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Zehnder ComfoFond-L Q

Ground to air subsoil exchanger

ComfoFond-L Q

The Zehnder ComfoFond-L Q is a subsoil heat exchanger designed to pre-heat the incoming air during cold periods and temper the intake air during warm periods. It contains features to ensure it automatically activates and deactivates to provide a comfortable, healthy and energy-efficient indoor climate.

Example controls - sold separately

Option Box

Key Benefits

- Pre-heating during the winter and air temperation during the summer.
- Hygienic closed loop system to prevent water, dust ingress and avoid the need for maintenance of a collector of open air to air systems.
- Plug and play with the ComfoAir Q unit.
- Maintain a balanced ventilation rate down to -22°C external conditions
- A class circulation pump.

Article Numbers

Description	Product Code
Unit	
Zehnder ComfoFond-L Q, left handed	471 310 084
Zehnder ComfoFond-L Q, right handed	471 310 085
Support Frame	
Support frame for ComfoFond-L Q	471 310 087
Zehnder ComfoPipe Plus ø 200mm, single adaptor for Q450/600 with ComfoFond-L Q	990 328 751
Filters	
Filter for Zehnder ComfoFond-L Q, G4, 1 piece	400 100 060
Zehnder Option Box with additional connectivity for Zehnder ComfoAir Q350/450/600	471 502 105
Suitable for use with MVHR unit:	
Zehnder ComfoAir Q350	471502015
Zehnder ComfoAir Q350 with pre-heater, right handed	471502016
Zehnder ComfoAir Q350 with pre-heater, left handed	471502017
Zehnder ComfoAir Q350 with enthalpy exchanger	471502018
Zehnder ComfoAir Q450	471502019
Zehnder ComfoAir Q450 with pre-heater, right handed	471502020
Zehnder ComfoAir Q450 with pre-heater, left handed	471502021
Zehnder ComfoAir Q450 with enthalpy exchanger	471502022
Zehnder ComfoAir Q600	471502023
Zehnder ComfoAir Q600 with pre-heater, right handed	471502024
Zehnder ComfoAir Q600 with pre-heater, left handed	471502025
Zehnder ComfoAir Q600 with enthalpy exchanger	471502026

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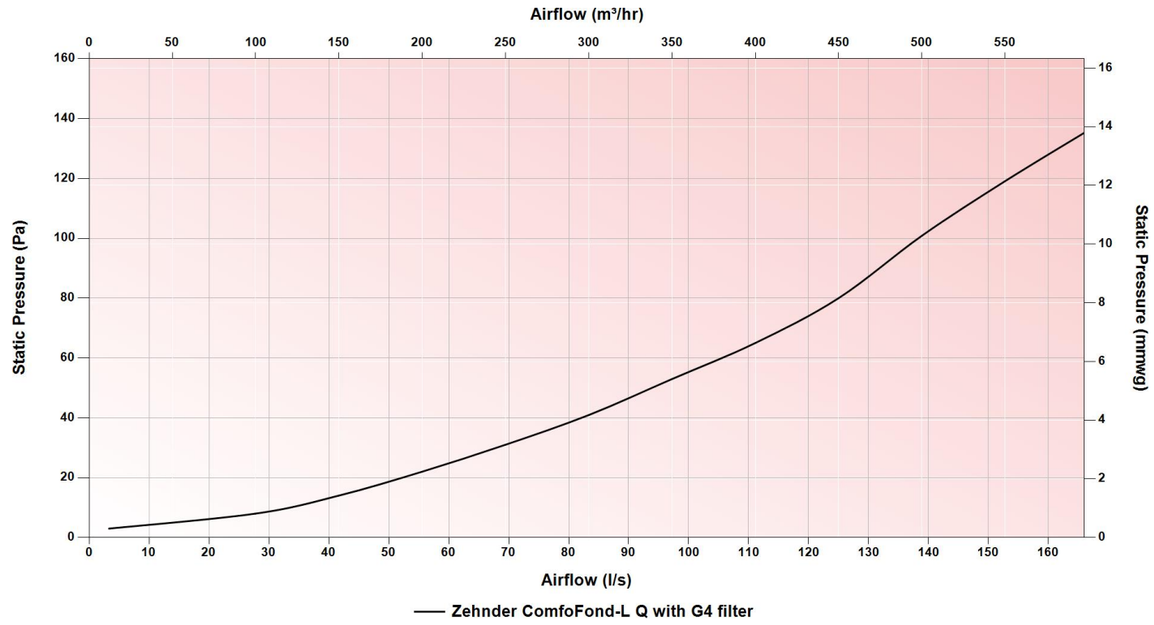
Pressure Curve



Sound Data

ComfoAir Q350 including ComfoFond-L Q

Speed	Test area	Octave Band (Hz) Sound Power Level, dB								dB(A) @ 3m
		63	125	250	500	1000	2000	4000	8000	
0.2	Casing		34.4	30.2	24.5	18.6	13.6	9.5	16.4	9.4
	Supply/Exhaust		50.1	42.7	38.3	30.8	23.3	12.1	11.1	
	Extract/Intake		40.6	32.5	23.2	17.8	15.6	11.2	18.5	
0.4	Casing		38.4	35.5	29.8	23.7	19.8	15.1	17.7	14.4
	Supply/Exhaust		53.6	48.7	43.9	36.7	30.8	20.8	17.0	
	Extract/Intake		44.0	38.0	28.2	21.9	19.1	14.2	18.6	
0.6	Casing		42.8	41.3	35.5	29.4	26.6	21.1	19.1	20.0
	Supply/Exhaust		57.4	55.4	49.9	43.2	39.0	30.2	23.4	
	Extract/Intake		47.8	43.9	33.6	26.5	22.9	17.4	18.7	
0.8	Casing		46.4	45.9	40.1	33.9	32.2	26.0	20.2	24.7
	Supply/Exhaust		61.0	61.5	55.5	49.2	46.5	38.9	29.3	
	Extract/Intake		50.8	48.8	38.0	30.2	26.0	20.0	18.8	
1	Casing		51.0	52.0	46.1	39.8	39.3	32.3	21.7	30.8
	Supply/Exhaust		64.6	67.7	61.2	55.2	54.2	47.7	35.3	
	Extract/Intake		54.8	55.1	43.7	35.0	30.0	23.3	19.0	

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 EN13053:2006. Casing dB(A) @ 3m given as hemispherical.

ComfoAir Q450 including ComfoFond-L Q

Speed	Test area	Octave Band (Hz) Sound Power Level, dB								dB(A) @ 3m
		63	125	250	500	1000	2000	4000	8000	
0.2	Casing		35.3	31.4	25.7	19.8	15.0	10.8	16.7	10.5
	Supply/Exhaust		50.9	44.0	39.6	32.1	25.0	14.1	12.5	
	Extract/Intake		41.4	33.7	24.3	18.7	16.4	11.9	18.5	
0.4	Casing		46.2	48.0	39.5	34.3	33.2	26.1	20.2	20.7
	Supply/Exhaust		53.7	55.2	46.6	41.5	38.7	29.5	13.0	
	Extract/Intake		46.0	46.9	32.4	24.7	20.0	14.3	17.1	
0.6	Casing		45.7	47.6	38.9	33.8	32.7	25.4	19.6	25.5
	Supply/Exhaust		58.0	60.0	52.8	46.7	44.9	37.3	24.9	
	Extract/Intake		50.7	50.8	38.4	29.8	25.6	19.9	18.9	
0.8	Casing		51.1	51.8	45.7	39.4	39.1	33.6	25.4	30.6
	Supply/Exhaust		62.3	64.9	59.0	52.0	51.0	45.1	36.8	
	Extract/Intake		55.4	54.7	44.4	34.9	31.1	25.4	20.7	
1	Casing		56.0	55.7	51.8	44.6	45.0	41.1	30.8	35.9
	Supply/Exhaust		66.7	69.8	65.3	57.2	57.2	53.0	48.7	
	Extract/Intake		60.2	58.6	50.4	40.0	36.7	31.0	22.5	

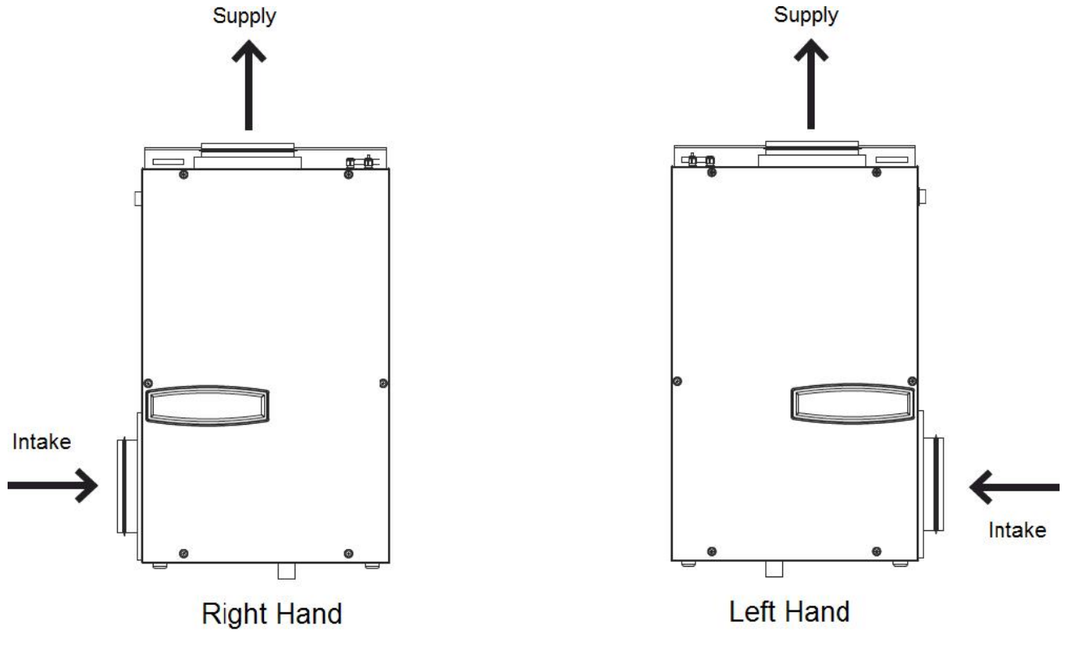
Casing tested according to ISO 3741:2010. Supply and Extract tested according to ISO 5135:1997 showing induct sound power level corrected for end duct reflection according EN13053:2006. Casing dB(A) @ 3m given as hemispherical.

ComfoAir Q600 including ComfoFond-L Q

Speed	Test area	Octave Band (Hz) Sound Power Level, dB								dB(A) @ 3m
		63	125	250	500	1000	2000	4000	8000	
0.2	Casing		36.7	33.3	27.6	21.6	17.2	12.7	17.2	12.3
	Supply/Exhaust		52.1	46.2	41.5	34.2	27.6	17.1	14.5	
	Extract/Intake		42.6	35.7	26.1	20.2	17.7	12.9	18.5	
0.4	Casing		50.3	52.0	47.1	41.1	38.1	33.3	27.3	31.1
	Supply/Exhaust		57.5	58.1	50.6	45.8	42.8	35.4	24.5	
	Extract/Intake		50.9	48.7	38.5	31.5	27.2	20.9	19.3	
0.6	Casing		50.0	51.5	46.5	40.6	37.4	32.4	26.6	30.6
	Supply/Exhaust		62.2	64.3	58.2	52.3	50.3	45.0	35.9	
	Extract/Intake		56.0	53.8	45.7	36.8	32.8	27.7	22.3	
0.8	Casing		53.8	56.4	53.5	46.4	45.0	42.1	34.9	37.0
	Supply/Exhaust		66.8	70.4	65.7	58.8	57.8	54.7	47.4	
	Extract/Intake		61.1	59.0	52.9	42.0	38.4	34.4	25.2	
1	Casing		57.3	61.0	59.9	51.8	51.9	50.9	42.5	43.2
	Supply/Exhaust		71.5	76.6	73.3	65.4	65.3	64.4	58.9	
	Extract/Intake		66.3	64.1	60.1	47.3	44.0	41.2	28.2	

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 EN13053:2006. Casing dB(A) @ 3m given as hemispherical.

Air Direction/Connection



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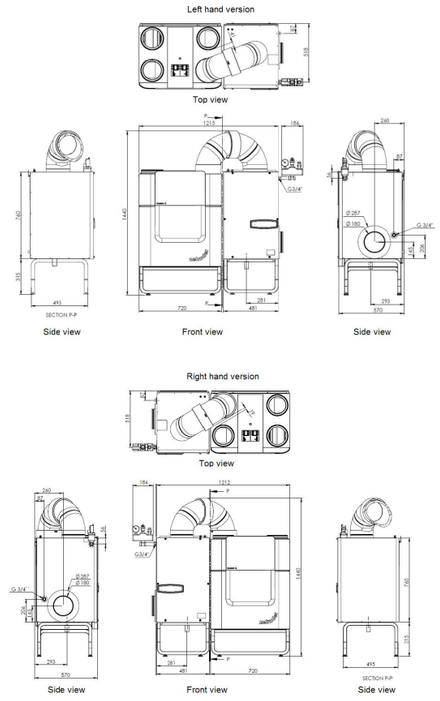
Technical Specification

Weight	47 Kg
Ducting	Internal - 180 mm
Condensate connection	32 mm
Materials	Internal EPP / ABS External coated sheet steel
Supply voltage	230V / single-phase / 50Hz
Maximum power consumption	70 W
Current draw	0.58 A
Fuse rating	3 amp
Ideal brine pressure	1.5 bar
Brine flow rate @ maximum 350m3/h	6-8 l/min
Brine flow rate @ maximum 450m3/h	8-10 l/min
Brine flow rate @ maximum 600m3/h	8-10 l/min
Maximum head circulation pump	7 m
Circulation pump class	A

Dimensions

Height	1440 mm
Width	1215 mm
Depth	570 mm



Performance Data

ComfoFond-L Q brine loop dimensions reocmmendations

MVHR Unit	Pipe type	Brine volume per 10m of pipe (l)	Minimum length of pipe in soil/clay ground (m)	Minimum length of pipe in sandy ground (m)
CAQ350	25/20.4 PE	3.3	65	130
CAQ450	32/26.2 PE	5.3	100	200
CAQ600	32/26.2 PE	5.3	110	220

ComfoFond-L Q brine mixture

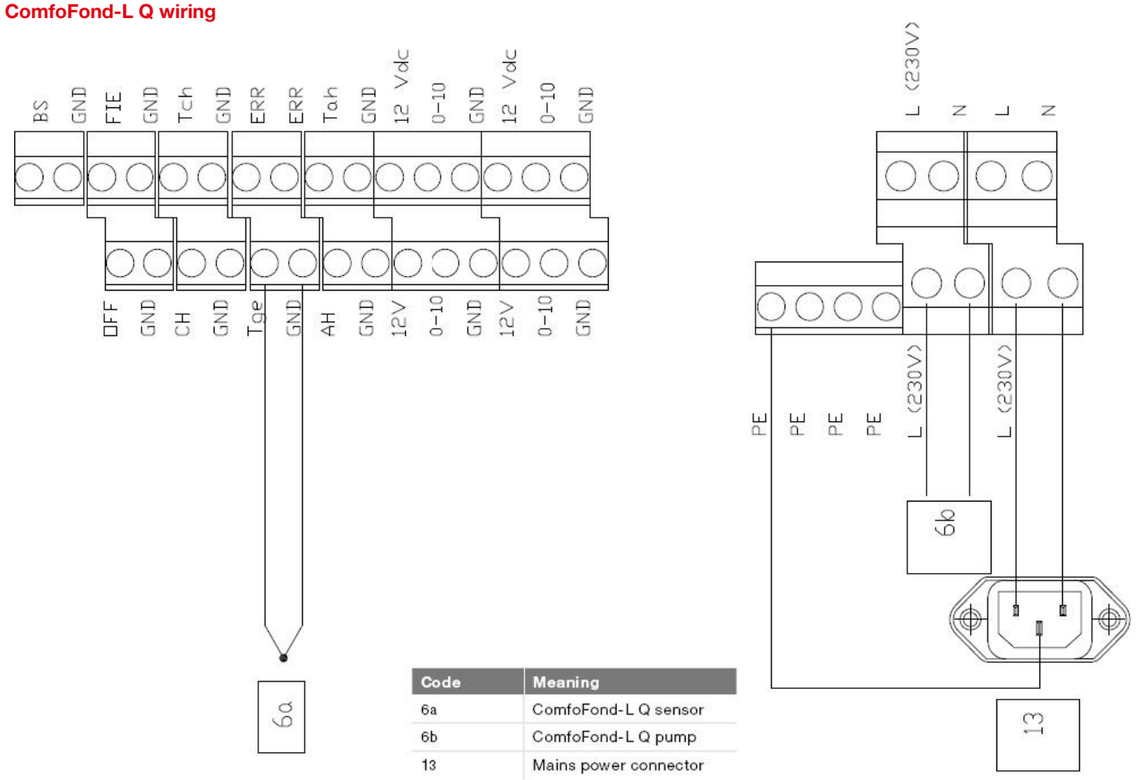
Desired ethylene glycol percentage	
Maximum outside temperature (oC)	Percentage (%)
-15	35
-20	40
-25	45
-30	50

Higher concentrations of ethylene glycol can cause flow-related problems on account of the viscosity of the mixture. Irreversible damage will be caused to the ComfoFond-L Q if concentrations in excess of 50% are used.

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.

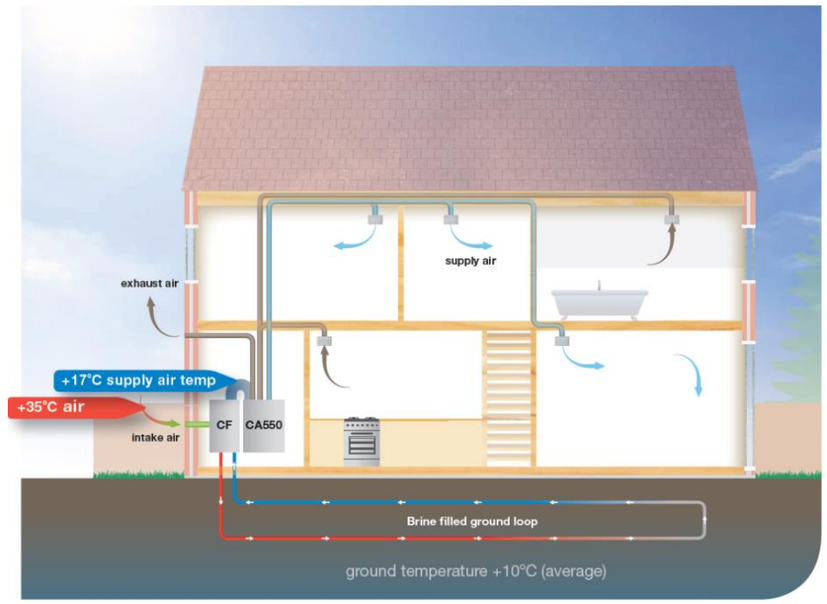
ComfoFond-L Q wiring



Code	Meaning
6a	ComfoFond-L Q sensor
6b	ComfoFond-L Q pump
13	Mains power connector

ComfoFond example

The Zehnder ComfoFond-L Q ground loop (by others) ideally should be laid between 1.2-1.6 m underground. The pipe can be laid in the ground around the house, but keep the length inside the house to a minimum. In order to increase the efficiency, a minimum distance of 60 cm between any loops in the pipe is advised. In order to protect the water pipes from freezing, the pipe must be at least 1 meter away from the water pipes present in the ground.



Summer - external air temperature at +35°C
- airflow rate at 250m³/h
- brine solution flow rate at 8 l/min.
- supply air temperature at +17°C

Zehnder ComfoPipe Plus ø 200mm, single adaptor for Q450/600 with ComfoFond-L Q

Article number: 990 328 751

Description

Adaptor:

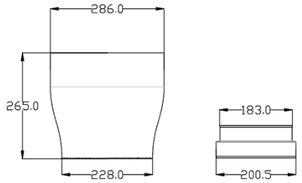
Adaptor for insulated duct system to securely connect to the ComfoAir Q450 or Q600 when installed with a ComfoFond-L Q, to enable a connection to a straight length of insulated duct or 45° bend. The bend comes complete with a connector to enable the intake for the ComfoFond-L Q to be connected to the insulated duct system.

Technical Specification

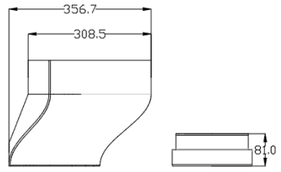
Item	Adaptor for ComfoAir Q / Adaptor for ComfoFond-L Q
Height	265 mm / 81 mm
Width	286 mm / 200.5 mm
Depth	356.7 mm / 200.5 mm
Weight (combined)	0.1 kg

Dimensions

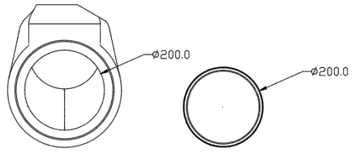
Front View



Side View



Top View



Controls

Option Box

Product code: 471 502 105

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

Key Benefits

- 4 x 0-10V inputs for use with the 12V 0-10V RH sensor or 12V 0-10V CO2 sensor
- Volt free contact input
- Post heater integration
- ComfoFond-L Q or sub-soil heat exchanger valve integration
- External filter alert integration
- Service mode activation input to disable fans e.g. when fire alarm activated

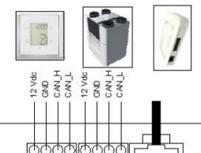
Technical Specification

Supply voltage	Low voltage direct from the MVHR units ComfoNET connector Mains power - 230 V / single-phase / 50Hz
IP rating	IP40
Recommended cable	4 core cable, 1 mm Max. (up to 50 metres)
RAL colour	9018
Maximum number per unit	1

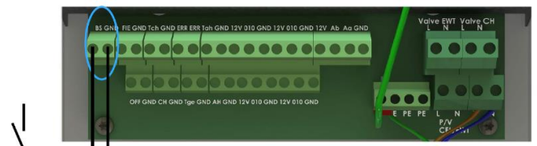
Dimensions (surface mounted)

Height	253 mm
Width	178 mm
Depth	60 mm

Wiring

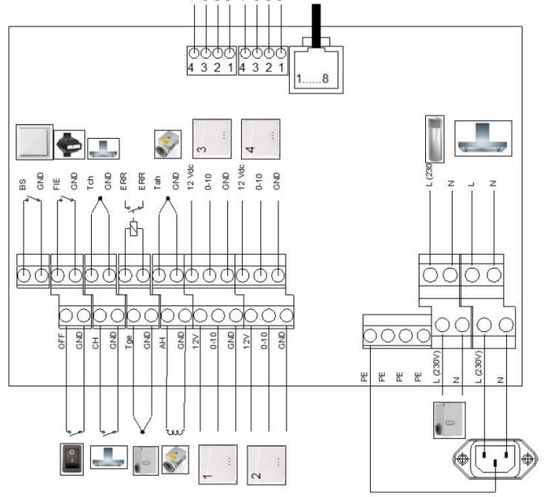


The Bathroom Switch connection option - II



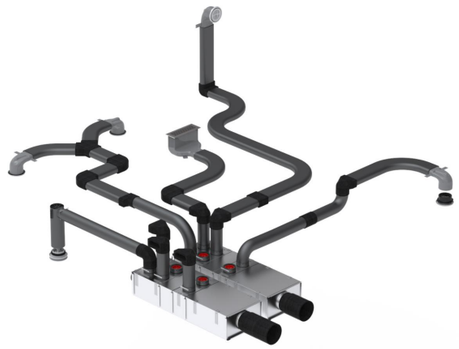
This contact can also be connected over a relay (e.g. in the bathroom light switch).

This is a potential free input so do not connect it to 230V!



For use with

Our range of ComfoFond-L Q units can be used in conjunction with our ComfoWell and ComfoTube Therm. 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 Q MVHR units. The ComfoTube Therm has been specifically designed to reduce energy loss when transporting tempered air, to enable energy-efficient cooling and heating whilst maintain the flexibility of the ComfoTube semi-rigid ductwork..



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BIM/CAD Components

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Our Informational Videos

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

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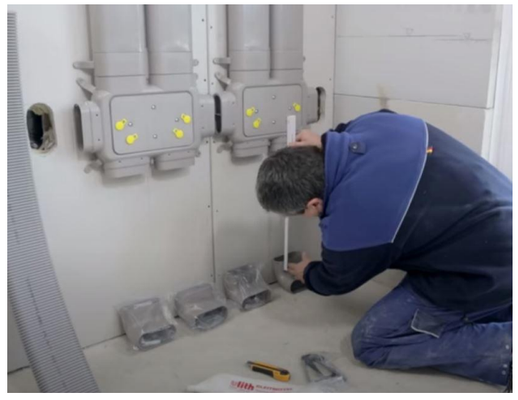

Watch our video on how to clean the Zehnder ComfoTube ductwork.

TO WATCH OUR VIDEO

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Consultant Specification

Specification

The unit shall consist of a body manufactured in powder coated steel. The unit shall be fully insulated using high quality EPP to maintain excellent thermal characteristics and prevent shrinkage over time.

The unit shall be capable of working in conjunction with the whole house ventilation system with heat recovery ComfoAir Q. The unit shall temper the intake air from outside before it enters the ComfoAir Q unit.

The unit shall be constructed to have a removable cover to allow full maintenance access. The removable cover shall enable access to the electrical connections, sensors and pump. The pump shall be suitable for removal without the requirement for the unit to be removed from situ and be available as a spare part 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 along with be UKCA Marked.

Operation

The unit shall be a ComfoFond-L manufactured by Zehnder and shall be suitable mount on a floor stand or wall next to a ComfoAir Q unit in accordance with the specification.

The unit shall transfer heat energy from the ground to the intake air. The unit shall require a suitable brine loop size and length to match the desired flow rate.

The unit shall have the ability to activate or deactivate automatically based on the selected temperature profile.

Controls

The ComfoFond-L Q unit shall contain the following functions within the unit pre-wired and factory fitted by the manufacturer:

• Temperature sensor to monitor external conditions

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