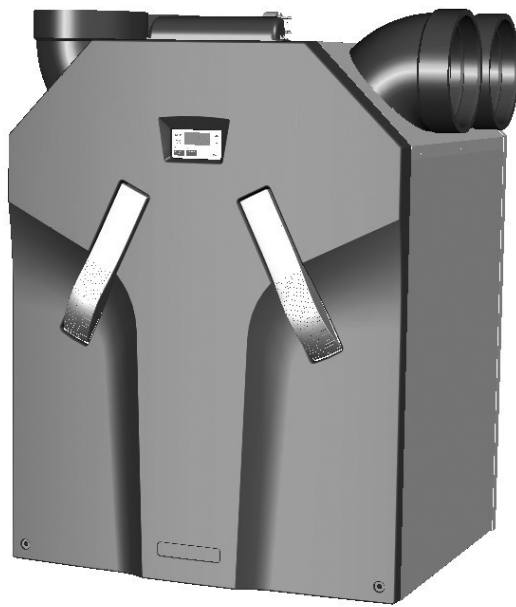

ComfoAir 350



User manual

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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. In case of disputes the Dutch version of these instructions will be binding.

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Preface



Carefully read this manual before use.

This manual provides all the information required for safe and optimal operation of the ComfoAir 350. 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 may slightly differ from the descriptions.

NOTE

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

1 Introduction

The device's name is ComfoAir 350. 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 has a CE marking on the identification plate. The identification plate can be found on top of the ComfoAir.

1.1 Warranty and liability

1.1.1 General

The sales and warranty conditions for companies in the metal, plastic and technology industries, which apply to the ComfoAir, have been deposited with the Clerk of the District Courts of the Hague on 19th October 1998, under number 119/1998.

1.1.2 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.

1.1.3 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.

1.2 Safety

1.2.1 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 ComfoAir may only be installed, connected, rendered operational and maintained by an appropriately approved installer, unless otherwise indicated in this manual;
- Installation of the ComfoAir must be carried out in accordance with the general and locally applicable construction, safety and installation instructions of the local council, electricity and water boards or other agencies;
- Observe the safety regulations, warnings, comments and instructions as prescribed in this manual at all times;
- Keep this manual with the ComfoAir throughout its life;
- Instructions with regard to cleaning or replacing the filters of the intake and exhaust valves must be carefully observed;
- The specifications stated in this document may not be changed;
- Modifying the ComfoAir is not allowed;
- The ComfoAir is only suitable for connection to 230V 50Hz mains;
- It is recommended to take out a maintenance contract so that the device is checked on a regular basis. The supplier can provide a list of registered installers nearby.

1.2.2 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.

1.2.3 Pictograms used

The following pictograms are used in this manual:



Point of attention.



Risk of:

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

Risk of personal injury to the user or installer.



2 For the user

Congratulations, you are the owner of a ComfoAir 350 , an heat recovery unit from Zehnder. We wish you lots of comfort.

2.1 Glossary

The ComfoAir features:

- Balanced ventilation;
- Heat recovery;
- Bypass for free cooling;
- Frost protection;
- Open fire programme;
- Wireless (RF) control (optional);
- Preheater element (optional);
- Enthalpy (optional).

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

2.1.1 Balanced ventilation

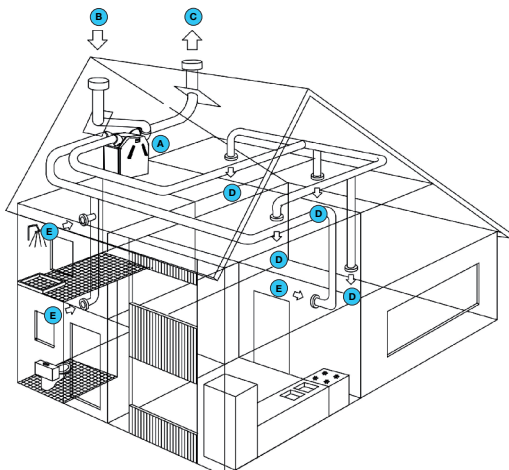
The ComfoAir is a balanced ventilation system. Balanced ventilation means that pollutants from the kitchen, the bathroom, the toilet(s) and possibly the storage room are extracted, while the same amount of fresh air is blown into the living room and bedrooms. Gaps under or near the doors ensure a good 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 (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: simply 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 Open fire programme

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



While the Open fire programme is activated the supply and exhaust fan can not be turned off manually.

2.1.6 Wireless (RF) control (optional)

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

2.1.7 Preheater element (optional)

Fitting the optional Preheater element 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 Preheater element is activated and deactivated automatically.

2.1.8 Enthalpy (optional)

It is possible to fit the ComfoAir with an enthalpy exchanger. An enthalpy exchanger helps to regulate humidity levels in the dwelling. In addition to heat recovery, the enthalpy exchanger also ensures moisture recovery. Moisture recovery means that moisture from extracted air is transferred to the supply air sourced from outside the dwelling. An enthalpy exchanger is also less sensitive to freezing.

2.2 Available operating elements

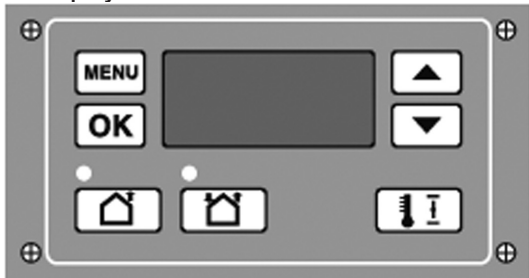
The ComfoAir is fitted with the following operating elements:

- Display on the unit;
- 3-position switch;
- 3-position switch with malfunction indicator;
- Wireless 3-position switch;
- Wireless 3-position switch with malfunction indicator;
- 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.



MENU	select menu		up
OK	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	Activation delay
3	▲	P22	Select 22
4	OK	30	Current setting
5	▼(10 x or press and hold)	20	Select 20
6	OK	P22	Sets the value to 20
7	MENU	P2	
8	MENU	1	Fan setting

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

Leaving Reading menu

- At action point 6 press "MENU" (instead of "OK").

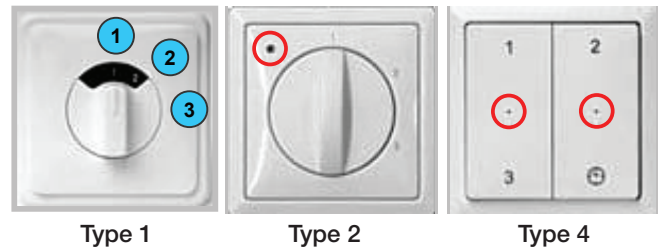
The display can not be used for setting the ventilation positions of the ComfoAir. The arrow keys are only for setting the additional programmes.

2.2.2 3-position switch

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

- Type 1 → Standard 3-position switch;
- Type 2 → 3-position switch with malfunction and filter alerts indicator;
- Type 3 → Wireless 3-position switch (RF)
- Type 4 → Wireless 3-position switch (RF) with malfunction and filter alerts indicator;

An wireless 3-position switch need to be returned to the ComfoAir if a General Reset is given.




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 when present and no extra ventilation is needed.
- Position 3 → High.
 - Use during cooking, showering and when additional ventilation is needed.
- Timer → Temporary High
 - Use during cooking, showering and when additional ventilation is needed for a short time.

The wireless 3-position switches have an separated button for the Timer. After the timer delay the ComfoAir will return to the ventilation setting which was active before the timer function was activated.

To use the Timer function with a wired 3-position switch choose setting 3 and immediately return to the setting you want after the timer delay.


 ***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.***


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). In that case, leave the delay timer at 0.***

Overrun timer

This ensures that the ComfoAir does not switch back to the normal (or previous) 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 normal (or previous) ventilation setting.

 ***If the bathroom switch is turned off within the programmed delay 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.



2.3 P menus for the user

Menu P1 → Status of programmes

		Status
Sub-menu	Description	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	General Reset
P21 (Optional) Note: Only applies to systems fitted with a corded switch and a second switch in the bathroom.	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. - Low voltage input	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.	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. - Low voltage input	0 Min.	120 Min.	30 Min.
P23 (Optional) Note: Only applies to systems fitted with a hardwired 3-position switch.	Overrun timer for ventilation position 3 (using a wired 3-position switch). • If ventilation setting 3 (high) is switched on briefly (< 3 sec), the ComfoAir will switch to the HIGH SETTING for 'x' minutes and then automatically returns to the NORMAL SETTING. If any 3-position switch 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 • 'x' weeks after cleaning the filters the "FILTER DIRTY" alert will reappear.	10 weeks	26 weeks	16 weeks

Sub-menu	Description	Time delay values		
		Minimum	Maximum	General Reset
P25 Note: Only applies to systems fitted with an RF switch.	<p>Overrun timer for ventilation setting 3 (using " ☺ ").</p> <ul style="list-style-type: none"> After pressing " ☺ " briefly (< 2 sec.), the ComfoAir will switch to the HIGH setting for 'x' minutes and then automatically returns to the NORMAL setting. <p>If any 3-position switch is operated during this lagging time the ComfoAir will instantly revert to the ventilation position as set at that time.</p>	1 Min.	20 Min.	10 Min.
P26 Note: Only applies to systems fitted with an RF switch.	<p>Overrun timer for ventilation setting 3 " using ☺ ".</p> <ul style="list-style-type: none"> After pressing " ☺ " CONTINUOUSLY (> 2 sec.), the ComfoAir will switch to the HIGH setting for 'x' minutes and then automatically returns to the NORMAL setting. <p>If any 3-position switch is operated during this lagging time the ComfoAir will instantly revert to the ventilation position as set at that time.</p>	1 Min.	120 Min.	30 Min.
P27	N/A	0 Min.	120 Min.	30 Min.

Menu P9 → Status of programmes (from menu P5 and P6 additional programmes)

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

2.4 Maintenance by the user

The following maintenance must be carry out by the user:

- 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

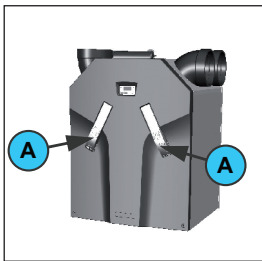
If so indicated on the digital operating device, you must clean or replace the filters.

⚠ Replace the filters (at least) every six months and clean the filters every 2 or 3 months.

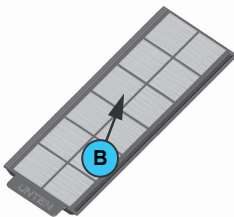
You will see the message “FIL” and ”tEr” appearing alternately on the display.

To replace ...

1. Press “OK” on the display for at least 4 seconds until the filter warning disappears.
2. Disconnect the power from the ComfoAir.
3. Remove the handles (A) from the ComfoAir



4. Remove the old filters (B) from the ComfoAir



5. Slide the new filters back into the ComfoAir.
6. Refit the handles (A) to the ComfoAir.
7. Reconnect the power to the ComfoAir.

⚠ Take care not to damage the filter material with the outer ends of the filter holders.

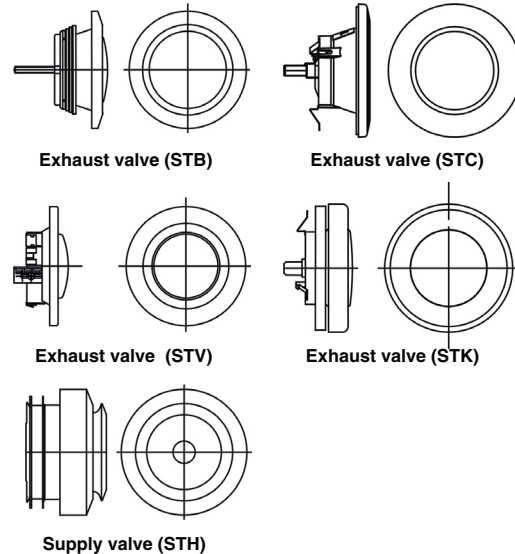
To clean...

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.

2.4.2 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:

1. Mark the setting of the valve;
2. Remove the valve from the wall or ceiling;
3. Clean the valve in a solution of soap and warm water;
4. Rinse the valve thoroughly and wipe dry;
5. Place the valve back WITH EXACTLY THE SAME SETTING (and IN THE SAME HOLE);
6. Repeat this procedure for the other valves.

About the valve settings...

The ventilation air is supplied and discharged by means of valves. Gaps near 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.

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.

2.5 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 methods of reporting malfunctions is given in the paragraphs below.

2.5.1 Malfunction alerts on the digital operating device

In the event of a malfunction, the corresponding malfunction code will be displayed on the digital operating device of the ComfoAir. 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 or filter dirty alert 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 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 or filter dirty alert both indicators will flash red 3 times. After that, both indicators will light up green once more.



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.



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

2.6 End of useful life

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

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

3 EEC declaration of conformity

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

EEC declaration of conformity

Machine description : Heat recovery units: ComfoAir 350 series

Complies with the following directives : Machinery Directive (2006/42/EEC)
Low Voltage Directive (2006/95/EEC)
EMC Directive (2004/108/EEC)

Zwolle, 5 January 2010
Zehnder Group Nederland 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. van Heuveln,
Managing Director

zehnder

Zehnder Group Nederland B.V.
Lingenstraat 2
8028 PM Zwolle
Nederland
Tel.: (038) 429 69 11
Fax.: (038) 422 56 94
Internet: www.jestorkair.nl
E-mail: info@jestorkair.nl