, hobby room, waiting room/sitting area, baby room, children's room, TV/music room, relax room, dining room, playroom, attic</i>	CO ₂

Each control module is also equipped with temperature sensing.

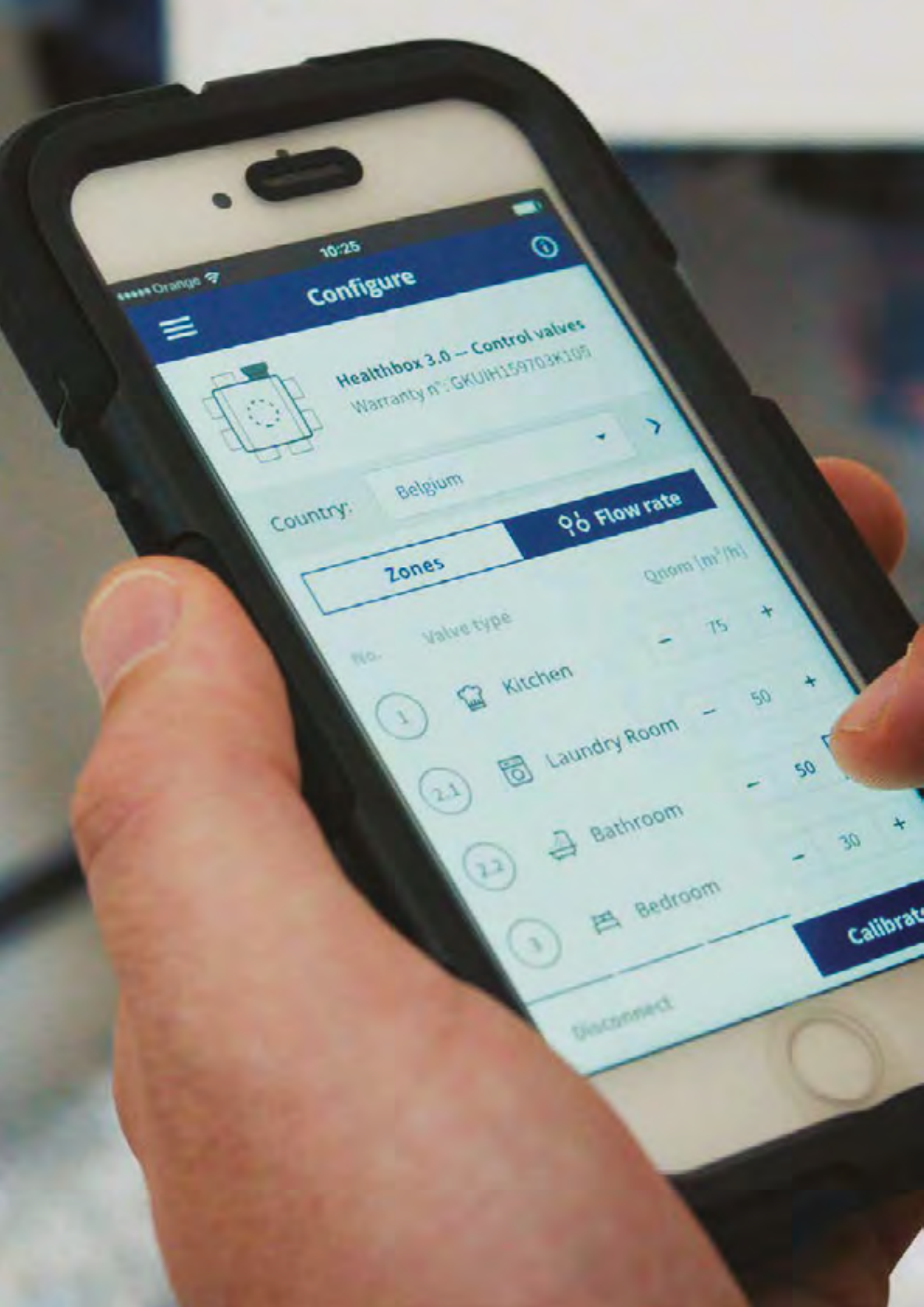
SMARTCONNECT AND APP CONTROL

SmartConnect turns Healthbox 3.0 into a smart device that can communicate with the user/installer and other smart devices. This makes Healthbox 3.0 completely ready to be integrated into a smart home, resulting in greater overall comfort.

The accompanying app gives the user a clear insight of the air quality (H₂O, VOC and/or CO₂) and the ventilation level within the home. Due to various possible profiles, the user can personalise the ventilation level per room and can adjust ventilation even better to his needs.

The installer app on the other hand, ensures a clear step-by-step plan and thus, saves a lot of time during installation. The 'self learning'-factor helps installers forward on their way to high quality installations. Furthermore, all required information for the EPB declaration is digitally supplied via the app.





Configure



Healthbox 3.0 -- Control valves
Warranty n°: GKUIH159703K105

Country: Belgium

Zones

Flow rate

No.	Valve type	Qnom [m³/h]
1	Kitchen	75
2.1	Laundry Room	50
2.2	Bathroom	50
3	Bedroom	30

Calibrate

Disconnect



SYSTEM HEALTHBOX 3.0

Healthbox® 3.0: demand & zone controlled extraction of polluted air

The Renson® C+ systems use a combination of self-regulating Invisivent window ventilations and demand-controlled discharge ventilation [**controlled per zone**] to create a pleasant and healthy indoor climate.



- Fresh outdoor air supply
- Drainage of polluted indoor air
- Fresh outdoor air for nightcooling
- Outdoor sun protection



Healthbox® 3.0

Demand-controlled **zone controlled**
extraction of polluted air from the home.

Technical data sheet page 87

Healthbox 3.0 is equipped to ventilate up to 7 rooms
as standard. By using valve collectors, it is possible to
ventilate up to 11 rooms.



KITS HEALTHBOX® 3.0

Kitchen kit

66060123

Kitchen valve
Grill base Ø125 + plaster cardboard
Strap Ø60-165
0.5m patch cable



Bathroom kit

66060121

Bathroom valve
Grill base Ø125 + plaster cardboard
Strap Ø60-165
0.5m patch cable



Toilet kit

66060122

Toilet valve
Grill base Ø80 + plaster cardboard
Strap Ø50-90
0.5m patch cable



Laundry room kit

66060120

Laundry room valve
Grill base Ø125 + plaster cardboard
Strap Ø60-165
0.5m patch cable



Bedroom kit

66060124

Bedroom valve
Grill base Ø125 + plaster cardboard
Strap Ø60-165
0.5m patch cable





TECHNICAL DATA SHEET:

Healthbox® 3.0

ITEM CODE

Item code	Designation	Main components
66060100	Healthbox 3.0 kit	<ul style="list-style-type: none">Healthbox 3.0 fan unitControl valves: kitchen - bathroom - toilet
66060101	Healthbox 3.0 SmartZone kit	<ul style="list-style-type: none">Healthbox 3.0 fan unitControl valves: kitchen - bathroom - toilet - two bedrooms

SYSTEM SPECIFICATIONS

Type of ventilation	Mechanical demand-controlled extraction
(Max.) ventilation flow rate	475 m³/h [at 135 Pa] 430 m³/h [at 200 Pa] <i>Fan specifications: see technical drawings</i>
Supply voltage	230 VAC ±10% [50 Hz, 60 Hz] <i>Mains plug included</i>
Fan unit rated power - At max. flow rate of 150 m³/h: - At max. flow rate of 225 m³/h: - At max. flow rate of 325 m³/h: - At max. flow rate of 400 m³/h: - At max. flow rate of 475 m³/h:	28 watts 35 watts 53 watts 80 watts 85 watts <i>See graphs</i>
Dimensions: - Fan unit without control valves - Fan unit with control valves	390 x 443 x 200 mm [LxWxH] 567 x 567 x 200 mm [LxWxH] <i>See technical drawings</i>
Connection dia. for intake duct	Choice via adaptor: 80 and/or 125 mm dia.
Connection dia. for extraction duct	Choice via adaptor: 125 or 150 mm dia. <i>[160 mm dia. via optional ring]</i>
Fan	Extremely quiet & energy-efficient EC motor with 180 mm dia. impeller. Active variable pressure control: the lowest possible pressure level is set in each case consistent with the required extraction flow rates.
Maximum fan operating pressure	350 Pa - Recommended operating pressure at design flow rate: ≤ 200 Pa - Target value for a very good operating pressure at design flow rate (cf. TV No. 258): ≤ 100 Pa
Calibration readout	Via user app, installer app & Renson web portal
Automatic calibration of ventilation flow rates <i>[patented]</i>	Takes place in 2 successive stages: - Stage 1: pressure drop readings taken automatically in all air ducts - Stage 2: valve positions for air distribution calculated automatically
Maximum number of connection points for extraction: - Basic form - Using valve collectors	7 11 <i>[subject to a few limiting conditions]</i>
Valve collector	1 or 2 valve collectors to be connected to the fan unit, with 1 to 3 control valves to be connected to each valve collector. The valve collector can also be connected remotely from the fan unit. Electrical connection [UTP cable Cat 5e, wire gauge 24AWG, 30 metres max.].
Connections	- 1x LAN connection - 2x USB connection <i>[USB dongle for Wi-Fi connection included]</i> - Inputs: 3x DIGITAL, 1x ANALOGUE [0-10 V] - Outputs: 2x DIGITAL, 1x ANALOGUE [0-10 V]
Breeze function	Temporary nominal ventilation [= demand control deactivated] at times when there is a given cooling need [= optimum shading factors]



TECHNICAL DATA SHEET:

Healthbox® 3.0

DEMAND-CONTROLLED VENTILATION CONTROL

The control valves provide individual demand control for each connected room. The control is applied consistent with the chosen country setting.




Air quality detection (CO ₂ or humidity and/or VOC)	Via electronic sensors in control valves. The sensors measure indoor air quality 24 hours a day in the exhaust air flow for each room.
Automatic control of ventilation extraction flow rate for each room	The stepper motor positions the internal valve damper based on measured sensor values. The extraction flow rate is controlled in this way consistent with air quality.
Ventilation extraction flow rate control algorithm (BE)	<ul style="list-style-type: none"> – CO₂ detection: proportional to 100% of nominal flow rate – VOC detection: dynamic, 10% or 100% of nominal flow rate – Humidity detection: dynamic, 10% or 100% of nominal flow rate

CONTROL VALVES

There are a number of predefined control valves. The desired nominal flow rate for each control valve can be set via the installer app. The make-up of the control valves is virtually identical, the only differentiation being:

- Plug-in printed circuit board with sensors
- Sticker on the stepper motor that shows the room to be connected



Predefined control valves				
Sticker on stepper motor	Room to be ventilated (BE)	CO ₂ detection	Humidity detection	VOC detection
	Bathroom with toilet <i>Wellness, garage, basement, etc.</i>	–	✓	✓
	Laundry room <i>Shower room, bathroom without toilet, etc.</i>	–	✓	–
	Toilet <i>Storeroom, technical rooms, workshop, walk-in wardrobe, hall/corridor, etc.</i>	–	–	✓
	Kitchen (open/closed)	✓	–	–
	Bedroom <i>Living room, office, study, hobby room, waiting room, leisure area, dining room, etc.</i>	✓	–	–



TECHNICAL DATA SHEET:

Healthbox® 3.0

OTHER FEATURES

Automatic fault indication	<ul style="list-style-type: none">- Via user app- Via installer app: fault indication reported during start-up phase- Via Renson web portal (both user and installer)
Automatic software updates	If Healthbox 3.0 is connected to the internet
User & installer app	Can be downloaded free of charge from Play Store [Android] and App Store [Apple] <ul style="list-style-type: none">- User app: My Healthy Ventilation- Installer app: Renson SmartConnect Ventilation
Integration into smart home & home automation	Communication can take place if Healthbox 3.0 is connected to a home network [Wi-Fi or cable]: <ul style="list-style-type: none">- Home network: communication via <i>local</i> REST API- Internet: communication via <i>server</i> REST API
Access to Renson web portal	<ul style="list-style-type: none">- User: if Healthbox 3.0 is connected to the internet, via account- Installer: via account
Fire protection [= release pressure in system with valves shut]	✓
EPB	Shading factors in accordance with table 2 of the set table [see Healthbox 3.0 specification sheet]

CONTROL

2 options:

- 'My Healthy Ventilation' app:
 - Readout of air quality in dwelling down to room level
 - Facility for personalisation and [temporary] manually changing ventilation extraction flow rate down to room level
- Zero potential switch [3 positions] for manually changing ventilation extraction flow rate [via DIGITAL input]

HEALTHBOX 3.0 INSTALLATION

Installation

Room	Indoor installation, preferably in insulated room
Mounting options	<ul style="list-style-type: none">- Can be mounted in any attitude: upright, flat [above/below], angled- Four mounting options: wall mounted, ceiling mounted, floor mounted, cord mounted [suspended, cover on top]
Exhaust direction	By using valve collectors, the exhaust direction can always be fitted in any desired direction => reduced pressure drop

The fan unit requires a minimum of 2 control valves to be connected to it.

Start-up

Start-up via installer app	The app guides the installer through the start-up, enabling a reliable high-quality system to be installed rapidly: <ul style="list-style-type: none">- Display of control valve configuration- Automatic calibration start-up, with facility for adjusting nominal flow rate + indication of remaining time- Overview of completed installation + digital generation of measurement report
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TECHNICAL DATA SHEET:

Healthbox® 3.0

Renson SmartConnect web portal

The Renson web portal guides the installer throughout project management and monitoring, from start-up to completion and on to after-sales service [near future]. The web portal comprises all project essentials:

- Project creation
- Project address details, installer on duty, Healthbox 3.0 status, installation parameters, etc.
- Sending measurement report digitally
- Data readout for after-sales service [near future]

This will bring about digitisation and administrative simplification of paperwork.

RENSON OPTIONS

Extraction vents	Design extraction points
Easyflex air ducts	Air transport ducts, airtightness class D
Acoudec	Air hose with high acoustic insulation properties
Roof exhaust / wall louvre	Suitable feed-through fittings with low pressure drop
Triple flow	Combined system for common ventilation extraction and flue gas supply and extraction
Fire kit	For compartmentalising in order to reduce fire spread risk

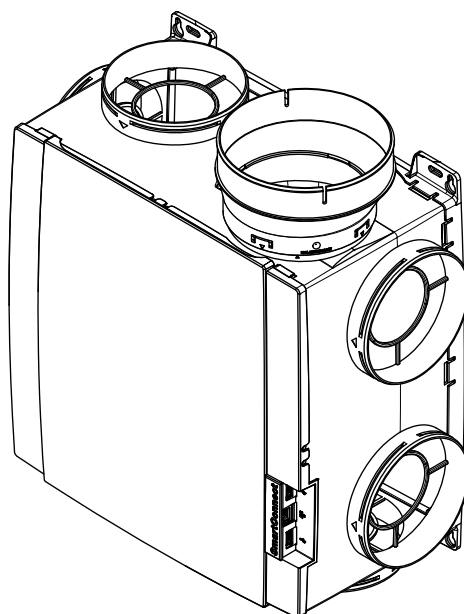
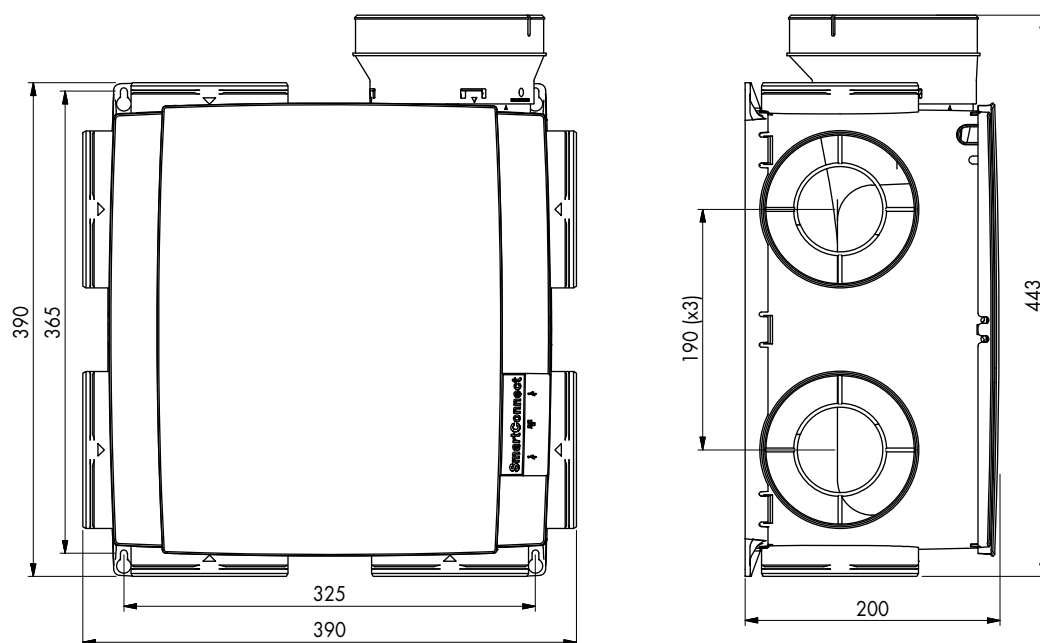


TECHNICAL DATA SHEET:

Healthbox® 3.0

TECHNICAL DRAWINGS

- Fan unit without control valves

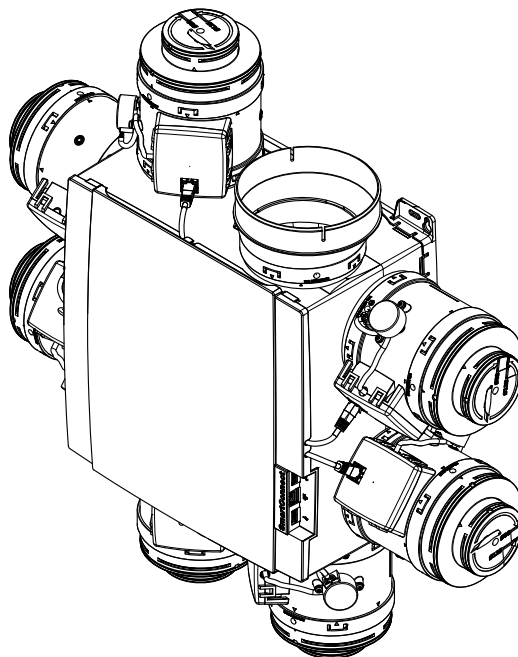
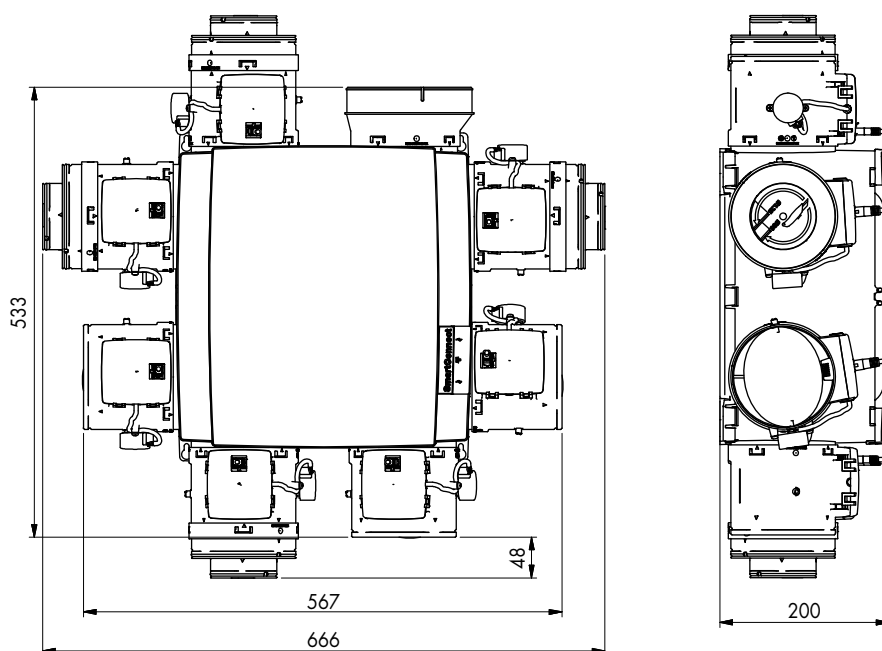




TECHNICAL DATA SHEET:

Healthbox® 3.0

- Fan unit with control valves

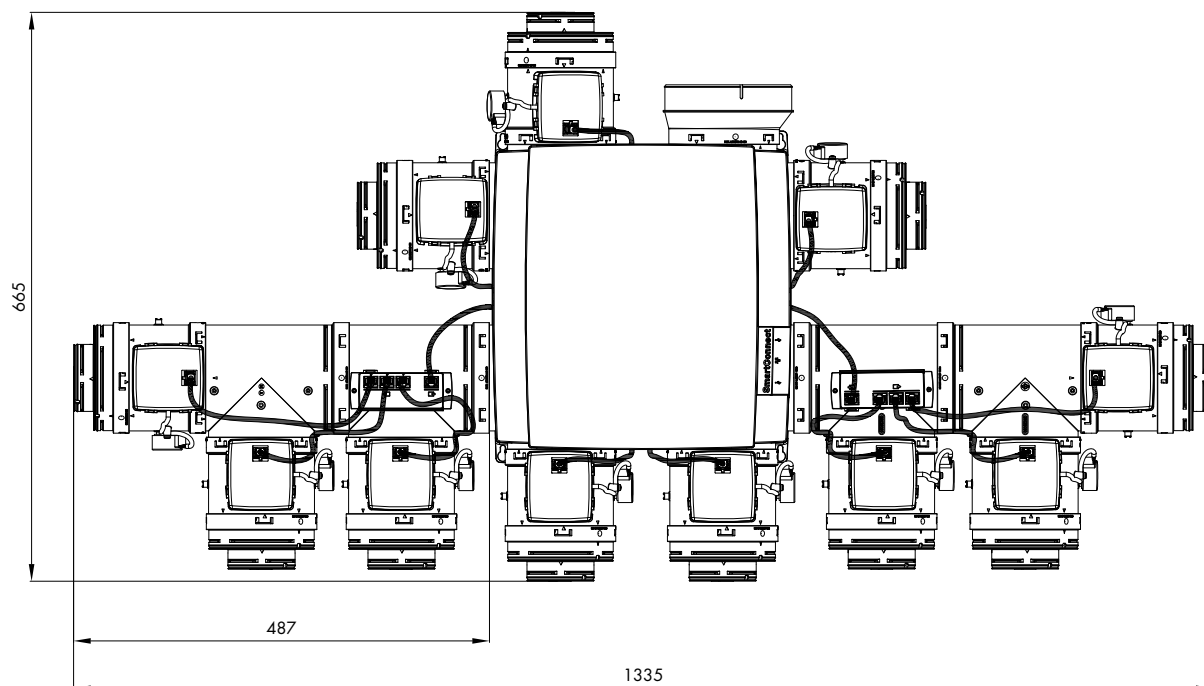




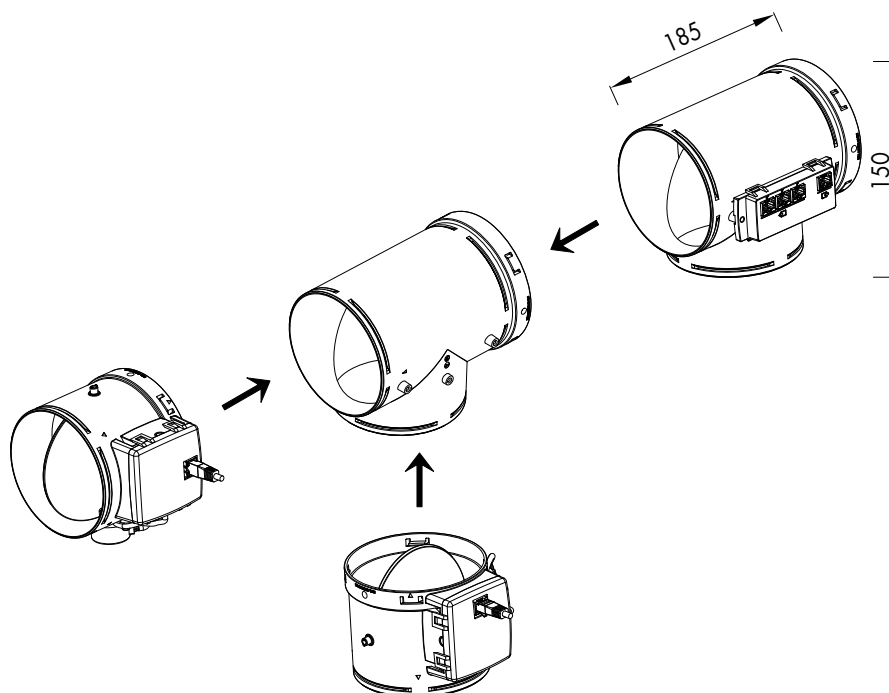
TECHNICAL DATA SHEET:

Healthbox® 3.0

- Healthbox 3.0 with 11 control valves



- Valve collector



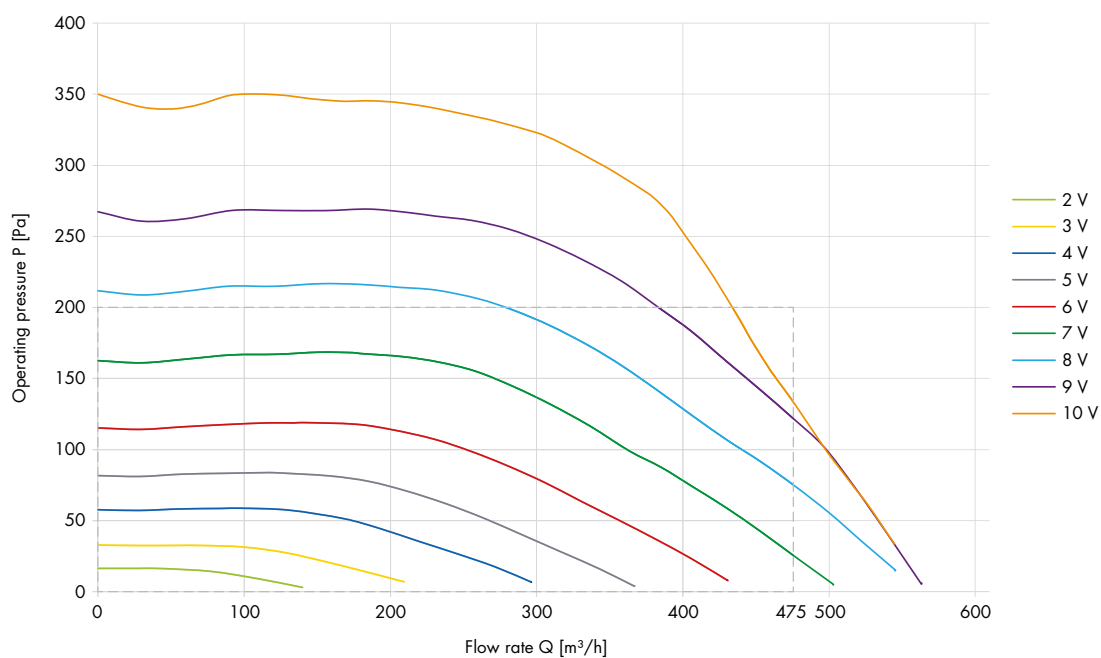


TECHNICAL DATA SHEET:

Healthbox® 3.0

GRAPHS

• Fan unit characteristics



• Fan power curves

