

Series
VENTS VUT H EC ECO
VENTS VUT EH EC ECO



A 11 control panel

The air handling units in heat- and sound-insulated casing. Air capacity up to **940 m³/h**, heat recovery efficiency up to 98%.

Description

The air handling units VUT H EC ECO and VUT EH EC ECO are the fully-featured ventilation units that ensure air filtration, fresh air supply and stale air extract.

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

The units are applied as components of ventilation and air conditioning networks for various premises. Due to high-efficient EC motors and expanded counter-flow heat exchanger surface the energy saving parameters of the ECO series units are the best at the market.

Compatible with round Ø160, 200 and 250 mm air ducts.

Modifications

VENTS VUT H EC ECO model is equipped with a counter-flow heat exchanger, a bypass and EC motors.

VENTS VUT EH EC ECO model is equipped with a counter-flow heat exchanger, a bypass, EC motors and an electric heater.

Casing

Made of aluzinc, internally filled with 25 mm mineral wool heat- and sound-insulating layer.

Filter

Supply air flow is purified through a bag filter with G4 filtering class. F7 class filter is available upon separate order. Extract air flow is purified through a panel filter with G4 filtering class.

Fans

High-efficient electronically-commutated motors with external motor.

Such motors are the most state-of-the-art energy-saving solution.

EC motors are featured with high performance and total speed controllable range. High efficiency reaching 90% is the premium advantage of the electronically-commutated motors.

The unit sizes 300 and 400 are equipped with constant flow fans with forward curved blades. These fans provide constant set air flow even in case of variable air resistance in the ventilation system, i.e. in case of clogged filters.

The 900 size units are equipped with fans with backward curved blades.

Heat exchanger

High-efficient plate counter-flow polystyrene heat exchanger. The drain pan under the heat exchanger block is used for condensate drainage.

Heater

The VUT EH EC ECO units are equipped with an electric heater to enable supply air warming up to set temperature.

The VUT H EC ECO have no built-in electric heater. It is available upon separate order and may be integrated into the unit.

Bypass

The unit is equipped with a bypass which is automatically opened if there is a need to cool down the ventilated area with cool intake air.

In the unit is equipped with an electric heater the bypass is used for freezing protection of the heat exchanger.

Control and automation

The unit includes an integrated automation and a multifunctional control panel with a sensor graphical display.

The delivery set includes a 10 m connecting cable for connection of the unit to the control panel. The freezing protection function is performed by means of two freeze protection mechanisms:

If the unit is equipped with an electric heater in case of freezing danger according to the temperature sensor readings the bypass damper is opened to let supply air flow through the bypass duct and not come in contact with the heat exchanger. The heater warms up supply air up to the required temperature and the heat exchanger is heated by the warm extract air. After the heat exchanger defrosting the bypass damper closes the bypass duct and the unit reverts to the standard operation mode.

If the unit is not equipped with an electric heater in case of freezing danger according to the temperature sensor readings the supply fan is stopped and warm extract air warms up the heat exchanger. After the heat exchanger defrosting and when the freezing danger is no longer imminent the supply fan is restarted and the unit reverts to the standard operation mode.

Control and protection functions

- ▶ from the control panel: turning on/off, speed selection, timer, day- and week-scheduled operation, errors;
- ▶ maintaining set room or duct air temperature;
- ▶ control by HV1 duct humidity sensor (special accessory) or by a built into air duct humidity sensor;
- ▶ three fan speed control;
- ▶ integrated or optional electric heater control;
- ▶ filter clogging control by motor hours.

Mounting

The unit is designed for the suspended or floor mounting. Service access to the unit is on the front panel side.

Designation key: _____

| Series | Rated air capacity [m ³ /h] | Heater | Duct connection | Motor type | Extra designation | Service side |
|------------------|--|------------------------------------|-----------------|--|-------------------|-----------------------|
| VENTS VUT | 300; 400; 900 | – no heater E – electric heater | H – horizontal | EC – synchronous electronically commutated motor | ECO | L – left R – right |

Accessories



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Duct humidity sensor HV1

Electric heater

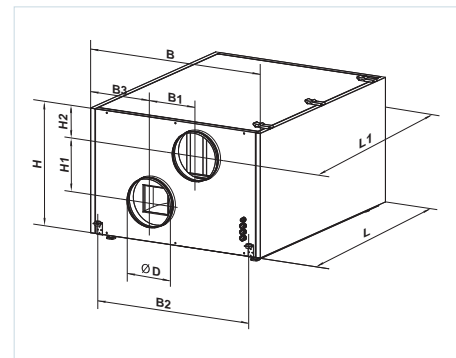
Technical data:

| | VUT 300 H EC ECO | VUT 300 EH EC ECO | VUT 400 H EC ECO | VUT 400 EH EC ECO | VUT 900 H EC ECO | VUT 900 EH EC ECO |
|---|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|
| Voltage [V / Hz] | 1~ 220-240 / 50-60 | | | | | |
| Max. unit power without electric heater [W] | 138 | | 306 | | 340 | |
| Max. unit current without electric heater [A] | 0,9 | | 2 | | 2,2 | |
| Integrated electric heater power [kW] | - | 3,0 | - | 3,0 | - | 3,0 |
| Integrated electric heater current [A] | - | 13,0 | - | 13,0 | - | 13,0 |
| Optional electric heater power [kW] | 3,0 | - | 3,0 | - | 3,0 | - |
| Optional electric heater current [A] | 13,0 | - | 13,0 | - | 13,0 | - |
| Max. air capacity [m³/h] | 300 | | 450 | | 940 | |
| RPM [min ⁻¹] | 1380 | | 2600 | | 1740 | |
| Sound pressure level at 3 m [dBA] | 24-45 | | 28-47 | | 28-47 | |
| Max. transported air temperature [°C] | -25 up to +60 | | | | | |
| Casing material | aluzinc | | | | | |
| Insulation | 25 mm min.wool | | | | | |
| Filter: extract | G4 panel type | | | | | |
| Filter: supply | G4 bag type (F7*) | | | | | |
| Connected air duct diameter [mm] | Ø160 | | Ø200 | | Ø250 | |
| Weight [kg] | 40 | 42 | 45 | 47 | 77 | 80 |
| Heat recovery efficiency | 86 up to 98% | | 85 up to 98% | | 81 up to 98% | |
| SEC Class | A+ | | | | | |
| Heat exchanger type | counter-flow | | | | | |
| Heat exchanger material | polystyrene | | | | | |

*modification

Overall dimensions:

| Type | Dimensions [mm] | | | | | | | | | |
|-------------------|-----------------|-----|-----|-----|-----|-----|-----|-----|------|------|
| | Ø D | B | B1 | B2 | B3 | H | H1 | H2 | L | L1 |
| VUT 300 EH EC ECO | 159 | 566 | 125 | 391 | 186 | 475 | 202 | 118 | 1081 | 1187 |
| VUT 400 EH EC ECO | 199 | 687 | 255 | 588 | 220 | 514 | 235 | 139 | 1092 | 1174 |
| VUT 900 EH EC ECO | 249 | 940 | 250 | 837 | 345 | 620 | 262 | 156 | 1200 | 1282 |



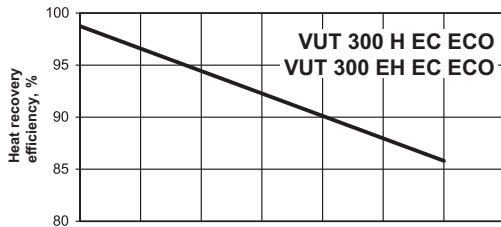
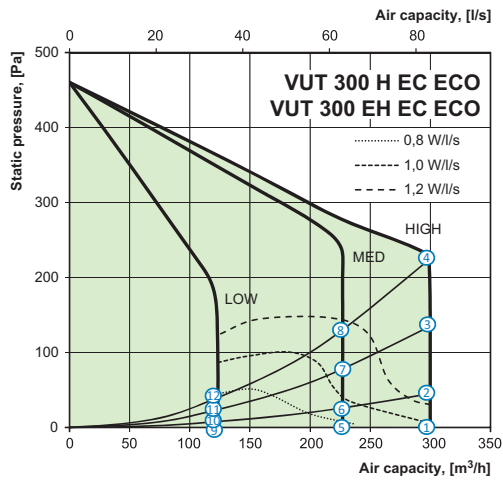
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 HEAT RECOVERY AIR
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AHU accessories:

| Type | G4 replaceable bag filter | F7 replaceable bag filter | G4 replaceable bag filter | Duct humidity sensor | Electric heater |
|-------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|
| VUT 300 H EC ECO | SFK VUT 300 H / EH | SFK VUT 300 H / EH | SF VUT 300 H / EH | HV1 | NK-VUT 300 EH EC ECO |
| VUT 300 EH EC ECO | EC ECO G4 | EC ECO F7 | EC ECO G4 | | - |
| VUT 400 H EC ECO | SFK VUT 400 H / EH | SFK VUT 400 H / EH | SF VUT 400 H / EH | | NK-VUT 400 EH EC ECO |
| VUT 400 EH EC ECO | EC ECO G4 | EC ECO F7 | EC ECO G4 | - | |
| VUT 900 H EC ECO | SFK VUT 900 H / EH | SFK VUT 900 H / EH | SF VUT 900 H / EH | | NK-VUT 900 EH EC ECO |
| VUT 900 EH EC ECO | EC ECO G4 | EC ECO F7 | EC ECO G4 | | - |

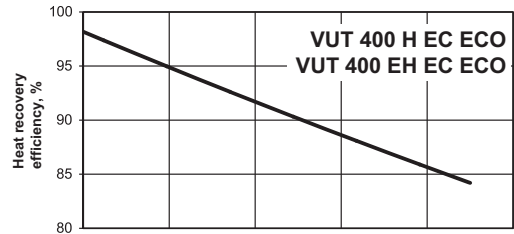
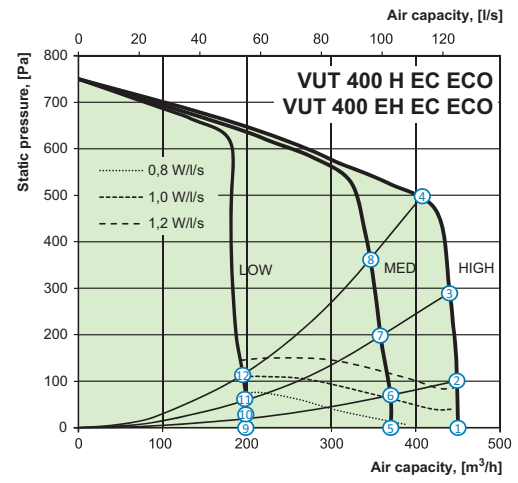
HEAT RECOVERY AIR HANDLING UNITS

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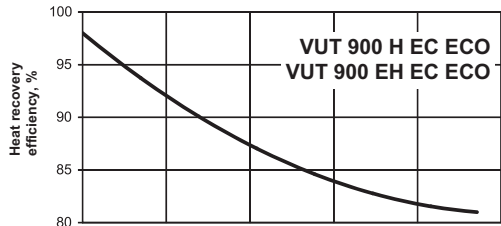
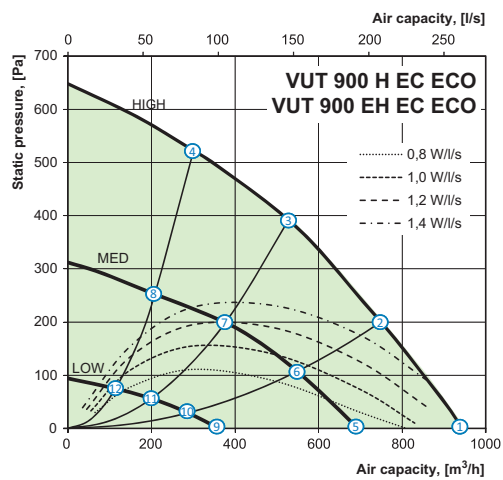
| Sound-power level | Hz | Octave-frequency band [Hz] | | | | | | | | |
|-------------------------|-----|----------------------------|----|-----|-----|-----|------|------|------|------|
| | | Gen | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| L_{WA} to inlet | dBA | 51 | 30 | 48 | 46 | 37 | 42 | 36 | 32 | 21 |
| L_{WA} to outlet | dBA | 60 | 41 | 54 | 57 | 55 | 44 | 46 | 35 | 24 |
| L_{WA} to environment | dBA | 33 | 23 | 23 | 32 | 27 | 19 | 15 | 19 | 18 |

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| Sound-power level | Hz | Octave-frequency band [Hz] | | | | | | | | |
|-------------------------|-----|----------------------------|----|-----|-----|-----|------|------|------|------|
| | | Gen | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| L_{WA} to inlet | dBA | 54 | 32 | 50 | 51 | 40 | 43 | 40 | 37 | 25 |
| L_{WA} to outlet | dBA | 65 | 44 | 57 | 58 | 54 | 51 | 48 | 38 | 27 |
| L_{WA} to environment | dBA | 37 | 27 | 28 | 32 | 29 | 22 | 19 | 21 | 23 |

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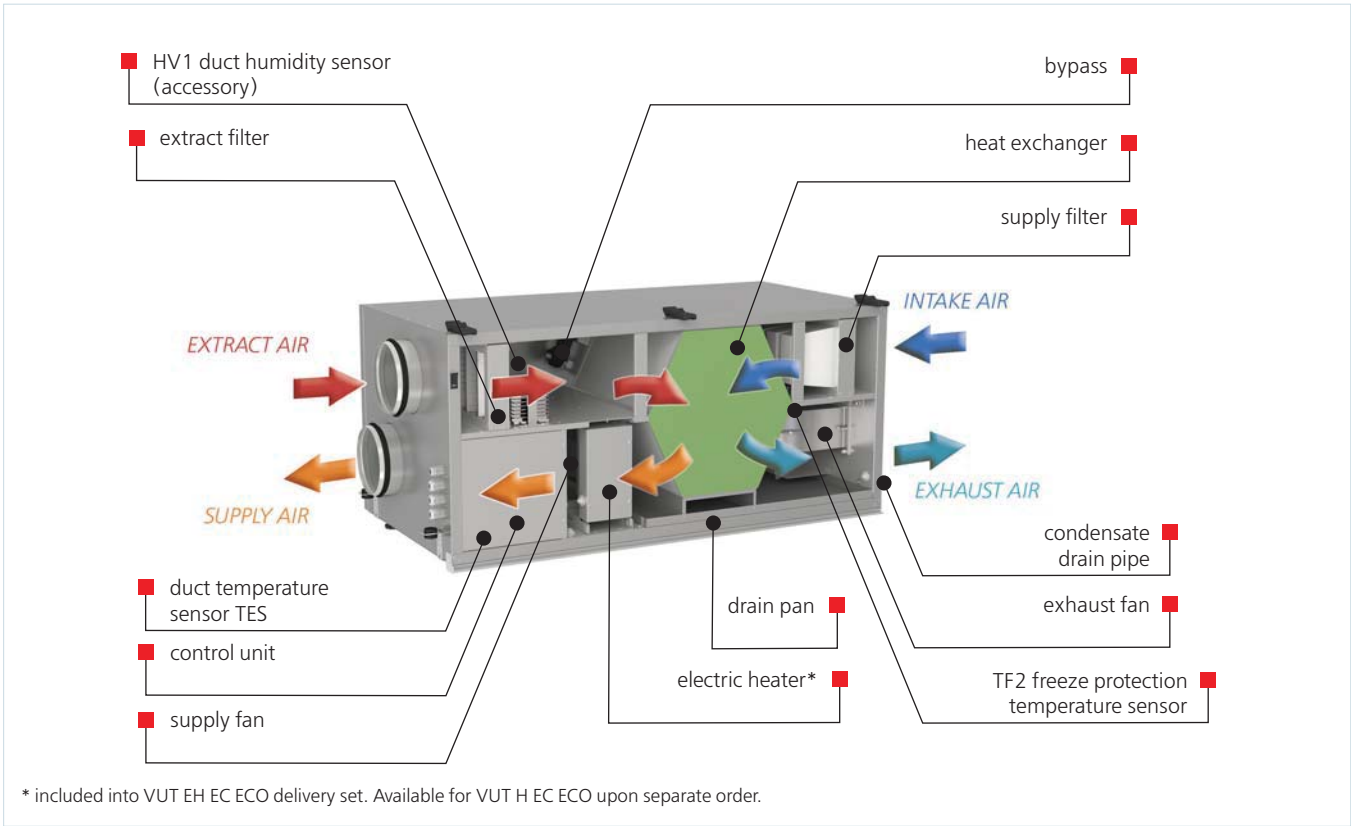


| Sound-power level | Hz | Octave-frequency band [Hz] | | | | | | | | |
|-------------------------|-----|----------------------------|----|-----|-----|-----|------|------|------|------|
| | | Gen | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| L_{WA} to inlet | dBA | 57 | 36 | 55 | 51 | 41 | 47 | 42 | 38 | 28 |
| L_{WA} to outlet | dBA | 67 | 47 | 62 | 62 | 59 | 53 | 52 | 42 | 29 |
| L_{WA} to environment | dBA | 41 | 26 | 29 | 36 | 32 | 24 | 22 | 26 | 26 |

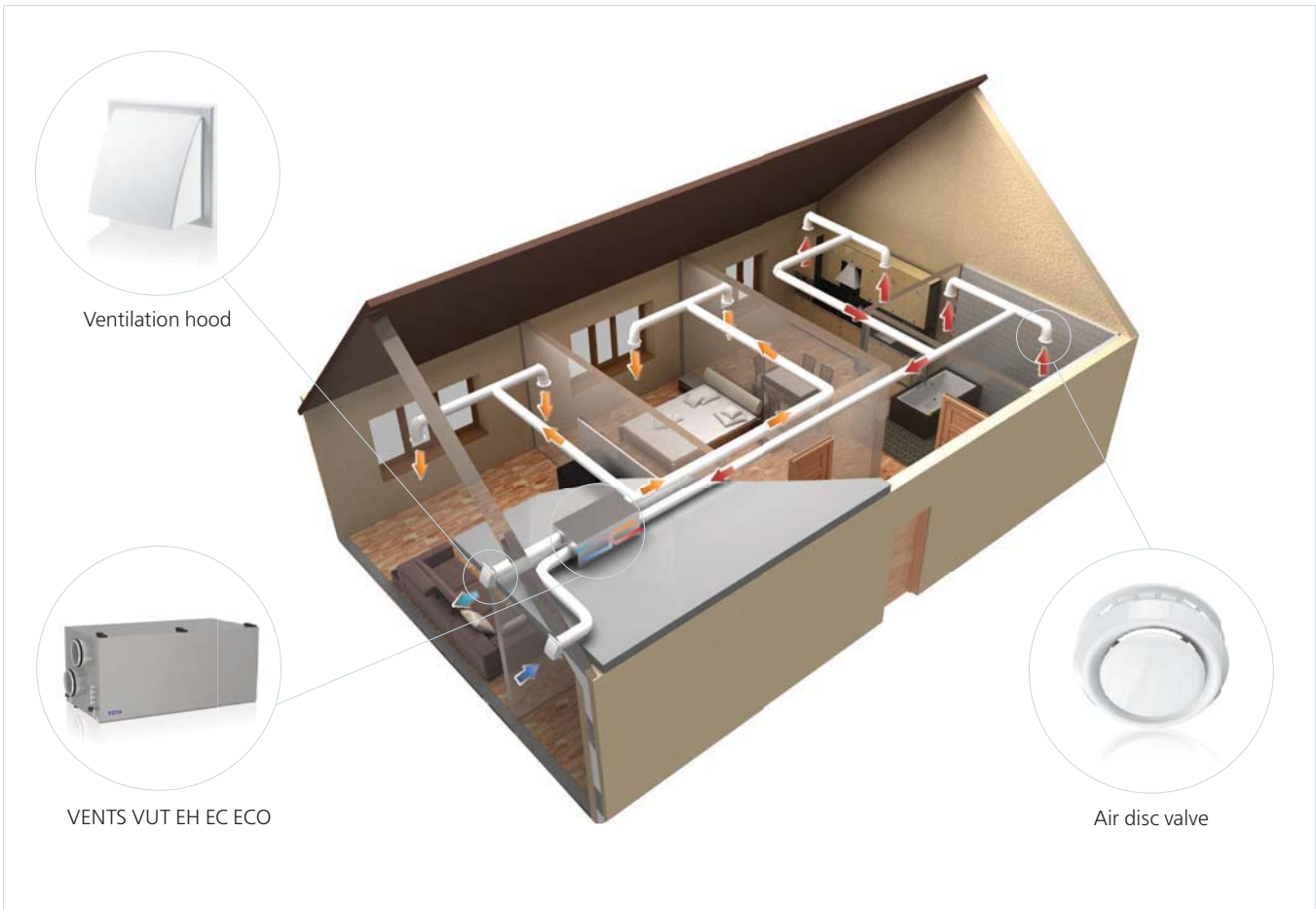
Unit single power [W]

| point | Unit single power [W] | | |
|-------|--|--|--|
| | VUT 300 H EC ECO/ VUT 300 EH EC ECO | VUT 400 H EC ECO/ VUT 400 EH EC ECO | VUT 900 H EC ECO/ VUT 900 EH EC ECO |
| 1 | 83 | 87 | 340 |
| 2 | 96 | 145 | 340 |
| 3 | 124 | 247 | 336 |
| 4 | 134 | 299 | 300 |
| 5 | 45 | 79 | 138 |
| 6 | 48 | 103 | 140 |
| 7 | 60 | 143 | 120 |
| 8 | 73 | 217 | 110 |
| 9 | 20 | 28 | 33 |
| 10 | 22 | 32 | 32 |
| 11 | 25 | 41 | 32 |
| 12 | 27 | 56 | 28 |

Unit design:



Application examples:



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