

Vasco 225 Compact

Description

The 225 Compact is a central balanced ventilation unit with heat recovery for residential applications. It mechanically supplies fresh air to the home and mechanically extracts polluted air from the home using integrated fans. Heat is recovered from the extracted air and transferred to the supplied air.

This unit is approved in accordance with:

- ✓ EN308 / EN13141-7 and for Belgium this is also in accordance with EN 308 with appendix G, whereby the device is included in the EPB product data database '4.4 fan and ventilation unit' with code 4.4.2 Double air flow with heat recovery.
- ✓ BCRG quality declaration and declaration of equivalence for the Netherlands.
- ✓ Passive House Institute.

The ventilation units bear the CE mark and comply with the following directives: 2014/53/EU (Radio Equipment Directive), 2011/65/EU (RoHS), 2009/125/EU (ErP Directive).

Design

Connections:

The 225 Compact ventilation unit is equipped with four air duct connections on the top and one on the bottom, all made of EPP (expanded polypropylene) with a diameter of 125 mm. Plastic connection nipples are supplied as standard, which can be placed on these EPP connections.

- ✓ 4 top connections:
 - External suction
 - Air extraction to the outside
 - Supply to the home
 - Air extraction from the home
- ✓ 1 bottom connections:
 - Supply to the home

The air duct connection for the supply to the house side can be connected at the top or at the bottom. If a connection at the bottom is chosen, the fan must be rotated 180°.

Insulated air ducts can be connected directly to the connections using the specific connection sleeve supplied. This ensures a condensation-free and airtight connection.

Reversibility:

By rotating the ventilation unit 180° and mounting the suspension on the correct side, both a left and right configuration of the house side is possible.

Mounting:

Vertical wall mounting, spirit level, wall bracket included as standard.

Frost protection:

Ensures frost-free operation of the ventilation unit by temporarily limiting the speed of the supply fan. This guarantees good ventilation during the winter period.

An optional electric preheating element prevents the heat exchanger from freezing and avoids temporary imbalances, resulting in increased comfort and a more efficient system.

Variant:

The 225 Compact is optionally available with an integrated electric preheater, which is included as standard with this variant.

Material

Enclosure:

High-quality lacquered metal, black (RAL9005) and white (RAL9016) side panels.

Inside:

Service-friendly construction, thermally insulating and metal lacquered casing with airtight EPP (expanded polypropylene) interior which prevents thermal bridges.

Technical specifications

Dimensions:	Height:	800 mm
	Width:	547 mm
	Depth:	300 mm
Weight:		28 kg
Power supply:		230V AC, 50 Hz, equipped with a 1.8 m cord with earth / Euro plug.
Maximum power consumption:		132 W (2x 65 W) at 225m ³ /h – 150Pa
Maximum air flow:		225m ³ /h – 150Pa, adjustable from 135 m ³ /h to 225 m ³ /h in steps of 15 m ³ /h.
Returns:		88.6% according to EN13141-7. 84% at 150m ³ /h / 82% at 195m ³ /h / 81% at 222m ³ /h according to EN308 appendix G.
Energy class:		A A+ with 2 optional RF CO ₂ or RH (humidity) switches.
Noise level:	Sound power unit emission	42.7 dB(A) at 70 % Q _{max} at 50 Pa
	Sound power supply duct	64.6 dB(A) at 70 % Q _{max} at 50 Pa
	Sound power drain duct	50.9 dB(A) at 70 % Q _{max} at 50 Pa
Fans:		Energy-efficient EC direct current fans with constant volume control supply fresh air to living rooms and bedrooms and extract polluted air from kitchens, bathrooms, toilets and storage rooms. The set air volume is maintained automatically and continuously.
Heat exchanger:		The cross-flow heat exchanger is characterised by low resistance, which also contributes to minimal noise levels and energy consumption. It is made of polystyrene, whose smooth surface minimises the accumulation of dirt or water.
Air filters:		Standard equipped with ISO16890 ePM10 50% (= M5 according to EN779) for the exhaust air and ISO16890 ePM1 55% (=F7 according to EN779) for the supply air. The filters are easily accessible by opening the filter valve. The filters have a replacement period of 6 months which is automatically indicated via the standard supplied RF 3 position switch.
Condensate drain:		For the drainage of condensation water, a 5/4" connection is provided at the bottom of the ventilation unit. This must be connected to the indoor sewer system in a frost-proof and airtight manner via a water seal. A dry siphon is included as standard, it can be placed both horizontally and vertically.

Functionalities

Control / control:	The ventilation unit is equipped with a constant volume control as standard. The set air volume is automatically and continuously regulated, regardless of the resistance in the air duct system and contamination of the air filters.
Internal moisture sensor:	The ventilation unit has an automatic control based on relative humidity. An internal humidity sensor measures the moisture content in the exhaust air of the home and adjusts the air flow rate depending on the moisture content.
Bypass:	<p>The bypass works fully automatically based on indoor and outdoor temperature measurement. When there is no need for heat exchange, the bypass directs the air around the heat exchanger. There are 2 modes that guarantee maximum comfort in the indoor climate with minimal energy consumption.</p> <p>"Free-Cooling"</p> <p>When the outside temperature is lower than the indoor temperature, the filtered outside air will be led directly into the house without heat exchange (natural cooling).</p> <p>"Free-Heating"</p> <p>When the outside temperature is higher than the indoor temperature, the filtered outside air will be led directly into the house without heat exchange (natural heating).</p>
Filter dirty notification:	<p>The ventilation unit features a time-based automatic filter debris notification. As soon as the filters need to be replaced, the LED will light up orange 2x when operating the RF 3-position switch supplied as standard. The filter dirt message can then be reset via the RF 3 position switch.</p> <p>Both the notification and its reset can also be done via other optional controls.</p>
Frost protection:	<p>Ensures the frost-free operation of the ventilation unit due to a temporary imbalance in which the speed of the supply fan is limited. This guarantees good ventilation during the winter period.</p> <p>An optional electric preheating element prevents the heat exchanger from freezing and prevents temporary imbalance, resulting in increased comfort and more efficient system.</p>

Controls

RF 3-position switch:

Included as standard, equipped with a 3V Lithium CR2450N battery, with an average lifespan of 10 years. Communication with the ventilation unit is wireless. To be mounted on a wall under construction by means of screw or adhesive mounting.

The switch has the following functions:

- ✓ Operating the ventilation mode (1, 2, 3, Timer)
- ✓ Setting the maximum air flow rate
- ✓ Resetting the filter dirt message
- ✓ LED feedback for error messages

Dimensions:

H: 83 mm

W: 83 mm

D: 15 mm

Housing: plastic**3 positions contact:**

The ventilation unit can be controlled in 3 positions via contact X9 on the circuit board. Position 1 provides 25% air flow, position 2 provides 50% air flow and position 3 provides the maximum set air flow.

1-10V contact:

Via contact X26 on the circuit board, the ventilation unit can be continuously controlled by means of a 1-10V signal. 1V corresponds to the minimum ventilation flow rate of the ventilation unit and 10V to the maximum.

Modbus contact:

Via contact X510 on the circuit board, the ventilation unit can be controlled and read out with the RS-485 Modbus protocol. This protocol enables advanced control and monitoring of the ventilation unit via a building management system.

Relay contact error:

Error messages can be read via contact X8 on the circuit board of the ventilation unit. This so-called fault relay is a normal open (NO) potential-free contact that closes as soon as an error message occurs or when the filters need to be replaced.

Accessories:

RF CO₂ switch (surface-mounted):

For automatically controlling and regulating the air flow rate of the ventilation unit based on the CO₂ level in the room. The switch must be connected to a supply voltage of 230V+N and the communication with the ventilation unit is wireless. To be mounted on a wall in construction by means of screw mounting.

The switch has the following functions:

- ✓ Operating the ventilation mode (1, 2, 3, Eco, Comfort)
- ✓ 2 automatic modes (Eco = 950 ppm and Comfort = 800 ppm)
- ✓ LED feedback for error messages
- ✓ Automatic self-calibrating

Dimensions:

H: 100 mm
W: 100 mm
D: 28 mm

Housing: plastic**RF CO₂ switch (built-in):**

For automatically controlling and regulating the air flow rate of the ventilation unit based on the CO₂ level in the room. The switch must be connected to a supply voltage of 230V+N and the communication with the ventilation unit is wireless. To be mounted on a wall in a flush-mounted box by means of screw mounting.

The switch has the following functions:

- ✓ Operating the ventilation mode (Home, Away, Timer)
- ✓ 2 automatic modes (Eco = 1050 ppm and Comfort = 800 ppm)
- ✓ Adjustable CO₂ level
- ✓ LED feedback for error messages
- ✓ Automatic self-calibrating

Dimensions:

H: 83 mm
W: 83 mm
D: 15 mm

Housing: plastic**RF RH Switch:**

For automatic control and regulation of the air flow rate of the ventilation unit based on the relative humidity (%) in the room. The switch is equipped with 2 alkaline batteries 1.5V AA for power supply and communication with the ventilation unit is wireless. To be mounted on a wall in construction by means of screw mounting.

The switch has the following functions:

- ✓ Operating the ventilation mode (1, 2, 3, Eco, Comfort)
- ✓ 2 automatic modes (Eco = 60 min setting 2 and Comfort = 30 min position 3)
- ✓ LED feedback for error messages

Dimensions:

H: 100 mm
W: 100 mm
D: 28 mm

Housing: plastic

RF Control Display:

For operating and reading the ventilation unit via a display. The switch must be connected to a supply voltage of 230V+N and the communication with the ventilation unit is wireless. To be mounted on a wall in a flush-mounted box by means of screw mounting.

The switch has the following functions:

- ✓ Operating the ventilation mode (1, 2, 3, Timer)
- ✓ Automatic weekly program
- ✓ Status of bypass, electric preheating element, among others
- ✓ Display of error messages

Dimensions:

H: 83 mm
W: 83 mm
D: 15 mm

Housing: plastic**Gateway:**

For operating and reading the ventilation unit via the Vasco Climate Control App. The Gateway must be connected via the supplied micro-USB cable + adapter to a 230V+N socket and the communication with the ventilation unit is wireless. The connection to the modem (LAN) is done via the supplied UTP cable. To be mounted on a wall.

The gateway has the following functions:

- ✓ Operating the ventilation mode (1, 2, 3, Timer, Auto, Away, Party, Vacation, Fireplace)
- ✓ Automatic weekly program
- ✓ Status of bypass, electric preheating element, etc.
- ✓ Display of error messages
- ✓ Setting parameters (e.g. ventilation flows, temperature bypass)

Dimensions:

H: 105 mm
W: 81 mm
D: 28 mm

Housing: plastic**Electric preheater:**

The ventilation unit is optionally equipped with an electric preheating element; this is standard for the LE types. It prevents freezing of the heat exchanger and avoids the defrost cycle, keeping the system functioning optimally even at freezing temperatures with increased comfort.

The built-in heating element is placed in the intake duct of outside air. The power supply is directly via the circuit board of the unit. The control is done via a supplied control cable with modulating signal to a solid state relay.

CO₂ ZoneControl:

For demand-controlled and zoned ventilation based on the measured CO₂ level in specific zones, using 2x plastic air flaps, Ø160mm, which regulate the flow rate to the specific zones and 2x RF CO₂ switches (built-in), which measure the CO₂ level in the specific zones.

The Master air valve must be connected via the included micro-USB cable + adapter to a 230V+N socket and the communication with the ventilation unit, as well as the RF CO₂ switches is wireless.