

Use

The Zehnder ComfoAir flat 150 comfort ventilation unit was specially developed for space-saving ceiling installation in residential and commercial buildings with high ventilation demand. It is thus excellently suited for conversions and modernisations. The Zehnder ComfoAir flat 150 combines maximum comfort, simple operation and high efficiency. It can move up to 150 m³/h of air at an external pressure of 100 Pa.

Efficiency

The integrated counterflow heat exchanger achieves efficiencies of up to 90%. High efficiency enhances user comfort. The supply air is heated to a pleasant temperature before entering the rooms. Incidentally, the energy requirement for heating the air is also minimised as a result.

Fans

The two supply and extract fans, which can be independently controlled, are driven by efficient DC motors. This allows differential pressures in the supply and extract air distribution systems to be compensated. By positioning the fans upstream of the heat exchanger and thanks to the effective sound insulation in the housing, only minor sound emissions occur.

The air volumes of the seven selectable stages can be set to between 60 m³/h minimum and 180 m³/h maximum on the Zehnder ComfoAir flat 150.

Filters

The Zehnder ComfoAir flat 150 is fitted with a class G4 filter as standard. The time of the next due filter replacement is shown on the control panel. A higher grade F7 pollen filter can be installed in the supply air for a particularly pure indoor climate.

Installation

The ventilation unit is controlled via a control panel in a switch box. Three operating modes and seven ventilation stages can be selected. Balanced supply and extract air mode, pure supply air mode or pure extract air operation are available. The defined ventilation stages and operating modes are shown on the control panel by LEDs.

The unit is provided with an intermittent ventilation function. During a defined period, the unit operates on the highest stage and then switches back to the originally defined stage. Intermittent or party ventilation is initiated by pressing a button on the control panel or an additional button. This may be located in the kitchen or bathroom.

Operation

The ventilation unit is controlled via a control panel. The three operating modes and seven ventilation stages are adjustable. Balanced supply and extract air mode, pure supply air mode or pure extract air operation are the available modes. The defined fan stages and operating modes are shown by LEDs on the display.

The unit is provided with an intermittent ventilation function. During a defined period, the unit operates on the highest stage and then switches back to the originally defined stage. Intermittent or party ventilation is initiated by pressing a button on the control panel or an additional button. This may be located in the kitchen or bathroom.



Servicing

Zehnder ComfoAir flat 150 comfort ventilation unit servicing is limited to regular filter replacement.

The heat exchanger should be cleaned every 2-3 years depending on the dust load in the air. This can be done by removing the heat exchanger from the unit and cleaning it with luke warm soapy water.

Frost protection

The Zehnder ComfoAir flat 150 can be operated without a geothermal heat exchanger. The frost protection setting allows safe operation of the ventilation unit even at very low temperatures. If a temperature around zero is reached in the exhaust air, the supply air volumetric flow is reduced, preventing ice formation.

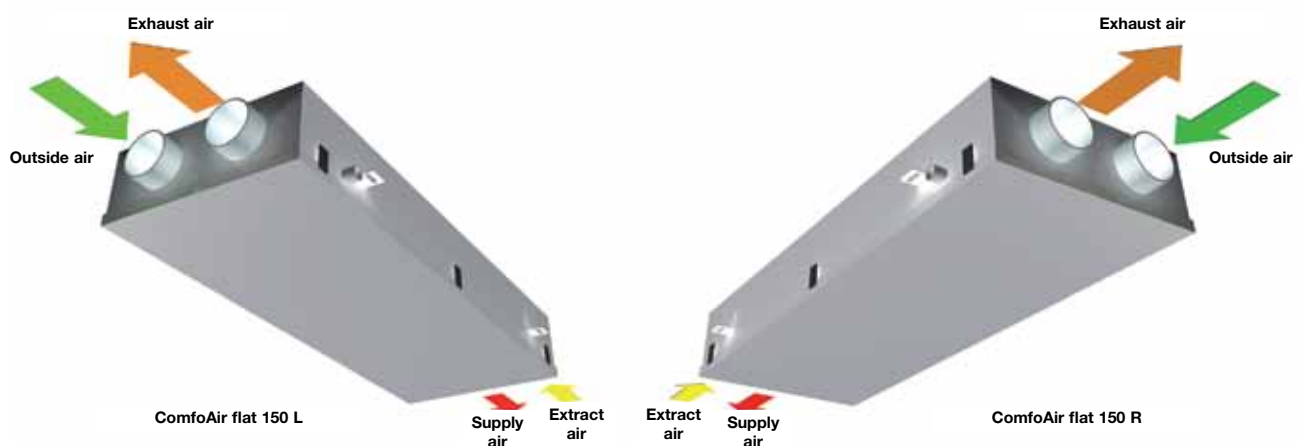
Summer setting

The Zehnder ComfoAir flat 150 can be switched to pure supply air or extract air operation, depending on the user's wishes, preventing unwanted recovery of excess heat from the building. A simple button press on the control panel is enough to change to pure supply or extract air mode.

Technical specifications

Unit type	Zehnder ComfoAir flat 150
Max. air volume (at 100 Pa)	150 m ³ /h
Min. air volume	60 m ³ /h
Efficiency	90%
Height	202 mm
Width	564 mm
Length	1526 mm

Design versions



Benefits

- Comfort ventilation up to 150 m³/h
- Comfortable supply temperature thanks to high efficiency
- Efficiency of 90% thanks to counterflow heat exchanger
- Horizontal installation in suspended ceiling thanks to low installation height
- Particularly well-suited for conversions and modernisations
- User-friendly, moveable foil keyboard with status display
- Air volume control with 7 stages
- Time-controlled filter replacement indicator
- Pure supply or extract air mode for comfortable summer operation
- Frost protection function for operation without preheating
- Low power consumption thanks to DC motors
- Quick and safe installation and maintenance


Article numbers

Unit type	Art. no.
Zehnder ComfoAir flat 150 R	990 202 010
Zehnder ComfoAir flat 150 L	990 202 012

Accessories	Art. no.
Access panel for ComfoAir flat 150 dry wall installation	990 202 016

Filters	Art. no.
Filter set for ComfoAir flat 150, 2 pieces	990 202 083
Pollen filter for ComfoAir flat 150, 1 piece	990 202 089

Description

Zehnder ComfoAir flat 150 comfort ventilation unit for ceiling installation, thanks to its low installation height this unit is suitable for installation in suspended ceilings, particularly suitable for conversions, refurbishment projects and with only shallow available space. Unit with plastic counterflow heat exchanger, thermal efficiency of 90%, directly controlled supply and extract fans with efficient EC direct current motors, supply air (F7) and extract air filters (G4). Housing made of galvanised sheet steel, completely acoustically and thermally insulated, movable control panel for seven fan stages and three operating modes, equipped with automatic frost protection setting, electrical connections via protruding terminal box, pipe connections lateral DN 125, maximum air volume 150 m³/h at 100 Pa, H x W x D: 202 x 564 x 1526 mm.

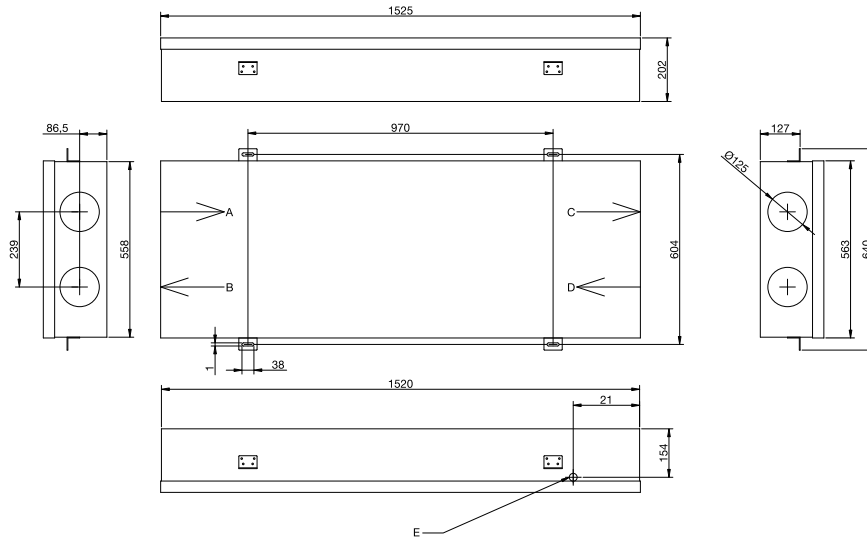
Features

Unit type	Zehnder ComfoAir flat 150
Installation options	hanging, with 4 installation brackets on ceiling
Air connections	lateral, all DN 125
Condensate drain	3/4 inch connection via on-site siphon
Temperature range	From -20 °C to 40 °C
Summer mode	Pure supply or extract air mode
Ventilation stage switching	Foil keyboard with 7 stages
Filter class	G4 (F7 supply air filter optional)
Frost protection function	Supply air reduction (automatic control)
Intermittent ventilation function	yes (15 minutes run-on)
Filter replacement indicator	yes (time-based)

Comfort ventilation unit

Zehnder ComfoAir flat 150

Dimensional drawing

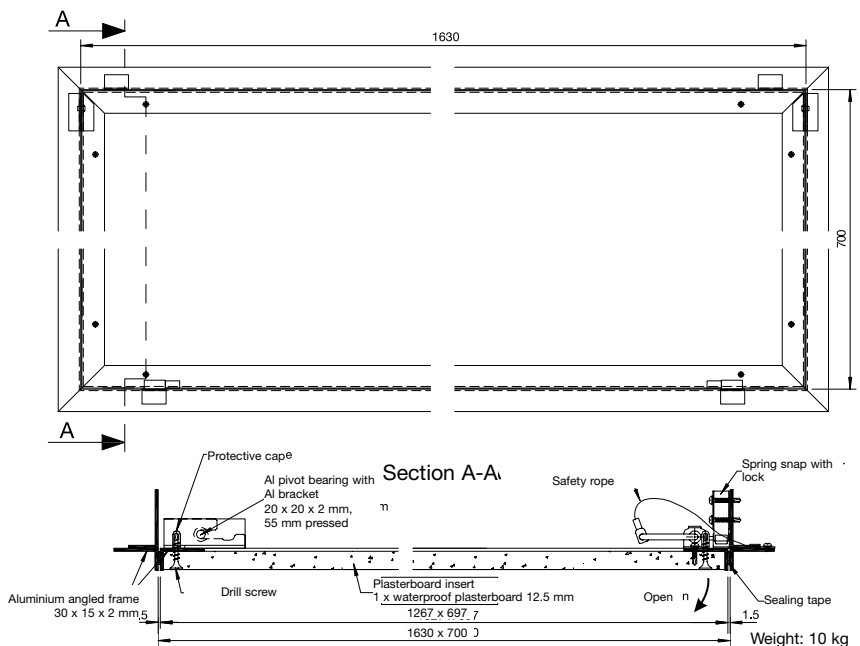


The above figure shows the Zehnder ComfoAir flat 150 R from below including the lateral installation brackets. The unit base is designed as a cover with snap fasteners for inspection and servicing. Ensure that the access panel is large enough for this when installing in a suspended ceiling.

Key

- A Extract air
- B Supply air
- C Exhaust air
- D Outside air
- E Condensate drain (3/4 inch hose with on-site siphon)

Access panel dimensional drawing



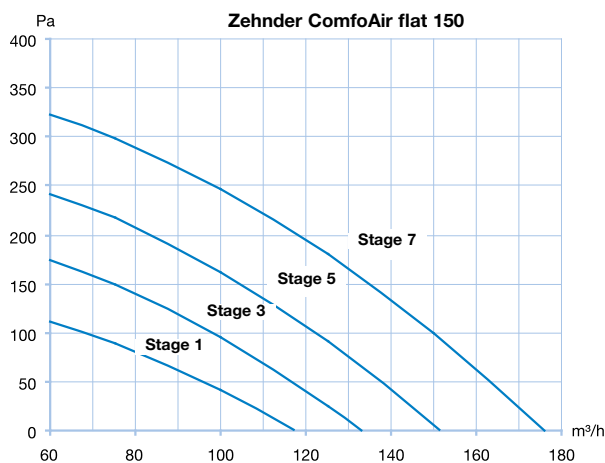
Comfort ventilation unit

Zehnder ComfoAir flat 150

Switch setting	Speed	Air volume	Pressure	Power	Installed noise level Lp(A)	Weight
Factory setting (speed)	%	Qv m ³ /h	Δ P st Pa	consumption w	3 m from unit dB(A)	kg

Zehnder ComfoAir 150

1) Stage 1 - minimum	40%	99	43	35	22	45
(3) Stage 3	60%	113	56	48	27	
(5) Stage 5	80%	130	75	66	32	
(7) Stage 7 - maximum	100%	150	100	90	33	



Sound

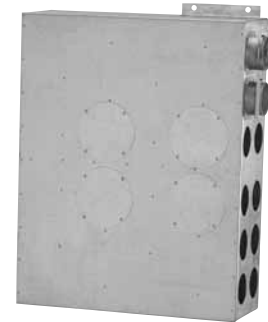
The acoustic performance level is measured in the air connection orifices directly on the unit.

Acoustic performance level (Lw at 0 m distance)

Ventilation unit	Air direction	Speed	Range						
			125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Zehnder ComfoAir 150	Supply air	7 - maximum	62	64	59	59	40	34	21
Zehnder ComfoAir 150	Extract air	7 - maximum	62	65	58	58	33	22	20
Zehnder ComfoAir 150	Outside air	7 - maximum	68	68	66	66	56	46	40
Zehnder ComfoAir 150	Exhaust air	7 - maximum	71	75	70	70	64	61	52

Attenuator for Zehnder ComfoAir flat 150

- Direct connection to the Zehnder ComfoAir flat 150 comfort ventilation unit
- Simple and fast installation thanks to compatible dimensions
- Efficient unit sound attenuation
- Reduction of transmitted sound
- Integrated mounting plate for the Zehnder ComfoFresh air distribution system
- With 6 connectors for supply air and 6 for extract air
- Easy to clean thanks to integrated access panel



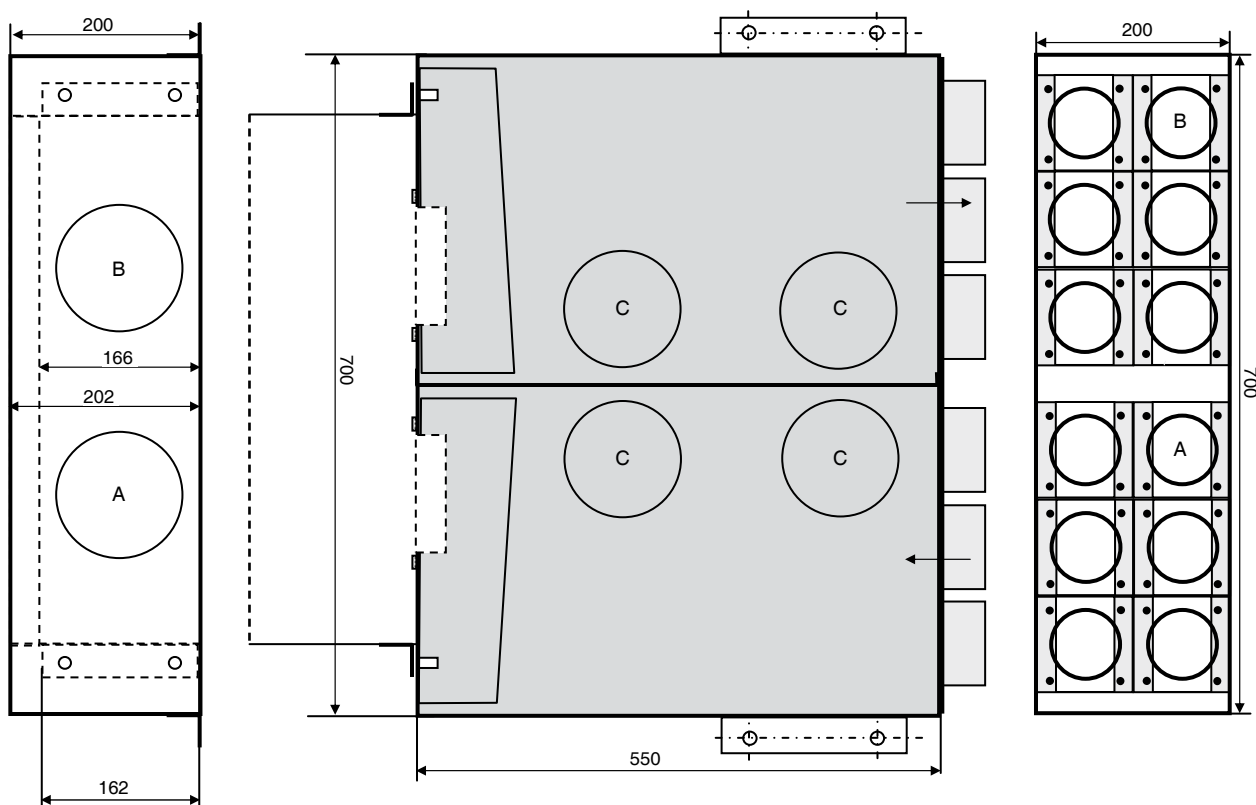
Article numbers

Product	Art. no.
Attenuator-distributor combination for Zehnder ComfoAir flat 150	990 202 015

Description

Attenuator for Zehnder ComfoAir flat 150 for direct connection to the ventilation unit without additional connecting components, with integrated air distribution and collection box made of galvanised sheet steel for front connection of Zehnder ComfoTube ventilation tubes. Max. 6 Zehnder ComfoTube each for supply air and extract air can be connected to the integrated mounting plate. The housing has installation brackets for easy ceiling installation. Ventilation unit connections: supply air DN 125 and extract air DN 125.

Dimensional drawing



Certificate

valid until Dec 31st, 2011

Passivhaus
Institut
Dr. Wolfgang Feist
Rheinstraße 44/46
D-64283 Darmstadt



Component suitable for
Passive Houses: Heat recovery unit
Manufacturer: Zehnder GmbH Comfosystems
Name of product: Zehnder Comfoair flat 150

The following criteria were checked for the award of this certificate:

- 1) **Passive House Thermal Comfort Criterion:**
A minimum supply air temperature of 16.5 °C is achieved at an ambient temperature of -10 °C.
Reasoning: In Passive Houses there is no need to install radiators on exterior walls. In order to avoid discomfort due to exposure to cold air, the supply air temperature must not sink below a minimum value.
- 2) **Efficiency Criterion (heat):**
The effective dry heat recovery rate, determined at an ambient air temperature between -15 and 10 °C, dry extraction air (21 °C) and with balanced mass flows, must be greater than
 $\eta_{HR,t,eff} \geq 75\%$ (in this case: 82%).
- 3) **Efficiency Criterion (electricity):**
The unit's total specific electric power consumption for the operating levels applied in Passive Houses must not exceed **0.45 W/(m³/h)**, for the supply air delivered at design mass flow (in this case: 0.41 W/(m³/h), under conditions described in the appendix).
- 4) **Airtightness and thermal insulation:**
The interior and exterior air leakage flow rates must not exceed 3 % of the nominal extraction air flow rate. (Requirements and verification are described in the certificate's appendix.)
- 5) **Balancing and controllability:**
(Requirements and verification are described in the certificate's appendix.)
- 6) **Sound insulation:** The certificate is only valid with the restriction of installation in a separate room for building services. The required sound pressure level of 35 dB(A) in the installation space with an equivalent absorption area of 4 m² is met, sound levels of < 25 dB(A) in living spaces and < 30 dB(A) in functional spaces are achieved with sound absorbers. (Requirements and verification are described in the certificate's appendix.)
- 7) **Room air hygiene:**
If the unit and all components are installed and operated according to the manufacturer's instructions, the unit will provide perfectly hygienic supply air. (Requirements and verification are described in the certificate's appendix.)
- 8) **Anti-freeze protection:** (Requirements and verification are described in the certificate's appendix.)

The certificate is to be used as follows:

COMPONENT suitable for PASSIVE HOUSES
Dr. Wolfgang Feist



Heat recovery:
Heat recovery rate (effective): 82 %
Electric efficiency: 0.41 Wh/m³

CDE-FLYERTS121, V1209, en, subject to changes