

Zehnder ComfoAir Flex 250

Ceiling mounted mechanical supply and extract ventilation with heat recovery (MVHR)

Product data sheet

always the best climate





ComfoAir Flex 250

The Zehnder ComfoAir Flex 250 has been developed as an ideal solution for apartments and small homes where efficient use of space is important. Installation within a suspended ceiling is possible, even in small spaces, thanks to its compact design with minimal dimensions and rotatable spigots. It contains features such as its integrated Wi-Fi connection with app control, automatic true summer by-pass, high heat recovery efficiency and upgradable high grade filters providing a comfortable, healthy and energy-efficient indoor climate.

Example controls - sold separately



ComfoSwitch C67



ComfoControl App

Key Benefits

- Wi-Fi enabled as standard for use with the ComfoControl app for IOS or Android.
- Left or right hand configuration through software alone, no mechanical alteration required.
- 100% full and filtered modulating summer bypass.
- Rotatable spigots for flexibility on duct connections.
- Commissioning wizard for a quick and simple set-up process.
- Flow control to maintain commissioned flow rates.
- Adaptive comfort technology.
- Automatic passive temperature boost in summer.
- Humidity boost continuously monitors the humidity level within the home and looks for a man-made spike before boosting the unit.
- Double dry siphon included to enable an easier installation.
- Tool free filter access.
- Volt free contact boost capability.
- 0-10V BMS input.
- Fire shutdown contact.
- Remote access.
- Internal pre-heater option.
- [ISO Coarse](#) (G4), [ISO ePM10](#) (M5) and [ISO ePM1](#) (F7) filter options.
- Passive House certified.

Article Numbers

Description	Product Code
Unit	
Zehnder ComfoAir Flex 250	471 234 220
Zehnder ComfoAir Flex 250 with pre-heater	471 234 230
Controls	
Controls, Zehnder ComfoSwitch C67 speed controller for ComfoAir Flex 250/350, incl. mounting box	655 010 255
Controls, ComfoControl RFZ wireless controller for use with ComfoSense 67/C67 (CCRFZ)	655 000 755
Controls, ComfoControl RFZ Timer wireless controller for use with ComfoSense 67/C67	655 000 780
Zehnder RF-PCB to offer wireless connectivity to the CCRFZ without the use of a ComfoSense C67	400 502 016
Controls CO2 C67, ComfoNET connection only, sensor and combined three position switch, incl. mounting box	655 000 885
Controls, Zehnder ComfoConnect PRO BMS interface for Zehnder ComfoAir Flex 250/350	471 429 300
Filters	
Filter for Zehnder ComfoAir Flex 250, ISO Coarse (G4), 2 Pieces	400 100 122
Filter for Zehnder ComfoAir Flex 250, ISO Coarse / ISO ePM10 (G4 / M5), 2 Pieces	400 102 098
Filter for Zehnder ComfoAir Flex 250, ISO Coarse / ISO ePM1 (G4 / F7), 2 Pieces	400 100 121
Filter for Zehnder ComfoAir Flex 250, ISO Coarse / ISO ePM1 (G4 / F7), 10 Pieces	400 100 123
Filter for Zehnder ComfoAir Flex 250, ISO ePM1 (F7), 10 Pieces	400 100 124
Filter for Zehnder ComfoAir Flex 250, ISO Coarse (G4), 10 Pieces	400 100 125
Accessories	
Heat exchanger for Zehnder ComfoAir Flex 250	527 010 690



SAP PCDB

SEC Class

	SFP (W/l/s)		Efficiency (%)	
	2009	2012	2009	2012
K+1	0.73	0.68	96%	95%
K+2	0.64	0.63	95%	94%
K+3	0.61	0.68	94%	92%
K+4	0.64	0.77	93%	91%
K+5	0.68	0.87	92%	90%
K+6	0.75	1.03	91%	88%
K+7	0.85		90%	



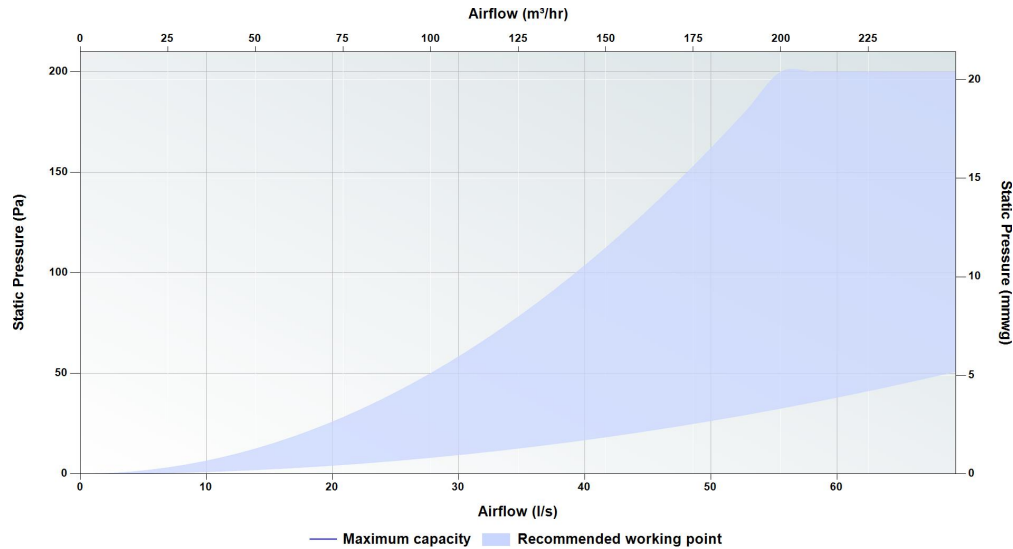
Based on average climate with local demand control

Passive House Certification

	Standard heat exchanger
Air flow range	100-195 m³/hr
Heat recovery rate	HR = 89%
Specific electric power	Pel,spec = 0.25 Wh/m³



Pressure Curve



Resistance Guard cap at 230Pa

Sound Data

Speed	Test area	Octave Band (Hz) Sound Power Level, dB								dB(A) @ 3 m
		63	125	250	500	1000	2000	4000	8000	
20%	Casing	38.3	35.2	33.0	24.9	26.0	19.4	13.8	11.2	12.8
	Supply/Exhaust	59.3	54.4	50.7	44.9	37.8	26.7	22.1	11.0	
	Extract/Intake	59.9	38.0	30.1	29.4	19.1	6.0	8.9	17.3	
40%	Casing	43.0	40.9	39.9	34.6	35.9	31.4	26.9	20.4	22.3
	Supply/Exhaust	64.5	60.6	58.3	54.6	47.6	39.1	36.7	24.4	
	Extract/Intake	62.1	44.2	37.4	38.7	28.7	15.6	16.0	18.4	
60%	Casing	47.3	46.1	46.2	43.6	45.1	42.3	39.0	28.9	31.7
	Supply/Exhaust	69.3	66.2	65.2	63.6	56.6	50.6	50.0	36.7	
	Extract/Intake	64.0	49.7	44.0	47.3	37.5	24.5	22.5	19.3	
80%	Casing	51.6	51.4	52.5	52.6	54.2	53.3	51.1	37.4	41.6
	Supply/Exhaust	74.0	71.9	72.2	72.5	65.6	62.0	63.4	49.1	
	Extract/Intake	66.0	55.3	50.7	55.8	46.3	33.3	28.9	20.2	
100%	Casing	52.8	52.8	54.2	55.1	56.7	56.3	54.4	39.8	44.4
	Supply/Exhaust	75.3	73.4	74.1	74.9	68.1	65.1	67.0	52.4	
	Extract/Intake	66.6	56.9	52.5	58.1	48.8	35.8	30.7	20.4	

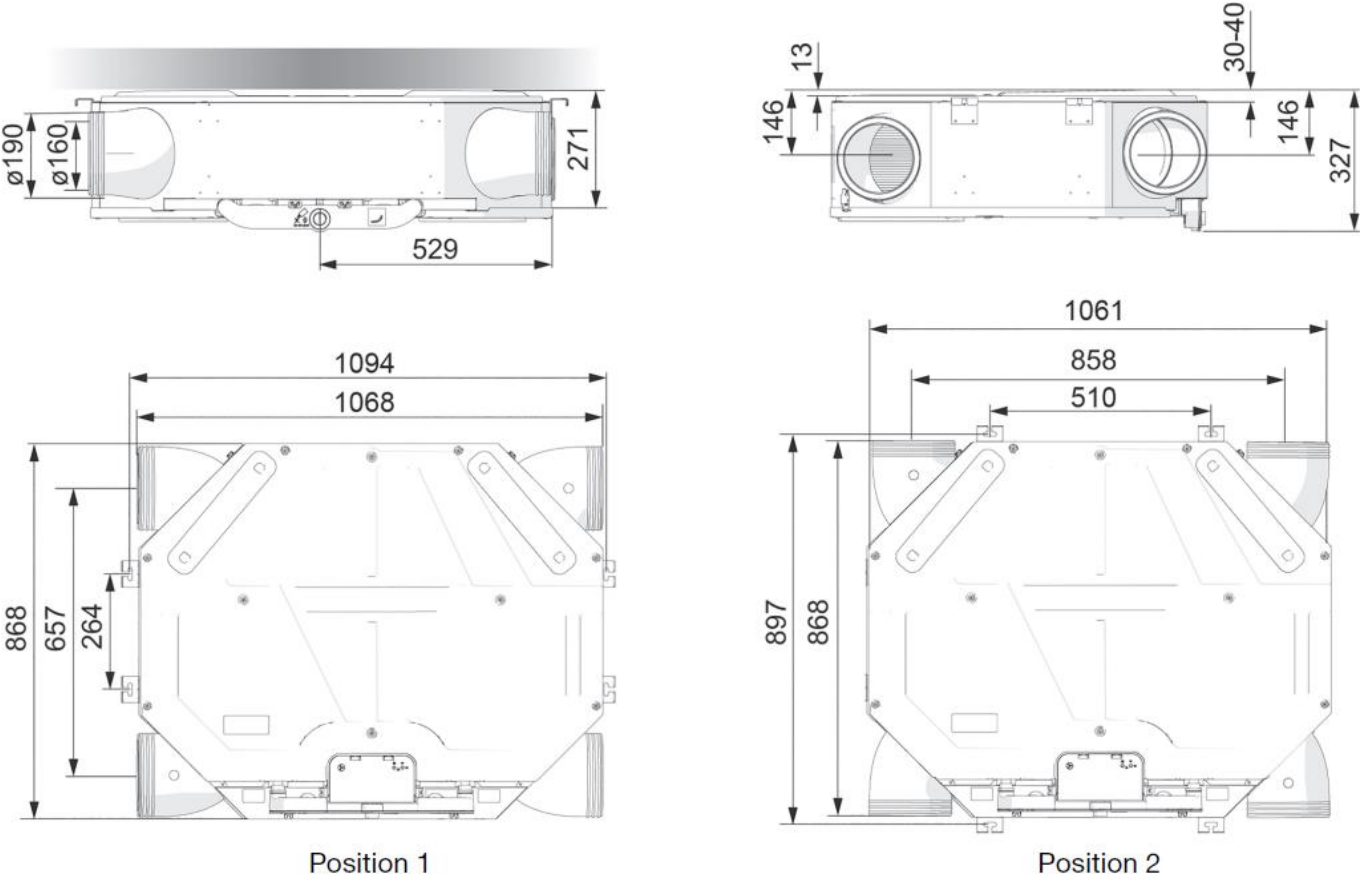
Casing tested according to [ISO 3741:2010](#). Supply and Extract tested according to [ISO 5135:1997](#) showing induct sound power level corrected for end duct reflection according [EN 13053:2019](#). Casing dB(A) @ 3 m given as hemispherical.

Technical Specification

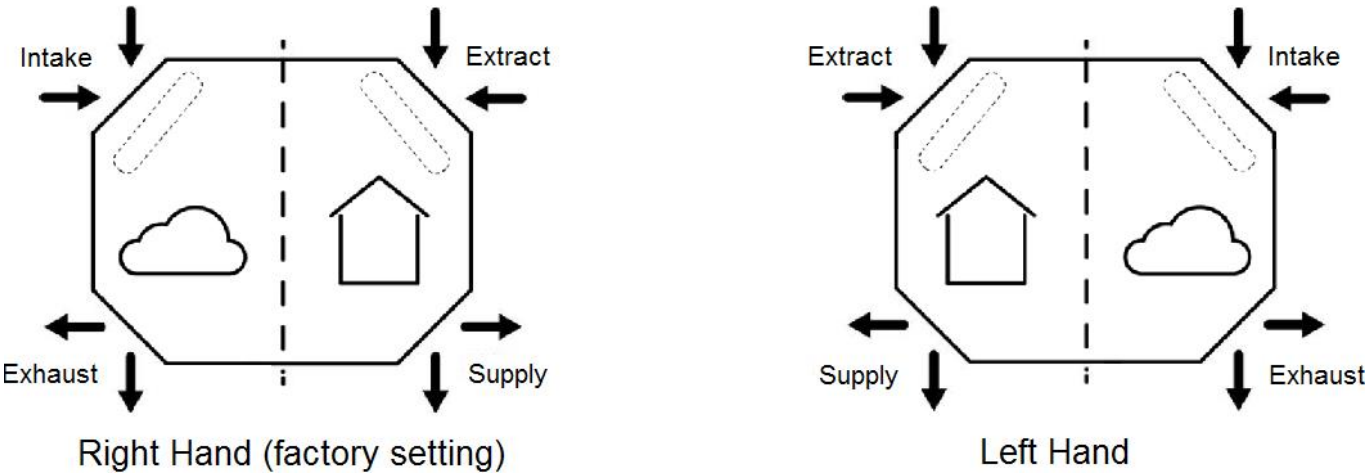
Weight	38 Kg
Ducting ø	Internal - 160 mm External - 190 mm
Condensate connection ø	32 mm
Filter grade	Standard - ISO Coarse / ISO Coarse (G4 / G4) Optional - ISO Coarse / ISO ePM1 (G4 / F7)
Materials	Internal EPP / ABS External coated sheet steel
Supply voltage	230 V / single-phase / 50Hz
Maximum power consumption including / excluding pre-heater	1820 W / 119 W
Current draw including / excluding pre-heater	8.35 A / 0.96 A
Fuse rating including / excluding pre-heater	10 / 3 amp
Specific Fan Power	0.63 W/l/s
Heat Recovery Efficiency	95%
IP Rating	IP20

Dimensions

Height	327 mm
Width	1061 - 1068 mm
Depth	868 mm



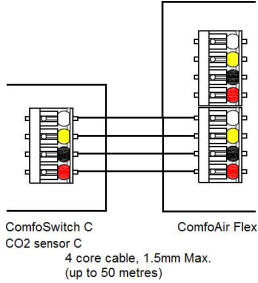
Air Direction/Connection



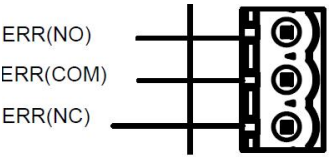
Wiring

Electrical connections should be carried out in accordance to [IEE regulations](#) by a qualified electrician. The unit is supplied with a flying lead for connection to the mains supply.

ComfoAir Flex ancillary wiring



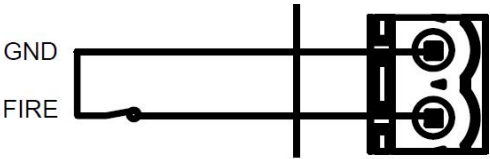
Error contact



ComfoAir Flex

3 core cable, 24 Vac/Vdc, 1 A (up to 30 metres)

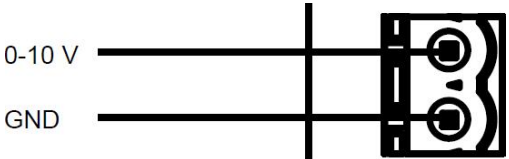
Fire alarm contact



ComfoAir Flex

3.3 Vdc, 1 mA (up to 30 metres)

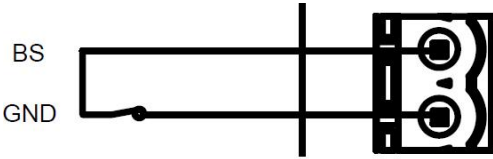
BMS input (0-10V)



ComfoAir Flex

2 core cable, 10 Vdc, 37.5 mA (up to 30 metres)

Volt free contact



ComfoAir Flex

3.3 Vdc, 1 mA (up to 30 metres)



Controls

ComfoSwitch C67

Product code: 655 010 255



The Zehnder ComfoSwitch C67 is a four position switch designed to enable the user to manually select the desired ventilation systems flow rate and provide system notifications

Key Benefits

- 4 separate ventilation flow rate options to select in 1 controller
- Temporary high speed activation setting
- Service and Maintenance alert

Technical Specification

Mounting options	Recessed / Surface
Supply voltage	Low voltage direct from the MVHR units ComfoNET connector
IP rating	IP44
Recommended cable	4 core cable, 1 mm Max. (up to 50 metres)
RAL colour	9016
Maximum number per unit	2 (3/6 if using ComfoSplitter unpowered/powered)
Supplied mounting box	655 010 270

Dimensions (recessed)

Height	80 mm
Width	80 mm
Depth	12 mm

Dimensions (surface mounted)

Height	80 mm
Width	80 mm
Depth	48.5 mm

ComfoControl RFZ

Product code: 655 000 755



The Zehnder CCRFZ is a three position switch designed to enable the user to manually select the desired ventilation systems flow rate and provide system notifications. This controller can only be used in conjunction with the ComfoSense or ComfoSense C.

Key Benefits

- Wireless controller
- 3 separate ventilation flow rate options to select in 1 controller
- 2 temporary high speed activation settings
- Service and Maintenance alert

Technical Specification

Mounting options	Surface
Supply voltage	Powered by a coin cell lithium battery (type: CR 2032)
IP rating	IP40
RAL colour	9010
Maximum number per unit	40

Dimensions (surface mounted)

Height	80 mm
Width	80 mm
Depth	14 mm



ComfoControl RFZT

Product code: 655 000 780



The Zehnder CCRFZT is a multi position switch designed to enable the user to manually select the desired overrun timer duration. This controller can only be used in conjunction with the ComfoSense or ComfoSense C.

Key Benefits

- Wireless controller
- 3 separate ventilation overrun timer options to select in 1 controller
- Manual override to prematurely turn off the overrun timer
- Controller service and connection alert

Technical Specification

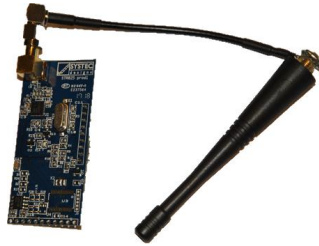
Mounting options	Surface
Supply voltage	Powered by a coin cell lithium battery (type: CR 2032)
IP rating	IP40
RAL colour	9010
Maximum number per unit	40

Dimensions (surface mounted)

Height	80 mm
Width	80 mm
Depth	14 mm

RF-PCB - ComfoAir Q

Product code: 400 502 016



The Zehnder RF-PCB enables the CCRFZ (655 000 755) controller to be used with the ventilation system without the need for the ComfoSense C67.

Key Benefits

- Acts as a wireless receiver to the CCRFZ (655 000 755) controller without the need for the ComfoSense C67
- Built into the unit and not visible from the outside

Technical Specification

Mounting options	Inside the unit direct to the PCB
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CO2 sensor C67

Product code: 655 000 885



The Zehnder CO2 sensor C67 is a remote CO2 sensor and combined three position switch designed to enable the user to manually select the desired ventilation systems flow rate based on the visual air quality indicator, or automatically adjust the unit relevant to the CO2 level.

Key Benefits

- Green, orange and red visual air quality indication light
- 3 separate ventilation flow rate options to temporarily select in 1 controller for manual 12hr override
- CO2 measuring range 0-2000 ppm
- Self-calibrating
- Discreet design
- Direct connection via ComfoNET (No need for Option Box)
- Daisychain connection available for when using multiple sensors

Technical Specification

Mounting options	Surface / Recessed
Supply voltage	Low voltage direct from the MVHR units ComfoNET connector
IP rating	IP30
Recommended cable	4 core cable, 1 mm Max. (up to 50 metres)
RAL colour	9016
Maximum number per unit	ComfoAir Q - 10 ComfoAir Flex - 4
Supplied mounting box	400 300 291

Dimensions (recessed)

Height	80 mm
Width	80 mm
Depth	12 mm

Dimensions (surface mounted)

Height	80 mm
Width	80 mm
Depth	43.5 mm



ComfoConnect PRO

Product code: 471 429 300



The Zehnder ComfoConnect PRO Modbus, Internet and app interface allows you to use the Zehnder ComfoControl app. The connection to the Zehnder device is wired via ComfoNET and LAN or wireless via Wi-Fi. Direct connection to a home automation system is also possible.

Key Benefits

- Automation protocols (Modbus RTU/TCP) with local / remote app control via cloud and technical support
- Digital security cryptographic keys, secure cloud platform and automatic software updates
- Compatible with a wide range of Zehnder ComfoNet II devices and accessories (Zehnder ComfoAir Q, Zehnder ComfoAir Flex, Zehnder ComfoSwitch C / ComfoSense C)

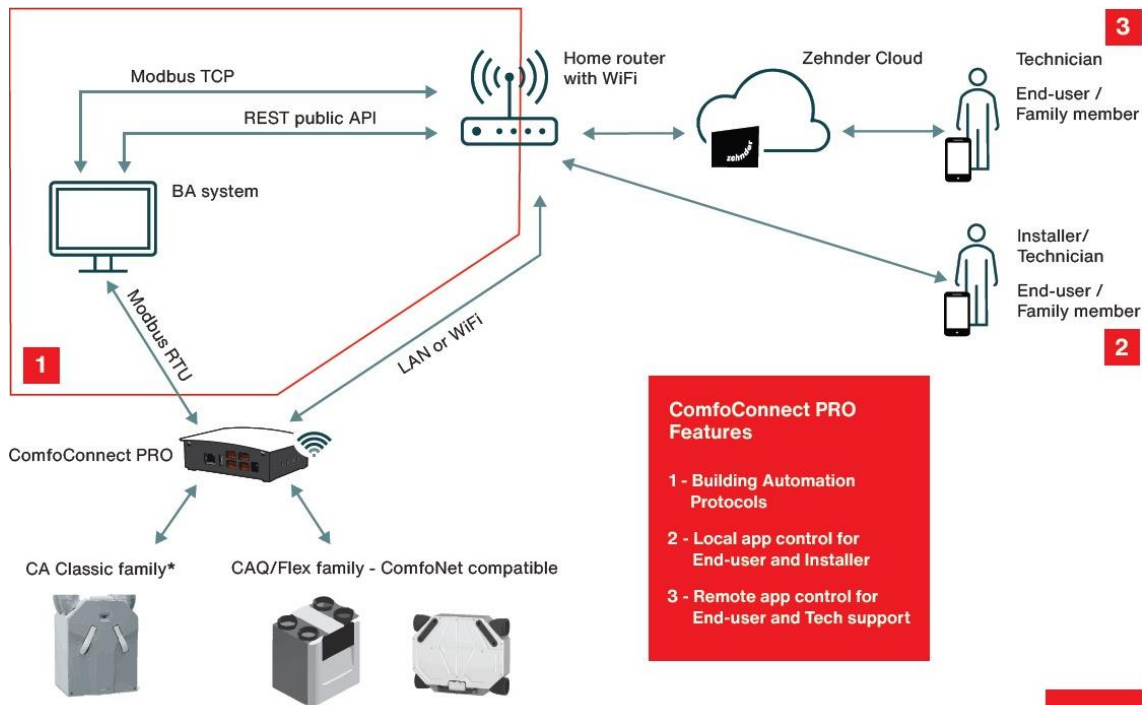
Technical Specification

Supply voltage	Low voltage direct from the MVHR units ComfoNET connector	
IP rating	IPX0	
Recommended cable	4 core cable, 1 mm Max. (up to 50 metres)	
RAL colour	Front: 9003	Back: 7024
Maximum number per unit	1	
Wi-Fi	2.4 GHz / 5 GHz	
Ethernet	10/100 Mbit	
Connectors	RS232 RS485	
Communication protocols	Modbus TCP Modbus RTU	
Compatible smart home manufacturers	Loxone Smart Place	

Dimensions (surface mounted)

Height	133 mm
Width	90 mm
Depth	41 mm

Wiring



*ComfoAir 160, 180, 200, 225, 350, 450, 550, SL220, SL330, Standard 300, Standard 375 - Available from software release 1.1



For use with

Our range of ComfoAir MVHR units can be used in conjunction with ComfoWell. The modular ComfoWell manifold can be combined with multiple circular connections for rigid round or semi-rigid connections. Along with filter boxes and attenuated manifold options, the ComfoWell is the perfect bespoke air distribution system for our ComfoAir MVHR units.



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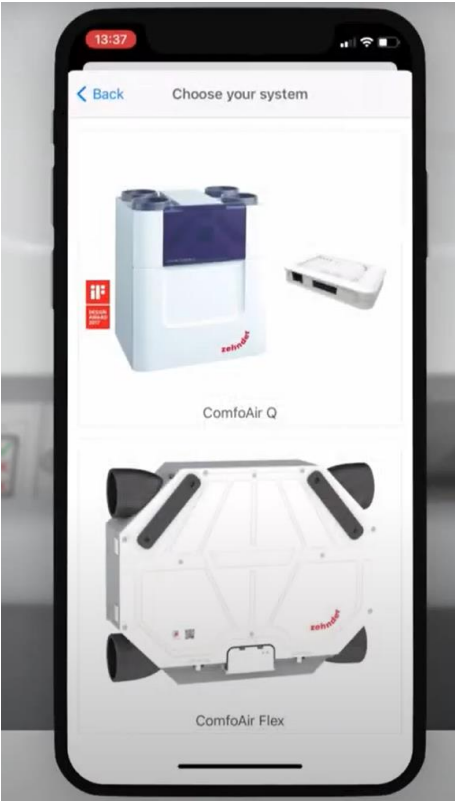
Our Informational Videos



Watch our video on how to install the Zehnder ComfoAir Flex.

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Watch our video on how to commission the Zehnder ComfoAir Flex.

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Consultant Specification

Specification

The unit shall consist of a body manufactured in powder coated sheet steel. The unit shall be fully insulated using high quality EPP to maintain excellent thermal characteristics and prevent shrinkage over time. It shall have EC motors with sealed for life bearings. The fans impellers should be low pressure centrifugal type with backward curved blades within ABS scroll housing and flow ring to provide accurate pressure measurement and incorporate a flow grid to optimise the airflow into the fan. The heat exchanger shall be a multi-plate, counter flow design constructed from Polystyrene with laser welded joints and shall retain up to 96% of the temperature differential of outgoing air.

The unit shall contain filters which have been tested to a minimum of [ISO Coarse](#) (G4) standard with the option to upgrade to [ISO ePM1](#) (F7). The filters shall be pleated to reduce the pressure drop and required cleaning time. The unit shall have 160 mm duct connections, and be suitable for ceiling mounting with the ability to allow left or right hand configuration through the unit's software alone – no mechanical reconfiguration shall be required. Integrated modulating preheater options shall be available to regulate its output to enable balanced ventilation with external air temperatures -10°C. The unit shall be compatible with air conditioning systems as condensate can be taken from both sides of the product simultaneously.

The unit shall have a 100% full summer bypass using an in-line modulating mechanism to provide filtered supply air 365 days of the year, even under bypass conditions. It shall provide fresh filtered air to aid night time cooling during summer and prevent condensation within the supply pipework, regardless of the external air temperature. The unit shall contain a temperature sensor for each air stream to ensure correct and logical operation of the bypass damper by evaluating differential as well as absolute temperature to maximise the opportunity for free cooling. The unit shall control air flow to react to prolonged, sustained increased pressure drops to best achieve the commissioned flow rate even when filter degradation occurs. Airflow should not react to short term 'wind gusts' to avoid nuisance running.

The unit shall be constructed to have a removable cover to allow full maintenance access. The removable cover shall enable access to the supply/extract fan, heat exchanger and access to electrical connections. The motors shall be suitable for removal without the requirement for the unit to be removed from situ and be available as spare parts for a minimum of 10 years even after ceasing manufacture of the unit.

The unit shall conform to LVD and EMC standards and be CE Marked in addition to having an EU compliant energy rating label (SEC) with a minimum grade of A. The unit shall conform to [UK Electrical Equipment \(Safety\) Regulations](#) and [Electromagnetic Compatibility Regulations](#) and be UKCA Marked. The unit shall be manufactured by Zehnder.

Operation

The supply and extract unit shall be a ComfoAir Flex manufactured by Zehnder and shall be suitable to mount on the ceiling in accordance with the specification.

The fresh filtered air from outside shall be supplied to each of the habitable rooms and pre-heated by the warm extract air from the wet areas, such as kitchen or bathroom, via the plastic counter flow heat exchanger. The unit shall vary its speed of the EC motors automatically when it receives a signal from one of the inbuilt sensors or via external switches.

The unit shall have the ability to adjust and commission the supply and extract motors independently via the app for smart phone or tablet. The motors shall both automatically adjust independently to the system pressure to achieve the input flow rate.

Controls

All ComfoAir Flex units shall contain the following functions within the unit pre-wired and factory fitted by the manufacturer:

- Dial-a-duty motor control
- Wi-Fi enabled as standard for use with app
- 4 Variable speed flow rate set points
- Automatic filtered modulating summer bypass with timed manual override option
- Heat exchanger frost protection
- Commissioning wizard to enable commissioning of the unit
- Integral service, fault and operation indicators
- Tool free filter access
- Humidity sensors to operate the unit in response to humidity spikes above natural background humidity levels as opposed to a single threshold humidity point to activate the high set point
- Automatic passive boost for night time cooling
- Variable overrun timer relative to high speed activation period

Consultant Specification

All ComfoAir Flex units shall contain the following options when combined with relevant ancillaries:

- BMS compatibility via Modbus protocol option (ComfoConnect PRO)
- Pre-heater frost protection option
- Control input for single or multiple 4 speed manual/auto controller with filter alert (ComfoSwitch C 67)
- Control input for single or multiple CO2 sensors with combined 3 speed manual controller (CO2 sensor C67)
- Wireless input for multiple 3 speed manual controller with temporary boost overrun (ComfoControl RFZ + RF-PCB)
- Wireless input for manual controller with 3 temporary boost overrun time options (ComfoControl RFZT + RF-PCB)