

Zehnder ComfoAir Flex

Installer manual



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 **Please read this manual carefully before use.**

With the help of this manual, you can install, commission or carry out maintenance on the ComfoAir Flex in a safe and optimal manner. The ComfoAir Flex is hereinafter referred to as the “unit”. As the unit is subject to continuous development and improvement, your unit may deviate from the description in this manual. An up-to-date installation manual can then be downloaded online.

The following symbols are used in this manual:

Symbol	Meaning
	Point of attention.
	Risk of compromised performance or damage to the ventilation system.
	Risk of personal injury.

! ? Questions

For all questions, the latest manual and new filters, you can contact your Zehnder office. Contact details are provided at the back of this manual.

Use of the ComfoAir Flex

- The ComfoAir Flex can only be used when it is properly installed according to the instructions in this manual.
- The ComfoAir Flex can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the unit in a safe way and understand the hazards involved.
- Children must not play with the ComfoAir Flex.
- Children must not clean and maintain the ComfoAir Flex unsupervised.

Warranty conditions

The unit 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 unit 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 conditions becomes invalid if:

- The warranty period has elapsed.
- The unit is used without filters.
- Spare parts are used that have not been supplied by the manufacturer.
- Unauthorised changes or modifications have been made to the unit.

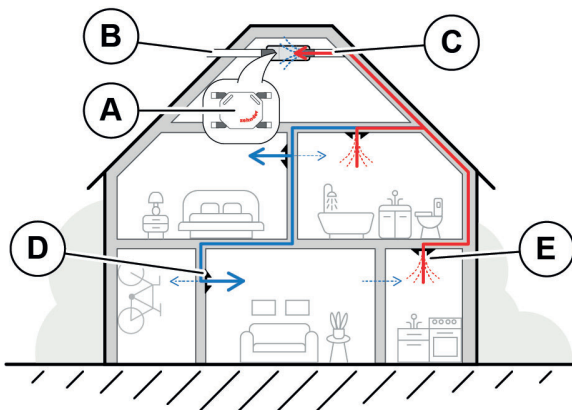
1 Introduction and safety

1.1 Introduction

The unit is a balanced ventilation system with heat recovery for energy-efficient ventilation in residential properties (e.g. apartments, houses). The unit removes dirty air from the wet rooms and supplies the same amount of fresh air to the dry rooms. Gaps under doors or grilles ensure that there is airflow in the house.


The balanced ventilation system contains:


- The unit (A)
- Duct system for fresh and exhaust air (B)
- Duct system for supply and extract air (C)
- Supply valves in the living room, bedroom(s) and any other dry room(s) (D)
- Return valves in the kitchen, bathroom, toilet and any other wet room(s) (E)



 **Read the manual carefully before use.**

 **Ensure that the gaps under or near doors are never obstructed.**

 **Condensation may occur on the outside of the unit. If this occurs no action is required.**

 **Dispose of the unit in an environmentally friendly manner. Do not dispose of the unit with your domestic waste.**

1.2 Safety

Read all the safety information carefully before you use the unit the first time to make sure that you use the unit safely and correctly.



WARNING
Electrical hazard



NATIONAL DISASTER
Health hazard

Switch off the power supply group or remove the unit plug from the wall outlet.

1.2.1 Safety instructions general

- ⚠ Always obey the safety regulations, warnings, comments and instructions in this manual. Failure to do so may lead to personal injury or damage to the ComfoAir Flex.
- ⚠ The installation, commissioning and maintenance must be carried out by a certified installer unless the instructions state otherwise. A non-certified installer can cause personal injury or damage to the performance of the ventilation system.
- ⚠ Do not open the casing. The installer makes sure that all parts that can cause personal injury are safely contained within the casing.
- ⚠ Do not disconnect the power to the ComfoAir Flex, unless instructed otherwise in the manual. This can lead to build-up of moisture and result in problems with mould.
- ⚠ Do not change technical specifications of the ComfoAir Flex given in this document. Changes can cause personal injury or damage the performance of the ventilation system.
- ⚠ If the power supply cord is damaged, it must be replaced with an original cord by the manufacturer, its service agent or similarly qualified persons in order to prevent accidents.

1.2.2 Safety instructions installation

- ⚠ Two people are required when lifting the ComfoAir Flex.
- ⚠ Always obey the general and locally applicable construction, safety and installation instructions of the local council, electricity and water boards or other agencies.
- ⚠ Unplug the unit from the wall outlet to disconnect the unit from the power supply. If the unit does not have a plug, use a switch as specified in EN 60335-1 (with switch-off of all poles and 3 mm overvoltage category III).
- ⚠ Always disconnect the unit from power supply before starting any service or maintenance work. When the ComfoAir Flex is open while in operation, it can cause personal injury.
- ⚠ Make sure the ComfoAir Flex cannot switch back ON accidentally.
- ⚠ Always connect air ducts of at least 900 mm length to the ComfoAir Flex before you connect the unit to the power supply to make sure that the motor cannot be touched while the unit is in operation.
- ⚠ Always take ESD protective measures when you work with electronics, such as wearing an antistatic wristband. Static electricity can cause damage to the electronics.

1.3 Installation conditions

To make a decision if the unit can be installed in a specific area, the next conditions must be obeyed to make sure that you install the unit correctly.

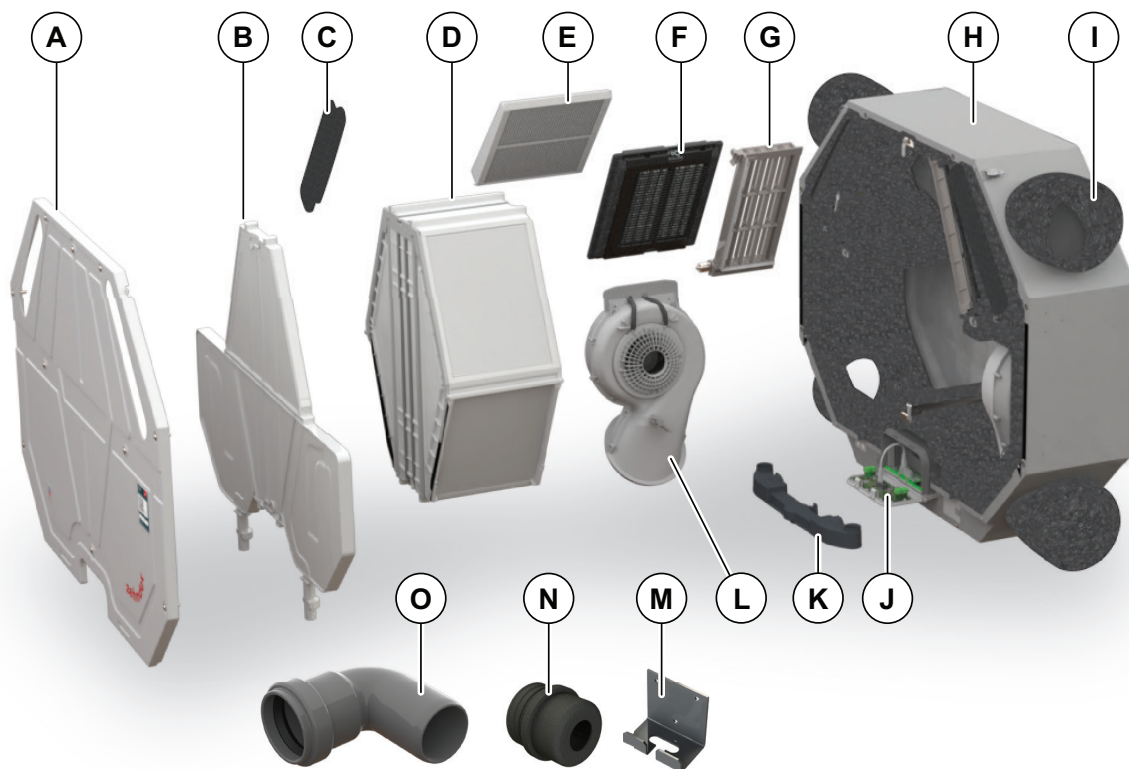
- ⚠ **Connect the unit to a 230 V~50 Hz power outlet. Any other mains connection will damage the unit. The unit is designed for use in residential areas only. It is not suitable for commercial use, for example, in swimming pools or saunas. Installation in an industrial environment can damage the unit.**
- ⚠ **Make sure that the installation area will stay in the permitted temperature range during the year. You can find the permitted temperature of the installation area in the table "Technical specifications".**
- ⚠ **Zehnder recommends that the unit is not installed in spaces with higher-than-average humidity (such as a bathroom or toilet). This prevents the formation of condensate on the outside of the unit.**
- ⚠ **Make sure that the electrical installation engages the maximum capacity of the unit. You can find the maximum capacity in the table "Technical specifications".**

Make sure there is sufficient space available within the installation area:

- For the air duct system with damping material around the unit.
- To do maintenance of the unit (at least 1 m² of the open space under the complete front plate of the unit).
- For the condensation drain on the front side of the unit.
- For an earthed power outlet, easy to reach at a distance of 100 cm. The length of the fixed power cable is 110 cm.

2 Description

2.1 Overview of the unit



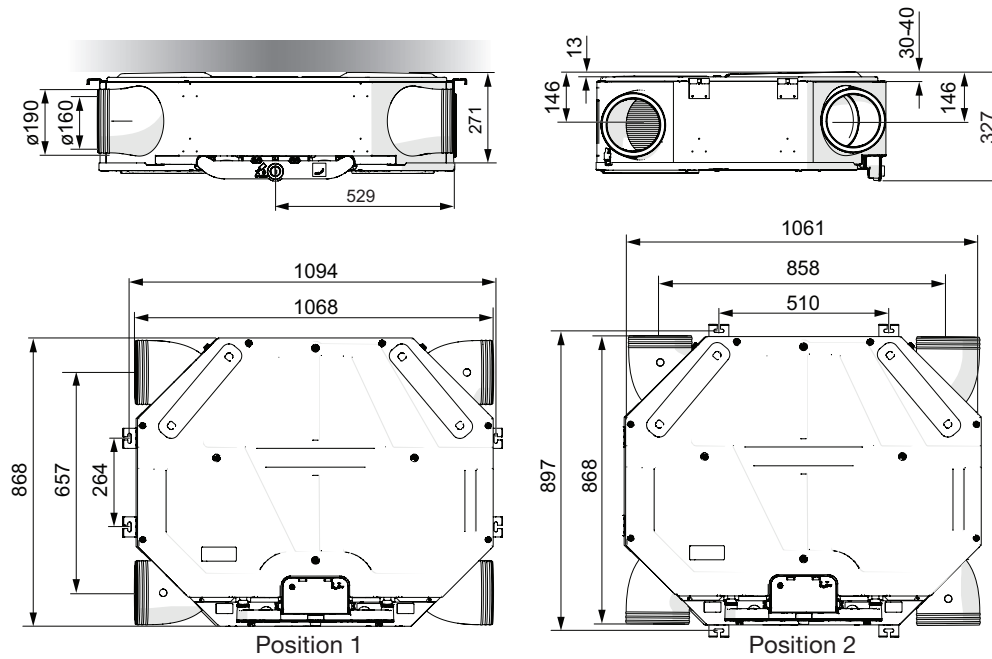
Position	Part
A	Front cover
B	Drip tray
C	Filter cap (2x)
D	Heat exchanger
E	Filters for air filtering (2x)
F	Preheater (country specific)
G	Bypass modules (2x)
H	Unit
I	Turnable bends (4x)
J	Electronics compartment
K	Double dry siphon
L	Scroll housing with fan (2x)
M	Mounting bracket (4x)
N	Rubber condensate connection grommets (2x)
O	90° bend/socket Ø 32mm with rubber ring

2.2 Filters and spare parts


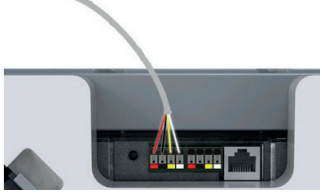
Please contact your local Zehnder office for spare parts. The contact details are provided at the back of this manual.

Please order the new filters online via the Zehnder Filtershop (available in the Zehnder ComfoControl App).

2.3 Dimensional drawing



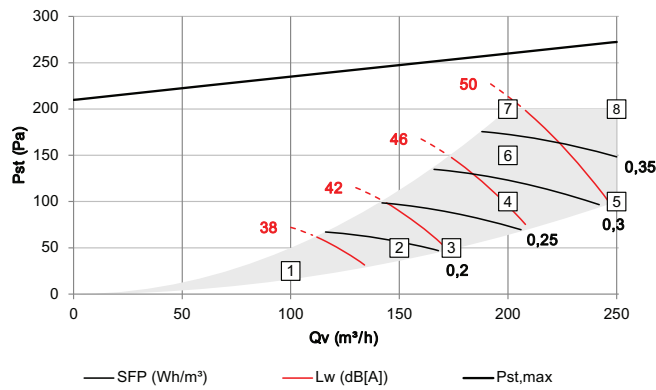
2.4 Technical specifications

	Flex 250	Flex 350
Electrical data		
Maximal power consumption	1820W ¹ / 119W ²	1890 W ¹ / 193W ²
Current draw	8,35A ¹ / 0,96A ²	8,87A ¹ / 1,48A ²
Cos φ	0,39 - 0,53	0,43 - 0,56
Power supply / power cord	230V±10%, single phase, 50Hz, 1,1m	
Internal fuse	12,5A	
Connection data		
Air connection size	Inside: Ø 160mm Outside: Ø 190mm	
Condensate drain size	Ø 32mm	
ComfoNet data		
Maximal power	150mA@12V	
Cable type	2x unshielded twisted pair, stiff (solid) wires 0,6mm ² (max 50m)	
Colour code	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> 12V: red GND: black CAN_H: yellow CAN_L: white </div>   </div>	
Material specifications		
Housing	Coated sheet metal	
Interior	EPP / ABS	
Heat exchanger	Polystyrene	
General		
IP classification	IP20	
ISO classification	B	
Installation	Ceiling	
Temperature range during transport and storage	-20°C to +50°C	
Temperature range moved air	-20°C to +50°C	
Temperature range installation area	+7°C to +40°C	
Weight	38kg	
Filter class	ISO Coarse/ ISO ePM1 (ISO 16890 compliant)	

¹ With preheater

² Without preheater

ComfoAir Flex 250 HRV ePM1 PRH



Performance values

Performance values* ComfoAir Flex 250 HRV ePM1 PRH								
Measurement point	qv [m³/h]	pst [Pa]	P [W]	cos φ	SFP [Wh/m³]	Lw, supply/exhaust [dB(A)]	Lw, extract/outdoor [dB(A)]	Lw, casing [dB(A)]
1	100	25	13	0.39	0.13	51	33	35
2	150	50	29	0.45	0.19	55	38	40
3	175	50	36	0.46	0.21	57	40	42
4	200	100	55	0.49	0.28	61	43	46
5	250	100	77	0.51	0.31	65	47	50
6	200	150	65	0.50	0.33	62	44	48
7	200	200	76	0.51	0.38	64	46	49
8	250	200	99	0.53	0.39	67	49	53

- * - Lw in dB(A) at reference area 10⁻¹² W
- Casing radiation measured according to ISO 3741:2010
- Noise level duct connections (supply, extract, outdoor, exhaust) measured according ISO 5135:1997 (values include end duct correction)
- SFP in Wh/m³ calculated using data measured according EN13141-7:2010
- Valid for unit with HRV exchanger, ePM1 filter on supply side and preheater inside

Sound specifications

Sound (supply air/exhaust air)* ComfoAir Flex 250 HRV ePM1 PRH										
Measurement point	qv [m³/h]	pst [Pa]	125 Hz [dB(A)]	250 Hz [dB(A)]	500 Hz [dB(A)]	1,000 Hz [dB(A)]	2,000 Hz [dB(A)]	4,000 Hz [dB(A)]	8,000 Hz [dB(A)]	Total [dB(A)]
1	100	25	57	54	50	43	33	29	18	51
2	150	50	61	58	55	48	39	37	25	55
3	175	50	62	60	57	50	42	40	27	57
4	200	100	64	63	60	53	47	45	32	61
5	250	100	67	66	64	57	52	51	38	65
6	200	150	65	64	62	55	49	48	35	62
7	200	200	66	65	64	57	51	50	37	64
8	250	200	68	68	67	60	55	55	41	67

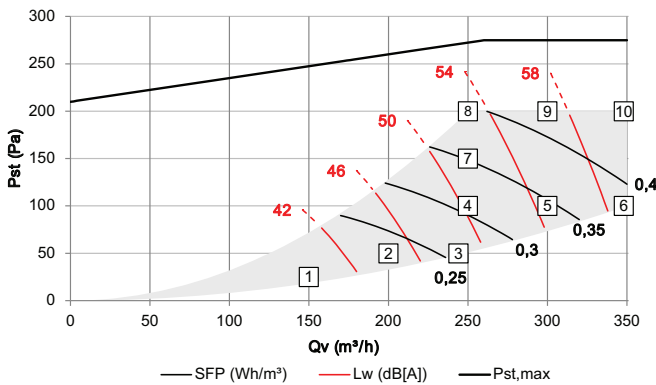
Sound specifications

Sound (extract air/outdoor air)* ComfoAir Flex 250 HRV ePM1 PRH										
Measurement point	qv [m³/h]	pst [Pa]	125 Hz [dB(A)]	250 Hz [dB(A)]	500 Hz [dB(A)]	1,000 Hz [dB(A)]	2,000 Hz [dB(A)]	4,000 Hz [dB(A)]	8,000 Hz [dB(A)]	Total [dB(A)]
1	100	25	41	34	34	24	11	12	18	33
2	150	50	44	38	39	29	16	16	18	38
3	175	50	46	39	41	31	18	18	19	40
4	200	100	48	42	44	34	21	20	19	43
5	250	100	50	45	48	38	25	23	19	47
6	200	150	49	43	46	36	23	21	19	44
7	200	200	50	44	47	38	25	23	19	46
8	250	200	52	47	50	41	28	25	20	49

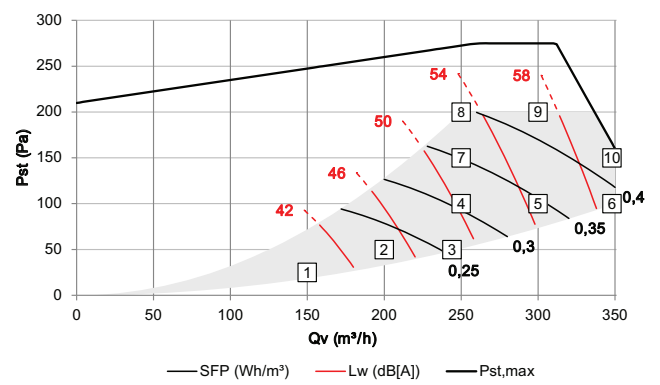
Casing radiation* ComfoAir Flex 250 HRV ePM1 PRH										
Measurement point	qv [m³/h]	pst [Pa]	125 Hz [dB(A)]	250 Hz [dB(A)]	500 Hz [dB(A)]	1,000 Hz [dB(A)]	2,000 Hz [dB(A)]	4,000 Hz [dB(A)]	8,000 Hz [dB(A)]	Total [dB(A)]
1	100	25	38	36	30	31	25	20	16	35
2	150	50	41	40	35	36	32	27	21	40
3	175	50	42	41	37	38	34	30	22	42
4	200	100	44	44	40	42	38	35	26	46
5	250	100	47	47	44	46	43	40	30	50
6	200	150	45	45	42	44	40	37	27	48
7	200	200	46	46	44	45	42	39	29	49
8	250	200	48	49	47	48	46	44	32	53

- * - Lw in dB(A) at reference area 10⁻¹² W
- Casing radiation measured according to ISO 3741:2010
- Noise level duct connections (supply, extract, outdoor, exhaust) measured according ISO 5135:1997 (values include end duct correction)
- SFP in Wh/m³ calculated using data measured according EN13141-7:2010
- Valid for unit with HRV exchanger, ePM1 filter on supply side and preheater inside.

Zehnder ComfoAir Flex 350 HRV ePM1 PRH (115W)



Zehnder ComfoAir Flex 350 HRV ePM1 PRH (85W)



Performance values

Performance data* ComfoAir Flex 350 HRV ePM1 PRH (115W)								
Measurement point	qv [m³/h]	pst [Pa]	P [W]	cos φ	SFP [Wh/m³]	Lw, supply/exhaust [dB(A)]	Lw, extract/outdoor [dB(A)]	Lw, casing [dB(A)]
1	150	25	24	0.44	0.16	54	37	39
2	200	50	45	0.48	0.23	59	41	44
3	245	50	64	0.50	0.26	63	45	48
4	250	100	77	0.51	0.31	65	47	50
5	300	100	103	0.53	0.34	69	50	55
6	350	100	135	0.55	0.38	73	54	59
7	250	150	88	0.52	0.35	66	48	51
8	250	200	99	0.53	0.39	67	49	53
9	300	200	126	0.54	0.42	71	52	57
10	350	200	158	0.56	0.45	75	56	62

- * - Lw in dB(A) at reference area 10⁻¹² W
- Casing radiation measured according to ISO 3741:2010
- Noise level duct connections (supply, extract, outdoor, exhaust) measured according ISO 5135:1997 (values include end duct correction)
- SFP in Wh/m³ calculated using data measured according EN13141-7:2010
- Valid for unit with HRV exchanger, ePM1 filter on supply side and preheater inside.

Performance values

Performance data* ComfoAir Flex 350 HRV ePM1 PRH (85W)								
Measurement point	qv [m ³ /h]	pst [Pa]	P [W]	cos ϕ	SFP [Wh/m ³]	Lw, supply/ exhaust [dB(A)]	Lw, extract/ outdoor [dB(A)]	Lw, casing [dB(A)]
1	150	25	23	0.43	0.15	54	37	39
2	200	50	44	0.48	0.22	59	41	44
3	245	50	63	0.50	0.26	63	45	48
4	250	100	77	0.51	0.31	65	47	50
5	300	100	104	0.53	0.35	69	50	55
6	350	100	136	0.55	0.39	73	54	59
7	250	150	88	0.52	0.35	66	48	51
8	250	200	99	0.53	0.40	67	49	53
9	300	200	127	0.54	0.42	71	52	57
10	350	150	150	0.55	0.42	74	55	61

- * - Lw in dB(A) at reference area 10⁻¹² W
- Casing radiation measured according to ISO 3741:2010
- Noise level duct connections (supply, extract, outdoor, exhaust) measured according ISO 5135:1997 (values include end duct correction)
- SFP in Wh/m³ calculated using data measured according EN13141-7:2010
- Valid for unit with HRV exchanger, ePM1 filter on supply side and preheater inside.

Sound specifications

Sound (supply air/exhaust air)* ComfoAir Flex 350 HRV ePM1 PRH (115W)										
Measurement point	qv [m ³ /h]	pst [Pa]	125 Hz [dB(A)]	250 Hz [dB(A)]	500 Hz [dB(A)]	1,000 Hz [dB(A)]	2,000 Hz [dB(A)]	4,000 Hz [dB(A)]	8,000 Hz [dB(A)]	Total [dB(A)]
1	150	25	60	58	54	47	38	35	23	54
2	200	50	63	62	59	52	45	43	30	59
3	245	50	66	65	63	56	49	49	36	63
4	250	100	67	66	64	57	52	51	38	65
5	300	100	69	69	68	62	57	57	44	69
6	350	100	72	72	73	66	62	64	49	73
7	250	150	68	67	66	59	53	53	40	66
8	250	200	68	68	67	60	55	55	41	67
9	300	200	71	71	71	64	60	61	47	71
10	350	200	73	74	75	68	65	67	52	75

Sound specifications

Sound (extract air/outdoor air)* ComfoAir Flex 350 HRV ePM1 PRH (115W)										
Measurement point	qv [m³/h]	pst [Pa]	125 Hz [dB(A)]	250 Hz [dB(A)]	500 Hz [dB(A)]	1,000 Hz [dB(A)]	2,000 Hz [dB(A)]	4,000 Hz [dB(A)]	8,000 Hz [dB(A)]	Total [dB(A)]
1	150	25	44	37	38	28	15	15	18	37
2	200	50	47	41	43	33	20	19	19	41
3	245	50	49	43	46	37	24	22	19	45
4	250	100	50	45	48	38	25	23	19	47
5	300	100	53	48	52	42	29	26	20	50
6	350	100	56	51	56	47	34	29	20	54
7	250	150	51	46	49	40	27	24	19	48
8	250	200	52	47	50	41	28	25	20	49
9	300	200	54	49	54	45	32	28	20	52
10	350	200	57	52	58	48	35	30	20	56

Casing radiation* ComfoAir Flex 350 HRV ePM1 PRH (115W)										
Measurement point	qv [m³/h]	pst [Pa]	125 Hz [dB(A)]	250 Hz [dB(A)]	500 Hz [dB(A)]	1,000 Hz [dB(A)]	2,000 Hz [dB(A)]	4,000 Hz [dB(A)]	8,000 Hz [dB(A)]	Total [dB(A)]
1	150	25	40	39	34	35	30	26	20	39
2	200	50	43	43	39	40	37	33	24	44
3	245	50	46	46	43	44	41	38	28	48
4	250	100	47	47	44	46	43	40	30	50
5	300	100	49	50	49	50	48	46	34	55
6	350	100	52	53	53	54	54	51	38	59
7	250	150	47	48	46	47	45	42	31	51
8	250	200	48	49	47	48	46	44	32	53
9	300	200	50	51	51	52	51	49	36	57
10	350	200	53	54	55	56	56	54	39	62

- * - Lw in dB(A) at reference area 10⁻¹² W
- Casing radiation measured according to ISO 3741:2010
 - Noise level duct connections (supply, extract, outdoor, exhaust) measured according ISO 5135:1997 (values include end duct correction)
 - SFP in Wh/m³ calculated using data measured according EN13141-7:2010
 - Valid for unit with HRV exchanger, ePM1 filter on supply side and preheater inside.

Sound specifications

Sound (supply air/exhaust air)* ComfoAir Flex 350 HRV ePM1 PRH (85W)										
Measurement point	qv [m³/h]	pst [Pa]	125 Hz [dB(A)]	250 Hz [dB(A)]	500 Hz [dB(A)]	1,000 Hz [dB(A)]	2,000 Hz [dB(A)]	4,000 Hz [dB(A)]	8,000 Hz [dB(A)]	Total [dB(A)]
1	150	25	60	58	54	47	38	35	23	54
2	200	50	63	62	59	52	45	43	30	59
3	245	50	66	65	63	56	49	49	36	63
4	250	100	67	66	64	57	52	51	38	65
5	300	100	69	69	68	62	57	57	44	69
6	350	100	72	72	73	66	62	64	49	73
7	250	150	68	67	66	59	53	53	40	66
8	250	200	68	68	67	60	55	55	41	67
9	300	200	71	71	71	64	60	61	47	71
10	350	150	73	73	74	67	63	65	51	74

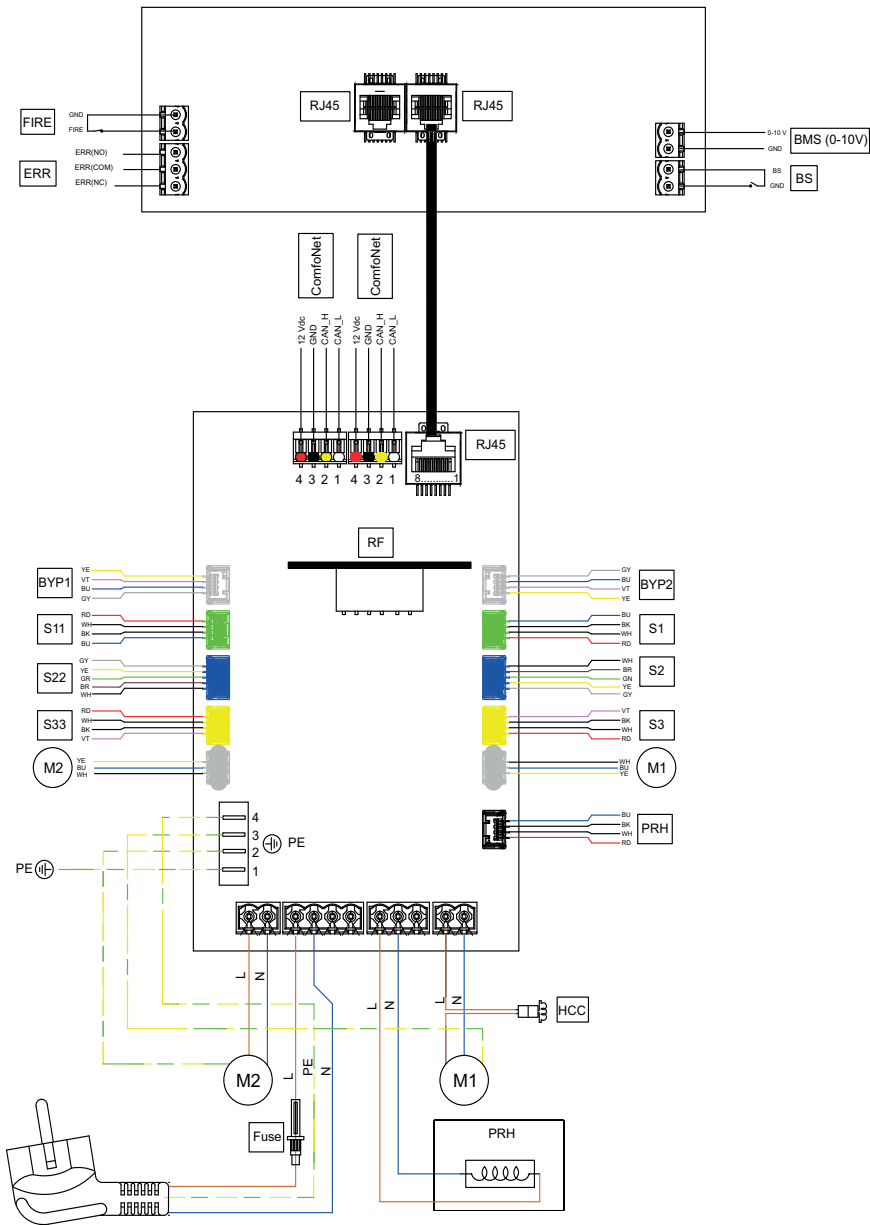
Sound specifications

Sound (extract air/outdoor air)* ComfoAir Flex 350 HRV ePM1 PRH (85W)										
Measurement point	qv [m³/h]	pst [Pa]	125 Hz [dB(A)]	250 Hz [dB(A)]	500 Hz [dB(A)]	1,000 Hz [dB(A)]	2,000 Hz [dB(A)]	4,000 Hz [dB(A)]	8,000 Hz [dB(A)]	Total [dB(A)]
1	150	25	44	37	38	28	15	15	18	37
2	200	50	47	41	43	33	20	19	19	41
3	245	50	49	43	46	37	24	22	19	45
4	250	100	50	45	48	38	25	23	19	47
5	300	100	53	48	52	42	29	26	20	50
6	350	100	56	51	56	47	34	29	20	54
7	250	150	51	46	49	40	27	24	19	48
8	250	200	52	47	50	41	28	25	20	49
9	300	200	54	49	54	45	32	28	20	52
10	350	150	56	52	57	48	35	30	20	56

Casing radiation* ComfoAir Flex 350 HRV ePM1 PRH (85W)										
Measurement point	qv [m³/h]	pst [Pa]	125 Hz [dB(A)]	250 Hz [dB(A)]	500 Hz [dB(A)]	1,000 Hz [dB(A)]	2,000 Hz [dB(A)]	4,000 Hz [dB(A)]	8,000 Hz [dB(A)]	Total [dB(A)]
1	150	25	40	39	34	35	30	26	20	39
2	200	50	43	43	39	40	37	33	24	44
3	245	50	46	46	43	44	41	38	28	48
4	250	100	47	47	44	46	43	40	30	50
5	300	100	49	50	49	50	48	46	34	55
6	350	100	52	53	53	54	54	51	38	59
7	250	150	47	48	46	47	45	42	31	51
8	250	200	48	49	47	48	46	44	32	53
9	300	200	50	51	51	52	51	49	36	57
10	350	150	52	53	54	55	55	53	39	61

- * - Lw in dB(A) at reference area 10⁻¹² W
- Casing radiation measured according to ISO 3741:2010
- Noise level duct connections (supply, extract, outdoor, exhaust) measured according ISO 5135:1997 (values include end duct correction)
- SFP in Wh/m³ calculated using data measured according EN13141-7:2010
- Valid for unit with HRV exchanger, ePM1 filter on supply side and preheater inside.

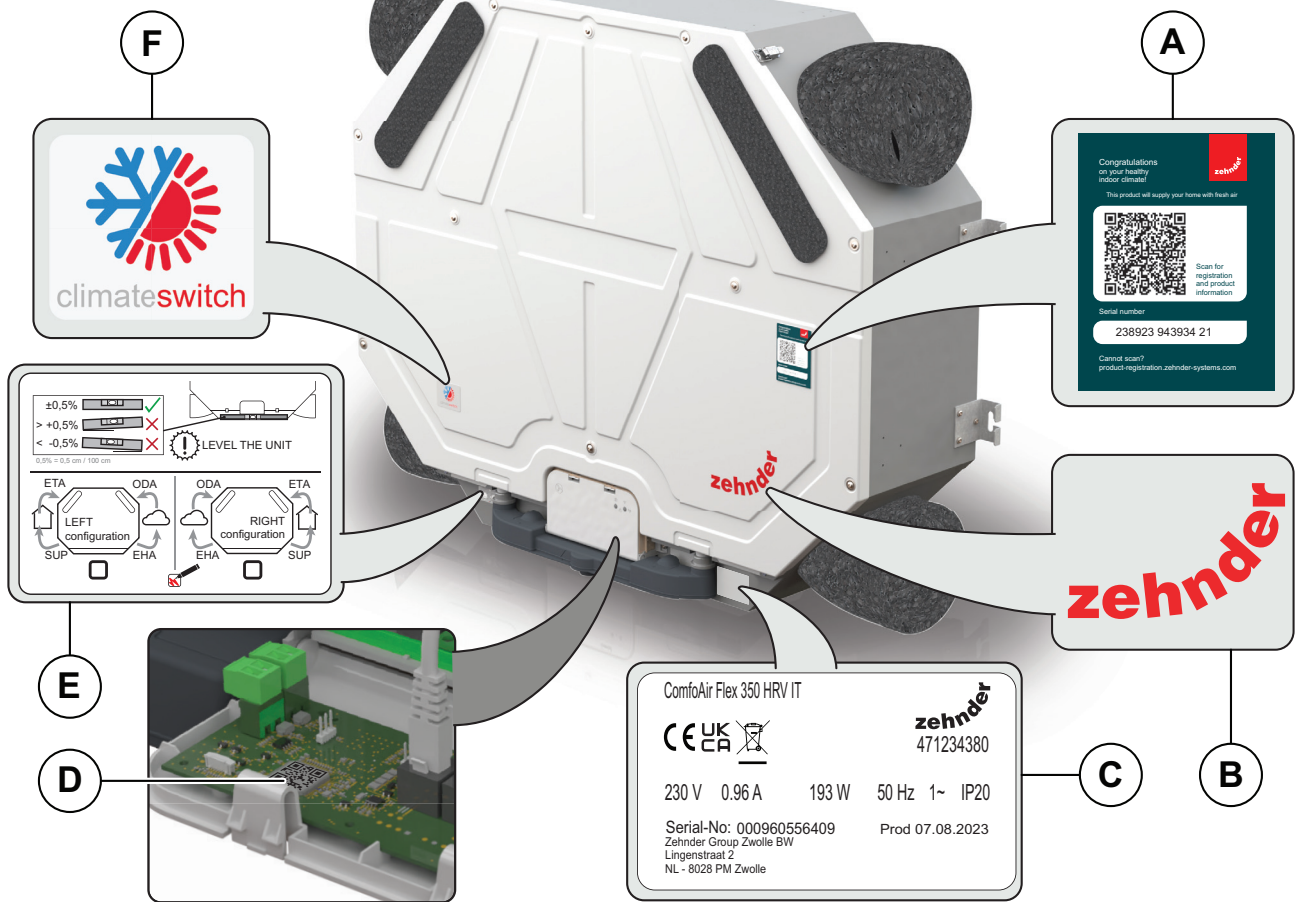
2.5 Wiring Diagram



Legend:

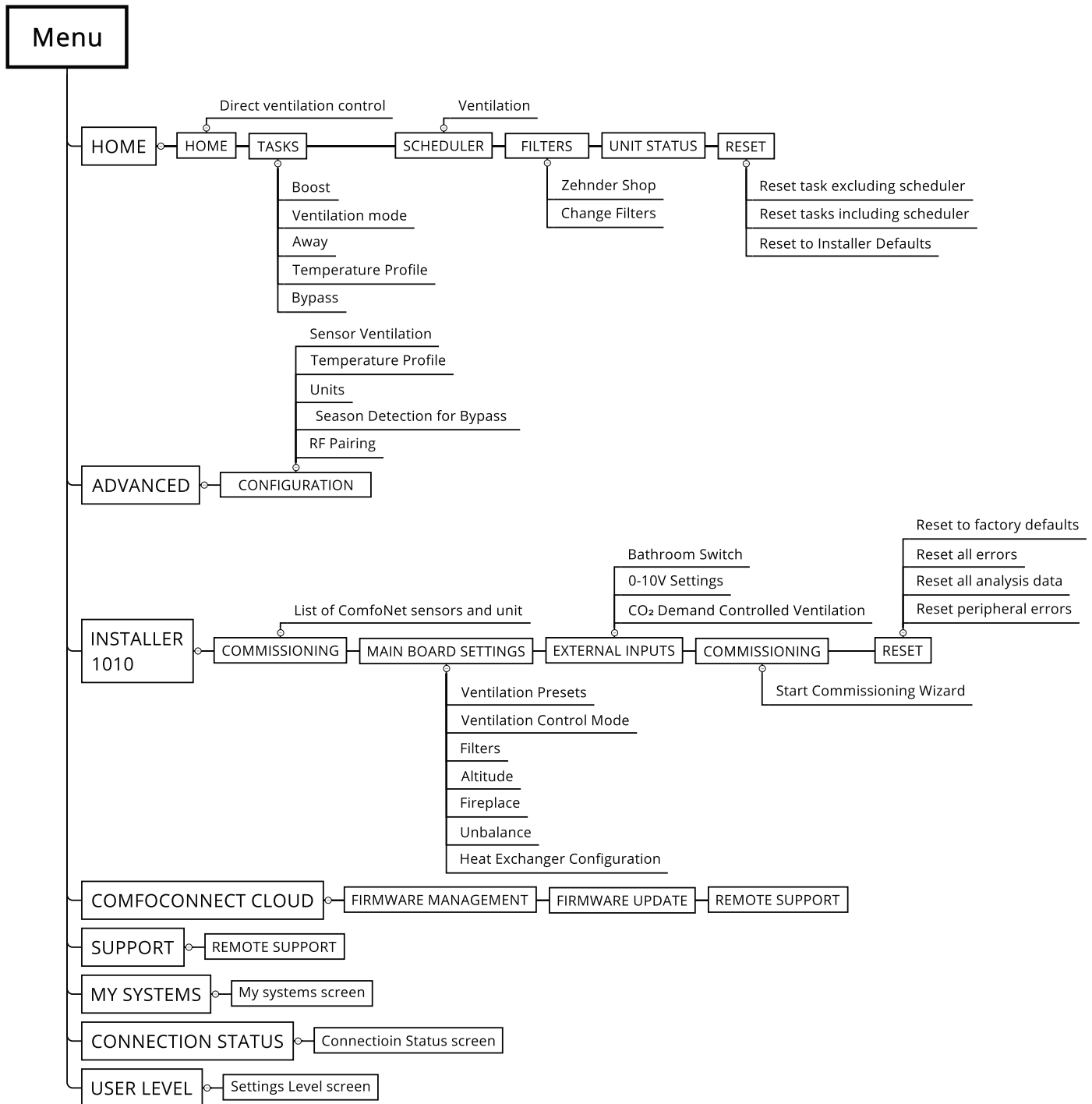
Code	Description
M1	Fan 1
M2	Fan 2
L	Black
N	Blue
PE	Green/Yellow
YE	Yellow
BU	Blue
WH	White
Mains	Power supply
L	Brown
N	Blue
PE	Green/Yellow
PRH	Preheater
L	Brown
N	Blue
RD	Red
WH	White
BK	Black
BU	Blue
S3/S33	T/Rh Sensor (yellow connector)
RD	Red
WH	White
BK	Black
VT	Violet
S2/S22	Flow Sensor
GY	Gray
YE	Yellow
GN	Green
BR	Brown
WH	White
S1/S11	T/Rh Sensor (green connector)
RD	Red
WH	White
BK	Black
BU	Blue
BYP.1/BYP.2	Bypass
YE	Yellow
VT	Violet
BU	Blue
GY	Grey
ComfoNet	ComfoNet
12V	Red
GND	Black
CAN_H	Yellow
CAN_L	White
RJ45	Connection between Main & Connection Board
RJ45	Diagnostics Tools
BMS 0-10V	0-10V input from BMS
GND	-
0-10	-
BS	Bathroom/boost switch input
GND	-
BS	-
FIRE	Fire alarm input
GND	-
FIRE	-
ERR	Error output
ERR(NC)	-
ERR(COM)	-
ERR(NO)	-
PE	Central Earth Connection
(1) Functional earth	Green/Yellow
(2) PE Fan	Green/Yellow
(3) PE Fan	Green/Yellow
(4) Power supply PE	Green/Yellow
HCC	High Current Choke
L	Brown


2.6 Sticker plan




Position	Sticker
A	QR code for access to the product documentation page.
B	Company logo
C	Identification type plate
D	QR code for the WiFi connection between Zehnder ComfoControl App and Zehnder ComfoAir Flex
E	Warning sticker and air directions sticker
F	Climate Switch technology

2.7 Menu structure



 It depends on the user level which menus are visible, therefore not all the menu items are possibly available at the user level you selected.

 Only the installer menu settings are explained in this manual. The explanation about the other menu's can be found in the user manual.

2.8 MAIN BOARD SETTINGS menu

2.8.1 Ventilation Presets menu

If you have gone through the commissioning wizard you will have already set the desired ventilation presets there. In this menu you can alter them without having to go through the whole commissioning wizard again.

In this menu you cannot set a preset higher than the next preset and preset 3 cannot be set higher than the maximum value determined during the commissioning wizard. It is best to set the maximum preset first and work back to the lower presets.

2.8.2 VENTILATION CONTROLS menu

In this menu you can set how the unit must respond to external influences like changes in air resistance in the system.

FLOW CONTROL

The factory default for the unit is set to FLOW CONTROL. The unit will regulate the airflow around the set airflow. External influences on the airflow will be corrected only when necessary, while small and short variations in airflow are allowed. This ensures a more steady behaviour of the fan speed.

CONSTANT FLOW

The unit will regulate the airflow to the exact set airflow. External influences on the airflow will be corrected immediately. The fan speed will constantly be corrected.


2.8.3 Filters menu

The factory default for the filter pre warning is 21 days before the calculated filter replacement date. This allows the user sufficient time to purchase new filters before the filters are completely contaminated, it is also possible to display this notification earlier by increasing the number of filter order days in the FILTER WARNING menu. The amount of air passing through the filters determines how quickly the filters should be replaced. The filters must be replaced at least every 180 days. If the unit is running more frequently at higher airflows, the unit will automatically shorten this time.

When using a filter of higher grade, (such as ePM1, ePM2.5, etc.) Zehnder recommends to adjust the 180 days to a lower value that fits your region.

If for a reason you want to replace your filter before the filter message has occurred, you can run the filter wizard by starting user menu CHANGE FILTERS in the FILTERS menu. After finishing the filter wizard, the filter counter will be reset automatically.

When you notice that you need to replace filters commonly before the filter message is displayed, please reduce the 180 days.

 **Do not change the filters when the unit is powered without using the filter wizard. For safety reasons the unit will stop the ventilation during the filter replacement instructions.**

2.8.4 Altitude menu

If you have gone through the commissioning wizard you will have already set the altitude of the unit there. In this menu you can alter it without having to go through the whole commissioning wizard again.

2.8.5 Fireplace Present menu

If you have gone through the commissioning wizard you will have already set the presence of a fire place in the dwelling there. In this menu you can alter it without having to go through the whole commissioning wizard again. This option only needs to be activated if there is an open fireplace present, so when there is a risk of smoke being pulled into the house. If there is no risk of smoke entering the house due to pressure differences, this function can be switched to "OFF".

Be aware, this is not a safety feature that monitors the pressure difference between inside and outside, this function will only prevent that the unit will cause a pressure differential.

2.8.6 Unbalance menu

The default setting for UNBALANCE is 0%. This will guarantee a balance between the supply and extract airflow and the best energy recovery possible. In some cases you may want to create an unbalance between the incoming and outgoing air. To create an overpressure in the dwelling, set the UNBALANCE menu to a negative setting. The unit will decrease the airflow of the extract air by the set percentage.

To create under pressure in the dwelling set the UNBALANCE menu to a positive setting. The unit will decrease the airflow of the supply air by the set percentage. This option is not possible when the menu FIRE PLACE PRESENT is set to YES.

2.9 External inputs

2.9.1 Bathroom Switch

The unit is equipped with boost contact. If this contact is closed, the ventilation airflow will be temporarily increased to PRESET 3 (BOOST mode), e.g. to quickly decrease the humidity level in a bathroom.

Installation:

Install a switch to connector BS (see the wiring diagram in this manual).

Commissioning:

After installation, commission the switch in the ventilation unit BATHROOM SWITCH menu.

The following menus must be set:

Menu item	Function
DELAY-ON TIMER (Not possible if a pulse switch is installed. Keep this setting on "0 min." when using a pulse switch.) (Default = 0 min.)	The exact time before the ventilation unit will start running at PRESET 3 after closing the contact. If the contact is opened within the set time the ventilation unit will act like the contact has never been closed.
OVER-RUN TIMER (First set time and then choose mode) (Default = 30 min. Default = FIXED)	<ul style="list-style-type: none"> ■ FIXED: The exact time the unit will stay running at PRESET 3 after the contact is opened (use if a pulse switch is installed). ■ MIRROR: The unit will stay at PRESET 3 for the same duration as the time the contact has been closed. If the contact has been closed longer than the set MIRROR time, the air volume will switch to the normal airflow when the timer runs out, even when the contact is still closed.

2.9.2 0-10V

The unit is equipped with a 0-10V input for direct control of the airflow by a Building Management System.

Installation:

Connect the 2-wire cable from the Building Management System to connector BMS INPUT (see the wiring diagram in this manual).

Commissioning:

After installation, commission the input in the ventilation unit 0-10V menu.

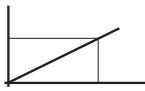
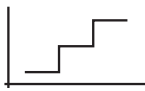
The following menus must be set:

Menu item	Function
INPUT AT 0% (Default = 0V)	The required input signal to get 0% output signal from the ventilation unit. If the connected ancillaries need negative control, set this value higher than the value at INPUT at 100%.
INPUT AT 100% Default = 10V)	The required input signal to get 100% output signal from the ventilation unit. If the connected ancillaries need positive control, set this value higher than the value at INPUT at 0%.
METHOD	STEER: the input signal will result in a linear proportional output signal.

2.9.3 0-10V Settings

The device is equipped with a possibility to connect CO₂-sensors C to the ComfoNET connection, to direct control the airflow to the indoor air quality, measured by the sensors.

■ 0-10V FUNCTION

Menu item	Function
FLOW PROPORTIONAL 	The ventilation unit will translate the incoming signal from a 0-10V sensor into a corresponding airflow request between the minimal and maximal set airflow [DEFAULT].
FLOW PRESET 	The ventilation unit will translate the incoming signal from a 0-10V sensor into one of the airflow presets.

■ 0-10V PRIORITY

Menu item	Function
ON	Always active, no matter if the unit is in AUTO or MANUAL mode (user cannot reduce airflow manually, when the 0-10V is high).
AUTO ONLY	Active only if the unit is in AUTO mode. If the unit is in AUTO mode and the user sets a ventilation preset, the output signal from the 0-10V input will be ignored until the ventilation unit returns to AUTO at the next step in the ventilation schedule or after 2 hours if no ventilation schedule has been programmed [DEFAULT].
OFF	The ventilation unit will ignore the 0-10V signal.

2.9.4 CO₂ Demand Controlled Ventilation

The assignment of a CO₂ Sensor C to a zone as well as device-specific settings for the CO₂ Sensor C can be done in the Zones menu. Each sensor can be assigned to a single zone from 1-8. By default, the unit, all CO₂ Sensor C and other ComfoNet peripherals are assigned to zone 1.

Installation:

Connect the CO₂ Sensor to a ComfoNet Connector on the main board using a 4 pole cable with stiff (solid) wires for push-in clamps. Recommended: DIN VDE 0281: J-Y(St)Y 2 x 2 x 0,6.

Commissioning:

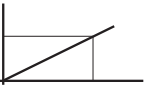
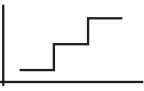
Leave the zone enabled, otherwise the sensors in this zone will be ignored.

Operation¹:

Adjust the setpoint if there is a specific reason. E.g. local building, energy or indoor air quality regulations or requirements.

¹ If more than 8 sensors are connected or different setpoints for rooms/zones in the building must be used, the sensors must be assigned to more than one zone.

■ CO₂ SENSOR C FUNCTION

Menu item	Function
FLOW PROPORTIONAL 	The ventilation unit will translate the incoming signal from the CO ₂ controller into a corresponding airflow request between the minimal and maximal set airflow [DEFAULT].
FLOW PRESET 	The ventilation unit will translate the incoming signal from the CO ₂ controller into one of the airflow presets.

■ CO₂ SENSOR C PRIORITY

Menu item	Function
ON	Always active, no matter if the unit is in AUTO or MANUAL mode (user cannot reduce airflow manually, when the CO ₂ level is high).
AUTO ONLY	Active only if the unit is in AUTO mode. If the unit is in AUTO mode and the user sets a ventilation preset, the output signal from the CO ₂ Controller will be ignored until the ventilation unit returns to AUTO at the next step in the ventilation schedule or after 2 hours if no ventilation schedule has been programmed [DEFAULT].
OFF	The output signal from the CO ₂ Controller (all CO ₂ Sensors C) will be ignored. Not for regular use, as it will disable CO ₂ based demand control ventilation!

■ CO₂ SENSOR C DEMAND SETTINGS PER ZONE

The parameters for automatic demand control ventilation based on CO₂ can be adjusted per zone in the CO₂ Demand Controlled Ventilation menu. By default the ventilation unit and sensors are all assigned to zone 1. For each zone the following settings can be done:

Menu item	Function
Enabled	Enabled on [DEFAULT]: The measurement values from sensors in this zone will be considered for automatic demand control ventilation. Enabled off. Not for regular use as it will disable CO ₂ based demand control ventilation for all sensors assigned to the zone.
Setpoint	The setpoint, which the ventilation unit must try to maintain. Default value: see installer manual of the connected CO ₂ Sensor C. The recommended value is between 900 and 1200.
Proportional Band	0-250%. Default: 50%.
Integral Time	30-3600 seconds. Default: 300 seconds.

2.9.5 Fire alarm²

The device is equipped with a fire contact on which a signal from a central fire detection system can be connected to remotely activate the service mode on the ventilation unit.

👉 Installation:

Connect the two-wire cable from the central fire system to connector FIRE (see the wiring diagram in this manual).

👉 Commissioning:

After installation there is no need to commission the input signal on the ventilation unit.

👉 Operation:

The ventilation unit will go into service mode when the fire contact is opened.

⚠ The ventilation is turned off during service mode.

2.10 External outputs

2.10.1 Error contact

The unit is equipped with a switch-over error output contact to remotely indicate the presence of an error on the unit.

👉 Installation:

Install an error indicator (e.g. LED) and its power supply to connector ERR (see the wiring diagram in this manual).

👉 Commissioning:

After installation there is no need to commission the error indicator on the unit.

👉 Operation:





When the unit has an error, it will close between contacts ERR(NO) and ERR(COM), contacts between ERR(NC) and ERR(COM) will be opened.

² Not allowed in Belgium

2.11 Commissioning

After the ComfoControl App has been connected and its the first time the unit has been powered up, the commissioning wizard will start automatically. If for some reason you want to restart the commissioning wizard on an operational unit, you can do this via this menu.

The first part that must be set is the basic configuration:

Screen	Function
DATE /TIME OF THE VENTILATION UNIT	Select the current date and time.
CONTINUE COMMISSIONING	The unit will ask you if you would like to commission the unit now.
ENTER INSTALLER PASSCODE	Enter the installer password that belongs to the ventilation unit type to be able to continue commissioning (see menu structure).
ORIENTATION OF THE UNIT	Select the required orientation of the unit: <ul style="list-style-type: none"> ■ LEFT: The supply and extract air connections are to the left side of the unit; ■ RIGHT: The supply and extract air connections are to the right side of the unit. <p> Refer to the paragraph Sticker plan for more information.</p>
CONNECTION OF THE CONDENSATION DRAIN	The unit will ask if the double dry siphon is installed correctly.
FILTERS	When an ePM1 filter is used in the unit and the orientation of the unit is changed to LEFT, the location of the ePM1 filter should be: <div style="text-align: center;">  = Right side </div> <p> Make sure the arrow on the filters are pointing in the direction of the airflow.</p>
PREHEATER	When a preheater is present, the unit will check if it is in the correct location.
FLOW UNIT	Select the required unit for displaying the airflow. <ul style="list-style-type: none"> ■ m³/h, ■ l/s.
ALTITUDE	Select the altitude group above sea level in which the unit is installed. With this information the unit can calculate the correct airflow to be displayed.
FIREPLACE PRESENT	Select the presence of a fire place in the dwelling. If a fire place is present, the unit will prevent causing under pressure in the dwelling, so smoke will not be pulled in to the dwelling. <p> The FIREPLACE setting is not a safety feature. For safety, a delta-pressure switch switching off the ventilation in case of under pressure should still be installed.</p>

The commissioning wizard will ask you to set the following information in the second part:

Screen	Function
OPEN ALL VALVES	The unit instructs you to prepare the system for a maximum flow test. When opening all valves also open all grilles and close all windows and doors.
ARE ALL VALVES COMPLETELY OPEN?	The unit will ask you if the system is ready for the maximum airflow test before starting the test.
MAXIMUM FLOW	After the maximum flow test is completed the unit will tell you the expected maximum flow of the system.
INSTRUCTION	The unit will ask you not to change the preparations you made for the maximum flow test till instructed.
MEDIUM AIRFLOW	Select the desired airflow for PRESET 2.
MAXIMUM AIRFLOW	Select the desired airflow for PRESET 3.
REDUCED AIRFLOW	Select the desired airflow for PRESET 1.
AWAY AIRFLOW	Select the desired airflow for PRESET AWAY.
COMMISSIONING PRESET	Select the desired airflow in which you would like to commission the valves and/or grilles.
FINE TUNE ALL EXTRACT AND SUPPLY VALVES	Use a flow meter to set the valves and/or grilles into the correct position. Start with the valve or grille farthest from the unit and work back along the air duct to the unit.
ARE ALL VALVES FINE TUNED	The unit will ask you if all valves and/or grilles are commissioned before checking the maximum airflow.
CHECK AIRFLOW	The unit will warn you if the selected maximum airflow is unable to be achieved. It is recommended you adjust the system to reduce the resistance in the air distribution system and enable the required airflow rate to be achieved. You can also ignore this information.
END OF COMMISSIONING WIZARD	The unit will tell you that the commissioning wizard is completed and will store all settings after confirmation.

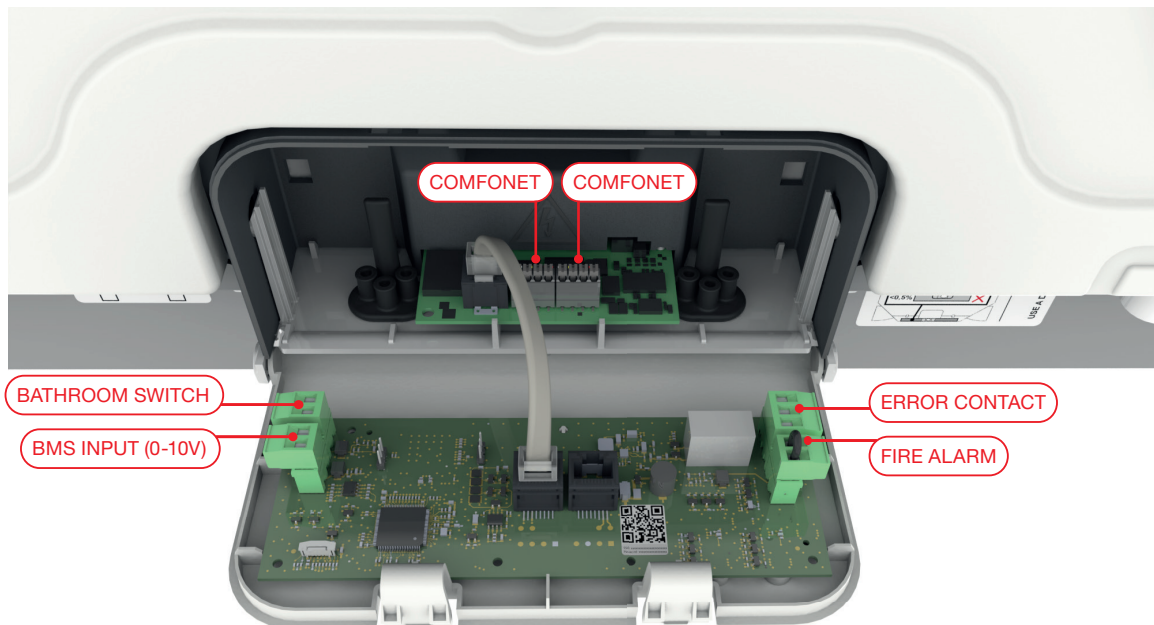
2.12 Reset

Menu item	Function
FACTORY DEFAULTS	Restore the unit default settings as it left the factory. You must commission the unit again.
RESET ERRORS	Reset all active error messages excluding peripherals errors. When the error causing the message is not solved the error message will come back again over time.
RESET ANALYSIS	Reset the data from the STATUS menu.
PERIPHERALS ERRORS	Disconnect the ancillary(-ies), which are causing an error. Do not use this menu when the function of the ancillary(-ies) causing the error are required. Following this reset the unit will assume the ancillary(-ies) has/have never been present, until detected once again.
(Ancillarie(s) which has been present, but is/are no longer detected)	

2.13 Firmware update

A registered installer can update the unit firmware to the latest version. Registration can be requested at Zehnder. An update can be performed to the same unit variant only. Country specific settings and variant specific settings will remain unchanged. The commissioning wizard is not required to be performed after a firmware update. From within the ComfoConnect Cloud menu in the ComfoControl App the latest firmware can be downloaded. The ComfoControl App must be connected to the unit locally or via the Remote Support function in order to update the firmware.

2.14 External connections



Technical specifications					
Code	Meaning	Interface	U _{max}	I _{max}	L _{max} wire
BATHROOM SWITCH	Potential free contact to activate boost action	Digital	3,3 Vdc	1 mA	30 m
BMS INPUT (0-10V)	Input signal from Building Management System to control airflow	Analogue	10 Vdc	37,5 mA	30 m
ERROR CONTACT	Switchover contact to Indicate if there is an error present on the unit	Relay	24 Vac/Vdc	1 A	30 m
FIRE ALARM ¹	Input that can be connected to a central fire system, puts the unit in standby when opened	Digital	3,3 Vdc	1 mA	30 m

¹ not allowed in Belgium

3 Transport

3.1 Safety instructions transport

- ⚠ Read the safety information and safety instructions before you transport the ComfoAir Flex.
- ⚠ Always obey the local applicable construction, safety and installation laws and regulations.
- ⚠ The edges of the unit front may be sharp. Use protective gloves to prevent cutting injuries.
- ⚠ Always handle the ComfoAir Flex with two persons.

👉 The permitted temperature range for storage and transport is from -20°C to $+50^{\circ}\text{C}$.

👉 Treat the unit with care during transport and unpacking.

👉 Make sure that you use the installation template printed on the box for the installation of the unit.

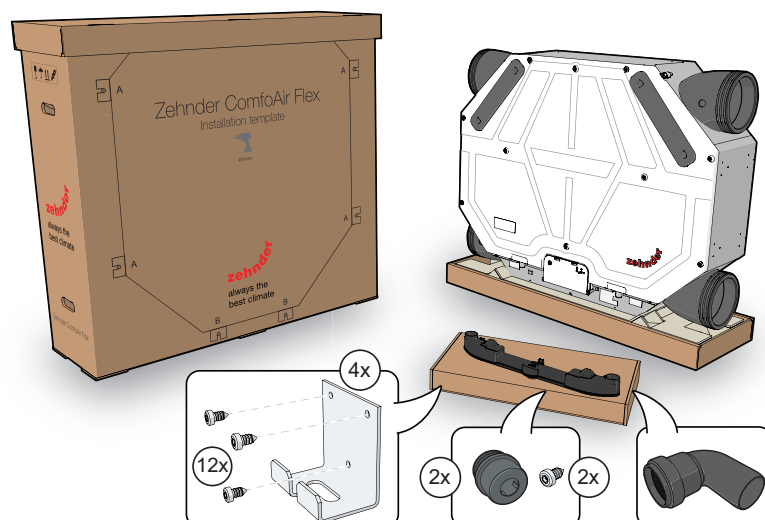
👉 Dispose of the packing material in an environmentally friendly manner.

3.2 Check the delivery

👉 Contact your supplier directly in case of damage or missing items.

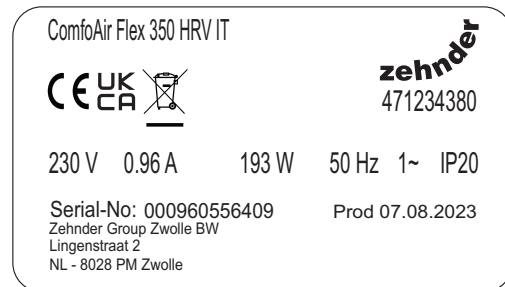
The box must contain:

- The ComfoAir Flex unit.
- 4 Turnable bends (pre-installed on the unit).
- A flat box with:
 - The double dry siphon.
 - 2 Rubber condensate connection grommets for the double dry siphon.
 - 2 Fasteners for the double dry siphon.
 - 4 Mounting brackets.
 - 12 Fasteners for the mounting brackets.
 - 90° bend/socket $\varnothing 32\text{mm}$ with rubber ring.
- Documentation.



👉 Check the identification type plate to make sure you have received the correct unit type.

Identification type plate



Information available on the identification plate

Suffix	Meaning
ComfoAir	Product family name.
Flex	Product type name.
250	Maximum air volume of 250 m ³ /h.
350	Maximum air volume of 350 m ³ /h.
GB	Country code of the unit.
R	The unit has been set with the supply and extract air on the right side as default.
L	The unit has been set with the supply and extract air on the left side as default.
PH	The unit has a pre-heater installed as default.
RF	The unit has an RF receiver for use with wireless control equipment as default.

3.3 Unpack the unit

👉 Use the integrated box handles to lift up the box and remove it from the unit.







👉 Place the unit on a blanket to prevent damage to the unit.


👉 Keep the box as it shows the installation template.


👉 Be careful with handling the unit, when pressure is put on the the turnable bends, they can come loose from the unit.

4 Installation

4.1 Safety instructions installation


-  Read the safety information and safety instructions before you install the ComfoAir Flex.
-  Obey the local laws and local regulations. Dangerous electrical voltage! Risk of death or injury due to 230V electrical voltage.
-  Work on the 230V mains must only be carried out by qualified electricians.
-  Disconnect the ComfoAir Flex from the power supply before starting assembly or disassembly.
-  Keep the ComfoAir Flex away from water and humid environment.
-  Keep children and animals away from the work location during installation.

 **Make sure that there is enough space under the ComfoAir Flex to do maintenance (at least 1 m² of the open space under the complete front plate of the unit). Space at the left and right sides is not necessary for the ComfoAir Flex for good operation.**


 **The QR code on the front side of the unit leads to the product documentation page.**

 **The ComfoAir Flex can only be mounted on the ceiling as described in this installation manual.**

 **Always install the ComfoAir Flex with two people.**

 **Do not use an extension cord with the ComfoAir Flex, for safety reasons.**


 **Only use the suitable tools and material to install the ComfoAir Flex.**

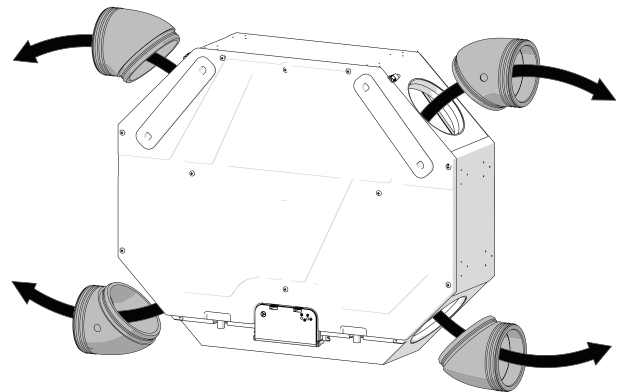
 **During assembly: it is important that the screws are tightened with minimal force. We strongly recommend to use a screwdriver, otherwise the screwheads could get damaged.**

4.2 Installation steps

Installation steps


Step 1: Remove the 4 turnable bends from the unit.

-  **Be aware that the turnable bends are loose. Do not hold the turnable bends when you move the unit. Remove all the turnable bends prior to the installation to prevent the unit from falling.**



Step 2: Prepare the installation area.

Make use of the installation template on the box (paragraph 3.2) to decide which position is the best to mount the unit on the ceiling. Take the following into account:

-  **Mount the unit on the ceiling with a minimum mass of 200 kg/m².**

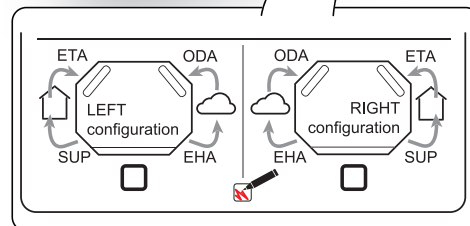
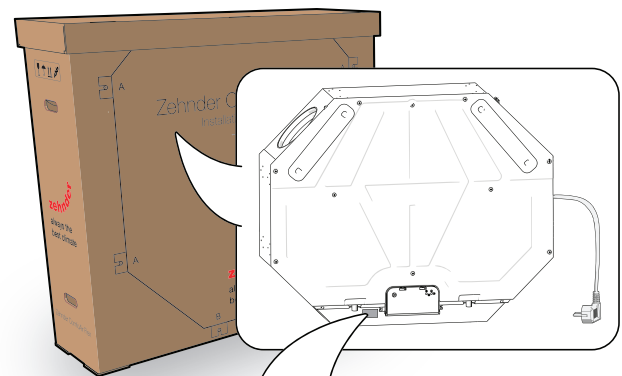
1. The stickers on the front side of the unit indicate the correct airflow directions for installing the air ducts.

-  **Refer to the paragraph Sticker plan for more information.**

2. Leave sufficient space for the condensation drain.
3. Make sure that an easy to reach earthed power outlet is available at a distance of length of the fixed power cable (approx. 100 cm).

-  **The length of the unit power cord is 110 cm.**

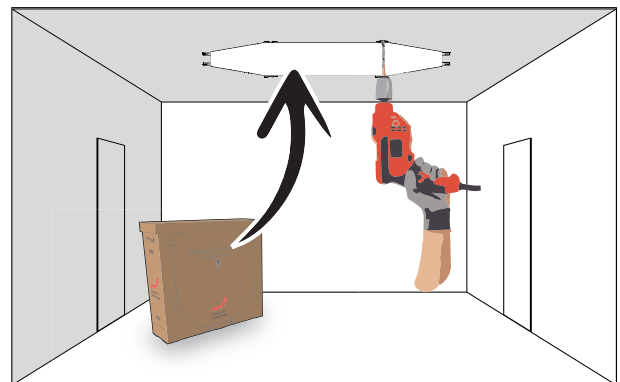
-  **Do not use an extension cable, for safety reasons.**



	Meaning
ODA	Outdoor air
SUP	Supply air
ETA	Extract air
EHA	Exhaust air

Step 3: The installation area.


- Make sure the mounting surface of the ceiling is level and free of bulging out objects, like small stones and building material.
- Make use of the installation template on the box to mark the positions of the holes to be drilled in the ceiling. Select the best applicable position(s): either A or B.
- Drill the holes in the ceiling and prepare them for installation of the unit.

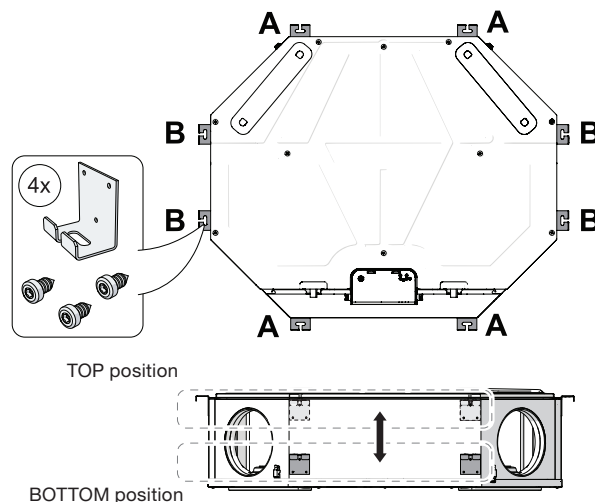


Installation steps

Step 4: Prepare the unit.

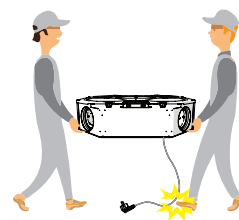
- Use the ceiling installation set, supplied with the unit, to attach the 4 mounting brackets to the unit.
- Select the following position options to attach the brackets:
 - Sides A or B (matching the positions of the holes in the ceiling).
 - Level TOP or BOTTOM. Choose the level depending on the suitable mounting material and the available space on the ceiling.
- The unit is now ready to be mounted on the ceiling.

 **Attach the unit to the ceiling using your own mounting material.**



Step 5: Move the unit.

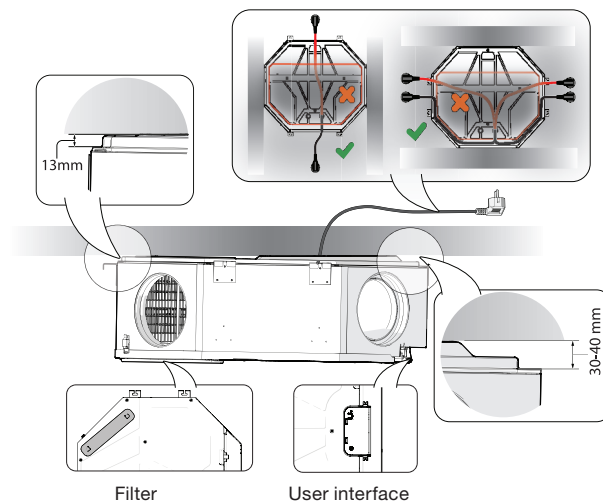
- ⚠ Always handle the unit with two people.
- ⚠ Hold up the power cord when you move the unit. The power cord hanging loose is a great hazard for slips, trips and falls.



Step 6: Install the unit.

- The ComfoAir Flex unit must be mounted on the ceiling with specific inclination (run-off to the condensate drain) to allow the condensate from the heat exchanger to drain away from the unit in the correct direction. This inclination is created by the integrated bulges on the backplate of the unit.
- Make sure that the inclination angle of the unit is between 30-40 mm. This distance can be measured with a tape measure.
- Make sure that the opposite side is installed close to the ceiling (13 mm).
- Make sure that the power cord is not pinched between the unit and the ceiling, otherwise it will eliminate the inclination.


 **Correct inclination prevents water leakage and damage to the unit and/or the ceiling.**




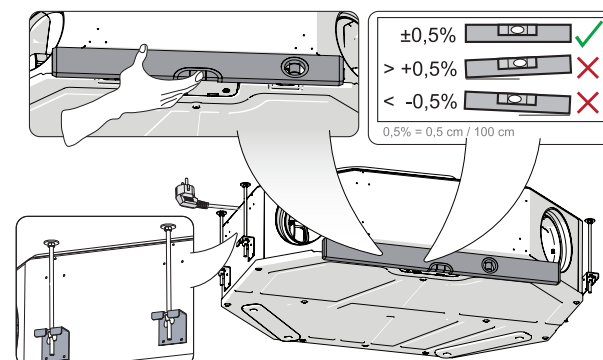
Step 7: Level check.

 **Make sure the unit is horizontally leveled.**

- Do a level check by placing a leveler on the casing close to the drainage holes.
- When the unit is level, tighten the locknuts/screws.

 **When the ceiling is level, the mounting brackets will automatically ensure that the unit hangs at the correct angle.**

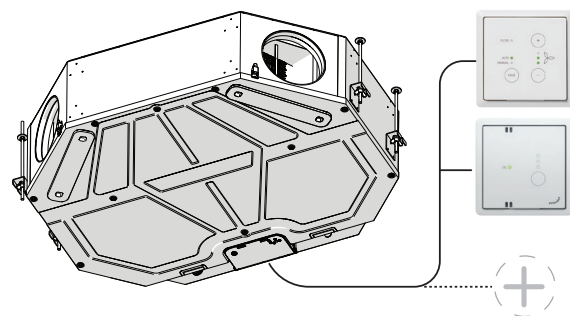
 **Do a check if the run-off distances 13 mm and 30-40 mm are correctly implemented (see step 6).**



Installation steps

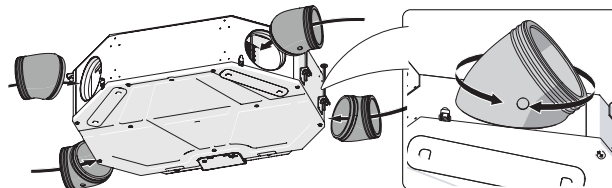
Step 8: Install the ancillaries

- Install all to be connected ancillaries.
- Follow the instructions in the related manuals.



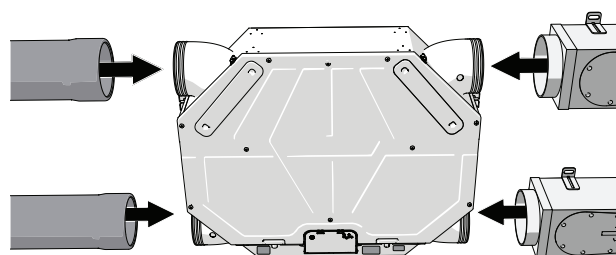
Step 9: Turnable bends.

- Reconnect all turnable bends to the unit.



Step 10: Connect the air ducts and the silencers.

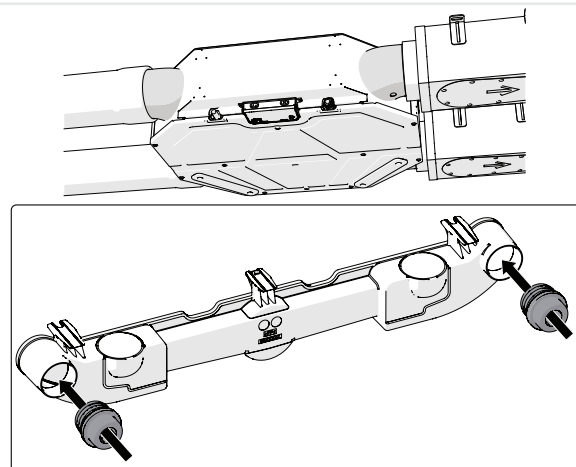
- Make sure that the air ducts are installed in accordance with the airflow directions (see Step 2).
- Install the air ducts/silencers with as little air resistance as possible and free from air leakage.
- Install the air ducts/silencers of at least 1m straight directly onto the supply and return air connections.



Step 11: Install the double dry siphon.

 The rubber condensate connection grommet only fits on one side into the ends of the double dry siphon.

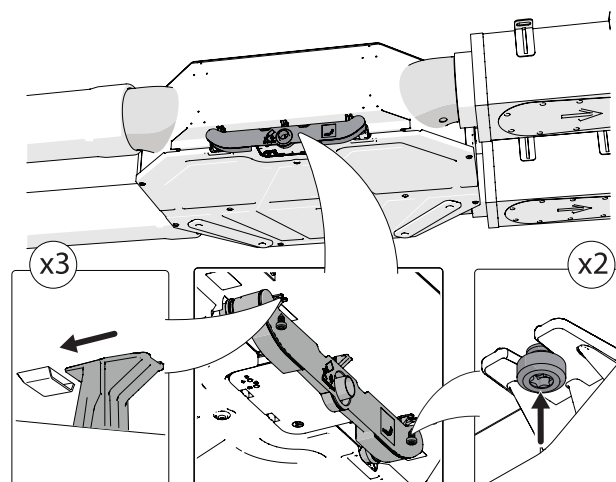
- Use the 2 rubber condensate connection grommets to connect the double dry siphon to the unit.
- Install the 2 rubber condensate connection grommets to the double dry siphon on both sides of the double dry siphon.





Step 12: Fasten the double dry siphon.

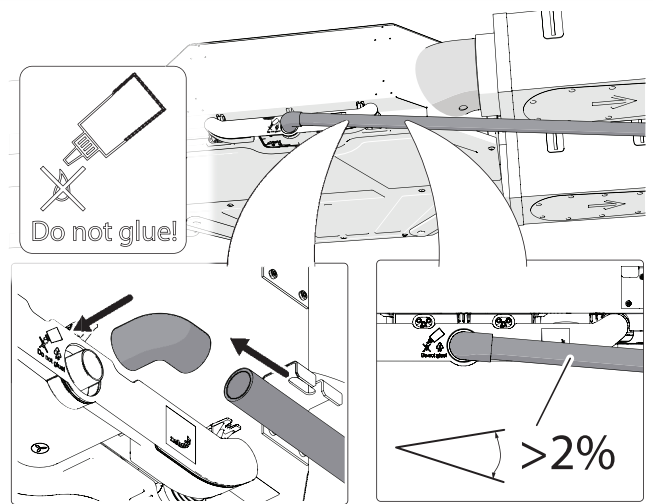
 The fixing points on the unit consist of 2 screw points and 1 click fixing in the middle.

- Make sure that you move the brackets of the double dry siphon fully into the pockets of the casing.
- Fasten the double dry siphon with the 2 screws to the casing.





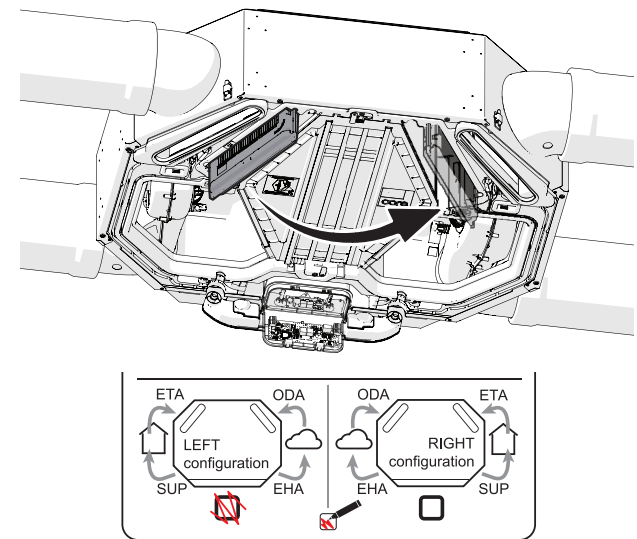
Step 13: Install the condensate discharge pipe at an angle of >2 % to prevent water leakage.

-  Use included with the unit bend/socket with rubber ring, EN 1329 compliant, with inner diameter of Ø 32mm and outer diameter of maximum Ø 46mm.
-  Do not use glue as you may need to be able to remove the double dry siphon and the condensate discharge pipe.



Step 14: Change the installation side of the preheater.

-  By default, the unit has a right-hand configuration with the preheater on the left (ODA) side of the unit.
-  For a LEFT configuration, the preheater must be installed on the right side (ODA) of the unit.
- In case of the LEFT configuration unit follow the steps in the chapter Maintenance procedures, paragraph 6.2 Maintenance of the preheater, to adjust the side of the preheater.




5 User Interface

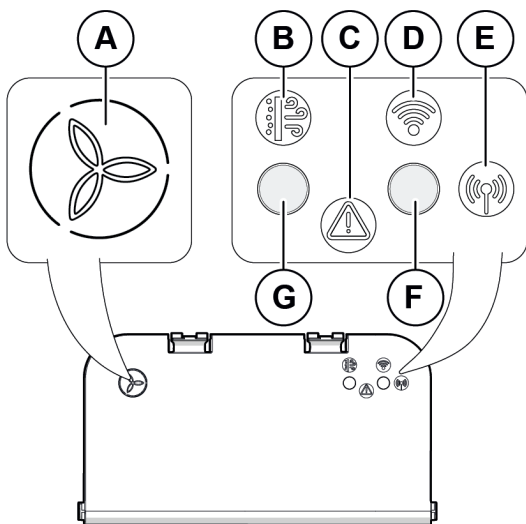
You can operate the unit with the User Interface on the unit, Zehnder ComfoControl App and with Zehnder controls, such as ComfoSwitch C and CO₂ Sensor C.

5.1 User Interface functions

The User Interface has five functions:

- Show ON/OFF status of the unit.
- Show current preset.
- Show ERRORS.
- Show WiFi status and RF status and execute WiFi connection.
- Show Filter status and execute the Filter wizard.

 Refer to the Zehnder ComfoControl App for more details about the status of the unit.

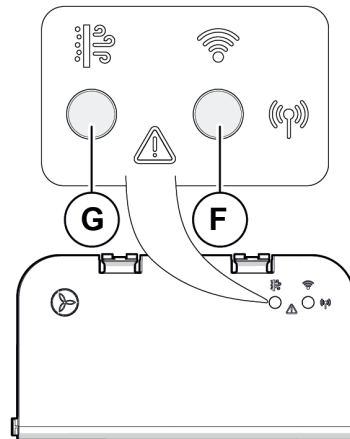


	Part
A	Power LED (preset 1-3 LED)
B	Filter LED
C	Error LED
D	WiFi LED
E	RF LED
F	Connection button
G	Filter button

5.2 Buttons

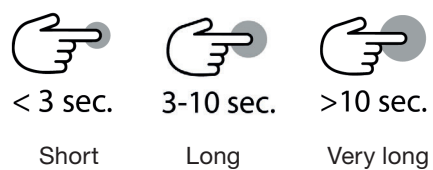
The User Interface has two buttons:

- The Filter button (G).
- The Connection button (F).



Button	Function
Filter (G)	Control the filter change wizard
Connection (F)	Control the WiFi mode Control RF pairing Reset the connection module
Both Filter (G) and Connection (F)	Reset errors Reset to factory defaults

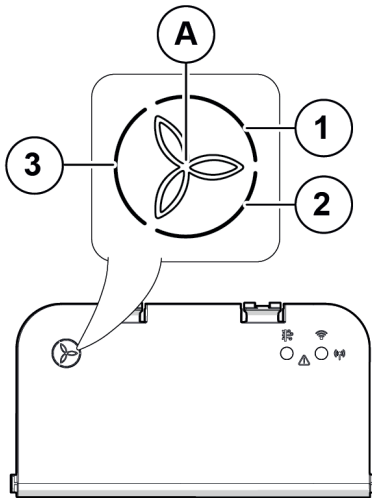
There are three types of button press levels based on how long you press the button:



5.3 Indicators (LEDs)

5.3.1 Fan preset

Fan preset LED (A) activity specifications:

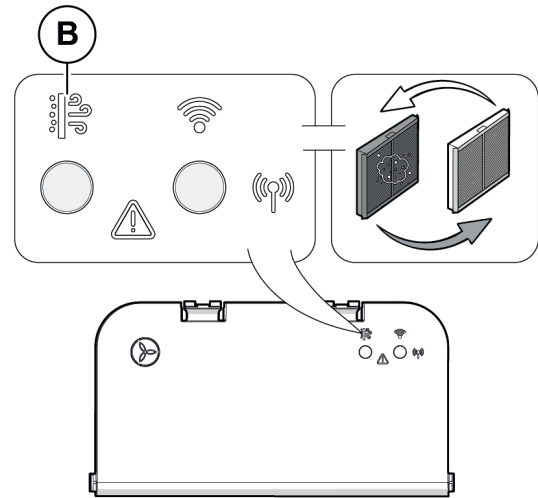


LED	LED state
	No power connected to the unit
	Preset AWAY
	Preset 1
	Preset 2
	Preset 3

- When a preset LED is lighting up solid, the unit is operating at this preset as requested by user/time scheduler.
- When the preset LED is blinking, the unit is operating with a higher airflow than requested by user/time scheduler, because an automatic control (sensor, etc.) requires a higher airflow. In the ComfoControl app you can verify which automatic control requires a higher airflow.

5.3.2 Filter

Filter LED (B) activity specifications:

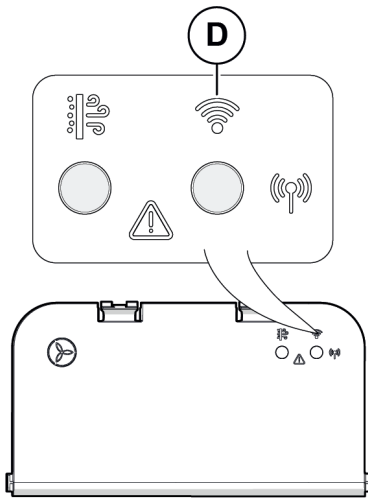


LED colour	LED state	Description
	OFF	Not available
	On	Filters are OK
	On	Filter warning, order filters now
	Blinking slow	Filter alarm, filter must be replaced
	Blinking slow	Filter replace wizard started
	Blinking slow (3x)	Filter replace wizard finished
	Blinking fast (5x)	Filter replace wizard aborted

- ⚠ **When the colour of the Filter LED is orange make sure to order the new set of filters.**
- ⚠ **When the colour of the Filter LED is red directly change the filters.**

5.3.3 Connectivity

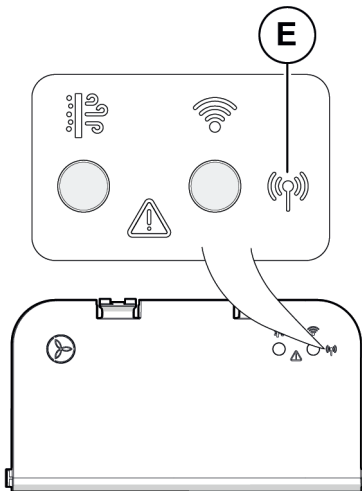
The connectivity LED (D) activity specifications:



LED colour	LED state	Description
-	OFF	No Wi-Fi
	On	Not connected to the home network
	Blinking fast	WiFi AP mode activated
	Breathing light	WiFi AP mode client connected
	Breathing white light	Connected to the home network via router

5.3.4 RF pairing

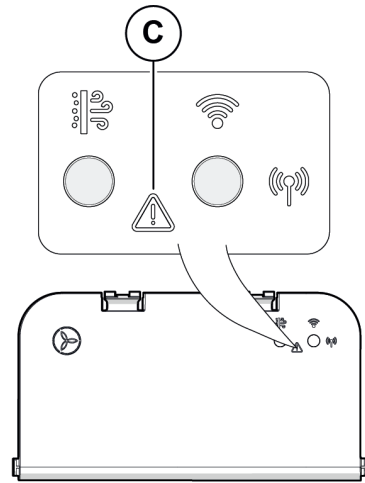
The RF LED (E) activity specifications:



LED colour	LED state	Description
	Blinking slow	RF pairing busy
	On (5 seconds)	RF pairing successful
	Blinking fast (5x)	RF pairing failed or aborted
	Blinking slow (3x)	RF pairing is not possible (no RF PCB installed)

5.3.5 Error

The Error LED (C) activity specifications:



LED colour	LED state	Description
-	OFF	No warning
	Blinking slow (3x)	Reset error
	Blinking fast	Zehnder ComfoControl App control required
	On	Warning
	Blinking slow	Alarm
	Blinking fast	Configuration error

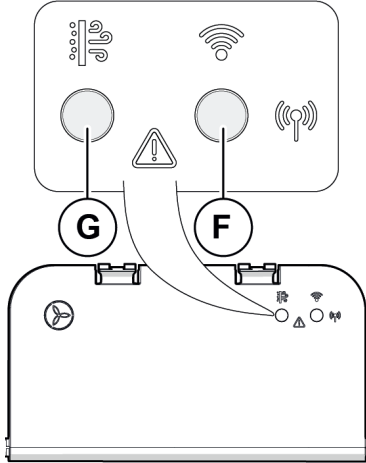
The LEDs only show the presence of an alarm warning on the device. To find out what the specific message is, you should consult the Zehnder ComfoControl App.

5.4 Special modes

- Factory reset.
- Startup mode.
- Installer mode.
- Firmware upgrade mode.

5.4.1 Factory reset

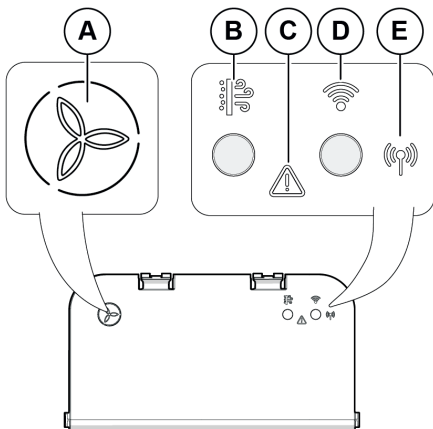
Two different reset commands:



Button	Push and hold	Description
Connection (F)	3-10 sec.	Factory reset of the connection module
Both Connection (F) and Filter (G)	3-10 sec.	Installer reset of the mainboard and the connection module

5.4.2 Startup mode

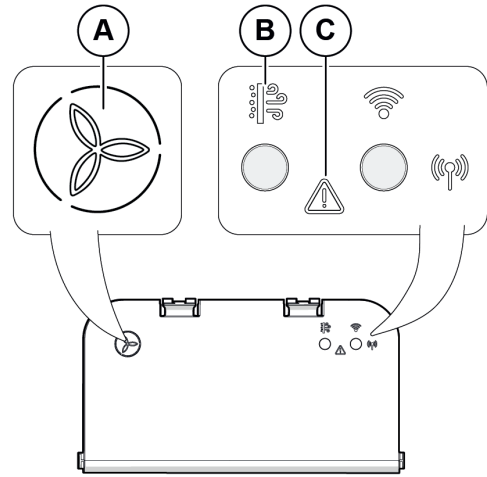
The LED behavior during the startup:



LED	LED state	Description
Fan preset (A) Filter (B) Error (C) Connection (D) RF (E)	Blinking white light slow (3x)	Unit is powering up

5.4.3 Installer mode

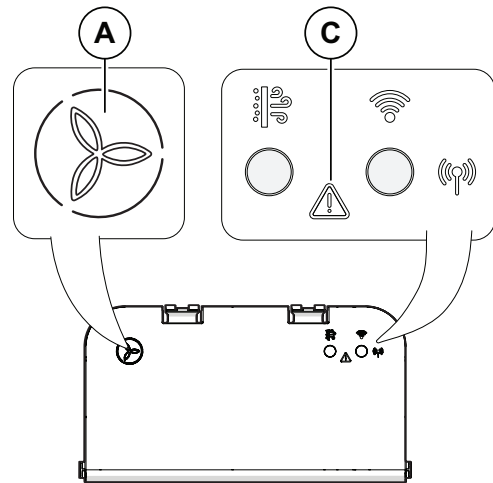
The unit is in a special mode for installer specific actions:



LED	LED state	Description
Error (C)	Blinking fast	Wizard active. Service mode active. Service print mode active.
Fan preset (A)	- OFF	
Filter (B)	- OFF	

5.4.4 Firmware upgrade mode

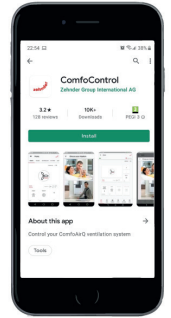
The LED behavior during firmware update:



LED	LED state	Description
Error (C)	Blinking white light slow	Mainboard update mode active.
Error (C)	Blinking white light fast	Connection board update mode active.
Fan preset (A)	Rotating	Flashing mainboard.
Error (C)	Blinking white light slow	Flashing connection board.
Fan preset (A)	Rotating	
Error (C)	Blinking white light fast	

5.5 Commissioning

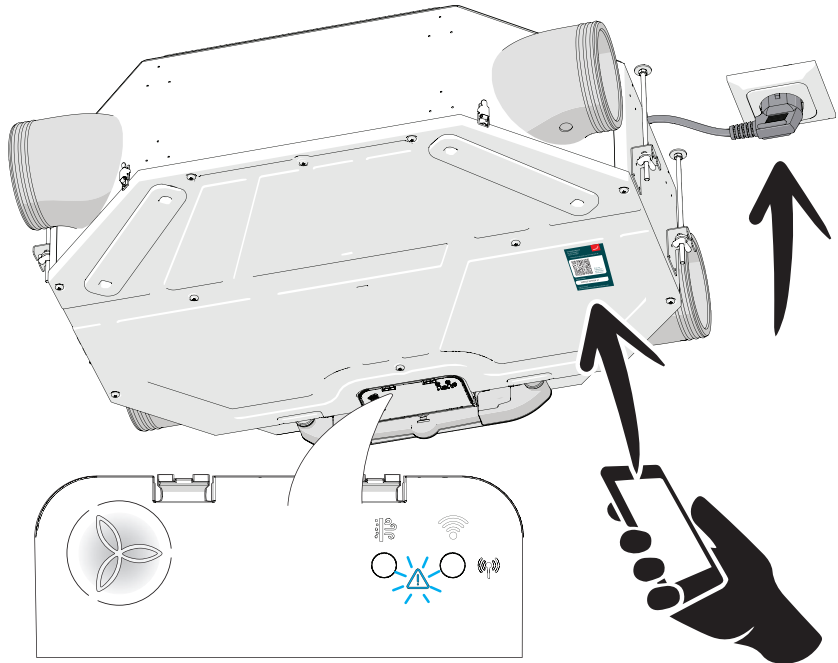
The official Zehnder ComfoControl App is available for iOS and Android devices. You can control and setup installation and user settings of your ComfoAir Flex ventilation system locally or remotely. (Remote use requires the device to be connected to internet via 3G/4G/5G or a WiFi hotspot).



Commissioning steps


Step 1:

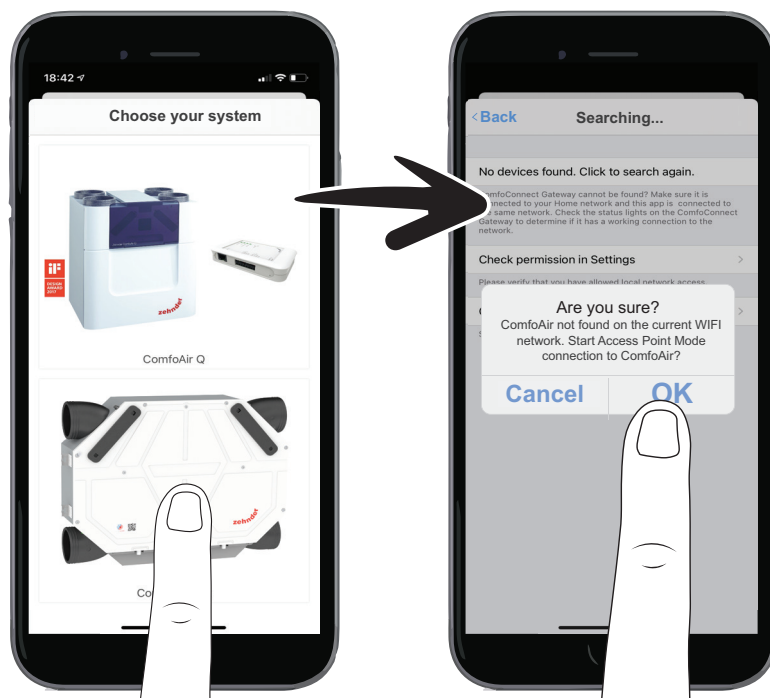
- Scan the QR code to download the Zehnder ComfoControl App.
- Connect the unit to the power. After the start up you can see that the Power LED is white and the Error LED is blue and blinking. The unit waits to be commissioned.



Step 2:

- Start up the App, go in the menu to "MY SYSTEMS", choose "ADD SYSTEM" and select the ComfoAir Flex system.
- Select OK for direct connection to the unit.

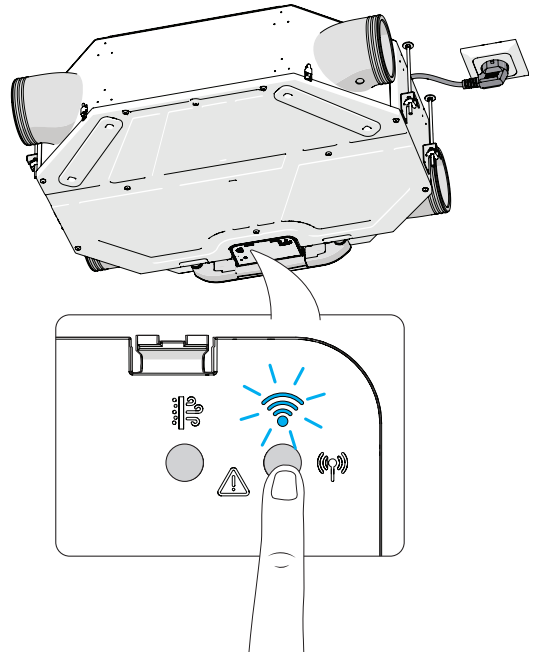
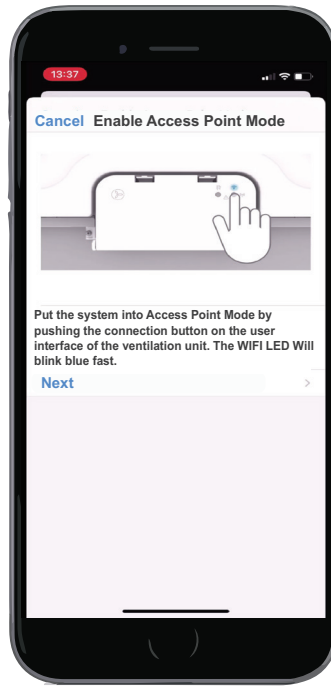
 **When a message with an Internet connection problem pops-up, select "Use mobile data" and proceed.**



Commissioning steps

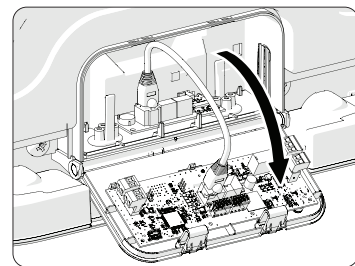
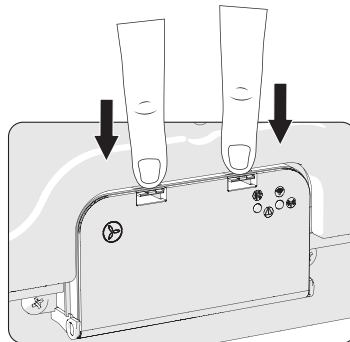
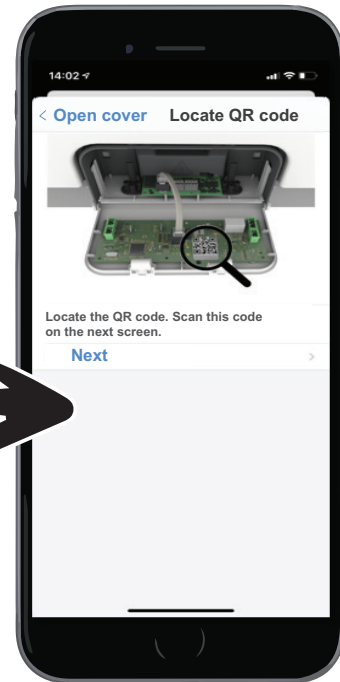
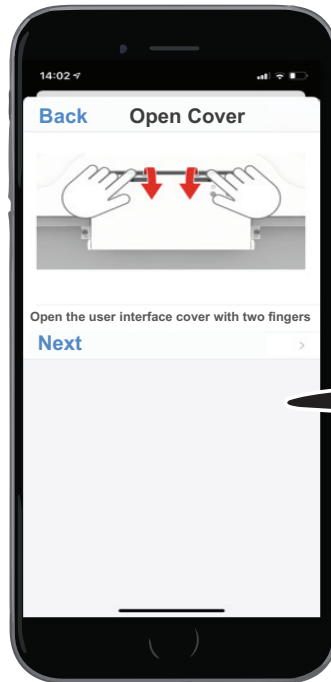
Step 3:

Follow the instructions in the Zehnder ComfoControl App and push the connection button (1x) on the user interface on the unit.



Step 4:

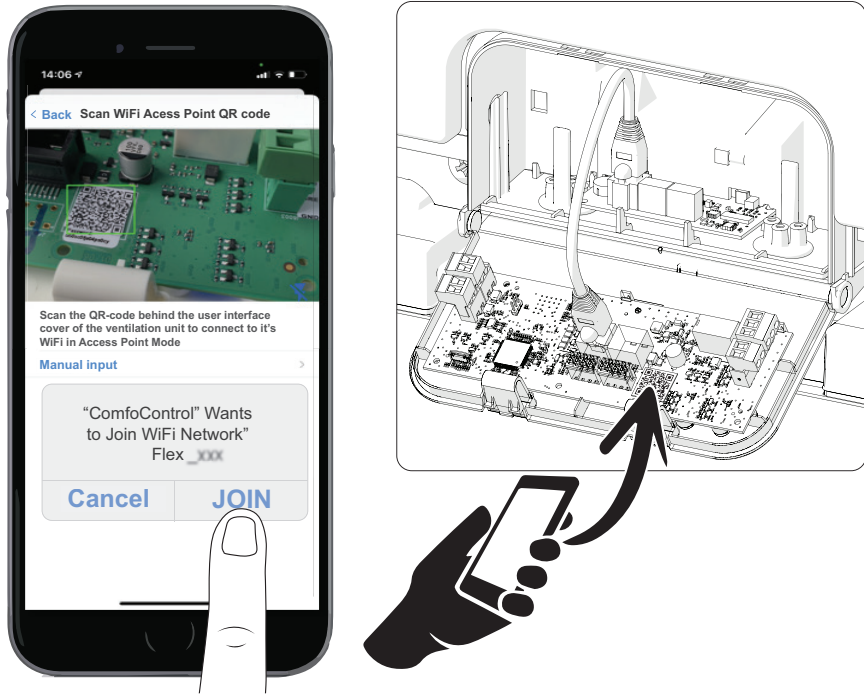
Open the user interface cover with two fingers and find the QR code.



Commissioning steps

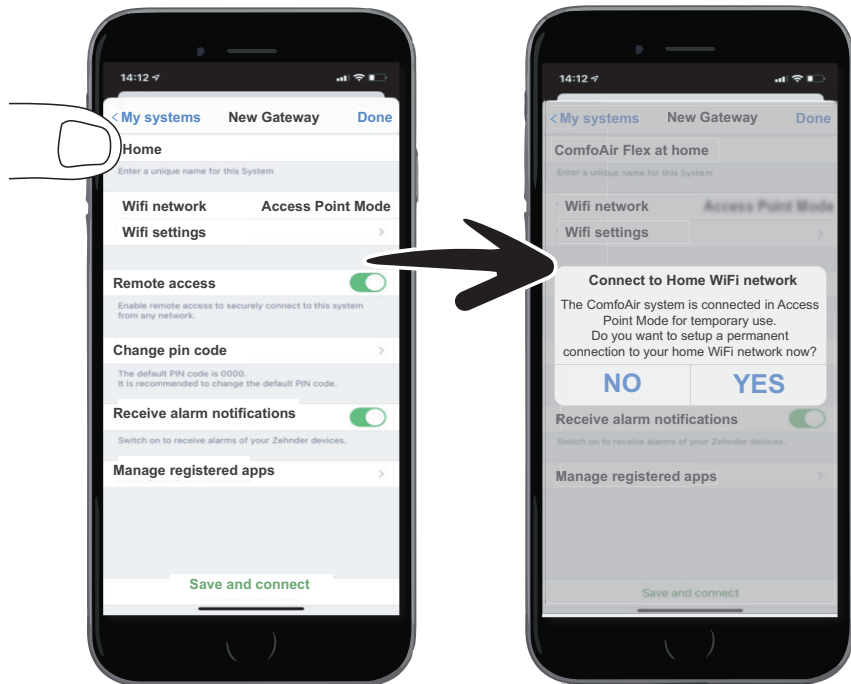
Step 5:

- Scan the QR code on the user interface and select "JOIN".
- Close the cover.



Step 6:


- Rename the unit from "Home" to "Temporary".
- When the pop-up with the question "Connect to Home WiFi network" is shown select NO for temporary connection.
- The Commissioning Wizard will start.




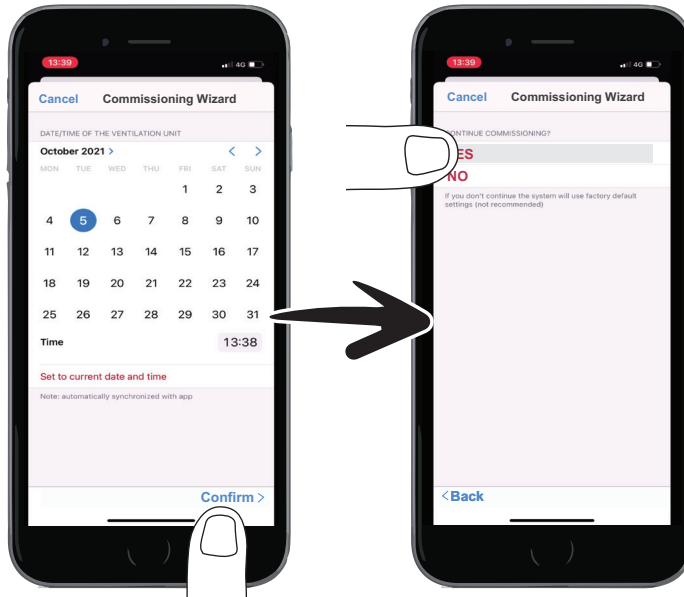
Commissioning steps

Step 7:

- When the Commissioning Wizard starts, follow the instructions in the Zehnder ComfoControl App.
- Complete the basic configuration of the wizard.

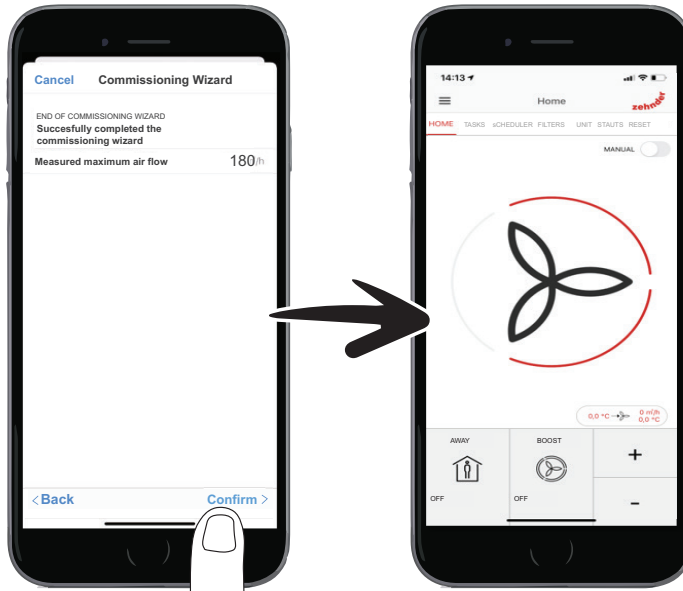
 **The wizard steps are necessary to prevent frost and water damage to the unit.**

 **Checkmark the applicable situation on the air direction sticker.**



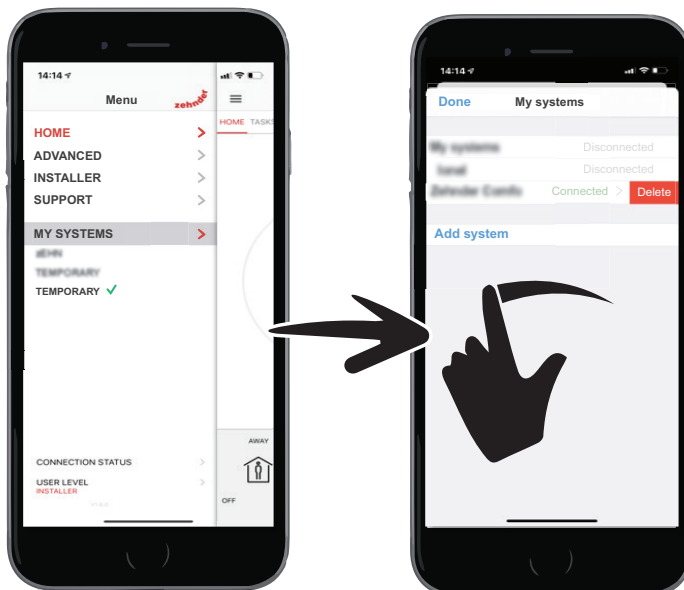
Step 8:

- Make sure that all commissioning steps are done and select "Confirm". The commissioning is finalized.
- Make sure that all the other (optional) installer settings are done.





Step 9:

- In the menu select "MY SYSTEMS".
- Swipe to the left to delete the temporary connection to the unit.





6 Maintenance procedures


 **Follow all the preventive maintenance procedures given in this chapter and in the user manual at a regular interval. If the preventive maintenance is not performed periodically the performance of the ventilation system will be compromised.**


 **Before you start the maintenance, run the unit in preset 3 for at least 2 minutes in order to remove condensate from the heat exchanger.**

 **If it is necessary to replace a spare part, please order a corresponding service set from Zehnder.**




 **Refer to the chapter 2.2 for more information on the available spare parts.**

 **Always disconnect the power from the unit before you carry out maintenance to the ventilation system. When the unit is open while in operation, it can cause personal injury. Make sure that the unit cannot be switched on accidentally.**

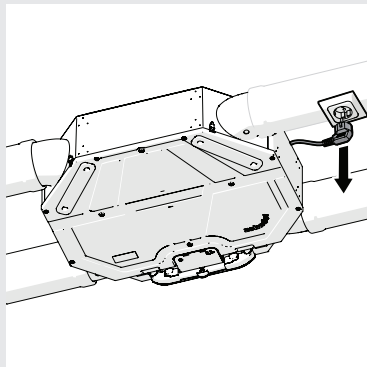
 **Make sure that the front is locked with the 2 locking clips on both sides before unscrewing the front.**

 **Always take ESD protection measures when you work with electronics, such as wearing an antistatic wristband. Static electricity can cause damage to the electronics.**

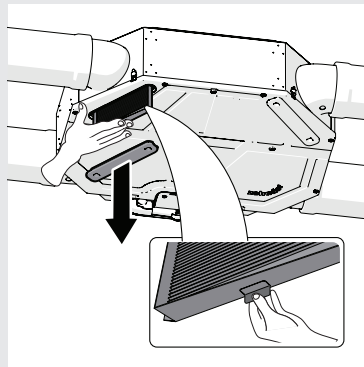
6.1 Procedure to open the unit and maintenance of the casing

-  **Before you start the maintenance, run the unit in preset 3 for at least 2 minutes in order to remove condensate from the heat exchanger.**
 - Inspect the unit casing for any damage at least once every 2 years.
 - Treat any signs of corrosion and other damage directly and appropriately.
-  **Do not use soap to clean the front foam and the EPP foam parts (black hard parts with structure). Soap affects the air and water tightness of the material.**
-  **During assembly: it is important, that the screws are tightened with minimal force, we strongly recommend to use a screwdriver.**


Procedure to open the unit and maintenance of the casing

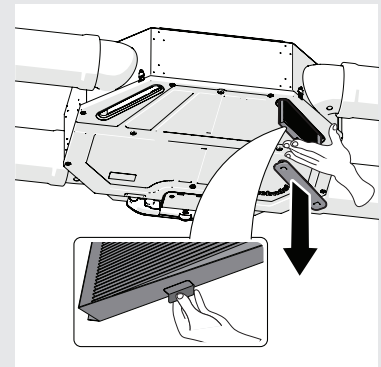


1 Disconnect the power from the unit.




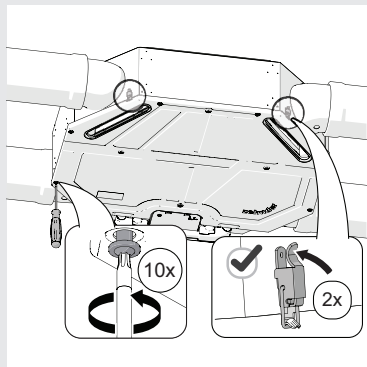
2 Remove the first filter cap and then the first filter.


 **Hold the filter to prevent it from falling out.**




3 Remove the second filter cap and then the second filter.

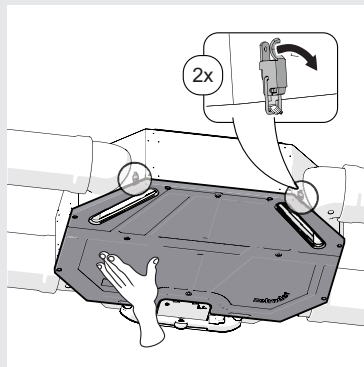
 **Hold the filter to prevent it from falling out.**



 **Make sure the front is locked with the 2 locking clips on both sides of the unit.**

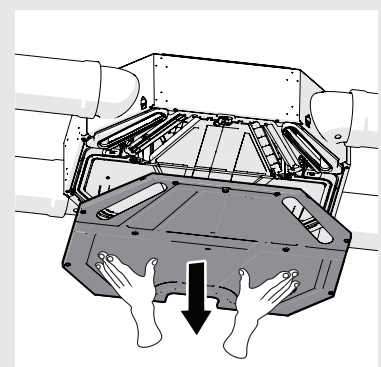
4 Remove all the 10 screws on the front with a screwdriver.

 **Keep the the screws together in a safe place until you have finished maintenance.**



5 Support the front with one hand and release the locking clips with the other hand.

 **Mind the weight of the loose front.**



6 Lower the front with care and put the front safe away during maintenance.

7 Perform the listed below checks.

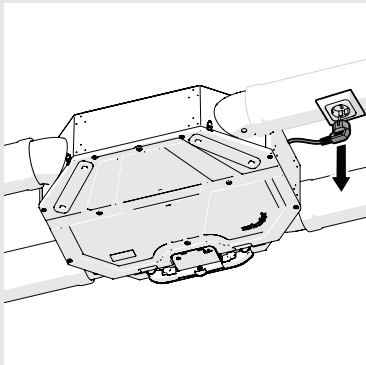
 **Maintenance check list:**

- ✓ Do a check of the locking clips for damage.
- ✓ Do a check inside and outside of the unit for dirt and damage.
- ✓ Do a check of the duct connections for dirt and damage.

6.2 Maintenance of the drip tray

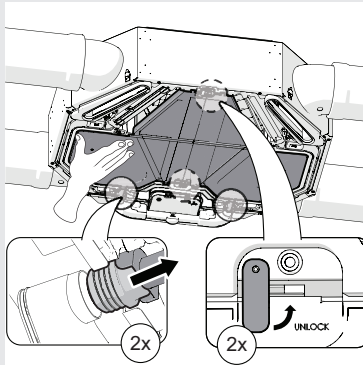
- Inspect the drip tray at least once every 2 years.
- Treat any signs of corrosion and other damage directly and appropriately.

Maintenance of the drip tray



1 Disconnect the power from the unit.

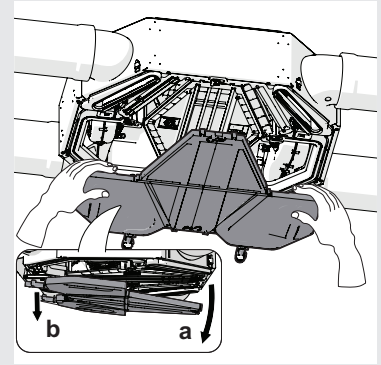
2 Follow the procedure in paragraph 6.1 to open the unit.



3 Push fully back the condensate connection grommets out of the double dry siphon on to the condensation drain pipes against the stop.


 **Some force is necessary.**

4 Support the drip tray with one hand and unlock the turn locks with the other hand to release the drip tray.



5 Remove the drip tray carefully.

6 Lower the drip tray with care and put the drip tray safe away during maintenance.

 **Be aware that some condensate water can still be present in the drip tray.**

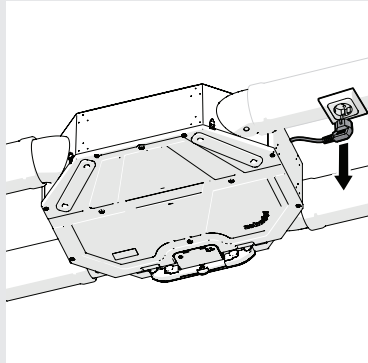
 **Maintenance check list:**

- ✓ Do a check of the turn locks for damage.
- ✓ Do a check of the drip tray for dirt and damage.

6.3 Maintenance of the modulating bypass

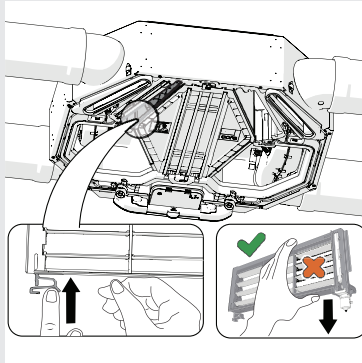
- Inspect both bypass valves at least once every 2 years.
- Treat any signs of dirt or damage directly and appropriately.
- Remove the bypass for easy cleaning.

Maintenance of the modulating bypass



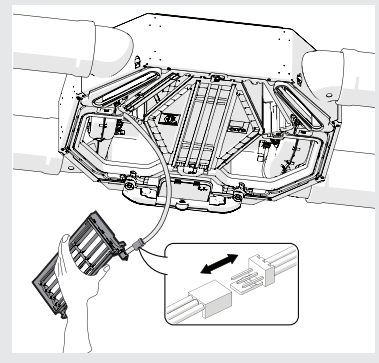
1 Disconnect the power from the unit.

2 Follow the procedure in paragraphs 6.1 and 6.2 to open the unit and remove the drip tray.



3 Remove the bypass while pressing in both locking mechanisms.

! Do not put pressure on the bypass slats. They can easily get damaged.



4 Disconnect the cable connector of the bypass motor.

5 Follow the same procedure to remove the second bypass module.

6 Perform the listed below checks.

Maintenance check list:

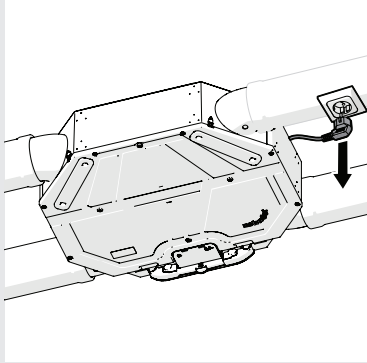
- ✓ Do a check of the bypass valves for dirt and damage.
- ✓ Clean the bypass with a vacuum cleaner with brush accessory and/or with a damp cloth to remove dirt and dust.
- ✓ After cleaning install the bypass back in the unit.

6.4 Maintenance of the preheater


- Inspect the preheater at least once every 4 years.
- Use a soft brush to clean the preheater.

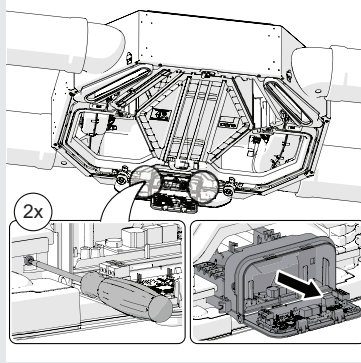
 **Do not wet-clean the preheater.**

Maintenance of the preheater

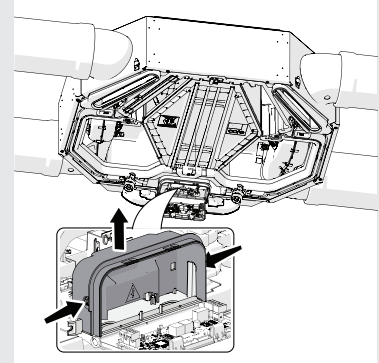


- 1 Disconnect the power from the unit.
- 2 Follow the procedures in the paragraphs 6.1, 6.2 and 6.3 to open the unit, remove the drip tray and remove the bypass module.

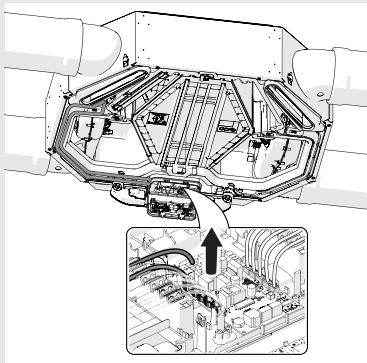
 **Only the bypass on the outdoor air side, where the pre-heater will be installed, is necessary to be removed.**



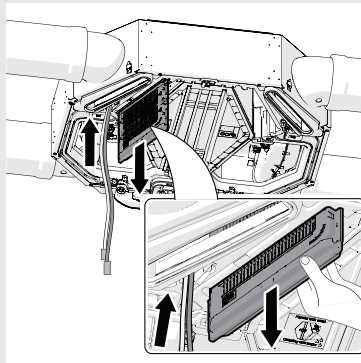
- 3 Remove the 2 screws of the electronics compartment and slide it out for more space.




- 4 Remove the grey cover from the electronics compartment by pushing the snap fasteners on the two sides.

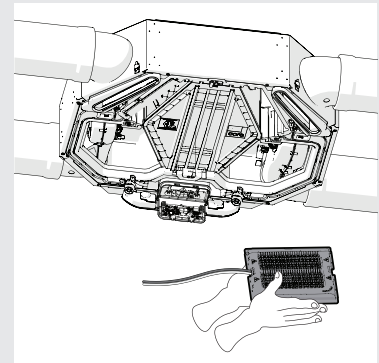


- 5 Open the electronic compartment and remove the signal connector and power cable from the preheater.



- 6 Push up the two cables, first the grey then the black cable, through the EPP casing and pull down at the other side the preheater.

 **Some force is necessary to push up the 2-wire grommet in the EPP casing.**



- 7 Remove the preheater to be cleaned.
- 8 Perform the listed below checks.

Maintenance check list:

- ✓ Inspect the preheater for any damage and dirt.
- ✓ If necessary, carefully clean the preheater with a brush.
- ✓ After cleaning the preheater, install the preheater back in the unit.

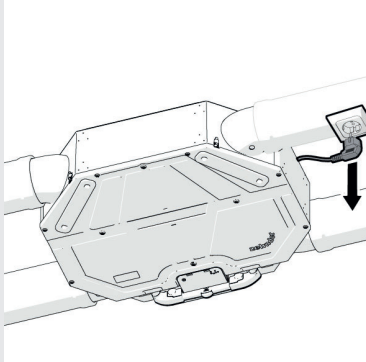
6.5 Maintenance of the heat exchanger

- Inspect the heat exchanger at least once every 2 years.
- Do not cut the strap of the heat exchanger. The strap is necessary to pull out the heat exchanger from the unit safely.

! Do not use soap to clean the heat exchanger. Soap will damage the air seal of the heat exchanger.

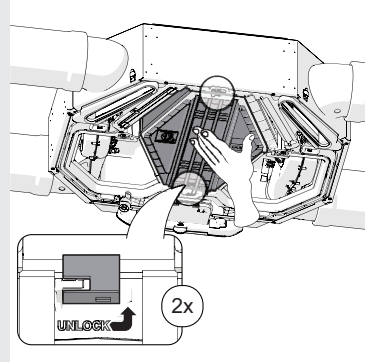
- Clean the heat exchanger with lukewarm water without detergent to remove dirt and dust.

Maintenance of the heat exchanger

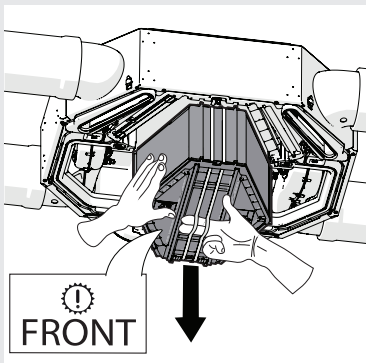


1 Disconnect the power from the unit.

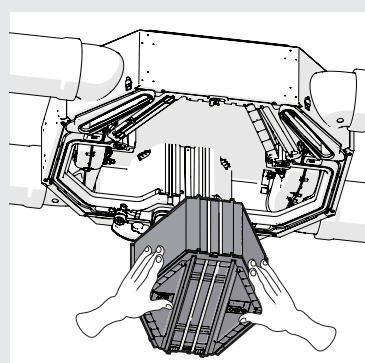
2 Follow the procedures in the paragraphs 6.1 and 6.2 to open the unit and remove the drip tray.



3 Support the heat exchanger with one hand and unlock both slide locks with the other hand to unlock the heat exchanger.



4 Support the heat exchanger with both hands when removing it from the unit. Gently pull the strap if necessary.



8 Lower the heat exchanger with care and put it away safely during maintenance.

9 Perform the listed below checks.

10 Please make sure that you re-install the heat exchanger in the correct way. Label FRONT should be visible.

Maintenance check list:

- ✓ Inspect the heat exchanger for any damage and dirt.
- ✓ If necessary, carefully clean the heat exchanger with water:
 - Submerge the heat exchanger several times in lukewarm tapwater (max. 40°C).
 - Rinse the heat exchanger with clean lukewarm tapwater (max. 40°C).
 - Hold the heat exchanger with both hands (on the solid side surfaces) and shake the excess water out of the heat exchanger.
- ✓ After cleaning the heat exchanger, install the heat exchanger back in the unit.

6.6 Maintenance of the fans

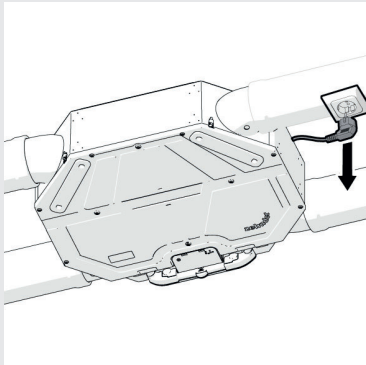
- Inspect the fans at least once every 2 years.
- Treat any signs of dirt or damage directly and appropriately.
- Remove the fans from the unit for easy cleaning.
- Use a vacuum cleaner with brush accessory to remove dirt and dust.



Be careful with the fan impellers to make sure they do not get damaged.

- Use a soft brush to clean the fan impellers.

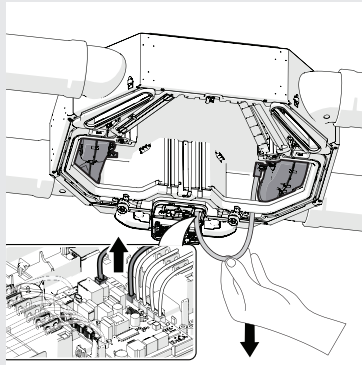
Maintenance of the fan(s)



1 Disconnect the power from the unit.

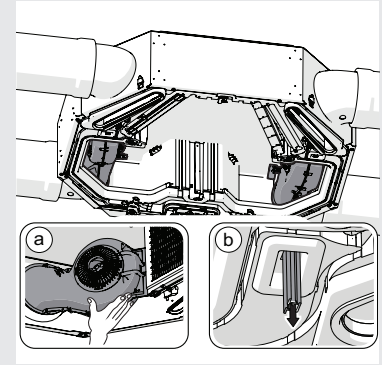
2 Follow the procedures in the paragraphs 6.1, 6.2 and 6.5 to open the unit, remove the drip tray and remove the heat exchanger.

See step 3 and 4 of chapter 6.4, on how to reach the mainboard.



3 Remove the signal connector and power cable of the fan connected to the mainboard.

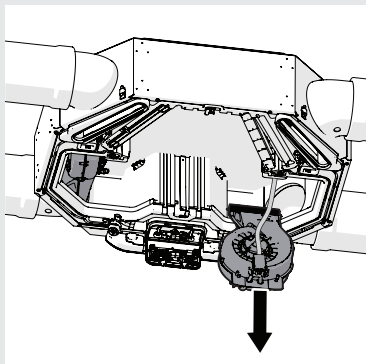
4 Carefully pull the fan wiring out of the electronics compartment.



5 Support the scroll housing with one hand.

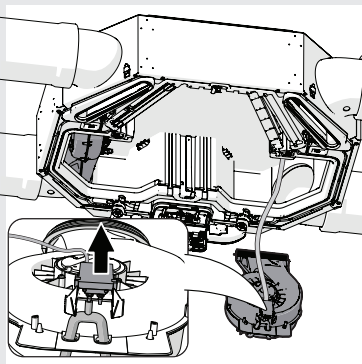
Unlock the scroll housing by pulling out the locking profile with the other hand.

Keep the locking profile at a safe place until you are done.



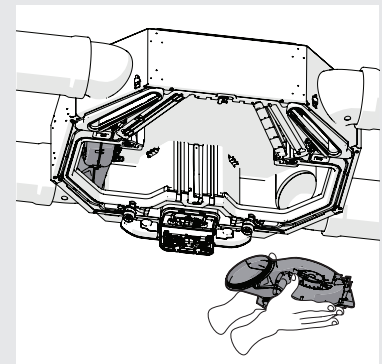
6 Carefully pull out the scroll housing with both hands:

- Slide the scroll towards the gap where the profile was.
- This way the scroll can be pulled out of the air connections.
- Turn the scroll towards the heat exchanger area to get it out of the unit.



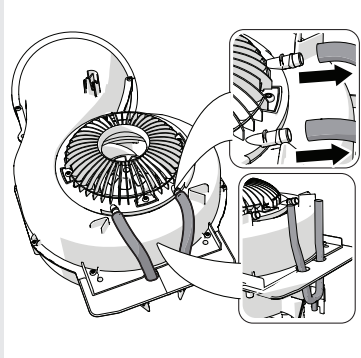
7 Disconnect the flow sensor from the back side of the scroll housing.

Remove the flow sensor tube from the connection that is marked with an arrow.

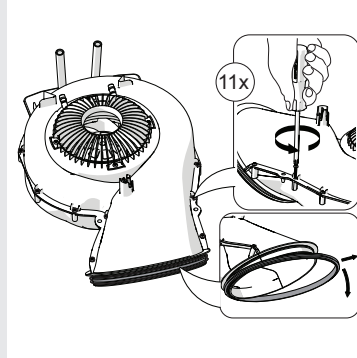


8 Lower the scroll housing with care and put it on the desk to proceed with maintenance.

Maintenance of the fan(s)

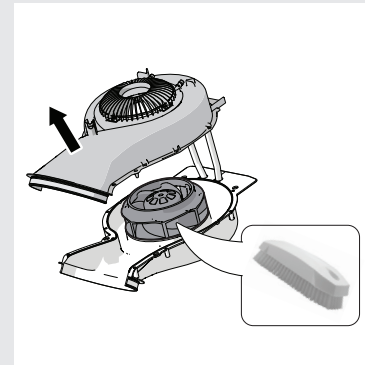


9 Remove the flow sensor tubes.



10 Remove all the 11 screws.

11 Remove the rubber sealing to open the scroll housing.



12 Perform the listed below checks.

Maintenance check list:

- ✓ Do a check of the flow grid, the scroll housing and the fan impellers for dirt and damage.
- ✓ If necessary, clean the flow grid and casing with a vacuum cleaner with brush accessory.
- ✓ If necessary, clean the fan impellers with a soft brush.
- ✓ Replace the fan when the fan is damaged.
- ✓ After maintenance, assemble all the parts in reverse order and place the scroll housing back in the unit.



During assembly: It is important that the screws are tightened with minimal force, we strongly recommend to use a screwdriver.

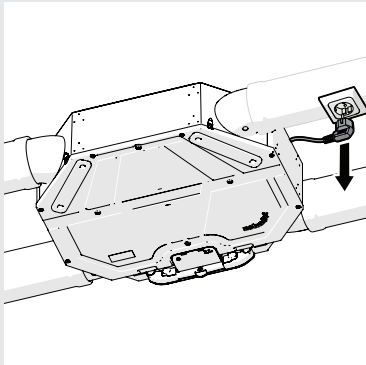


The flow measurement tube needs to be connected to the left connector of the flow sensor, when refitted (connection is marked with an arrow on the sensor).

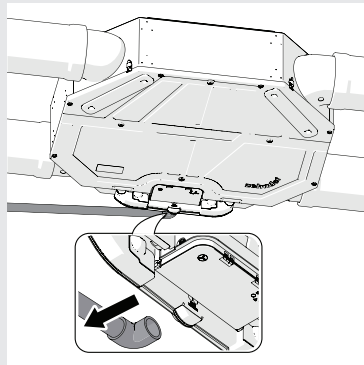
6.7 Maintenance of the double dry siphon

- Inspect the double dry siphon at least once every 2 years.

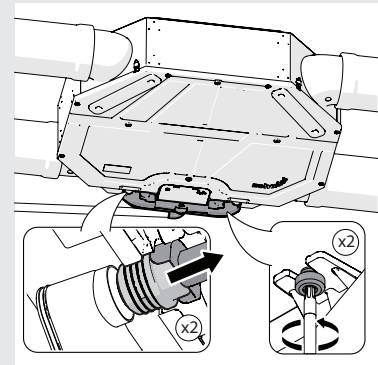
Maintenance of the double dry siphon




1 Disconnect the power from the unit.



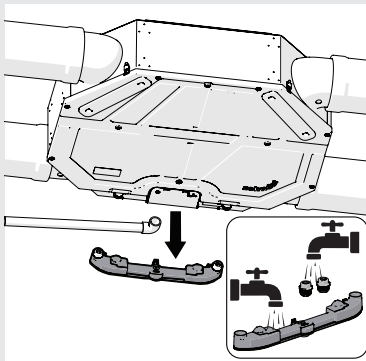
2 Pull off the drain pipe connection sleeve from the double dry siphon. The drain pipe remains attached to the ceiling.



3 Push fully back the condensate connection grommets out of the double dry siphon on to the condensation drain pipes against the stop.


 **Some force is necessary.**

4 Loosen the screws from the base plate.



5 Remove the double dry siphon with the condensate connection grommets from the condensation drain.

6 Clean the double dry siphon and the condensate grommets with clean tap water.

 **Make sure that you keep the condensate connection grommets and the double dry siphon together in a safe place until you have finished maintenance.**

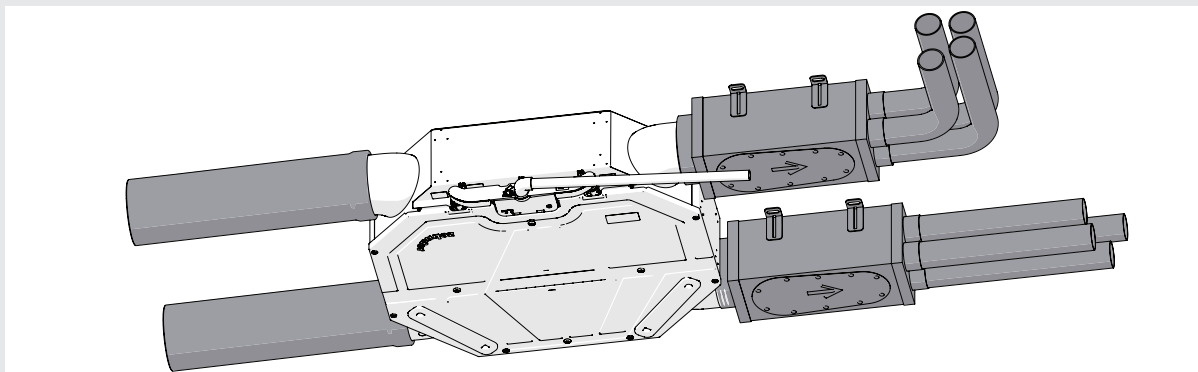
 **Maintenance check list:**

- ✓ Inspect the dry siphon for dirt and grease.
- ✓ Check whether the seal of the condensation drain is airtight.
Air must not pass through, but the condensate water should drain properly as well.
- ✓ Resolve the observed issues.
- ✓ Re-attach the condensation drain to the unit, see paragraph 4.2 step 13.

6.8 Maintenance of the air ducts

- Inspect the air ducts at least once every 4 years.
- Examine the air ducts for dirt, grease, air leakage and resistance.

Maintenance of the air ducts




- 1 Disconnect the power from the unit.
- 2 Remove the valves and/or the grilles for access to the air ducts.
- 3 Perform the listed below checks.

Maintenance check list:

- ✓ Do a check of the air ducts for dirt and grease.
- ✓ Inspect the air ducts for air leakage. Fix the loose joints.
- ✓ Check the air ducts for bends, dents and blocked valves (resistance).
- ✓ Inspect the air ducts, the valves and/or grilles and clean them, if necessary.
- ✓ Resolve the observed issues.
- ✓ Re-attach the air ducts to the unit, see paragraph 4.2 step 10.

 **Use a brush or a vacuum cleaner to remove the dirt and the dust.**

 **Do not use the unit to remove the dirt from the air ducts. The dirt can cause damage to the unit.**

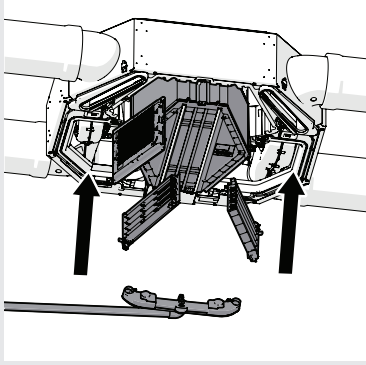
6.9 Procedure to end the maintenance

■ After maintenance, install all parts to their initial positions.

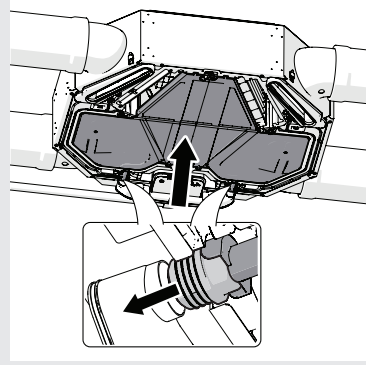
⚠ **Make sure all the cables are placed in the guide rails of the EPP casing for a correct fit.**

⚠ **During assembly: It is important that the screws are tightened with minimal force, we strongly recommend to use a screwdriver.**

Ending maintenance



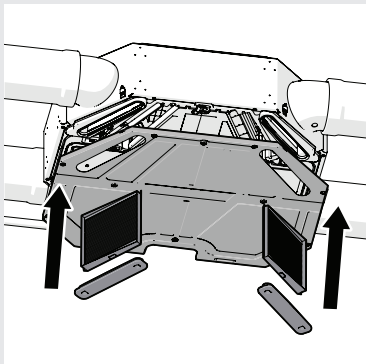
1 Install the heat exchanger, bypass, preheater back in opposite sequence.



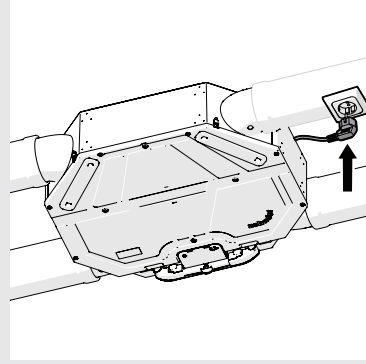
2 Install the drip tray.

3 Push the two condensate connection grommets from the condensation drain pipes into the double dry siphon.

👉 **Some force is necessary.**



4 Install the front, filters and filter caps back in opposite sequence.



5 Connect the unit to the power mains.

