ComfoAir 350 Luxe

Manual

Table of Contents

1 Introduction

This chapter provides general information on the ComfoAir.

1.1 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. 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 350 Luxe may slightly differ from the descriptions.
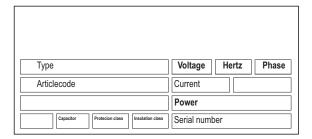
NOTE

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.

1.2 CE marking

The device's name is ComfoAir 350 Luxe. 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

1.3 Warranty and liability

1.3.1 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.

1.3.2 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.

1.4 Safety

1.4.1 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 such as the GIW (Dutch Home Warranty Institute);
- 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;

1.4.2 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.

1.4.3 Pictograms used

The following pictograms are used in this manual:

☞ *Point of attention.*

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

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;
- 0 - 10V input;
- Pre-heater (optional);
- Afterheater (optional);
- Geothermal heat exchanger (optional);
- Enthalpy (optional).

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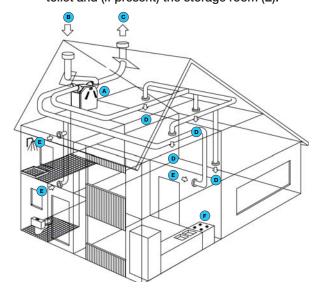
2.1.1 Balanced ventilation

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 350 Luxe (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 0-10V input

The ComfoAir is fitted with four 0 to 10V inputs. This 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;

2.1.7 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.

2.1.8 Afterheater (optional)

It is possible to fit the ventilation system with a afterheater. The afterheater ensures that the supply air is heated further before it enters any living areas. The advantage of an afterheater is that the supply air can be instantly released into the house at the set comfort temperature. That offers additional comfort.

The afterheater works automatically: simply set the required comfort temperature.

☞ *The afterheater is part of the ducting of the ventilation system, and does not form part of the ComfoAir.*

2.1.9 Geothermal heat exchanger (optional)

It is possible to fit the ventilation system with a geothermal heat exchanger. The geothermal heat exchanger ensures that outside air is supplied to the dwelling at a constant temperature of about 8 °C. Therefore, in the event of subzero temperatures, the outside air can be heated up by means of the geothermal heat exchanger, prior to releasing it into the house via the ComfoAir. Alternatively, in the event of hot summer conditions, the outside air can be cooled down by means of the geothermal heat exchanger, prior to releasing it into the house via the ComfoAir. The geothermal heat exchanger is automated.

☞ *The geothermal heat exchanger is part of the ducting of the ventilation system, and does not form part of the ComfoAir.*

2.1.10 Enthalpy (optional)

The ComfoAir can be optionally fitted with an enthalpy exchanger. An enthalpy exchanger is less sensitive to freezing. An enthalpy system means the ComfoAir uses the afterheater less, and no longer reduces the air supply from outside, though it does stop it in extreme cold.

2.1.11 Luxury version extra options

Besides the options stated earlier, the ComfoAir Luxe also offers the following options:
- Connection for remote (fixed-line) malfunction alerts;
- Connection for remote (fixed-line) deactivation of the fans;
- Connection for filter alert for external filters.

2.2 Available operating elements

The ComfoAir can be fitted with the following operating elements:
- 3-position switch;
- Wireless 3-position switch;
- 3-position switch with malfunction indicators;
- Bathroom switch to temporarily select the highest ventilation position;
- CO_2 sensor;
- CC Luxe panel;
- CC Ease panel.
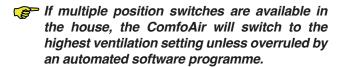
A concise explanation of these operating elements is given in the paragraphs below.

2.2.1 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 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.

☞ *The CC Ease panel or CC Luxe panel can be used to select an additional ventilation position (the absent setting).*

2.2.2 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.

2.2.3 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).*

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.
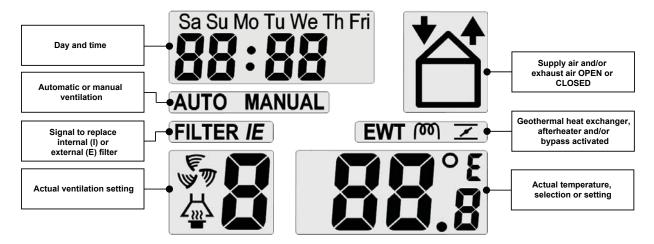
2.2.4 CC Luxe panel
The ComfoAir can be operated by means of a CC Luxe panel, which can be ordered separately. The CC (Comfort Control) Luxe panel is a digital operating device which can be mounted on the wall in the living room and from there communicates with the ComfoAir. The CC Luxe panel is operated via a touch screen.

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.

The CC Ease panel has a number of buttons to operate the ComfoAir and to enter the settings. These buttons are illustrated below.

	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.
2. **Wait** until the day, e.g. "Sa", starts blinking.
3. **Select** the correct day using " + " or " ▽ ".

4. **Press** and briefly hold " ⊘ ".
5. **Wait** until the hour, e.g. " 12 ", starts blinking.
6. **Select** the correct hour using " △ " or " ▽ ".

7. **Press** and briefly hold " ⊘ " again.
8. **Wait** until the minutes, e.g. " 00 ", start blinking.
9. **Select** the correct minutes using " + " or " ▽ ".

10 **Press** and briefly hold" ⊘ " again to return.

2.3.2 Reading and setting the comfort temperature

The comfort temperature can be read, but also set to the desired temperature. After entering the setting, the ComfoAir will automatically work to the temperature set.

Reading the comfort temperature

1. **Press** " 🌡 " briefly.
2. **Wait** until the comfort temperature appears.
3. **Press** " 🌡 " again to return.

Setting the comfort temperature

1. **Press** " 🌡 " longer than 2 seconds.
2. **Wait** until the comfort temperature, e.g. " 20.0 ", flashes.
3. **Select** the desired comfort temperature using " + " or " ▽ ".
4 **Press** and briefly hold " 🌡 " to confirm.

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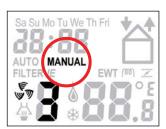
- Setting 1 → Low.
    - Use for low ventilation levels.
- Setting 2 → Normal.
    - Use if you require normal ventilation.
- Setting 3 → High.
    - Use this position during cooking, showering and when additional ventilation is needed.

☞ *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** " ⊕ " to increase the ventilation volume.
2. **Press** " ▽ " to decrease the ventilation volume.

During manual ventilation, the CC Ease panel will not display "**AUTO**", but "**MANUAL**".

3. **Press** " ⊘ " to return to automatic ventilation.

2.3.4 Switching Boost on

1. **Press** " ⚛ ".
2. **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

1. **Press** " 🏠 " once 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 supplied via the supply fan, but through the open windows.

2. **Press** " 🏠 " twice to switch the exhaust fan off (and to switch the supply fan on).

3. **Press** " 🏠 " three times 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.

If required, you can change the default ventilation setting to suit your individual situation. Examples include weekday and weekend programmes.

The ventilation volume can be changed/set as follows:

1. **Press** <u>together</u> for 2 seconds icons " ⊙ " and " 🖑 ".
2. **Wait** until the ventilation programme appears.
3. **Programme** the desired day or series of days.
4. **Select** the desired option using" ⊕ " or " ▽ ".

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

5. **Press** " ⊙ ".
6. Wait until the ventilation setting is flashing in the bottom right-hand corner.

7. **Select** the desired ventilation setting using " ⊕ " or " ▽ ".
8. **Press** " ⊙ ".
9. **Programme** the start time of the desired ventilation level.

– **Select** the desired time in hours using " ⊕ " or " ▽ ".

– **Press** " ⊙ " again.
– **Wait** until the minutes appear on the screen.
– **Select** the required time in minutes using " ⊕ " or " ▽ ".

– **Press** " ⊙ " again.
– **Wait** until the ventilation setting flashes.
– **Select** the desired ventilation level using " ⊕ " or " ▽ ".
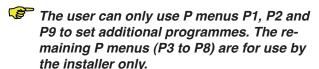
– **Press** " 🖑 " to confirm.
10. **Programme** the next ventilation programme if required.
– Repeat steps 1 to 9 to set the next ventilation programme.

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 " ⊕ " simultaneously.
2. **Wait** until the "P menu" appears on the display.
3. **Select** the desired P sub-menu using " ⊕ " or " ▽ ", e.g., P menu "2".

4. **Press** " ⊙ " to confirm the P menu.
5. **Select** the desired P sub-menu using " ⊕ " or " ▽ ", e.g., P sub-menu " 23 ".
6 **Press** " ⊙ " to confirm the P sub-menu.

Entering settings in P menus

7. **Select** a new value for the programme using " ⊕ " or " ▽ ".
8. **Press** " ⊙ " to confirm.
9. **Repeat** steps 3 to 8 to set multiple ventilation programmes in succession.

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

Returning to the main menu

10. **Press** " ⌂ " **twice.**

Menu P1 → Status of programmes

Sub-menu	Description	Ventilation programmes
		Activated
P10	Is menu 20 currently active?	Yes (1) / No (0)
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)
P19	Is menu 29 currently active?	Yes (1) / No (0)

Menu P2 → Setting time delays

Sub-menu	Description	Time delay values		
		Minimum	Maximum	Default
P20 (Optional)	n/a	0 Min.	180 Min.	0 Min.
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		
		Minimum	Maximum	Default
P25 **Note:** **Only applies to systems fitted 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 fitted 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 fitted with a CC Ease panel.**	Time for the Boost setting. • After pressing " ⊛ " continuously (>2 sec.), the ComfoAir runs at the high setting for 'x' minutes and then automatically returns to the programmed setting.	0 Min.	120 Min.	30 Min.
P29 (Optional)	n/a	1%	99%	10%

Menu P9 → Status of programmes (from menu P5)

Sub-menu	Description	Ventilation programmes
		Activated
P90	Open fire programme active?	Yes (1) / No (0)
P91	Bypass Open (=Yes) / Closed (=No)?	Yes (1) / No (0)
P92	Geothermal heat exchanger valve Open (=Yes) / closed (=No)	Yes (1) / No (0)
P93	Afterheater active?	Yes (1) / No (0)
P94	0 – 10 V programme active?	Yes (1) / No (0)
P95	Frost protection active?	Yes (1) / No (0)
P96	n/a	Yes (1) / No (0)
P97	Enthalpy programme active?	Yes (1) / No (0)

2.4 Maintenance by the user

As a user of the ComfoAir, you must carry out the following maintenance:
- Cleaning or replacing the filters;
- Cleaning the valves (in the dwelling).

A concise explanation of these maintenance activities is given in the paragraphs below.
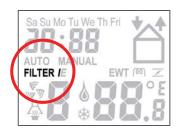
⚠️ *Failure to carry out (periodic) maintenance on the ComfoAir ultimately compromises the performance of the ventilation system.*

2.4.1 Cleaning or replacing the filters

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

- " FILTER *I* " → The internal filters must be cleaned or replaced.
- " FILTER *E* " → The external filters must be cleaned or replaced.

The CC Ease panel will display one of the above filter warnings.
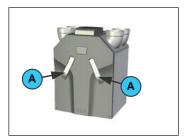
☞ *The internal filters are included in the standard configuration of the ComfoAir. The external filters (optional) form part of the ducting of the ventilation system yet do not form part of the ComfoAir.*
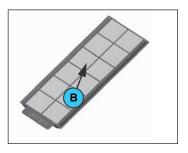
To replace ...

If the filters need replacing, follow this procedure:
- Press " 🗓 " on the CC Ease panel until the filter alert disappears.
- Disconnect the power from the ComfoAir.
- Remove the handles (A) from the ComfoAir

- Remove the old filters (B) from the ComfoAir

- Slide the new filter back into the ComfoAir.
- Refit the handles (A) to the ComfoAir.
- Reconnect te power to the ComfoAir.

To clean...

Vacuum the filters (B) with a vacuum cleaner instead of replacing them with new filters.
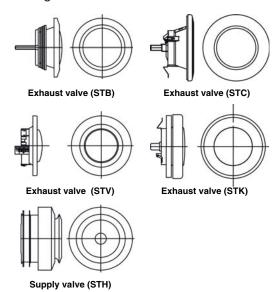
⚠️ *When using the ComfoAir for the first time, it is recommended to clean the filters (and valves) first. During the construction phase the ventilation system could have become dirty with building dust.*

⚠️ *Replace the filters (at least) once a year.*

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:
- **Remove** the valve from the wall or ceiling;
- **Clean** the valve in a solution of soap and warm water;
- **Rinse** the valve thoroughly and wipe **dry**;
- **Place** the valve back WITH EXACTLY THE SAME SETTING (and IN THE SAME HOLE);
- **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 CC Ease panel;
- The malfunction alert appears on the CC Luxe panel;
- The malfunction indicator on the 3-position switch lights up;

A concise explanation of these maintenance activities 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 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 cleaning 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 cleaning/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.*

2.6 End of useful life

Consult with your supplier about what you should do 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 switches with the normal waste, but bring them to the specially designated disposal locations.
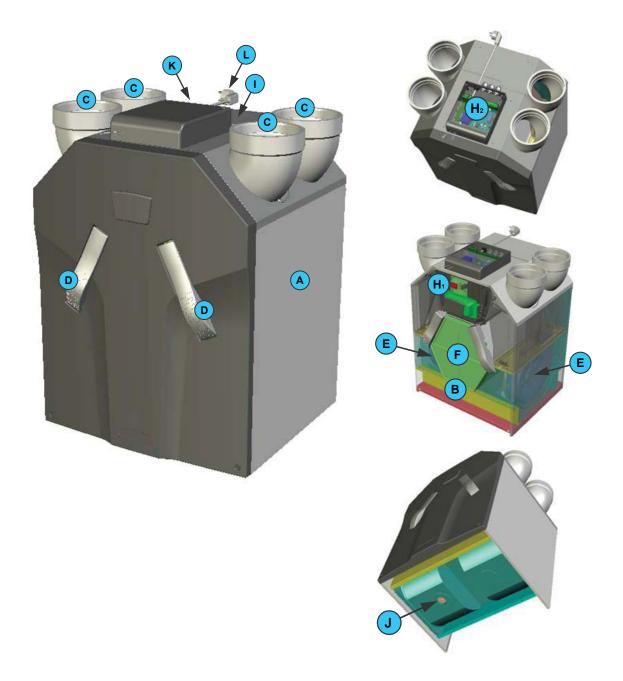
3 For the Fitter

This chapter describes how to fit the ComfoAir.

3.1 ComfoAir 350 Luxe

The standard ComfoAir 350 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 G4 filters (D) for air purification;
- 2 energy-efficient DC motors (E) with high-efficient fan;
- HE (High Efficient) heat exchanger (with optional moisture exchanger) (F);
- Connector panel (H2) with connections for the CC Ease panel, the enthalpy exchanger and the 0 – 10V control sensors, CC Luxe panel, Afterheater, Geothermal heat exchanger and all other luxury options;
- 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-core, 230V connection (L).

3.2 Technical specifications

ComfoAir 350 Luxe nL (normal air volumes)		
Position	**Ventilation capacity**	**Value**
ABSENT SETTING	40 m3/h at 4 Pa	10 W
LOW SETTING	120 m3/h at 30 Pa	21 W
MEDIUM SETTING	180 m3/h at 65 Pa	44 W
HIGH SETTING	260 m3/h at 140 Pa	105 W
MAXIMUM	350 m3/h at 240 Pa	243 W
Position	**Ventilation capacity**	**Value**
ABSENT SETTING	40 m3/h at 4 Pa	0.08 A
LOW SETTING	120 m3/h at 30 Pa	0.17 A
MEDIUM SETTING	180 m3/h at 65 Pa	0.35 A
HIGH SETTING	260 m3/h at 140 Pa	0.81 A
MAXIMUM	350 m3/h at 240 Pa	1.77 A

Electricity	
Power supply	230/50 V/Hz
Cos.phi	0,50 - 0,60

Supply fan noise level (at 0 m)		
Position	**Ventilation capacity**	**Value**
ABSENT SETTING	40 m3/h at 4 Pa	36 db(A)
LOW SETTING	120 m3/h at 30 Pa	50 db(A)
MEDIUM SETTING	180 m3/h at 65 Pa	59 db(A)
HIGH SETTING	260 m3/h at 140 Pa	68 db(A)
MAXIMUM	350 m3/h at 240 Pa	75 db(A)

Exhaust fan noise level (at 0 m)		
Position	**Ventilation capacity**	**Value**
ABSENT SETTING	40 m3/h at 4 Pa	39 db(A)
LOW SETTING	120 m3/h at 30 Pa	43 db(A)
MEDIUM SETTING	180 m3/h at 65 Pa	48 db(A)
HIGH SETTING	260 m3/h at 140 Pa	55 db(A)
MAXIMUM	350 m3/h at 240 Pa	61 db(A)

ComfoAir 350 Luxe HL (high air volumes)		
Position	**Ventilation capacity**	**Value**
Absent Setting	40 m3/h at 4 Pa	10 W
Low Setting	140 m3/h at 40 Pa	27 W
Medium Setting	180 m3/h at 65 Pa	104 W
High Setting	325 m3/h at 215 Pa	196 W
Maximum	350 m3/h at 240 Pa	243 W
Position	**Ventilation capacity**	**Value**
Absent Setting	40 m3/h at 4 Pa	0.08 A
Low Setting	140 m3/h at 40 Pa	0.21 A
Medium Setting	180 m3/h at 65 Pa	0.81 A
High Setting	325 m3/h at 215 Pa	1.42 A
Maximum	350 m3/h at 240 Pa	1.77 A

Electricity	
Power supply	230/50 V/Hz
Cos.phi	0,50 - 0,60
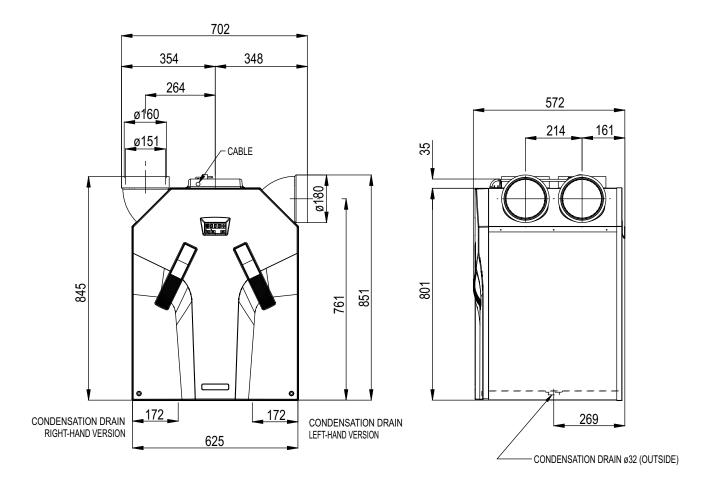
Supply fan noise level (at 0 m)		
Position	**Ventilation capacity**	**Value**
Absent Setting	40 m3/h at 4 Pa	36 db(A)
Low Setting	140 m3/h at 40 Pa	54 db(A)
Medium Setting	180 m3/h at 65 Pa	68 db(A)
High Setting	325 m3/h at 215 Pa	74 db(A)
Maximum	350 m3/h at 240 Pa	75 db(A)

Exhaust fan noise level (at 0 m)		
Position	**Ventilation capacity**	**Value**
Absent Setting	40 m3/h at 4 Pa	39 db(A)
Low Setting	140 m3/h at 40 Pa	45 db(A)
Medium Setting	180 m3/h at 65 Pa	55 db(A)
High Setting	325 m3/h at 215 Pa	59 db(A)
Maximum	350 m3/h at 240 Pa	61 db(A)

General Specifications	
HE Exchanger Material	Polystyrene
Interior Material	(E)PP / PA / PA
Thermal Yield	95%
Mass	39 kg

3.3   Dimension sketch

702
354
348
264
ø160
ø151
CABLE
ø180
845
761
851
CONDENSATION DRAIN
RIGHT-HAND VERSION
172
172
CONDENSATION DRAIN
LEFT-HAND VERSION
625

572
35
214
161
801
269
CONDENSATION DRAIN ø32 (OUTSIDE)

3.4 Fitting 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 roof vents should be made airtight and damp-proof. The outside air supply duct and the air exhaust duct between the roof/wall passage and the ComfoAir must be rendered damp proof. This prevents the formation of condensation on the outside of the ducts.
- 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.
- 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.
- 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.
- The cable used to connect the CC Ease panel or the CC Luxe panel must have the following specifications:
  - Cable type: shielded twisted pair 4x0.34mm2.
  - Cable lengtth: 10 m maximum.
- We recommend fitting both the intake and the exhaust connections of the ComfoAir with silencers located directly against the unit. For further information, please contact Zehnder.

⚠ *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 350 Luxe;
  Check the identification plate to ensure that it is the required type.
- 4 x 45° connection bends;
- Mounting bracket;
- Manual.

The ComfoAir is supplied in the following types:

Type
ComfoAir 350 L Luxe
ComfoAir 350 R Luxe
ComfoAir 350 L Luxe PH
ComfoAir 350 R Luxe PH

Meaning of the suffixes:

- L   = Left.
- R   = Right.
- PH   = Pre-heater.
- Luxe = Refers to the luxury version with the connector PCB.
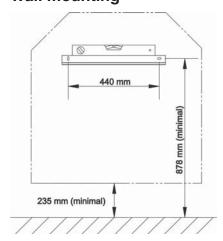
CC Ease panel or CC Luxe panel (optional) can be ordered separately.

3.6 Wall mounting

Mount the ComfoAir against a wall with a minimum mass of 200 kg/m².
For other types of wall, we recommend using the Zehnder mounting frame on the floor (available as an optional extra). This reduces contact noise as much as possible.

- **Fasten** the mounting bracket (included) to the wall. Make sure it is level.
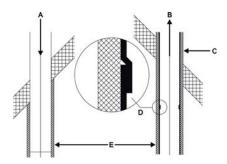
- **Mount** the condensation drain (not supplied) under the ComfoAir. The stated dimension of 235 mm is an indication only, and is dependent on the type of condensation drain selected.
- **Make sure** to leave a minimum space of 1 metre in front of the ComfoAir in view of the necessary maintenance work.

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.*
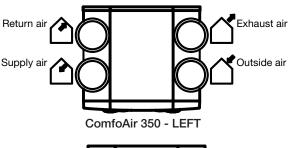
3.6.1 Connection of the air ducts

Install a silencer straight directly onto the supply and return connections. For relevant advice, please contact Zehnder.
Subsequently, the air ducts to be connected, with a minimum ø of 150 mm, must be installed with as little air resistance as possible and must be free from air leakage.
- **Do not** use flexible ducting and leave room for mounting silencers.
- **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.
- **Install** the air exhaust duct so it drains in the direction of the ComfoAir.
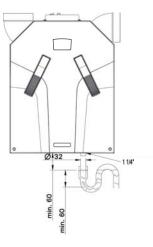
ComfoAir 350 - LEFT

ComfoAir 350 - RIGHT
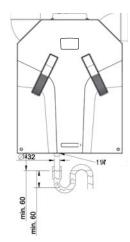
3.6.2 Connection of the condensation drain

ComfoAir 350 - LEFT

ComfoAir 350 - 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 condensation water created in the heat exchanger is fed to a PVC condensation drain.

The connection for the condensation drain has an external diameter of 32 mm. It is located underneath the ComfoAir.
- **Connect** the condensation drain, via a pipe or hose, to the water seal of the domestic wastewater system.
- **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 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.*
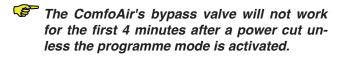
3.7 Commissioning the ComfoAir

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 CC Ease panel

Accessing the P menus
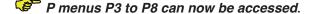
1 **Press** " 🗓 " and " + " simultaneously.
2 **Wait** until the "P menu" appears on the display.

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

3 **Press** and hold " + " and " − " for 2 seconds, simultaneously.
4 **Wait** until "P menu" P3 appears on the display.

☞ *P menus P3 to P8 can now be accessed.*

5 **Select** the desired P menu, e.g. " 5 ", using " + " or " ▽ ".
6 **Press** " ⊘ " to confirm the P menu.

7 **Select** the desired P sub-menu, e.g. " 51 ", using " + " or " ▽ ".
8 **Press** " ⊘ " to confirm the P sub-menu.

Entering settings in P menus

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

9 **Select** a value for the parameter using " + " or " ▽ ".
10 **Press** " ⊘ " to confirm.
11 **Repeat** steps 5 to 10 to set multiple parameters in succession.
    Or
    Press " 🗓 " to return to the P menu.

Returning to the main menu

12 **Press** " 🗓 " twice.

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
P40	Current value of T_{AH} (= AFTERHEATER TEMPERATURE)	-	-	Current ºC
P41	Comfort temperature	12 ºC	28 ºC	20 ºC
P44	n/a	-	-	Current 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
P49	Current value T_{GE} (= outside air temperature for the geothermal heat exchanger)	-	-	Current ºC

3

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 frost-free 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 frost-free 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.			
P53	n/a	0 (= No)	1 (= Yes)	0
	Note: Always keep this setting on Default.			
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'.			
P55	Confirming the presence of a after-heater. • 0; Afterheater not fitted • 1; Afterheater fitted • 2; Afterheater is fitted and is regulated by a PWM signal.	0 (= No)	2 (= PWM)	0
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

	Additional programme values		
Submenu	Description	Minimum	Maximum	Default
P59	Confirming the presence of an en-thalpy 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 pro-gramme will not be activated and malfunction alerts EA1 & EA2 will never occur.			

Menu P6 → *Setting additional programmes*

	Additional programme values		
Submenu	Description	Minimum	Maximum	Default
P60	Confirming the presence of a geothermal heat exchanger. • 0; Geothermal heat exchanger not fitted • 1; Geothermal heat exchanger fit-ted • 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 prop-erly.			
P61	Setting the percentage by which the supply fan must increase its speed when the valve of the geothermal heat exchanger is opened.	0%	99%	0%
P62	Tge (Tgeothermal heat exchanger), low	0 °C	15 °C	7 °C
P63	Tge (Tgeothermal heat exchanger), high	10 °C	25 °C	23 °C
P64	Tah (Tafterheater), desired	5 °C	40 °C	18 °C

Menu P7 → *Reading malfunctions (and system information)*

	(Malfunction) information values		
Submenu	Description	Minimum	Maximum	Default
P70	Current software version.	Version number of the software (without "v")		
P71	Most recent malfunction.	Code in accordance with alarm and malfunc-tion alert		
P72	Malfunction before the most recent one	Code in accordance with alarm and malfunc-tion alert		
P73	Malfunction before the most recent two	Code in accordance with alarm and malfunc-tion alert		
P74	Resetting a malfunction in the Com-foAir	0	1	0

Submenu	Description	(Malfunction) information values		
		Minimum	Maximum	Default
P75	General reset. • **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 and P6 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 cleaned or replaced before the dirty filter alert appears.			
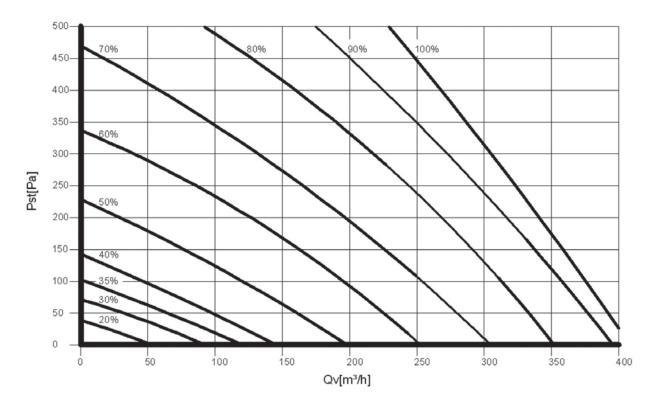
Menu P8 → Analogue controls

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	-
820	Analogue input 2 0= not fitted 1 = fitted	0	1	0
821	0= controlling 1 = programming (analogue input 2)	0	1	0
822	set point analogue input 2 (programming)	0	100	50
823	min. setting analogue input 2	0	99	0
824	max. setting analogue input 2	0	100	100
825	0=positive analogue input 2 1=negative setting analogue input 2	0	1	0
826	read-out analogue input 2	0	100	-
830	Analogue input 3 0= not fitted 1 = fitted	0	1	0
831	0= controlling 1 = programming (analogue input 3)	0	1	0

Series No.	Description	(Malfunction) information values		
		Minimum	Maximum	Default
832	set point analogue input 3 (programming)	0	100	50
833	min. setting analogue input 3	0	99	0
834	max. setting analogue input 3	0	100	100
835	0=positive analogue input 3 1=negative setting analogue input 3	0	1	0
836	read-out analogue input 3	0	100	-
840	Analogue input 4 0= not fitted 1 = fitted	0	1	0
841	0= controlling 1 = programming (analogue input 4)	0	1	0
842	set point analogue input 4 (programming)	0	100	50
843	min. setting analogue input 4	0	99	0
844	max. setting analogue input 4	0	100	100
845	0=positive analogue input 4 1=negative setting analogue input 4	0	1	0
846	read-out analogue input 4	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):

- **Set** the ComfoAir in programming mode.
  CC Ease: Press <u>simultaneously</u> for 3 seconds on " 🌀 " and " 🕐 " untill "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.*

- **Close** all windows and outside doors.
- **Close** all inside doors.
- **Check** the presence of structural overflow pro

- **Check** whether both fans function in the three speed settings.

- **Switch** the ComfoAir to high speed.
- **Install** all valves and set the valves according to the settings.

- **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.*

- **In the event** that the currently set air volumes still deviate too much:
  – **Adjust** the valves.
- **Check** the entire installation again, after all valves have been set.
- **Switch** the ComfoAir (back) to ventilation position 2.

3.9 Maintenance by the installer

As a fitter of the ComfoAir, you must carry out the following maintenance:
- Inspecting the heat exchanger and fans;
- Cleaning the filter (if Pre-heater is fitted).

A concise explanation of these maintenance activities is given in the paragraphs below.
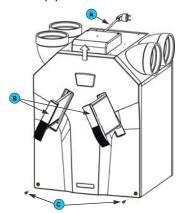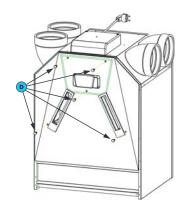
⚠ *Failure to carry out (periodic) maintenance on the ComfoAir ultimately compromises the performance of the ventilation system.*
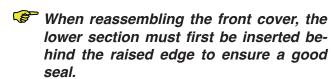
3.9.1 Inspecting the heat exchanger and fans

The fans and the heat exchanger must be inspected once every 4 years.

- **Disconnect** the power from the ComfoAir..
- **Remove** the filters (B) from the ComfoAir.
- **Release** the front panel by unscrewing the screws (C).
- **Slide** the front panel upwards and **remove** the front panel from the ComfoAir.
- **Release** the cover panel by unscrewing the screws (D).

☞ *When reassembling the front cover, the lower section must first be inserted behind the raised edge to ensure a good seal.*
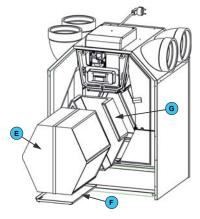
ComfoAir – Left-hand version
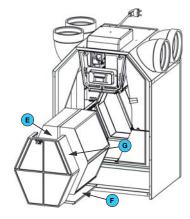
- **Pull** the strap (E) to remove the heat exchanger and the leakage tray (F).
- **Remove** the bypass duct (G) in the **left-hand** version of the ComfoAir.

ComfoAir – Right-hand version

- **Remove** the bypass duct (G) in the **right-hand** version of the ComfoAir.
- **Pull** the strap (E) to remove the heat exchanger and the leakage tray (F).

Left-hand

Right-hand

- **Remove** the heat exchanger from the leakage tray (F).

☞ *The heat exchanger may contain some residual water!*
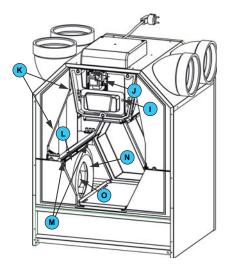
- **Clean** the heat exchanger, if so required.
  – **Submerge** the heat exchanger in hot water (max. 40 °C). Do this a couple of times.
  – **Rinse** the heat exchanger with clean hot tap water (max. 40 °C).
  – **Clasp** the heat exchanger between both hands (on the coloured side surfaces) and shake the water from the heat exchanger.

⚠ *Do not use aggressive cleaning agents or solvents.*

Do not re-install the heat exchanger yet. The fans also need to be inspected. The steps below explain how to remove, inspect and (if required) clean the fans (after cleaning the heat exchanger) :

- **Remove** the small plastic panel (I) in front of the PCB panel by unscrewing the two screws.
- **Release** the connectors (J) and the earth wire on the PCB panel and fully remove the cables including the two grommets (K).
- **Remove** the entire scroll casing (L) by pressing the click fasteners (M).
- **Remove** the inflow nozzle (N) by pressing the click fasteners surrounding the scroll casing.
- **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.*

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

⚠ *Install the leakage tray (F) correctly underneath the heat exchanger. The openings in the leakage tray must be on the side of the condensation drain.*

☞ *Check the condensation drain once every two years.*

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

3.9.2 Cleaning the filter if a Pre-heater is fitted

The filter of the Pre-heater, if fitted, must be cleaned once every 4 years:

- **Disconnect** the power from the ComfoAir.
- **Remove** the filters (B) from the ComfoAir.
- **Release** the front panel by unscrewing the screws (C).
- **Slide** the front panel upwards and **remove** it from the ComfoAir.
- **Release** the cover panel by unscrewing the screws (D).
- **Remove** the small plastic panel (I) in front of the PCB panel by unscrewing the two screws.
- **Release** the connectors (J) and the earth wire on the PCB panel and fully **remove** the cables including the two grommets (K).
- **Remove** the cable (P) from the PCB panel.
- **Remove** the base (Q) of the Pre-heater.
  – The base is fitted in the electronic carriage with four snap connections. Two snap connections are located at the front (visible) and two at the back (not visible).
- **Clean** the filter with a brush.
- **Remove** any deposit using a damp cloth.
- **Install** all parts in reverse order.
- **Carry out** the self-test in accordance with menu P76.

⚠ *Install the leakage tray (F) correctly underneath the heat exchanger. The openings in the leakage tray must be on the side of the condensation drain.*

⚠ *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.
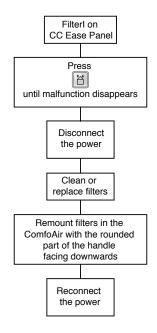
Code	Description
A0	NTC sensor Tge is defective. (= geothermal heat exchanger temperature)
A1	NTC sensor T1 is defective. (= outside air temperature)
A2	NTC sensor T2 is defective. (= supply air temperature)
A3	NTC sensor T3 is defective. (=return air temperature)
A4	NTC sensor T4 is defective. (= exhaust 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
A10	n/a
A11	NTC sensor Tah is defective. (= afterheater temperature)
E1	Exhaust fan not rotating.
E2	Supply fan not rotating.
E4	Heat recovery mode has been switched off by external contact
EA1	Enthalpy sensor measures excessive RH values.
EA2	No communication with the enthalpy sensor.
‚Fil' ‚tEr'	Internal filter is dirty
FilterI	Internal filter is dirty
FilterE	External filter is dirty
NC	No communication with the ComfoAir
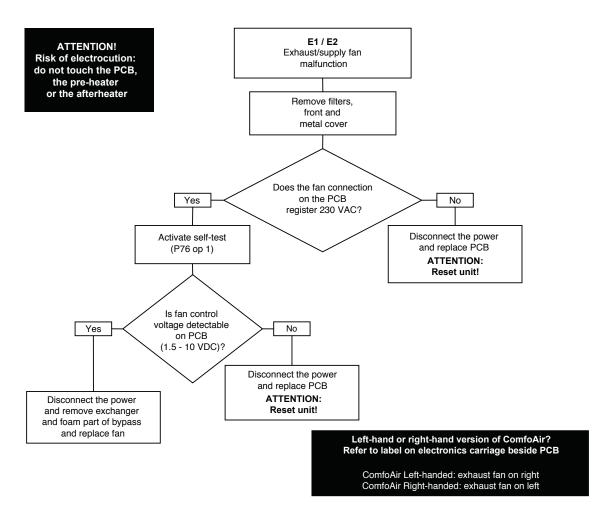
⚠ *Prevent water from entering the electrical connections.*

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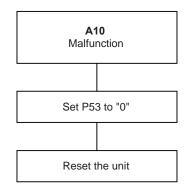
Below are a number of trouble-shooting tips for the malfunction alerts described previously which can appear on the digital operating device in the event of a malfunction.

```
┌─────────────────┐
│   Filterl on    │
│  CC Ease Panel  │
└─────────────────┘
         │
┌─────────────────┐
│      Press      │
│       [⌁]       │
│ until malfunction│
│   disappears    │
└─────────────────┘
         │
┌─────────────────┐
│   Disconnect    │
│   the power     │
└─────────────────┘
         │
┌─────────────────┐
│    Clean or     │
│ replace filters │
└─────────────────┘
         │
┌──────────────────────┐
│ Remount filters in the│
│ ComfoAir with the rounded│
│   part of the handle  │
│   facing downwards    │
└──────────────────────┘
         │
┌─────────────────┐
│   Reconnect     │
│   the power     │
└─────────────────┘
```

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

```
┌─────────────────────┐
│      E1 / E2        │
│  Exhaust/supply fan │
│    malfunction      │
└─────────────────────┘
           │
┌─────────────────────┐
│   Remove filters,   │
│     front and       │
│    metal cover      │
└─────────────────────┘
           │
      ◇─────────────◇
     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 remove exchanger  │
│ and foam part of bypass│
│   and replace fan     │
└──────────────────────┘
```

```
┌──────────────────────┐
│ Disconnect the power  │
│   and replace PCB     │
│     ATTENTION:        │
│     Reset unit!       │
└──────────────────────┘
```

Left-hand or right-hand version of ComfoAir?
Refer to label on electronics carriage beside PCB

ComfoAir Left-handed: exhaust fan on right
ComfoAir Right-handed: exhaust fan on left

ATTENTION!

Risk of electrocution: do not touch the PCB, the pre-heater or the afterheater

A10
Malfunction

Set P53 to "0"

Reset the unit

ATTENTION!

Risk of electrocution: do not touch the PCB, the pre-heater or the afterheater

E4
ComfoAir switched off by auxiliary equipment

Cause depends on what equipment is interfaced with the ComfoAir: check the relevant device

---

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

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

Disconnect the power

Remove filters, front and metal cover

Remove the malfunctioning sensor's connector from the PCB

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

Resistance okay?

Yes → Replace PCB **ATTENTION: Reset unit!**

No → Replace temperature sensor

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

3

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

A0 / A11
Malfunction of
Temperature sensor
T_{ge} / T_{AH}

Check resistance
of temperature sensor:
Refer to table

Resistance
okay?

Yes

No

Disconnect the power
and replace PCB
ATTENTION:
Reset unit!

Disconnect the power
and replace
temperature sensor

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

A5 / A6
Malfunction of
bypass / pre-heater motor

Remove filters,
front and
metal cover

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,
the pre-heater
or the afterheater

A7
Malfunction
Pre-heater does not heat (sufficiently)

Disconnect the power

Remove filters,
front and metal cover

Unplug Pre-heater from the PCB

Is resistance of
Pre-heater
plug > 300 ohms?

Yes

No

Remove exchanger
(incl. foam part of bypass
in a ComfoAir Right)
and Pre-heater

Is resistance
of T1 okay?

Yes

Replace PCB

No

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,
the pre-heater
or the afterheater

A8
Malfunction
Pre-heater becomes too hot

Remove filters,
front and metal cover

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.

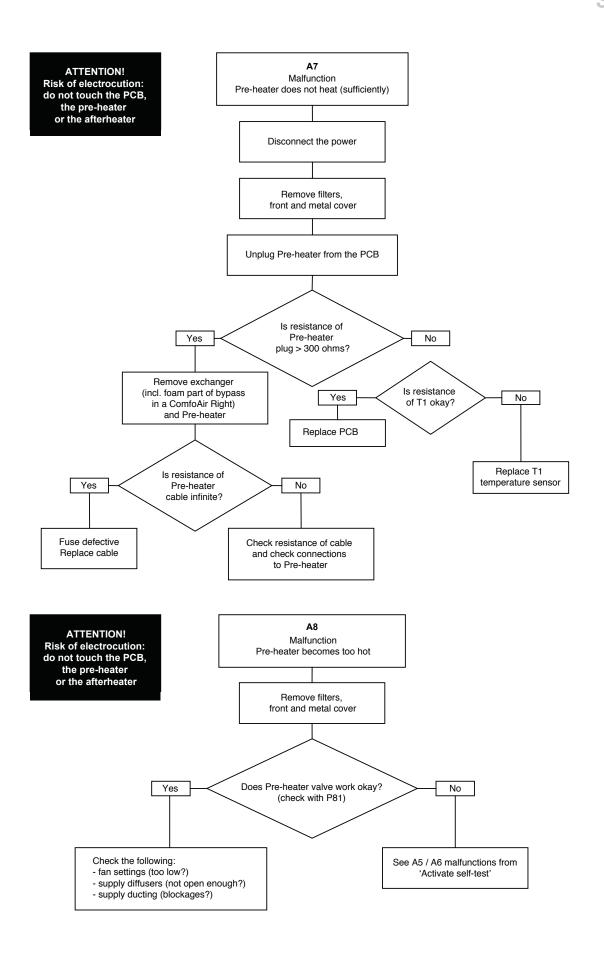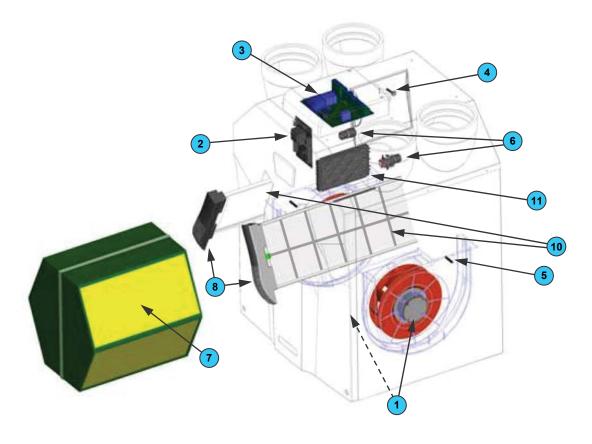| Problem/Malfunction	Indication	Check / action
System switched off	Power supply on	**Check** the fuse on the PCB panel. • If the fuse is OK, the control PCB is defective.
	No power supply	**Mains power** is off.
High intake temperature in summer	Bypass remains closed	**Reduce** the comfort temperature.
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	
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:SFlb[Fans rotate in position 1]. • Voltage only on N & L3 & L2:SFlb[Fans rotate in position 2]. • Voltage only on N & L3 & L1 or N & L3 & L2 & L1:SFlb[Fans rotate in position 3].
	Switch is defective	
Wireless 3-position switch not working	Battery is discharged	**Check** the battery. • **Replace** the battery (if necessary).
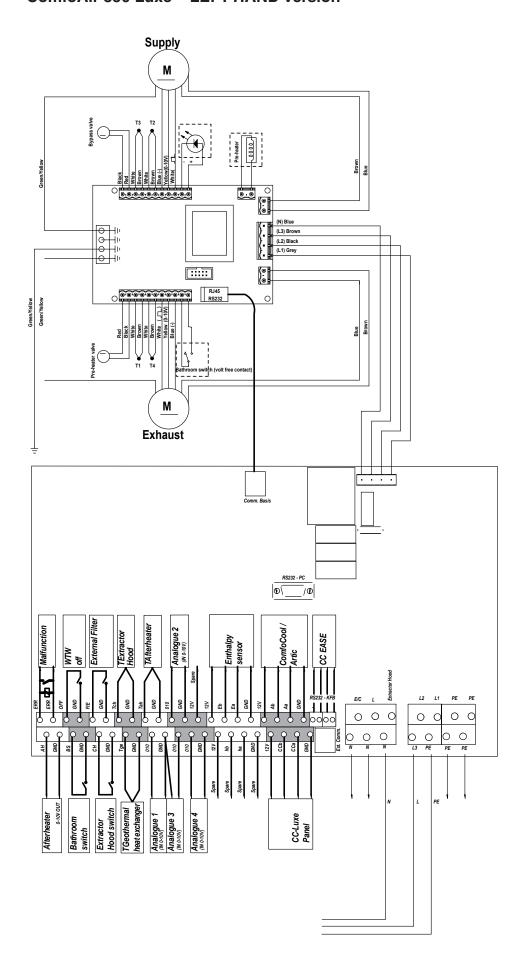
3.11 Service parts
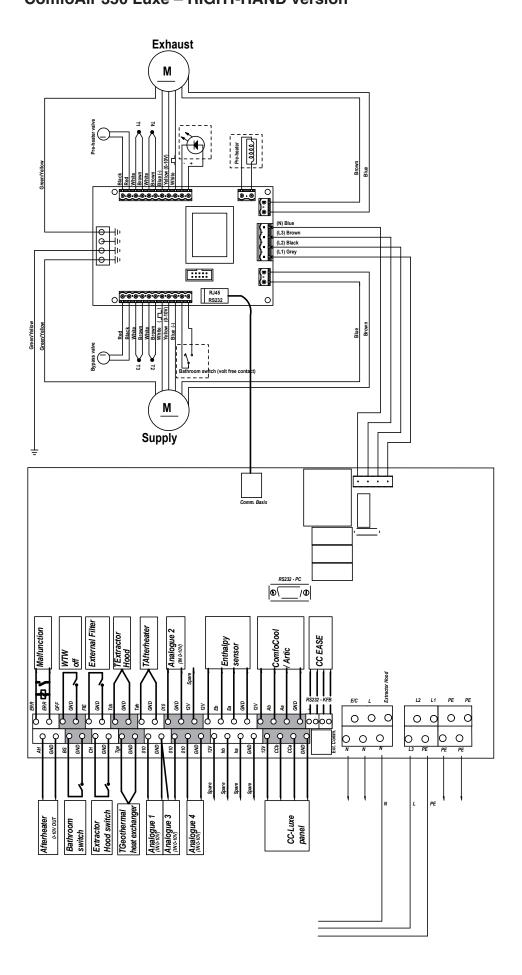
The following table contains an overview of the spare parts available for the ComfoAir.

Number	Part	Article number
1	Fans (left and right)	400200010
2	ComfoAir PCB; basic or luxury version	400300010/53
3	Connector panel in (top-mounted) casing; basic or luxury version	400300011/53
4	Temperature sensor T1 / T3 (in top of unit; near the electronic carriage)	400300030
5	Temperature sensor T2 / T4 (in scroll casing of both fans)	400300022
6	Servo motor & cable (for the bypass and the Pre-heater)	400300050
7	Heat exchanger	400400010
8	Filter handle	400100020
10	Filter	400100030
11	Pre-heater (also available as an optional kit for subsequent installation)	400300060

3.12 Wiring diagram: ComfoAir 350 Luxe – LEFT-HAND version

3.13 Wiring diagram:
ComfoAir 350 Luxe – RIGHT-HAND version

Exhaust

M

Pre-heater valve

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

Pre-heater

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

Green/Yellow

Brown

Blue

RJ45
RS232

Green/Yellow

Green/Yellow

Bypass valve

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

Bathroom switch (volt free contact)

Blue

Brown

M

Supply

Comm. Basis

RS232 - PC

Malfunction	WTW off	External Filter	TExtractor Hood	TAfterheater	Analogue 2 (IN 0-10V)	Enthalpy sensor	ComfoCool /Artic	CC EASE

ERR
ERR
OFF
GND
FIE
GND
Tch
GND
Tah
GND
010
GND
12V
Spare
12V
Eb
Ea
GND
12V
Ab
Aa
GND

RS232 - KFB

Ext. Comm.

AH
GND
BS
GND
CH
GND
Tge
GND
010
GND
010
010
GND
12V
Ib
Ia
GND
12V
CCb
CCa
GND

Spare
Spare
Spare
Spare

E/C   L   Extractor Hood

L2   L1   PE   PE

N   N   N

L3   PE   PE   PE

Afterheater (0-10V OUT)

Bathroom switch

Extractor Hood switch

TGeothermal heat exchanger

Analogue 1 (IN 0-10V)

Analogue 3 (IN 0-10V)

Analogue 4 (IN 0-10V)

CC-Luxe panel

N   L   PE

3.14 ComfoAir 350 Luxe 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

3.1 Commissioning Equipment		
Schedule of air flow measurement equipment used, (model and serial)		Date of last UKAS calibration
1.		
2.		
3.		

3.2 Air Flow Measurements – System 1 Only		
Fan reference (as 1.2)	Measured Extract Rate (l/s)	Design Extract Rate (l/s) Refer to Table 5.1a in ADF
Extract Fan 1.		
Extract Fan 2.		
Extract Fan 3.		
Extract Fan 4.		
Extract Fan 5.		

For kitchen extract canopies, only the highest setting needs to be recorded.

3.3 Air Flow Measurements (Extract) – 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 5.1a ADF	Measured Air Flow Low Rate (l/s)	Design Air Flow Low Rate (l/s) Refer to Table 5.1a in ADF
Kitchen				
Bathroom				
En Suite				
Utility				
Other…				
Other…				
Other…				

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				

EC declaration of conformity

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Lingenstraat 2
8028 PM Zwolle-NL
Tel.: +31 (0)38-4296911
Fax: +31 (0)38-4225694
Company register Zwolle 05022293

EG declaration of conformity

Machine description   : **Heat recovery units: ComfoAir 350 series**

Complies with the following directives : Machinery Directive   (98/37/EG)
Low Voltage Directive   (93/68/EEG)
EMC Directive   (89/336/EEG)

Zwolle, 5 February 2008
J.E. Stork Ventilatoren B.V.

E. v. Heuveln,
Managing Director

comfosystems   **zehnder**