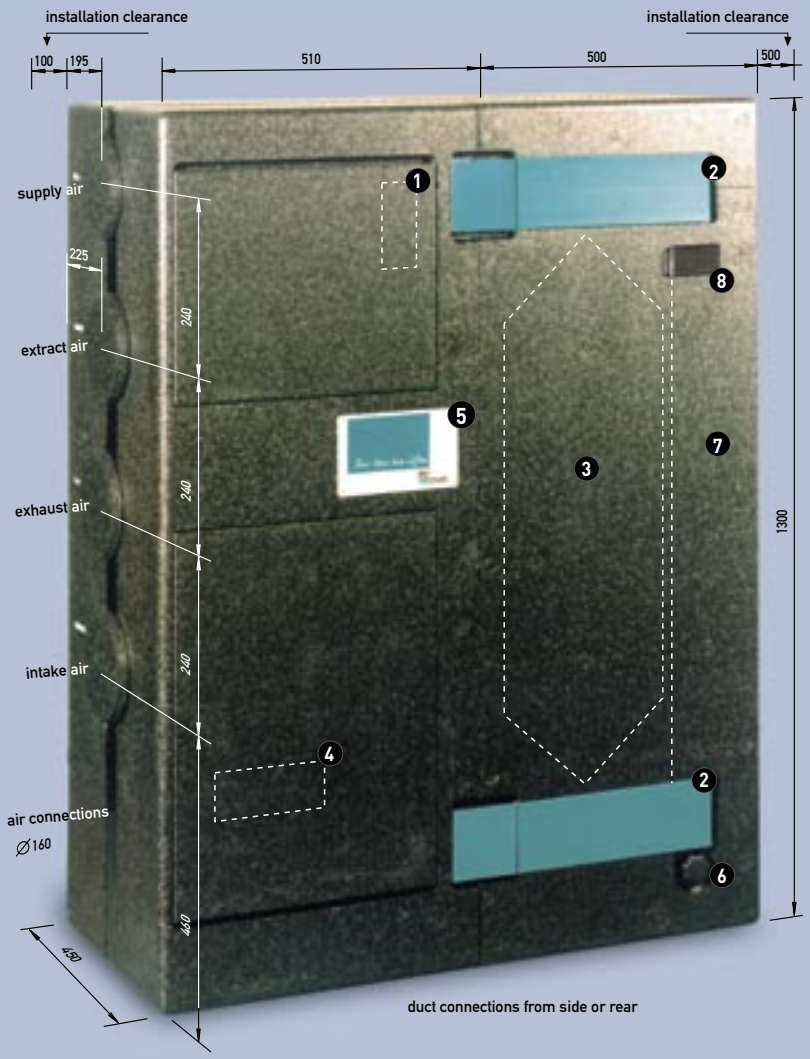
THERMOS 200/300 DC

PASSIV HAUS COMPLIANT MECHANICAL VENTILATION HEAT RECOVERY UNIT



1 · extract air filter
2 · connecting terminals
3 · heat exchanger
4 · intake air filter
5 · terminal box
6 · motorised bypass valve
7 · summer bypass
8 · bypass shut-off insert

PASSIVE HOUSE certified COMPONENT Dr. Wolfgang Feist

Heat recovery: [3]
heat recovery rate [effective]: 92% [1) 2)]
Electrical efficiency: 0.36 Wh/m³

1) results may vary according to the test methods used, e. g. with or without condensation
2) best efficiencies in the German market today
3) certificate refers to thermos 200 DC

PRODUCT DESCRIPTION

The PAUL heat recovery unit **thermos 200 / 300 DC** is used for balanced mechanical ventilation in homes and uses a highly efficient counter-flow channel-type heat exchanger (protected by German and European patents). The heat exchanger has a heat transfer surface area of 60 m2; this is more than twice that of the other commercially available units. The thermal efficiency of this exchanger is much higher than that of conventional cross-flow plate heat exchangers.
The thermos unit is offered in two specifications according to the power of the ventilation fans (charts 2 and 3). The high-efficiency electronically commutated radial fans with integrated electronic power control provide an excellent cost/benefit ratio of 1:20 to 26 (e. g. for thermos 200 DC: electric power input 53 W, heat recovery 1197 W @ -3°C intake temperature).
The programmer allows the air flow rate to be regulated in 3 steps. The fan power of the 3 steps can be varied in 1% increments. The programmer functions are: 8 independent timing programs with weekday timer for presetting the operating times and power setting of the ventilation fans, control of the motorised summer bypass valve, intake/exhaust balancing, filter monitor function, frost protection for downstream hot water duct heater, potential to connect several boost switches and a standby circuit with a power input of less than 2 W.
Optional features are: controlling a frost protection pre-heater, regulating a ground to air heat exchanger or a ground to brine to air frost protection, a heating circuit (e. g. heating circuit pump or electric back-up heater up to 2.1 kW), and addition of several boost switches.
The PAUL MVHR unit is a fully soundproofed and heat-insulated design. The entire housing is made of EPP foam (no sheet metal parts) and thus contains no thermal bridges (utility model protection)! The intake air is cleaned via a G4 filter, or optionally via a pollen filter (F8). On the extract side, the unit is protected from dirt and contamination by a G4 filter.
The MVHR unit thermos 200/300 DC is designed for the use in residential buildings, especially in low-energy and Passiv Haus buildings, and can also be used in nurseries, schools, retirement homes, offices etc.

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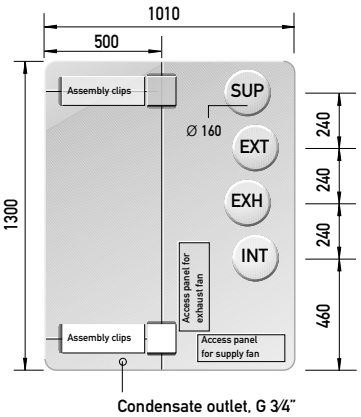
Comfort Panel
for automatic control
L x W x D (mm): 158 x 125 x 32



Rear view of MVHR unit

thermos 200/300 DC **TECHNICAL DATA**

Distributed by:

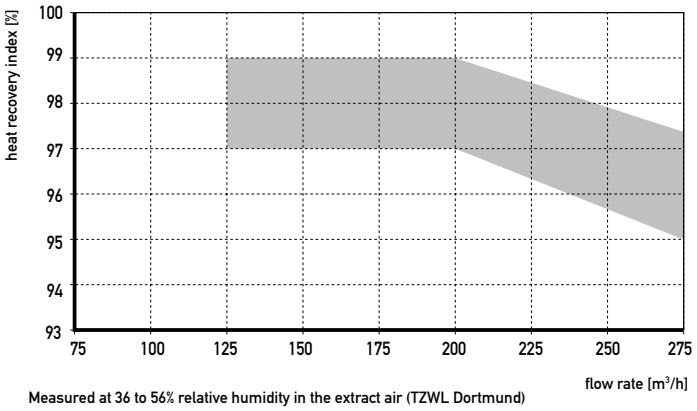
Unit dimensions: Control dimensions: incl. frost protection and back-up heating options	H x W x D [mm]: 1300 x 1010 x 450 L x W x D [mm]: 340 x 300 x 80 L x W x D [mm]: 340 x 300 x 140
Installation:	Raise by 100 to 200 mm from floor for condensate discharge
Place of installation:	frost free, preferably > 10°C
Duct connections:	4 x 160 mm dia.
Condensate:	G 3/4" condensate connection
Material:	Housing: EPP foam, up to 80 mm thick, heat-insulated and soundproofed Heat exchanger: plastic
Weight:	approx. 35 kg
Filters:	Intake air: G4 or F8 (pollen filter), extract air: G4
Electrical connection:	single-phase 230 V, 50 Hz,or three-phase 3 x 230 V, 50 Hz for operation of two back-up heaters (frost protection heater and electric duct heater) ready for connection – no plug-in
Cable lengths:	• power cord (230 V): by customer • MVHR unit to control unit: 3 m • automatic control to programmer: max. 15 m (by customer)
Control:	• automatic control with programmer
Protection:	IP 44 (unit) IP 20 (control)
Ventilators:	2 48VDC radial fans with integrated electronics
Power input/flow/ available pressure:	see charts 2 and 3
Heat recovery rate:	approx. 97 to 99%, see chart 1 (according to TZWL)

Sound pressure level: acc. to DIN 45635 Part 1 (3-m distance in dB(A))

Step	200 DC	300 DC
58%	28	35
100%	34	42

Temperature range of heat exchanger:	can be used between -20°C and 40°C
Summer operation:	• motorised bypass valve
Frost protection:	• optional frost protection heating, or • optional ground to air heat exchanger
Back-up heating:	• hot water duct heater as external unit, or • electric duct heater as external unit
Information:	Subject to change in the interest of technical progress.

Characteristic of **thermos 200 DC and thermos 300 DC**



Measured at 36 to 56% relative humidity in the extract air (TZWL Dortmund)

Chart 1: Heat recovery efficiency

Characteristic of **thermos 200 DC**

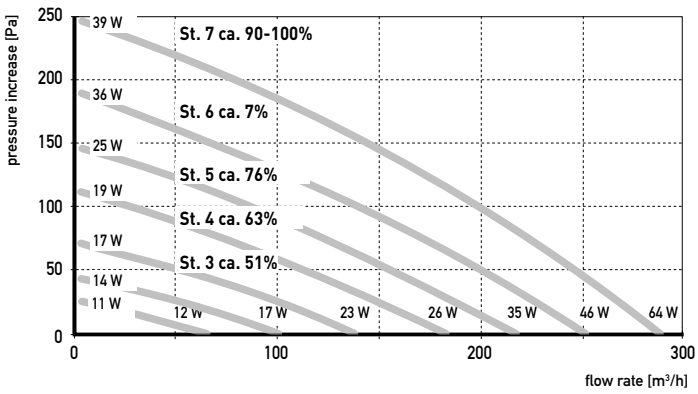


Chart 2: Characteristics for flow rate, externally available pressure and power input

Characteristic of **thermos 300 DC**

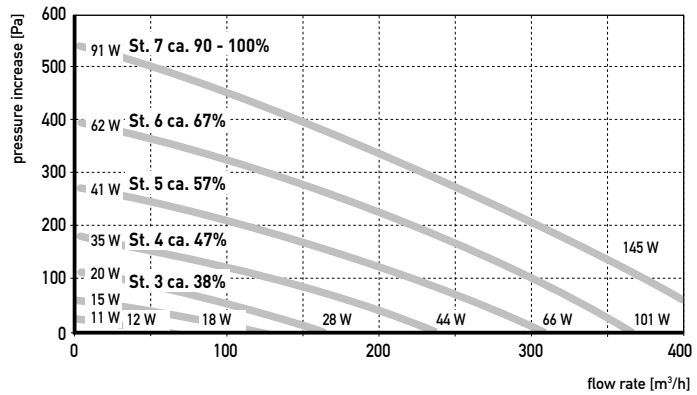


Chart 3: Characteristics for flow rate, externally available pressure and power input

- Environment award
- Innovation awards
- European and German patents
- Product of the Year award
- First Passiv Haus compliant HRV system
- Environment Oscar award
- INTEC award for Saxony

PAUL Comfort Ventilation obtained innovation awards both on the German state and Saxon regional levels, and received the German Environment Award (European-wide competition), as well as the Product of the Year and Environment Oscar awards.

PAUL offers equipment for controlled residential ventilation with efficiencies of up to 99% – groundbreaking in the industry.

Our motto is "New ideas in ventilation" – for fresh and healthy air in homes with energy saving systems for safeguarding the integrity of the environment.

PAUL® WÄRMERÜCKGEWINNUNG

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