RENSON®

Creating healthy spaces

Healthbox® 3.0

Anleitung
Manual

Software version ≥ 0005

Introduction

This manual consists of 2 parts:
- **Part 1 - User:** guide to the operation of the device
- **Part 2 - Installer:** guide for performing a correct installation

General safety regulations

Always follow the safety regulations, warnings, comments and instructions from this manual. If these safety regulations, warnings, comments and instructions are not followed, it could lead to damage to the Healthbox 3.0 or to personal injury, for which RENSON® NV cannot be held responsible.

- Installation of the Healthbox 3.0 must be performed in accordance with the general and locally applicable regulations regarding construction, safety and installation requirements of the municipal/urban and/or other bodies.
- Only a qualified electrician (or supported by a qualified installer) should install, connect, commission and maintain Healthbox 3.0 differently than as described in this manual.
- All wiring must be done by a qualified person.
- Please ensure that the electrical power supply for Healthbox 3.0 corresponds to the requirements in this guide.
- If the power cord is damaged, it must be replaced by the manufacturer, its service representative or similar qualified persons to avoid danger.
- Healthbox 3.0 is constructed so that in normal use, and without deliberate action, it is not possible to come into contact with moving or live parts.
- The device must be mounted in a touch-proof manner. This means that, under normal operating conditions, no one can come into contact with moving or live parts of the fan unit without a deliberate action such as:
  - Disassembling the cover plate (and motor plate).
  - Disconnecting an air duct and/or protective cover on the suction points during normal use.

Specific measures

- Ensure that the Healthbox 3.0 remains easily accessible at all times, so that maintenance and service can be done easily.
- Healthbox 3.0 meets the legal requirements for electrical devices.
- Modifications to the Healthbox 3.0 are not allowed.
- The fan unit may only be used with appropriate RENSON® accessories.
- Use RENSON® air ducts and a RENSON® roof guide to minimize the pressure drop. This results in lower energy consumption and lower noise fan noise.
- The installer must ensure that the air extraction of the fan unit is placed at sufficient distance from the drainage and supply of the boiler.
- The possibility of touching the fan must be excluded. Therefore, an air duct network must always be connected to Healthbox 3.0 before putting it in to service. The minimum channel length is 0.5 m.
- When Healthbox 3.0 is combined with products for compartmentalisation to reduce the distribution risk of fire:
  Ensure that the fire valve/butterfly valve/sleeve/... has sufficient free air passage to minimize pressure loss. Choosing the wrong type may lead to non-functioning of the Healthbox 3.0.
- DO NOT install Healthbox 3.0 in areas where the following items are present or may be present:
  – An excessively fat-laden atmosphere
  – Corrosive or flammable gases, liquids or vapours
  – Room air temperature above 50°C or lower than -10°C
  – Relative humidity higher than 90% or outside
  – Healthbox 3.0 should not be used in places where it may be subject to possible water jets

The following specific safety measures must be taken:

- Always ensure that before commencing work activities, the power supply is disconnected by unplugging the power cord from the wall socket or by switching off the fuse. (ensure that this has actually happened!)
- Always wait for a minimum of 30 seconds to reconnect the power supply.
- Use appropriate/suitable tools for performing work on mounting the Healthbox 3.0.
- Use the device only for applications for which it was designed, as stated in the manual.

PLEASE NOTE:
The fan unit has to function permanently, i.e. the Healthbox 3.0 should never be turned off. (legal obligation according to NBN D50-001 Chapter 4.2. System C)

Privacy Statement

If this unit is connected to the internet, it sends various unit information automatically to Renson. For more information about this data processing, see **www.renson.eu/privacy**.

If Air quality sensor data is used to display graphics (historical) to the user.
As an installer you are not automatically entitled to access this sensor data of a Healthbox 3.0 that you installed, conform General Data Protection Regulation (GDPR).
If a customer's Healthbox 3.0 is connected to your own account via a **user app,** we recommend that you disconnect this connection to your account (via the user app or web portal for users) before the customer takes the property into use.

PART 1 • USER

1 • Introduction

Congratulations on your purchase of Healthbox 3.0!

We are convinced that you have made the right choice. With Healthbox 3.0, your home is correctly ventilated in an energy efficient way, giving you a healthy indoor climate:

- Protection against excessive moisture concentrations
- Supplied with good air quality

By automatically adjusting the ventilation level according to your living habits, heating leakage is drastically reduced. If you chose the SmartZone option, you can also enjoy demand-controlled extraction in the bedroom(s).

Via the SmartConnect connection, Healthbox 3.0 can be connected to the internet. This allows Healthbox 3.0 not only to communicate with the user through a free app, but also with other smart devices in smart home management systems.

Follow RENSON® and discover all innovations about mechanical ventilation!

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www.youtube.com/user/RensonMarketing

2 • Healthbox 3.0 operation

Healthbox 3.0 was specifically developed for integration in residential homes and apartments, but can also be used in the non-residential sector such as residential care centres, studios, etc. It is a compact device, which means that it does not require a lot of installation space.

Proper functioning of the demand-controlled ventilation system is only guaranteed if the following three pillars are adapted to one another:

- Supply: self-regulating RENSON® window ventilation class P3 or P4.
- Throughput: door grille or crack under the door.
- Drainage: Healthbox 3.0 demand-controlled fan unit.

2.1 • Demand-controlled ventilation

The demand-controlled ventilation system from Renson® is successful due to its comfort, energy efficiency and ease of maintenance. The home is optimally ventilated according to the living habits of the residents.

Healthbox 3.0 monitors the air quality 24 hours a day for CO_2 or moisture and/or VOCs (odour) per connected room. The ventilation level is hereby intelligently fully automatically adjusted in function of the measured air quality. This is done based on sensors in the control module. As long as the air quality in a room is good, the ventilation level remains limited, which is very interesting regarding energy in terms of heat savings and electricity consumption.

2.2 • Fan control

The fan is controlled via an active variable pressure control. This is a smart control that continuously adjusts the fan speed to achieve the required ventilation air flows at the lowest possible pressure level. This ensures extremely quiet operation as well as the lowest power consumption.

2.3 • Breeze function

Healthbox 3.0 is standard equipped with a Breeze function. The Breeze function helps to limit the risk of overheating inside the home.

What is the Breeze function?

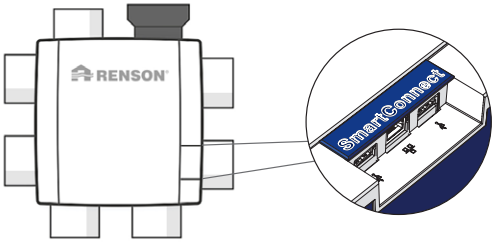
When outside temperatures rise considerably during the day in summer, Healthbox 3.0 helps to let in the fresh air at night.
The Breeze function becomes active to extract the warm indoor air more quickly in all rooms with an increased flow rate and thus supply cooler outdoor air.
As a result, the Healthbox 3.0 contributes to the natural cooling of the residence.

Activating the Breeze function

Breeze control is automatic, but can only be active at night (between 0h and 6h) if the average indoor temperature (measured on all control modules) is higher than the minimum temperature (e.g. 24°C). The minimum temperature is freely adjustable in the app. The Breeze function must be active for at least one hour.

3 • SmartConnect

With the SmartConnect connection, Healthbox 3.0 can be connected to the home network*. This offers the occupant the following benefits:



- Home network **connected** to the internet:
  - The app (section 3.2) can be used to visualise data about the measured air quality from the device and if necessary, to temporarily manually adjust the ventilation level where necessary.
  - The Lio web portal can be consulted (section 3.3).
  - Healthbox 3.0 can be incorporated into a smart home, to be integrated into a home management system in order to communicate with other smart devices. All possibilities for interaction can be fully used (section 3.4).

- Home network **not connected** to the internet:
  - Healthbox 3.0 can be incorporated into a smart home to communicate with other smart devices in a home management system. Interaction possibilities are rather limited (section 3.4).

NOTE:
Healthbox 3.0 always works completely autonomously, even if there is no connection to the home network.

3.1 • Connecting Healthbox 3.0 to the home network

To use the ***app*** and the ***web portal,*** the home network to which Healthbox 3.0 is connected must be connected to the Internet. This way, it is possible to read out all data from the ventilation system on the app, in order to adjust Healthbox 3.0 with the app, ...

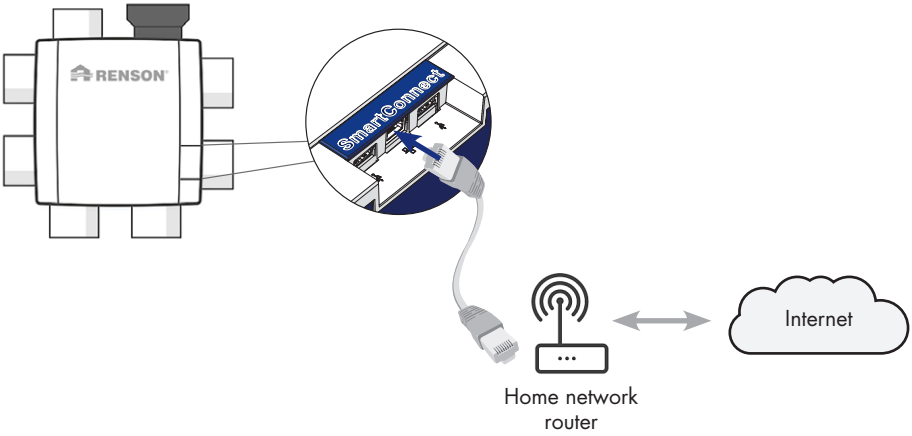
Quick access to instructional video

** private and secure network*

3.1.1 • Possible ways to connect Healthbox 3.0 to the home network

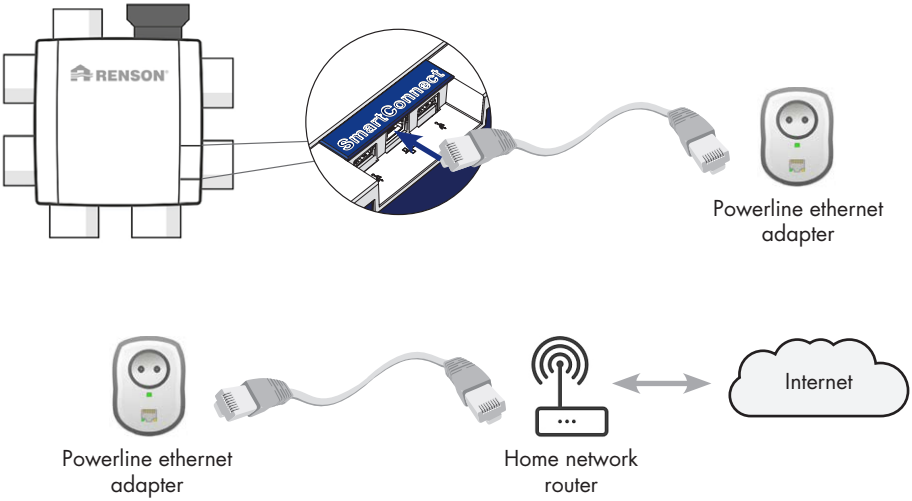
3.1.1.1 • Network cable

Instructions: connect Healthbox 3.0 directly to the router via a network cable.



3.1.1.2 • Ethernet-over-Power (EoP)

Instructions: connect both Healthbox 3.0 and router via network cable with a powerline ethernet adapter.

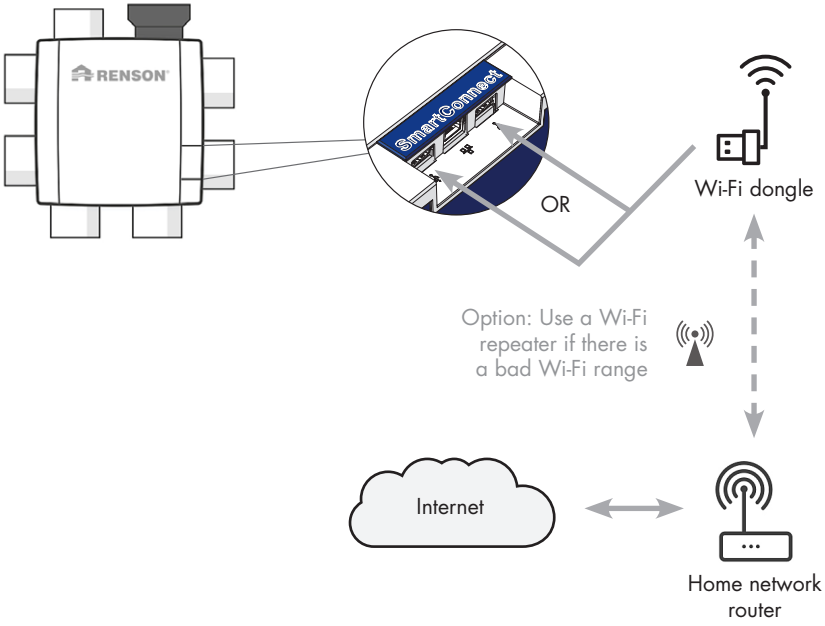


3.1.1.3 • Wi-Fi dongle

Healthbox 3.0 is compatible to connect to secure Wi-Fi networks (WEP/WPA/WPA2).

Instructions: Insert the Renson Wi-Fi dongle into any USB connection of the SmartConnect zone (if not already connected).

If Healthbox 3.0 is live, Healthbox 3.0 must be disconnected from the power supply after plugging in the Wi-Fi dongle. Wait for 30 seconds and put the Healthbox 3.0 back on power.



3.1.2 • Steps to connect Healthbox 3.0 to the app

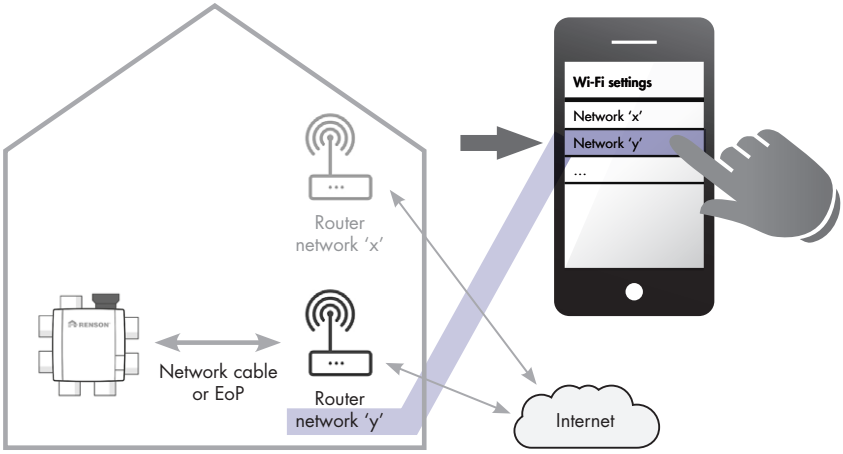
First download the app (section 3.2.1) and start the app up until the Log in/Register screen. The next steps to follow depend on how Healthbox 3.0 is connected to the home network:

1. Connection via network cable or Ethernet-over-Power (EoP)
2. Connection via Wi-Fi dongle

3.1.2.1 • Connection via network cable or Ethernet-over-Power (EoP)

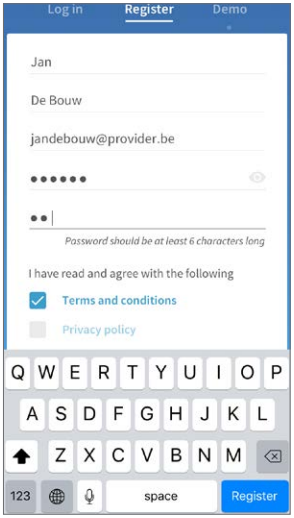
1. First, connect Healthbox 3.0 to the network via network cable or Ethernet-over-Power (see section 3.1.1).

2. Using the Wi-Fi settings of your smartphone, select the network (with internet) to which Healthbox 3.0 is connected.

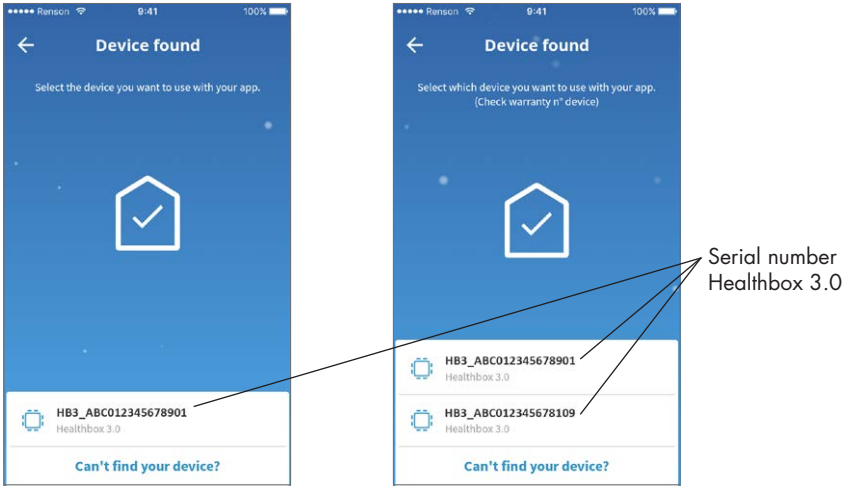


3. The connection between Healthbox 3.0 and the app must be made using the app.

   Start the app and create an account by registering:



4. The app then searches for the Healthbox 3.0 devices that are connected to the selected network.



1 device found in the network

Multiple devices found in the network

5. Add Healthbox 3.0 to your account

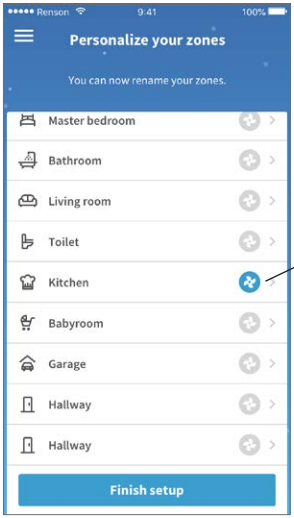
- **1 device found in the network**
  Select 'Add device to your account'.

- **Multiple devices in the same network**
  The devices found will all be displayed in the list. Each Healthbox 3.0 has a unique serial number, which can be found on the ID label on the bottom of the fan unit. Select the Healthbox 3.0 that you want to connect to (first). Any additional Healthbox 3.0 can be connected via the Settings menu in the app (see section 3.2.2).

NOTE:
– If several Healthbox 3.0 devices in different networks must be connected to the same app/account: follow the step-by-step plan (from step 1) for each Healthbox 3.0 again.
– To add Healthbox 3.0 to your account, the home network must be connected to the Internet. If the selected network is not connected to the Internet, connect Healthbox 3.0 to another network connected to the Internet (repeat the step-by-step plan from step 2).

6. Identifying the connected rooms *(optional)*

In the final phase of the set-up, a name can be assigned to each room where there is ventilation.



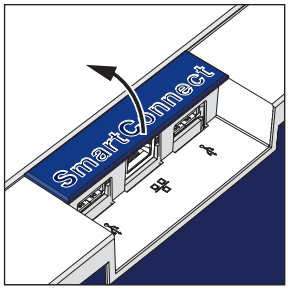
To verify whether each room has been assigned a name:
- Tap the fan icon next to a room. If this is the correct room, you will hear the fan temporarily accelerate (see above).
- Hold your hand beneath the extraction vent for the particular room. If you feel suction, the room has been assigned the correct name.

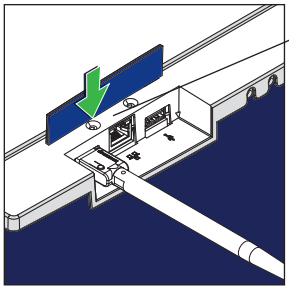
3.1.2.2 • Connection via Wi-Fi dongle

1. First, set up the Healthbox 3.0 to connect it to the network via Wi-Fi dongle (section 3.1.1.3).

2. Activate the Healthbox 3.0 network

   Lift the SmartConnect rubber flap so that the two slots are visible. To activate the Wi-Fi dongle, insert a small object into the corresponding slot and briefly press until the corresponding LED starts flashing. Look into the hole to see the LED.

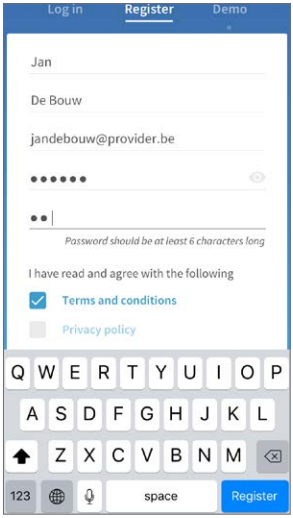




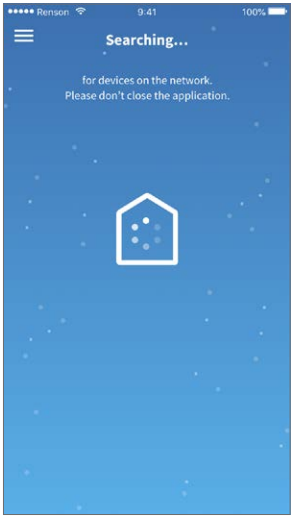
Healthbox 3.0 enters into the so-called "Access Point Mode" and temporarily acts (4 hours) as a local network that can be found by a smartphone. This local area network is characterized by the serial number of the Healthbox 3.0 (form: HB3_*ABC0123456789*01). Every Healthbox 3.0 has a unique serial number which can be found on the blue ID label at the bottom of the ventilation unit.

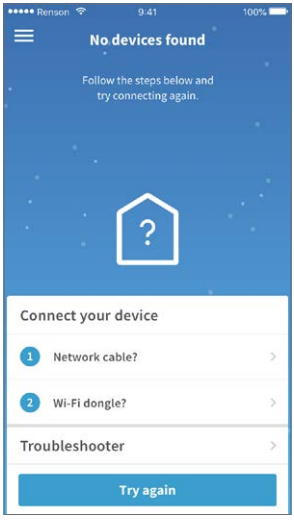
3. Launch the app

Connect Healthbox 3.0 to the app. Open the app and register by creating an account:



The 'Searching…' screen is then displayed (the app is searching for the Healthbox 3.0 device in the network), followed by the screen 'No devices found' (because no device is connected to the app yet).



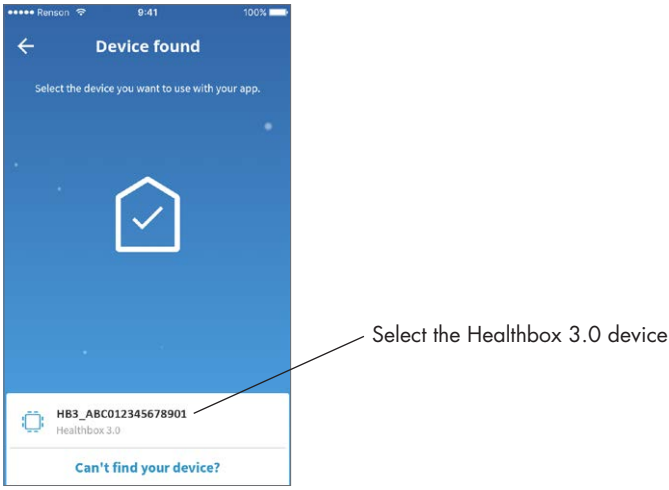


Go to your phone's Wi-Fi settings and search for the Healthbox 3.0 network (format: HB3_*ABC012345678901*). Make sure that your smartphone and Healthbox 3.0 are within close proximity to each other so that your phone can detect the emitted Wi-Fi signal.

Next, select this network.

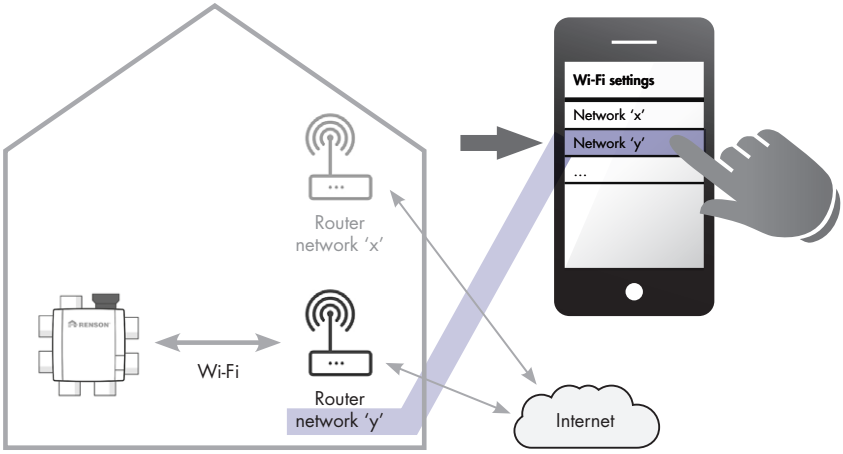
Then tap 'Try again' at the bottom of the 'No devices found' screen of the app.

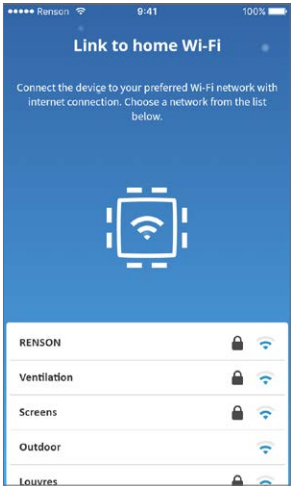
4. The app will now show the 'Device found' screen. Select the Healthbox 3.0 device that is displayed.

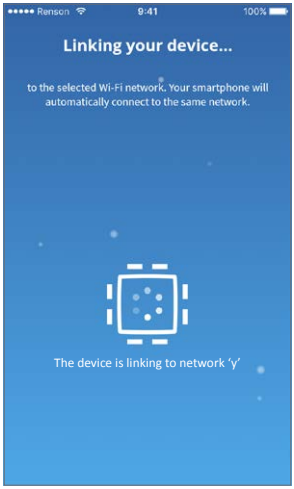


5. Add Healthbox 3.0 to your account

The following screen “Link to home Wi-Fi” shows all Wi-Fi home networks that are within reach of the Healthbox 3.0 Wi-Fi signal. Select the right network on your smartphone (make sure you’re connected to the internet). Follow the steps on the ‘Linking your device...’ screen and establish the connection.



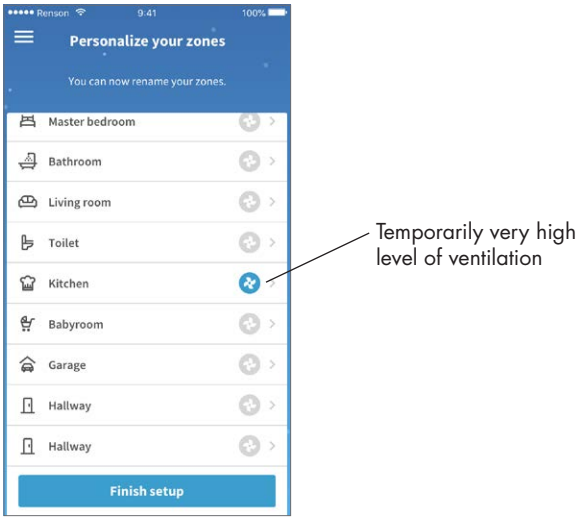




NOTE:
– To add Healthbox 3.0 to your account, the home network must be connected to the Internet. If the selected network is not connected to the Internet, connect Healthbox 3.0 to another network that is connected to the Internet. Reset the Wi-Fi dongle (section 13) and repeat the step-by-step plan starting with step 2.
– See section 3.2.3 in case any other Healthbox 3.0 devices have to be connected to the same app/account.

6. Identifying the connected rooms *(optional)*

In the final phase of the set-up, a name can be assigned to each room where there is ventilation.



To verify whether each room has been assigned a name:
– Tap the fan icon next to a room. If this is the correct room, you will hear the fan temporarily accelerate (see above).
– Hold your hand beneath the extraction vent for the particular room. If you feel suction, the room has been assigned the correct name.

3.2 • Healthbox 3.0 app

3.2.1 • Download

The *Healthbox 3.0* app can be downloaded for free from the App Store (Apple) or Google Play (Android). Register to create an account and discover all the benefits of this demand-controlled system. Please note that the Healthbox 3.0 must be connected to a home network (with internet) to use the app.

Healthbox 3.0

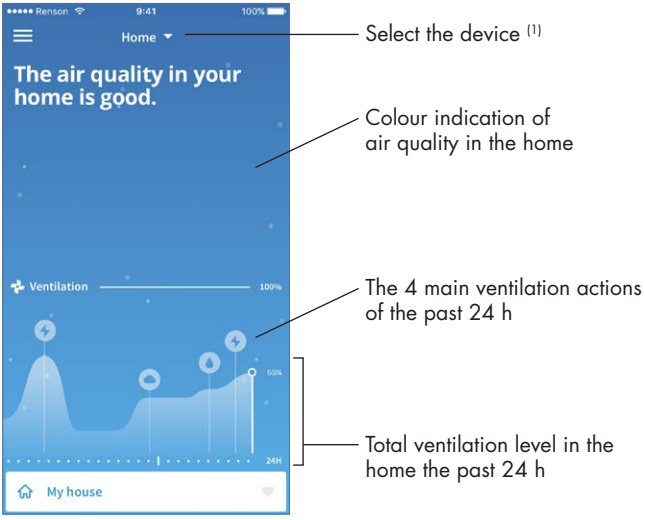
Download on the App Store

GET IT ON Google Play

Download

3.2.2 • Overview of the different screens

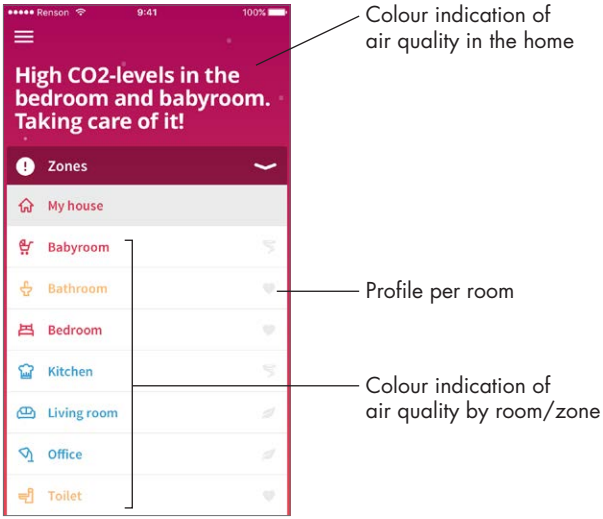
- **General dashboard**



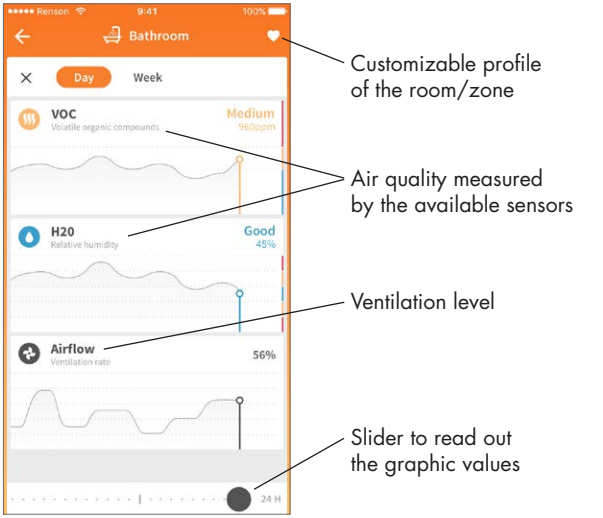
(1) *If the app is connected to several Healthbox 3.0 devices.*

User

- **Overview per room/zone:** clear view of the air quality and the corresponding ventilation level thanks to clear **colour indication.**
  - Blue: good air quality
  - Orange: moderate air quality
  - Red: substandard air quality



- **History** of the air quality in the home and per room/zone (both on a daily and weekly basis). The occupant can effectively see how Healthbox 3.0 adjusts the ventilation level accordingly.

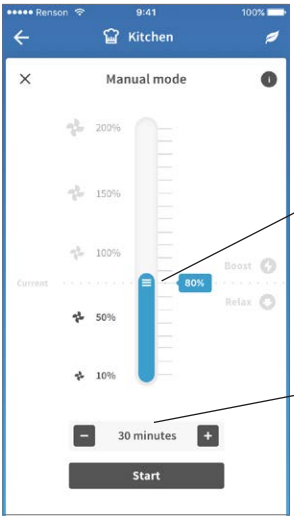


- **Customizable profile:** the ventilation level per room/zone is fully automatically adapted to your living habits, but can also be customised to suit the resident.

All profiles are based on demand control:

- The **Eco** profile prioritizes the energy efficient aspect where the polluted air is discharged with a lower ventilation level over a longer period of time.
- The **Health** profile ensures healthy indoor air and is energy efficient due to the demand-controlled ventilation system (normal setting).
- The **Intense** profile ensures that contaminated air is discharged more quickly via an intensified ventilation level.

- **Manual mode:** the occupant can manually set a higher or lower ventilation level for a certain duration. This can be done either per room/zone or for the entire home. The manual mode (temporarily) disregards the sensor(s) and overrides all other settings.



Temporarily increase or decrease the ventilation level

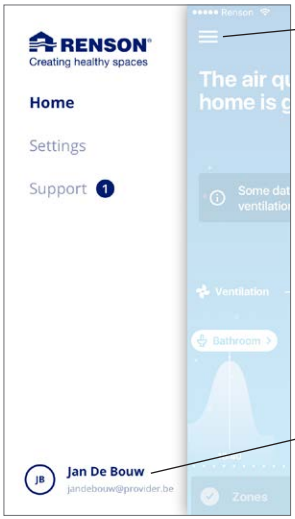
Duration time manual mode

3.2.3 • Possible functions

Additional functions can be accessed using the 'Menu' button:

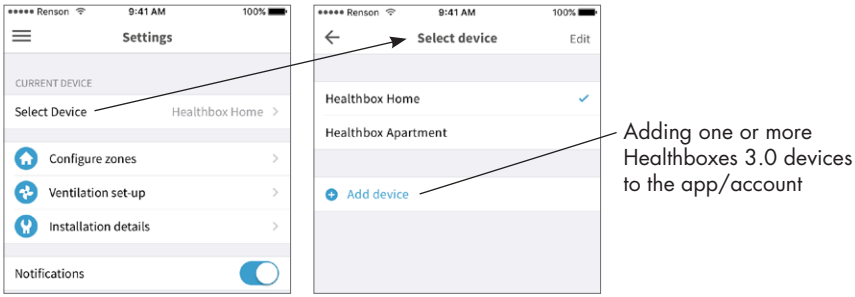
- Configure zones
- Settings for increased acoustic comfort *
- Clock program *
- Breeze function
- CO2 detection
- FAQs
- Overview error messages

** Settings will continue to be active as long as healthbox 3.0 is connected to the internet.*



- **The same app/account** can be used simultaneously for several Healthbox 3.0 devices. It doesn't matter whether they are in the same or a different network; useful for example for a residence in the country.

  Select the menu "Settings":



3.3 • Lio webportal

The Lio web portal, just like the app, provides the occupant additional information from the Healthbox 3.0 (provided that the device is connected to the home network with internet). The web portal can be accessed via the web link www.my-lio.eu. Use the account you use for the app (section 3.2), or register to create an account.

The web portal displays a few details of the installation (the same as with the app). It could also show if the Healthbox 3.0 is in a rented home. This way, the dates that the tenant and landlord can obtain insight can be specified (see section 9).

3.4 • Healthbox 3.0 in a smart home

When Healthbox 3.0 is connected to the home network (section 3.1), it offers the possibility to communicate (= data exchange) with smart devices in home management systems (home automation). Connecting Healthbox 3.0 in home management systems allows you to experience a higher overall comfort in your home.

Visit the website www.renson.eu (products → mechanical ventilation → Healthbox 3.0) to zoom in on the specific possibilities and partnerships between the Renson Healthbox 3.0 and manufacturers of home management systems.

NOTE:
Via a software update, Healthbox 3.0 can always be upgraded if needed. This way, a link can always be made with each manufacturer in the list of partnerships.

4 • Control

Healthbox 3.0 is an autonomous working device, but the occupant can manually adjust the ventilation level according to their wishes.

This can be done in various ways:
- Free app (section 3.2)
- External switch (section 23.2.3)
- Control/Control panel/app if Healthbox 3.0 is included in a smart home or home automation system (section 3.4)

If several controls are connected to the Healthbox 3.0, then Healthbox 3.0 will assume the ventilation level / mode of the control that was last operated.

5 • Glossary

- **Demand control:** Healthbox 3.0 monitors the air quality 24 hours a day for CO2 or moisture and/or VOCs (odour) per connected room. The ventilation level is hereby intelligently fully automatically adjusted according to the chosen ventilation profile in function of the measured air quality. This is done based on sensors in the control module.

- **Manual Mode:** the occupant can set a certain ventilation level (Boost/Relax) and duration time. The Manual Mode overrides the operation of the sensors and all other settings.

- **Breeze function:** When outside temperatures rise considerably during the day in summer, Healthbox 3.0 helps to let in the fresh air at night. The Breeze function becomes active to extract the warm indoor air more quickly in all rooms with an increased flow rate and thus supply cooler outdoor air. As a result, the Healthbox 3.0 contributes to the natural cooling of the residence.

- **Clock program:** with the clock program, ventilation is not demand-controlled. Occupants set when, where and with which ventilation level they want to ventilate according to pre-set times themselves.

- **Silent setting:** the occupant can switch on the Silent setting for a certain period of time (e.g. at night). A shading factor, for example 50%, is applied to the selected ventilation profile (i.e. on the value of the nominal flow rate).

- **Nominal position** (= C mode or Design mode): operation without demand-control, at nominal ventilation level (= nominal system pressure and all valves at nominal position). This mode can be used by the installer and/or ventilation reporter to perform flow rate measurements on each extraction grille. Ventilation level = manual mode at 100%.

- **Minimum level:** the minimum level determines the minimum ventilation flow rate.

6 • Maintenance and inspection

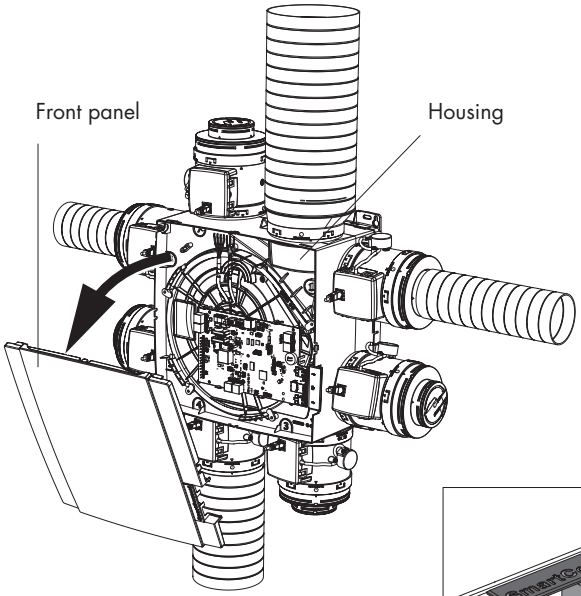
6.1 • Maintenance

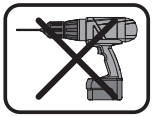
Do not use sprays, abrasive cleaners, dish washing detergents, solvents or cleaning agents that contain chlorine. These may damage the unit.

Clean the Healthbox 3.0 with a damp cloth and some solvent-free soap.

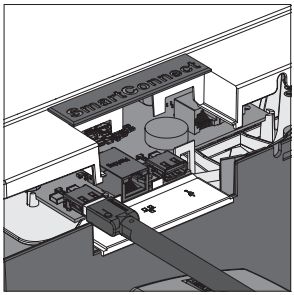
6.1.1 • Fan unit

- The **fan** is equipped with maintenance free bearings and can operate without any problems for a long time.
- The **fan impeller** must be cleaned every 2 years. If a motorless cooker hood is connected to the fan unit, the impeller must be cleaned every year.



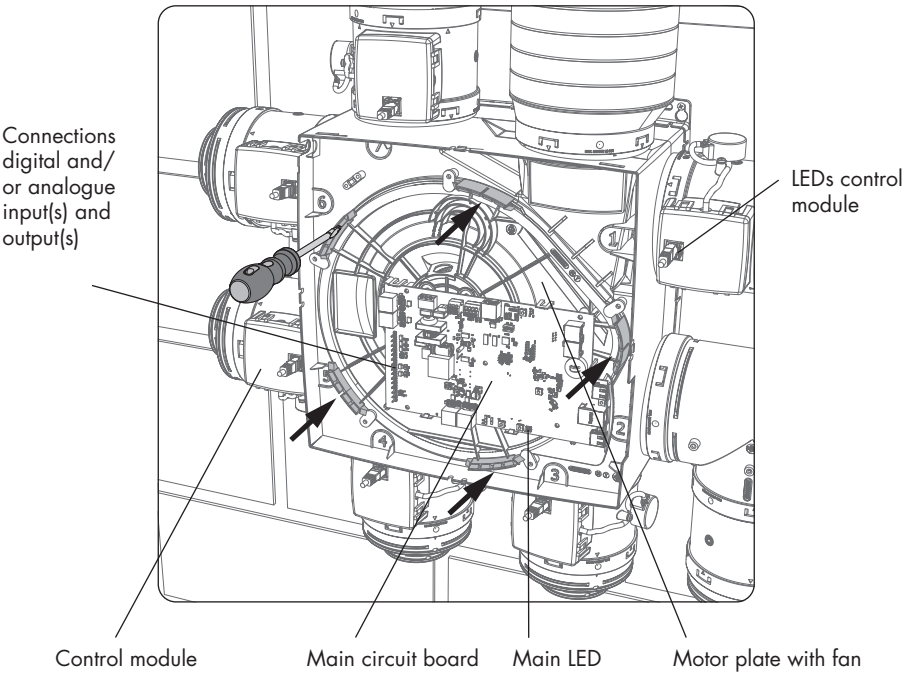


If necessary, use a flat screwdriver for loosening the motor plate.



Proceed in the following way:

- Disconnect the power cord from the wall outlet or switch off the fuse to disconnect the device. Ensure that this has actually happened.
- Remove the cover plate from the ventilation unit.
- Disconnect the RJ45 cables connecting the main circuit board of the Healthbox 3.0 to the control modules/valve collector(s). Highlight which control module was connected to which connector of the main circuit board.
- Disconnect the mains connector plug from the main circuit board, as well as any connections to the digital and/or analogue input(s) and output(s).
- Next, remove the motor plate with fan from the fan unit housing by removing the 5 tension clips using a flat screwdriver. Do not touch the main circuit board!



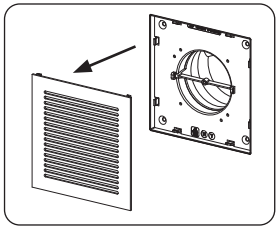
- Clean the fan impeller by blowing it clean with a compressor/compressed air (do this outdoors). Never clean the fan with water and do not immerse it in water or in any other cleaning agent.
- Clean the fan slag shell with a wet cloth and then dry the slag shell with a dry cloth.
- Reassemble everything in reverse order as described above.
- Finally, put the Healthbox 3.0 back under mains voltage. After this, the system starts automatically. The LEDs on all control modules light up green again after approx. 1 minute.

6.1.2 • Window ventilation

The supply grilles in the windows must be cleaned with a vacuum cleaner annually.

6.1.3 • Living area extraction grilles

The extraction grilles in the ventilated rooms must be cleaned quarterly. To do this, click the design grille out of the grille base, if necessary by using a fine object.

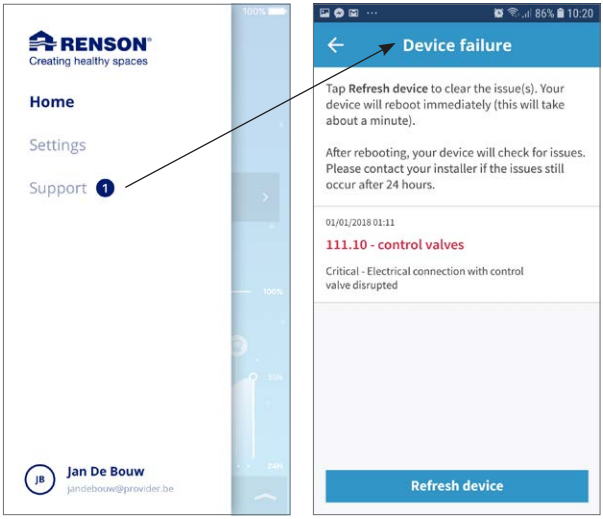


6.2 • Inspection

The instructions for checking the device described in this section can be carried out by the user. However, it is advisable to have an authorised professional check the full operation of the device periodically.

6.2.1 • Error messages check

Refer to "Device failure" in the 'Support' tab of the Healthbox 3.0 app. The errors that have occurred are shown, together with the corresponding instruction.

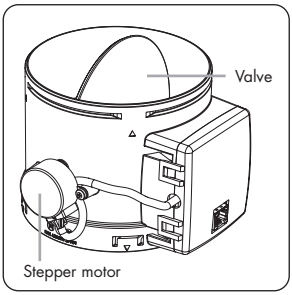


6.2.2 • LED display control

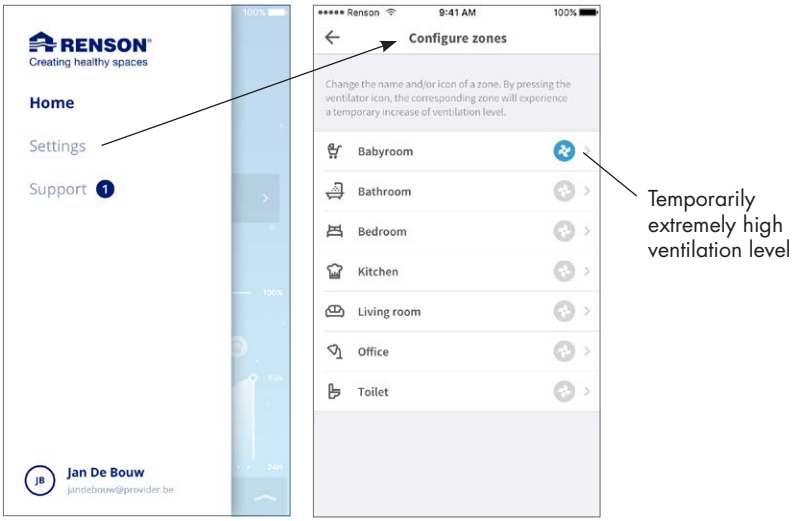
Under normal operation:
- The Main LED at the bottom of the main circuit board of Healthbox 3.0 should light up green (continuously) (remove the cover plate so that the main circuit board is visible).
- The green LED on each control module should (continuously) light up and the orange LED should not light or flash.

6.2.3 • Inspection of control modules operation

A **visual inspection of the valve movement of the control modules** can take place on a regular basis (e.g. annually).

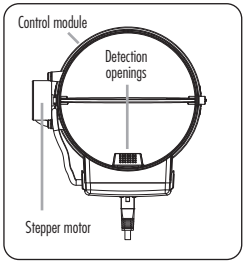


- **Ventilation flow rate control**
  Refer to "Configure zones" on the app's Settings tab.



Press the room/zone fan symbol to temporarily have an extremely high ventilation level in just this room/zone; the damper blade of the corresponding control module opens completely and the damper blade of all other control modules switches to closed position. Opening the damper blade can then be applied to each control module in this way. The visual check is completed when the movement of each control module has been completed. If you notice that a damper blade does not rotate, contact your installer.

- **Sensor measurement**
  - Check if the detection openings above the sensors are not clogged/polluted. If possible, clean with a dry cloth or blow through.
  - If a sensor no longer works properly, this is reported in 'System errors' (section 6.2.1).



6.2.4 • Air quality control/ventilation flow rate

In the overview list of the Healthbox 3.0 app, the air quality, both the current status and the history (day/week) of all rooms/zones can be consulted.

6.2.5 • Monitoring when the ventilation is working

- Open all window ventilations completely.
- Set the ventilation air flow via manual mode in the app to > 100% in the home (= My house). At each discharge point, extraction air should be observed (please keep a light sheet of paper at the outlet point if in doubt).

7 • Documents

7.1 • Product map

Supplier's name or trademark	Renson
Reference model	Healthbox 3.0 – 475
Energy efficiency class	B
SEC - cold climat	–11,61 kWh/m²a
SEC - average climat	–27,11 kWh/m²a
SEC - warm climat	–54,18 kWh/m²a
Declared typology	RVU
Type of drive installed	variable speed
Type of heat recovery system	does not apply
Thermal efficientcy	does not apply
Maximum flow rate	475 m³/h
Electric power input of the fan drive, including any motor control equipment, at maximum flow rate	74 W
Sound power level LWA	47 dB(A)
Reference flow rate	333 m³/h
Reference pressure difference	50 Pa
SPI	0,090 W/(m³/h)
Control typology	local demand control
CTRL	0,65
Declared maximum internal leakage rates	does not apply
Declared maximum external leakage rates	5,4%
Recirculation	does not apply
Mixing rate of non-ducted bidirectional ventilation units not intended to be equipped with one duct connection on either supply or extract air side	does not apply
Position and description of visual filter warning for RVUs intended for use with filters, including text pointing out the importance of regular filter changes for performance and energy efficiency of the unit	does not apply
Instructions to install regulated supply/exhaust grilles for natural air supply/ extraction	www.renson.eu
Internet address for pre-/dis-assembly instructions	www.renson.eu
For non-ducted units only: the airflow sensitivity to pressure variations at + 20 Pa and – 20 Pa	does not apply
For non-ducted units only: the indoor/outdoor air tightness in m³/h	does not apply
AEC (Annual Electricity Consumption)	0,47 kWh electricity/m²a
AHS (Annual Heat Saved) - cold climat	55,36 kWh primary energy/m²a
AHS (Annual Heat Saved) - average climat	28,30 kWh primary energy/m²a
AHS (Annual Heat Saved) - warm climat	12,80 kWh primary energy/m²a

7.2 • EU declaration of conformity

EU DECLARATION OF CONFORMITY

The manufacturer located in Europe

RENSON® Ventilation NV
Industriezone 2 Vijverdam
Maalbeekstraat 10
8790 Waregem (BELGIUM)

declares that the demand controlled ventilation systems for residential applications mentioned below,

Healthbox 3.0

when used according to the respectively technical conditions of these products,

comply with the conditions of the European standards
- EN 13141-1 Testing components residential ventilation (supply and extraction vents)
- EN 13141-2 Testing components residential ventilation (supply and extraction grills)
- EN 13141-4 Testing components residential ventilation (fan)
- ISO 3741 Acoustic testing
- EN 55014-1 + A1 EMC (emission)
- EN 55014-2 + A1 + A2 EMC (immunity)
- EN 61000-3-2 (Harmonics)
- EN 61000-3-3 (flicker)
- EN 61000-4-2 (ESD)
- EN 61000-4-3 (Radiated immunity)
- EN 61000-4-4 (EFT)
- EN 61000-4-5 (Surge)
- EN 61000-4-6 (Conducted immunity)
- EN 61000-4-11 (Voltage dips and interruptions immunity)
- EN 60335-1 + A1 + A2 + A3 + A4 Safety (general)
- EN 60335-2-80 + A1 Safety (particular requirements for fans)

implying that the products comply with the demands posed by:
- 2006/42/EC Machinery Directive, as amended and corrected
- 89/106/EEC Construction Products Directive, as amended
- Construction Products Regulation (EU) 305/2011
- 2014/35/EU Low Voltage Directive
- 2014/30/EU EMC Directive

The undersigned are both individually empowered to edit the technical dossier.

28 June 2017,

Paul RENSON
Owner

dr. ir. Ivan POLLET
Head of research

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SUNPROTECTION
OUTDOOR

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RENSON®
Creating healthy spaces

8 • Service

8.1 • Service request

Contact your RENSON® installer and specify the warranty number of your device. The warranty number can be found on the device and on the warranty form. The warranty number can also be found in the app (via Settings → Installation details) and on the web portal.

8.2 • User warranty conditions

The warranty period is 2 years. Installation and maintenance must be done according to the instructions and current professional standards. For detailed warranty conditions, consult our website **www.renson.eu**.

Exclusion:

- Ingress of construction debris, injection of unsuitable products, use of aggressive liquids or solvents, defects resulting from improper or abnormal use, small imperfections in finish that do not affect functioning, damage due to dyes, damage caused by drilling, defects as a result of improper repair by third parties, voltage spikes in the power supply, lightning, violence or war.
- The warranty is inside the package. The installer will complete this and give it to the resident.

9 • Privacy Statement

9.1 • Data from the Healthbox 3.0

When Healthbox 3.0 is connected to the Internet, the device collects measurement data (via the sensors in Healthbox 3.0) that can be accessed by Renson. Renson is committed to handle these data carefully and confidentially. The necessary legal documents on this subject can be found on www.renson.eu/privacy.

How the measured data is stored depends if an account is created or not [1]:
- No account created: Healthbox 3.0 data is only stored for a limited time (see www.renson.eu/privacy).
- Account created: the data is kept for a longer period of time.

9.2 • Data access

In a transparent way, we would like to explain by means of a few concrete situations how Renson deals with the collected measured data, when Healthbox 3.0 is connected to the internet;

- No account created: the data can only be consulted by Renson.
- Account created: in addition to Renson, there are 2 more parties involved in data access:
  1. The owner of the home
  2. The occupant of the home

9.2.1 • Situation 1: occupant = owner

Verify via the web portal (section 3.3) that there are no unwanted persons (other accounts) connected to your device, to prevent unauthorized access to your measured data.

9.2.2 • Situation 2: occupant ≠ owner (hire/rental situation)

The measurement data collected by Healthbox 3.0 is personal data of the occupant, not the owner. Renson provides a different level of display for measured data for occupant and owner:
- The occupant: can retrieve all measured data individually at certain intervals (about 5 minutes), i.e. detailed information.
- The owner: only gets an indication of the status per day i.e. summarized information. The purpose of the summarized information is to give the owner access to the correct use of the Healthbox 3.0 and structural health of the home.

In order to ensure that the privacy of the occupant is protected, the owner must indicate via the web portal (section 3.3) that the Healthbox 3.0 is in a rental property.

[1] *account created = account created where Healthbox 3.0 is linked to (it is created at the start up of the user app).*

- **Recommendation for the occupant (= tenant):**

  The tenant must check via his account in the web portal that the landlord only has access to Healthbox 3.0 in the rented accommodation as an owner (and not as occupant). The landlord does not have the right to require access to the detailed information (and also not via the rental agreement for example). However, a landlord has the right to require access to the summarized data (e.g. via the rental contract). In this case, the tenant may not simply deny the landlord access to these summarized data of the Healthbox 3.0 in the rented accommodation.

- **Recommendation for the owner (landlord):**

  The landlord must state Healthbox 3.0 as a device in a rental home via his account on the web portal. This allows the landlord to access the summarized information of the Healthbox 3.0, without infringing the privacy of the tenant. If needed, the landlord may include in the tenancy agreement that the tenants cannot be denied the summarized information. If the landlord has access to the detailed information of the Healthbox 3.0 that is active in a rented property without the explicit approval of the tenant, the landlord is in breach of the privacy legislation (conform European law GDPR).

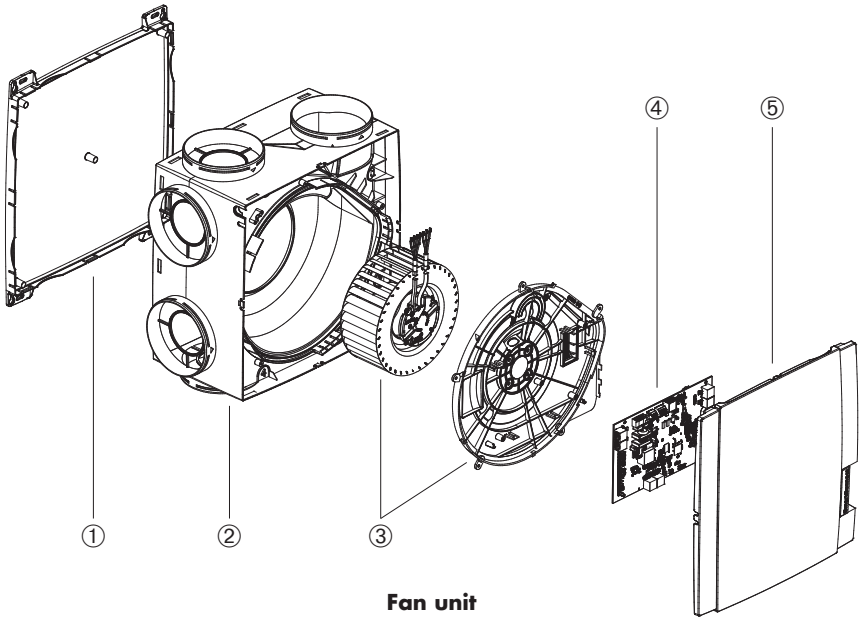
NOTE:
Someone who has physical access to the device can always disconnect all users (= accounts) from a specific device. The table (section 20) shows how this can be done.

MOUNTING INSTRUCTIONS

PART 2 • INSTALLER

10 • Fan unit

Each fan unit is made up of the following parts:



Fan unit

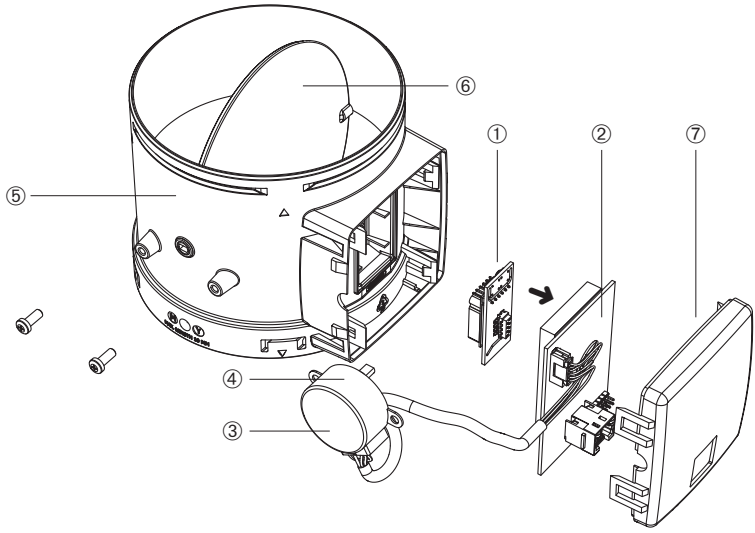
Item	Amount	Description
①	1	Mounting base
②	1	Pump shell
③	1	Assembly ventilator and motor plate
④	1	Main print
⑤	1	Clickable cover plate

Healthbox 3.0 has 7 supply points, which allows direct connection of up to 7 control modules. Up to 11 control modules can be connected using valve collectors (section 12). The technical specifications of Healthbox 3.0 (such as the maximum discharge rate for example) are shown in section 24.

11 • Control module

The software in the Healthbox 3.0 fan unit determines how the automatic control of the ventilation level is done. That control determines how much air will be discharged per control module in function of the measured air quality and is determined by parameters such as nominal air flow, minimum air flow, limit value sensors, duration control, etc.

Air quality is detected in a room/zone by means of (an) integrated sensor(s) in the control module that performs local measurements in the airflow.



Control module

Item	Amount	Description
①	1	Plug on print with sensor(s)
②	1	Circuit board (with foam)
③	1	Sticker with symbol
④	1	Stepper motor
⑤	1	Mantel control module
⑥	1	Damper blade
⑦	1	Control module cover

Types

Each control module kit consists of:
- 1 x control module with sensor(s)
- 1 x RJ45 patch cable of 0.5 m
- 1 x strap
- 1 x white grille basis with plaster cardboard

There are five types of control modules. The construction of each type of control module is almost identical and only differs by:
- Plug on print with sensors (determines which type of detection can be done): The sensor(s) is(are) located on a plug on print plugged onto the circuit board of the control module.
- Sticker on the stepper motor showing an indication of the room/zone that needs to be connected.

Each type of room can be detected using the 5 types of control modules:

	Symbol sticker	Indication for the room/zone to be connected	Detection [1]	Type grille base
1.		Washing area (DEFAULT) *Shower, bathroom without toilet*	H_2O	174x174 mm, Ø125 mm
2.		Bathroom with toilet (DEFAULT) *Wellness, garage, basement*	H_2O VOC	174x174 mm, Ø125 mm
3.		Toilet (DEFAULT) *Storage/utility room, workshop, dressing, hall/corridor*	VOC	134x134 mm, Ø80 mm
4.		Kitchen (open/closed) (DEFAULT)	CO_2	174x174 mm, Ø125 mm
5.		Bedroom (DEFAULT) *Living room, office, practice area, study, hobby room, waiting room/sitting area, nursery, children's room, TV/music room, relax room, dining room, playroom, attic*	CO_2	174x174 mm, Ø125 mm

Each control module is also equipped with temperature sensing.

[1] *The country setting ultimately determines the control that is used during sensing.*

12 • Valve collector

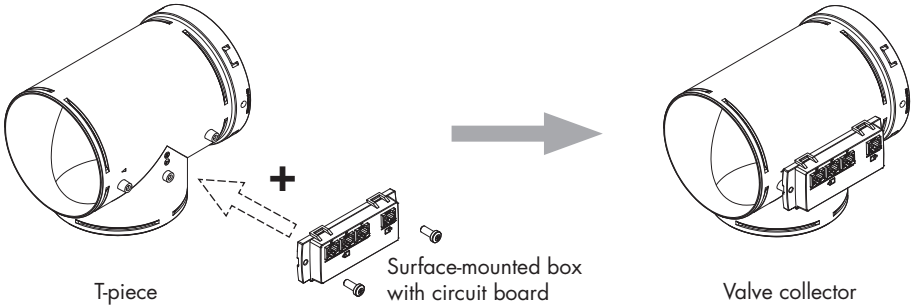
The valve collector for Healthbox 3.0 gives the installer the following advantages:

1. Increases the number of control modules that can be connected (up to max. 11)
2. Possibility to install the air duct works more compactly
3. Possibility to reduce the required air duct works

The valve collector is connected to Healthbox 3.0 via RJ45 patch cable.

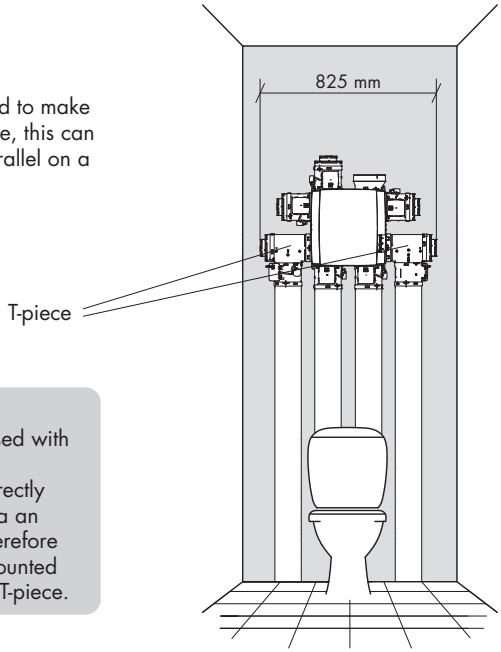
12.1 • Build-up of the valve collector

The valve collector consists of a T-piece and a surface-mounted box with circuit board:



- **T-piece**

The T-piece without circuit board can be used to make 90° bends in the air duct works. For example, this can be useful to integrate several air ducts in parallel on a limited width, as shown in the figure.

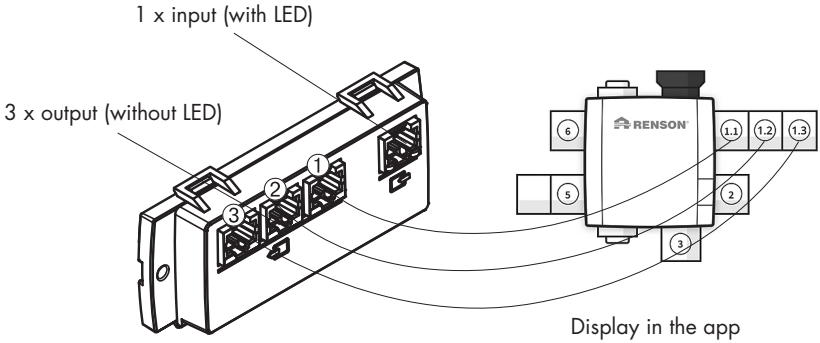


NOTE:
– One side of the T-piece is closed with an adaptor cap.
– The control module can be directly connected with the fan unit via an RJ45 patch cable. There is therefore no need to place a surface-mounted box with circuit board on the T-piece.

- **Surface-mounted box with circuit board**

The surface-mounted box with circuit board must be screwed to the T-piece with 2 screws.

There are 4 RJ45 connectors on the circuit board to connect an RJ45 patch cable:
- 1 x input: connection to the fan unit
- 3 x output: connection to 1, 2 or 3 control modules.
  The connectors are numbered. This numbering is copied to the configuration drawing in the installer app.



12.2 • Valve collector options

12.2.1 • Composition/configuration

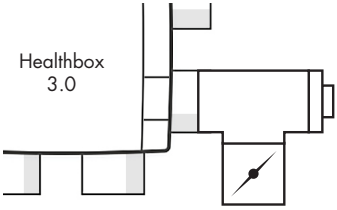
- A maximum of 2 T-pieces may be placed on top of each other to form an assembly to which up to a maximum of 3 control modules can be connected. By using valve collectors, up to 3 control modules can therefore be connected to 1 supply point of the fan unit.

- When 2 or 3 control modules are connected to the valve collector, a surface-mounted box with circuit board must be placed on the T-piece.

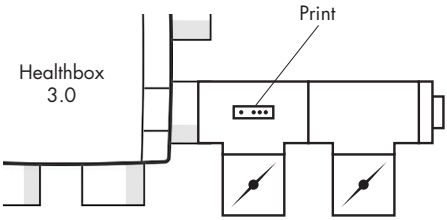
- The valve collector may be connected to any supply point.

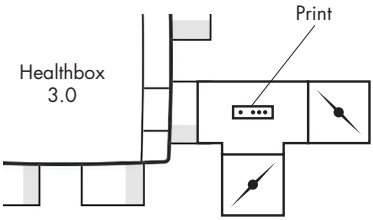
- The below setups are allowed per valve collector, on any supply point (here this is always illustrated on the same supply point).

  – 1 control module:

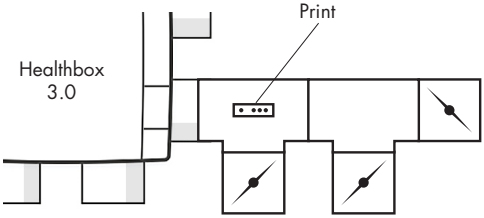


  – 2 control modules:

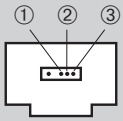




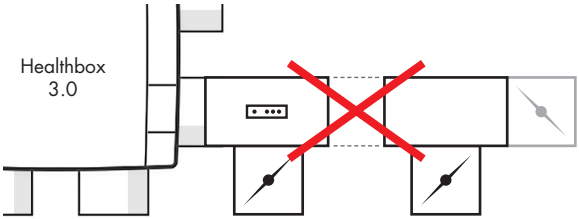
  – 3 control modules:



Make sure that the controller module closest to the fan unit is connected to connector ①. This way, the measurements for the ventilation flow rates for automatic calibration are correctly made.



NOTE:
T-pieces forming a valve collector must be connected directly to each other, i.e. without an air duct between them. An exception to this is the adaptor piece; 1 open adaptor piece may be placed between them.



By using valve collectors on the suction pipes, the air extraction of the fan unit can always be placed in the desired direction (to achieve minimum pressure loss).

12.2.2 • Instructions

With the aid of valve collectors, up to maximum 11 control modules can be connected to the Healthbox 3.0. However, do carefully read the following restrictive instructions:

- Valve collectors can be connected to a maximum of 2 connection points of the fan unit.
- A maximum of 3 control modules can be connected to a valve collector.
- The RJ45 patch cable between the control module and valve collector must not exceed 0.5 m (= length of the supplied RJ45 patch cable).
- The **maximum allowable air flow** through a valve collector is **150 m³/h** (this is the total of all nominal flow rates of the control modules connected to the valve collector).
- The table below describes **the maximum number of control modules with CO_2 detection** (conform ,) that can be used for installation in the Healthbox 3.0 configuration when using valve collectors:

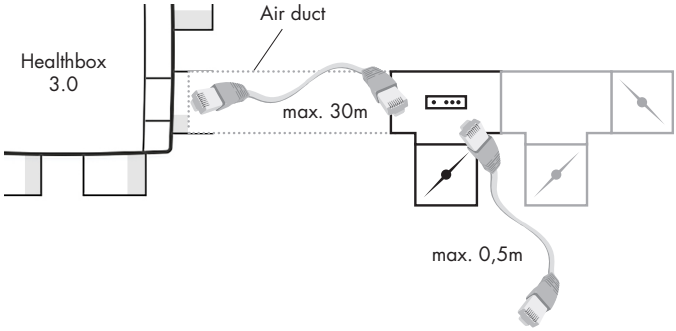
	Total number of control modules connected in the Healthbox 3.0 configuration				
Total number of prints valve collectors connected to Healthbox 3.0	**≤ 7**	**8**	**9**	**10**	**11**
1	–	7	6		
2	–	6	6	5	5

– : No limitations

Example:
Healthbox 3.0 configuration with a total of 9 control modules, where 2 print valve collectors are connected to the Healthbox 3.0:
The configuration can be carried out with 9 control modules, of which up to 6 control modules have CO_2 detection.

12.2.3 • Decentralized valve collector

The valve collector (1 to 3 control modules) doesn't need to be placed directly on to the supply point of the fan unit. The valve collector can also be installed locally by connecting an air duct between the fan unit and the valve collector.



This offers possibilities to perform an installation with fewer air ducts.

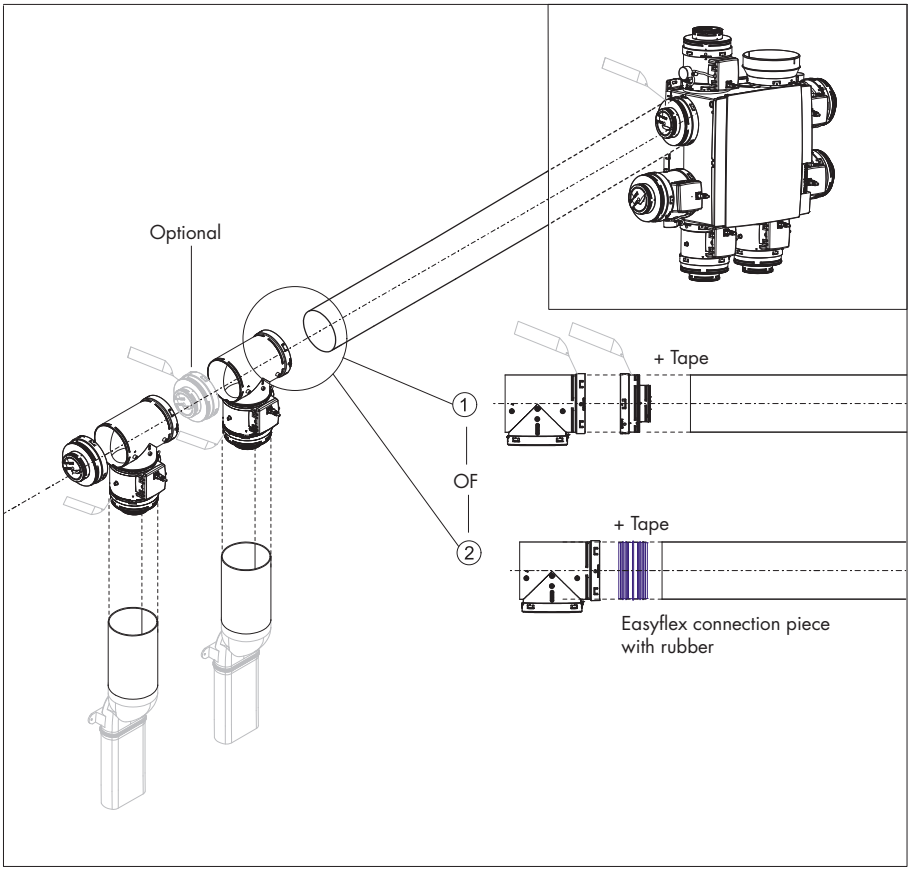
- Please note that the air flow through the air duct between valve collector and fan unit is properly dimensioned in terms of air speed and pressure drop. The total air flow through the air duct is the sum of all nominal air flows of the control modules connected to the valve collector.

  As an indication:
  A total air flow of 130 m^3/h results in an air speed of approx. 3 m/s through a round air duct of Ø 125.

- The electrical connection between valve collector and Healthbox 3.0 must be made using a RJ45 patch cable (UTP cable with RJ45 connector at both ends)
  – Type of UTP cable: Cat5e, wire thickness **24AWG**
  – Maximum cable length: 30 metres

  Renson has cable lengths of 5 metres and 10 metres available in their range.

The schematic diagram below shows which components are required for decentralized installation of a valve collector:



13 • Wi-Fi dongle

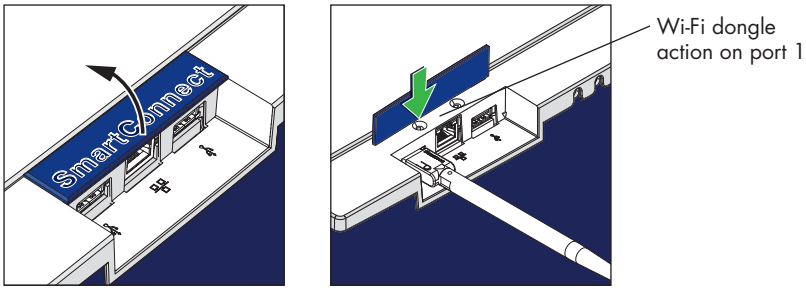
The Renson Wi-Fi dongle should be plugged into a USB port of the Healthbox 3.0 SmartConnect zone. Via the Wi-Fi dongle it is then possible to connect the Healthbox 3.0 to:

1. The Installer app
   The app guides how the installer can make the connection between the app and Healthbox 3.0. (Healthbox 3.0 works in *"Access Point mode"*).

2. Home network (Wi-Fi)
   Connection to the Wi-Fi home network can be made either with the user app (section 3.1.2.2) or with the installer app.
   (Healthbox 3.0 works in *"Client mode"*)

– If Healthbox 3.0 (already) is connected to a network, the connection between the installer app and Healthbox 3.0 can also be done simultaneously directly via the Wi-Fi dongle.
– When a Wi-Fi dongle is unplugged and then plugged in again:
  · In Access Point mode: the connection must be reconnected
  · In Client Mode: connection to the network will be made automatically again (even if the Wi-Fi dongle is plugged into the other USB port).
– If the Main LED lights up white, the Healthbox 3.0 cannot connect to the network.

Possible actions:
Lift the SmartConnect rubber flap so that the 2 holes below become visible. Next, press with a fine object briefly in the corresponding hole to perform an action. When an action is taken, the corresponding LED gives feedback. This LED feedback can be found in section 21.



- **Activating the Wi-Fi dongle:**
  – Plug Wi-Fi dongle into SmartConnect
  – Switch on the device and wait approximately 1 minute
  – Healthbox 3.0 automatically opens itself for 4 hours to connect to the installer app. Pressing the button again ends the opening process to connect.

After the 4 hours have elapsed, Healthbox 3.0 can be reactivated for 4 hours by pressing a fine object into the corresponding hole.

- **Reset the Wi-Fi dongle**
  Long press (between 5 and 10 seconds) on the button in the hole.

  → Disconnect the link to the home network (Wi-Fi) and/or installer app. Activation can then be used to reconnect to an (other) Wi-Fi home network (section 3.1.2.2) or the installer app.

  Resetting may be necessary in the following circumstances:
  – Connecting the Healthbox 3.0 to another network
  – Password of the home network changes
  – Healthbox 3.0 can no longer connect to the installer app or home network

14 • Mounting instructions

14.1 • Dimensions (mm)

The dimensions are included in the appendix at the end of this manual.

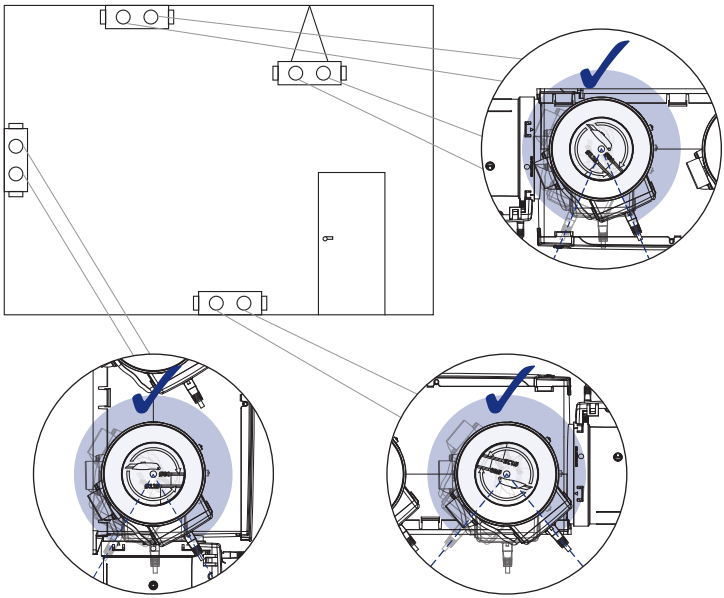
14.2 • Mounting instructions

Important! Read these instructions before starting the installation!

Follow the safety regulations and specific measures to be taken as mentioned in the introduction. When carrying out the installation, pay attention to the:

- Requirements of the STS-P 73-1 (based on the Belgian standard NBN D50-001:1991), in particular section 4.15 "Acoustic aspects of the mechanical part".
- Conformity of noise requirements according to the applicable standard (Belgium: NBN S01-400-1).

- Preferably choose the installation space outside a living area (near the roof / wall throughput) where the connection of the air duct network can easily be made. Please take in account:
  - Preferably do not place the fan unit near a bedroom to limit any noise transmission.
  - Avoid obstacles that prevent access to or removal of the fan unit.
- Healthbox 3.0 must not be connected to a motorised cooker hood or dryer.
- The air extraction of the fan must always be blown outwards.
- Make sure that the sensors of the control modules are not positioned downwards (see drawing).



The installation of Healthbox 3.0 and the corresponding air ducts must be carried out in such a way that the air ducts can be connected with as few bends as possible. Bends lead to higher pressure losses which causes the fan unit to operate at a higher pressure level. This has a negative impact on both power usage and acoustic performance.

Installation methods

Healthbox 3.0 can be installed in all directions:
- Upright
- Flat (above/below)
- Tilted

Installation can be done in 4 ways:
- Wall mounting
- Ceiling mounting
- Floor mounting
- Rope mounting: hanging (cover plate facing upwards)

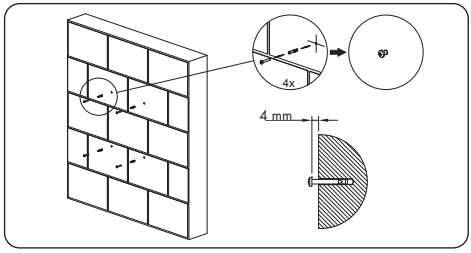
By using valve collectors, Healthbox 3.0 can be placed in a certain position at any time, so that the air extraction of the Healthbox 3.0 can be placed in the direction of the roof guide.

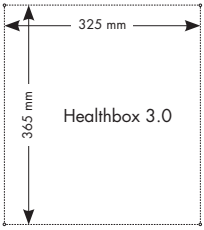
14.2.1 • Wall, ceiling and floor mounting

Healthbox 3.0 can be fixed to a wall/ceiling/floor with 4 suitable screws for the respective surface via the integrated fixing holes.

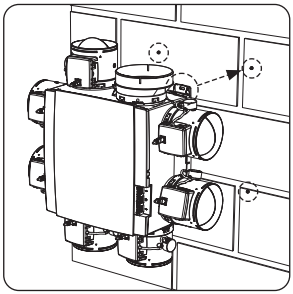
Preferably, fix it without vibration to a solid wall/ceiling with a minimum mass of 100 kg/m^2.
It is recommended to use vibration damping material between the fan unit and the mounting wall.

- If necessary, install the roof guide if it is not already present.
- Use the drilling template to mark where the plugs should be drilled.
- Place wall plugs and use screws (suitable for the type of surface). Make sure that the head of the screws protrudes ± 4 mm from the wall.



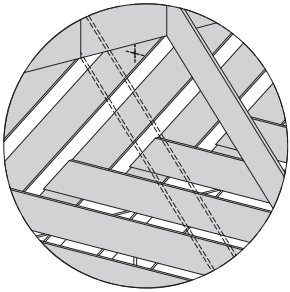


- Hook the fan unit on the four pre-mounted screws.

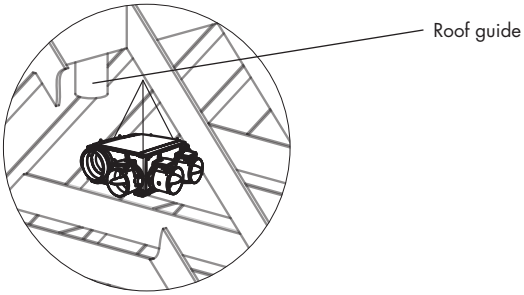


14.2.2 • Rope mounting

The device can also be attached to a rope. During rope mounting, the fan must be suspended by a sufficiently sturdy support structure. The cover plate must face upwards.



- Choose a suspension point (near the roof guide), where the fan unit can be installed and the air duct network can be easily connected.



- Hang the fan unit on to a suspension rope (not included).

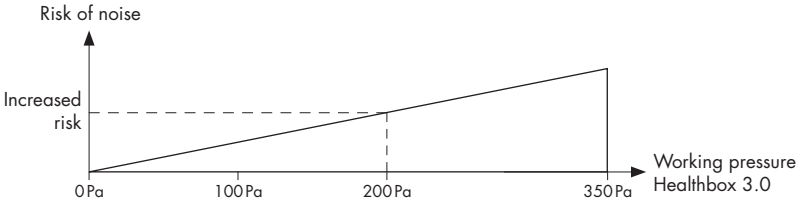
14.3 • Placing air ducts

- Anchor the fixed air ducts so that Healthbox 3.0 is not burdened by the weight of the air ducts.
- Provide an airtight air duct network. The Renson Easyflex has the best airtightness class D.
- Avoid using sharp bends as much as possible (<90°) in both fixed air ducts and flexible piping. Do not place sharp bends in the pipes directly in front of the control module.
- For riser pipes, preferably use circular air ducts.
- To prevent condensation in the air ducts, use insulated air ducts/pipes when they are placed outside the insulated volume of the home.
- Use fixed air ducts as much as possible. The fixed air ducts have less air resistance than aluminium flexible pipes, and their purpose is to bridge distance.
- The aim of the aluminium flexible pipe is to make a curve run gradually and to attenuate vibrations.

Renson aluminium flexible pipe	Characteristics	Application
Aludec		– Connect the fan unit and extraction grilles to the fixed air ducts (approx. 0.5 m length). – Connect the fan unit with roof guide/ façade guide.
Isodec	Insulated	The same use as with Aludec, to be used when the pipe is placed outside the insulated volume.
Acoudec	Acoustically dampening Insulated	The same use as with Aludec, to be used when sound reduction is important.

Limit the number of curves in the pipes to reduce resistance in the piping! This way, the fan unit can operate at a lower pressure level. After all, a device with a lower operating pressure is more energy efficient and quieter.

Recommended working pressure Healthbox 3.0 at design air flow: ≤ 200 Pa
Guide values of a very good working pressure at design air flow: ≤ 100 Pa



14.3.1 • Extraction/supply air ducts

The following factors are important for the correct determination of the required air ducts:
- Intended extraction air flow rate
- Distance between fan unit and extraction point
- Desired acoustic comfort for the user
  RENSON® recommends a maximum air speed of 3.0 m/s to ensure **acoustic comfort.** Go to www.renson.eu (products → mechanical ventilation) for an overview of the technical specifications (graphics for air velocity, pressure drop) of the Renson® Easyflex air ducts.

14.3.2 • Extraction air ducts

- Avoid sharp bends (< 90°) in the bleed line. A slight bend will cause pressure loss and less noise.
- Min. 0.5 m of straight pipe (flexible) after the fan unit, before a bend may be used in the drain pipe.
- Guide value length of aluminium drain pipe flexible (Aludec/Isodec): stretched hose!

Ø Flexible	Maximum rated air flow	Max. length bleed line (max. 1 curve)
Ø125	150 m³/h	2.5 m
	275 m³/h	1.5 m
Ø150	275 m³/h	2.5 m
	375 m³/h	1.5 m

- Individual extraction (house construction): use the RENSON® wall or roof exhaust. They are designed to operate with low pressure loss.
- Central extraction (apartment construction): correctly dimensioned central duct for extraction. If an (auxiliary) roof fan is used: constant pressure control.

Download the installation tips

14.3.3 • Acoustics

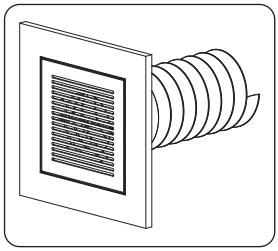
- In certain situations and/or rooms (e.g. bedrooms, open kitchen), it may be necessary to use acoustic insulation materials.
  - When the suction line between the extraction point and the fan unit is shorter than 3 metres, we strongly recommended to install a silencer (Acoudec) to avoid any noise nuisance.
  - If the suction line between the extraction point and the fan unit is shorter than 1 metre, a silencer must be installed (Acoudec).
  - When using spiral tube lines, we strongly recommended to install a silencer (Acoudec) to minimise noise nuisance.

- Always position the silencer as close to the control module as possible.

- When connecting one or more rooms to each other via air ducts/ collector/...., we strongly recommended to install a silencer (Acoudec) to avoid any noise nuisance (crosstalk between the different rooms). The silencers must be placed between the extraction points and the connection point.

- For additional sound reduction, acoustic insulation material can also be placed on to the extraction grille. Please note that the pre-set air flow is still achieved.

14.4 • Placing the design extraction grille



Carefully select the place (in ceiling or wall) where you want to install the extraction grille.
The aim is to position the extraction grille as far away from the intake port as possible so that the entire room is flushed.

Overview of the possibilities for mounting the extraction grille:

Extraction grille installation in wall or ceiling

A. Fixed channel work: angled connection (channel Ø80 mm & Ø125 mm)
B. Fixed channel work: straight connection (channel Ø80 mm & Ø125 mm)
C. Flexible channel work: straight connection with mounting flange (channel Ø80 mm & Ø125 mm)

Extraction grille installation in plasterboard walls

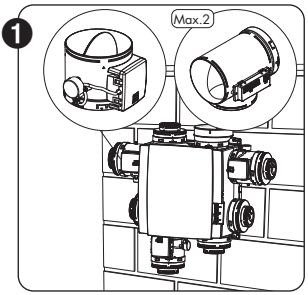
A. Surface mounting with mounting flange (channel Ø80 mm & Ø125 mm)
B. With gypkit, recessed flexible channel work in 9.5 or 12.5 mm plasterboard walls (channel Ø80 mm & Ø125 mm)

Extraction grille installation in MDF

A. Surface mounting with mounting flange (channel Ø80 mm & Ø125 mm)
B. With panel kit, recessed flexible channel work in 5-30 mm MDF: straight connection (channel Ø80 mm & Ø125 mm)

Follow the instructions on www.renson.eu (products → mechanical ventilation → product grille base) for a detailed explanation and visualization.

14.5 • Connecting control modules, valve collectors and air ducts



- Mount the control modules directly or via a valve collector or T-piece on the fan unit.
- The label on the control module indicate which room/zone(s) the control module can be connected to (section 11).
- The desired rated air flow can be set during the calibration procedure with the installer app.

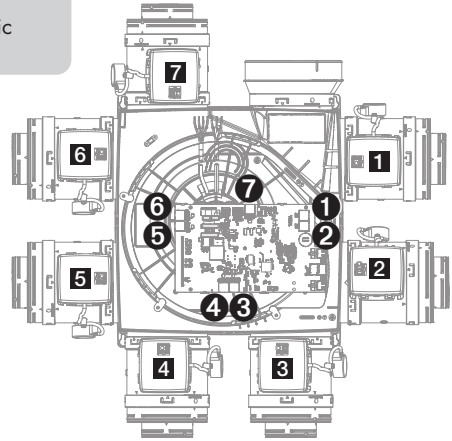
NOTE
Do not manually rotate the damper blade (see fig. 1) in order to avoid possible engine damage.

- The control modules are connected to the connectors on the main circuit board of the Healthbox 3.0 [1] via RJ45 patch cables. The RJ45 patch cable can be placed in the provided recesses. The cable length of the RJ45 patch cable between control module and fan unit must not exceed 0.5m. This is the length of the supplied RJ45 patch cables.

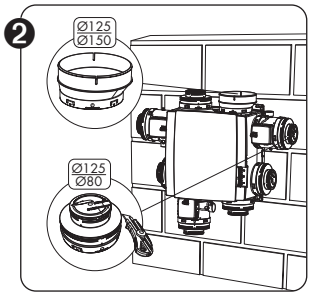
Make sure that the control module is always connected to the corresponding connector. The numbers of the connectors are integrated in the fan unit.

Connect control module 1 to connector ❶
Connect control module 2 to connector ❷
Connect control module 3 to connector ❸
Connect control module 4 to connector ❹
Connect control module 5 to connector ❺
Connect control module 6 to connector ❻
Connect control module 7 to connector ❼

This way, the measurements for the automatic calibration are done correctly.

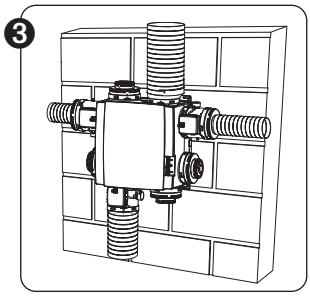


[1] *Have the connections ready before connecting the Healthbox 3.0 to a power supply.*



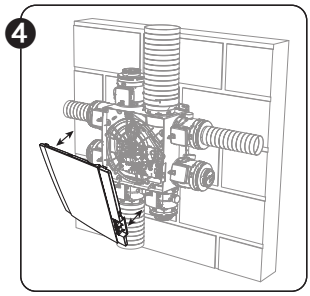
- You can use **adapter/cap Ø125-80** for different functionalities:
  1. Seal the unused supply points.
  2. Coupling piece between control module and flexible/air duct. Cut off the cover according to the matching groove on the adapter:
  – Ø125 → Ø80: if a channel Ø80 must be connected.
  – Ø125 → Ø125: if a channel Ø125 must be connected.

- **Air extraction adapter Ø125-150**
  Use the supplied air extraction adapter Ø125 → Ø150 to connect a Ø150 bleed line. The air extraction adapter is eccentric. An air duct Ø160 can also be easily connected via the optional rubber ring (available separately).



- Connect the air duct works flexibly to the adapter pieces by using the supplied straps.

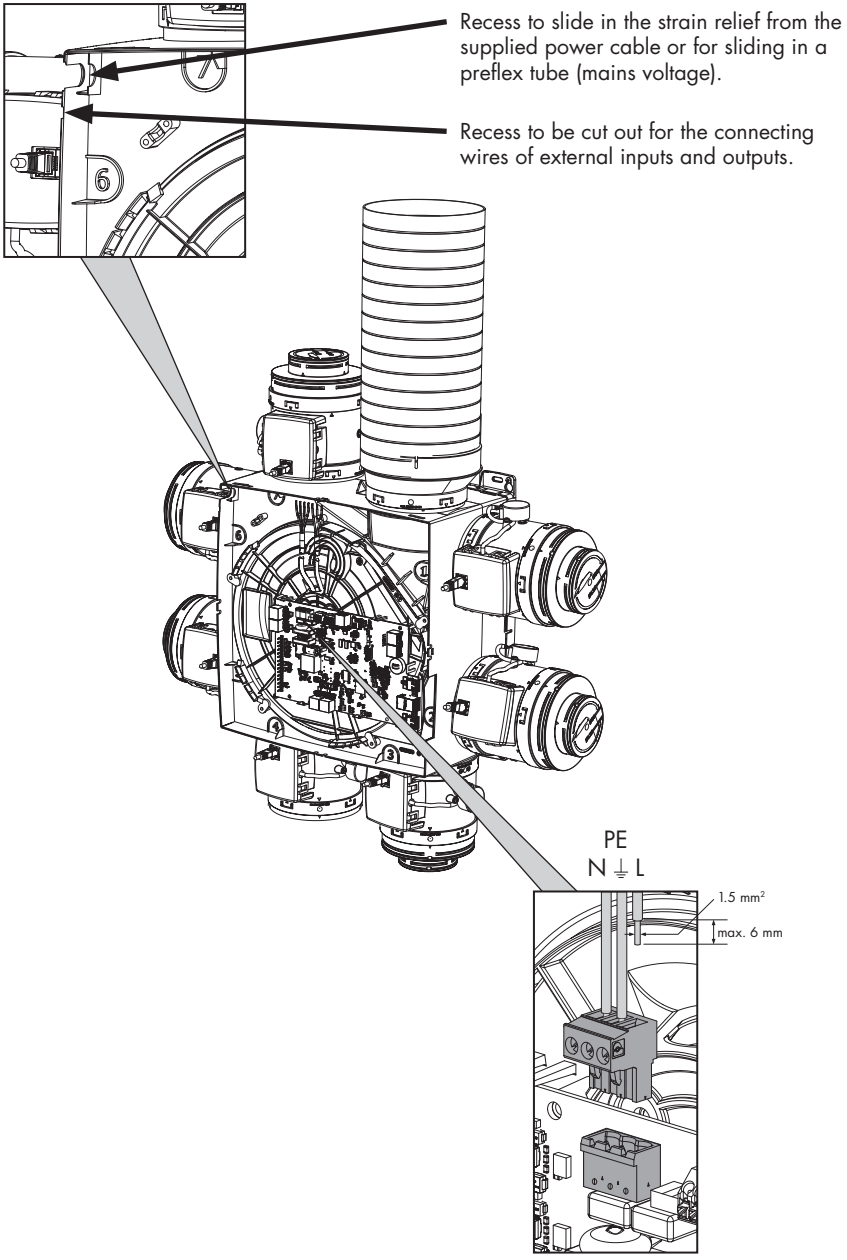
- Connect each room/zone(s) to the appropriate control module (section 11).



- ⚠ → Make sure that the power supply is switched off!
- Remove the cover plate from the Healthbox 3.0.
- Follow the instructions to make all electrical connections (section 14.6).
- Fit the cover plate back onto the fan unit.

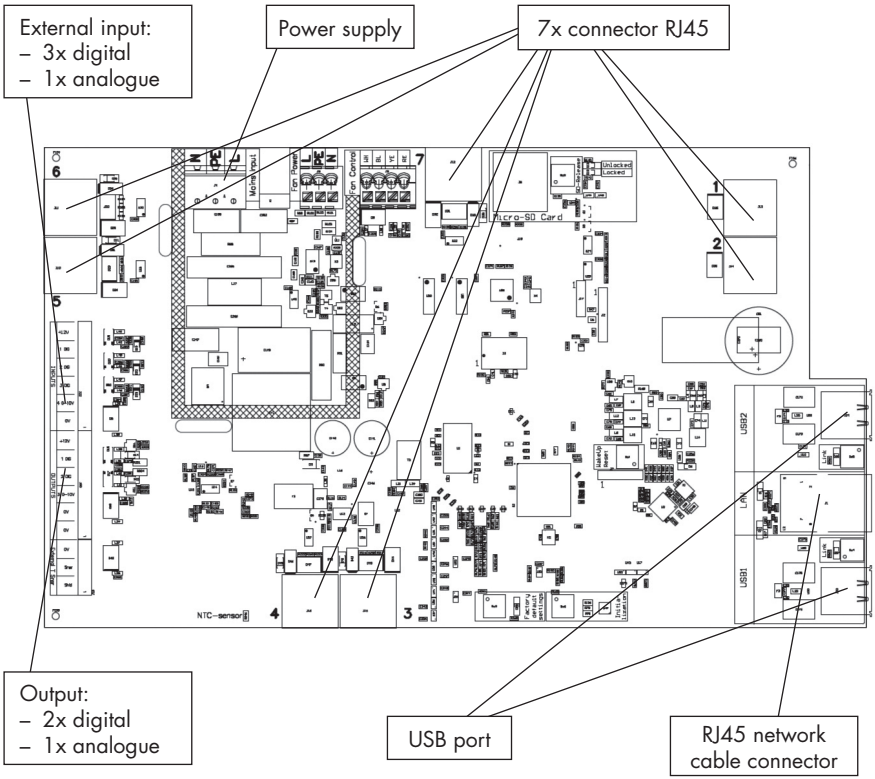
- You are now ready to start the system (section 15).

14.6 • Wiring diagram Healthbox 3.0



Connecting the power cable

14.6.1 • Connections



- **Power supply:** connect to the outlet or directly to the fuse box (section 14.6.3).
- **Connector RJ45:** connecting the RJ45 patch cable from the control module or valve collector.
- **USB port:** the USB port can be used to allow Healthbox 3.0 to communicate with the home network via Wi-Fi and/or directly with the installer app. Use the included Renson USB Wi-Fi dongle.

> Switch on the mains voltage (again) after plugging in the Wi-Fi dongle.

- **RJ45 network cable connector:** the connection can be used to connect Healthbox 3.0 to the home network via a network cable.
- **Output:** Healthbox 3.0 can send information to external devices via the digital outputs and/or analogue output. A detailed description can be found in section 23.
- **External input:** Healthbox 3.0 can be controlled by external devices via the digital and/or analogue input(s). A detailed description can be found in section 23.

14.6.2 • Connecting to the network

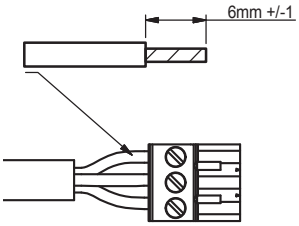
Follow the instructions in section 3.1.1.

14.6.3 • Connecting to the mains voltage

Healthbox 3.0 can be connected in 2 ways:

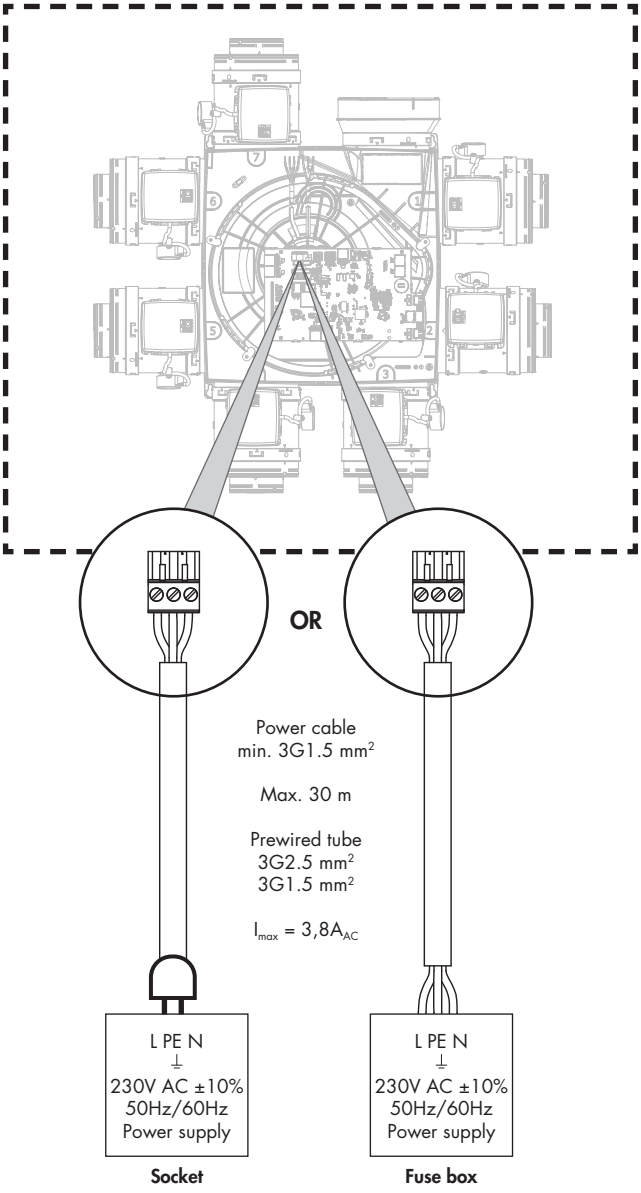
1. Plug the supplied power cable into the **wall outlet** (the outlet must be located in a hard-to-reach location).

2. By connecting directly to the fuse box. The wires of the cable must be stripped 6 mm before they are connected to the connector.



The circuit board indicates where the L, N and PE wires are to be connected.

If Healthbox 3.0 is connected directly to the fuse box, a device must be installed in the fuse box to disconnect Healthbox 3.0 from the power supply.
This device must be a bipolar type, must be connected directly to the Healthbox 3.0 and must withstand category III overvoltages.



Installation and electrical connection of the various components may only be carried out by qualified personnel in accordance with the applicable safety regulations.

15 • Starting up the Healthbox 3.0

15.1 • Before the automatic calibration starts

Extreme weather conditions, e.g. strong winds, may affect the operation of the system. Avoid starting the automatic calibration under these conditions.

Before starting automatic calibration, it is important to:
1. Fully open all window ventilations
2. Close all windows
3. Preferably close interior doors
4. Stop all other installations that bring in outside air or send out indoor air.

Check the installation:

- There should be a minimum of two control modules connected to the fan unit.
- Check that each RJ45 patch cable of the control module is connected to the corresponding Healthbox 3.0/valve collector connector. Connecting to the corresponding connector is important for a correct automatic calibration of the system (section 14.5).
- Make sure that the mains voltage is turned on (again) after plugging in the Wi-Fi dongle.
- Possibilities and limitations for using valve collector(s) (section 12).
- If a Renson telescopic hood is connected to Healthbox 3.0, make sure it is closed.

15.2 • Starting automatic calibration

The unique automatic calibration ensures that the time for setting the desired design air flow is greatly reduced compared to a system with conventional control valves.

If necessary, automatic calibration can still be adjusted via the installer app.
When valve collectors are used in the setup, there is real need for such correction.

1. Power the Healthbox 3.0.

   – **Start up check:** the operating system of the Healthbox 3.0 is started (this takes about a minute).
   – The **configuration check** then takes place: each control module moves into the closed position. The fan will first run for a short period of time and then run at its minimum speed.

2. Feedback (LEDs) during the start-up phase:

Status Healthbox 3.0	MAIN LED circuit board	LEDs control module/valve collector	
		Green	Orange
Start-up check	Light up white	Off	Off
Configuration check	Off	Flashing	Flashing
Calibration required	Flashing green	Flashing [1] (in sequence with Main LED)	Off

[1] Make sure that the LEDs of all control modules in the configuration flash green only.

A full overview of how the LEDs of Healthbox 3.0 behave throughout the start-up can be found in section 21.

Healthbox 3.0 can then be calibrated in 2 ways:
– via the installer app
– via the 'Initialization' button on the main circuit board

The duration of the calibration is determined by the number of control modules that are connected, amongst others; the more control modules, the longer the calibration takes.

Guide value:

# control modules	Duration of calibration
2 - 5	2 to 3 minutes
6 - 7	3 to 4 minutes
8 - 11	4 to 7 minutes

15.2.1 • Calibration via the installer app

The Healthbox 3.0 set-up app can be downloaded for free from the App Store (Apple) or Google Play (Android). Register to create an account.

Download on the App Store

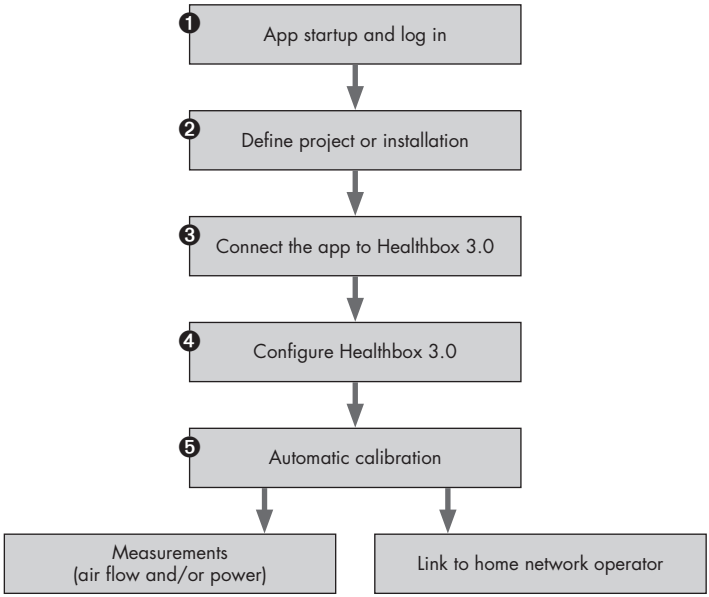
GET IT ON Google Play

Download

Healthbox 3.0 set-up

Some important advantages to install via the app:
- Guide through the installation process
- Desired nominal air flow can be easily adjusted/adjusted
- Configuration can be easily adjusted
- Remaining duration indication for automatic calibration
- Overview of installation pressure losses (after automatic calibration)
- If an error occurs during calibration, a message will be displayed with a suggested solution
- The installation parameters are forwarded to the web portal
- A measurement report is automatically drawn up digitally in the web portal
- All installed installations can be managed in the web portal

The installer is guided through the following steps when installing via the app:



15.2.2 • Calibration via the Initialization button on the main circuit board

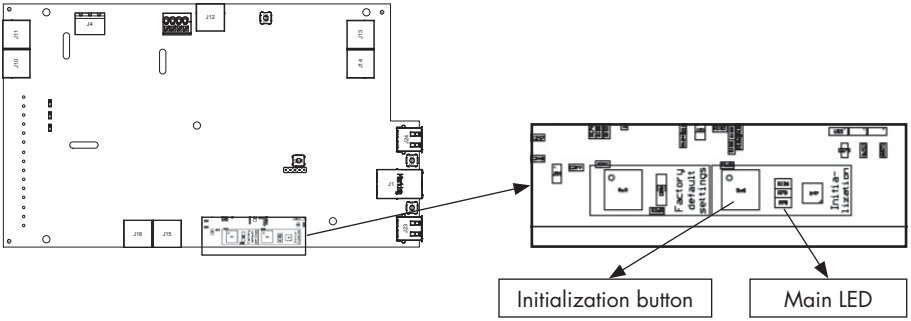
Via the Initialization button on the main circuit board, Healthbox 3.0 calibrates according to **country choice Belgium.** The country selection determines how the software in Healthbox 3.0 applies ventilation level control during normal operation. The control determines how much air will be discharged in function of the measured air quality and is determined by parameters such as nominal air flow, minimum air flow, limit value sensors, duration control,....

Do not apply this calibration method in the following cases:
- If a calibration should be done according to a legislation (≠ Belgium).
- If nominal air flow needs to be adjusted.
- If a control module needs to be arranged differently (e.g. use bedroom type control module for the living room, assuming that the bedroom and living room would require a different regulation in legislation).

In these cases, choose to start the installation immediately with the installer app or work with the app afterwards.

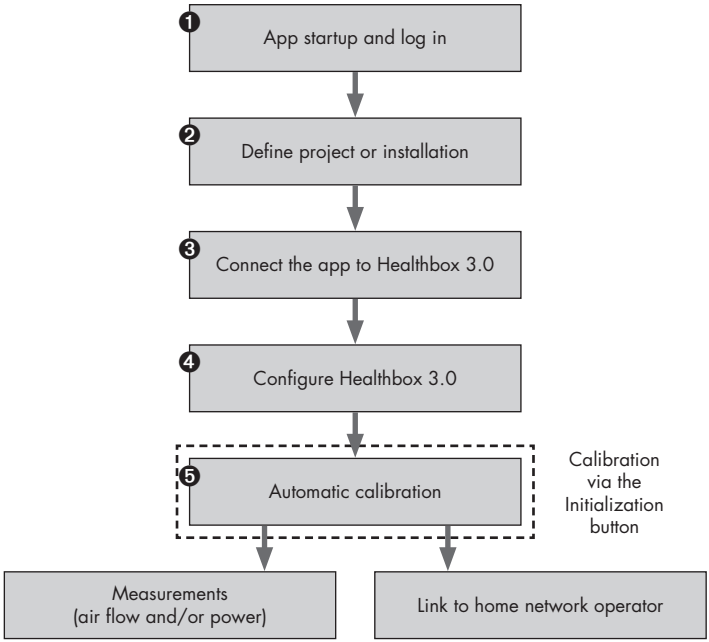
- **Start calibration**

Press the Initialization button for > 5 seconds (but < 15 seconds) to start calibration. The Main LED on the main circuit board will then flash green rapidly. When calibration is completed, Healthbox 3.0 will immediately start normal operation:
- calibration OK: Main LED lights solid green
- calibration not OK: Main LED is solid yellow (required nominal air flows are not all achieved)



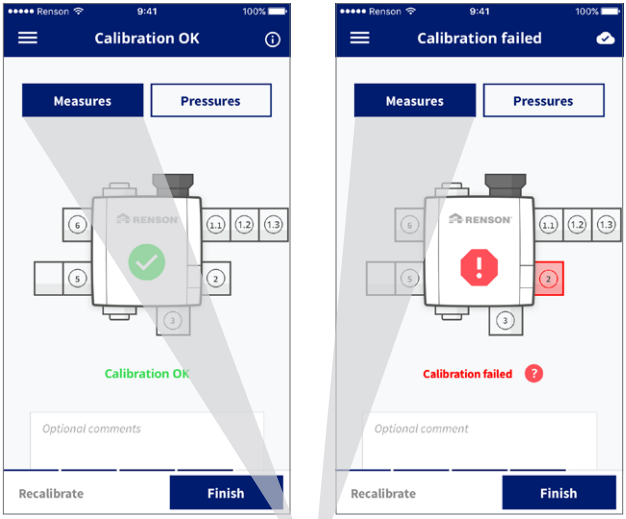
- **Complete installation with the installer app**

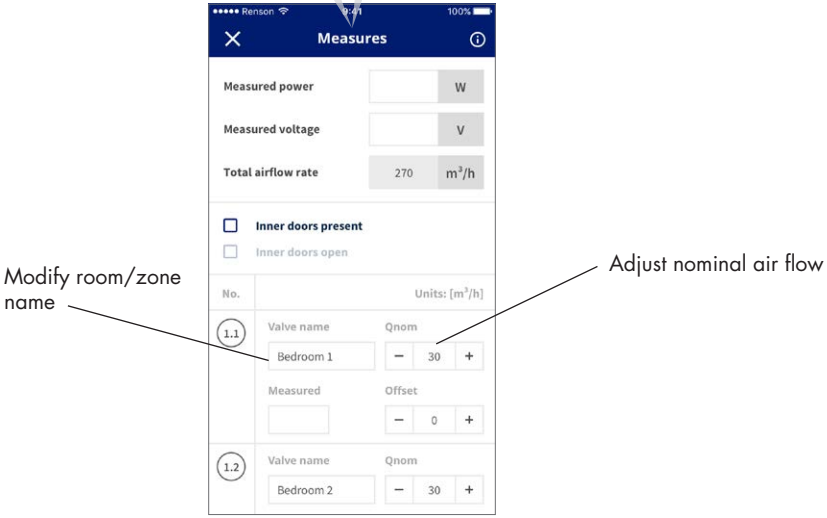
With previous action, step ❺ of the calibration in the flow is already completed.



After calibration, the system can be further 'finished' with the app. To do so, go through step 1 to 4. Some adjustments that may be useful:

- Nominal air flows: these can be adjusted using the 'Measures' button on the "Calibration OK/failed" screen. An adjustment of the desired nominal air flow is made immediately, without the need for a new calibration.
- Name of a space/zone: this can be changed by clicking the 'Measures' button on the "Calibration OK/failed" screen.





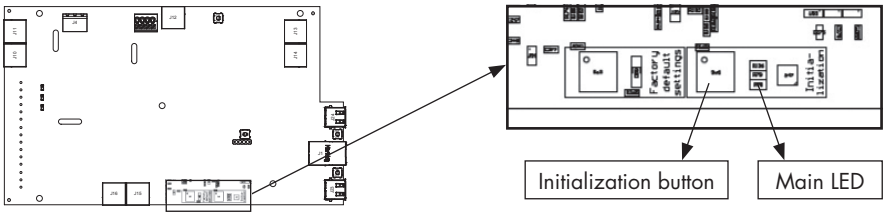
15.3 • After automatic calibration – nominal position

In certain countries/regions, legislation stipulates that after installation the drainage flow rates per room must be measured using a measuring instrument [1]. The measurement should be carried out in nominal position. The standard states that nominal air flow must be achieved simultaneously in each room.

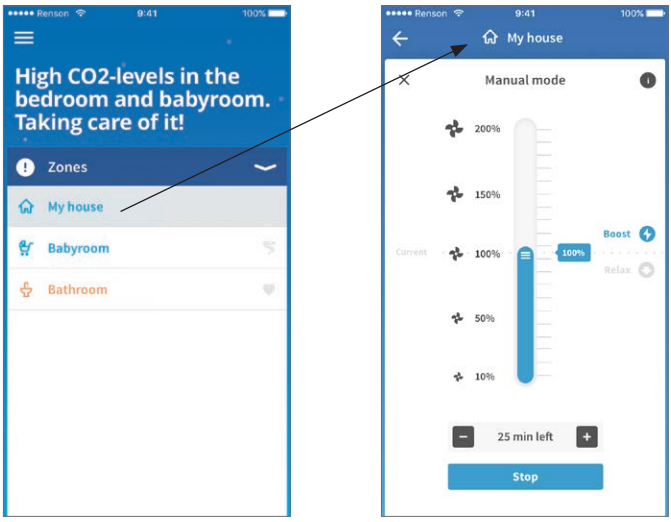
[1] *The air flows must be in accordance with the ventilation air flows stated according to the ventilation preliminary design. If the air flows do not match, correct it if necessary, using the installer app.*

The nominal position can be activated in 3 different ways. The Main LED on the main circuit board lights blue when the Healthbox 3.0 is ventilated in nominal mode.

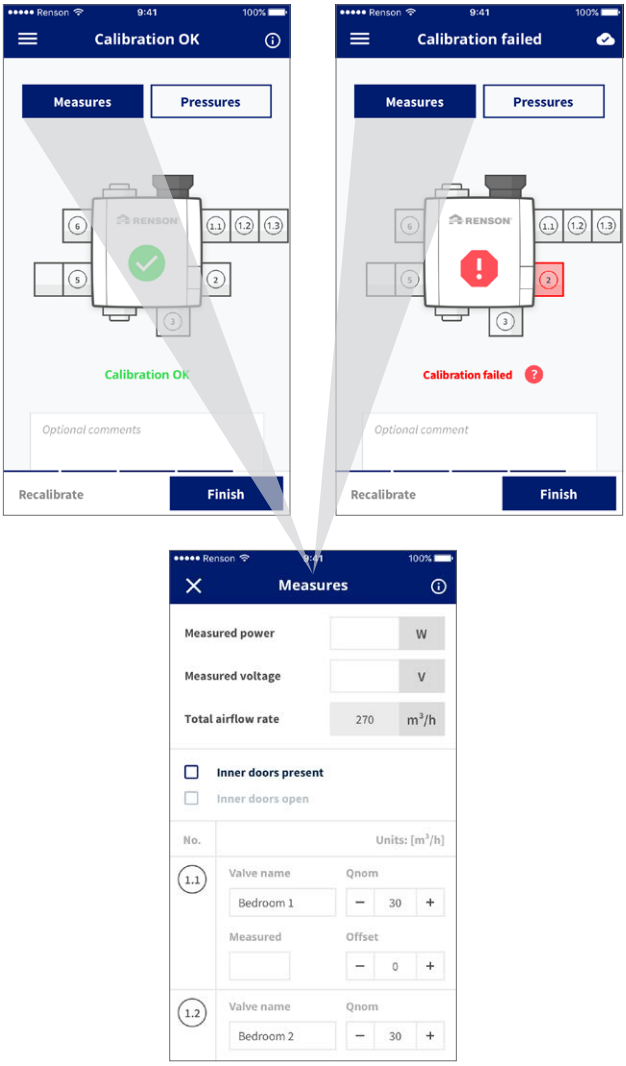
1. On the main circuit board of the Healthbox 3.0: press the Initialization button briefly (1sec.). Healthbox 3.0 then operates for 2 hours in nominal mode.



2. User app: choose manual mode Boost 100% for the entire home (via the user app/account)



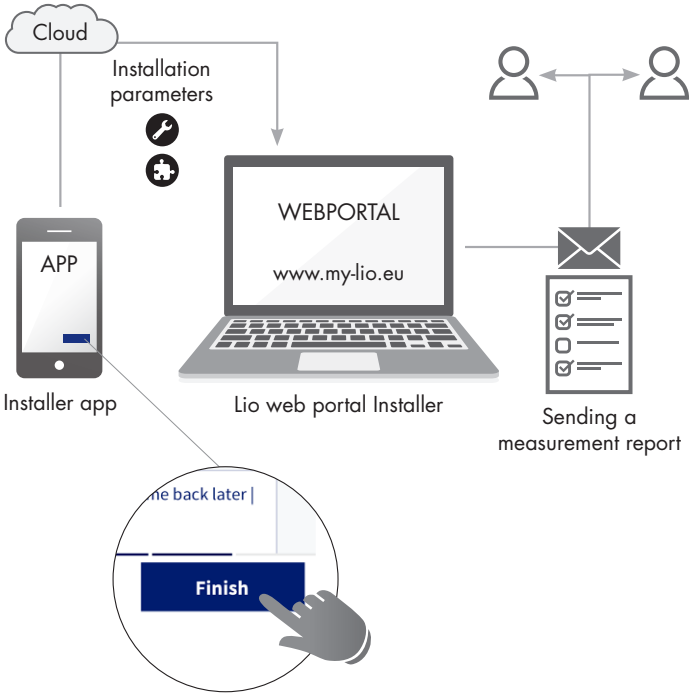
3. Installer app: (automatic) in the submenu 'Measures' (after automatic calibration)



Healthbox 3.0 works in nominal mode as long as the submenu 'Measures' is active.

16 • Measurement report

The measurement report is available specifically for the installer who is also a ventilation reporter (in accordance with Belgian legislation). Starting up Healthbox 3.0 with the app (installer) has the great advantage that all installation parameters to the Lio web portal for installer (section 17) are recorded.
The measurement report contains a selection of the installation parameters and is made up automatically in that web portal. This way, the measurement report can be sent from the web portal to the bodies or persons concerned.



17 • Lio web portal (Installer)

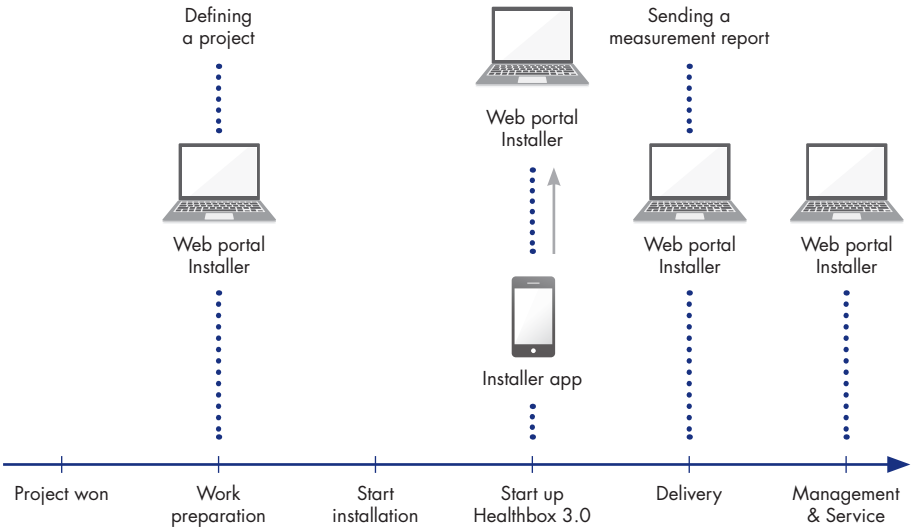
The Lio web portal for installer offers the following advantages:

- Installation parameters are tracked
- Management of all installations
- Digitisation of paperwork (preparatory administrative work)
- New possibilities in providing service [1]

Start the web portal via the link www.my-lio.eu

The account that is created upon registering via app or web portal for installer gives access to both the app and the web portal.

Situation sketch: how/where/when the installer uses the app and web portal in the installation process.

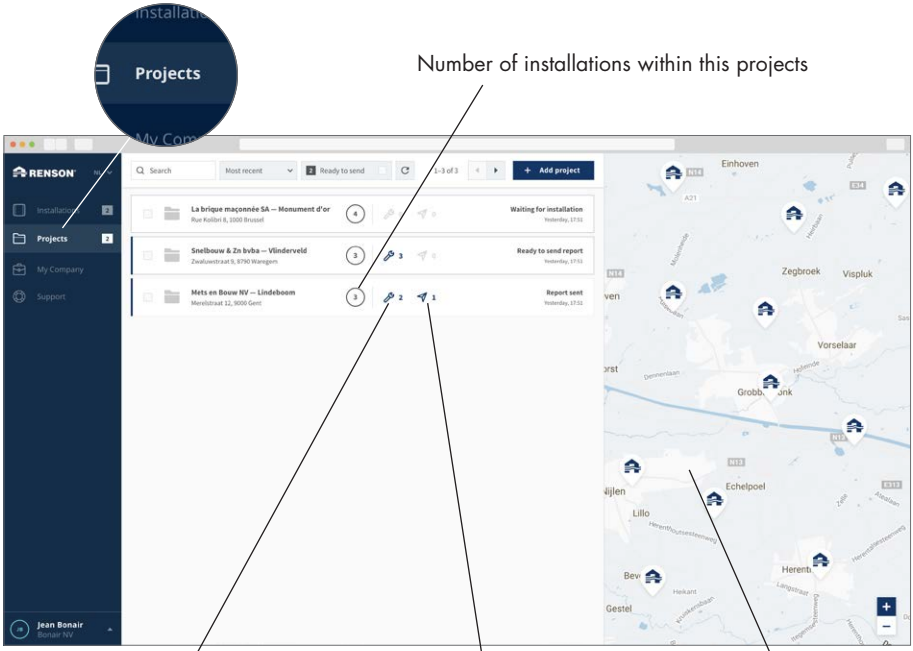


[1] *Provided that Healthbox 3.0 is connected to the home network.*

17.1 • Menu 'Projects'

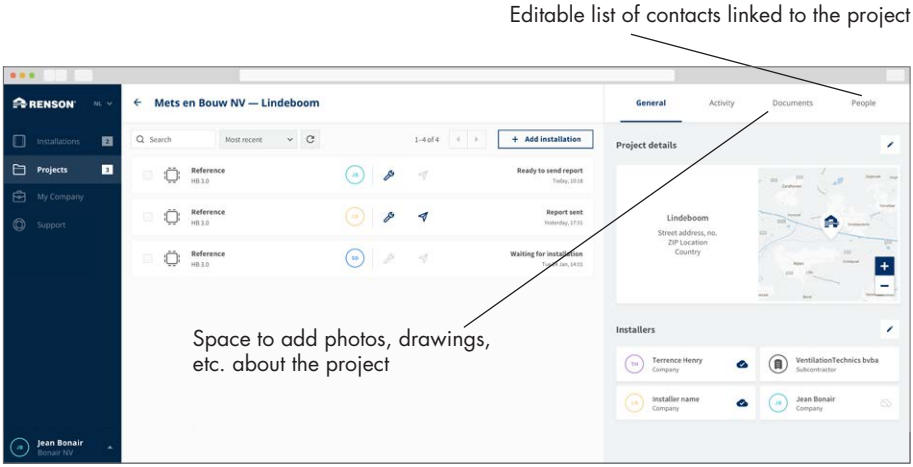
The "Projects" menu is explained here. 'Projects' gives an overview and status of the active projects.

17.1.1 • Projects: overview and status



When a project is selected, an overview is given of all installations within this project.

(1) *automatic calibration completed*

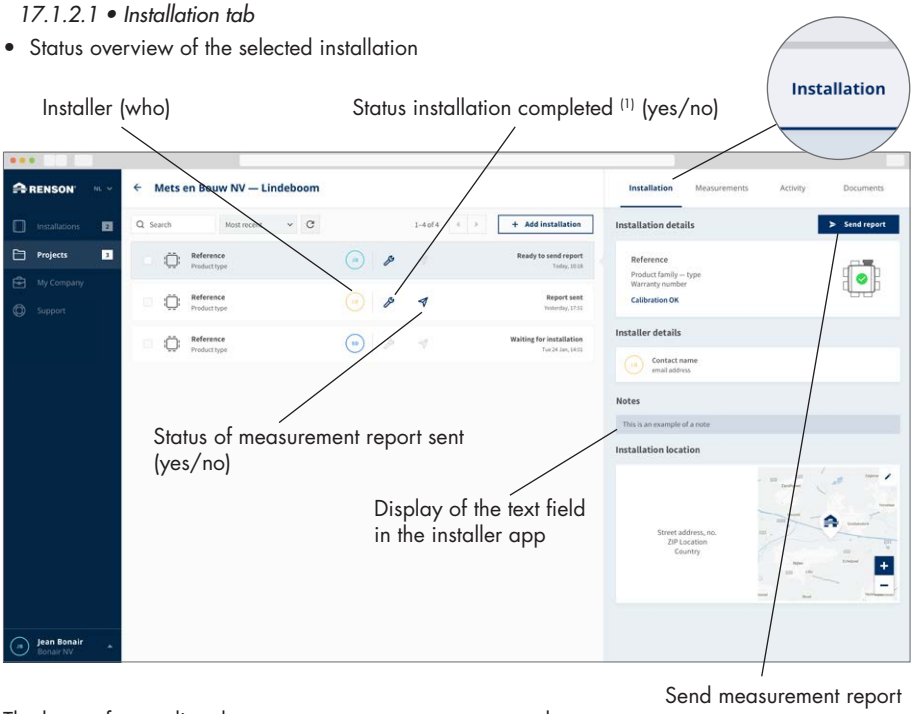


17.1.2 • Installation within a project

Select an installation to consult all related information from it.

17.1.2.1 • Installation tab

- Status overview of the selected installation



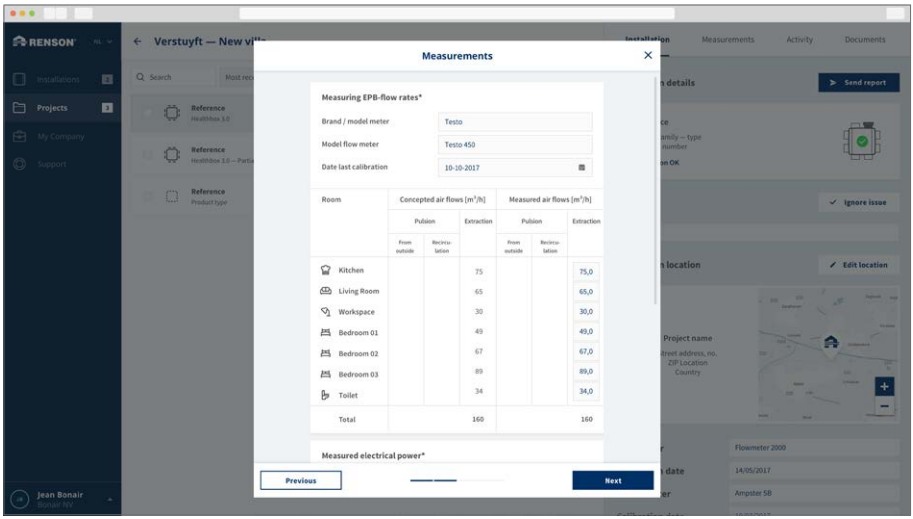
The button for sending the measurement report appears only when an installation has been completed.

(1) automatic calibration completed

- Sending a measurement report

1. General information: contact details of the applicant and address details of the project.

2. The content for the report is automatically pre-filled. This data was sent by the installer app.



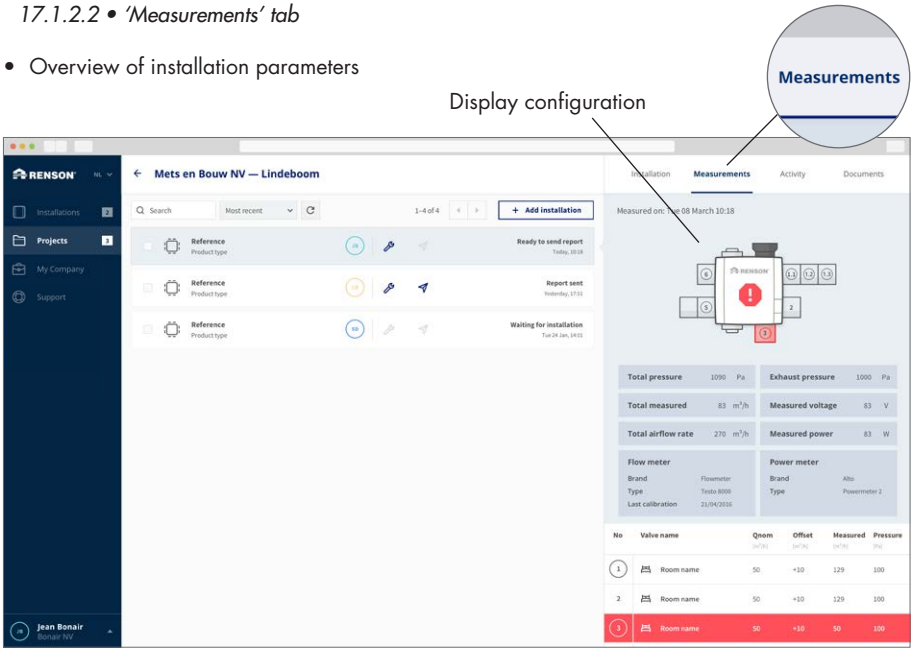
Certain data can be supplemented/modified.

3. The measurement report can be sent by e-mail to multiple recipients.

4. If the measurement report was sent successfully, the symbol turns dark blue in the overview screen.

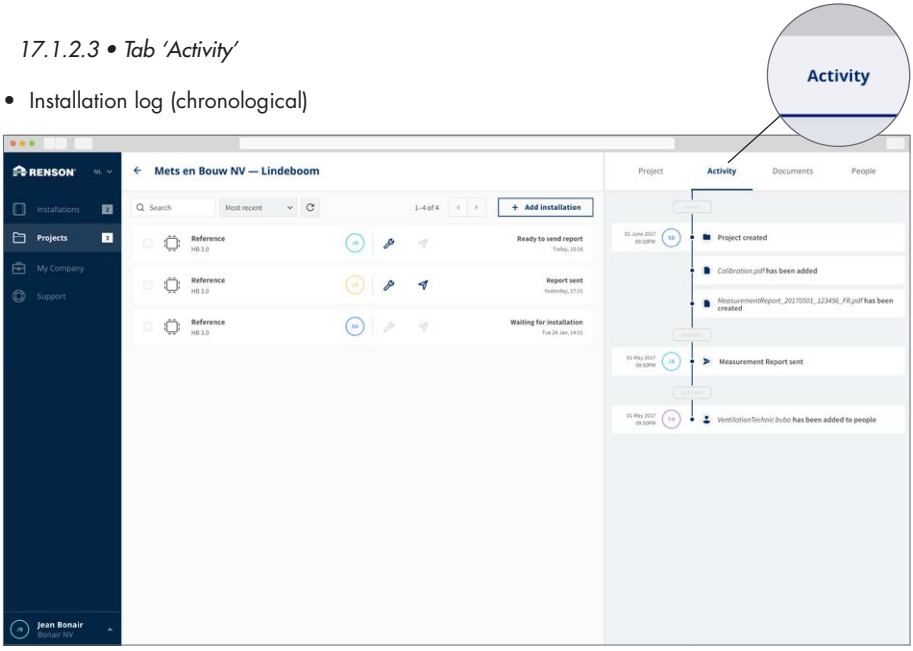
17.1.2.2 • 'Measurements' tab

- Overview of installation parameters



17.1.2.3 • Tab 'Activity'

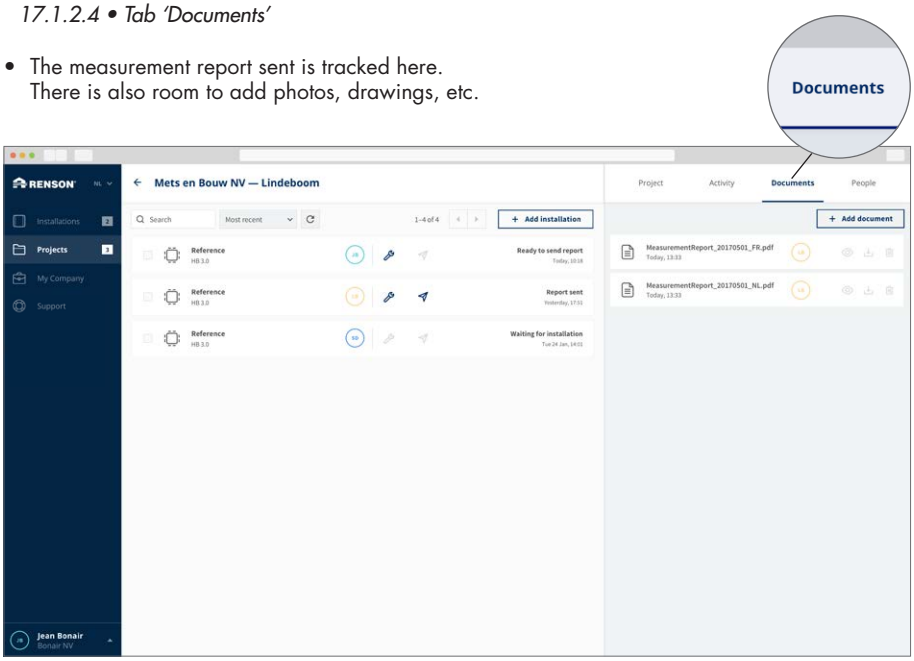
- Installation log (chronological)



Installer

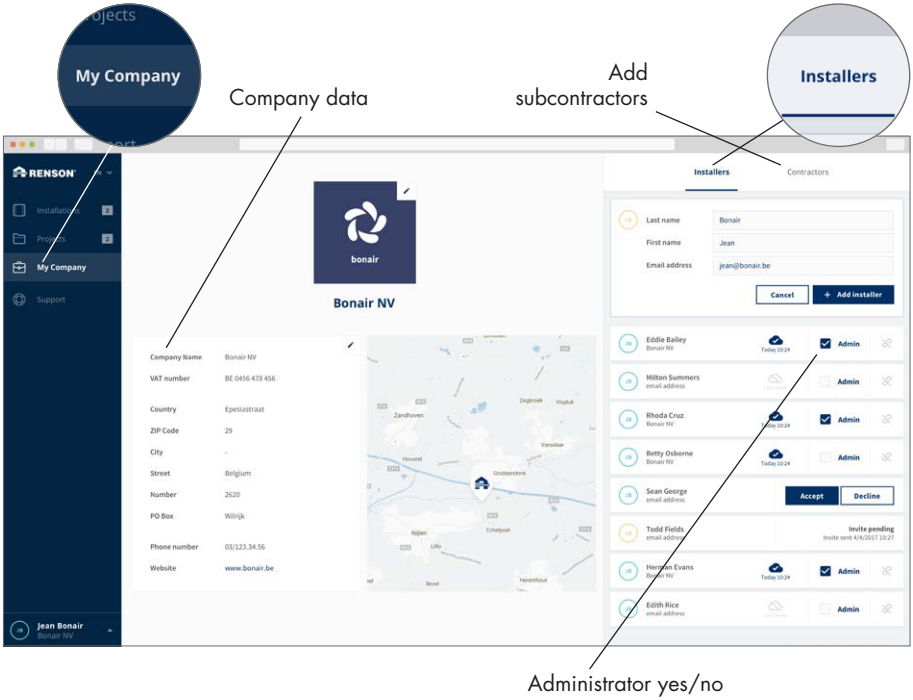
17.1.2.4 • Tab 'Documents'

- The measurement report sent is tracked here.
  There is also room to add photos, drawings, etc.



17.2 • Menu 'My Company'

With 'My Company', it is possible to manage company data, as well as add installers and partners (subcontractors), follow up, grant rights, ...



When creating a new installer within a company, it is important to determine if he may or may not be given the level Admin.

Admin level has the following privileges:

- Create and manage a project
- Draw up and send a measurement report
- Adjust company data

18 • Expansions

Healthbox 3.0 can be expanded with the following applications:

- Integrating into a smart home via SmartConnect, for communication with smart devices in home management systems (home automation) (section 3.4).
- Can be connected to a RENSON® motorless cooker hood in order to remove cooking fumes efficiently.
- Connect to RENSON® air components:
  - Easyflex® air ducts: air transport according to the best airtightness class D
  - Extraction grille: design discharge point (installation or surface-mounted) with or without control valve
  - Aludec: air flexibility
  - Acoudec: air flexibility with strong acoustic insulation properties
  - Isodec: air flexibility with thermal insulating properties
  - Roof and/or wall ducting: suitable throughputs with limited pressure loss
  - Triple Flow: the combination solution for collective ventilation discharge and flue gas supply and extraction

Consult our website www.renson.eu (Products → mechanical ventilation) for more information.

19 • FAQs Installation

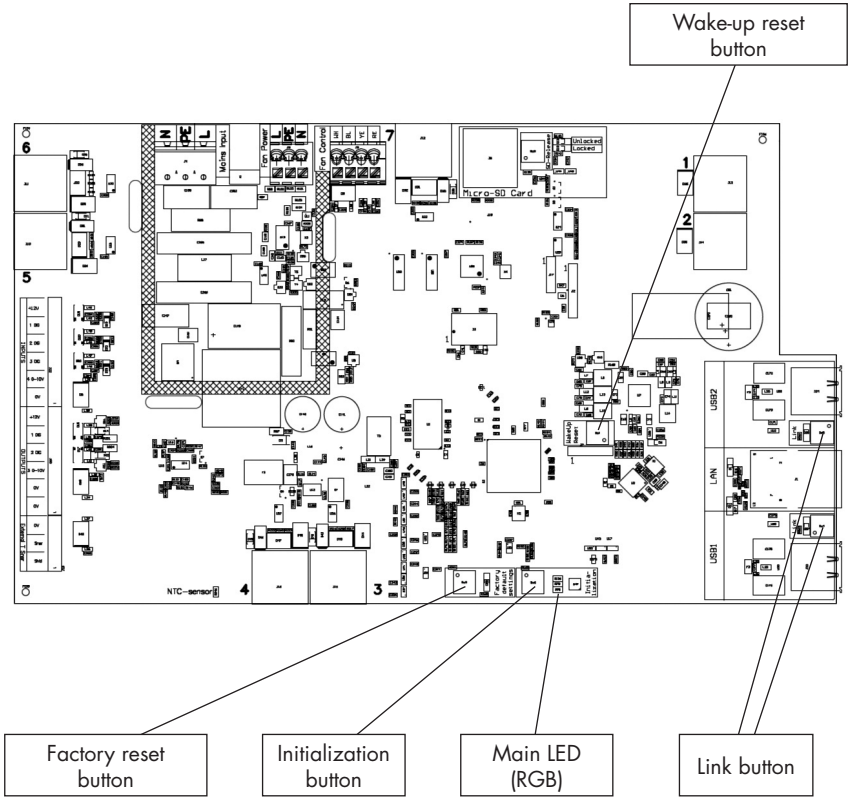
Answers to some frequently asked questions about installation can be found via the 'Support' menu in the installer app.

20 • Control features main circuit board

Various buttons are provided on the Healthbox 3.0 main circuit board to enable fast execution of certain Healthbox 3.0 actions.

- Leave Healthbox 3.0 under power and remove the cover plate. If connected, the Wi-Fi dongle and network cable can be disconnected. Afterwards, both can be connected back again without the need for any additional action.

- Overview buttons:



- Possible actions

Button	Short press	Long press
Factory reset	–	– Press duration: ≥ 5 seconds – Reset Healthbox 3.0 to factory settings. New calibration is required. – *Main LED: illuminates continuously white*
Initialization	– Press duration: ± 1 second – Healthbox 3.0 operates 2 hours in nominal position – *Main LED: illuminates continuously blue*	– Press duration: between 5 and 15 seconds – Start calibration (according to country setting BE) – *Main LED: rapidly flashes green*
Wake-up reset	–	– Press duration: ≥ 8 seconds – Restarting Healthbox 3.0 (same as de-energizing the device) – *Main LED: illuminates continuously white*
Link	– Healthbox 3.0 sets itself to "Access Point mode" for 4 hours. In this mode, Healthbox 3.0 can be connected to the installer app. – *LED* [1]	– Press duration a bit longer: 3 to 5 seconds – Disconnect the link between the Healthbox 3.0 and - Wi-Fi router - The Installer app – *LED* [1]
Both Link buttons at the same time	– Press duration: max. 2 seconds – Disconnect all accounts associated with Healthbox 3.0 [2] – *LED USB: 10 x flashing of both LEDs*	–

[1] LED feedback (section 21)

[2] No single account (app, web portal) still has access to the current data of Healthbox 3.0. To reconnect Healthbox 3.0 with the app, follow the steps described in section 3.1.2 (you can log in with the existing account).

21 • LED feedback

The prints of Healthbox 3.0, valve collector and control modules have different LEDs.
The LEDs show a visual indication of the operating state:

Action taken	Operating state Healthbox 3.0	Main LED Healthbox 3.0	
		White	Green
Plug in the socket	Start-up check	Illuminate	–
	Configuration check: valves rotate to closed position. The fan starts to run for a short time and then runs at minimum speed.	Illuminate	–
	Request to calibrate [2]	–	Flash
Start calibration *(via the installer app or via ≥ 5 sec press on the Initialization button)*	Calibrate	–	Flashing quickly
–	Normal operation	–	Illuminate
Start nominal mode *(via user/installer app or via the Initialization button)*	Nominal operation mode *(Healthbox 3.0 not in demand control)*	–	–
–	In failure (error)	–	–
–	In failure (warning)	–	–
Press ≥ 5 seconds on the Factory reset button	Factory reset → Start-up check	Illuminate	–
Press ≥ 8 seconds on the Wake up reset button	Wake-up reset → Start-up check/detection configuration	Illuminate	–

[1] If a valve/valve collector is not selected, both LEDs are off.
[2] If there is an error in the configuration (see list of errors), there is no demand for calibration.
[3] In sequence with each other.
[4] Illuminate: nominal air flows are achieved.
Flash: one or more nominal air flows are not achieved.
[5] If the malfunction is linked to a control module.

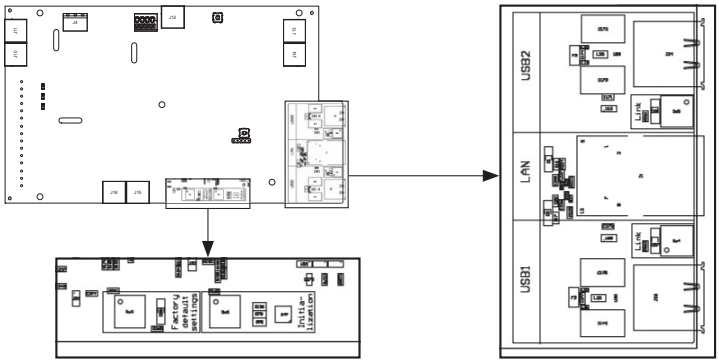
LED at USB:

AP active	Client active	LED at USB
NO	NO	-
NO	YES	Illuminates (the LED flashes rapidly during connection)
YES	NO	Flashes slowly
YES	YES	Illuminates (flashes briefly when AP is activated)

– AP = Access Point mode
– Client = Healthbox 3.0 connection to home network
– If the Main LED lights up white, the Healthbox 3.0 cannot connect to the network.

Main LED Healthbox 3.0				LEDs control modules [1]		LED print valve collector [1]	
Yellow	**Blue**	**Red**	**Purple**	**Green**	**Orange**	**Green**	**Orange**
–	–	–	–	–	–	–	–
–	–	–	–	Flash [3]	Flash [3]	Flash [3]	Flash [3]
–	–	–	–	Flash [3]	–	Flash [3]	–
–	–	–	–	Flashing quickly [3]	–	Flashing quickly [3]	–
–	–	–	–	Illuminate	–	Illuminate	–
–	Illuminate, flash [4]	–	–	Illuminate	–	Illuminate	–
–	–	Flash	–	Illuminate	Flash [5]	Illuminate	Flash [5]
Illuminate	–	–	–	Illuminate	–	Illuminate	–
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–

Main circuit board Healthbox 3.0



22 • Device failure

Two types of errors are defined:
- Error: The device is subject to a severe malfunction and will shut down.
- Warning: The device is experiencing a malfunction but may/will continue to operate.

The errors can be visualized in different ways:

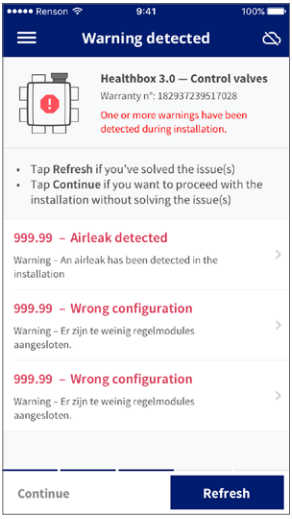
- **Installer app**

  - If an error occurs **during the installation process,** a message will appear. The fault may be of the error or warning type:

	How to continue the installation process?
Error	Requires corrective action to continue the installation process.
Warning	Advice to take corrective action. However, the installation process can still be continued without corrective action.

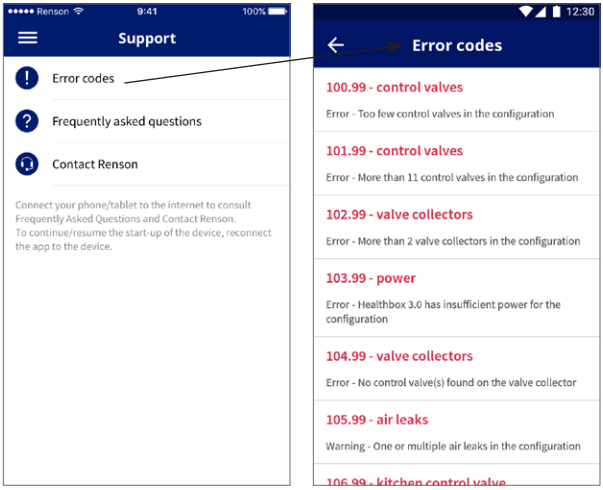
The error message is always accompanied by some possible solutions to remedy the problem.

Error



Warning

– Through the 'Support' menu, the list of possible errors (and associated possible solutions) can be consulted in Healthbox 3.0. The app must be connected to the Internet though (via Wi-Fi or mobile 3G/4G).



- **Fan unit**

The LEDs show an indication, see the table in section 21.

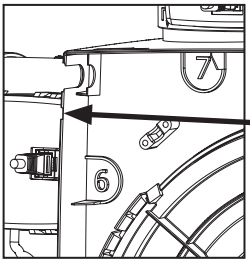
- **User app**

Section 6.2.1 of this manual describes how to check the faults/errors.

NOTE:
When the unit is disconnected from power, all error messages of the device will be erased.

23 • Link Healthbox 3.0 with electronic peripherals

Healthbox 3.0 can be paired with electronic peripherals. To place the cables outside the Healthbox 3.0, the provided recess can be cut out.

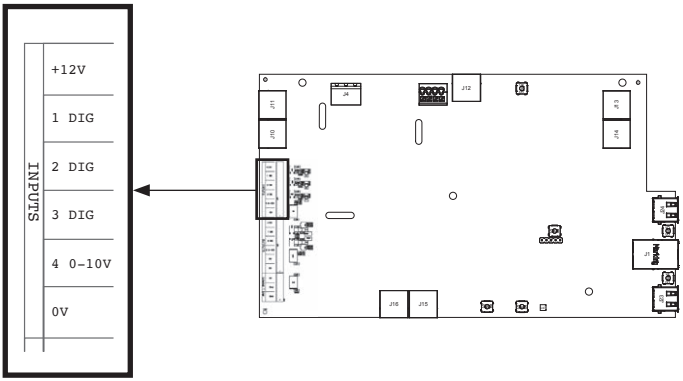


Recess to be cut out for the connecting wires of external inputs and outputs.

23.1 • Linking in a smart home through partnerships

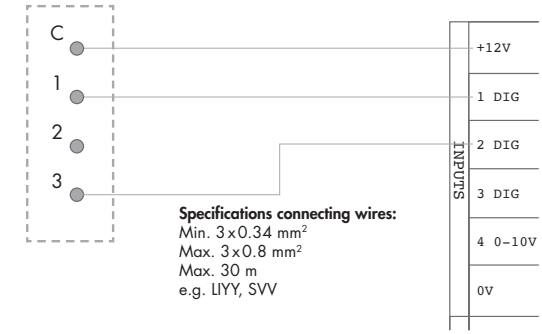
See the description in section 3.4.

23.2 • Linking via main circuit board inputs



NOTE:
A maximum of 1 'activator' can be connected to each input (so no parallel connection).

23.2.1 • 3-way switch (XVK3)



NOTE:
Contact 2 does not need to be connected, contact 3 is connected with '2 DIG'.

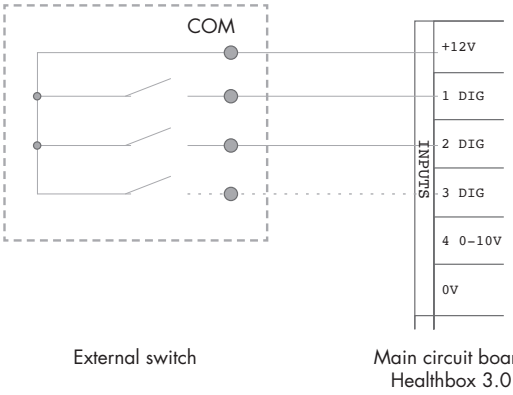
23.2.2 • Wiring diagrams domotics

23.2.2.1 • Digital inputs

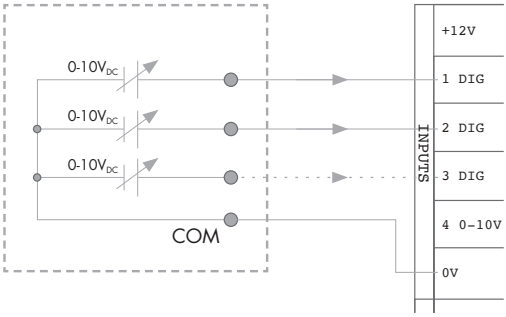
The digital inputs can be controlled in 2 different ways:

1. **Potential-free contact:** via a continuously closed contact

Principle sketch:



2. **Voltage control:** via a continuous signal;
→ [0-1.5V_{DC}] sends a logical LOW
→ [5-10V_{DC}] a logical HIGH

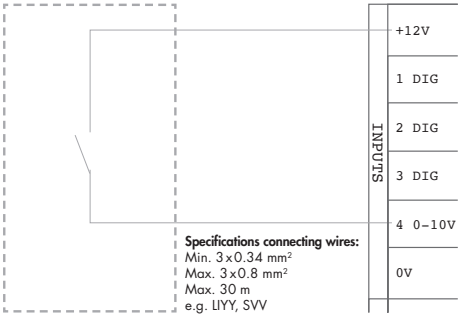


External control — Main circuit board Healthbox 3.0

23.2.2.2 • Analogue input

The analogue input can be controlled in the following 2 ways:

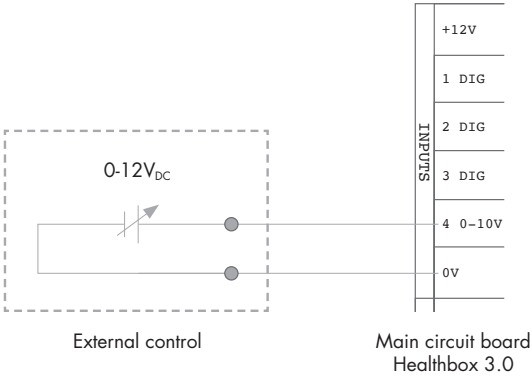
- Switch (potential-free): via a continuously closed contact



External control — Main circuit board Healthbox 3.0

(Use this diagram for the Odormatic extractor hood)

Power source: through a continuous signal
→ [0-1.5V_{DC}] sends a logical LOW
→ [10-12V_{DC}] a logical HIGH



23.2.3 • Functional logic

The functionality of the inputs is permanently defined:

23.2.3.1 • Digital input

Closed contact or logical HIGH on the input	Operating state Healthbox 3.0
1 DIG	Minimum position [1] - Demand control idle - Minimum air flow [2] through all control modules
2 DIG	Boost mode [1] - Demand control idle - Increased air flow [3] through all control modules

[1] After 12 hours, the demand control of the Healthbox 3.0 will be reactivated.
[2] The value is copied from the setting "Minimum ventilation level' in the 'Settings' menu in the user app. Default is this 0% of the nominal air flow.
[3] The value is copied from the 'Intense' profile, i.e. 20% of the nominal air flow.

If there is no control at the input, Healthbox 3.0 operates in demand control (automatic mode).

23.2.3.2 • Analogue input

Control via switch:
With the kitchen control module, an airflow rate of 300 m^3/h is extracted, while the other control modules in the configuration extract the minimum volume. If several control modules of the kitchen type are connected in the configuration, the extraction airflow rate of 300 m^3/h is split between these control modules. After 12 hours, the demand control of the Healthbox 3.0 will be reactivated.

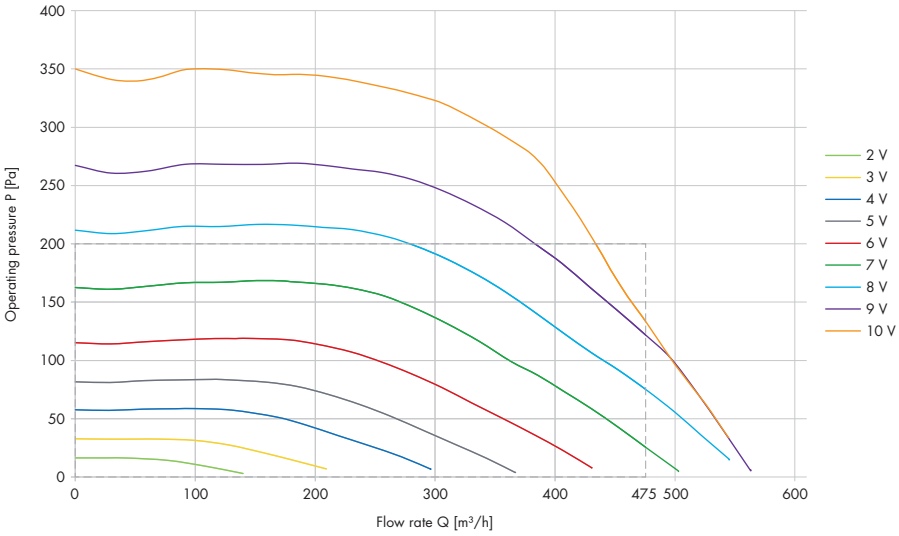
24 • Technical specifications

The complete current technical specification sheet can be found at www.renson.eu (products → mechanical ventilation → Healthbox 3.0).

- **System properties**

(Max.) ventilation air flow	475 m³/h (at 135 Pa) 430 m³/h (at 200 Pa)
Supply voltage	230 Vac ±10% (50Hz, 60Hz)
Consumed power fan group	- At max. air flow 150m³/h : 28 Watts - At max. air flow 225m³/h : 35 Watts - At max. air flow 325m³/h : 53 Watts - At max. air flow 400m³/h : 80 Watts - At max. air flow 475m³/h : 85 Watts
Fan	- Extremely quiet & energy efficient EC motor with impeller Ø180 - Active variable pressure control: the lowest possible pressure level is set each time in function of the required discharge rate
Maximum working pressure fan	350 Pa - Recommended working pressure at design air flow: ≤ 200 Pa - Guide value of a very good working pressure at design air flow (conform TV n° 258): ≤ 100 Pa
Connections	- 1x Ethernet connection - 2x USB connection (USB dongle for Wi-Fi connection included) - Inputs: 3x DIGITAL, 1x ANALOG (0-10V)
Automatic software updates	When Healthbox 3.0 is connected to the internet
Fire protection	Depressurize the system with valves close

- **Fan features of the fan unit**

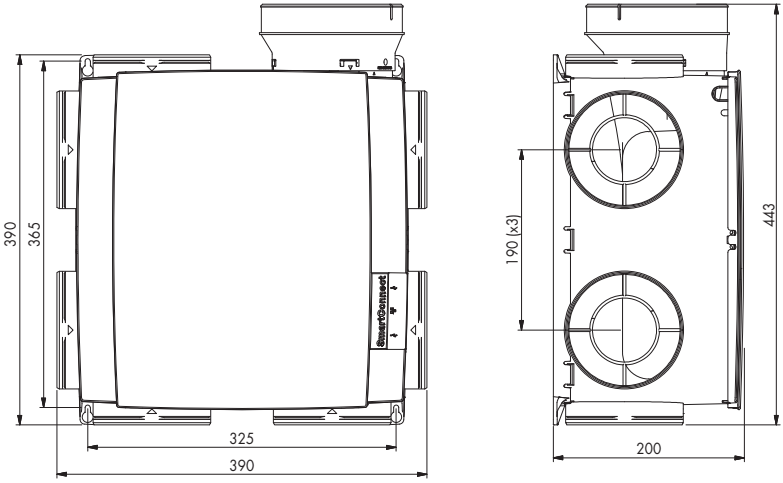


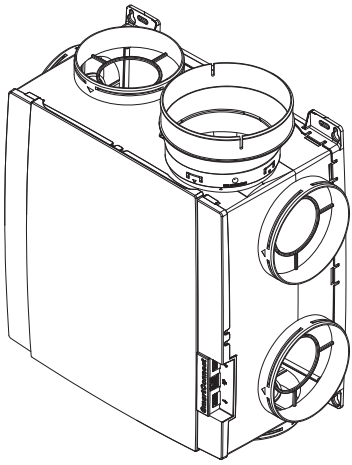
The fan features can be helpful in determining the maximum airflow rate depending on the air duct network's total pressure drop.

ANHANG
APPENDIX

Abmessungen (mm) / Dimensions (mm)

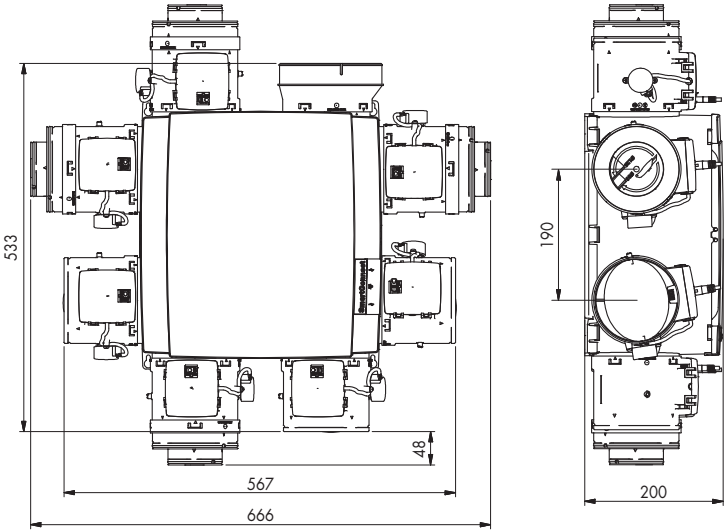
- **Lüftereinheit ohne Steuermodule / Ventilation unit without control modules**

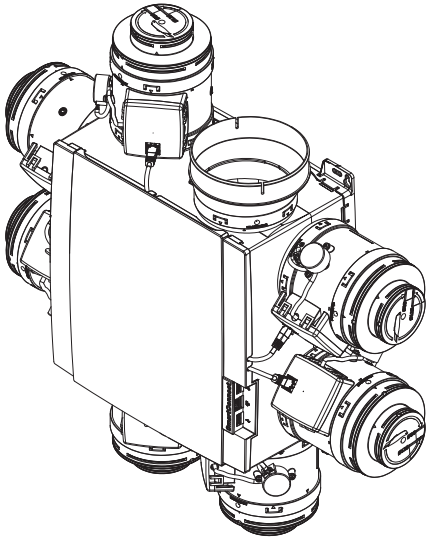




Gewicht / Weight : 2,6 kg

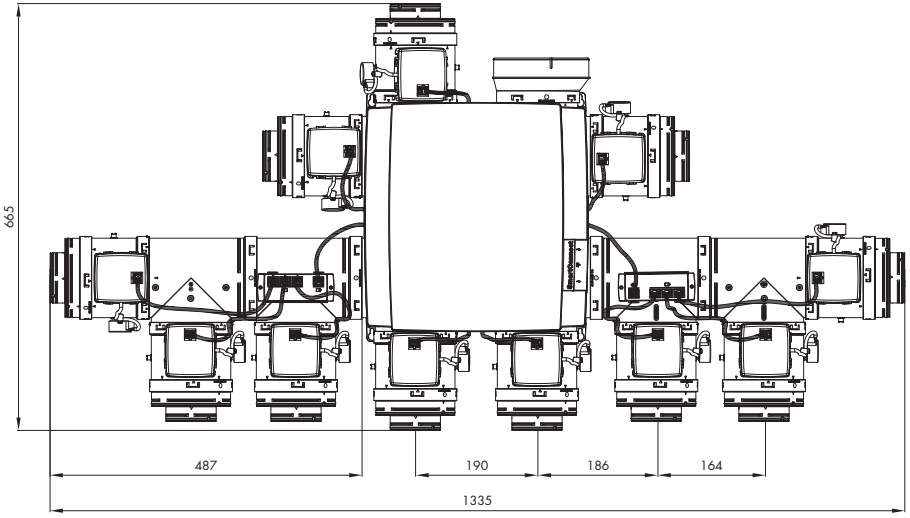
• **Lüftereinheit mit Steuermodulen / Ventilation unit with control modules**



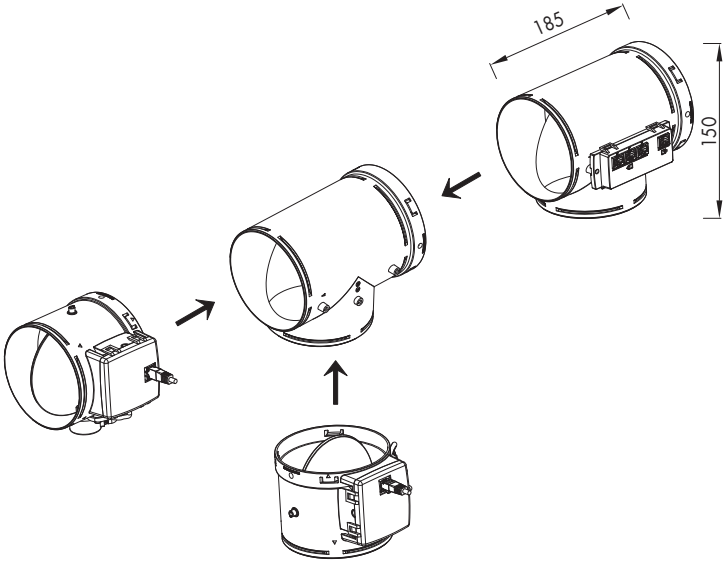


Gewicht / Weight : 4,3 kg (mit 7 Steuermodulen / with 7 control modules)

• **Healthbox 3.0 mit 11 Steuermodulen / Healthbox 3.0 with 11 control modules**



• **Ventilkollektor / Valve collector**



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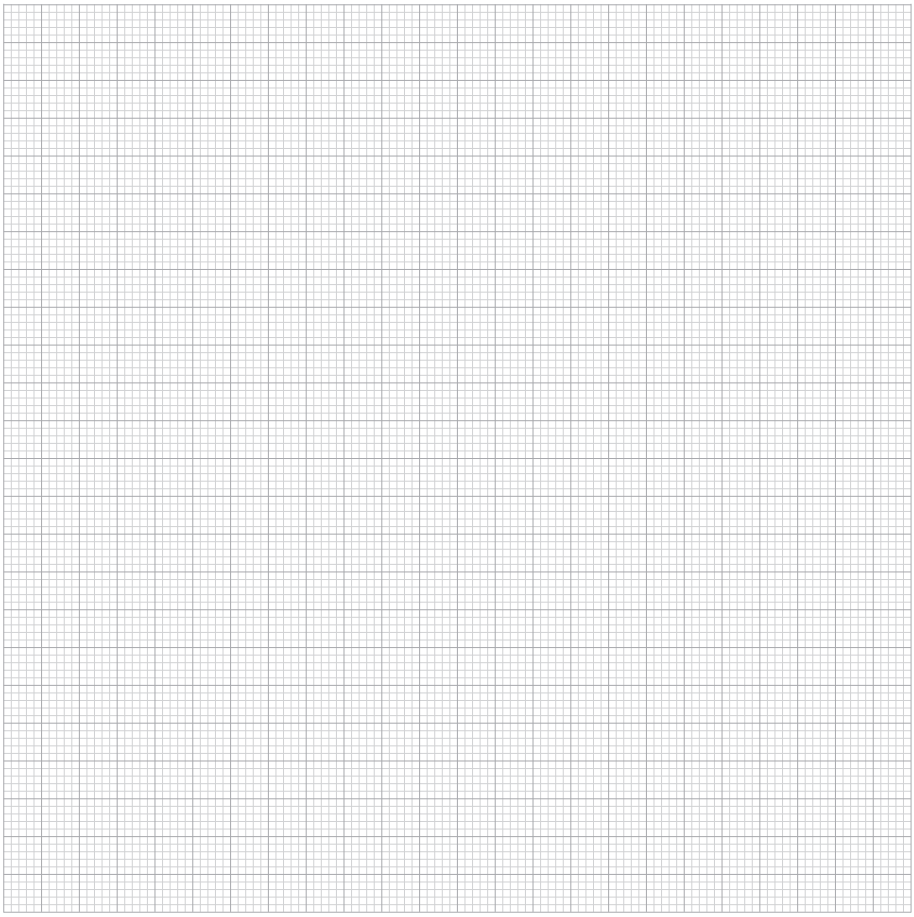

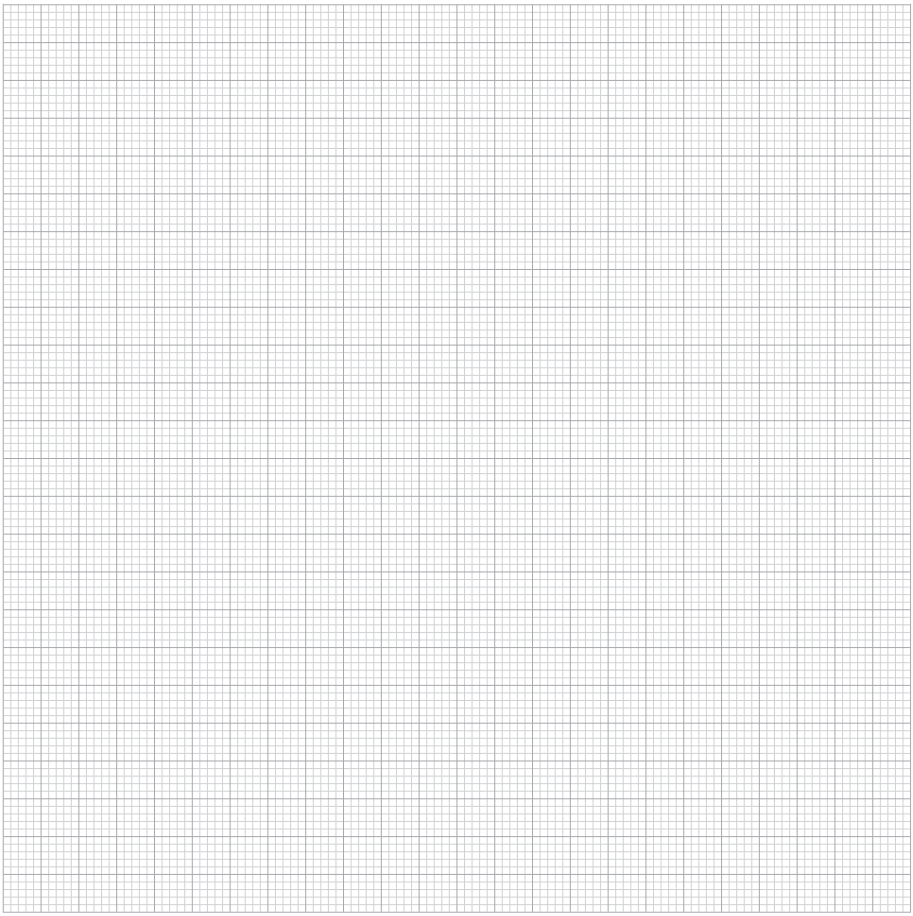

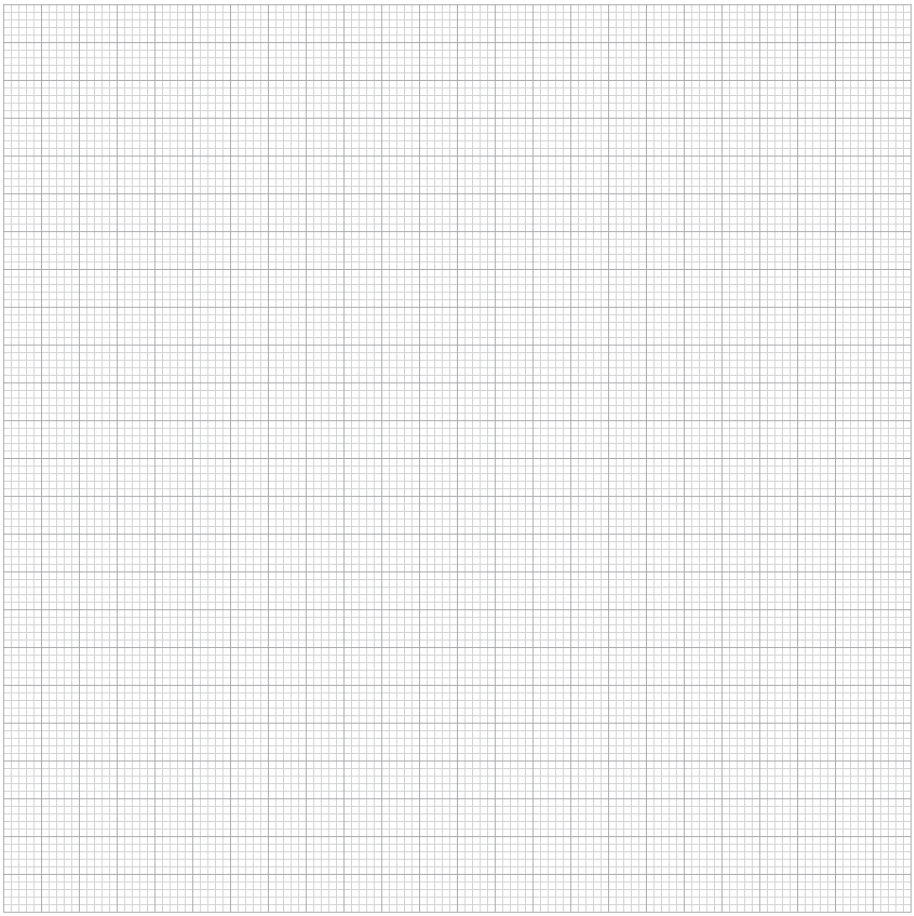

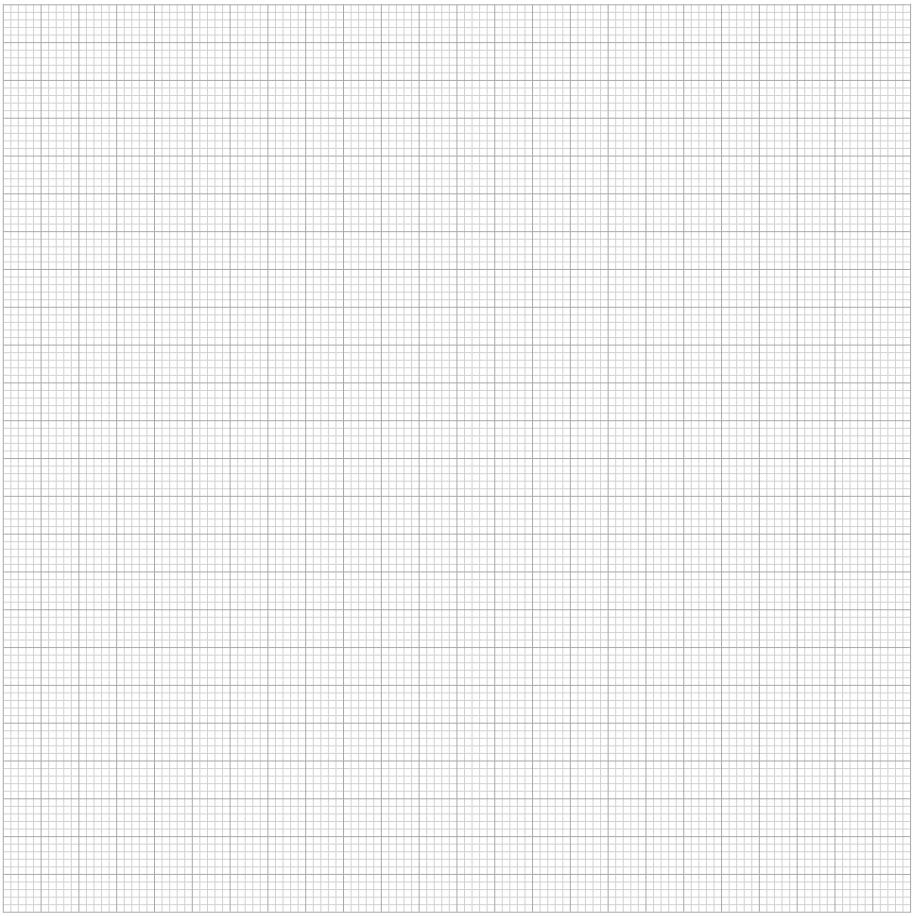

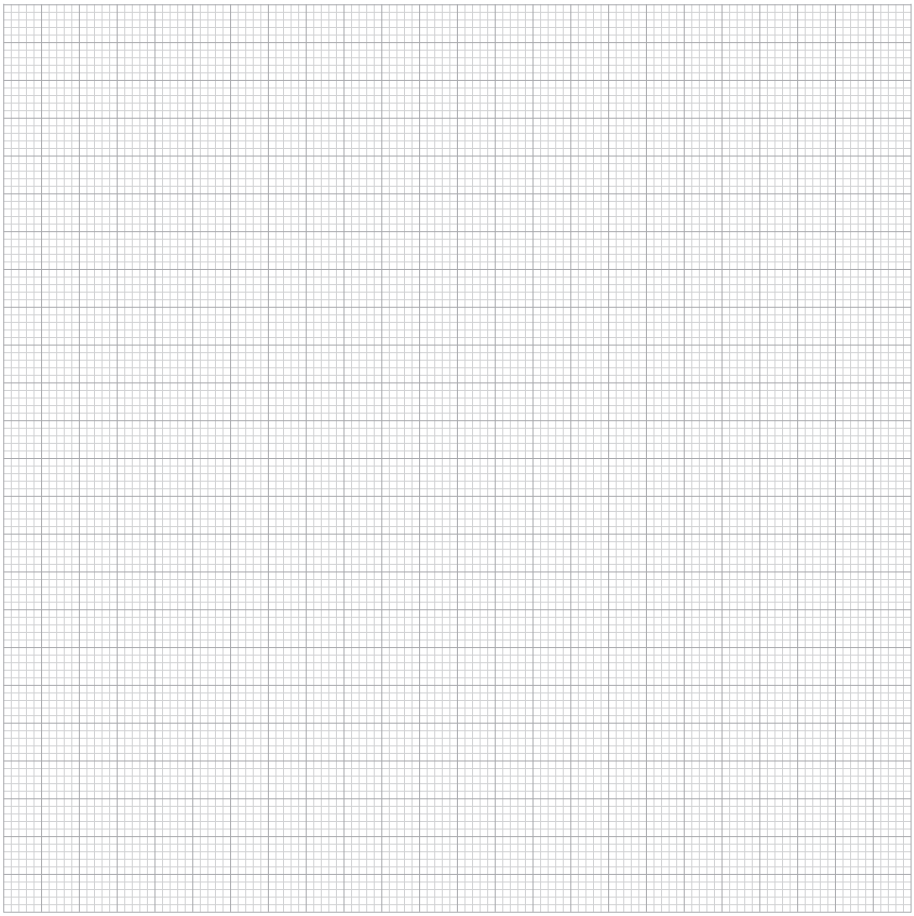

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