

# 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 ePM1 >55%(F7) filter option.
- Passive House certified.

## Article Numbers

Description	Product Code
<b>Unit</b>	
Zehnder ComfoAir Flex 250	471 234 220
Zehnder ComfoAir Flex 250 with pre-heater	471 234 230
<b>Controls</b>	
<a href="#">Controls, Zehnder ComfoSwitch C67 speed controller for ComfoAir Flex 250/350, incl. mounting box</a>	655 010 255
<a href="#">Controls, ComfoControl RFZ wireless controller for use with ComfoSense 67/C67 (CCRFZ)</a>	655 000 755
<a href="#">Controls, ComfoControl RFZ Timer wireless controller for use with ComfoSense 67/C67</a>	655 000 780
<a href="#">Zehnder RF-PCB to offer wireless connectivity to the CCRFZ without the use of a ComfoSense C67</a>	400 502 016
<b>Filters</b>	
Filter for Zehnder ComfoAir Flex 250, ISO Coarse >65% (G4), 2 Pieces	400 100 122
Filter for Zehnder ComfoAir Flex 250, ISO Coarse >65% / ISO ePM1 >55% (G4 / F7), 2 Pieces	400 100 121
Filter for Zehnder ComfoAir Flex 250, ISO Coarse >65% / ISO ePM1 >55% (G4 / F7), 10 Pieces	400 100 123
Filter for Zehnder ComfoAir Flex 250, ISO ePM1 >55% (F7), 10 Pieces	400 100 124
Filter for Zehnder ComfoAir Flex 250, ISO Coarse >65% (G4), 10 Pieces	400 100 125
<b>Accessories</b>	
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%	



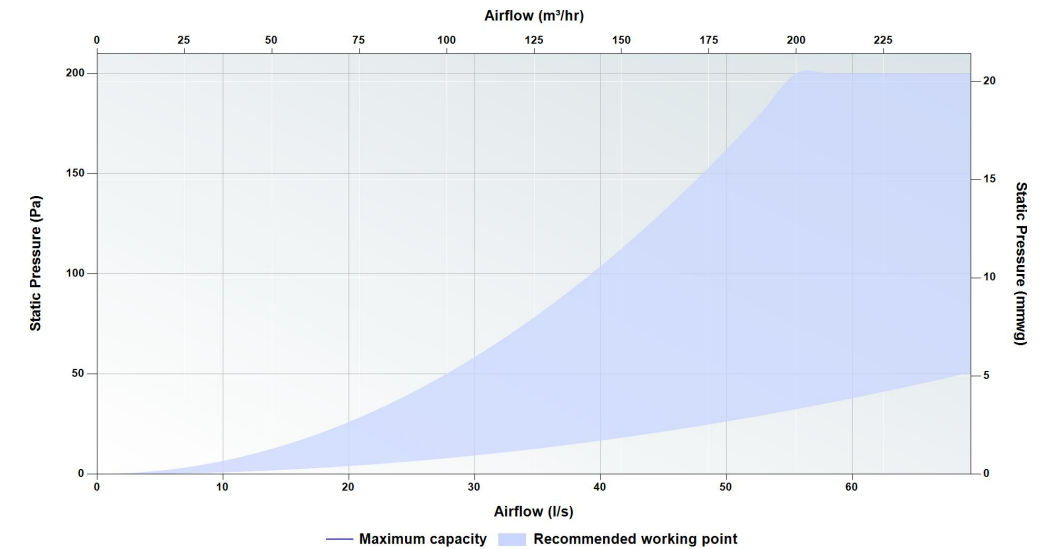
Based on average climate with local demand control

## Passive House Certification

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



## 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	

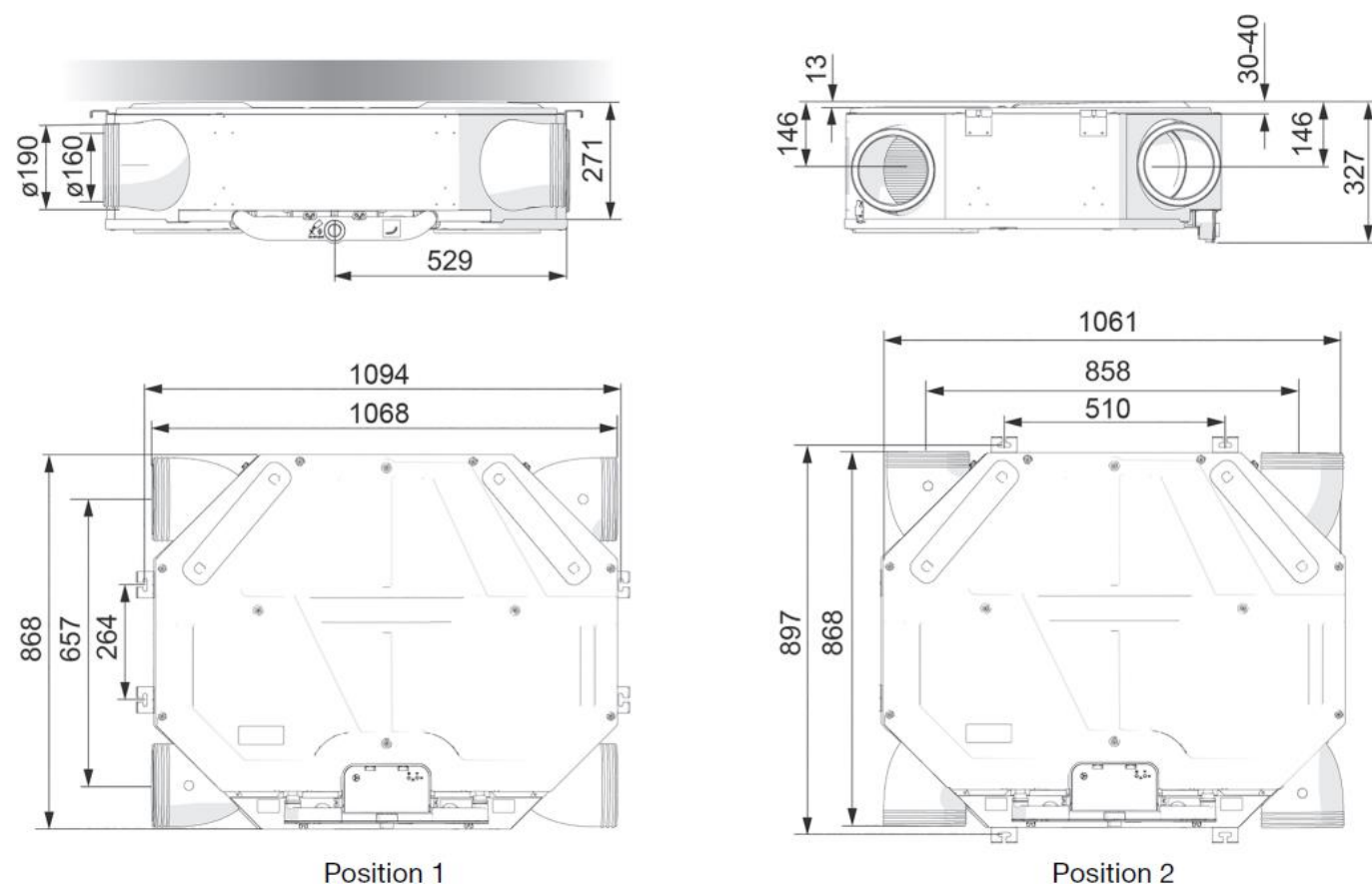
Casing tested according to ISO 3741:2010. Supply and Extract tested according to ISO 5135:1997 showing induct sound power level corrected for end duct reflection according to EN 13053:2019. Casing dB(A) @ 3 m given as hemispherical.

## Technical Specification

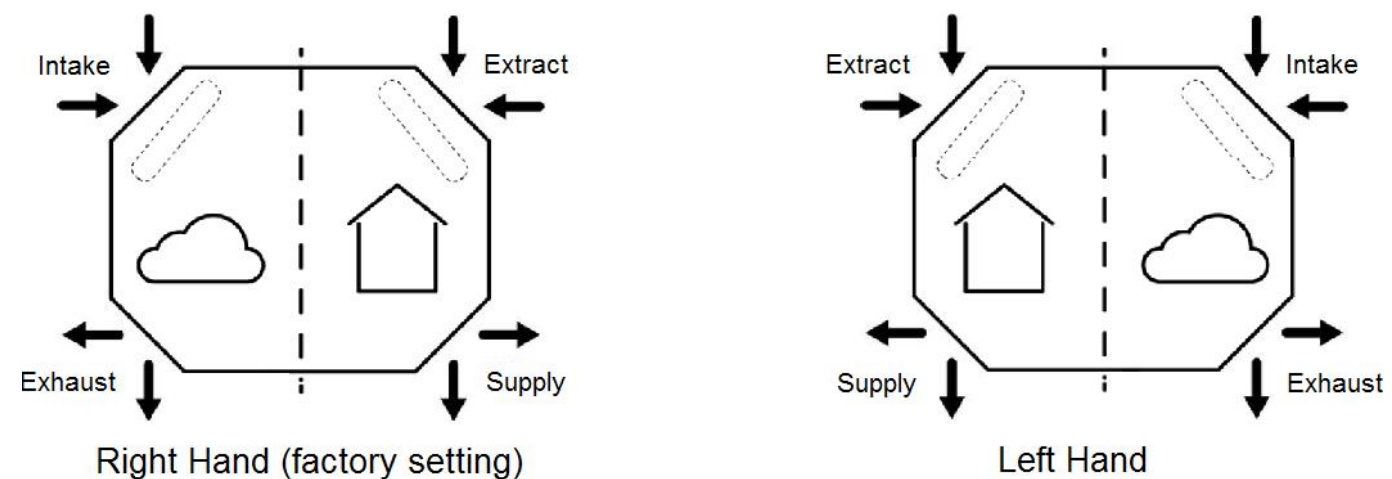
Weight	38 Kg
Ducting ø	Internal - 160 mm External - 190 mm
Condensate connection ø	32 mm
Filter grade	Standard - ISO Coarse >65% / ISO Coarse >65% (G4 / G4) Optional - ISO Coarse >65% / ISO ePM1 >55% (G4 / F7)
Materials	Internal EPP / ABS External coated sheet steel
Supply voltage	230 V / single-phase / 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



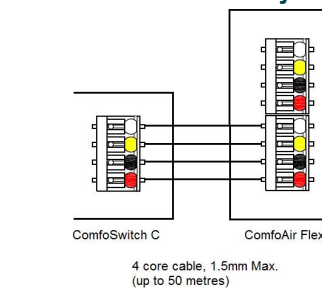
## Air Direction/Connection



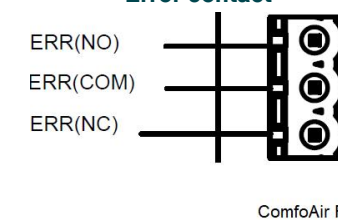
## Wiring

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.

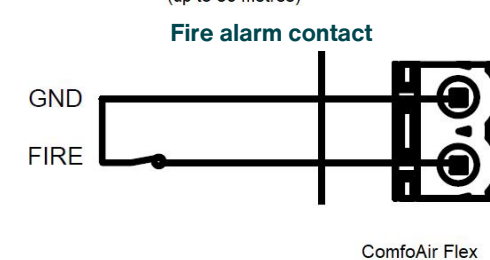
### ComfoAir Flex ancillary wiring



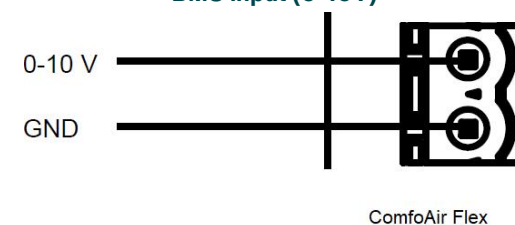
### Error contact



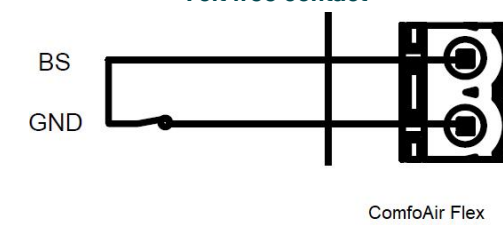
### Fire alarm contact



### BMS input (0-10V)



### Volt free contact



## 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
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## 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.



TO VIEW OUR COMFOWELL INFORMATION

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## BIM/CAD Components

If you would like to download the BIM / CAD files for this or any other of our products then please visit our BIM library.

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## Installation Instructions

If you would like to download the installation files for this or any other of our products then please visit our download page by clicking the link below.

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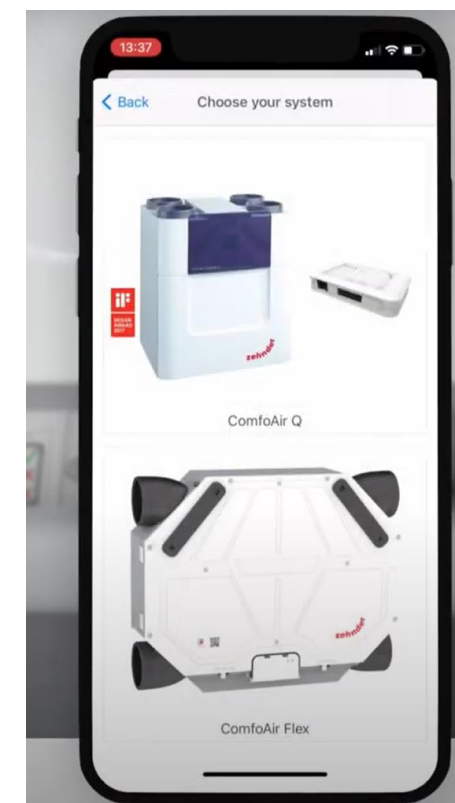
## Our Informational Videos



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 >65% \(G4\)](#) standard with the option to upgrade to [ISO ePM1 >55% \(F7\)](#). 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 - Coming soon)
- 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)