

Zehnder ComfoAir 70

Technical specification for decentralised comfort ventilation unit



General

Zehnder ComfoAir 70 is a decentralised comfort ventilation unit with heat and humidity recovery using synchronous supply and extract air operation. It is often used in apartment renovations as well as in new residential builds. The comfort ventilation unit is particularly suited for one- and two-room apartments, vacation and student apartments. An additional room can be connected to the adjoining room connections for supply or extract air using Zehnder air distribution (optional). An enthalpy exchanger, which ensures a high degree of heat and humidity recovery, is standard on the unit, and therefore provides a comfortable indoor climate and has a positive effect on indoor humidity.



ComfoAir 70
with white aluminium
outside wall panel



ComfoAir 70
with plastic outside
wall panel



ComfoAir 70
with stainless steel
outside wall panel

* Depending on the unit configuration chosen. Detailed information on page 6 and at <http://international.zehnder-systems.com>



Zehnder ComfoLED electronic
control panel

Benefits

- Exceptionally good indoor climate, high energy efficiency and maximum hygiene due to washable enthalpy exchanger
- Quiet operation due to high-quality radial fans and good insulation
- Maximum living comfort due to synchronous supply or extract air operation for continuous heat and humidity recovery
- Optimum feel-good climate due to demand control by means of optional humidity, CO₂ and VOC sensor boards
- Simple and quick installation with minimal intrusion into the living space
- Attractive look: Plastic outside wall panel can be painted over to match the colour of the wall
- Intuitive operation via the external Zehnder ComfoLED electronic control panel
- Clean operation, as no condensate to dispose of down the façade of the building and no condensate container
- Maximum planning flexibility and good airflow due to optional adjoining room connection

Technical specifications

Data	
Unit dimensions (H x W x D)	660 x 440 x 145 mm
Outside wall thickness	Min. 275 to 600 mm
Wall installation tube	Ø 250 mm, 600 mm long
Core hole drilling	Ø approx. 270 mm
Fans	DC radial fan
Filter class	G4 supply/extract air (optional F7 supply air)
Heat exchanger	Cross-counterflow enthalpy exchanger
Housing	Powder-coated aluminium, RAL 9016, fine structure, matt
Unit core	Expanded polypropylene (EPP)
Electrical connection	230 VAC/50–60 Hz
Max. current draw	0.15 A
Power consumption	4 W to 17 W (standby: < 1 W)
Protection class	II (protective insulation)
Degree of protection	IP20
Volume flow	15–25–40–60 m ³ /h
Energy efficiency	Up to 90% heat recovery Up to 84% humidity recovery
Weight	22 kg
Application	-20 °C to 40 °C
Frost protection	From -5 to -15 °C, unit then switches to standby mode
Control	4 fan speeds, standby, filter message, fault message, shutters seal automatically in standby mode, optional sensor control by means of humidity, VOC and CO ₂ sensor
Leakage (in acc. with DIN 13141 Part 8 – 2006)	Internal: 0.1% External: 0.9%

Energy indicators

“Passivhaus” certification

Component ID	0826vs03
Application [m ³ /h]	20–40
Heat output η_{HR} [-]	85%
Specific electric power consumption $p_{el,spec}$ [W/(m ³ /h)]	0.24
Humidity recovery η_X [-]	64%

EU energy labelling

Energy efficiency class	A *
Maximum flow rate [m ³ /h]	50–60
Sound power level L_{WA} [dB(A)]	34–47

* Depending on the unit configuration chosen.
Detailed information on page 6 and at international.zehnder-systems.com

Article numbers

Description	Article number
Zehnder ComfoAir 70, white aluminium outside wall panel, without wall installation tube	527 007 230
Zehnder ComfoAir 70, plastic outside wall panel, without wall installation tube	527 007 240
Zehnder ComfoAir 70, stainless steel outside wall panel, without wall installation tube	527 007 250

Accessories	Article number
Round wall installation tube, made of plastic, Ø 250 mm, length = 600 mm, with 2 blanking plugs, for retrofitting	527 005 200
Square wall installation tube, made of EPP, 268 x 268 (W x H), length = 600 mm, with 2 blanking plugs, for new builds	527 005 800
Sealing tape for Zehnder ComfoAir 70, for an adjoining room connection	521 000 580
Zehnder ComfoLED electronic control panel	527 007 290
Humidity sensor board	527 007 260
Humidity and VOC sensor board	527 007 270
Humidity and CO ₂ sensor board	527 007 280

Filters	Article number
Filter set for Zehnder ComfoAir 70 G4 (2 pieces)	527 005 180
Filter set for Zehnder ComfoAir 70 G4/F7 (2 pieces)	527 005 190
Filter set for Zehnder ComfoAir 70 G4 (10 pieces)	527 005 160
Filter set for Zehnder ComfoAir 70 G4/F7 (10 pieces)	527 005 170

Scope of delivery

To install Zehnder ComfoAir 70 into the wall, a wall installation tube is required which must be ordered separately. The unit is delivered ready to install with the chosen outside wall panel and power supply for a 230 VAC connection.

Level of efficiency

The generously proportioned enthalpy exchanger, the core of the ventilation unit, functions particularly energy-efficiently. It uses both the sensitive and the latent energy in the extract air. Heat recovery of up to 90% and humidity recovery of up to 84% are possible. Using humidity recovery, the unit functions at temperatures as low as -5 °C without the need for a pre-heater or frost protection. This also saves energy and provides a comfortable indoor climate.

Fans

Supply and extractor fans are driven by energy-efficient EC direct-current motors. The radial fans are resistant to wind loads. The unit operates very quietly due to the arrangement of the fans in the wall opening and the use of a special insulation material. The fans can be set to any of four speeds.

Filters

Standard equipment on Zehnder ComfoAir 70 includes G4 supply and extract air filters (coarse dust filters). After the expiry of a certain interval, an indicator on the control panel indicates that the filter must be replaced. The filter should then be replaced as soon as possible. A Class F7 pollen filter (optional) can be installed in the supply air inlet.

Installation

The comfort ventilation unit is installed in an outside wall. No condensate forms in the unit, therefore there is no condensate drain. The façade of the house always remains clean and dry, as no dirt can form due to condensate dripping down.

Installation of the unit is quick and easy. Two different wall installation tubes are available: either a round tube that is used for renovations and is inserted in the core hole of the outside wall, or a square tube that can be embedded in the wall. Zehnder ComfoAir 70 is then inserted from inside the room and screwed into place. A 230 VAC mains power supply is connected behind the wall mounting system of the unit. After the insulated tube is adjusted, the weather-resistant outside wall panel is fixed to the outside wall. It is that easy to install the unit and have it ready for operation without great intrusion into the living space.

Operation

The built-in control panel on the front of the unit facilitates easy, uncomplicated operation of the Zehnder ComfoAir 70 comfort ventilation unit. By briefly pressing the plus/minus buttons, 4 fan speeds can be set or the unit can be switched to standby mode. Fault messages are displayed and an indicator lets you know when it is time to replace the filter. The automatic function can be set by briefly pressing the plus button from fan speed 4. Visualisation is implemented by a separate LED. In standby mode, the built-in shutters automatically seal off the outdoor and exhaust air openings on the ventilation unit. The comfort ventilation unit has automatic frost protection.

The optional external Zehnder ComfoLED electronic control panel allows Zehnder ComfoAir 70 to be conveniently operated remotely. The functions of the external electronic control panel correspond to those on the integrated control panel. If an external electronic control panel is installed, the internal control panel supplied as standard remains fully functional.

As an option, sensor boards to control humidity, VOC or CO₂ can also be used. In the automatic function, the ventilation unit's control panel checks the measurement results of the sensors and controls the unit's fan speeds to ensure maximum living comfort.

Maintenance

Routine maintenance of Zehnder ComfoAir 70 is easy to carry out and should be performed regularly to keep the ventilation unit operating in a flawlessly hygienic manner. After the cover is removed, the filters can be pulled out of the housing without tools. The enthalpy exchanger can be removed from the housing after the upper insulation element is taken off. The enthalpy exchanger can be washed out with water. Please see the user manual for information about servicing tasks.

Frost protection

Using the enthalpy exchanger for humidity recovery, the unit functions at temperatures as low as -5 °C without the need for a pre-heater. Should the outside temperature fall below that level, frost protection is activated to regulate the supply of cold outdoor air. If the outside temperature falls further, the unit switches to standby mode at -15 °C. Unit operation is regulated by a temperature sensor. The unit begins to work automatically when the outside temperature rises again. Frost protection prevents the unit from freezing.

Adjoining room connection

Adjoining room connections (optional) can be mounted on the back (in-wall) or on the side of Zehnder ComfoAir 70. An additional room is connected to the supply or extract air with joining piece 90 flat 51 and thus integrated into the ventilation system. In order to minimise pressure losses, distances should be kept to a minimum. For instance, the unit can be installed in the bathroom and fresh air supplied to the living or sleeping areas. The unit emits no noise in the living/sleeping areas and the rooms are optimally supplied with fresh air.

Tender specification

Zehnder ComfoAir 70 is a decentralised, compact comfort ventilation unit with heat recovery and a large enthalpy exchanger. The ventilation unit is perfectly suited for use in the renovation of one- and two-room apartments, student and vacation apartments, and for new builds. The housing is made of powder-coated aluminium and is designed without thermal bridges. The interior lining is made of expanded polypropylene (EPP) to provide heat and sound insulation. The outside wall panel is made of high-quality plastic and can be painted over to match the colour of the wall. Radial fans with direct-current motors are particularly resistant to wind loads and allow economical operation with a high degree of electrical efficiency.

Supply and extractor fans can be controlled separately and, in connection with an adjoining room connection, can be precisely adjusted to the balance air volume.

The core of Zehnder ComfoAir 70 is its generously proportioned plastic cross-counterflow enthalpy exchanger. With heat recovery of up to 90% and humidity recovery of up to 84%, it ensures the maximum in energy recovery. No condensate forms in the unit. It functions at temperatures as low as -5 °C without the need for a pre-heater or frost protection. The unit is controlled by means of a built-in control panel on the front of the unit. Four fan speeds, the automatic function and standby mode can be set. The display shows fault messages and lets you know when it is time to replace the filter. The ventilation unit can also be controlled remotely with the optional ComfoLED electronic control panel. Zehnder ComfoAir 70 is delivered ready to connect to the 230 VAC mains power supply with outside wall panel. The wall installation tube must be ordered separately. The filters are located at the front and can be easily replaced by the user without tools after removing the cover. Zehnder ComfoAir 70 is mounted on the inner side of an outside wall and vents outdoor and exhaust air directly via an insulated wall tube.

- Four fan speeds, manual selection
- Automatic function can be selected
- Automatic frost protection
- Automatic shutter fastener
- Time-controlled filter replacement indicator
- Fault indicator

Options

- Class F7 pollen filter
- White aluminium and stainless steel outside wall panel
- Adjoining room connection for supply or extract air
- Round wall installation tube, made of plastic, Ø 250 mm, length = 600 mm, with 2 blanking plugs, for retrofitting
- Square wall installation tube, made of EPP, 268 x 268, length = 600 mm, with 2 blanking plugs, for new builds
- External Zehnder ComfoLED electronic control panel
- Humidity sensor board, humidity and VOC sensor board, humidity and CO2 sensor board

Sound specifications

Noise level at a distance of 3 m, open space

	Unit <u>without</u> adjoining room connection	Unit with <u>one</u> adjoining room connection	Unit with <u>two</u> adjoining room connections
Fan speed 1	11.0 dB(A)	9.2 dB(A)	2.9 dB(A)
Fan speed 2	23.6 dB(A)	16.3 dB(A)	16.0 dB(A)
Fan speed 3	29.4 dB(A)	24.3 dB(A)	16.2 dB(A)
Fan speed 4	36.4 dB(A)	31.2 dB(A)	22.7 dB(A)

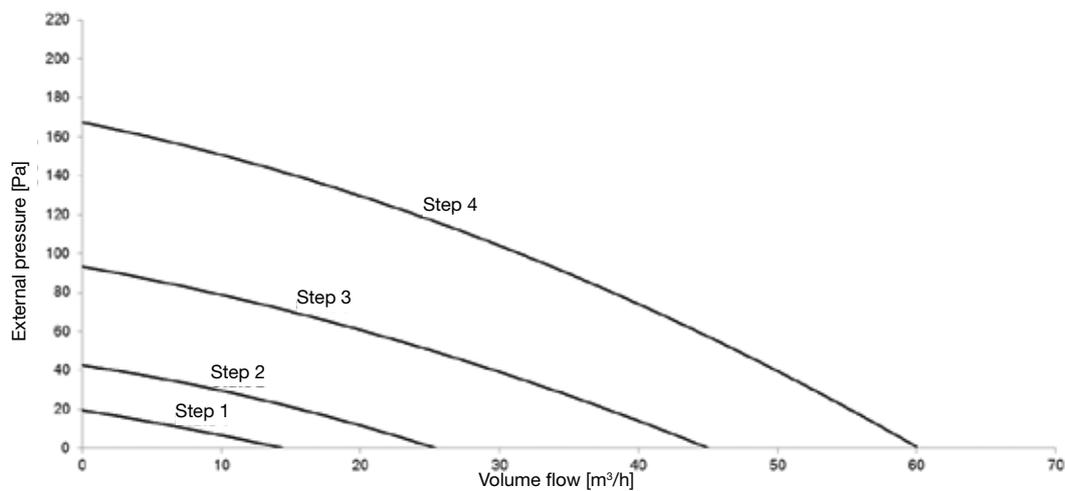
Sound transmission

	Weighted sound reduction index Rw [dB]	Weighted normalised level difference Dn [dB]
Shutter open	17	40
Shutter closed	25	48

Operation data

	Volume flow [m³/h]	Thermal efficiency [%]	Humidity efficiency [%]	Power consumption [W]
Standby				< 1
Fan speed 1	15	90	84	4
Fan speed 2	25	83	73	5
Fan speed 3	40	76	61	9
Fan speed 4	60	71	54	17

Pressure loss graph

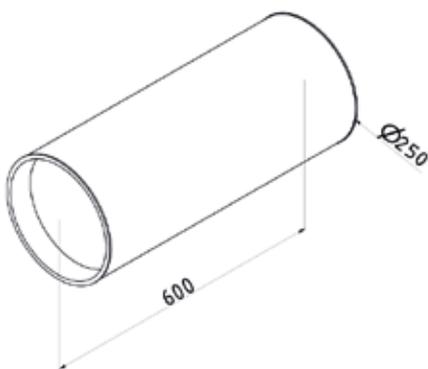
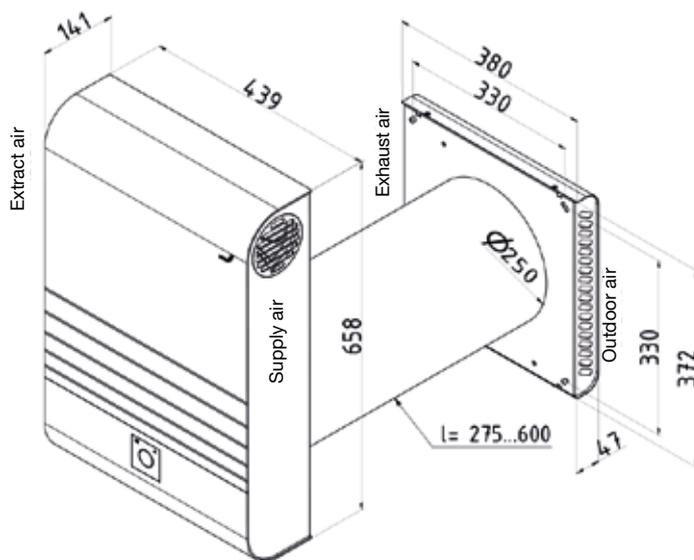


Energy efficiency classes

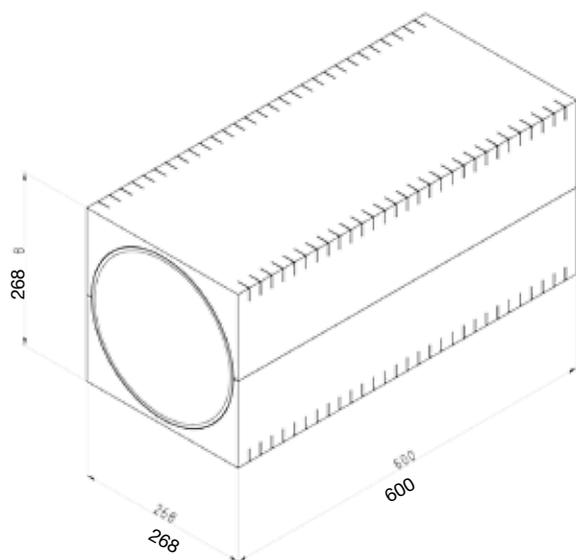
Energy efficiency classes in accordance with EU Regulation no. 1254/2014.

Energy efficiency classes						
Comfort ventilation unit	Article number	Control according to site requirements			Manual control	
		Humidity sensor board 527 007 260	Humidity and VOC sensor board 527 007 270	Humidity and CO ₂ sensor board 527 007 280	Unit <u>without</u> adjoining room connection	Unit with <u>one</u> adjoining room connection
ComfoAir 70	527 007 230 527 007 240 527 007 250	A	A	A	B	A

Dimensional drawing



Round structural shell



Square structural shell

ComfoAir 70 Declaration of Performance

Information requirement for RVUs as per EU Regulation No. 1254/2014 Heat recovery unit Zehnder ComfoAir 70												
Supplier's name or trade mark	Zehnder Group											
Supplier's model identifier	ComfoAir 70 (1 NRC)			ComfoAir 70 Sensorik (1 NRC)			ComfoAir 70 (2 NRC)			ComfoAir 70 Sensorik (2 NRC)		
SEC [kWh/(m²a)] specific energy consumption (cold, average, warm)	-68,5	-34,3	-12,1	-77,5	-40,8	-17,1	-68,5	-34,3	-12,1	-77,5	-40,8	-17,1
SEC Class	A+	A	E									
Type of ventilation unit	Bidirectional RVU											
Type of drive installed	Multi-speed drive											
Type of heat recovery system	Recuperative			Recuperative			Recuperative			Recuperative		
Thermal efficiency [%]	76			76			76			76		
Maximum flow rate [m³/h]	50			50			50			50		
Electric power input [W]	17			17			17			17		
Sound power level [dB(A)]	42			42			34			34		
Reference flow rate [m³/h]	35			35			35			35		
Reference pressure difference [Pa]	50			50			50			50		
SPI [W/(m³/h)]	0,21			0,21			0,21			0,21		
Control factor and typology	1 Manual control			0,65 Local demand control			1 Manual control			0,65 Local demand control		
Declared maximum internal and external leakage rates [%]	Internal: 0,1											
	External: 0,9			External: 0,9			External: 0,9			External: 0,9		
Mixing rate	-			-			-			-		
Position and description of visual filter warning	Symbolized message on control panel											
Internet address for assembly and disassembly instructions	www.international.zehnder-systems.com											
Airflow sensitivity to pressure variations [%]	-			-			-			-		
Indoor/outdoor air tightness [m³/h]	-			-			-			-		
AEC [kWh/a] annual electricity consumption (cold, average, warm)	845	308	263	693	156	111	845	308	263	693	156	111
AHS [kWh/a] annual heating energy saved (cold, average, warm)	8091	4136	1870	8614	4404	1991	8091	4136	1870	8614	4404	1991

ComfoAir 70 Declaration of Performance

Information requirement for RVUs as per EU Regulation No. 1254/2014										
Heat recovery unit Zehnder ComfoAir 70										
Supplier's name or trade mark	Zehnder Group			Zehnder Group						
Supplier's model identifier	ComfoAir 70 (without NRC)			ComfoAir 70 Sensorik (without NRC)						
SEC [kWh/(m ² a)] specific energy consumption (cold, average, warm)	-66,4	-32,9	-11,1	-76,3	-40,0	-16,6				
SEC Class	A+	B	E	A+	A	E				
Type of ventilation unit	Bidirectional RVU			Bidirectional RVU						
Type of drive installed	Multi-speed drive			Multi-speed drive						
Type of heat recovery system	Recuperative			Recuperative						
Thermal efficiency [%]	76			76						
Maximum flow rate [m ³ /h]	60			60						
Electric power input [W]	17			17						
Sound power level [dB(A)]	47			47						
Reference flow rate [m ³ /h]	42			42						
Reference pressure difference [Pa]	0			0						
SPI [W/(m ³ /h)]	0,21			0,21						
Control factor and typology	1 Manual control			0,65 Local demand control						
Declared maximum internal and external leakage rates [%]	Internal: 0,1			Internal: 0,1						
	External: 0,9			External: 0,9						
Mixing rate	U1			U1						
Position and description of visual filter warning	Symbolized message on control panel			Symbolized message on control panel						
Internet address for assembly and disassembly instructions	www.international.zehnder-systems.com			www.international.zehnder-systems.com						
Airflow sensitivity to pressure variations [%]	< 20			< 20						
Indoor/outdoor air tightness [m ³ /h]	inside to the outside: 5,2 outside to the inside: 6,9			inside to the outside: 5,2 outside to the inside: 6,9						
AEC [kWh/a] annual electricity consumption (cold, average, warm)	871	334	289	704	167	122				
AHS [kWh/a] annual heating energy saved (cold, average, warm)	7941	4060	1836	8517	4354	1969				

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