

Zehnder ComfoAir Q 450

Wall or floor mounted mechanical supply and extract ventilation with heat recovery (MVHR) with humidity sensor

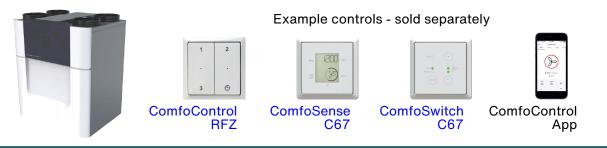
Product data sheet

always the best climate



ComfoAir Q 450

The Zehnder ComfoAir Q, with state of the art design and intelligent technology, regardless of whether you are working on a new build or an old building, with Zehnder comfortable ventilation you have an innovative, tried and tested complete system. It contains features such as its automatic modulating true summer by-pass, world class heat recovery efficiency and integrated humidity sensor to provide a comfortable, healthy and energy-efficient indoor climate.



Key Benefits

- World class 96% efficiency.
- 100% full and filtered modulating summer bypass.
- Left or right hand configuration through software alone, no mechanical alteration required.

Controls, Zehnder Option Box with additional connectivity for Zehnder ComfoAir Q350/450/600

Zehnder RF-PCB to offer wireless connectivity to the CCRFZ without the use of a ComfoSense C67

Controls, Zehnder ComfoSplitter for ComfoAir Q350/450/600

Controls, 12V 0-10V CO2 sensor and combined three position switch

- 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.
- Tool free filter access.
- ISO ePM1 >65% (F7) filter option.
- App for installer and end user option.
- Wireless commissioning option.
- Remote access option.
- KNX compatibility option.
- 0-10V input option.
- Internal pre-heater option.
- Post heater control option.
- Enthalpy cube option.
- Passive House certified.

Article Numbers

Description	Product Code
Unit	
Zehnder ComfoAir Q450	471 502 019
Zehnder ComfoAir Q450 with pre-heater, right handed	471 502 020
Zehnder ComfoAir Q450 with pre-heater, left handed	471 502 021
Zehnder ComfoAir Q450 with enthalpy exchanger	471 502 022
Controls Controls, Zehnder ComfoSense C 67 remote display for Zehnder ComfoAir Q350/450/600, incl. mounting box	655 010 235
	655 010 255
Box	
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
Controls, Zehnder ComfoConnect KNX C for ComfoAir Q350/450/600	655 011 120
Controls, Zehnder ComfoConnect LAN C for ComfoAir Q350/450/600	655 011 100

471 502 105

655 010 275

400 502 016

655 000 855

	SAP PCD
_	

	SFP (V	SFP (W/I/s)		су (%)
	2009	2012	2009	2012
K+1	-	0.54		96%
K+2	0.56	0.53	96%	95%
K+3	0.48	0.55	95%	94%
K+4	0.49	0.62	95%	94%
K+5	0.53	0.73	94%	93%
K+6	0.60	0.86	94%	93%
K+7	0.68	1.04	94%	93%

Passive House Certification

	Standard heat exchanger	Enthalpy heat exchanger
Air flow range	70–345 m³/h	70–345 m³/h
Heat recovery rate	HR = 88%	HR = 83%
Specific electric power	Pel,spec = 0.21 Wh/m ³	Pel,spec = 0.21 Wh/m ³
Humidity recovery		x = 71%

Sound Data

Speed Test area				Octave Ba	und (Hz) So	und Power	Level, dB			dB(A) @ 3 m
Speed	Testalea	63	125	250	500	1000	2000	4000	8000	ав(А) @ 3 Ш
	Casing	42.0	37.0	40.8	28.0	24.7	22.2	12.0	10.2	16.6
20%	Supply/Exhaust	54.9	49.9	50.9	41.1	36.9	33.4	22.6	2.6	
	Extract/Intake	46.8	41.8	43.5	27.2	20.2	15.1	9.5	15.5	
	Casing	49.0	44.0	46.3	36.8	32.1	30.7	22.8	17.8	23.4
40%	Supply/Exhaust	61.1	56.1	57.9	50.1	44.4	42.2	33.9	19.7	
	Extract/Intake	53.6	48.6	49.1	35.8	27.5	23.2	17.5	18.1	
	Casing	55.7	50.7	51.5	45.2	39.1	38.7	33.0	25.1	30.2
60%	Supply/Exhaust	67.0	62.0	64.6	58.6	51.6	50.6	44.5	35.9	
	Extract/Intake	60.1	55.1	54.4	44.0	34.5	30.7	25.0	20.6	
	Casing	61.6	56.6	56.2	52.6	45.3	45.8	42.1	31.5	36.7
80%	Supply/Exhaust	72.3	67.3	70.5	66.1	57.9	58.0	54.0	50.3	
	Extract/Intake	65.8	60.8	59.1	51.2	40.7	37.5	31.7	22.8	
	Casing	64.2	59.2	58.2	55.9	48.0	48.9	46.1	34.3	39.6
100%	Supply/Exhaust	74.5	69.5	73.0	69.4	60.7	61.3	58.1	56.5	
	Extract/Intake	68.3	63.3	61.1	54.4	43.4	40.4	34.6	23.7	

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.

Decorative radiators Comfortable indoor ventilation Heating and cooling ceilings Clean air Solutions

Article Numbers

Description

Support Frame Support frame for Zehnder ComfoAir Q350/450/600, height 252 mm

Filters

Filter for Zehnder ComfoAir Q350/450/600, ISO Coarse >65% (G4) Filter for Zehnder ComfoAir Q350/450/600, ISO Coarse >65% (G4) Filter for Zehnder ComfoAir Q350/450/600, ISO Coarse >65% (G4) Filter for Zehnder ComfoAir Q350/450, ISO Coarse >65% / ISO ePM Filter for Zehnder ComfoAir Q350/450, ISO ePM1 >65% (F7), 10 Piec Filter for Zehnder ComfoAir Q350/450, ISO ePM1 >65% (F7), 50 Pie

Accessories

Heat exchanger for Zehnder ComfoAir Q350/450/600 Enthalpy exchanger for Zehnder ComfoAir Q350/450/600

	Product Code
m	471 502 008
), 2 Pieces	400 502 012
), 10 Pieces	400 502 014
), 50 Pieces	400 502 021
V1 >65% (G4 / F7), 2 Pieces	400 502 013
eces	400 502 015
eces	400 502 022
	400 502 008

SEC Class



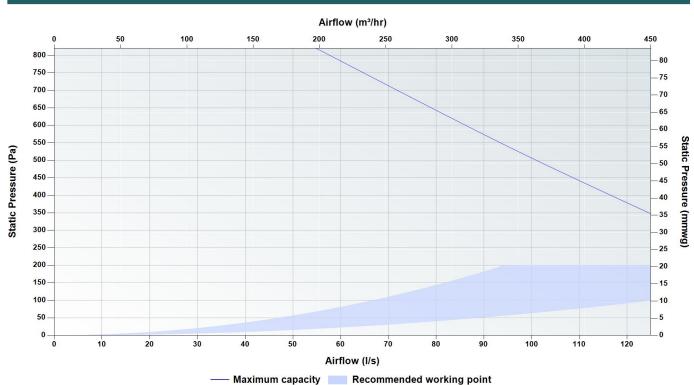
Based on average climate with local demand control



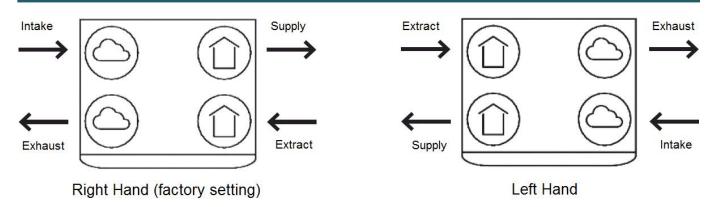
Due duet Cede

400 502 010

Pressure Curve



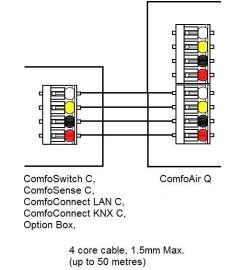
Air Direction/Connection



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.

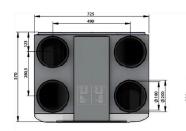
CAQ ancillary wiring



Decorative radiators Comfortable indoor ventilation Heating and cooling ceilings Clean air Solutions

Technical Specification

Weight	50 Kg
Ducting ø	Internal - 180 mm External - 200 mm
Condensate connection ø	32 mm
Filter grade	Standard - ISO Coar ISO Coarse >65% ((Optional - ISO Coars ISO ePM1 >65% (G4
Materials	Internal EPP / ABS External coated she
Supply voltage	230 V / single-phase
Maximum power consumption including / excluding pre-heater	2240 W / 250 W
Current draw including / excluding pre-heater	10.8 A / 1.98 A
Fuse rating including / excluding pre-heater	13 / 3 amp
Specific Fan Power	0.48 W/I/s
Heat Recovery Efficiency	0.96
Preheater power	2.0 kW



Top view



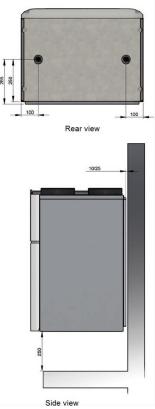
Front view

Dimensions

Height	850 mm
Width	725 mm
Depth	570 mm



eet steel se / 50Hz



Controls

ComfoSense C67 Product code: 655 010 235



Key Benefits

4 separate ventilation flow rate options to select in 1 controller

systems flow rate and provide system notifications

The Zehnder ComfoSense C67 is a four position switch designed

to enable the user to manually select the desired ventilation

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

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

Dimensions (recessed)

Height	80 mm
Width	80 mm
Depth	12 mm

Dimensions (surface mounted)

Height	80 mm
Width	80 mm
Depth	48.5
	mm

Dimensions (recessed)

Dimensions (surface mounted)

80 mm 80 mm

12 mm

80 mm

80 mm

48.5 mm

Height

Width

Depth

Height

Width Depth

ComfoControl RFZT

Product code: 655 000 780



ComfoSense or ComfoSense C.

Key Benefits

- Wireless controller

- Controller service and connection alert

Technical Cuestin

rechnical Specification		Dimensions (si	urface mounted)	
Mounting options	Surface	Height	80 mm	
Supply voltage	Powered by a coin cell lithium battery	Width	80 mm	
	(type: CR 2032)	Depth	14 mm	
IP rating	IP40			
RAL colour	9010			
Maximum number per unit	40			

ComfoSwitch C67 Product code: 655 010 255



ventilation systems flow rate and provide system notifications **Key Benefits**

• 4 separate ventilation flow rate options to select in 1 controller

The Zehnder ComfoSwitch C67 is a four position switch

designed to enable the user to manually select the desired

- 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



ComfoSense or ComfoSense C.

Key Benefits

- Wireless controller
- Service and Maintenance alert

Technical Specification		Dimensions (surface mounted)	
Mounting options	Surface	Height	80 mm
Supply voltage	Powered by a coin cell lithium battery	Width	80 mm
	(type: CR 2032)	Depth	14 mm
IP rating	IP40		
RAL colour	9010		
Maximum number per unit	40		

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

• 3 separate ventilation flow rate options to select in 1 controller 2 temporary high speed activation settings

The Zehnder CCRFZT is a multi position switch designed to enable the user to manually select the desired overrun timer

Dimensione (surface meaning)

This controller can only be used in conjunction with the

- 3 separate ventilation overrun timer options to select in 1 controller Manual override to prematurely turn off the overrun timer

ComfoConnect KNX C Product code: 655 011 120

The Zehnder ComfoConnect KNX C enables the connection between the ventilation system and the KNX building management system.



Key Benefits

- Control and monitor the ventilation system via the KNX building management system
- Control ventilation flow rate, temperature profile, temporary high speed setting and external sensor set points
- Monitor ventilation flow rates, temperatures and external sensors
- 7 day flow rate programmer
- Service and Maintenance alert
- ETS5 compatible

Technical Specification

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	Front: 9003 Back: 7024
Device model	System B
Supported configuration mode	S-Mode
Supported ETS version	5
Zehnder KNX library available at	https://www.zehnder.co.uk
Maximum number per unit	1

Dimensions (surface mounted) Height 120 mm

пеідпі	120 mm		
Width	76 mm		
Depth	25 mm		

Key Benefits



- Volt free contact input Post heater integration
- External filter alert integration

Technical Specification Low voltage direct from the MVH ComfoNET connector Mains power - 230 V / single-pha Supply voltage IP rating IP40 4 core cable, 1 mm Max. (up to 50 metres) Recommended cable RAL colour 9018

Wirina

The Bathroom Switch connection option - II

Maximum number per unit 1

ComfoConnect LAN C

Product code: 655 011 100



Key Benefits

Control and monitor the ventilation system via the ComfoControl app

The Zehnder ComfoConnect LAN C enables the connection between the ventilation system and the ComfoControl app for

- Control ventilation flow rate, temperature profile, temporary high speed setting and external sensor set points
- Monitor ventilation flow rates, temperatures and external sensors
- 7 day flow rate programmer

iPhone and android devices.

- Access the ventilation system remotely from anywhere in the world
- Service and Maintenance alert direct to your phone
- User menu access
- Installer menu access

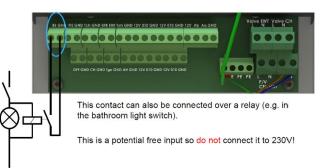
Zehnder ComfoControl App

Technical Specification

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	Front: 9003 Back: 7024	
Maximum number per unit	1	

Dimensions (surface mounted)

Height	120 mm
Width	76 mm
Depth	25 mm



Option Box Product code: 471 502 105

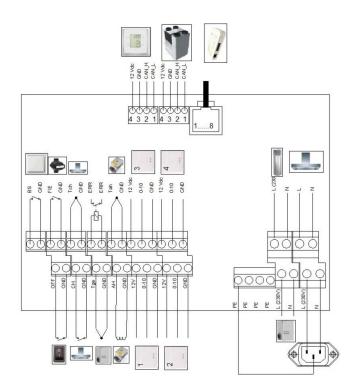
The Zehnder Option Box enables the connection between the ventilation system and various other external components.

4 x 0-10V inputs for use with the 12V 0-10V RH sensor or 12V 0-10V CO2 sensor

- ComfoFond-L Q or sub-soil heat exchanger valve integration

- Service mode activation input to disable fans e.g. when fire alarm activated

	Dimensions (surface mounted)	
HR units	Height	253 mm
ase / 50Hz	Width	178 mm
	Depth	60 mm



12V 0-10V CO2 sensor Product code: 655 000 855

Product code: 655 010 275

The Zehnder ComfoSplitter enables 5 additional ComfoNet connectivity options to the ventilation system.

Key Benefits

- 2 additional ComfoNet connectivity options when unpowered
- 5 additional ComfoNet connectivity options when powered

Technical Specification

ComfoSplitter

Mounting options	Surface
Supply voltage	Low voltage direct from the MVHR units ComfoNET connector Mains power - 230 V / single-phase / 50Hz
IP rating	IP22
Recommended cable	4 core cable, 1 mm Max. (up to 50 metres)
RAL colour	9018
Maximum number per unit	1

Dimensions (surface mounted)

Height	108 mm
Width	53 mm
Depth	23 mm



ĊO2 level.

Key Benefits

- manual 12hr override
- CO2 measuring range 0-2000 ppm
- Discreet design

Technical Specification	n	Dimensions (re	ecessed)
Mounting options	Surface / Recessed	Height	80 mm
Supply voltage	12 V DC voltage direct from the MVHR units PCB	Width	80 mm
	connector	Depth	12 mm
IP rating	IP30		
Recommended cable	4 core cable, 1 mm Max. (up to 50 metres)	Dimensions (surface mounted)	
RAL colour	9016	Height	80 mm
Supplied mounting box	400 300 291	Width	80 mm
		Depth	43.5
			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

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

- Green, orange and red visual air quality indication light - 3 separate ventilation flow rate options to temporarily select in 1 controller for

0-10V output corresponding to measured CO2

Our Informational Videos

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

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

TO WATCH OUR VIDEO

CLICK HERE



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

TO WATCH OUR VIDEO



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 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 diamond shaped 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 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 recyclable 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 180 mm duct connections, and be suitable for vertical wall mounting or floor stand 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 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 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 Q manufactured by Zehnder and shall be suitable to mount on a floor stand, wall or in a cupboard 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 LCD interface. The motors shall both automatically adjust independently to the system pressure to achieve the input flow rate.

Controls

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

- Dial-a-duty motor control
- 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
- Control panel PIN protection
- 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 Q units shall contain the following options when combined with relevant ancillaries: BMS compatibility via KNX protocol option (ComfoConnect KNX C)

- Wi-Fi connectivity option (ComfoConnect LAN C)
- RFZ wireless connectivity option (RF-PCB or ComfoSense C 67)
- Switched live input option (Option Box)
- Volt free contact option (Option Box)
- 0-10V input option (Option Box)
- Pre-heater frost protection option
- Post-heater control option (Option Box)
- Control input for single or multiple capacitive touch speed controllers with 7 day programmer capabilities (ComfoSense C 67)
- Control input for single or multiple 4 speed manual/auto controller with filter alert (ComfoSwitch C 67)