

# KOMFORT EC S5B270(-E)

Heat and energy recovery air handling units



## Features

- Air handling units for efficient supply and exhaust ventilation in flats, houses, cottages and other buildings.
- Heat and humidity recovery minimizes ventilation heat losses during cold season and reduce air conditioner load during hot season.
- Controllable air exchange for creating the best suitable indoor microclimate.
- Compatible with round Ø125 mm air ducts.



**Air flow:**  
up to 300 m<sup>3</sup>/h  
83 l/s



**Heat recovery efficiency:**  
up to 98 %



## Design

- The casing is made of expanded polypropylene (EPP) 15-26 mm thickness with high heat- and sound-insulating properties.

## Fans

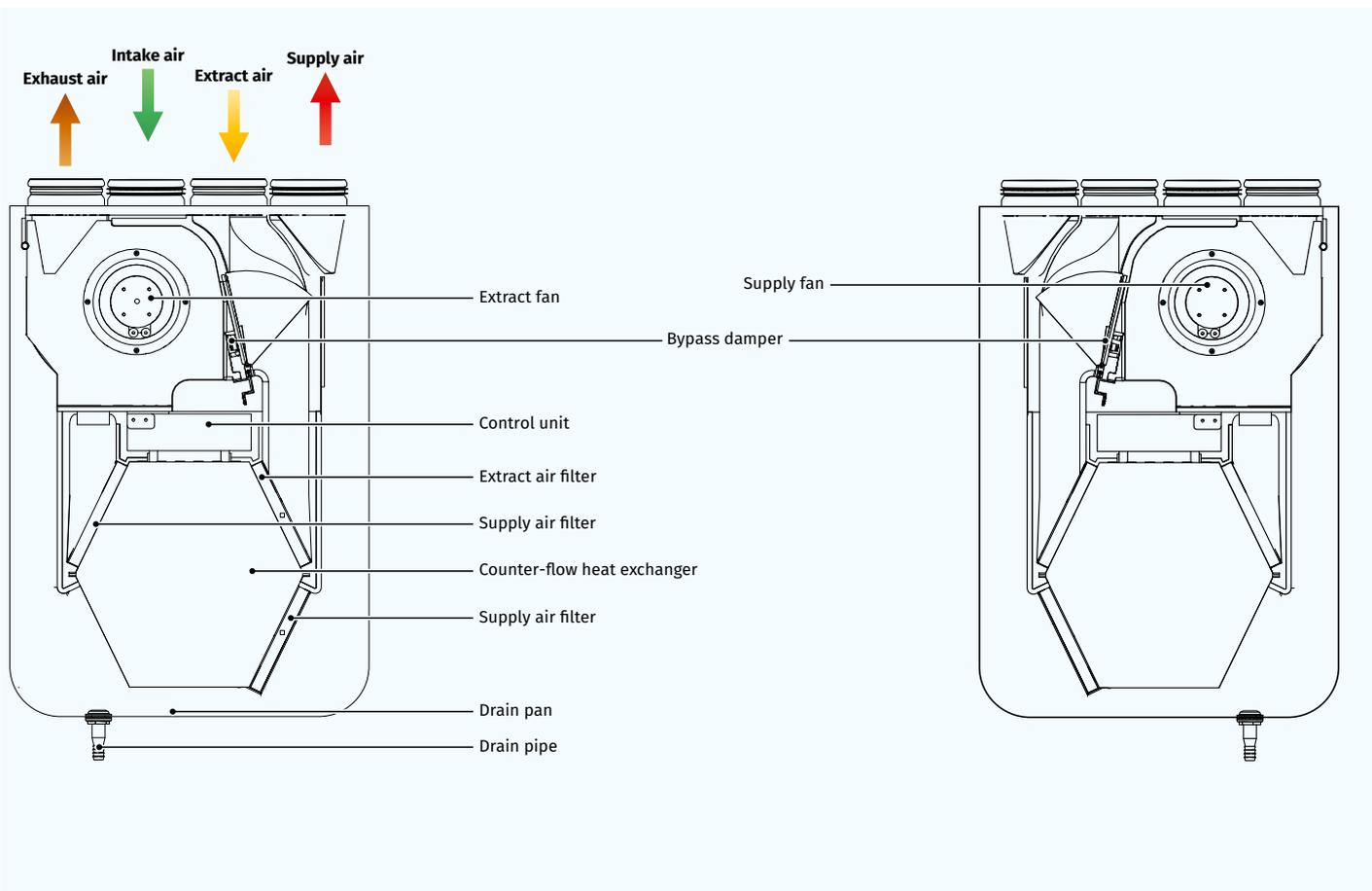
- High-efficient external rotor EC motors and centrifugal impellers with backward curved blades are used for air supply and exhaust.
- EC motors have the best power consumption to air flow ratio and meet the latest demands concerning energy saving and high-efficient ventilation.

- EC motors are featured with high performance, low noise level and totally controllable speed range.
- Dynamically balanced impellers.

## Air filtration

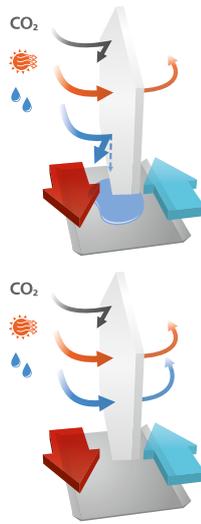
- The supply and extract air streams are stripped of impurities on the panel G4 air filters. Optionally a F8 replaceable filter may be applied.

EPP HEAT AND ENERGY RECOVERY AIR HANDLING UNITS



### Heat recovery

- o **KOMFORT EC S5B270** have a counter-flow polystyrene heat exchanger. In the cold season the extract air heat energy is absorbed by the cold intake air and the ventilation heat losses are minimized. The condensate produced by heat recovery is collected in a drain pan and drained to the sewage system. In the warm season the heat of the outside air is absorbed by the exhaust air. This way the supply air is pre-cooled and operation load for air conditioners is reduced.
- o **KOMFORT EC S5B270-E** have a counter-flow enthalpy membrane heat exchanger. In the cold season the heat and moisture contained in the extract air are transferred to the intake air flow through the enthalpy membrane. This way the ventilation heat losses are minimized. In the warm season the heat and moisture of the outside air are absorbed by the exhaust air through the enthalpy membrane. This way the supply air is pre-cooled and dehumidified and operation load for air conditioners is reduced.



### Bypass

- o The **KOMFORT EC S5B270(-E)** models are equipped with a bypass which can be opened if there is a need to cool down the ventilated area with cool intake air.

### Mounting

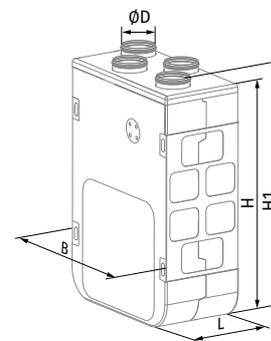
- o The ventilation units are designed for wall mounting.
- o Due to universal casing design both left and right mounting is possible.
- o The service panel located on the left and on the right from the unit as seen from the supply air direction.

### Designation key

Serie	Motor type	Spigot orientation	Casing modification	Bypass	Nominal air flow [m³/h]	Heat exchanger type	Control
KOMFORT	EC: electronically commutated motor	S: vertical spigot orientation	5: EPP	B: integrated bypass	270	-: heat recovery -E: energy recovery	S14: sensor control panel with LED indication

### Overall dimensions [mm]

Model	D	B	H	H1	L
KOMFORT EC S5B270(-E)	125	590	852	893	316



### Control and automation

- o **KOMFORT EC S5B270(-E) S14** has an integrated control panel with sensor buttons and LED indication.

### FREEZE PROTECTION

- o The freeze protection is based on shutdown of the supply fan. In case of a freezing danger communicated by the temperature sensor the supply fan turns off for a period that enables warming up of the heat exchanger with warm extract air. After a freezing danger is no longer imminent the ventilation unit reverts to the standard operation mode.

Functions	S14
Control functions	
Unit on/off	•
Low, Medium, High speed selection	•
Filter maintenance indication	•
Alarm indication	•
Bypass control	Manual
Fan speed adjustment from 0 to 100 %	•
Additional equipment available	
Internal humidity sensor	o
Kitchen hood, CO <sub>2</sub> or humidity sensor contacts (NO)	•
Fire contacts (NC)	•
Air damper contacts	•

• - available; o - option.

**Technical data**

Parameters	KOMFORT EC S5B270 S14	KOMFORT EC S5B270-E S14
Voltage [V/50-60 Hz]	1 ~ 230	1 ~ 230
Power [W]	162	162
Current [A]	1.2	1.2
Maximum air flow [m³/h]	300	300
RPM [min <sup>-1</sup> ]	3200	3200
Sound pressure level at 3 m [dBA]	34	34
Transported air temperature [°C]	-25...+50	-25...+50
Casing material	EPP	EPP
Insulation	15-26 mm, EPP	15-26 mm, EPP
Extract filter	G4	G4
Supply filter	G4 (Option: F8)	G4 (Option: F8)
Connected air duct diameter [mm]	125	125
Weight [kg]	13	13.5
Heat recovery efficiency [%]	87-98	72-94
Heat exchanger type	counter-flow	counter-flow
Heat exchanger material	polystyrene	enthalpy membrane
SEC class for S14 automation	A+	A+
ErP	2016, 2018	2016, 2018

Sound power level, A-filter applied.

Sound power level, A-weighted	General	Octave frequency band [Hz]								LpA, 3 m [dBA]	LpA, 1 m [dBA]
		63	125	250	500	1000	2000	4000	8000		
L <sub>WA</sub> to supply inlet [dBA]	82	65	63	65	80	74	74	68	64		
L <sub>WA</sub> to supply outlet [dBA]	66	60	56	55	63	58	49	40	33		
L <sub>WA</sub> to exhaust inlet [dBA]	85	64	67	71	81	77	79	75	67		
L <sub>WA</sub> to exhaust outlet [dBA]	71	51	64	62	68	60	60	50	42		
L <sub>WA</sub> to environment [dBA]	55	37	45	44	53	43	43	40	38	34	44

\* Data provided for point 1 of the air flow diagram

Total power. Total sound pressure level.

Point	Total power of the unit [W]	Sound pressure level at 3 m (1 m) [dBA]
1	153	34 (44)
2	150	34 (44)
3	142	33 (43)
4	62	30 (40)
5	60	29 (39)
6	59	28 (38)
7	17	27 (37)
8	17	23 (33)
9	16	23 (33)

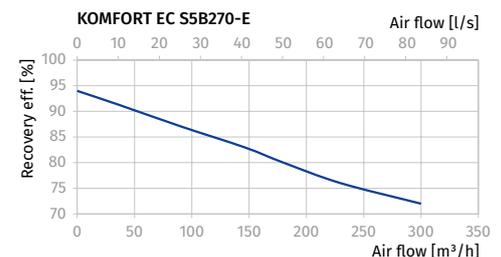
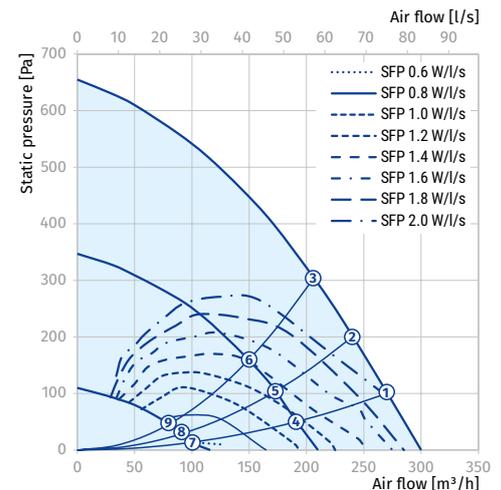
Calculation of the exhaust air temperature:

$$t = t_{\text{outd}} + k_{\text{hr}} \times (t_{\text{extr}} - t_{\text{outd}}) / 100,$$

where

 $t_{\text{outd}}$  – outdoor air temperature [°C],

 $t_{\text{extr}}$  – extract air temperature [°C],

 $k_{\text{hr}}$  – heat exchanger efficiency (according to the diagram) [%]


## Accessories

		KOMFORT EC S5B270 S14	KOMFORT EC S5B270-E S14
G4 panel filter		FP 182x254x18 G4	FP 182x254x18 G4
F8 panel filter		FP 182x254x18 F8	FP 182x254x18 F8
Internal humidity sensor		FS2	FS2
External CO <sub>2</sub> sensor with indication		CD-1	CD-1
External CO <sub>2</sub> sensor		CD-2	CD-2
External humidity sensor		HR-S	HR-S
Syphon kit		SFK 20x32	SFK 20x32
Air damper		VKA 125	VKA 125
Electric actuator		LF230	LF230