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KOMFORT ERV EC DB S14

Suspended heat and energy recovery air handling units

Features

- Air handling units for efficient supply and exhaust ventilation in flats, houses, cottages and other buildings.
- Reduction of load on air conditioning systems in a hot climate and heat loss in a cold climate due to heat and moisture recovery.
- Control of air exchange for creating comfortable indoor microclimate.
- Compatible with round Ø100 or 150 mm air ducts.



Air flow:
up to 430 m³/h
119 l/s



Heat recovery efficiency:
up to 85 %

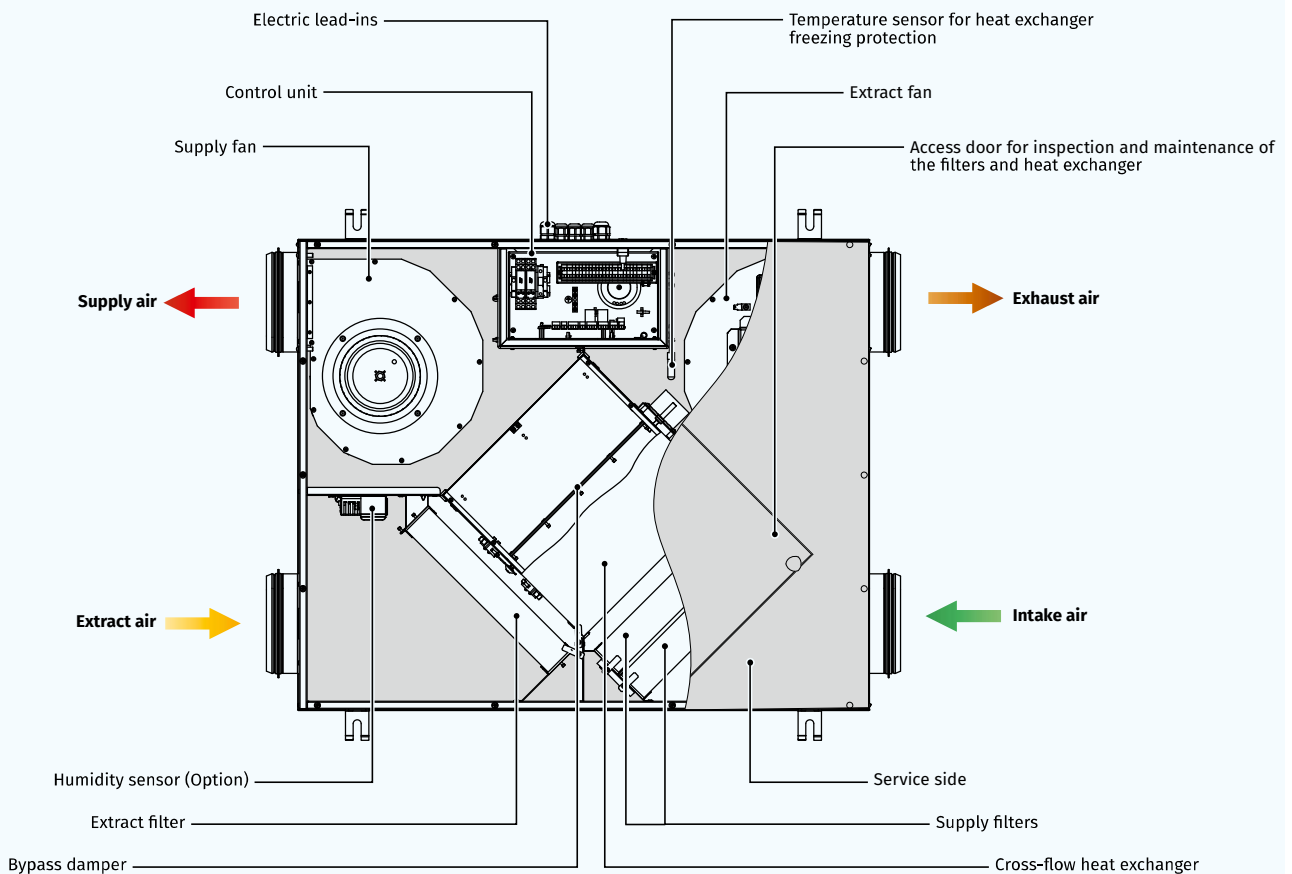


Design

- The casing is made of polymer-coated steel panels, internally filled with foamed polyurethane layer 5-10 mm (depend on modification) for heat- and sound-insulation.
- The unit is equipped with a removable bottom panel for ease of maintenance. This service panel is used to access the filters and the heat exchanger for maintenance operations.
- The spigots are located at the sides of the unit and are equipped with rubber seals for airtight connection to the air ducts.
- The casing is equipped with fixing brackets to suspend the unit to the ceiling.

Fans

- The unit is equipped with high-efficient external rotor EC motors used for air supply and exhaust.
- The **KOMFORT ERV EC DB100 S14**, **KOMFORT ERV EC DB150 S14** and **KOMFORT ERV EC DB250 S14** units are equipped with a centrifugal impeller with forward curved blades and the **KOMFORT ERV EC DB350 S14** units - with backward curved blades.
- 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.
- The impellers are dynamically balanced.



Heat recovery

- o The units are equipped with the enthalpy cross flow heat exchangers made of polymerized cellulose.
- o Heat recovery is based on heat and moisture transfer between the extract and supply air streams through the heat exchanger plates. The air flows are fully separated while flowing through the heat exchanger. The process of heat transfer proceeds in the heat exchanger where extract air transfers most of its heat to the intake air flow. This reduces thermal energy losses in cold seasons. In summer heat recovery acts reverse: the cooled extract air transfers part of cold to the warm intake air. This contributes to better performance of the air conditioner in ventilated premises.



Control and automation

- o The **KOMFORT ERV EC DB S14** units have an with a wall-mounted control panel S14 with a LED indication. The units are equipped with a USB connector (Type B) and can be connected to a PC for configuring the advanced settings in a special software.
- o The standard delivery set includes a 10 m cable for connection of the unit to the control panel.
- o **S14 automation functions:**
 - Unit On/Off.
 - Unit performance control (selection of Low, Medium or High speed).
 - Bypass damper opening and closing for summer ventilation.
 - Alarm indication.
 - Filter maintenance indication.
- o **Additional functions of the S14 automation with installed software:**
 - Fan speed adjustment from 0 to 100 %. Each speed is individually adjusted for the supply and the extract fans.
 - Operation control on feedback from the FS2 duct humidity sensor (to be ordered separately).
 - Unit operation setting according to the external control unit (to be ordered separately).
 - Temperature setting for freeze protection system activation.
 - Control and operation adjustment of the filter maintenance timer
 - External relay control unit and humidity level control.
 - Software version upgrading.



FROST PROTECTION

- o **The electronic frost protection system** is used to prevent the heat exchanger freezing in cold seasons. In case of heat exchanger freezing danger communicated by the temperature sensor the supply fan is stopped to let warm extract air warm up the heat exchanger. After that the supply fan is turned on and the unit reverts to normal operation.

Air filtration

- o Two built-in G4 and F8 filters provide efficient supply air filtration.
- o The G4 filter is used for extract air filtration.

Bypass

- o The units are equipped with a bypass for summer ventilation (air cooling by the cool air from outside).

Mounting

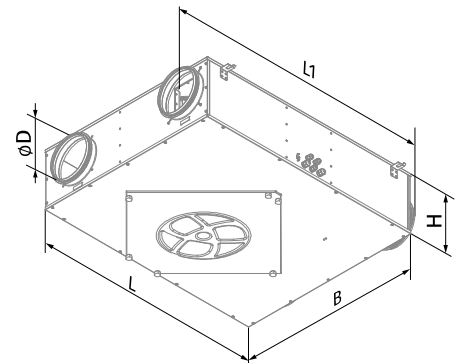
- o Due to a low casing height the air handling units are a perfect solution for space-restricted installation above suspended ceilings.
- o The unit mounting position must provide access for service maintenance.

Designation key

| Serie | Unit type | Motor type | Mounting type | Bypass | Nominal air flow [m³/h] | Control |
|---------|----------------------------------|-------------------------------------|--|----------------------|-------------------------|---|
| KOMFORT | ERV: energy recovery ventilation | EC: electronically commutated motor | D: suspended mounting, horizontally oriented spigots | B: integrated bypass | 100; 150; 250; 350 | S14: sensor control panel with LED indication |

Overall dimensions [mm]

| Model | D | B | H | L | L1 |
|--------------------------|-----|-----|-----|------|------|
| KOMFORT ERV EC DB100 S14 | 99 | 479 | 204 | 601 | 734 |
| KOMFORT ERV EC DB150 S14 | 99 | 704 | 227 | 947 | 854 |
| KOMFORT ERV EC DB250 S14 | 149 | 704 | 227 | 947 | 854 |
| KOMFORT ERV EC DB350 S14 | 149 | 754 | 277 | 1117 | 1024 |



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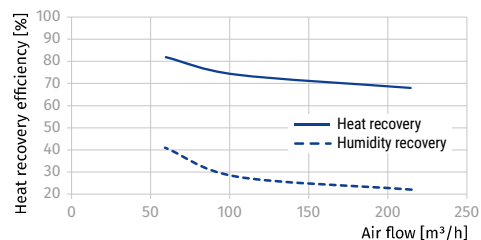
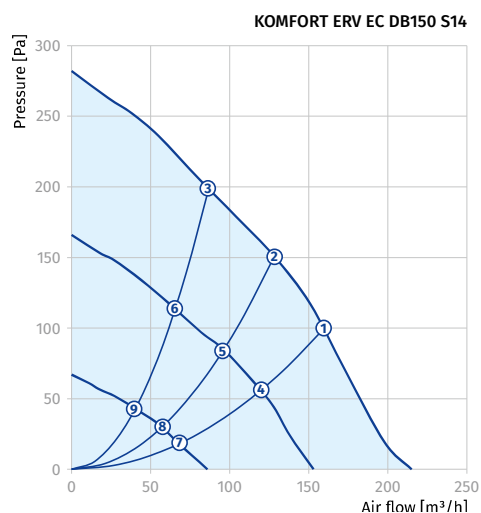
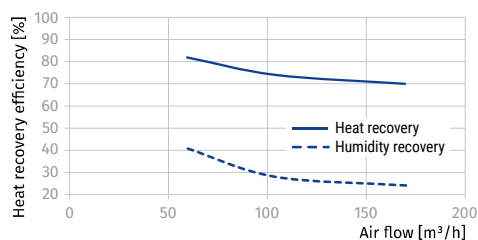
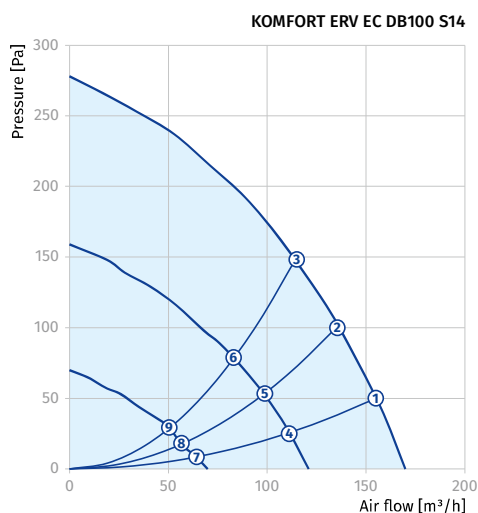
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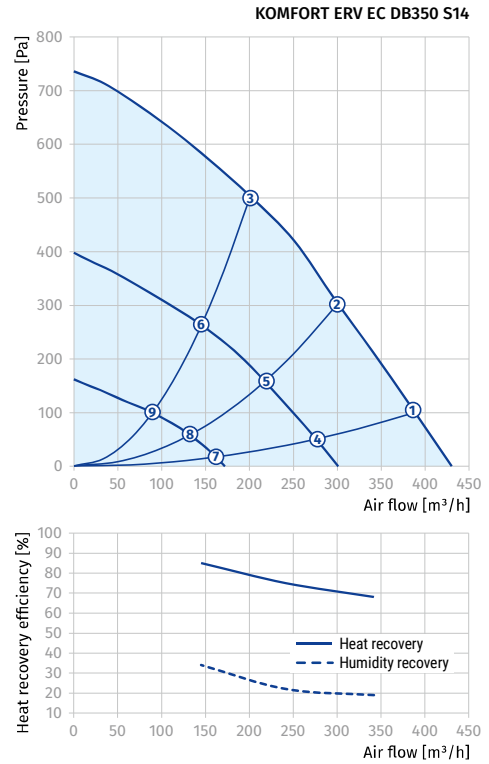
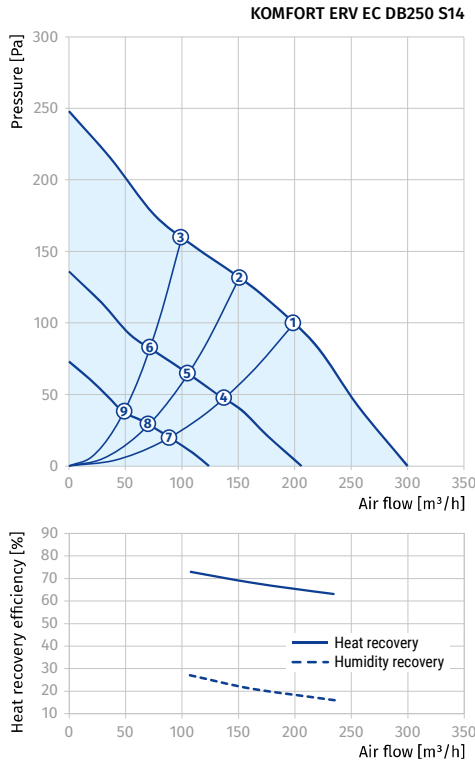
Technical data

| Parameters | KOMFORT ERV EC DB100 S14 | KOMFORT ERV EC DB150 S14 | KOMFORT ERV EC DB250 S14 | KOMFORT ERV EC DB350 S14 |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Voltage [V/50 (60) Hz] | 1~220-240 | 1 ~ 220-240 | 1 ~ 220-240 | 1 ~ 220-240 |
| Power [W] | 66 | 83 | 84 | 171 |
| Current [A] | 0,5 | 0,7 | 0,7 | 1,3 |
| Maximum air flow [m ³ /h (l/s)] | 170 (47) | 215 (60) | 300 (83) | 430 (119) |
| RPM [min ⁻¹] | 2800 | 2000 | 2000 | 3200 |
| Sound pressure level at 3 m [dBA] | 30 | 32 | 36 | 46 |
| Transported air temperature [°C] | -25...+40 | -25...+40 | -25...+40 | -25...+40 |
| Extract filter | G4 | G4 | G4 | G4 |
| Supply filter | G4 + F8 (PM2.5 > 93 %) | G4 + F8 (PM2.5 > 93 %) | G4 + F8 (PM2.5 > 83 %) | G4 + F8 (PM2.5 > 87%) |
| Connected air duct diameter [mm] | 100 | 100 | 150 | 150 |
| Weight [kg] | 17 | 26 | 29 | 42 |
| Heat recovery efficiency [%]* | 70–82 | 68–82 | 63–73 | 68–85 |
| Humidity recovery efficiency [%] | 24–41 | 22–41 | 16–27 | 19–34 |
| Heat exchanger type | cross flow | cross flow | cross flow | cross flow |
| Heat exchanger material | polymerized cellulose | polymerized cellulose | polymerized cellulose | polymerized cellulose |
| SEC class | A | A | A | A |
| ErP | 2016, 2018 | 2016, 2018 | 2016, 2018 | 2016, 2018 |

* Heat recovery efficiency is specified in compliance with EN 13141-7.


Total power of the unit [W]

| Point | KOMFORT ERV EC DB100 S14 | KOMFORT ERV EC DB150 S14 | KOMFORT ERV EC DB250 S14 | KOMFORT ERV EC DB350 S14 |
|-------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 62 | 64 | 80 | 147 |
| 2 | 55 | 61 | 67 | 145 |
| 3 | 48 | 55 | 59 | 144 |
| 4 | 30 | 26 | 43 | 75 |
| 5 | 27 | 24 | 34 | 73 |
| 6 | 25 | 23 | 28 | 70 |
| 7 | 13 | 13 | 23 | 21 |
| 8 | 13 | 13 | 22 | 21 |
| 9 | 12 | 13 | 19 | 20 |



Accessories

| | | KOMFORT ERV EC DB100 S14 | KOMFORT ERV EC DB150 S14 | KOMFORT ERV EC DB250 S14 | KOMFORT ERV EC DB350 S14 |
|--|--|--------------------------|--------------------------|--------------------------|--------------------------|
| G4 panel filter | | FP 200x191x20 G4 | FP 300x220x48 G4 | FP 300x220x48 G4 | FP 300x270x48 G4 |
| F8 panel filter | | FP 200x191x40 F8 | FP 300x220x48 F8 | FP 300x220x48 F8 | FP 300x270x48 F8 |
| Internal humidity sensor | | FS2 | FS2 | FS2 | FS2 |
| CO ₂ sensor with indication | | CD-1 | CD-1 | CD-1 | CD-1 |
| CO ₂ sensor | | CD-2 | CD-2 | CD-2 | CD-2 |
| Humidity sensor | | HR-S | HR-S | HR-S | HR-S |
| Air damper | | VKA 100 | VKA 100 | VKA 150 | VKA 150 |
| Electric actuator | | LF230 | LF230 | LF230 | LF230 |