

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, irrespective of distance or dilution.
- 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, 12V 0-10V CO2 sensor and combined three position switch, incl. mounting box | 655 000 885 |
| 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% | |



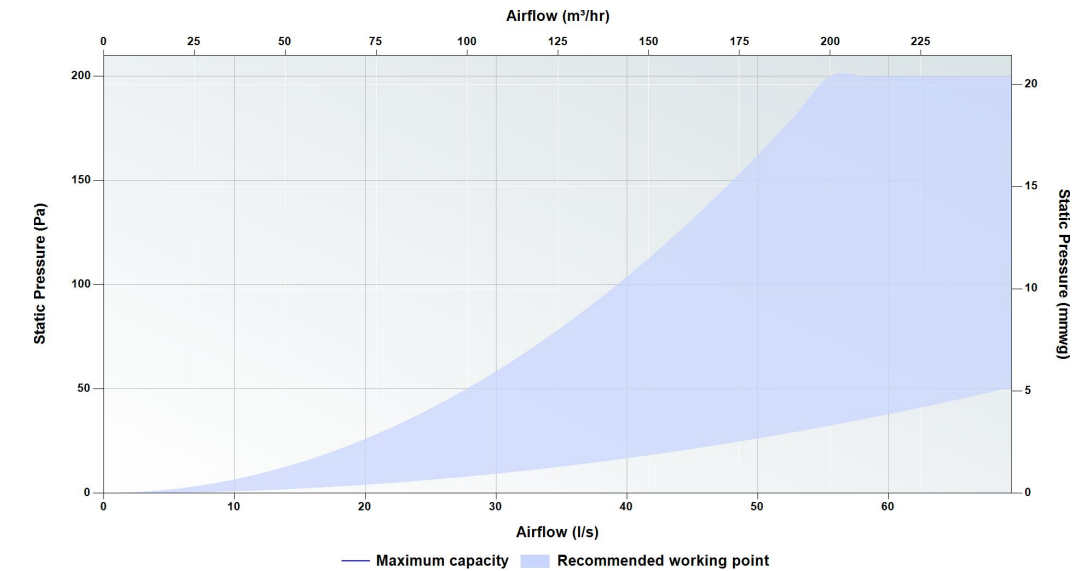
Based on average climate with local demand control

Passive House Certification

| | Standard heat exchanger |
|-------------------------|-----------------------------------|
| Air flow range | 100-195 m ³ /hr |
| Heat recovery rate | HR = 89% |
| Specific electric power | Pel,spec = 0.25 Wh/m ³ |



Pressure Curve



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 | |

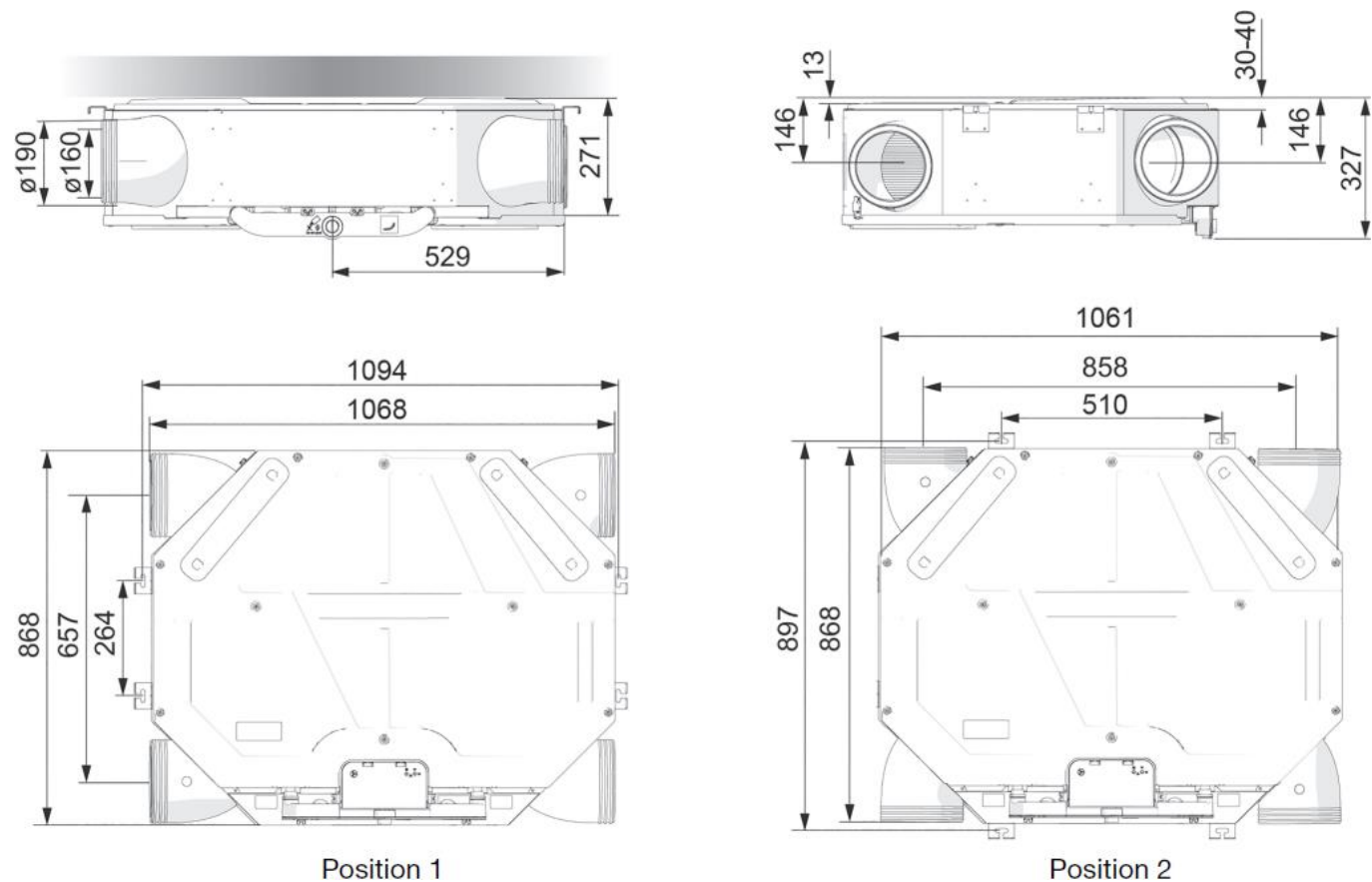
Casing tested according to ISO 3741:2010. Supply and Extract tested according to ISO 5135:1997 showing induct sound power level corrected for end duct reflection according to EN 13053:2019. Casing dB(A) @ 3 m given as hemispherical.

Technical Specification

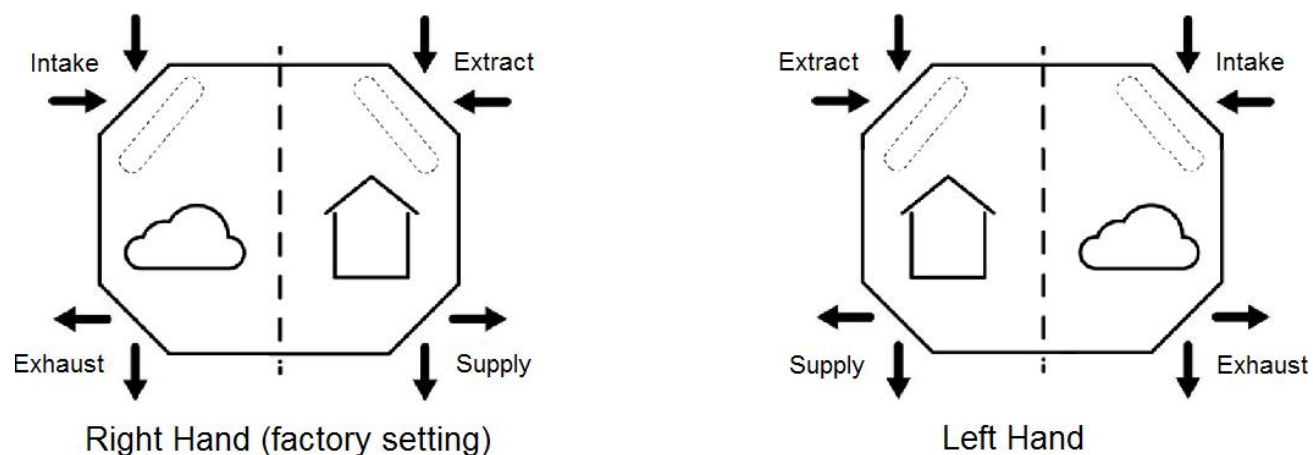
| | |
|---------------------------|--|
| Weight | 38 Kg |
| Ducting ø | Internal - 160 mm External - 190 mm |
| Condensate connection ø | 32 mm |
| Filter grade | Standard - ISO Coarse / ISO Coarse (G4 / G4) Optional - ISO Coarse / ISO ePM1 (G4 / F7) |
| Materials | Internal EPP / ABS External coated sheet steel |
| Supply voltage | 230 V / single-phase / 50Hz |
| Maximum power consumption | 119 W / 1820 W |
| Current draw | 0.96 A / 8.35 A |
| Fuse rating | 3 / 10 amp |
| Specific Fan Power | 0.63 W/l/s |
| Heat Recovery Efficiency | 0.95 |
| IP Rating | IP20 |

Dimensions

| | |
|--------|----------------|
| Height | 327 mm |
| Width | 1061 - 1068 mm |
| Depth | 868 mm |



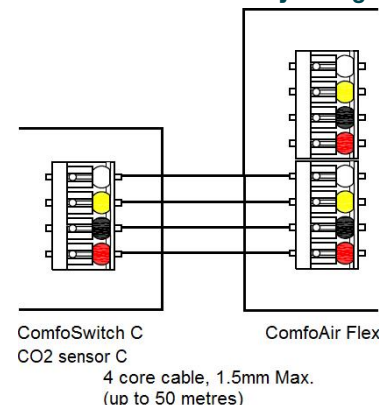
Air Direction/Connection



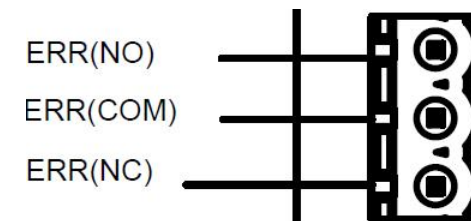
Wiring

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



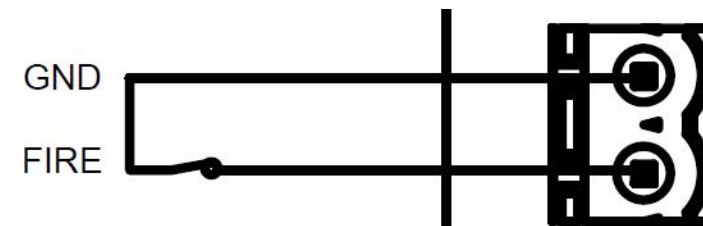
Error contact



ComfoAir Flex

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

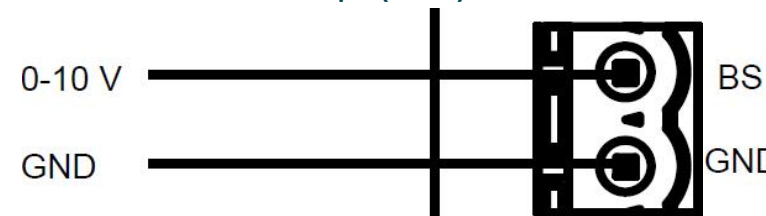
Fire alarm contact



ComfoAir Flex

3.3 Vdc, 1 mA
(up to 30 metres)

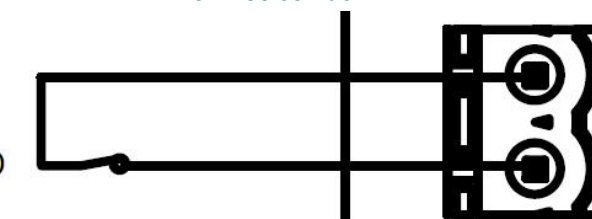
BMS input (0-10V)



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 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 |

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

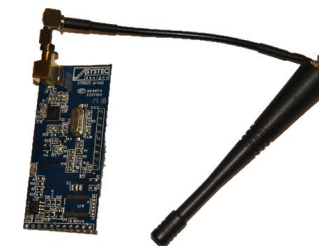
| | |
|-------------------------|--|
| Mounting options | Surface |
| Supply voltage | Powered by a coin cell lithium battery (type: CR 2032) |
| IP rating | IP40 |
| RAL colour | 9010 |
| Maximum number per unit | 40 |

Dimensions (surface mounted)

| | |
|--------|-------|
| Height | 80 mm |
| Width | 80 mm |
| Depth | 14 mm |

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 |
|------------------|-----------------------------------|

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)

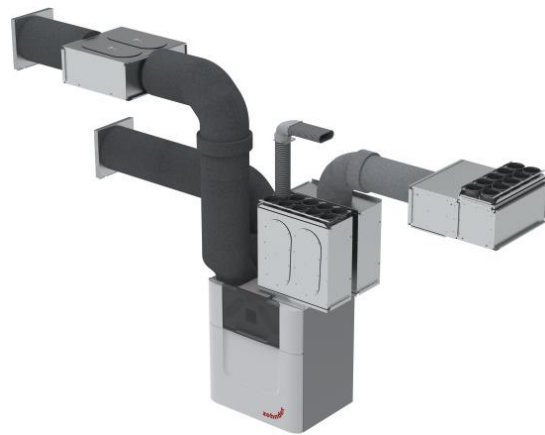
| | |
|--------|-------|
| Height | 80 mm |
| Width | 80 mm |
| Depth | 12 mm |

Dimensions (surface mounted)

| | |
|--------|---------|
| Height | 80 mm |
| Width | 80 mm |
| Depth | 43.5 mm |

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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BIM/CAD Components

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Installation Instructions

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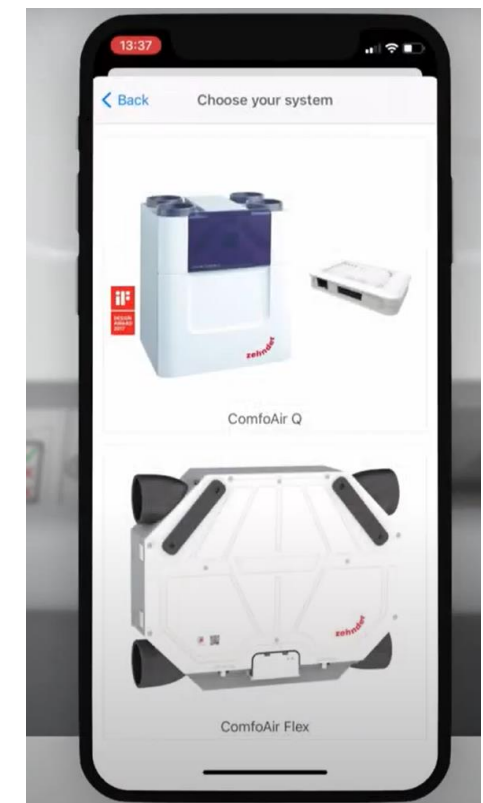
Our Informational Videos



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.

TO WATCH OUR VIDEO

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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
- 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)