
ComfoAir 550



Manual

All rights reserved.

This manual has been compiled with the utmost care. The publisher cannot be held liable for any damage caused as a result of missing or incorrect information in this manual.

Table of Contents

1	INTRODUCTION	1
1.1	Preface	1
1.2	CE marking	1
1.3	Guarantee and liability	1
1.3.1	Guarantee conditions	1
1.3.2	Liability	1
1.4	Safety	2
1.4.1	Safety regulations	2
1.4.2	Safety provisions and measures	2
1.4.3	Pictograms used	2
2	FOR THE USER	3
2.1	Glossary	3
2.1.1	Balanced ventilation	3
2.1.2	Heat recovery	3
2.1.3	Bypass for free cooling	3
2.1.4	Frost protection	3
2.1.5	Chimney sweep programme	3
2.2	Available operating devices	4
2.2.1	Display on the unit	4
2.2.2	3-position switch	4
2.2.3	Bathroom switch	5
2.3	Maintenance by the user	7
2.3.1	Cleaning or replacing the filters	7
2.3.2	Cleaning the valves (in your dwelling)	7
2.4	Malfunctions	8
2.4.1	Malfunction alerts on digital operating devices	8
2.4.2	3-position switch with malfunction indicator	8
2.4.3	What to do in the event of a malfunction	8
2.5	End of useful life	8

3. FOR THE INSTALLER	9
3.1 ComfoAir	9
3.2 Technical specifications	10
3.3 Dimension sketch	11
3.4 Installation conditions	12
3.5 Installation of the ComfoAir	12
3.5.1 Transport and unpacking.....	12
3.5.2 Checking the delivery.....	12
3.6 Wall mounting	12
3.6.1 Connection of the air ducts.....	13
3.6.2 Connection of the condensation drain.....	13
3.7 Commissioning the ComfoAir	14
3.7.1 Display on the unit.....	14
3.8 Programming air specifications	18
3.9 Maintenance by the installer	19
3.9.1 Inspecting the heat exchanger and fans.....	19
3.10 Malfunctions	20
3.10.1 Malfunction alerts on the digital operating device.....	20
3.10.2 Trouble shooting.....	21
3.10.3 Malfunctions (or problems) without alarms.....	23
3.11 Service parts	24
3.12 Wiring diagram: ComfoAir basic – LEFT-HAND version	25
3.14 Wiring diagram: ComfoAir basic – RIGHT-HAND version	26
3.14 ComfoAir 550 installation measuring report	26

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,
- Fitter → 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. There is therefore a possibility that the ComfoAir differs slightly from the descriptions given.

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 550. In the following it will be referred to as ComfoAir.

The ComfoAir is a balanced ventilation system with heat recovery for healthy, balanced and energy-efficient ventilation in your dwelling. The ComfoAir identification plate is shown below.

Type			Voltage	Hertz	Phase
Articlecode			Current		
			Power		
	Capacitor	Protection class	Insulation class	Serial number	

1.3 Guarantee 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-authorized changes or modifications have been made to the unit.

1.3.2 Liability

The ComfoAir has been designed and produced for application in balanced ventilation systems. Any other application is seen as inappropriate use and can result in damage to the ComfoAir or personal injury, for which the manufacturer cannot be held liable.

The manufacturer is not liable for damage caused by:

- 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. If the safety regulations, warnings, comments and instructions are not complied with, this can lead to 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;
- Store this manual in the vicinity of the ComfoAir for its entire working 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;
- Modifications may not be made to the ComfoAir;
- 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;
- Reheater (optional).

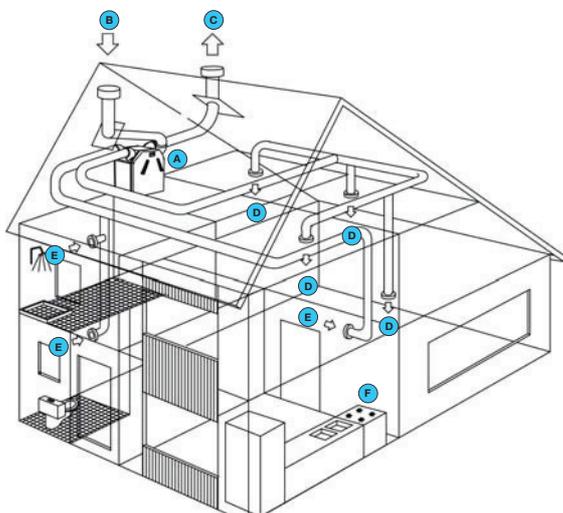
A concise explanation of these concepts/features is given in the paragraphs below.

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.

A balanced ventilation system consists of:

- ComfoAir (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.

2.2 Available operating devices

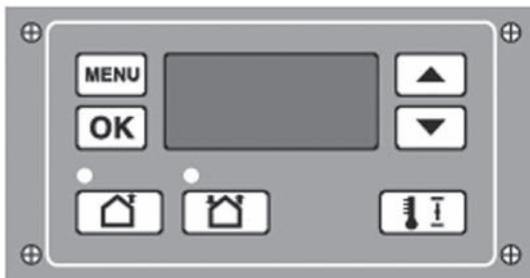
The ComfoAir can be fitted with the following operating elements:

- Display on the unit;
- 3-position switch;
- Wireless 3-position switch;
- 3-position switch with malfunction indicators;
- Bathroom switch to temporarily select the highest ventilation position.

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.



	select menu		up
	OK		down
	supply off (led green)		supply on (led green)
	comfort temperature		

Shown in display

	Ventilation setting absent
	Ventilation setting low
	Ventilation setting medium
	Ventilation setting high
	Menu symbol
	Malfunction code (flashes)
	Bypass

Access to the menus

Se-quence	Press	Display	Description
1	MENU	P2	Time delay
2	▲	P9	Status
3	▲	P1	Status

Example

Setting bathroom switch delay

Se-quence	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

2.2.2 3-position switch

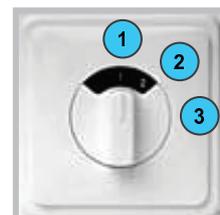
A 3-position switch can be used to set the ventilation positions of the ComfoAir. One or multiple 3-position switches can be fitted in the house (e.g. in the kitchen). The following types of switches can be used:

- Type 1 → Standard 3-position switch;
- Type 2 → 3-position switch with LED for malfunction and filter alerts;
- Type 3 → Wireless 3-position switch with: LED for malfunction and filter indication.

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.



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.

Menu P1 Status of programmes

Sub-menu	Description	Ventilation programmes	
		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 POSITION.	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 to the NORMAL SETTING.	0 Min.	120 Min.	30 Min.

Sub-menu	Description	Time delay values		
		Minimum	Maximum	Default
P23 (Optional) Note: Only applies to systems fitted with a hardwired switch.	Overrun timer for ventilation position 3. <ul style="list-style-type: none"> If ventilation setting 3 (high) is switched on briefly (< 3sec), the ComfoAir remains at ventilation position 3 in accordance with the time set in this menu. <p>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.</p>	0 Min.	120 Min.	0 Min.
P24	Filter warning <ul style="list-style-type: none"> Here the user can indicate when the "FILTER DIRTY" alert must appear. 	10 weeks	26 weeks	16 weeks
P25 Note: Only applies to systems fitted with an RF switch.	Overrun timer for ventilation setting 3 (using "☺"). <ul style="list-style-type: none"> After pressing "☺" BRIEFLY (< 2 sec.), the ComfoAir will switch to the HIGH SETTING and automatically switch back to the set level after 'x' minutes. 	1 Min.	20 Min.	10 Min.
P26 Note: Only applies to systems fitted with an RF switch.	Overrun timer for ventilation setting 3 (using "☺"). <ul style="list-style-type: none"> After pressing AND HOLDING "☺" (> 2 sec.), the ComfoAir will switch to the HIGH SETTING and automatically switch back to the set level after 'x' minutes. 	1 Min.	120 Min.	30 Min.
P27	n/a	0 Min.	120 Min.	30 Min.

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)
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)

2.3 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.

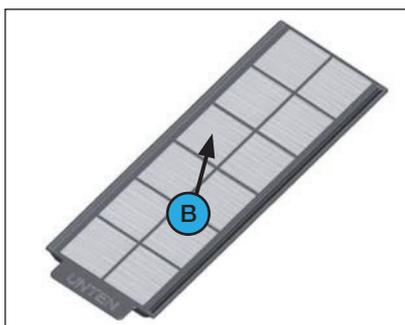


2.3.1 Cleaning or replacing the filters

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

You will see the message "FIL" and "tEr" appearing alternately on the display. If the filters need replacing, follow this procedure:

- Press "OK" (Display) for at least 4 seconds until the filter warning disappears.
- Disconnect the power from the ComfoAir.
- Remove handles (A) from the ComfoAir.
- Remove the old filters (B) from the ComfoAir.
- Insert the new filter in the ComfoAir.
- Remount the handles on the ComfoAir
- Reconnect the power to the ComfoAir.



To clean...

Vacuum the filters (B) with a vacuum cleaner instead of replacing them with new filters.



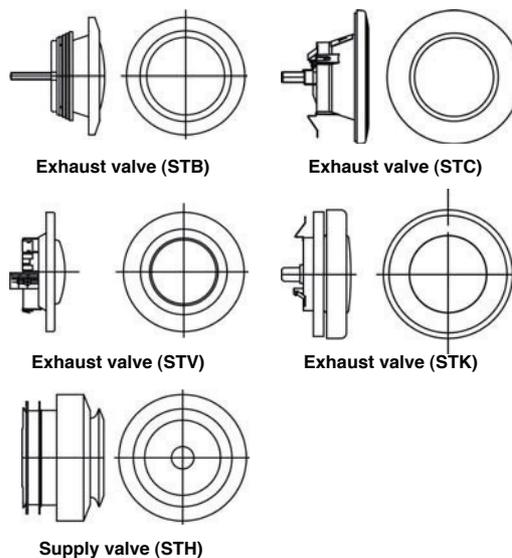
When using the ComfoAir for the first time, it is recommended to clean the filters (and valves) first, as during the construction phase the ventilation system could have become dirty with building dust.



Replace the filters (at least) once a year.

2.3.2 Cleaning the valves (in your dwelling)

The ventilation system may be fitted with the following valves:



You must clean the valves (at least) twice a year:

- Remove the valve from the wall or ceiling;
- Clean the valve in soapy 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 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.

2.4 Malfunctions

Malfunctions in the ComfoAir are reported as follows:

- The malfunction alert appears on the display;
- The malfunction indicator on the 3-position switch lights up.

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

2.4.1 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. 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.

2.4.2 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 indicators.
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, it will also light up in the event of filter cleaning warnings.**

2.4.3 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.

2.5 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.

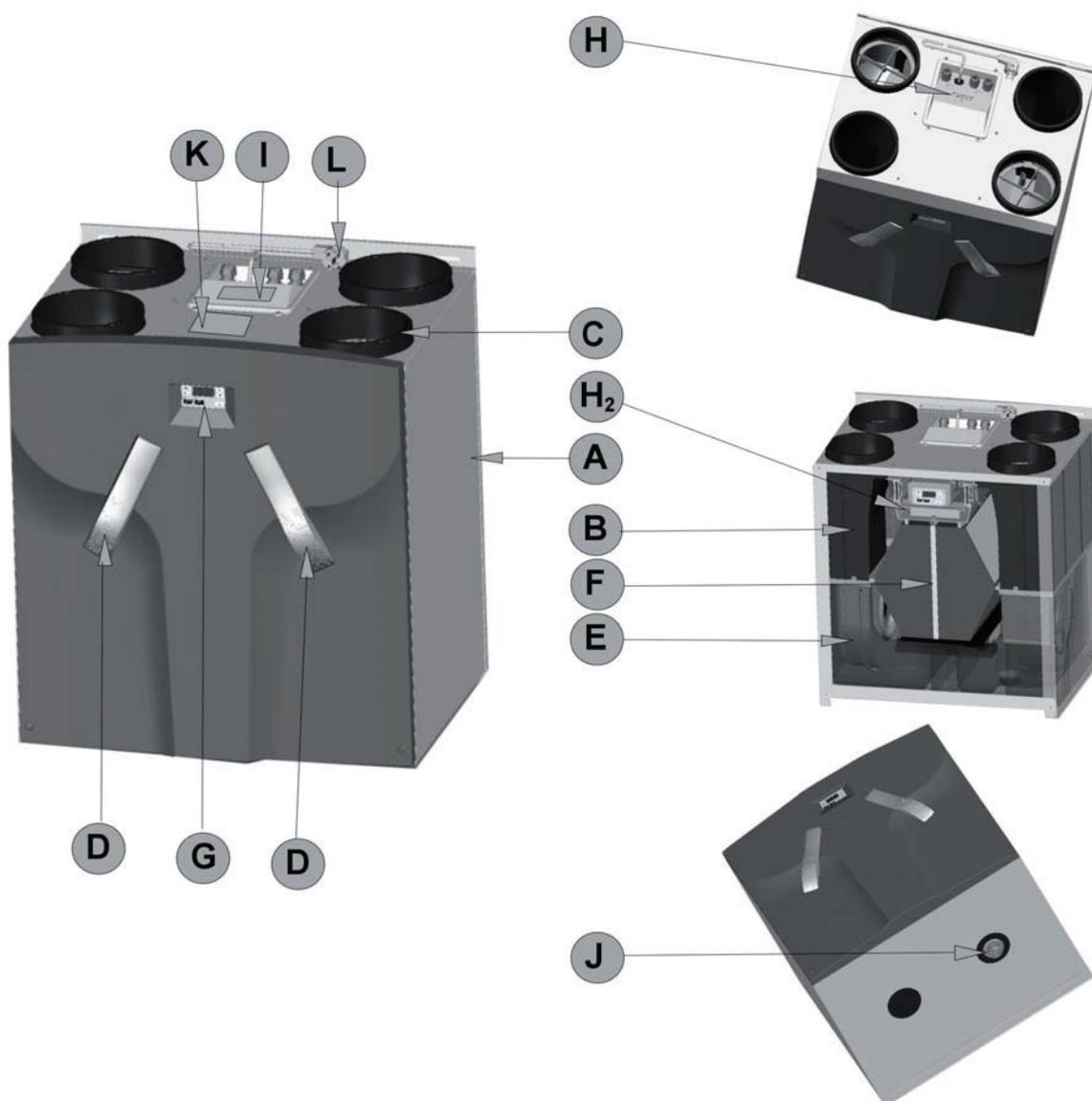
3 For the Installer

This chapter describes how to fit the ComfoAir.

3.1 ComfoAir

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 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);
- Display (G) to read data and for setting procedures;
- Electronics compartment (H) for connecting external switches and controllers;
- Removable PCB unit (H₂);
- Identification plate (I) detailing information on the ComfoAir (not visible);
- Condensation drain connector (J);
- Sticker (K) detailing air connections;
- 3-core or 5-core, 230V connection (L).



3.2 Technical specifications

ComfoAir 550 (nL setting)

Position	Ventilation capacity	Value
LOW SETTING	150 m ³ /h at 23 Pa	27 W
MEDIUM SETTING	250 m ³ /h at 77 Pa	68 W
HIGH SETTING	450 m ³ /h at 323 Pa	313 W
MAXIMUM	550 m ³ /h at 240 Pa	365 W
Position	Ventilation capacity	Value
LOW SETTING	150 m ³ /h at 23 Pa	0.23 A
MEDIUM SETTING	250 m ³ /h at 77 Pa	0.55 A
HIGH SETTING	450 m ³ /h at 323 Pa	2.21 A
MAXIMUM	550 m ³ /h at 240 Pa	2.56 A

Electricity	
Power supply	230/50 V/Hz
Cos.phi	0,48 - 0,62

Supply fan noise level (at 0 m)

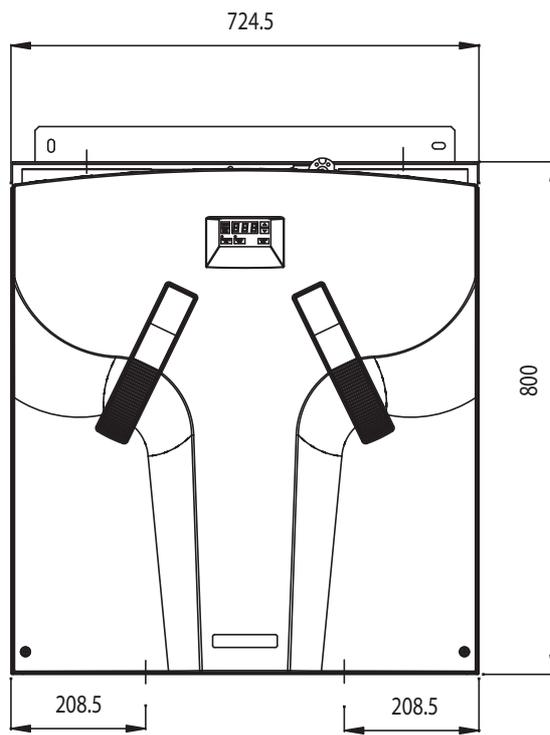
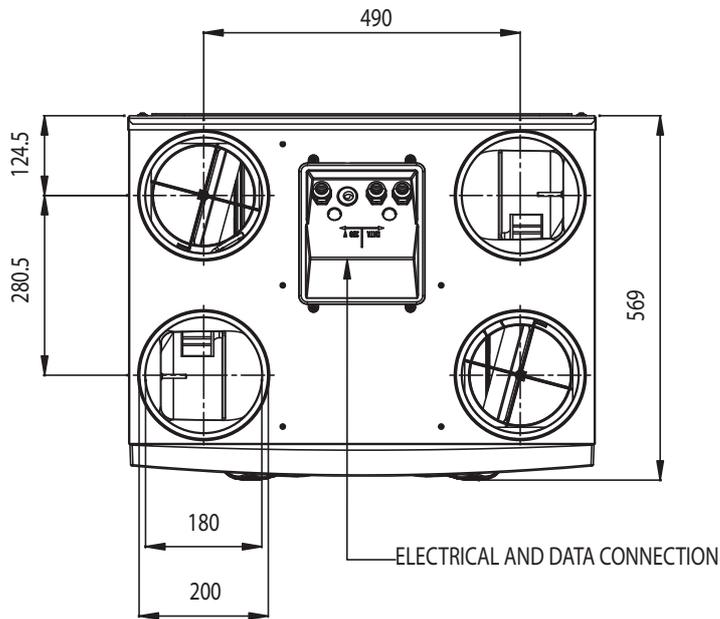
Position	Ventilation capacity	Value
LOW SETTING	150 m ³ /h at 23 Pa	50 dB(A)
MEDIUM SETTING	250 m ³ /h at 77 Pa	63 dB(A)
HIGH SETTING	450 m ³ /h at 323 Pa	78 dB(A)
MAXIMUM	550 m ³ /h at 240 Pa	79 dB(A)

Exhaust fan noise level (at 0 m)

Position	Ventilation capacity	Value
LOW SETTING	150 m ³ /h at 23 Pa	39 dB(A)
MEDIUM SETTING	250 m ³ /h at 77 Pa	49 dB(A)
HIGH SETTING	450 m ³ /h at 323 Pa	63 dB(A)
MAXIMUM	550 m ³ /h at 240 Pa	64 dB(A)

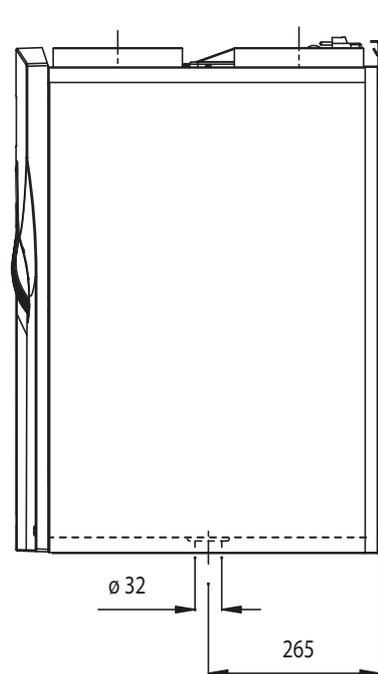
General Specifications	
HE Exchanger Material	Polystyrene
Interior Material	(E)PP / PA / PA
Thermal Yield	95%
Mass	47 kg

3.3 Dimension sketch



CONDENSATION DRAIN
RIGHT-HAND VERSION

CONDENSATION DRAIN
LEFT-HAND VERSION



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 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.
- We advise fitting both the intake and the exhaust connections of the ComfoAir with silencers located directly against the unit. For more 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 care 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.
- Mounting bracket;
- Manual.

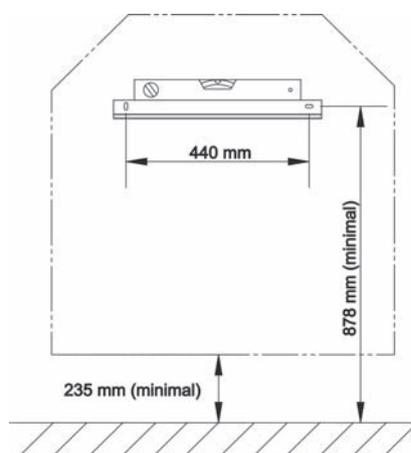
The ComfoAir is supplied in the following types:

Type	
ComfoAir L	ComfoAir L RF
ComfoAir R	ComfoAir R RF

Meaning of the suffixes:

- L = Left.
- R = Right.
- RF = Wireless 3-position switch.

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.

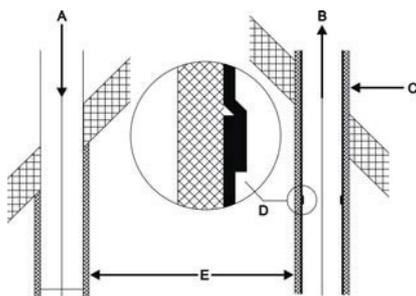
- Using a spirit level, fix the mounting bracket horizontally to the wall. Use M8 anchor bolts. Make sure there is enough space under the ComfoAir to mount the siphon.
- Mount the condensation drain (not supplied) under the ComfoAir. The stated dimension of 235 mm is an indication only, and is dependent 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.

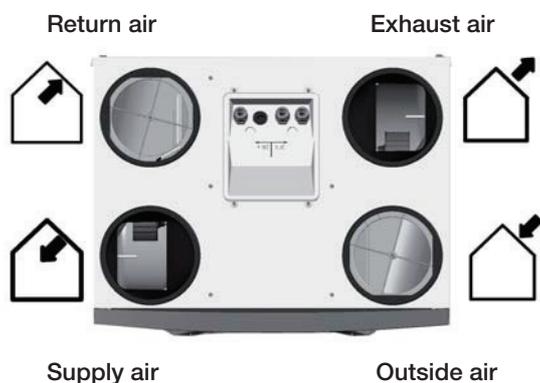
3.6.1 Connection of the air ducts



Install a straight silencer directly onto the supply and return connections. For more advice, please contact Zehnder.

Subsequently, the air ducts to be connected, with a minimum \varnothing of 180 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.



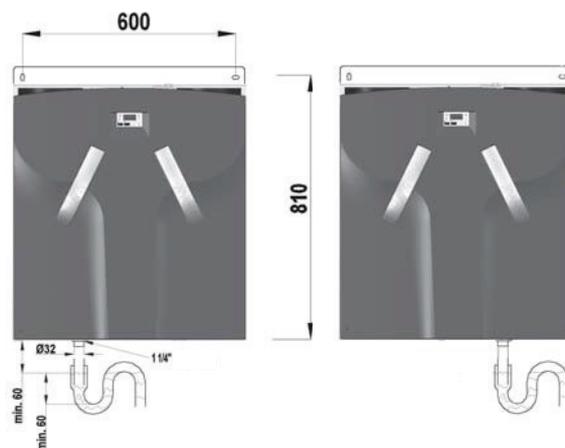
ComfoAir - Left



ComfoAir - Right

3.6.2 Connection of the condensation drain

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.



ComfoAir - Right

ComfoAir - Left

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:

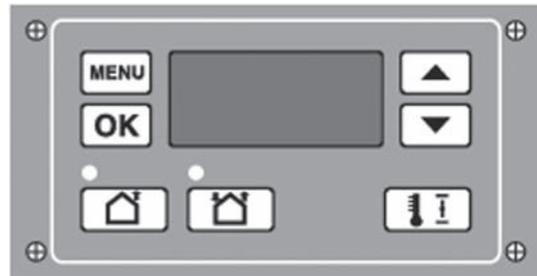
Menu	Options
P1	Reading statuses (from menu P2)
P2	Setting time delays
P3	Setting the ventilation levels
P4	Reading the temperatures
P5	Setting additional programmes
P6	Setting additional programmes
P7	Reading and resetting malfunctions (and system information)
P8	Setting 0-10V inputs
P9	Reading statuses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



	select menu		up
	OK		down
	supply off (led green)		supply on (led green)
	comfort temperature		

Shown in display

	Ventilation setting absent
	Ventilation setting low
	Ventilation setting medium
	Ventilation setting high
	Menu symbol
	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 continuously)	40	Select 40
7	OK	P35	Value is 40
8	MENU	P3	
9	MENU	1	Fan setting

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 °C	28 °C	20 °C
P45	Current value of T1 (= outside air temperature)	-	-	Current °C
P46	Current value of T2 (= supply air temperature)	-	-	Current °C
P47	Current value of T3 (= return air temperature)	-	-	Current °C
P48	Current value of T4 (= exhaust air temperature)	-	-	Current °C

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	n/a	0 (= No)	1 (= Yes)	0
	Note: Always keep this setting on Default			
P52	n/a	0	3	2
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 for High setting INCLUDING analogue input. • 1; Preference to for High 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	n/a	0 (= No)	3 (= Yes)	0
	Note: Always keep this setting on Default			

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	<p>General reset.</p> <ul style="list-style-type: none"> Press "OK" on the display for 5 seconds to carry out a general reset. <p>All original factory settings are restored following a general reset.</p> <p>Note:</p> <p> After a general reset, the ComfoAir will ask you to reset the "nL / HL" (see P56) and "Li / Re" (see P57) settings.</p> <p> Following a general reset, all settings in menus P2 and P3 and the programmes in P5 and P6 will need to be reset.</p>	0	1	0
P76	<p>Self-test of the ComfoAir.</p> <p>Note:</p> <p>Directly after activation of the self-test, the ComfoAir switches to its highest speed. Immediately after activating the self-test, the bypass valve opens and closes.</p>	0	1	0
P77	<p>Resetting filter dirty counter.</p> <p>Note:</p> <p>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.</p>	0	1	0

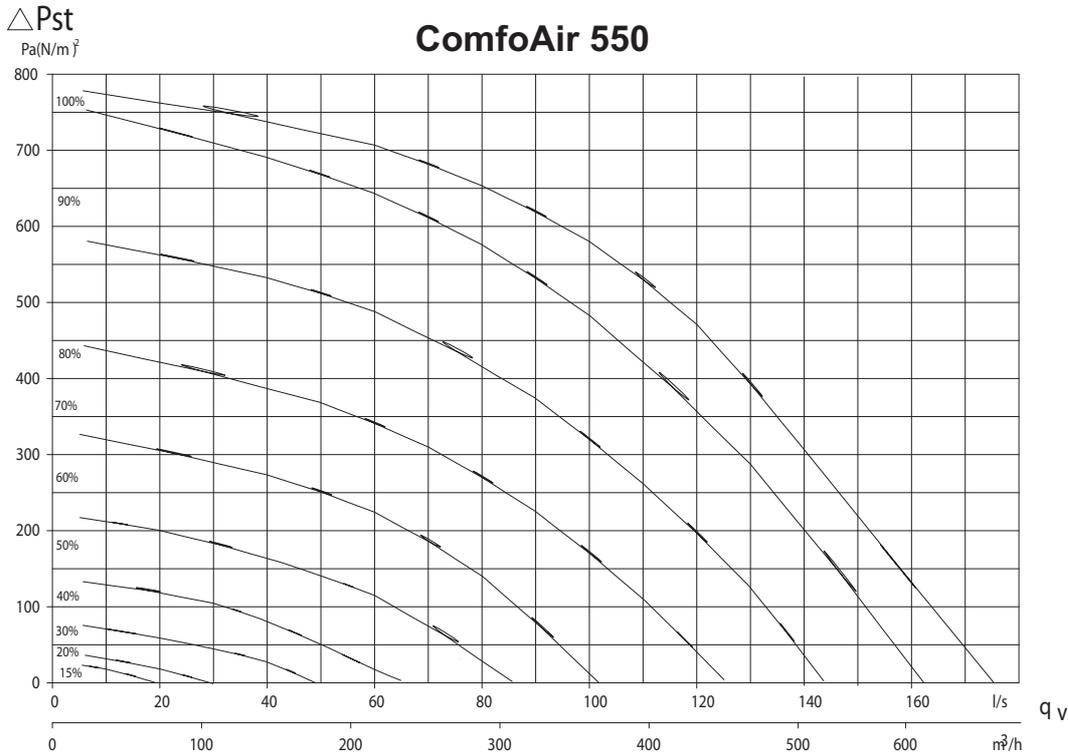
Menu P8 → Settings

Series No.	Description	(Malfunction) information values		
		Minimum	Maximum	Default
850	RF input 1 0= not fitted 1 = fitted	0	1	0
851	0= control 1 = programme (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 =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 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.
 - Display: Press **simultaneously** for 3 seconds on "  " and "  " until "InR" appears on the Display..

 **In programming mode, the bypass valve is always closed. After 30 minutes, the ComfoAir automatically terminates the programming mode.**

- Close all windows and outside doors.
- Close all inside doors.



- 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 menu P30 to P37 on 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;

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

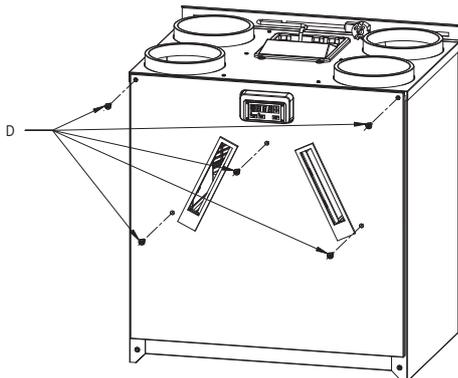
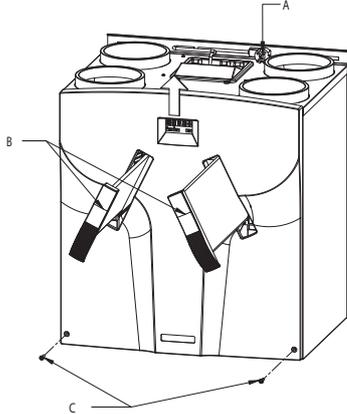


Failure to carry out (periodic) maintenance on the ComfoAir ultimately compromises the performance of the ventilation system.

3.9.1 Inspecting the heat exchanger and fans

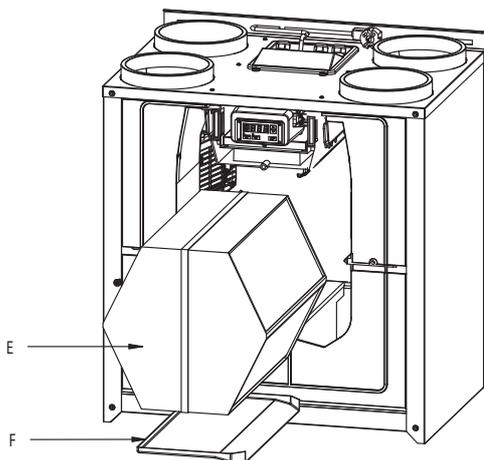
The fans and the heat exchanger must be inspected once every 4 years.

- Disconnect the power from the ComfoAir.
- Remove 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.

- Pull the strap (E) to remove the heat exchanger and the leakage tray (F).



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

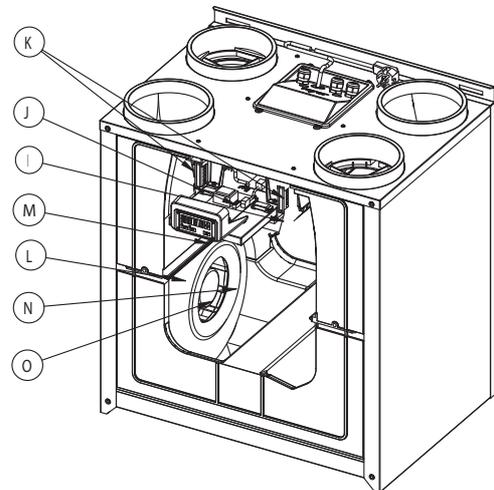
The heat exchanger may contain water residues!

- Clean the heat exchanger, if required.
 - Submerge the heat exchanger in hot water (max. 40 °C).
 - 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 screw from the electronics carriage.
- Pull the electronics carriage carefully forwards.
- 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 correctly underneath the heat exchanger. The slanting side of the leakage tray must be on the side of the condensation drain.

 **During assembly of the heat exchanger, check the position of the four rubber seals.**

 **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.**

3.10 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

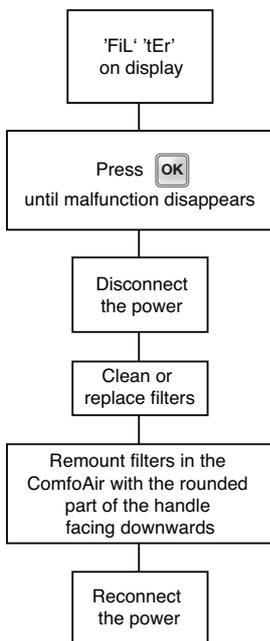
Below is a list of the malfunction alerts on digital operating device.

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	N/a
E1	Exhaust fan not rotating (M1).
E2	Supply fan not rotating (M2).
,Fil' ,tEr'	Internal filter is dirty

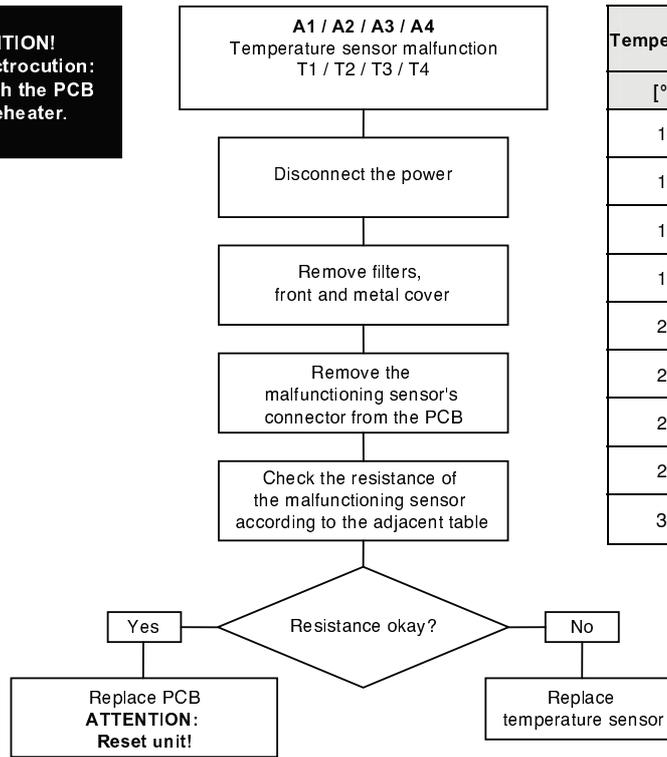
 **Prevent water from entering the electrical connections.**

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.

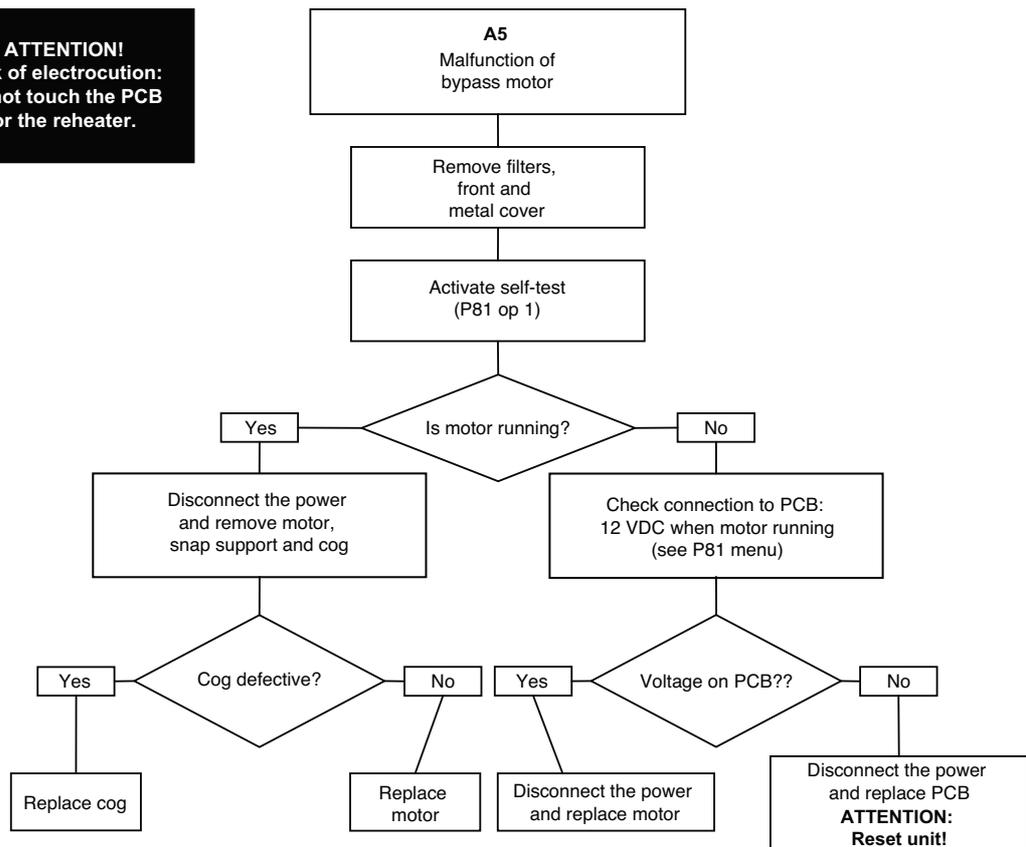


ATTENTION!
Risk of electrocution:
do not touch the PCB
or the reheater.

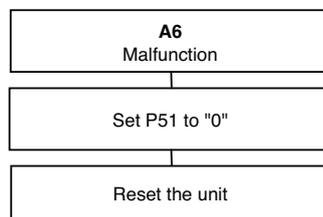


Temperature [°C]	Resistance [KΩ]		
	MIN.	MID.	MAX.
10	19,570	19,904	20,242
15	15,485	15,712	15,941
18	13,502	13,681	13,861
19	12,906	13,071	13,237
20	12,339	12,491	12,644
21	11,801	11,941	12,082
22	11,291	11,420	11,550
25	9,900	10,000	10,100
30	7,959	8,057	8,155

ATTENTION!
Risk of electrocution:
do not touch the PCB
or the reheater.



ATTENTION!
Risk of electrocution:
do not touch the PCB
or the reheater.



3.10.3 Malfunctions (or problems) without alerts

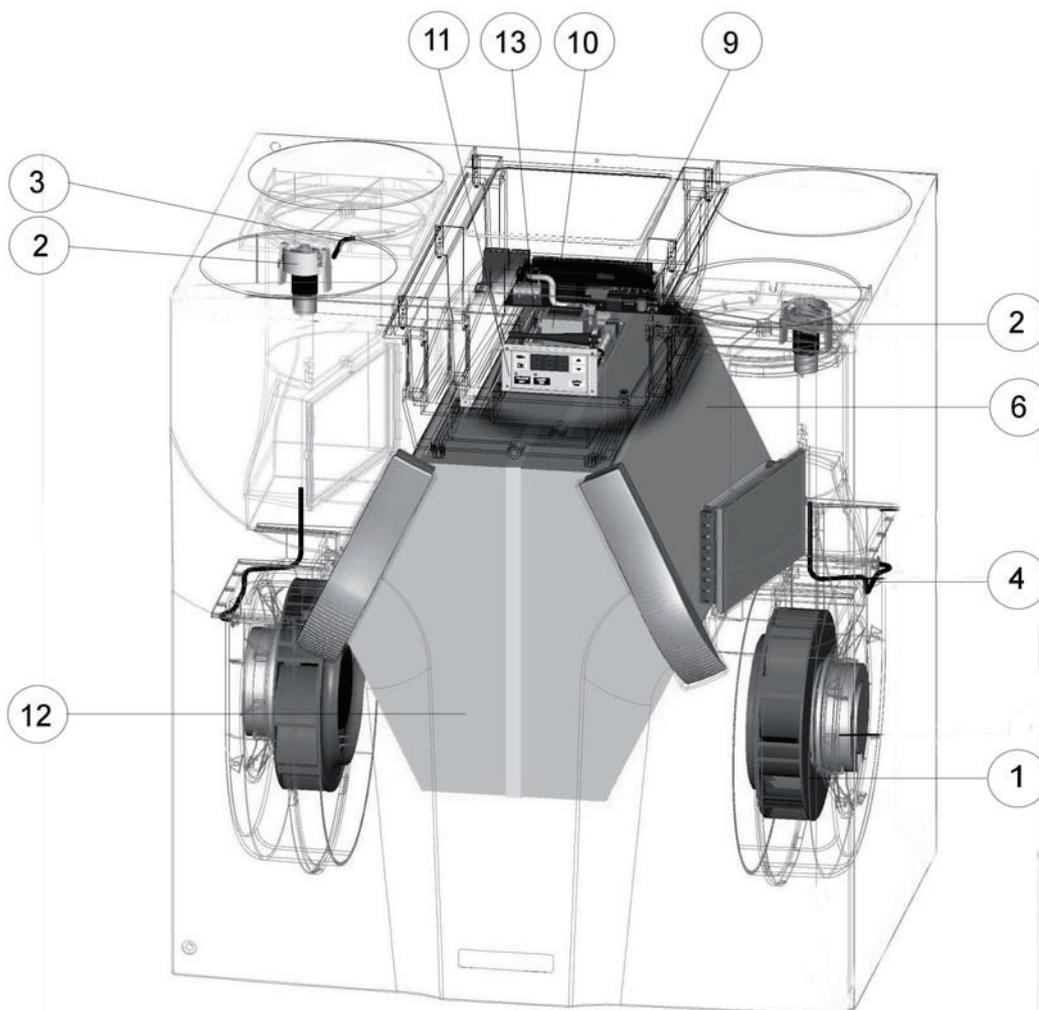
An overview of the malfunctions (or problems) without notifications is given below.

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.
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 correct	Check the wire-circuit of the 3-position switch by measuring the voltage:
	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	Art.nr.
1	Fans (left and right)	400200014
2	Servo motor & cable (for the bypass)	400300035
3	Temperature sensor T1 / T3 (in top of unit; near the electronic carriage)	400300025
4	Temperature sensor T2 / T4 (in scroll casing of both fans)	400300026
6	Filter (2x)	400100030
9	RFZ Antenna	
10	ComfoAir control PCB	400300028
11	Display	400300034
12	Heat exchanger	400400011
13	RFZ Remote control transmitter (optional)	400300033



3.14 ComfoAir 550 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
<i>Enter System 1 to 4 as defined by Approved Document F 2010</i>	
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		m ²
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 experienced, 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.				
<i>For kitchen extract canopies, only the highest setting needs to be recorded.</i>				
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

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

EG declaration of conformity

Machine description : Heat recovery units: ComfoAir range

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.

A handwritten signature in black ink, consisting of a large, stylized initial 'E' followed by a series of vertical strokes and a horizontal line extending to the right.

E. v. Heuveln,
Managing Director

comfosystems

zehnder

Zehnder Comfosystems
Unit 1
Brookside Avenue
Rustington
West Sussex
BN16 3LF