

Series
VENTS
VUT 300 E2V EC



Air handling units with heat recovery for cold climate.
Air capacity up to **300 m³/h**.
Heat recovery efficiency up to **95%**

■ **Description**

The air handling unit VUT 300 E2V EC with heat recovery is the fully-featured ventilation unit which ensures air filtration, fresh air supply and stale air extract.

The heat contained in the extract air is recuperated in the plate counter-flow heat exchanger to warm up supply air.

The unit is designed for energy efficient ventilation of cottages and flats in the cold climatic conditions.

The heat exchanger freezing protection is ensured due to the pre-heating electric heater on the intake side. Compatible with round Ø 150 or 160 mm air ducts.

■ **Casing**

Made of double-skinned aluzinc, internally filled with 20 mm mineral wool heat- and sound-insulating layer.

■ **Filter**

Supply and extract air flows are purified through two bag filters with filtering class G4. A replaceable filter with filtering class F7 is optionally available.

■ **Fans**

High-efficient electronically-commutated direct current motors with external motor and impellers with backward curved blades.

Such motors are the most state-of-the-art energy-saving solution. EC motors are featured with high performance and total speed controllable range.

Any of three fan speeds may be adjusted with the remote controller. The supply and extract fan speeds are adjustable during the system setup.

■ **Heat exchanger**

Counter-flow polystyrene heat exchangers with high heat recovery efficiency (up to 95%). The drain pan under the heat exchanger block ensures condensate removal.

The heat exchanger has freezing protection with the electric heater on the intake side.

The special heat exchanger freeze protection logic provides temporary fan speed slowdown at the outdoor temperatures below -30 °C if the pre-heating power is not sufficient to maintain the best heat recovery efficiency.

The removable heat exchanger facilitates cleaning.

■ **Heater**

The unit is exchanged with two electric heaters. The first heater is located upstream of the heat exchanger to heat the intake air up to the temperature that excludes the heat exchanger freezing and to maintain the maximum heat recovery efficiency.

The second heater is located downstream of the heat exchanger to warm up supply air flow up to the set temperature.

The heating electric elements have active overheating

protection controlled by the temperature sensor in the air duct and two overheating thermostats. The first one is actuated at +60 °C and has automatic reset and the second one is actuated at +90 °C and has manual reset. Air supply to the electric heating elements at the end of the heating cycle ensures cooling of the electric heating elements.

■ **Control and automation**

The unit is equipped with a control panel with LCD display fixed on 10 m cable. The remote controller is also supplied with the unit as a standard.

Automation functions:

- ▶ Turning the unit on/off. Air supply to the electric heating elements during the unit shutdown.
- ▶ Three fans speeds are adjusted during the system setup.
- ▶ Electric pre-heating power regulation function during low outside temperatures. Automatic fan speed slowdown in case of insufficient pre-heating.
- ▶ The electric heater downstream of the heat exchanger ensures maintaining of the set supply temperature. The warming-up temperature is adjusted from +16 °C up to +26 °C. The warming up function may be turned on/off from the remote controller.
- ▶ Connection of automatically driven air dampers is provided.
- ▶ Input for alarm signal from the fire fighting system.
- ▶ Relay input for connection of the CO₂ / humidity / IAQ or any other sensor that switches the unit to maximum speed.
- ▶ Filter clogging control by motor hours.
- ▶ Unit week schedule setting.

Controllable ventilation on demand:

The unit is equipped with a contact for relay signal from an external sensor. The unit operation according to an external sensor (for example, CO₂ sensor) enables energy demand reducing. Operation logic of the unit with CO₂ sensor: An

Designation key: _____

| Series | Rated air capacity [m ³ /h] | Air ducts diameter | Heater type and number | Duct connection | Motor type |
|------------------|--|--------------------|-------------------------------|---------------------|---|
| VENTS VUT | 300 | – 150 – 160 | E2 – electric, 2 items | V – vertical | EC – synchronous electronically commutated motor |

Accessories



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unoccupied ventilated premise has low CO₂ concentration and requires no intensive ventilation. The unit operates at low speed for minimum permanent ventilation.

As people come inside, CO₂ concentration in the premise increases and the signal from CO₂ sensor closes relay contact.

The unit is turned to maximum speed until CO₂ concentration in the room drops down and the contact is opened. After that the unit reverts to the low speed.

To arrange this operating logic it is required to connect any sensor with relay output and to connect it to the respective unit input. The sensor is available upon separate order.

■ Mounting

The unit is designed for inner mounting in glazed balconies, auxiliary premises, in the attics and is allowed for use at the ambient air temperature not below -15 °C. If the unit is intended to operate at low outside temperatures, its drain pipe must be

heat insulated to prevent condensate freezing.

The unit must be fixed to the wall with anchor bolts or mounted on the floor in a position that enables condensate drainage. While mounting the unit provide service access on the front panel side. The panel may be fully removed if required.

■ Extra accessories

The **SR** duct silencers are recommended to install in the supply air duct to ensure extra sound attenuation.

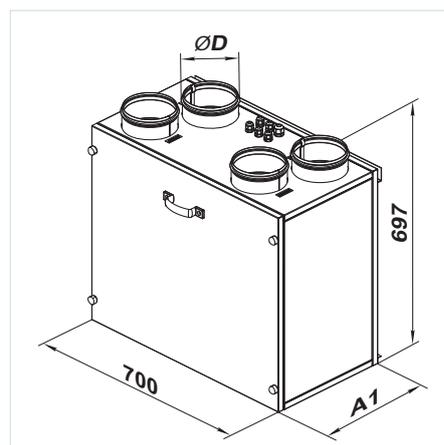
Technical data:

| | VUT 300 E2V EC | VUT 300-2 E2V EC |
|---------------------------------------|---|------------------|
| Voltage [V / Hz] | 1 ~ 230 | |
| Max. fan power [W] | 212 | |
| Fan current [A] | 1.4 | |
| Electric heater power [kW] | 2 items x 2 | |
| Electric heater current [A] | 2 items x 8.7 | |
| Total unit power [kW] | 4.22 | |
| Max. unit current [A] | 18.8 | |
| Max. air capacity [m ³ /h] | 300 | |
| Sound pressure level at 3 m [dBA] | 37 | |
| Transported air temperature [°C] | from - 39 up to +60 | |
| Casing material | aluzinc | |
| Insulation | 20 mm mineral wool | |
| Filter: extract / supply | bag type G4/G4 (F7*) (replaceable filter order code SFK 300 E2V EC G4 / SFK 300 E2V EC F7) | |
| Connected air duct diameter [mm] | Ø150 | Ø160 |
| Weight [kg] | 38 | |
| Heat recovery efficiency | from 38 up to 95 % | |
| Heat exchanger type | counter-flow | |
| SEC Class | A | |
| Heat exchanger material | polystyrene | |

*modification

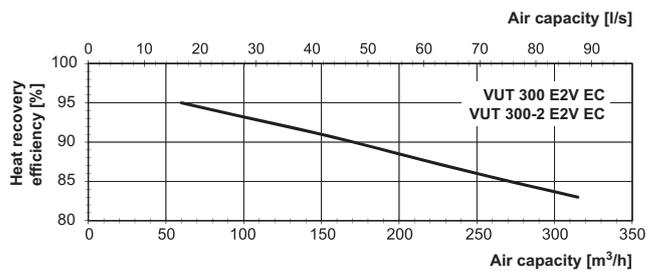
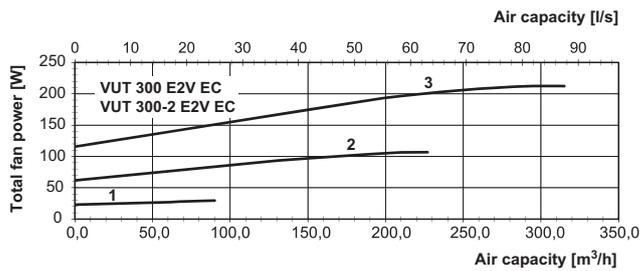
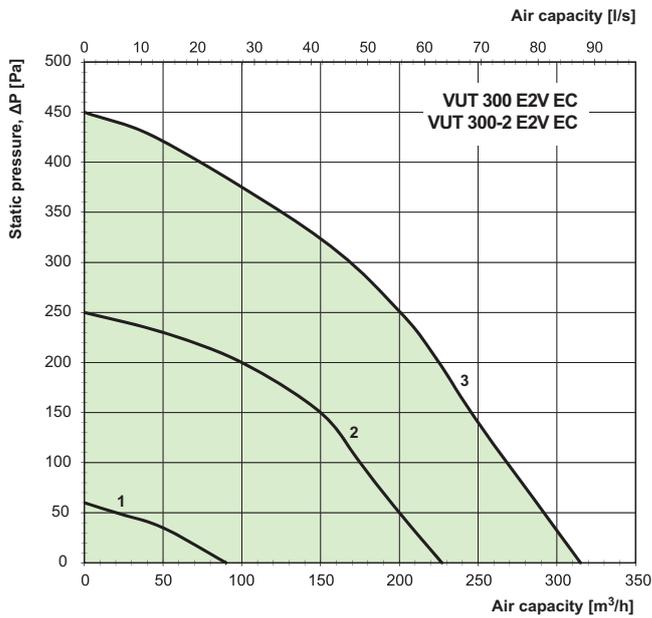
Unit overall dimensions:

| Type | Dimensions, [mm] | |
|------------------|------------------|-----|
| | ØD | A1 |
| VUT 300 E2V EC | 150 | 373 |
| VUT 300-2 E2V EC | 160 | 403 |



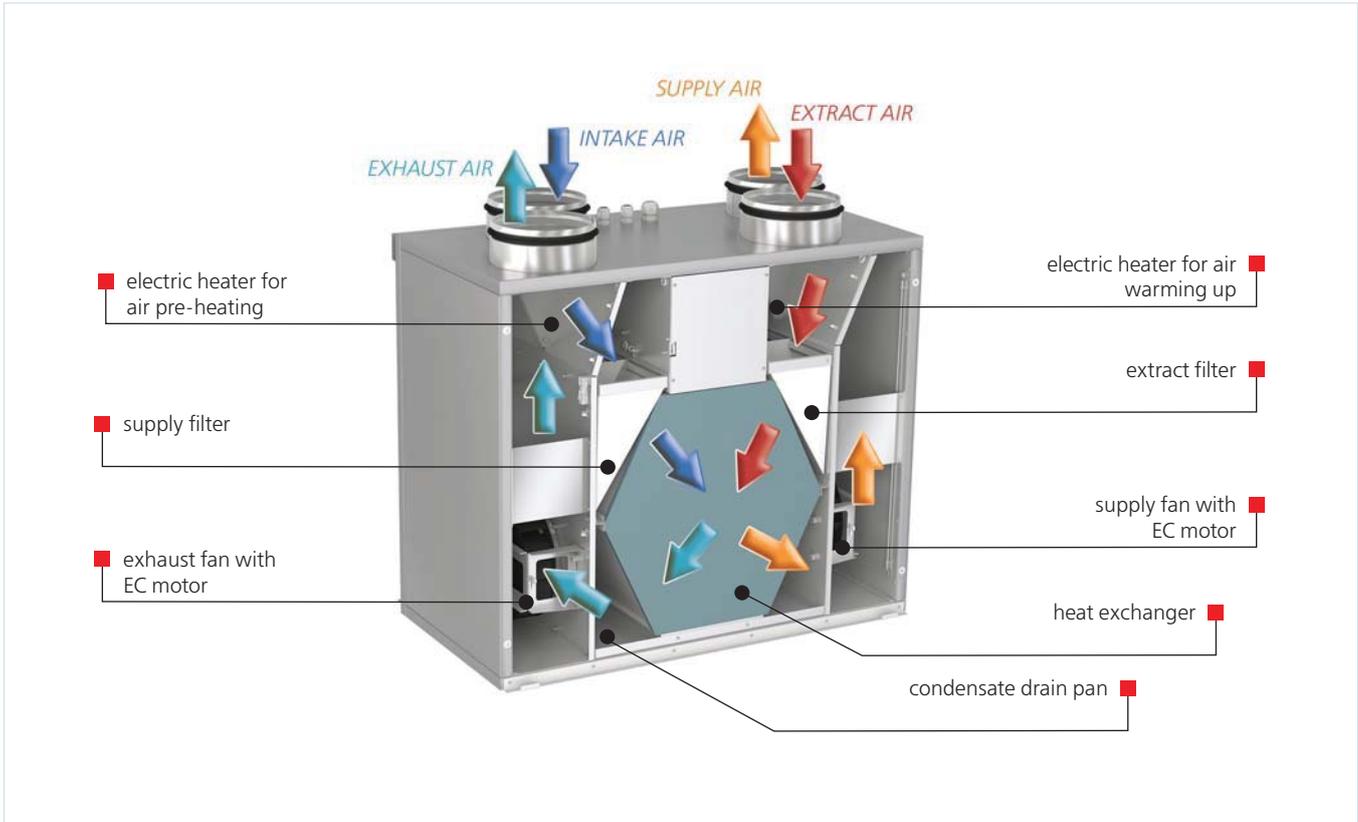
Technical data:

VENTS VUT E2V EC



| Sound pressure level | Hz | Octave-frequency band [Hz] | | | | | | | | |
|-------------------------|-----|----------------------------|----|-----|-----|-----|------|------|------|------|
| | | Gen | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| L_{wA} to inlet | dBA | 59 | 28 | 42 | 50 | 56 | 53 | 48 | 43 | 35 |
| L_{wA} to outlet | dBA | 65 | 31 | 47 | 56 | 62 | 60 | 54 | 49 | 43 |
| L_{wA} to environment | dBA | 52 | 26 | 39 | 45 | 50 | 37 | 42 | 36 | 18 |

Unit design:



Application example:



HEAT RECOVERY AIR HANDLING UNITS VENTS VUTE2V/EC