Zehnder ComfoAir 160

Wall or ceiling mounted mechanical supply and extract ventilation with heat recovery (MVHR)

Product data sheet

always the best climate



ComfoAir 160

The Zehnder ComfoAir 160 is a heat recovery unit designed to enable better and easier specification of ventilation in new properties due to its versatility. It can be left or right handed in addition to being ceiling or wall mounted. It contains features such as its 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



ComfoControl Basic LED



ComfoSense 67



12V 0-10V CO2 sensor



ComfoControl RFZ

Key Benefits

- 100% full and filtered summer bypass.
- Left or right hand configuration in one unit.
- Flexible installation options either ceiling or wall mountable.
- Constant volume motors to maintain commissioned flow rates.
- Tool free filter access.
- Volt free contact boost capability.
- BMS capability via RS232 protocol.
- RFZ wireless connectivity option.
- 0-10V input option.
- ISO Coarse >65% / ISO ePM1 >65% (G4 / F7) filter combination as standard for pre-heater version.
- Internal pre-heater option.
- Enthalpy cube option.
- Passive House certified.

Article Numbers

Description	Product Code
Unit	
Zehnder ComfoAir 160	CA160-GB
Zehnder ComfoAir 160 Luxe	CA160LUXE-GB
Zehnder ComfoAir 160 Luxe with pre-heater	CA160LUXEPH-GB
Controls	
Controls, Zehnder ComfoSense 67 controller for Zehnder ComfoAir Luxe/PH models (CCS)	655 010 215
Controls, three position switch for ComfoAir standard models (CCB)	659 000 120
Controls, three position switch with service indicator for ComfoAir standard models (CCBL)	659 000 300
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 67	655 000 770
Controls, 12V 0-10V CO2 sensor and combined three position switch	655 000 855
Controls, 12V 0-10V RH sensor	659 000 330
Controls, remote air quality sensor	AQR
Controls, remote humidity sensor	HHR
Controls, remote passive infra-red movement sensor	PIRR
Controls, remote temperature sensor	THR
Filters	
Filter for Zehnder ComfoAir 160, ISO Coarse >65% (G4), 2 Pieces	400 100 023
Filter for Zehnder ComfoAir 160, ISO Coarse >65% / ISO ePM1 >65% (G4 / F7), 2 Pieces	400 100 024
Accessories	
Condensate trap for horizontal installation of Zehnder ComfoAir 160	990 202 050
Heat exchanger for Zehnder ComfoAir 160	400 400 036
Enthalpy exchanger for Zehnder ComfoAir 160	400 400 037

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SAP PCDB

	SFP (W/l/s)		Efficiency (%)	
	2009	2012	2009	2012
K+1	0.85	0.84	85%	85%
K+2	0.81	0.96	85%	83%
K+3	0.88	1.15	84%	82%
K+4	1.02		83%	
K+5	1.16		82%	

SEC Class

A+

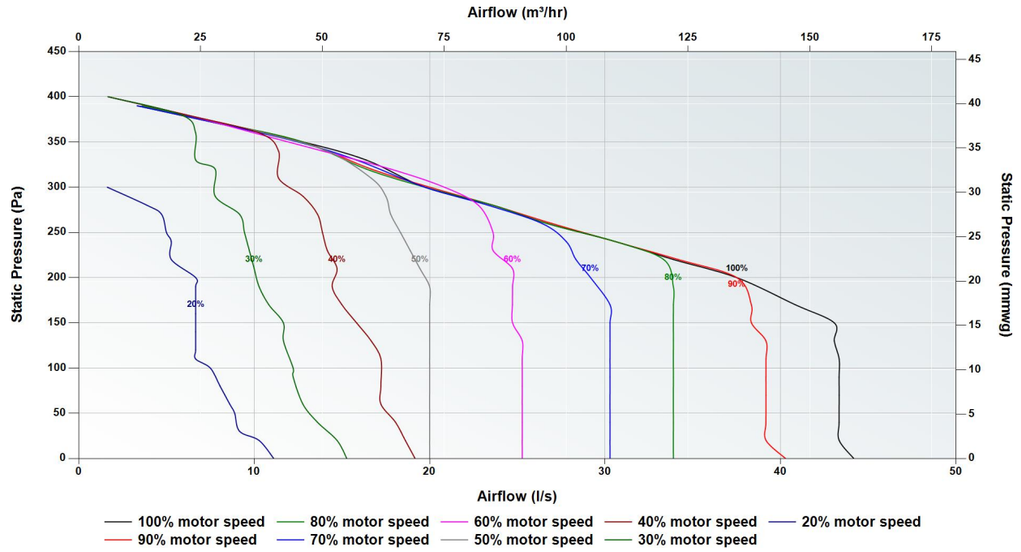
Based on average climate with local demand control

Passive House Certification

	Standard heat exchanger	Enthalpy heat exchanger
Air flow range	73–109 m³/h	73–115 m³/h
Heat recovery rate	HR = 89%	HR = 85%
Specific electric power	Pel,spec = 0.36 Wh/m³	Pel,spec = 0.33 Wh/m³
Humidity recovery		x = 64%

CERTIFIED COMPONENT
Passive House Institute

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	39.5	32.9	31.7	22.2	13.3	9.9	16.0	23.7	10.4
	Supply	66.7	51.2	43.1	36.9	32.3	18.3	15.0	20.8	
	Extract	53.1	36.2	28.0	19.0	8.0	6.8	6.1	5.1	
40%	Casing	42.5	35.7	32.6	28.2	22.8	18.3	17.4	23.7	13.4
	Supply	72.0	59.1	53.1	46.0	43.7	33.5	26.8	22.4	
	Extract	58.3	44.1	37.9	28.1	19.4	14.4	11.9	8.3	
60%	Casing	42.0	40.1	38.1	33.8	32.0	27.2	24.2	24.6	19.6
	Supply	75.9	66.5	60.5	52.1	52.6	43.7	39.1	31.8	
	Extract	62.3	51.4	45.3	34.2	28.2	19.5	18.1	13.1	
80%	Casing	44.8	46.5	43.3	40.7	38.2	34.8	31.9	28.2	26.0
	Supply	82.2	71.7	67.6	57.7	58.9	50.7	47.7	42.5	
	Extract	68.5	56.7	52.4	39.8	34.6	23.0	22.4	18.4	
100%	Casing	47.7	46.7	47.2	47.2	41.3	40.1	37.6	35.2	30.9
	Supply	86.2	75.8	72.0	63.3	62.8	57.1	54.1	50.8	
	Extract	72.5	60.8	56.9	45.3	38.5	26.2	25.6	22.6	

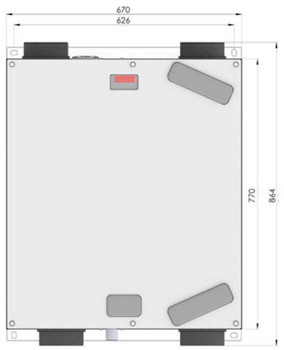
Casing tested according to ISO 3741:2010. Supply and Extract tested according to ISO 5135:1997 showing induct sound power level corrected for end duct reflection according EN 13053:2019. Casing dB(A) @ 3 m given as hemispherical.

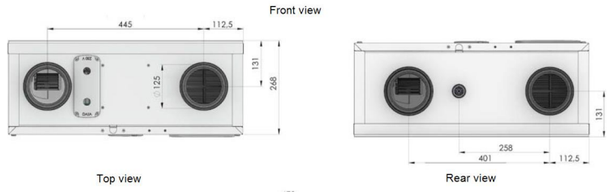
Technical Specification

Weight	28 Kg
Ducting ø	Internal - 100 mm External - 125 mm
Condensate connection ø	32 mm
Filter grade	Standard - ISO Coarse >65% / ISO Coarse >65% (G4 / G4) Optional - ISO Coarse >65% / ISO ePM1 >65% (G4 / F7)
Materials	Internal EPP / ABS External coated sheet steel
Supply voltage	230 V / single-phase / 50Hz
Maximum power consumption including / excluding pre-heater	1067 W / 67 W
Current draw including / excluding pre-heater	4.7 A / 0.52 A
Fuse rating including / excluding pre-heater	6 / 3 amp
Specific Fan Power	0.81 W/l/s
Heat Recovery Efficiency	0.85
Preheater power	1 kW

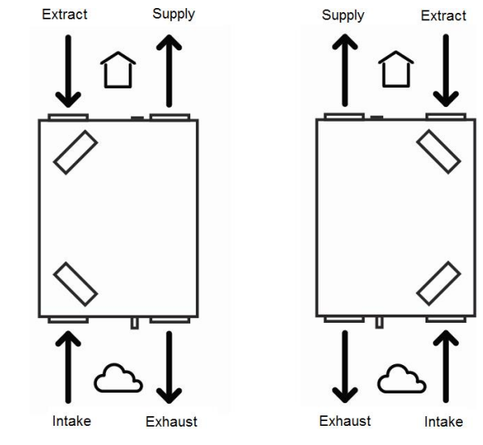
Dimensions

Height	268 mm
Width	670 mm
Depth	864 mm





Air Direction/Connection

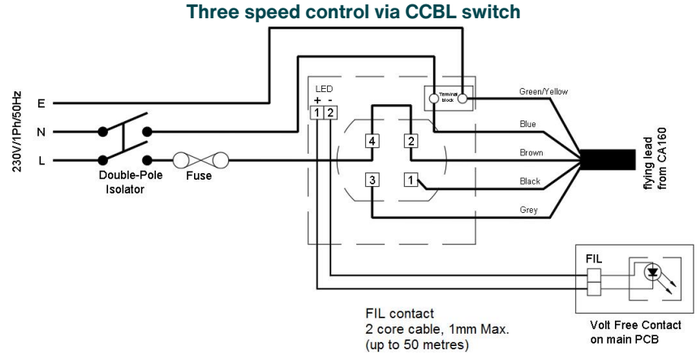


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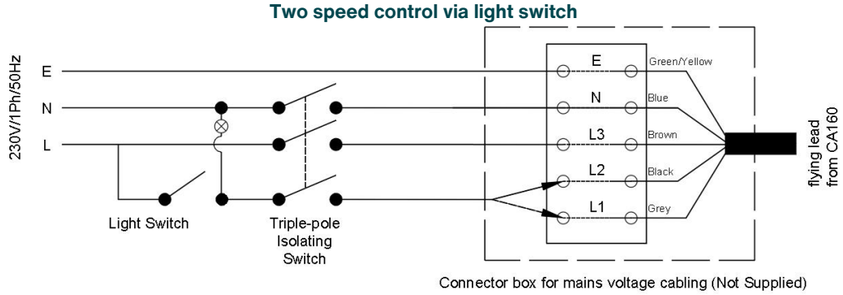
Wiring

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.

Three speed control via CCBL switch

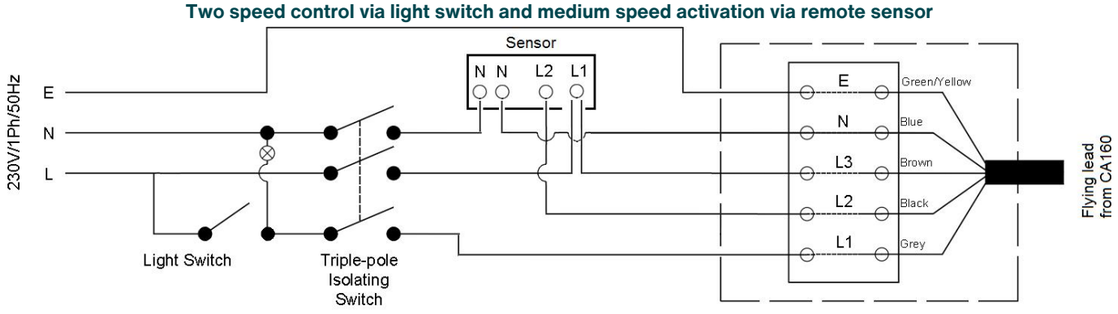


Two speed control via light switch

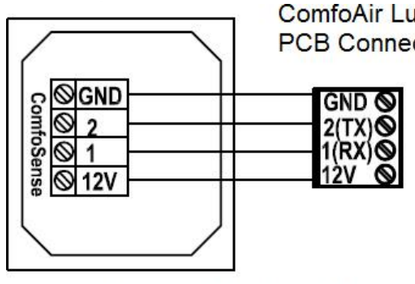


NB - For boost speed select either Black wire (medium) or Grey wire (high).

Two speed control via light switch and medium speed activation via remote sensor

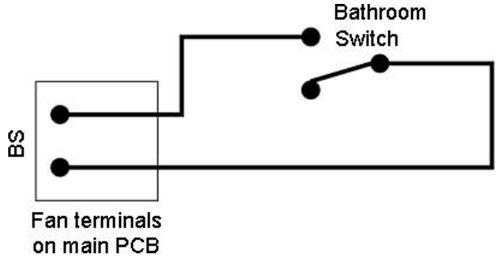


Four speed control via ComfoSense controller



4 core cable, 1mm Max.
(up to 50 metres)

Two speed control via volt free contact switch



1 core cable, 1mm Max.
(up to 50 metres)

Controls

ComfoSense 67

Product code: 655 010 215



The Zehnder ComfoSense 67 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
- 7 day flow rate programmer
- Summer bypass indicator
- Frost protection indicator
- Service and Maintenance alert
- Clock function
- User menu access
- Installer menu access
- RF bridge to enable use of the CCRFZ (655 000 755) controller

Technical Specification

Mounting options	Recessed / Surface
Supply voltage	Low voltage direct from the MVHR units PCB connector
IP rating	IP44
Recommended cable	4 core cable, 1 mm Max. (up to 50 metres)
RAL colour	9016
Maximum number per unit	1
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 Basic

Product code: 659 000 120



The Zehnder CCL is a three position switch designed to enable the user to manually select the desired ventilation systems flow rate

Key Benefits

- 3 separate ventilation flow rate options to select in 1 controller

Technical Specification

Mounting options	Recessed / Surface
Supply voltage	Mains power - 230 V / single-phase / 50Hz
IP rating	IP20
RAL colour	9010

Dimensions (recessed)

Height	80 mm
Width	80 mm
Depth	9 mm

Dimensions (surface mounted)

Height	80 mm
Width	80 mm
Depth	40 mm

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ComfoControl Basic LED

Product code: 659 000 300



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

Key Benefits

- 3 separate ventilation flow rate options to select in 1 controller
- Service and Maintenance alert

Technical Specification

Mounting options	Recessed / Surface
Supply voltage	Mains power - 230 V / single-phase / 50Hz
IP rating	IP20
Recommended cable	FIL contact only - 2 core cable, 1 mm Max. (up to 50 metres)
RAL colour	9010
Recommended mounting box	659 000 310

Dimensions (recessed)

Height	83 mm
Width	83 mm
Depth	7 mm

Dimensions (surface mounted)

Height	83 mm
Width	83 mm
Depth	44 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

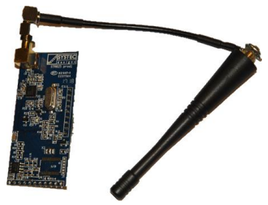
Mounting options	Surface
Supply voltage	Powered by a coin cell lithium battery (type: CR 2032)
IP rating	IP40
RAL colour	9010
Maximum number per unit	40

Dimensions (surface mounted)

Height	80 mm
Width	80 mm
Depth	14 mm

RF-PCB - ComfoAir

Product code: 655 000 770



The Zehnder RF-PCB enables the CCRFZ (655 000 755) controller to be used with the ventilation system without the need for the ComfoSense 67.

Key Benefits

- Acts as a wireless receiver to the CCRFZ (655 000 755) controller without the need for the ComfoSense 67
- 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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12V 0-10V CO2 sensor

Product code: 655 000 855



The Zehnder 12V 0-10V remote CO2 sensor and combined three position switch is 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
- 0-10V output corresponding to measured CO2
- Discreet design

Technical Specification

Mounting options	Surface / Recessed
Supply voltage	12 V DC voltage direct from the MVHR units PCB connector
IP rating	IP30
Recommended cable	4 core cable, 1 mm Max. (up to 50 metres)
RAL colour	9016
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

12V 0-10V RH sensor

Product code: 659 000 330



The Zehnder 12V 0-10V remote humidity sensor enables a signal to be sent to the ventilation system to control the corresponding flow rate.

Key Benefits

- Humidity measuring range 0-100% relative humidity
- 0-10V output corresponding to measured relative humidity

Technical Specification

Mounting options	Surface
Supply voltage	12 V DC voltage direct from the MVHR units PCB connector
IP rating	IP30
Recommended cable	3 core cable, 1 mm Max. (up to 50 metres)
RAL colour	9010

Dimensions (surface mounted)

Height	95 mm
Width	97 mm
Depth	30 mm

AQR

Product code: AQR



The Zehnder AQR remote air quality sensor enables a signal to be sent to the ventilation system to automatically place the unit into a higher flow rate.

Key Benefits

- Set activation level covering a range of pollutants such as hydrogen, CO, methane, ethanol and isobutane
- Adjustable overrun timer between 2-40 minutes
- Can be fitted with locking security straps to prevent tampering
- Suitable for locating where temperatures don't exceed 45°C

Technical Specification

Mounting options	Surface
Supply voltage	Mains power - 230 V / single-phase / 50Hz

Dimensions (surface mounted)

Height	86 mm
Width	93 mm
Depth	37 mm

HHR

Product code: HHR



The Zehnder HHR remote humidity sensor enables a signal to be sent to the ventilation system to automatically place the unit into a higher flow rate.

Key Benefits

- Set humidity activation between 30-90% relative humidity
- Adjustable overrun timer between 2-40 minutes
- Can be fitted with locking security straps to prevent tampering
- Suitable for locating where temperatures don't exceed 45°C

Technical Specification

Mounting options	Surface
Supply voltage	Mains power - 230 V / single-phase / 50Hz

Dimensions (surface mounted)

Height	86 mm
Width	93 mm
Depth	37 mm

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PIRR

Product code: PIRR



The Zehnder PIRR remote passive infra-red movement sensor enables a signal to be sent to the ventilation system to automatically place the unit into a higher flow rate.

Key Benefits

- Senses movement up to 7 m away
- Adjustable overrun timer between 2-40 minutes
- Can be fitted with locking security straps to prevent tampering
- Suitable for locating where temperatures don't exceed 45°C

Technical Specification

Mounting options	Surface
Supply voltage	Mains power - 230 V / single-phase / 50Hz

Dimensions (surface mounted)

Height	86 mm
Width	93 mm
Depth	37 mm

THR

Product code: THR



The Zehnder THR remote temperature sensor enables a signal to be sent to the ventilation system to automatically place the unit into a higher flow rate.

Key Benefits

- Set temperature activation between 5-35°C
- Fixed 2 minute overrun timer
- Can be fitted with locking security straps to prevent tampering
- Suitable for locating where temperatures don't exceed 45°C

Technical Specification

Mounting options	Surface
Supply voltage	Mains power - 230 V / single-phase / 50Hz

Dimensions (surface mounted)

Height	86 mm
Width	93 mm
Depth	37 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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Our Informational Videos



Watch our video on how to install the ComfoAir 160 with our ComfoTube Flat 51 ductwork.

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Watch our video on how to clean the install ComfoTube Flat 51 ductwork.

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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 impellors should be low pressure centrifugal type with backward curved blades within ABS scroll housing . The heat exchanger shall be a multi-plate, counter flow design constructed from Polystyrene with laser welded joints and shall retain up to 85% of the temperature differential of outgoing air with the option to upgrade to an enthalpy heat exchanger for latent and sensible heat transfer plus moisture recovery negating the need for a condensate drain.

The unit shall contain filters manufactured from synthetic material which has been tested to a minimum of ISO Coarse >65% (G4) standard with the option to upgrade to ISO ePM1 >65% (F7). The filters shall be pleated to reduce the pressure drop and required cleaning time. The unit shall have 100 mm duct connections, and be suitable for vertical wall or horizontal ceiling mounting. Integrated preheater options shall be available to enable balanced ventilation with external air temperatures -10°C.

The unit shall have 100% full summer by-pass and provide filtered supply air 365 days of the year, even under bypass conditions. 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.

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 manufactured by Zehnder and shall be suitable for vertical wall or horizontal ceiling mounting 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 front mounted in-built interface on the standard versions or via the separate controller on the LUXE versions. The motors shall both automatically adjust independently to the system pressure to achieve the commissioned flow rate.

Controls

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

- 100% variable supply and extract motor control
- 4 Variable speed flow rate set points
- Automatic filtered summer bypass
- Heat exchanger frost protection
- Integral service, fault and operation indicators
- Control panel PIN protection
- Tool free filter access
- Variable overrun and delay on timer
- Switched live input
- Volt free contact
- BMS compatibility via RS232 protocol option
- RFZ wireless connectivity option
- 0-10V input option
- Pre-heater frost protection option
- Control input for capacitive touch speed controller with 7 day programmer capabilities

Zehnder Group UK Limited · Concept House · Watchmoor Point · Camberley · Surrey · GU15 3AD
T +44 1276 408404 · ventilation@zehnder.co.uk · www.zehnder.co.uk