ComfoAir 200

Manual

Table of Contents

Preface

In addition to this general chapter, this manual consists of:

- A part for the user;
- A part for the installer.

📖 Carefully read this manual
   before use.
   - User   → Chapters 1 and 2.
   - Installer → Chapters 1 and 3.

This manual provides all the information required for safe and optimal installation, operation and maintenance of the ComfoAir 200 . It is also intended as a reference for servicing, so that this can be carried out in a responsible manner. The device is subject to continuous development and improvement. As a result, the ComfoAir 200 may slightly differ from the descriptions.

NOTE

This manual has been compiled with the utmost care. However, no rights can be derived from it. In addition, we at all times reserve the right to change the contents of this manual, without prior notice.

1 Introduction

This chapter provides general information on the ComfoAir 200 .

1.1 CE marking

The device's name is ComfoAir 200 . In the following it will be referred to as ComfoAir.
The ComfoAir is a balanced ventilation system with heat recovery in order to create healthy, balanced and energy-efficient ventilation in houses. The ComfoAir identification plate is shown below.

Type		Voltage	Hertz	Phase
Articlecode		Current		
		Power		
	Capacitor	Protecion class	Insolation class	Serial number

1.2 Warranty and liability

1.2.1 Guarantee conditions

The ComfoAir is covered by a manufacturer's warranty for a period of 24 months after fitting up to a maximum of 30 months after the date of manufacture. Warranty claims may only be submitted for material faults and/or construction faults arising during the warranty period. In the case of a warranty claim, the ComfoAir must not be dismantled without written permission from the manufacturer. Spare parts are only covered by guarantee, if they were supplied by the manufacturer and have been installed by an approved installer.

The warranty becomes invalid if:

- The guarantee period has elapsed;
- The device is used without filters;
- Parts are used that have not been supplied by the manufacturer;
- Non-authorised changes or modifications have been made to the unit.

1.2.2 Liability

The ComfoAir has been designed and manufactured for use in "balanced ventilation systems". Any other use is deemed unintended use and can lead to damage to the ComfoAir or personal injury, for which the manufacturer cannot be held liable.
The manufacturer is not liable for any damage originating from:

- Non-compliance with the safety, operating and maintenance instructions in this manual;
- The use of components not supplied or recommended by the manufacturer.
  Responsibility for the use of such components lies entirely with the installer;
- Normal wear and tear.

1.3 Safety

1.3.1 Safety regulations

Always comply with safety regulations in this manual. Non-compliance with the safety regulations, warnings, notes and instructions in this manual can cause personal injury or damage to the ComfoAir.

- The electrical installation of the ComfoAir may only be performed by a qualified electrician in accordance with Part P of the Building Regulations;
- Installation of the ComfoAir must be carried out in accordance with the general and locally applicable construction, safety and installation instructions of the local council, electricity and water boards or other agencies;
- Observe the safety regulations, warnings, comments and instructions as prescribed in this manual at all times;
- Keep this manual with the ComfoAir throughout its life;
- Instructions with regard to cleaning or replacing the filters of the intake and exhaust valves must be carefully observed;
- The specifications stated in this document may not be changed;
- Modifying the ComfoAir is not allowed;
- The ComfoAir is not suitable for connection to the three-phase mains;

1.3.2 Safety provisions and measures

- The ComfoAir cannot be opened without using tools;
- It should not be possible to touch the fans, therefore ducting must be connected to the ComfoAir at a minimum duct length of 900mm.

1.3.3 Pictograms used

The following pictograms are used in this manual:

☞ *Point of attention.*

⚠ *Risk of:*
  - *damage to the device;*
  - *performance of the device is compromised if instructions are not observed carefully.*

⚠ *Risk of personal injury to the user or installer.*

2 For the user

This chapter describes how to operate the ComfoAir.

2.1 Glossary

The ComfoAir features:
- Balanced ventilation;
- Heat recovery;
- Bypass for free cooling;
- Frost protection;
- Chimney sweep programme;
- Wireless (RF) control (optional));
- 0 - 10V input;
- Pre-heater (optional);
- Enthalpy (optional).

A concise explanation of these concepts/features is given in the paragraphs below.

2.1.1 Balanced ventilation

The ComfoAir is a balanced ventilation system. Balanced ventilation means that pollutants from the kitchen, the bathroom, the toilet(s) and possibly the storage room are extracted, while the same amount of fresh air is blown into the living room and bedrooms. Gaps under the doors ensure a good through-flow in the dwelling. The air circulation is in balance.

⚠️ *Ensure that these gaps are never obstructed by draught excluders or deep-pile carpet, for example. Otherwise the system will not function optimally.*

A balanced ventilation system consists of:
- ComfoAir 200 (A);
- Duct system for the supply of outdoor air (B) and the exhaust of indoor air (C);
- Supply valves in the living room and bedrooms (D);
- Exhaust valves in the kitchen, bathroom, the toilet and (if present) the storage room (E).
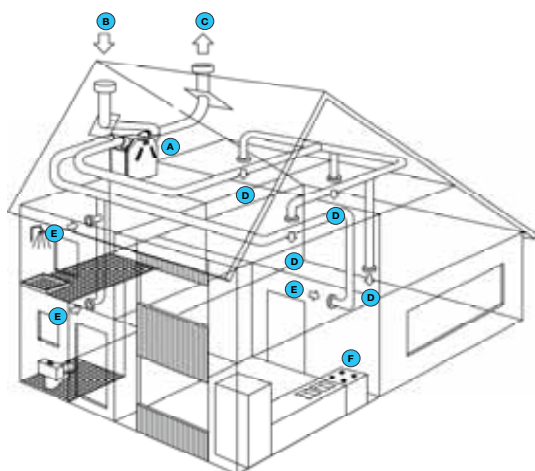
2.1.2 Heat recovery

Besides ensuring a healthy balance between incoming and outgoing air, the ComfoAir also provides the benefits of heat recovery. Heat recovery means that heat from the extracted air is transferred to the fresh, and usually colder, air from outside the building.

2.1.3 Bypass for free cooling

The bypass is often used during hot days in the summer season. By allowing colder outside air in at night, the indoor temperature of the dwelling can be kept low during hot days. The bypass works automatically. All you have to do is set the required comfort temperature.

2.1.4 Frost protection

The ComfoAir is also fitted with a frost protection device. This is an automatic protective system that temporarily reduces (or even briefly stops) the supply of outdoor air to the ComfoAir if there is a risk of freezing in the ComfoAir. This can occur in the event of moderate to sharp frost during the winter months.

2.1.5 Chimney sweep programme

The ComfoAir is fitted with an Chimney sweep programme. The Chimney sweep programme is used in houses that have a fireplace, as there is a risk of air being sucked back from the chimney. The Chimney sweep programme works automatically but requires activation by the installer.

☞ *While the Chimney sweep programme is activated the supply and exhaust fan can not be turned off manually.*

2.1.6 Wireless (RF) control (optional)

It is possible to set the ventilation positions of the ComfoAir with one or more wireless switches. To do this the ComfoAir needs a build in RF module or a connected CC Ease panel.

2.1.7 0-10V input

The ComfoAir Luxe has a single 0-10V input.
This input allows various different types of control system or sensor to be connected. Examples of the options include:
- CO_2 sensor; flow regulation using carbon dioxide levels;
- Moisture sensor; flow regulation using moisture levels;

2.1.8 Pre-heater (optional)

Fitting the optional pre-heater in the ComfoAir gives the added bonus that balanced ventilation remains intact for longer. In that case, the supply of cold outside air no longer needs to be reduced (so soon). The pre-heater is (de)activated automatically.

2.1.9 Enthalpy (optional)

It is possible to fit the ComfoAir with an enthalpy exchanger. An enthalpy exchanger helps to regulate humidity levels in the dwelling. In addition to heat recovery, the enthalpy exchanger also ensures moisture re-

covery. Moisture recovery means that moisture from extracted air is transferred to the supply air sourced from outside the dwelling. An enthalpy exchanger is also less sensitive to freezing.

2.2 Available operating elements

The ComfoAir can be fitted with the following operating elements:
- Display on the unit;
- 3-position switch;
- 3-position switch with malfunction indicators;
- Wireless (RF) 3-position switch;
- Bathroom switch to temporarily select the highest ventilation position;
- CO_2 sensor;
- CC Ease panel.

A concise explanation of these operating elements is given in the paragraphs below.

2.2.1 Display on the unit

The ComfoAir can be operated by means of a digital display which is mounted on the unit.

MENU	select menu		▲	up
OK	OK		▼	down
⌂	supply off (led green)		⌂	supply on (led green)
↕	comfort temperature			

Shown in display

A	Ventilation setting absent
1	Ventilation setting low
2	Ventilation setting medium
3	Ventilation setting high
X X	Menu symbol
X X	Malfunction code (flashes)
•	Bypass

Access to the menus

Sequence	Press	Display	Description
1	MENU	P2	Time delay
2	▲	P9	Status
3	▲	P1	Status

Example
Setting bathroom switch delay

Sequence	Press	Display	Description
1	MENU	P2	Time delay
2	OK	P21	Delay timer
3	▲	P22	Select 22
4	OK	30	Current setting
5	▼(10 x or press and hold)	20	Select 20
6	OK	P22	Sets the value to 20
7	MENU	P2	
8	MENU	1	Fan setting

☞ *Only in the P2 menus settings can be made. The other P-menus (P1 and P9) can only be read.*

Leaving Reading menu
- Press "MENU" (instead of "OK").

☞ *The display can not be used for setting the ventilation positions of the ComfoAir. The arrow keys are only for setting the additional programmes.*

2.2.2 3-position switch

A 3-position switch can be used to set the ventilation positions of the ComfoAir. One or multiple 3-position switches can be fitted in the house (e.g. in the kitchen). The following types of switches can be used:

• Type 1 → Standard 3-position switch;
• Type 2 → 3-position switch with LED for malfunction and filter alerts;
• Type 3 → Wireless 3-position switch (RF) with LED for malfunction and filter indication;

☞ *If multiple position switches are available in the house, the ComfoAir will switch to the highest ventilation setting unless overruled by an automated software programme.*

Setting the ventilation using 3-position switch(es)

A 3-position switch can be used to set 3 different ventilation positions.

• Position 1 → Low.
- Use for low ventilation levels.
• Position 2 → Normal.
- Use if you require normal ventilation.
• Position 3 → High.
- Use this position during cooking, showering and when additional ventilation is needed.

Type 1   Type 2   Type 3
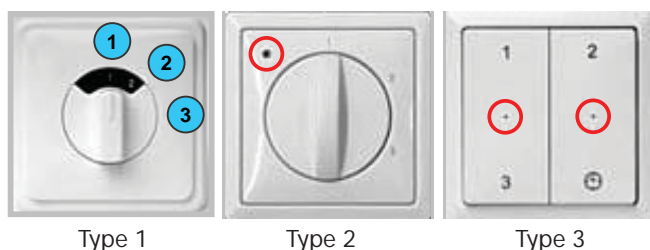
☞ *The CC Ease panel can be used to select an additional ventilation position (the absent setting).*

2.2.3 CO$_2$ sensor

The ComfoAir can also be operated using a CO$_2$ sensor. A CO$_2$ sensor can be used either as a 3-position switch or to determine manually the ventilation required by measuring CO$_2$ levels in the room concerned.

2.2.4 Bathroom switch

A bathroom switch can be used to temporarily set the ComfoAir in the highest ventilation level. This switch is mostly fitted in the bathroom to extract any excess moisture after showering, as soon as possible. The bathroom switches vary widely in model and are therefore not illustrated here.
If required, the bathroom switch can be turned on and off using a time delay entered via a digital operating device.

Delay timer
This ensures that the ComfoAir does not switch on at the highest setting when activated, but first waits for the delay timer to run its course.

☞ *If the bathroom switch is deactivated during the delay timer period, then the ComfoAir will remain at its current ventilation setting and not switch to the highest setting.*

⚠ *The delay timer does not work with all types of bathroom switches (e.g. pulse switches). In that case, leave the delay timer at 0.*

Overrun timer
This ensures that the ComfoAir does not switch back to the default (or preprogrammed) setting when deactivated, but first waits for the overrun timer to run its course. Once the programmed overrun timer is complete, the ComfoAir returns to the default (or preprogrammed) ventilation setting.

☞ *If the bathroom switch is turned off within the programmed overrun timer period, then the overrun function will be terminated.*

Light switch
The functions of the bathroom switch can also be integrated into a light switch.

2.2.5 CC Ease panel

The ComfoAir can be operated by means of a CC Ease panel, which can be ordered separately. The CC (Comfort Control) Ease panel is a digital operating device which can be mounted on the wall in the living room and from there communicates with the ComfoAir. The following overview summarizes the information that will be displayed.

Day and time	Sa Su Mo Tu We Th Fri `88:88`
Automatic or manual ventilation	AUTO MANUAL
Signal to replace internal (I) filter	FILTER I
Actual ventilation setting	

Supply air and/or exhaust air OPEN or CLOSED	
Bypass activated	
Actual temperature, selection or setting	
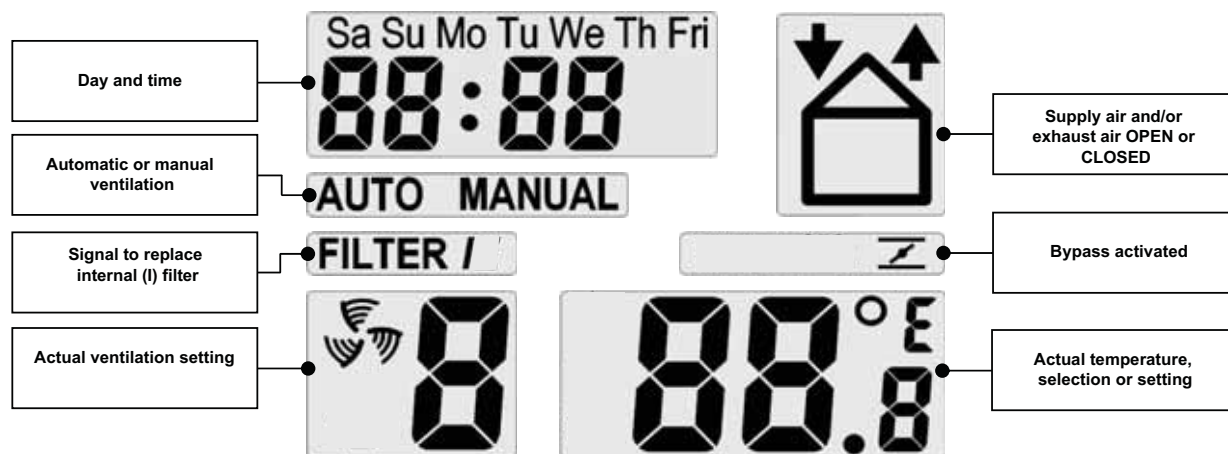
The CC Ease panel has a number of buttons to operate the ComfoAir and to enter the settings. These buttons are illustrated below.

Button	Description
	This button allows you to switch to the highest ventilation setting. - **Press** once → Boost setting ON. - **Press** twice → Boost setting OFF.
	This button allows you to switch between supply/exhaust. - **Press** once → SUPPLY OFF (and EXHAUST ON). - **Press** twice → EXHAUST OFF (and SUPPLY ON). - **Press** 3 times → SUPPLY and EXHAUST both ON.
	With this button you can read or set the comfort temperature. - **Press** for less than 2 seconds → READ. - **Press** for longer than 2 seconds → SET.
	This button allows you to programme two settings. - **Press** for less than 2 seconds → Programme ventilation setting (AUTO / MANUAL). - **Press** longer than 2 seconds → Programme date and time.
	This button allows you to programme different settings: - In P menu → Set values. - In main screen → Enter ventilation setting (A, 1, 2, 3).

2.3   Operating the CC Ease panel

The CC Ease panel is used for the following:
- Reading and setting the day and time;
- Reading and setting the comfort temperature;
- Reading and setting the ventilation volume;
- Activating the Boost setting;
- Switching the supply and exhaust fan on/off;
- Setting a personal ventilation programme;
- Setting additional ventilation programmes/ options in the P menus.

A concise explanation of the above listing is given in the paragraphs below.

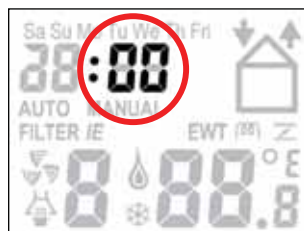### 2.3.1   Setting the date and time

1. Press " ⊘ " longer than 2 seconds.
- Wait until the day, e.g. "Sa", starts blinking.
2. Select the correct day using " + " or " − ".

3. Press " ⊘ ".
- Wait until the hour, e.g. " 12 ", starts blinking.
4. Select the correct hour using " + " or " − ".

5. Press " ⊘ ".

- Wait until the minutes, e.g. " *00* ", start blinking.

6. Select the correct minutes using " △+ " or
   " ▽ ".

7. Press and " ⊘ " to return.

2.3.2 Reading and setting the comfort temperature

The comfort temperature can be read, but also set to the desired indoor temperature. By this temperature the ComfoAir will determined if free cooling with the use of the bypass is desired.

Reading the comfort temperature

1. Press " 🌡 " briefly.
- Wait until the comfort temperature appears.
2. Press " 🌡 " to return.
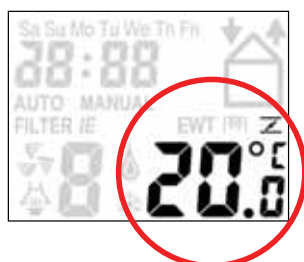
Setting the comfort temperature

1. Press " 🌡 " longer than 2 seconds.
- Wait until the comfort temperature, e.g.
  " *20.0* ", starts blinking.
2. Select the desired comfort temperature using
  " △+ " or " ▽ ".
3. Press and briefly hold " 🌡 " to return.

☞ *It is best to set the comfort temperature at the same temperature as the room thermostat (the CH system)*

2.3.3 Reading and setting the ventilation volume

Reading the ventilation volume

The current ventilation volume, e.g. "2", will always be displayed on the CC Ease panel. Normally the ComfoAir regulates the required ventilation volume <u>automatically</u> according to a preset ventilation programme. During automatic ventilation mode "AUTO" will be displayed on the CC Ease panel.

In addition to showing the programmed ventilation setting, the CC Ease panel also displays whether a temporary control system (such as a CO_2 sensor or a bathroom switch) is overriding the ventilation setting.

In the event a required ventilation setting is being overridden by a time delay function (such as the bathroom switch overrun timer), a 't' is displayed in the bottom right-hand corner of the CC Ease panel.
In the event a required ventilation setting is being overridden by a signal from a sensor (such as a CO_2 sensor), an 'A' is displayed in the bottom right-hand corner of the CC Ease panel.
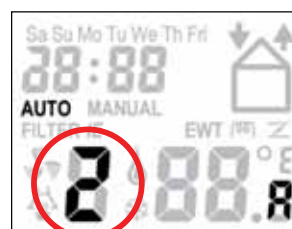
Setting the ventilation volume

The ventilation volume can also be set <u>manually</u> by increasing or decreasing it. A total of 4 ventilation volumes/levels can be set. They are:

- Setting A → Absent.
  - Use when absent.

☞ *At setting A, the house is ventilated using the minimum prescribed ventilation volume.*

- Setting 1 → Low.
  - Use for low ventilation levels.
- Setting 2 → Normal.
  - Use if you require normal ventilation.
- Setting 3 → High.
  - Use this position during cooking, showering and when additional ventilation is needed.

☞ *The ComfoAir will switch to the highest ventilation position set in the house unless overruled by an automated software programme.*

The ventilation volume can be set as follows:
1. Press " $\boxed{+}$ " to increase the ventilation volume.
2. Press " $\boxed{-}$ " to decrease the ventilation volume.
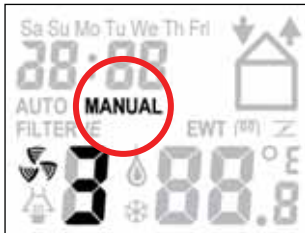
During manual ventilation, the CC Ease panel will not display "**AUTO**", but "**MANUAL**".

3. Press " $\boxed{\odot}$ " to return to automatic ventilation.

2.3.4 Switching Boost on
1. Press" $\boxed{}$ ".
- Wait until '3t' appears.

Once the programmed time delay is complete, the ComfoAir automatically switches back to the previous ventilation setting.

2.3.5 Switching the supply and exhaust fan on/off

☞ *While the Chimney sweep programme is activated the supply and exhaust fan can not be turned off manually.*

1. Press " $\boxed{}$ " once (first time) to switch off the supply fan.

This mode can be used when the windows are open during the summer. In that case, fresh air is not sup-

plied via the supply fan, but through the open windows.

2. Press " $\boxed{}$ " again (second time) to switch the exhaust fan off (and simultaneously switching the supply fan on).
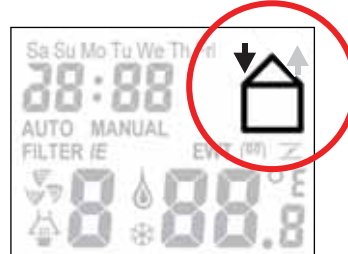
3. Press " $\boxed{}$ " again (third time) to switch the supply and exhaust fans on again.
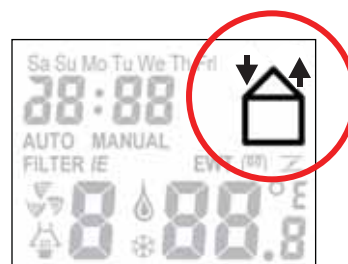
☞ *Bear in mind that switching off the supply or exhaust fan will temporarily immobilize your balanced ventilation system.*

2.3.6 Setting the ventilation programme
The ComfoAir has a factory default ventilation (setting 2).
If wanted, you can change the default ventilation setting to suit your individual situation. For example a weekday and weekend programm.

The ventilation volume can be changed/set as follows:

1. Press and hold " $\boxed{}$ " and " $\boxed{\odot}$ " for 2 seconds, simultaneously.
– Wait until the ventilation programme appears.
2. Programme the desired day or series of days.
3. Select the desired option using" $\boxed{+}$ " or
   " $\boxed{-}$ ".

You can choose from:
– Weekend: "SaSu";
– Working week: "MoTuWeThFr";
– Week: "SaSuMoTuWeThFri";
– Separate days: "Sa", "Su", "Mo", "Tu", "We", "Th" and "Fri".

4. Press " ⊘ ".
– Wait until the programme position is flashing in the bottom right-hand corner.
5. Select the desired programme position using " △+ " or " ▽– ".
6. Press " ⊘ ".
– Wait until the hour, e.g. " 7 ", starts blinking.
7. Select the desired start time in hours using " △+ " or " ▽– ".
8. Press " ⊘ " .
– Wait until the minutes , e.g. " 00 ", starts blinking.
9. Select the desired start time in minutes using " △+ " or " ▽– ".

10. Press " ⊘ ".
– Wait until the ventilation setting , e.g. " 3 ", starts blinking.
11. Select the desired ventilation level using " △+ " or " ▽– ".

12. Press " 🐦 " to return.
13. Programme the next ventilation programme if required.
    – Repeat steps 1 to 12.

☞ *The default ventilation program will be loaded again if a Factory Reset is given.*

2.3.7 Setting extra programmes
Some P menus in the CC Ease panel can be used to:
• Read the status of various ventilation programmes;
• Set time delays for various ventilation programmes on/off;
• Set time delays for various ventilation programmes.

☞ *The user can only use P menus P1, P2 and P9 to set additional programmes. The remaining P menus (P3 to P8) are for use by the installer only.*

Accessing the P menus
1 Press and hold " 🕘 " and " △+ " for 2 seconds simultaneously.
– Wait until the "P menu" appears on the display.
2. Select the desired P sub-menu using " △+ " or " ▽– ", e.g., P menu " 2 ".

3. Press " ⊘ ".
4. Select the desired P sub-menu using " △+ " or " ▽– ", e.g., P sub-menu " 23 ".
5. Press " ⊘ ".

Entering settings in P menus

☞ *The minimum and maximum values for the available ventilation programmes are preset in the software.*

6. Select a new value for the programme using " △+ " or " ▽– ".
7. Press " ⊘ ".
8. Repeat steps 4 to 7 to set multiple ventilation programmes in succession.

☞ *Only in the P2 menus settings can be altered. The other P-menus (P1 and P9) can only be read.*

Leaving Reading menu

• Press " ⏱ " (instead of " ⊘ ").

Returning to the main menu

10. Press " ⏱ " twice to return.
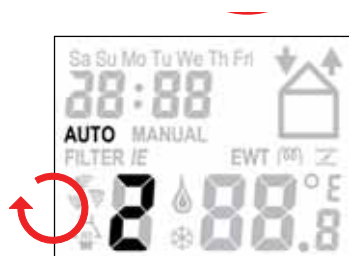
2.3.8 P menus for the user

Menu P1 → Status of programmes

Sub-menu	Description	Status
		Activated
P11	Is menu 21 currently active?	Yes (1) / No (0)
P12	Is menu 22 currently active?	Yes (1) / No (0)
P13	Is menu 23 currently active?	Yes (1) / No (0)
P14	Is menu 24 currently active?	Yes (1) / No (0)
P15	Is menu 25 currently active?	Yes (1) / No (0)
P16	Is menu 26 currently active?	Yes (1) / No (0)

Menu P2 → Setting time delays

Sub-menu	Description	Time delay values		
		Minimum	Maximum	Default
P21 (Optional) Note: Only applies to systems fitted with a corded switch and a second switch in the bathroom.	- Low voltage input Delay timer for the bathroom switch (to switch to high position). • 'x' minutes after operating the bathroom switch, the ComfoAir switches to the HIGH SETTING.	0 Min.	15 Min.	0 Min.
P22 (Optional) Note: Only applies to systems fitted with a corded switch and a second switch in the bathroom.	- Low voltage input Overrun timer for the bathroom switch (to switch to normal position). • 'x' minutes after operating the bathroom switch, the ComfoAir switches back to the NORMAL SETTING.	0 Min.	120 Min.	30 Min.
P23 (Optional) Note: Only applies to systems fitted with a hardwired switch.	Overrun timer for ventilation position 3. • If ventilation setting 3 (high) is switched on briefly (< 3 sec), the ComfoAir remains at ventilation setting 3 in accordance with the time set in this menu. If the position switch or RF remote control is operated during this lagging time, the ComfoAir will instantly revert to the ventilation position as set at that time.	0 Min.	120 Min.	0 Min.
P24	Filter warning • Here the user can indicate when the "FILTER DIRTY" alert must appear.	10 weeks	26 weeks	16 weeks

Sub-menu	Description	Time delay values		
		Mini-mum	Maxi-mum	Default
P25 **Note:** **Only applies to systems fit-ted with an RF switch.**	Overrun timer for ventilation setting 3 (using " ⊘ "). • After pressing " ⊘ " BRIEFLY (< 2 sec.), the ComfoAir runs at the HIGH setting for 'x' minutes and then automatically returns to the programmed setting.	1 Min.	20 Min.	10 Min.
P26 **Note:** **Only applies to systems fit-ted with an RF switch.**	Overrun timer for ventilation setting 3 " ⊘ ". • After pressing " ⊘ " for LONGER (> 2 sec.), the ComfoAir runs at the HIGH setting for 'x' minutes and then automatically returns to the programmed setting.	1 Min.	120 Min.	30 Min.
P27 **Note:** **Only applies to systems fit-ted with a CC Ease panel.**	Time for the Boost setting. • After pressing " ⊡ " the ComfoAir runs at the high setting for 'x' min-utes and then automatically returns to the programmed setting.	0 Min.	120 Min.	30 Min.

Menu P9 → Status of programmes (from menu P5 additional programmes)

Sub-menu	Description	Status
		Activated
P90	Open fire programme active?	Yes (1) / No (0)
P91	Bypass Open (=Yes) / Closed (=No)?	Yes (1) / No (0)
P94	0 – 10 V programme active?	Yes (1) / No (0)
P95	Frost protection active?	Yes (1) / No (0)
P97	Enthalpy programme active?	Yes (1) / No (0)

2.4 Maintenance by the user

The following maintenance must be carry out by the user:

- Replacing the filters;
- Cleaning the valves (in the dwelling).

A concise explanation of these maintenance activities is given in the paragraphs below.

⚠ *Failure to carry out (periodic) maintenance on the ComfoAir ultimately compromises the performance of the ventilation system.*

2.4.1 Replacing the filters

If so indicated on the digital operating device, you must replace the filters.

⚠ *Replace the filters (at least) once every six months.*
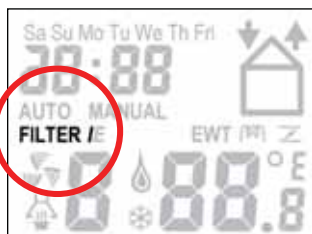
- On the display the message "FiL" and "tEr" will appear alternately.
- On the CC Ease panel "FilterI" will appear.

To replace ...

- Press " OK " on the display or press " 🗓 " on the CC Ease panel until the filter warning disappears.
- Disconnect the power from the ComfoAir.
- Remove the filter caps (A) from the ComfoAir.

- Remove the old filters (B) from the ComfoAir
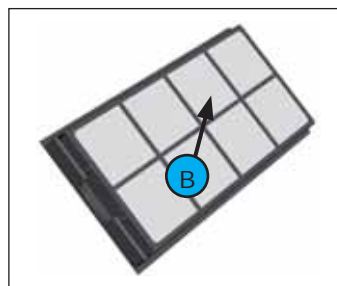
- Slide the new filters back into the ComfoAir.
- Refit the filter caps (A) to the ComfoAir.
- Reconnect the power to the ComfoAir.

⚠ *When using the ComfoAir for the first time, it is recommended to replace the filters and clean the valves first. During the construction phase the ventilation system could have become dirty with building dust.*

2.4.2 Cleaning the valves (in your dwelling)

The ventilation system may be fitted with the following valves:

Exhaust valve (STB)   **Exhaust valve (STC)**

Exhaust valve (STV)   **Exhaust valve (STK)**

Supply valve (STH)
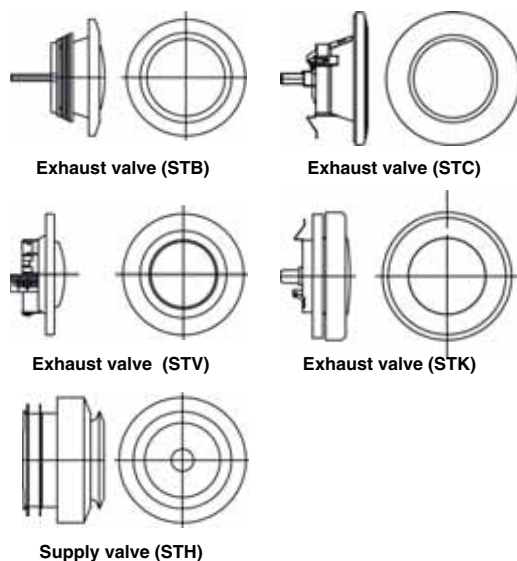
You must clean the valves (at least) twice a year:
1. Remove the valve from the wall or ceiling;
2. Clean the valve in a solution of soap and warm water;
3. Rinse the valve thoroughly and wipe dry;
4. Place the valve back WITH EXACTLY THE SAME SETTING (and IN THE SAME HOLE);
5. Repeat this procedure for the other valves.

About the valve settings...

The installer will have set all the valves to ensure the optimum performance of the ventilation system. Therefore, do not change the setting of the valves.

⚠️ *After cleaning, make sure that all valves are placed back with the same setting (and in exactly the same ventilation hole in the wall or ceiling) AT ALL TIMES. Otherwise, system performance will be compromised.*

The ventilation air is supplied and discharged by means of valves. Gaps under doors in the dwelling ensure that the air flows in the right direction. In order to ensure that the correct ventilation volumes are maintained in the rooms, the following must be observed:
• **Do not** seal the gaps;
• **Do not** change the settings of the valves;
• **Do not** replace the valves with one another.

2.5 Malfunctions

Malfunctions in the ComfoAir are reported as follows:
• The malfunction alert appears on the display.
• The malfunction alert appears on the CC Ease panel;
• The malfunction indicator on the 3-position switch lights up;

A concise explanation of these methods of reporting malfunctions is given in the paragraphs below.

2.5.1 Malfunction alerts on the digital operating device

In the event of a malfunction, the corresponding malfunction code will be displayed on the digital operating device of the ComfoAir. The digital operating device will always show an 'A' or an 'E', with a number as a suffix. Please refer to the malfunction overview to find out the meaning of the relevant malfunction alert.
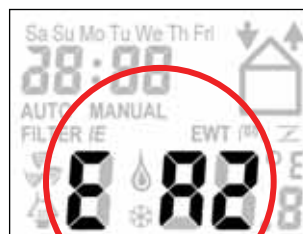
2.5.2 3-position switch with malfunction indicators

The 3-position switches that are fitted with a malfunction indicator show when a malfunction has occurred. Depending on the type of the 3-position switch, this is done in one of the following two ways:

- 3-position switch with malfunction indicator.
  In the event of a malfunction (or in the event of a filter dirty alert) the indicator lights up;
- Wireless (RF) 3-position switch with malfunction indicator.
  The malfunction indicators will light up once this 3-position switch is used. One indicator will light up green to indicate communication has been established. Subsequently, in the event of a malfunction (and in the event of a filter dirty alert) both indicators will flash red 3 times. After that, both indicators will light up green once more.

☞ *The malfunction indicator on the 3-position switch will not light up in the event of malfunctions alone, but will also light up in the event of filter replacement warnings.*

2.5.3 What to do in the event of a malfunction

In the event of a malfunction, contact the installer. Note down the malfunction code that appears on the digital operating device. Make a note of your ComfoAir type. This is given on the identification plate on the top of the ComfoAir.

The system should not be disconnected from the power supply, unless the ComfoAir must be taken out of service due to a serious malfunction, or for filter replacement or any other compelling reasons.

⚠ *If the ComfoAir is disconnected from the power supply, mechanical ventilation of the dwelling will cease. This can lead to a build-up of moisture and results in problems with mould. Long-term deactivation of the ComfoAir must therefore be prevented.*

☞ *If the ComfoAir is installed in an area with a higher average humidity (such as bathroom or toilet) the probability of condensation on the outside of the ComfoAir is high. This is a normal phenomenon, similar to condensation on a window, on which no action is needed.*

2.6 End of useful life

Consult with the supplier about what should be done with the ComfoAir at the end of its useful life. If the ComfoAir cannot be returned to the supplier, avoid disposing of it with the domestic waste, and ask your local council about the options for recycling the components or processing the materials in an environmentally friendly manner.

Furthermore, do **not** dispose of batteries from the wireless (RF) switches with the normal waste, but bring them to the specially designated disposal locations.

3 For the Installer

This chapter describes how to fit the ComfoAir.

3.1 ComfoAir configuration

The standard ComfoAir configuration consists of:

- External casing (A) of coated sheeting;
- Interior (B) of high-quality, expanded polypropylene (E)PP;
- 4 connections (C) for the air ducts;
- 2 filters (D) for air purification. Filter classification: Supply Air G4, Exhaust Air G4;
- 2 energy-efficient DC motors (E) with high-efficient fan;
- HR (High Efficient) heat exchanger (F);
- Connector panel (H2) with connections for the CC Ease panel, the enthalpy exchanger and the 0 – 10V control sensor;
- PCB panel (H1) with connections for the fans, the bypass, the Pre-heater, temperature sensors (T1 to T4), the 3-position switch with or without malfunction and filter indication (optional) and the bathroom switch (optional);
- Identification plate (I) detailing information on the ComfoAir (not visible);
- Condensation drain (J) to drain the condensation of the warm return air;
- Sticker (K) detailing the air connections (not visible);
- 3 or 5 wire 230V connection (L);
- Display (G) to read data, and for programming procedures;
- 2 Filtercaps (M);
- 4 Ceiling mounting brackets (N) or 1 Wall mounting bracket (not visible).
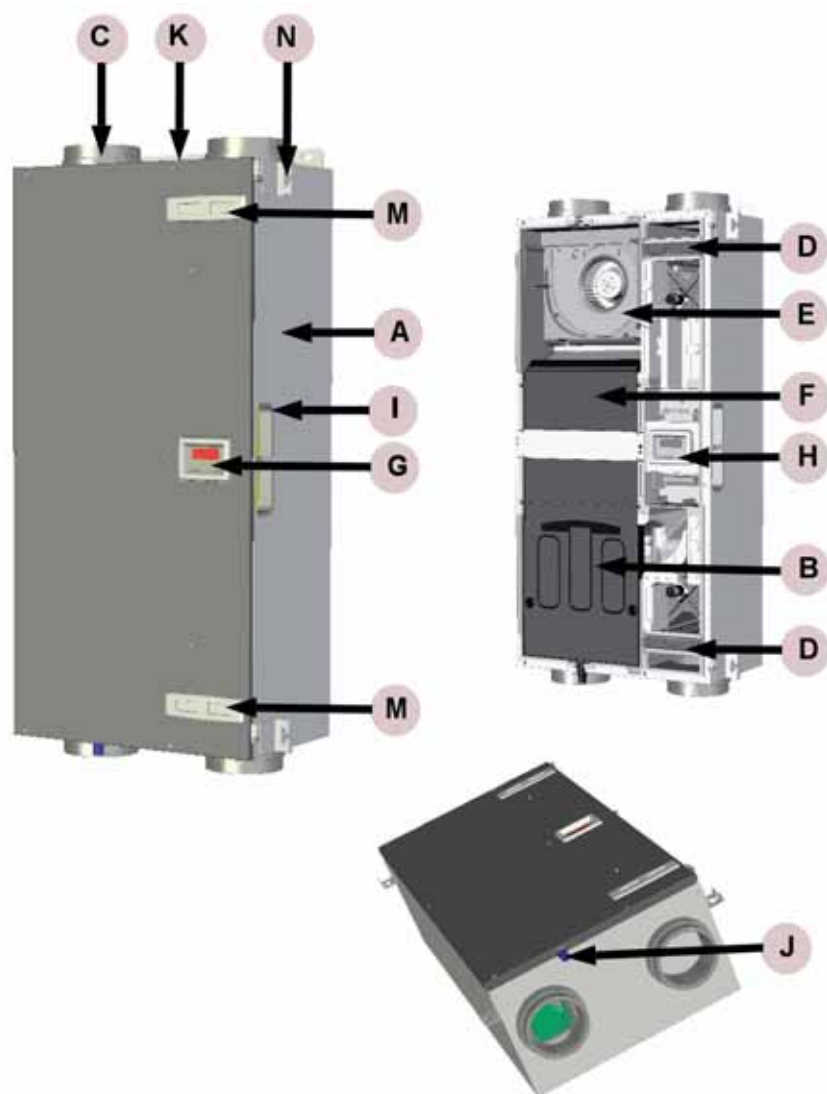
3.2 Technical specifications

ComfoAir 200 nL (normal air volumes)		

Position	Ventilation capacity	Power
ABSENT SETTING	20 m3/h bij 3 Pa	9 W
LOW SETTING	70 m3/h bij 10 Pa	17 W
MEDIUM SETTING	120 m3/h bij 30 Pa	30 W
HIGH SETTING	185 m3/h bij 68 Pa	68 W
MAXIMUM	255 m3/h bij 125 Pa	143 W
Position	Ventilation capacity	Current
ABSENT SETTING	20 m3/h bij 3 Pa	0.08 A
LOW SETTING	70 m3/h bij 10 Pa	0.14 A
MEDIUM SETTING	120 m3/h bij 30 Pa	0.25 A
HIGH SETTING	185 m3/h bij 68 Pa	0.55 A
MAXIMUM	255 m3/h bij 125 Pa	1.10 A

Electricity	
Power supply	230/50 V/Hz
Cos.phi	0,48 - 0,57

Supply fan noise level (at 0 m)		

Position	Ventilation capacity	Sound power
ABSENT SETTING	20 m3/h bij 3 Pa	37 db(A)
LOW SETTING	70 m3/h bij 10 Pa	49 db(A)
MEDIUM SETTING	120 m3/h bij 30 Pa	59 db(A)
HIGH SETTING	185 m3/h bij 68 Pa	66 db(A)
MAXIMUM	255 m3/h bij 125 Pa	73 db(A)

Exhaust fan noise level (at 0 m)		

Position	Ventilation capacity	Sound power
ABSENT SETTING	20 m3/h bij 3 Pa	36 db(A)
LOW SETTING	70 m3/h bij 10 Pa	39 db(A)
MEDIUM SETTING	120 m3/h bij 30 Pa	44 db(A)
HIGH SETTING	185 m3/h bij 68 Pa	52 db(A)
MAXIMUM	255 m3/h bij 125 Pa	60 db(A)

ComfoAir 200 HL (high air volumes)		
Position	**Ventilation capacity**	**Power**
ABSENT SETTING	20 m3/h bij 3 Pa	9 W
LOW SETTING	90 m3/h bij 13 Pa	20 W
MEDIUM SETTING	185 m3/h bij 68 Pa	68 W
HIGH SETTING	245 m3/h bij 120 Pa	128 W
MAXIMUM	255 m3/h bij 125 Pa	143 W
Position	**Ventilation capacity**	**Current**
ABSENT SETTING	20 m3/h bij 3 Pa	0.08 A
LOW SETTING	90 m3/h bij 13 Pa	0.16 A
MEDIUM SETTING	185 m3/h bij 68 Pa	0.55 A
HIGH SETTING	245 m3/h bij 120 Pa	0.99 A
MAXIMUM	255 m3/h bij 125 Pa	1.10 A

Electricity	
Power supply	230/50 V/Hz
Cos.phi	0,48 - 0,57

Supply fan noise level (at 0 m)		
Position	**Ventilation capacity**	**Sound power**
ABSENT SETTING	20 m3/h bij 3 Pa	37 db(A)
LOW SETTING	90 m3/h bij 13 Pa	53 db(A)
MEDIUM SETTING	185 m3/h bij 68 Pa	66 db(A)
HIGH SETTING	245 m3/h bij 120 Pa	72 db(A)
MAXIMUM	255 m3/h bij 125 Pa	73 db(A)

Exhaust fan noise level (at 0 m)		
Position	**Ventilation capacity**	**Sound power**
ABSENT SETTING	20 m3/h bij 3 Pa	36 db(A)
LOW SETTING	90 m3/h bij 13 Pa	42 db(A)
MEDIUM SETTING	185 m3/h bij 68 Pa	52 db(A)
HIGH SETTING	245 m3/h bij 120 Pa	56 db(A)
MAXIMUM	255 m3/h bij 125 Pa	60 db(A)

General Specifications	
HE Exchanger Material	Polystyrene
Interior Material	(E)PP / ABS
Thermal Yield	95%
Mass	30 kg

3.3 Dimension sketch

330

535

Ø159.5

Ø149.5

Ø125.5

1200

1108

186   186

CONDENSATION DRAIN
LEFT   RIGHT

Ø20

159

293

315
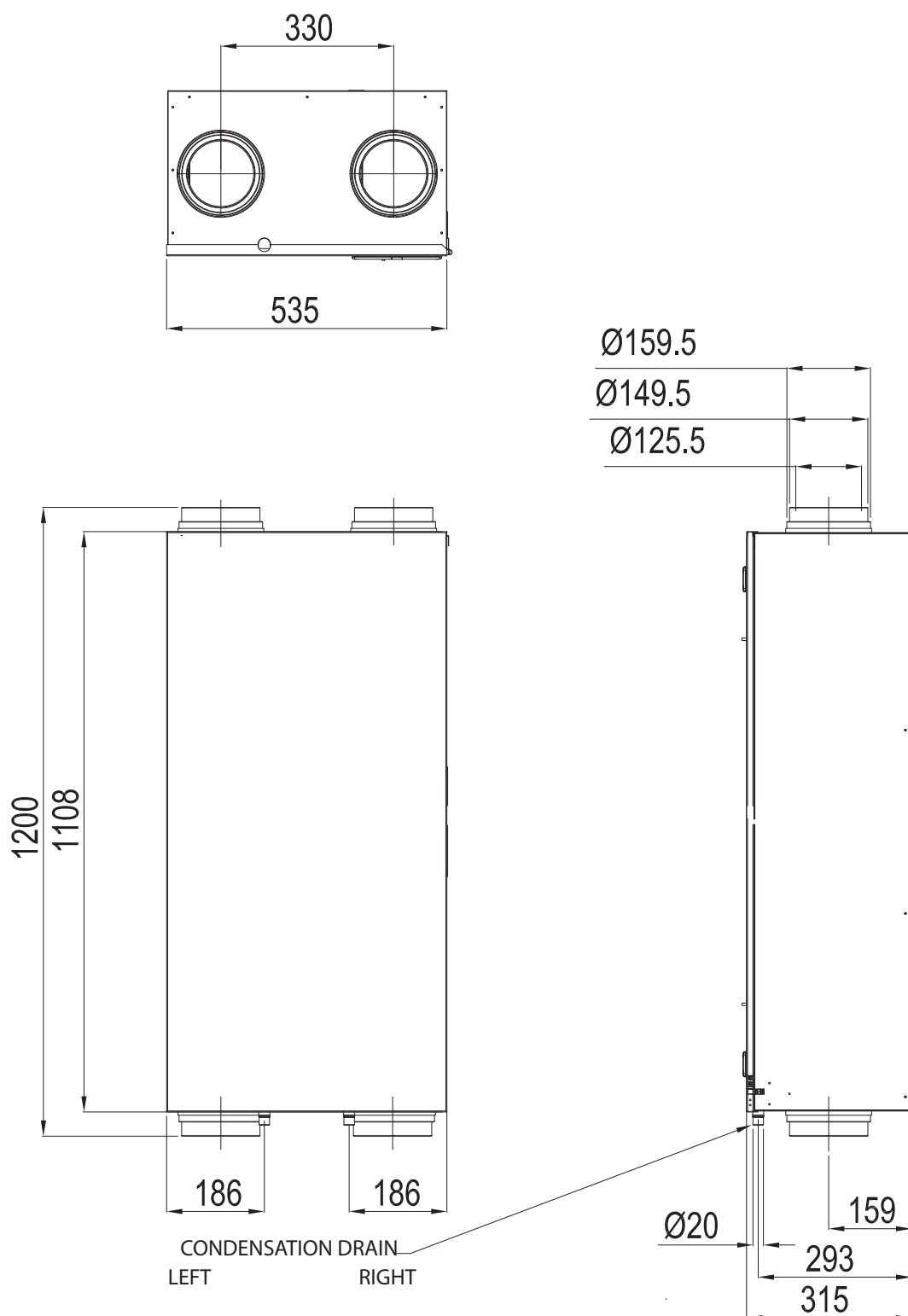
3.4 Installation conditions

In order to determine whether the ComfoAir can be installed in a certain area, the following aspects must be taken into account:

- The ComfoAir must be installed according to the general and locally applicable safety and installation regulations of power and water companies, as well as the instructions in this manual.
- The system must be fitted to allow sufficient room around the ComfoAir for the air connections and supply and exhaust ducts as well as for carrying out maintenance activities.
- The room must offer the following provisions:
  - Air duct connections.
  - 230V electrical connection.
  - Provisions for the condensation drain.
- The ComfoAir must be installed in a frost-free space. The condensation must be drained off frost-free, at a gradient and incorporate a 'U' bend.

☞ *We do not recommend installing the ComfoAir in areas with a higher average humidity (such as bathroom or toilet). This will prevent condensation on the outside of the ComfoAir.*

- The cable used to connect the CC Ease panel must have the following specifications:
  - Cable type: shielded twisted pair 4x0.34mm2.
  - Cable lengtth: 10 m maximum.

⚠ *A 10mm gap should be left under the inside doors in order to ensure effective and draught-free airflow in the house. If these openings are obstructed, due to draught excluders or deep-pile carpet, the airflow in the house will stagnate. As a result, system performance will be compromised or fail altogether.*

3.5 Installation of the ComfoAir

3.5.1 Transport and unpacking

Take the necessary precautions when transporting and unpacking the ComfoAir.

☞ *Make sure the packing material is disposed of in an environmentally friendly manner.*

3.5.2 Checking the delivery

Contact your supplier immediately in case of damage or an incomplete delivery. The delivery must include:

- ComfoAir;
  Check the identification plate to ensure that it is the required type;
- Ceiling mounting set;
- Wall mounting bracket;
- Manual.

The ComfoAir is supplied in the following types:

Type
ComfoAir 200 L
ComfoAir 200 R

Type	
ComfoAir 200 L Luxe	ComfoAir 200 L Luxe PH
ComfoAir 200 R Luxe	ComfoAir 200 R Luxe PH

Meaning of the suffixes:

- L   = Left.
- R   = Right.
- PH   = Pre-heater.
- Luxe = Refers to the luxury version with the connector PCB.

CC Ease panel (optional) can be ordered separately.

3.6 Mounting of the ComfoAir

The ComfoAir can be mounted two ways:
- On the ceiling;
- On the wall.

3.6.1 Mounting on the ceiling
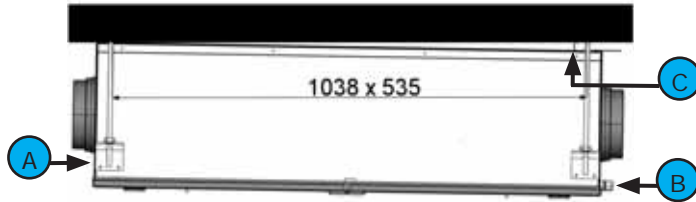
Mount the ComfoAir to a ceiling with a minimum mass of at least 200 kg/m2.
1. Fasten the four mounting brackets (A) (using the screws supplied) to the sides of the ComfoAir.
2. Fasten the two spacer brackets (C) (using the screws supplied) to the top of the ComfoAir on the side of the condensation drain (B). As long as the ceiling is level, this ensures a run-off of 2% to the condensation drain.
3. Mark the position of the mounting points on the ceiling.
4. Mount four pieces of studding (M8 or M10) extending 290 cm below the ceiling.
5. Screw suitable (securing) rings and nuts on the four rods.
6. Hang the unit on the rods and then screw the locknuts tight.
   Allow a 2% run-off to the condensation drain. If the ceiling is horizontal, the spacer brackets will automatically ensure that the ComfoAir hangs at the correct angle.
7. Mount the condensation drain to the ComfoAir with a coupling or removable pipe.
9. The air exhaust duct must be fitted with a double-walled or insulated roof passage. This prevents the formation of condensation between the roof boarding. In addition, the air exhaust duct must drain in the direction of the ComfoAir.
10. To prevent unnecessary temperature loss in either the summer or the winter, we recommend fitting thermal and damp-proof insulation to the supply ducts from the ComfoAir up to the supply valves.

Ensure that there is enough room under the ComfoAir for carrying out maintenance. The ComfoAir does not require any space at the sides for effective operation.

☞ *Do not mount the side of the ComfoAir against the wall due to the risk of impact sound.*

3.6.2 Mounting on the wall
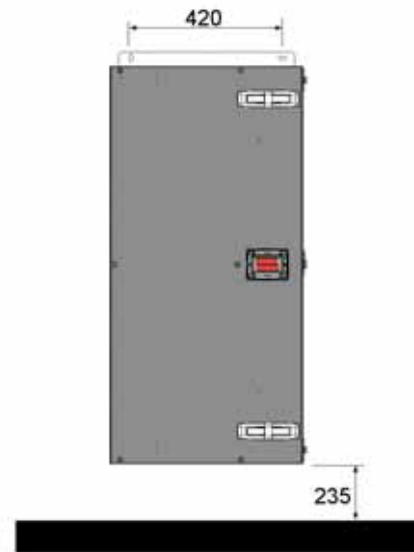
Mount the ComfoAir against a wall with a minimum mass of 200 kg/m^2.
1. Using a spirit level, fix the mounting bracket horizontally to the wall. Use M8 anchor bolts. Make sure there is enough space under the ComfoAir to mount the siphon.
2. Hang the unit in the mounting bracket.
3. Mount the condensation drain under the ComfoAir. The stated dimension of 235 mm is an indication only, and is dependent on the type of condensation drain selected.

Make sure to leave a minimum space of 1 metre in front of the ComfoAir for carrying out maintenance. The ComfoAir does not require any space at the sides for effective operation.

☞ *Do not mount the side of the ComfoAir against the wall due to the risk of impact sound.*

3.6.3 Connection of the air ducts

Supply air   Return air

Exhaust air   Outside air

ComfoAir 200 - Left

Return air   Supply air

Outside air   Exhaust air
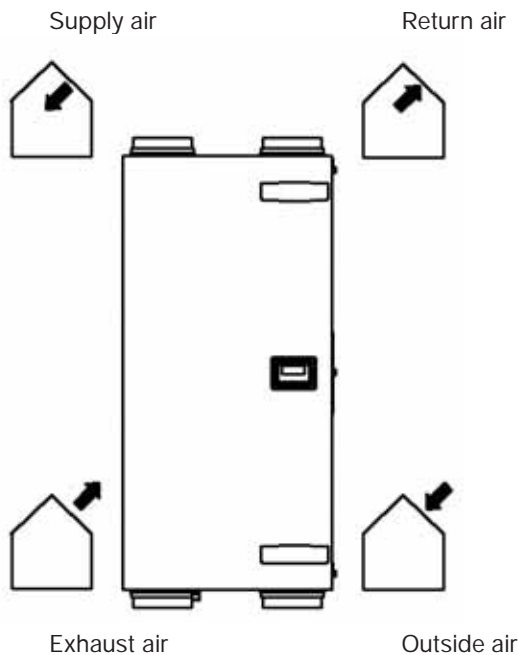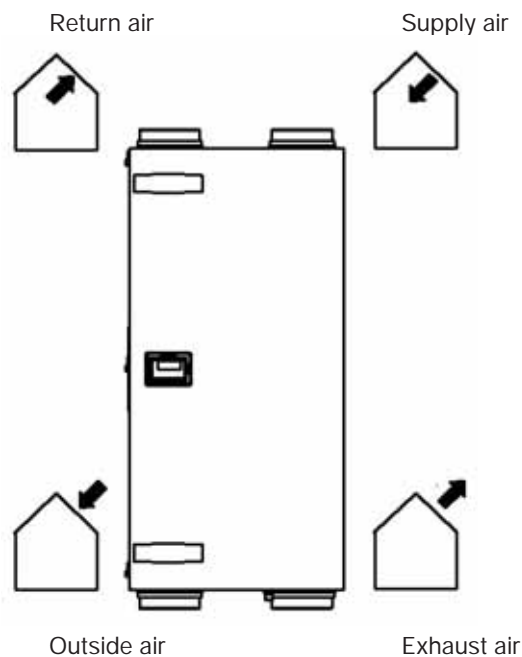
ComfoAir 200 - Right
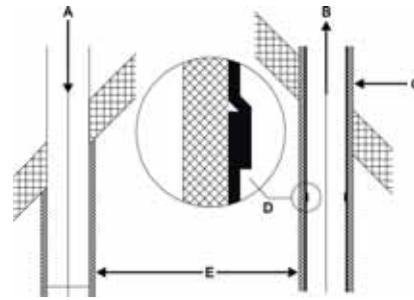
The following aspects must be taken into account, while installing the air ducts:

- Install a silencer directly onto the supply and return connections. For relevant advice, please contact Zehnder.
- Install, the air ducts with a minimum ø of 125 mm, as little air resistance as possible and free from air leakage.
- When using flexible channels only Zehnder channel systems may be used. Any other flexible channel will disturb the basic operating principle of the balanced ventilation system.
- We recommend that the ventilation system be fitted with intake and exhaust valves made by Zehnder.
- Insulate the outside air supply and the air exhaust duct between the roof/wall passage to render the ComfoAir damp proof. This prevents the formation of condensation on the outside of the ducts.
- The air exhaust duct must be fitted with a double-walled or insulated roof passage. This prevents the formation of condensation between the roof boarding. In addition, the air exhaust duct must drain in the direction of the ComfoAir.
- To prevent unnecessary temperature loss in either the summer or the winter, we recommend fitting thermal and damp-proof insulation to the supply ducts from the ComfoAir up to the supply-valves.

3.6.4 Connection of the condensation drain

ComfoAir - Left

ComfoAir - Right

Warm exhaust air is cooled by the outside air in the heat exchanger. This causes the moisture in the indoor air to condense in the heat exchanger. The con-

densation water created in the heat exchanger is fed to a PVC condensation drain.

The connection for the condensation drain has an external diameter of 20 mm and a ledge of 21.2 mm. It is located underneath the ComfoAir.
• **Connect** the condensation drain, via a pipe with coupling or hose, to the water seal of the domestic waste-water system.

⚠ *For future maintenance activities the condensation drain must be removable.*

• **Position** the upper edge of the water seal at least 40 mm underneath the condensation drain of the ComfoAir.
• **Make sure** that the outer end of the pipe or tube exits below the water level.
• **Ensure** the condensation drain pipe on ceiling-mounted units has a run-off to the siphon of at least 2%.

☞ *Ensure that the water seal connected to the domestic waste-water system is always full of water.*

⚠ *Also ensure that the end of the hose is at least 60 mm under the level of the water. This prevents the ComfoAir from sucking in any leakage air.*

3.7 Commissioning the ComfoAir
After installation, the ComfoAir must be commissioned.

This can be done via the P menus on the digital operating device. These P menus can be used to enter various settings (ventilation programmes, in particular) for the ComfoAir. An overview of the available P menus is given below:

Menu	Options
P1	Reading statuses (from menu P2)
P2	Setting time delays
P3	Setting the ventilation levels
P4	Reading the temperatures
P5	Setting additional programmes
P6	Setting additional programmes
P7	Reading and resetting malfunctions (and system information)
P8	Setting 0-10V inputs
P9	Reading statuses (from menu P5)

P menus P1, P2 and P9 can be accessed by the user, mainly to read statuses and set time delays. The remaining P menus P3 to P8 are intended **solely** for the installer.

☞ *The ComfoAir's bypass valve will not work for the first 4 minutes after a power cut unless the programme mode is activated.*

3.7.1 Display on the unit

MENU	select	▲	up
OK	OK	▼	down
⌂	supply off	⌂	supply on
	(led green)		(led green)
↕Ī	comfort temperature		

Shown in display

A	Ventilation setting absent
1	Ventilation setting low
2	Ventilation setting medium
3	Ventilation setting high
X X	Menu symbol
X X	Malfunction code (flashes)
•	Bypass

Access to the menus

Se-quence	Press	Display	Description
1	MENU	P2	Time delay
2	▲ + ▼ (3 seconds)	P3	Press the buttons simultaneously
3	▲	P4	Temperatures
4	▲	P5	Settings
5	▲	P6	Settings
6	▲	P7	Malfunction / Reset / Self-test
7	▲	P8	0 - 10V Inputs
8	▲	P9	Status

Example
Setting the MEDIUM POSITION of the supply fan to 40%

Se-quence	Press	Display	Description
1	MENU	P2	Time delay
2	▲ + ▼ (3 seconds)	P3	Press the buttons simultaneously
3	OK	P30	Exhaust fan Position A
4	▲ (6x)	P36	Select P36
5	OK	50	Current setting
6	▼ (10 x or press con-tinuously)	40	Select 40
7	OK	P35	Value is 40
8	MENU	P3	
9	MENU	1	Fan setting

☞ *Some P menus (such as P1 and P9) can only be read.*

Leaving Reading menu
- Press "MENU" (instead of "OK").

☞ *The display can not be used for setting the ventilation positions of the ComfoAir. The arrow keys are only for setting the additional programmes.*

3.7.2 CC Ease panel

Accessing the P menus

1. Press and hold " 🔲 " and " ⊕ " for 2 seconds, <u>simultaneously</u>.
- Wait until the "P menu" appears on the display.

☞ *P menus P1, P2 and P9 can now be accessed*.

2. Press and hold " ⊕ " and " ▽ " for 2 seconds, <u>simultaneously</u>.
- Wait until P menu "P3" appears on the display.
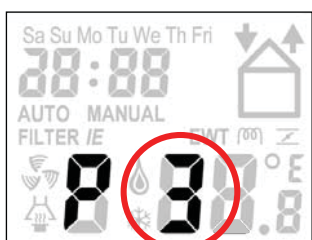
☞ *P menus P3 to P8 can now be accessed*.

3. Select using " ⊕ " or " ▽ " the desired e.g., P menu " 5 ".

4. Press " ⊙ ".
5. Select the desired P sub-menu, e.g. " 51 ", using " ⊕ " or " ▽ ".

6. Press " ⊙ ".

Entering settings in P menus

☞ *The minimum and maximum values for the available settings parameters are preset in the software.*

7. **Select** a value for the parameter using " ⊕ " or " ▽ ".
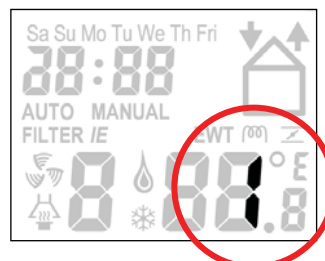
8. **Press** " ⊙ ".
9. **Repeat** steps 5 to 8 to set multiple parameters in succession.
   Or
   Press " 🔲 " to return to the P menu so steps 3 to 8 can be repeated.

☞ *Some P menus (such as P1 and P9) can only be read.*

Leaving Reading menu
• Press " 🔲 " (instead of " ⊙ ")

Returning to the main menu

12 **Press** " 🔲 " twice to return.
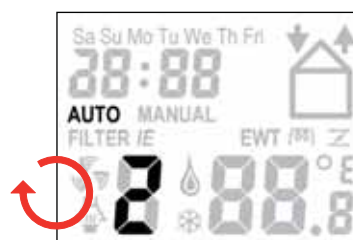
3.7.3 P menus for the installer

☞ *Menus with a line at minimum and maximum value are Reading menus.*

Menu P3 → *Setting ventilation programmes*

Submenu	Description	Ventilation programme values		
		Minimum	Maximum	Default
P30	Setting the capacity (in %) of the exhaust fan in ABSENT POSITION.	0% or 15%	97%	nL / HL 15% / 15%
P31	Setting the capacity (in %) of the exhaust fan in LOW POSITION.	16%	98%	nL / HL 35% / 40%
P32	Setting the capacity (in %) of the exhaust fan in MEDIUM POSITION.	17%	99%	nL / HL 50% / 70%
P33	Setting the capacity (in %) of the exhaust fan to HIGH POSITION.	18%	100%	nL / HL 70% / 90%
P34	Setting the capacity (in %) of the supply fan to ABSENT POSITION.	0% or 15%	97%	nL / HL 15% / 15%
P35	Setting the capacity (in %) of the supply fan in LOW POSITION.	16%	98%	nL / HL 35% / 40%
P36	Setting the capacity (in %) of the supply fan in MEDIUM POSITION.	17%	99%	nL / HL 50% / 70%
P37	Setting the capacity (in %) of the supply fan in HIGH POSITION.	18%	100%	nL / HL 70% / 90%
P38	Current capacity (in %) of the exhaust fan.	-	-	Current %
P39	Current capacity (in %) of the supply fan.	-	-	Current %

Menu P4 → *Reading the temperatures*

Submenu	Description	Temperature values		
		Minimum	Maximum	Default
P41	Comfort temperature	12 ºC	28 ºC	20 ºC
P45	Current value of T1 (= outside air temperature)	-	-	Current ºC
P46	Current value of T2 (= supply air temperature)	-	-	Current ºC
P47	Current value of T3 (= return air temperature)	-	-	Current ºC
P48	Current value of T4 (= exhaust air temperature)	-	-	Current ºC

Menu P5 → Setting additional programmes

Submenu	Description	Additional programme values		
		Minimum	Maximum	Default
P50	Activation of the open fire programme.	0 (= No)	1 (= Yes)	0
P51	Confirming the presence of a pre-heater	0 (= No)	1 (= Yes)	0
	Note: Only change if a pre-heater is installed afterwards. If the ComfoAir must be reset to the original factory settings using P75, the default value of the pre-heater is set to "NOT FITTED". • **Check** the presence of the pre-heater following a general system reset via menu P75.			
P52	Setting the Pre-heater programme. • 0; Guaranteed protection. • 1; High protection. • 2; Nominal protection. • 3; Economy.	0	3	2
	Note: In GUARANTEED PROTECTION MODE the pre-heater is switched on soonest; this level offers the best guarantee of balanced ventilation. Vice versa, in ECONOMY MODE the pre-heater switches on at the last possible moment; balanced ventilation is not guaranteed in this mode. When commissioning the ComfoAir, the Pre-heater programme can usually be left at level 2: NOMINAL MODE (factory setting). In areas with frequent cold spells in winter (frequent periods of -10°C or lower), level 1 should be selected: HIGH PROTECTION or even level 0: GUARANTEED PROTECTION.			
P54	Confirming the presence of a bypass.	0 (= No)	1 (= Yes)	1
	Note: The standard ComfoAir configuration includes a bypass. Therefore, leave the value at '1'.			
P56	Setting the required air volume in the house. • nL: "normal air volume". • HL: "high air volume".	nL	HL	HL
	Note: Setting the air volume in P56 (to "nL" or "HL") is the starting point for programming the air specifications and setting the fans.			
P57	Setting the ComfoAir type. • Li = "Left-hand version". • Re = "Right-hand version".	Li	Re	Li
	Note: The ComfoAir is correctly preprogrammed at the factory. • See also the identification plate for these details.			
P58	Enter controller priorities. • 0; Preference to highest air setting INCLUDING analogue input • 1; Preference to highest air setting EXCLUDING analogue input	0	1	0
P59	Confirming the presence of an enthalpy exchanger. • 0; Enthalpy exchanger fitted • 1; Enthalpy exchanger with RH sensor. • 2; Enthalpy exchanger without RH sensor.	0 (= No)	2 (= Yes)	0
	Note: If an enthalpy exchanger without a sensor is selected, then the enthalpy programme will not be activated and malfunction alerts EA1 & EA2 will never occur.			

Menu P6 → Setting additional programmes

Submenu	Description	Additional programme values		
		Minimum	Maximum	Default
P60	Confirming the presence of a geothermal heat exchanger. • 0; Geothermal heat exchanger not fitted • 1; Geothermal heat exchanger fitted • 3; Geothermal heat exchanger un-regulated.	0 (= No)	3 (= Yes)	0
	Note: If a valveless geothermal heat exchanger is fitted, then the unregulated setting must be selected so that the ComfoAir's bypass valve continues to function properly.			

Menu P7 → Reading malfunctions (and system information)

Submenu	Description	(Malfunction) information values		
		Minimum	Maximum	Default
P70	Current software version.	Version number of the software (without "v")		
P71	Most recent malfunction.	Code in accordance with alarm and malfunction alert		
P72	Malfunction before the most recent one	Code in accordance with alarm and malfunction alert		
P73	Malfunction before the most recent two	Code in accordance with alarm and malfunction alert		
P74	Resetting a malfunction in the ComfoAir	0	1	0
P75	General reset. • **Press** "OK" on the display or press " ⊘ " on the CC-Ease panel for 5 seconds to carry out a general reset. All original factory settings are restored following a general reset.	0	1	0
	Note: ☞ *After a general reset, the ComfoAir will ask you to reset the "nL / HL" (see P56) and "Li / Re" (see P57) settings.* ☞ *Following a general reset, all settings in menus P2 and P3 and the programmes in P5 will need to be reset.* ☞ *If the ComfoAir is fitted with a pre-heater, this must be reconfirmed in menu P51, as this setting defaults to not fitted after a general reset.*			
P76	Self-testing the ComfoAir	0	1	0
	Note: Immediately after activating the self-test, the ComfoAir will run at maximum RPM. Immediately after activating the self-test, the bypass valve opens and closes. If the self-test is successful, the valve of the pre-heater opens and closes (if fitted).			
P77	Resetting filter dirty counter	0	1	0
	Note: This resets the counter that triggers a dirty filter alert on the ComfoAir. This allows the filter to be replaced before the dirty filter alert appears.			

Menu P8 → Analogue controls

Series No.	Description	(Malfunction) information values		
		Minimum	Maximum	Default
810	Analogue input 1 0= not fitted 1 = fitted	0	1	0
811	0= controlling 1 = programming (analogue input 1)	0	1	0
812	set point analogue input 1 (programming)	0	100	50
813	min. setting analogue input 1	0	99	0
814	max. setting analogue input 1	0	100	100
815	0=positive analogue input 1 1=negative setting analogue input 1	0	1	0
816	read-out analogue input 1	0	100	-
850	RF input 1 0= not fitted 1 = fitted	0	1	0
851	0= controlling 1 = programming (RF input 1)	0	1	0
852	set point RF input 1 (programming)	0	100	50
853	min. setting RF input 1	0	99	0
854	max. setting RF input 1	0	100	100
855	0=positive RF input 1 1=negative setting RF input 1	0	1	0
856	Read-out RF input	0	100	-

3.8 Programming air specifications

After installation, the ComfoAir must be programmed.
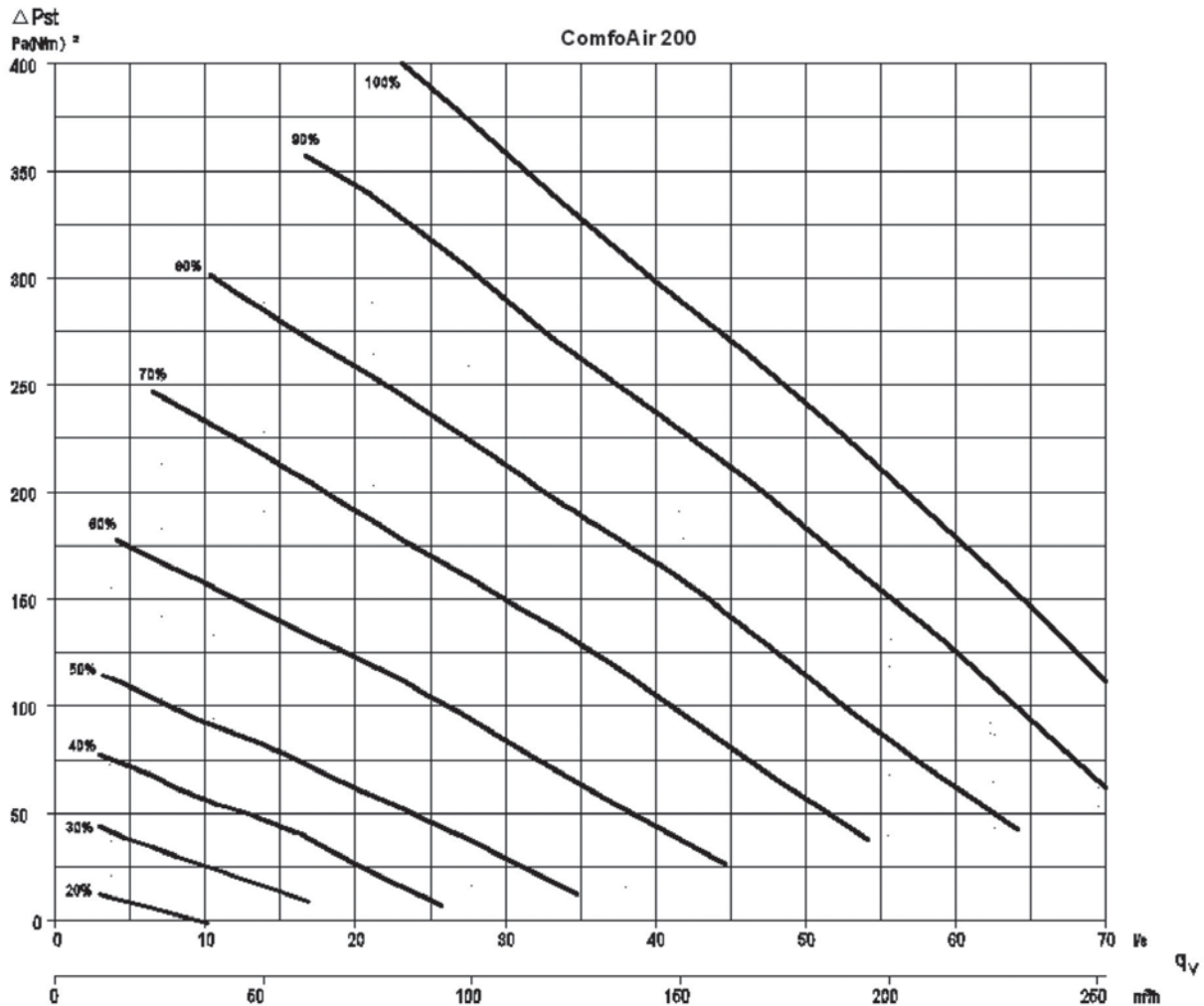
This can be done using the air specifications of the ComfoAir above.

The default settings of the ComfoAir, nL, are:

Position ABSENT	15%
Position LOW	35%
Position MEDIUM	50%
Position HIGH	70%

The default settings of the ComfoAir, HL, are:

Position ABSENT	15%
Position LOW	40%
Position MEDIUM	70%
Position HIGH	90%

Follow this procedure to programme the ComfoAir (after installation):

1. **Set** the ComfoAir in programming mode.
   – Display: Press simultaneously for 3 seconds on " 🔲 " and " 🔲 " until "InR" appears on the display.
   – CC Ease panel: Press simultaneously for 3 seconds on " 🔲 " and " 🔲 " until "InR" appears on the CC Ease panel.

☞ *In programming mode, the bypass and pre-heater valves are always closed. After 30 minutes, the ComfoAir automatically terminates the programming mode.*

2. Close all windows and outside doors.
3. Close all inside doors.
4. Check whether both fans function in the three speed settings.
5. Switch the ComfoAir to high speed.
6. Install all valves and set the valves according to the settings.
7. Change the fan settings in P menus P30 to P37 of the digital operating device.
   – Select the lowest possible setting in order to conserve energy.
   – **Ensure** that the ratios between low, medium and high remain equal.

☞ *Use the chart of the ComfoAir's air specifications to set the fans.*

9. In the event that the currently set air volumes still deviate too much:
   – Adjust the valves.
10. Check the entire installation again, after all valves have been set.

11. Switch the ComfoAir (back) to ventilation position 2.
    – Display: Press simultaneously for 3 seconds on " 🏠 " and " 🏠 " until "InR" disappears of the display.
    – CC Ease panel: Press simultaneously for 3 seconds on " 💨 " and " 🏠 " until "InR" disappears of the CC Ease panel.

3.9 Maintenance by the installer

The following maintenance must be carry out by the installer:

• Inspecting the heat exchanger and fans;

A concise explanation of these maintenance activities is given in the paragraphs below.

⚠ *Failure to carry out (periodic) maintenance on the ComfoAir ultimately compromises the performance of the ventilation system.*

3.9.1 Inspecting the heat exchanger and fans

☞ *Check the condensation drain, the fans and the heat exchanger once every 2 years*

1. Disconnect the power from the ComfoAir.
2. Remove the filter caps from the ComfoAir.
3. Release the front panel by unscrewing the screws (C).

⚠ *The front swings forward on ceiling-mounted units.*
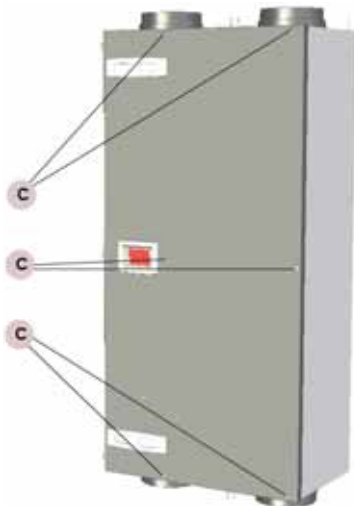
4. Lift front panel from its hinges.
5. Disconnect condensation drain.

☞ *Take care not to trap your fingers when mounting front panel.*

6. Remove the leakage tray by removing the screws (D and E).

☞ *The heat exchanger and leakage tray may contain water!*
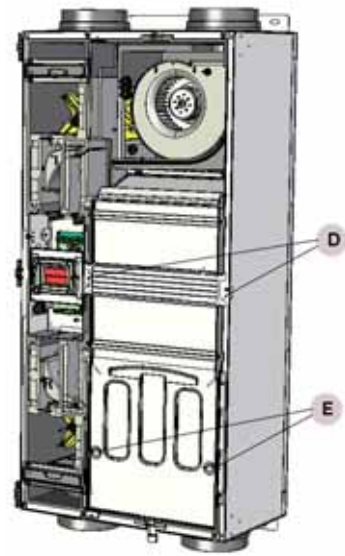
7. Rotate locking nuts (G) on heat exchanger a quarter of a turn.

⚠ *The heat exchanger may fall downwards on ceiling-mounted units, so ensure the heat exchanger is supported when rotating the locking nuts.*
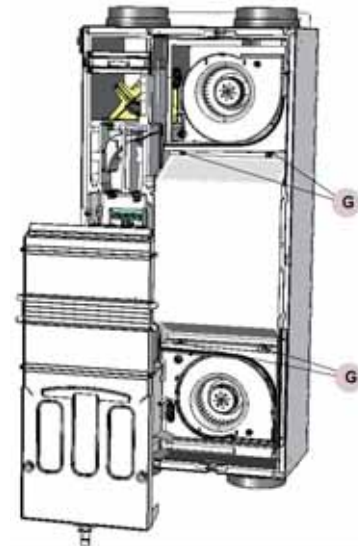
8. **Pull strip** to remove heat exchanger (D).
9. **Clean** the heat exchanger, if so required.
    – **Submerge** the heat exchanger in hot water (max. 40 °C). Do this a couple of times.
    – **Rinse** the heat exchanger with clean hot tap water (max. 40 °C).
    – **Clasp** the heat exchanger between both hands (on the coloured side surfaces) and shake the water from the heat exchanger.
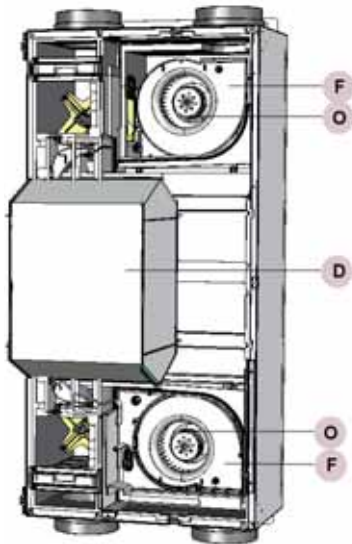
⚠️ *Do not use aggressive cleaning agents or solvents.*

☞ *Do not re-install the exchanger yet. The steps below explain how to remove, inspect and (if needed) clean the fans.*

10. **Remove** the inflow nozzle (F) by unscrewing the 2 screws surrounding the scroll casing.
11. **Clean** the fans (O).

☞ *Use a soft brush to clean the fan impellers.*

☞ *Use a vacuum cleaner to remove dust.*

⚠️ *Do not damage the fan impellers.*

⚠️ *Do not damage the temperature sensor.*

12. **Install** all parts in reverse order.
13. **Carry out** the self-test in accordance with menu P76.

⚠️ *Fasten the screws to a maximum of 1.5 Nm. This is roughly equal to speed 2 of an average battery-powered drill.*

3.10 Malfunctions

If the ComfoAir suffers a malfunction, then in most cases a malfunction alert will appear on the screen of the digital operating device.

However, malfunction alerts may not appear on the digital operating device in all cases, even though there is a malfunction (or problem). A concise explanation of both types of malfunction (or problem) is given in the paragraphs below.

3.10.1 Malfunction alerts on the digital operating device

Below is a list of the malfunction alerts on the digital operating device.

Code	Description
A1	NTC sensor T1 is defective. (= outside air temperature)
A2	NTC sensor T2 is defective. (= supply air temperature)
A3	NTC sensor T3 is defective. (=return air temperature)
A4	NTC sensor T4 is defective. (= exhaust air temperature)
A5	Malfunction in the bypass motor.
A6	Malfunction in the Pre-heater motor.
A7	Pre-heater does not heat sufficiently.
A8	Pre-heater becomes too hot
E1	Exhaust fan not rotating.
E2	Supply fan not rotating.
EA1	Enthalpy sensor measures excessive RH values.
EA2	No communication with the enthalpy sensor.
NC	No communication with the ComfoAir
‚Fil' ‚tEr'	Internal filter is dirty
FilterI	Internal filter is dirty

⚠️ *Prevent water from entering the electrical connections.*

3.10.2 Trouble shooting

Below are a number of trouble-shooting tips for the malfunction alerts described previously which can appear on the digital operating device in the event of a malfunction.

FiL' 'tEr' on
display and/or
FilterI on
CC Ease panel

Press
[OK] or [⌂]
until malfunction disappears

Disconnect
the power

Remove the
filtercaps

Replace the
filters

Refit the
filter caps

Reconnect
the power

ATTENTION!
Risk of electrocution:
do not touch the PCB
or the pre-heater.

E1 / E2
Exhaust/supply fan
malfunction

Remove filter caps,
front and
display

Does the fan connection
on the PCB
register 230 VAC?

Yes

No

Activate self-test
(P76 op 1)

Disconnect the power
and replace PCB
ATTENTION:
Reset unit!

Is fan control
voltage detectable
on PCB
(1.5 - 10 VDC)?

Yes

No

Disconnect the power
and replace PCB
ATTENTION:
Reset unit!

Disconnect the power and
disconnect the condensation
drain. Remove the leakage
trayand exchanger and
replace fan

ATTENTION!
Risk of electrocution:
do not touch the PCB
or the pre-heater.

A1 / A2 / A3 / A4
Temperature sensor malfunction
T1 / T2 / T3 / T4

Temperature	Resistance [KΩ]		
[°C]	MIN.	MID.	MAX.
10	19,570	19,904	20,242
15	15,485	15,712	15,941
18	13,502	13,681	13,861
19	12,906	13,071	13,237
20	12,339	12,491	12,644
21	11,801	11,941	12,082
22	11,291	11,420	11,550
25	9,900	10,000	10,100
30	7,959	8,057	8,155

Disconnect the power

Remove filter caps,
front and display

Remove the
malfunctioning sensor's
connector from the PCB

Check the resistance of
the malfunctioning sensor
according to the adjacent table

Resistance okay?

Yes

No

Replace PCB
ATTENTION:
Reset unit!

Replace
temperature sensor

ATTENTION!
Risk of electrocution:
do not touch the PCB
or the pre-heater.

A5 / A6
Malfunction of
bypass / pre-heater motor

Remove filter caps
and front

Activate self-test
(P81 op 1)

Is motor running?

Yes

No

Disconnect the power and
remove motor,
snap support and cog

Check connection to PCB:
12 VDC when motor running
(see P81 menu)

Cog defective?

Yes

No

Voltage on PCB??

Yes

No

Replace cog

Replace
motor

Disconnect the power
and replace motor

Disconnect the power
and replace PCB
ATTENTION:
Reset unit!

ATTENTION!
Risk of electrocution:
do not touch the PCB
or the pre-heater.

A7
Malfunction
Pre-heater does not heat (sufficiently)

Disconnect the power

Remove filter caps
and front

Unplug Pre-heater from the PCB

Is resistance of
Pre-heater
plug > 300 ohms?

Yes

No

Remove Pre-heater

Is resistance
of T1 okay?

Yes

No

Replace PCB

Replace T1
temperature sensor

Is resistance of
Pre-heater
cable infinite?

Yes

No

Fuse defective
Replace cable

Check resistance of cable
and check connections
to Pre-heater

ATTENTION!
Risk of electrocution:
do not touch the PCB
or the pre-heater.

A8
Malfunction
Pre-heater becomes too hot

Remove filter caps
and front

Does Pre-heater valve work okay?
(check with P81)

Yes

No

Check the following:
- fan settings (too low?)
- supply diffusers (not open enough?)
- supply ducting (blockages?)

See A5 / A6 malfunctions from
'Activate self-test'

3.10.3 Malfunctions (or problems) without alerts

An overview of the malfunctions (or problems) without notifications is given below.

Problem/Malfunction	Indication	Check / action
System switched off	Power supply on	Check the fuse on the PCB panel. • If the fuse is OK, the control PCB is defective.
	No power supply	Mains power is off.
High intake temperature in summer	Bypass remains closed	Reduce the comfort temperature.
	ComfoAir is still in Winter mode	Wait untill ComfoAir switches to Summer mode.
Low intake temperature in winter	Bypass stays open	Increase the comfort temperature.
Little or no air supply; shower remains damp	Filters blocked	Replace the filters.
	Valves blocked	Clean the valves.
	Exchanger clogged by dirt.	Clean the exchanger.
	Exchanger frozen	Defrost the exchanger.
	Fan dirty	Clean the fan.
	Ventilation ducts blocked	Clean the ventilation ducts.
	ComfoAir is in frost-protection mode	Wait until the weather warms up
Too noisy	Fan bearings defective	Replace the fan bearings.
	Fan settings	Change the fan settings.
	Slurping noise • Siphon is empty • Siphon does not seal properly	Reconnect the siphon.
	Whistling noise • An air gap somewhere	Seal the air gap.
	Airflow noise • Valves do not close onto duct. • Valves not open far enough	Reinstall the valves. Reset the valves.
Condensation leak	Condensation drain clogged	Unblock the condensation drain.
	Condensation from exhaust duct does not run into leakage tray	Check whether the connections are correct.

Corded 3-position switch not working	Cabling is Not good	Check the wire-circuit of the 3-position switch by measuring the voltage:
		• Voltage only on N & L3:
		  [Fans rotate in position 1].
		• Voltage only on N & L3 & L2:
		  [Fans rotate in position 2].
		• Voltage only on N & L3 & L1 or
		  N & L3 & L2 & L1:
		  [Fans rotate in position 3].

	Switch is defective	
Wireless (RF) 3-position switch not working	Battery is discharged	Check the battery. • Replace the battery (if necessary).
	Switch is not correctly tuned	Remove the power shortly from the ComfoAir. Shortly after reconnecting the power tune the switch again.

3.11 Service parts
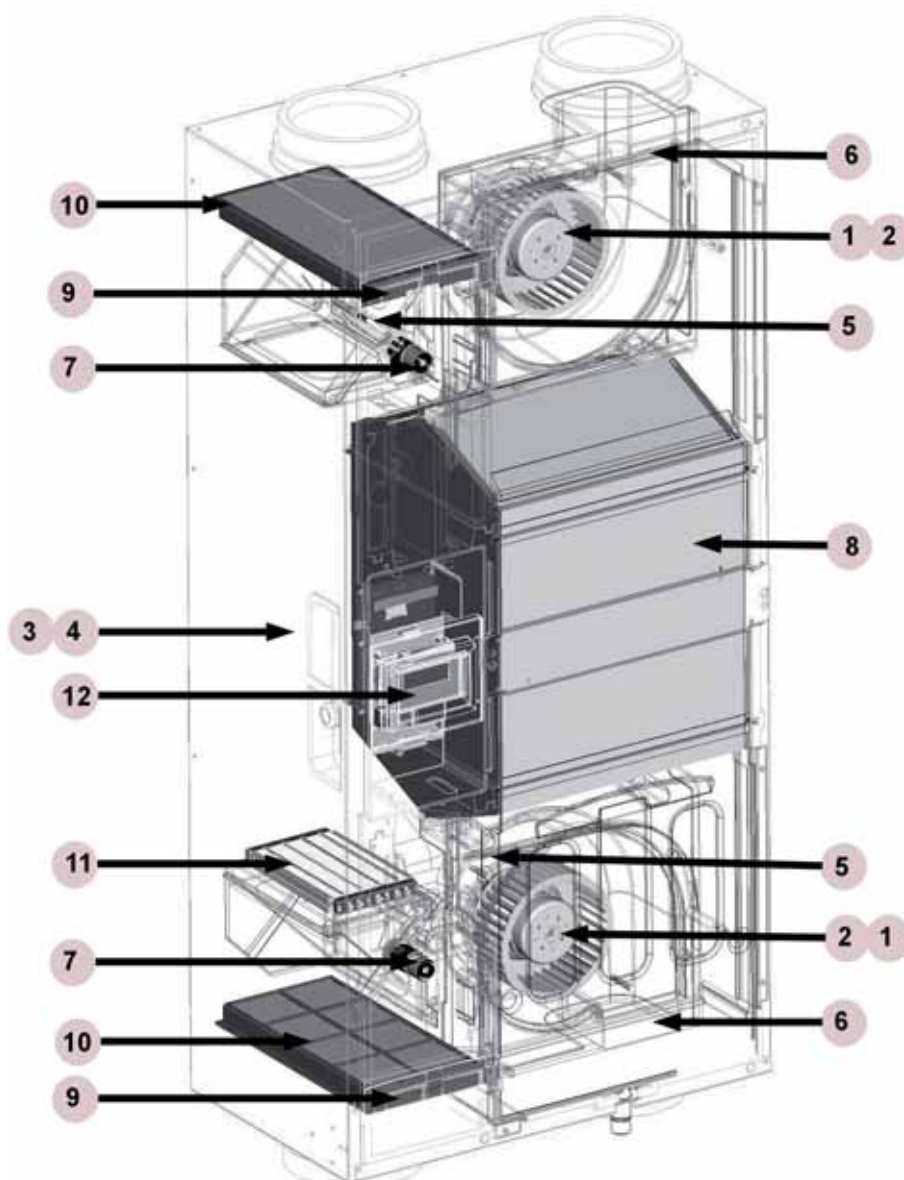
The following table contains an overview of the spare parts available for the ComfoAir.

Number	Part	Article number
1	Fan Right-hand (Green)	400200018
2	Fan Left-hand (Red)	400200019
3	ComfoAir PCB; basic or luxury version	400300051
4	Connector panel	400300031
5	Temperature sensor T1 / T3	400300049
6	Temperature sensor T2 / T4	400300048
7	Servo motor & cable (for the bypass and the Pre-heater)	400300015
8	Heat exchanger	400400012
9	Filter cap	
10	Filter	400100014
11	Pre-heater (also available as an optional kit for subsequent installation)	400300060
12	Display	400300020

3.12 Wiring diagram: ComfoAir 200 – LEFT-HAND version

CASING

Blue

Brown

Brown

Blue

(N) Blue
(L3) Brown
(L2) Black
(L1) Grey

VENT.

VENT.

Pre-heater

TR1

FIL

RJ45
RS232

DISPLAY

Bathroom switch (volt free contact)

EXHAUST

SUPPLY

M

M

White (⌐)
Yellow (0-10V)
Blue (-)
Brown
White
Brown
White
Red
Black

Blue(-)
Yellow (0-10V)
White (⌐)
Brown
White
Brown
White
Black
Red

T2

T3

BS

VENT.

VENT.

T2/T4

T1/T3

BYP/PRE

T2/T4

T1/T3

BYP/PRE

T4

T1

Bypass valve

Pre-heater valve

Green/ Yellow

Green/ Yellow

Green/ Yellow

3.13 Wiring diagram: ComfoAir 200 – RIGHT-HAND version

CASING

SUPPLY

Blue
Brown

(N) Blue
(L3) Brown
(L2) Black
(L1) Grey

VENT.
VENT.

Pre-heater

TRI 1

RJ45 RS232

DISPLAY

Brown
Blue

Bathroom switch (volt free contact)

EXHAUST

+
-

White (⎍)
Yellow (0-10V)
Blue (-)
Brown
White
Brown
White
Red
Black

FIL
VENT.
T2/T4
T1/T3
BYP/PIE

T4
T1

Pre-heater valve

BS
VENT.
T2/T4
T1/T3
BYP/PIE

Blue(-)
Yellow (0-10V)
White (⎍)
Brown
White
Brown
White
Black
Red

T2
T3

Bypass valve

Green/ Yellow
Green/ Yellow
Green/ Yellow

3.14 Wiring diagram: ComfoAir 200 Luxe – LEFT-HAND version

EXHAUST

SUPPLY

Bypass valve

T3
T2

Green/Yellow

Black
Red
White
Brown
White
Brown
White / ⌐
Yellow (0-10V)
Blue (-)
+

Pre-heater

BYP/PIE T1/T3 T2/T4 VENT. FIL

TRI 1

VENT. 1

(N) Blue
(L3) Brown

VENT.

Brown
Blue

Green/Yellow

Green/Yellow

Pre-heater valve

Red
Black
White
Brown
White
Brown
White / ⌐
Yellow (0-10V)
Blue(-)

T1
T4

BYP/PIE T1/T3 T2/T4 VENT. BS

BS

RJ45
RS232

DISPLAY

Brown
Blue

Bathroom switch (volt free contact)

J1

RS232
PC

0-10V
0-10V

RS485
Entalpy

RS485
Hybalans

RS232
KFB

12V
A1
A2
GND
12V
B
A
GND
12V
B
A
GND
12V
RX
TX
GND

PCB
Hybalans

3.15 Wiring diagram: ComfoAir 200 Luxe – RIGHT-HAND version

SUPPLY

EXHAUST
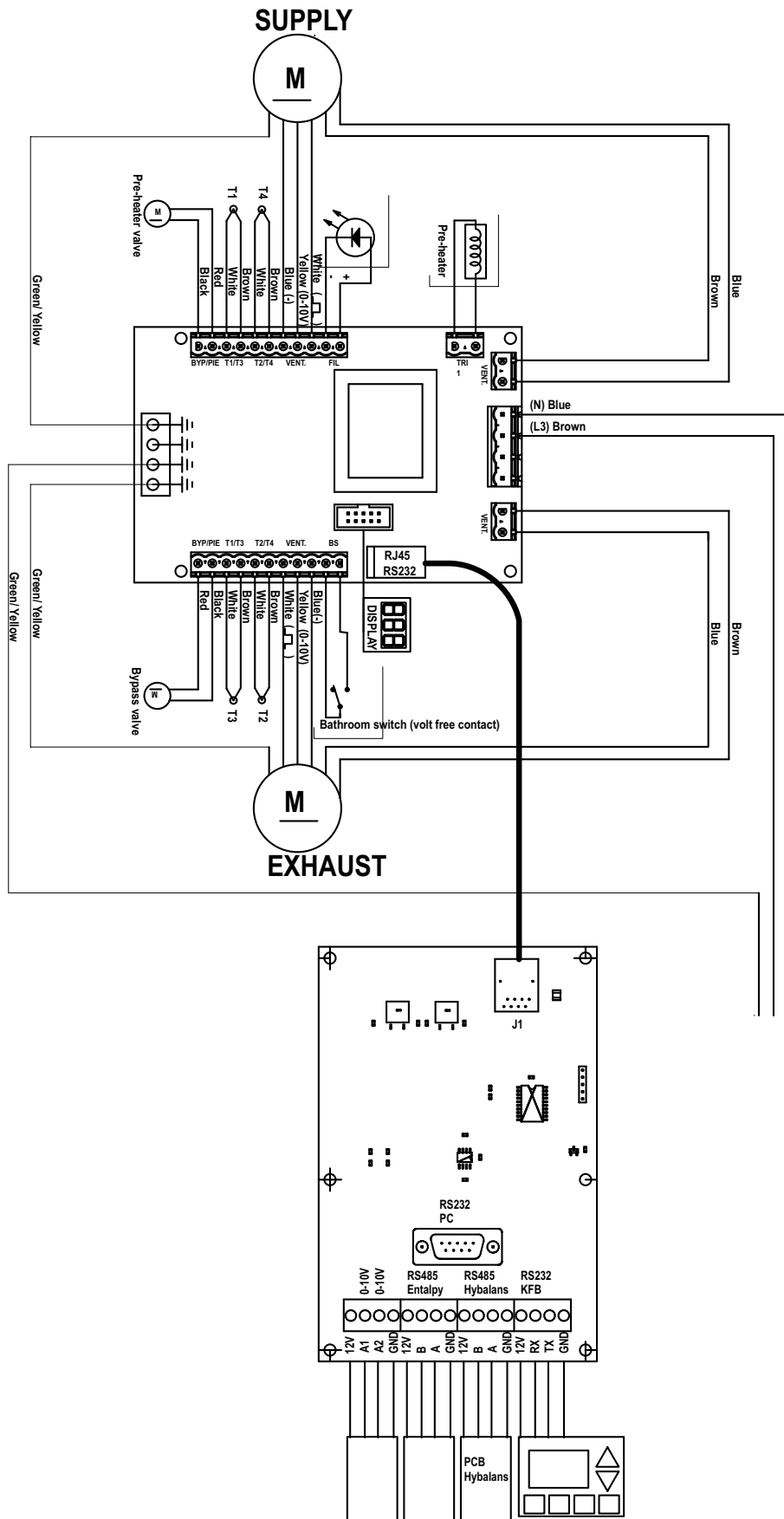
3.16 HRV95W installation measuring report

Part 1 – System details and declarations

1.1 Installation Address Details	
Dwelling name/number	
Street	
Locality	
Town	
County	
Post Code	

1.2 Installation Details	
System classification*	System …..
Enter System 1 to 4 as defined by Approved Document F 2010	
Manufacturer	
Model numbers	
Serial number (where available)	
Location of fan units	1.
	2.
	3.
	4.
	5.

1.3 Installation Engineer's Details	
Engineer's Name	
Company	
Address Line 1	
Address Line 2	
Telephone Number	
Post Code	

1.4 Commissioning Engineer's Details (if different to 1.3)	
Engineer's Name	
Company	
Address Line 1	
Address Line 2	
Telephone Number	
Post Code	

Note. If a system has been installed that is not defined by System 1 to 4 in Approved Document F, further installation checks and commissioning procedures may be required. Seek particular guidance from the manufacturer for these systems.

Part 2a – Installation details

2.1 Installation Checklist – General (all Systems)		Tick as appropriate	
Has the system been installed in accordance with manufacturer's requirements?		Yes	No
Have relevant system installation clauses been followed as details in Tables 1, 3, 5 and 7 as applicable?		Yes	No
If any deviation from Tables 1, 3, 5 and 7, these should be detailed here			
Description of installed controls (e.g. timer, central control, humidistat, PIR, etc)			
Location of manual/override controls			
2.2 Installation Engineer's Declaration			
Engineer's Signature			
Registration Number (if applicable)			
Date of Inspection			

Part 2b – Inspection of Installation
This section should be completed by the commissioning engineer prior to completing Part 3.

2.3a Visual Inspections – General (all Systems)		
Total installed equivalent area of background ventilators in dwelling		mm
Total floor area of dwelling		m²
Does the total installed equivalent ventilator area meet the requirements given in Tables 5.2a, 5.2b, or 5.2c in ADF?	Yes	No
Have all background ventilators been left in the open position?	Yes	No
Have the correct number and location of extract fans/terminals been installed that satisfies Table 5.2a in ADF?	Yes	No
Is the installation complete with no obvious defects present?	Yes	No
Do all internal doors have sufficient undercut to allow air transfer between rooms (i.e. 10 mm over and above final floor finish)	Yes	No
Has all protection/packaging been removed (including background ventilators) such that system is fully functional?	Yes	No
For ducted systems, has the ductwork installation been installed in such manner that air resistance and leakage is kept to a minimum?	Yes	No
Are the correct number and size of background ventilators provided that satisfy ADF?	Yes	No
Has the entire system been installed such that there is sufficient access for routine maintenance and repair/replacement of components?	Yes	No
2.3a Visual Inspections – General (Systems 3 and 4 only)		
Have appropriate air terminal devices been installed to allow system balance?	Yes	No
Has the heat recovery unit (System 4 only) and all ductwork been effectively insulated where installed in unheated spaces?	Yes	No
Condensation connection is complete and drains to an appropriate location (System 4 only)?	Yes	No
2.3c Other Inspections – General (System 1, 3 and 4 only)		
Upon initial start up, was any abnormal sound or vibration experiences, or unusual smells detected?	Yes	No

Part 3 – Commissioning details

3.4 Air Flow Measurements (Supply) – System 3 and 4 only				
Room reference (location of terminals)	Measured Air Flow High Rate (l/s)	Design Air Flow High Rate (l/s) Refer to Table 5.1b ADF	Measured Air Flow Low Rate (l/s)	Design Air Flow Low Rate (l/s) Refer to Table 5.1b in ADF
Living Room 1				
Living Room 2				
Dining Room				
Bedroom 1				
Bedroom 2				
Bedroom 3				
Bedroom 4				
Bedroom 5				
Study				
Other…				
3.4 Air Flow Measurements (Supply) – System 3 and 4 only				
Engineer's Signature				
Registration Number (if applicable)				
Date of Commissioning				

ECC declaration of conformity

J.E. Stork Ventilatoren B.V.
Lingenstraat 2
8028 PM Zwolle-NL
Tel.: +31 (0)38-4296911
Fax: +31 (0)38-4225694
Company register Zwolle 05022293

ECC declaration of conformity

Machine description	: **Heat recovery units: ComfoAir 200 series**

Complies with the following directives : Machinery Directive   (2006/42/EEC)
Low Voltage Directive   (2006/95/EEC)
EMC Directive   (204/108/EEC)

Zwolle, 1 September 2009
J.E. Stork Ventilatoren B.V.

E. v. Heuveln,
Managing Director

comfosystems **zehnder**