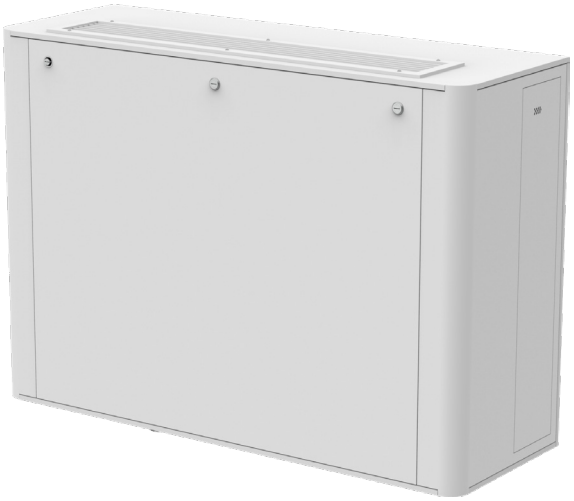
RPS

Counter-current flow heat recovery unit with inverter motor

Nominal air flow rate 800 m³/h

- **VMC solution for classrooms, bars, restaurants, offices, hotels, shops**
- **Minimum air flow rate 800 m³/h**
- **Fully silent operation**
- **Ventilation management by VOC probe**
- **Photocatalytic device**



DESCRIPTION

RPS is a counter-current heat recovery unit ideal for retrofit solutions for classrooms, offices, hotels, bars, restaurants, shops. With versatile installation and compact dimensions, it can be adapted to any existing space by drilling just two 300mm holes in one of the perimeter walls of the building, thus avoiding outside air ducts.
Thanks to the high thermal efficiency of the heat recovery unit, the appropriately filtered and treated fresh air is introduced at a temperature close to that of the room.

VERSIONS

RPS800A: With rear external air inlets and upper air delivery
RPS800B: With side external air inlets and upper air delivery

FEATURES

Structure

The external metal casing is treated with RAL9003 anti-corrosion polyester paint and insulated internally with a 12mm thick high sound-absorbing mattress with low thermal conductivity.
The natural anodised aluminium delivery air distribution grille is adjustable. The stale air is suctioned through special micro-punched grilles directly in the unit casing.

Ventilation group

The ventilation unit consists of fan plug fans with rear-facing blades and a directly coupled Ec-type electric motor.
The use of fan plug fans reduces the power input compared to fans with front-facing blades.

Heat exchanger

Plate heat exchanger with counter-current flow.

Condensate drip

The aluminium condensate drip tray is thermally insulated and must be connected to a condensate discharge system.

Air filtration

As standard the fresh air is filtered through an ePM1 50% filter in accordance with ISO 16890 (F7 in accordance with EN 779).
As standard the exhaust air is filtered through an ePM10 50% filter in accordance with ISO 16890 (M5 in accordance with EN 779).

For version A only, other Coarse 30% filters in accordance with ISO 16890 (G2 in accordance with EN 779) are fitted to the outside air vents to protect the unit from large components such as pollen, leaves and insects. The filters are easily accessible for maintenance and cleaning.

Air sanitisation

As standard, the fresh air flow has a latest-generation device with a photo-catalytic UV lamp for active sanitisation.
The hydrogen peroxide produced by the photo-catalytic reaction, disseminated and carried by the air flow, makes this sanitisation action effective on the surfaces of the unit as well as in the air in the place of installation and by contact with the surfaces of the rooms treated.

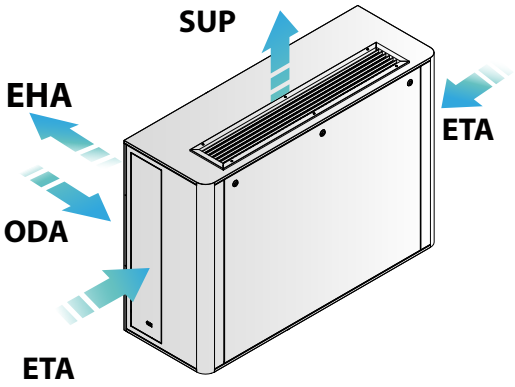
Regulation

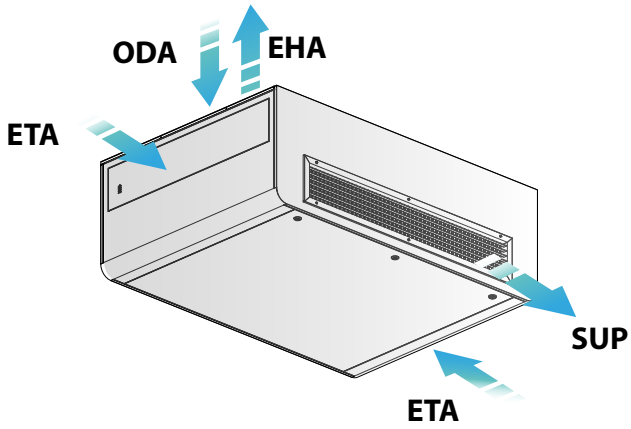
The power is supplied through the control board positioned on the inside panel of the heat recovery unit.
The unit is managed by a microprocessor control card and is controlled by the ultra-thin, flush-mounted control panel, which controls the functions from a capacitive touch screen with an LCD display.
The main adjustment functions are as follows:

- Manual fresh and exhaust air ventilation speed control
- Fresh and exhaust air ventilation speed control according to the air quality (by VOC probe)
- Freecooling
- Heat recovery unit anti-freeze function
- Ambient air cleaning function
- Photo-catalytic device management
- ON/OFF from digital input
- Management via RS485 serial with Modbus RTU protocol

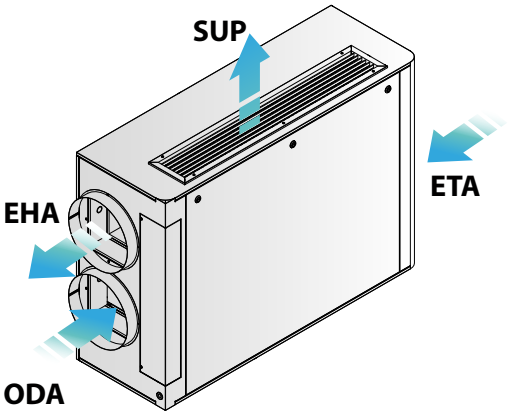
POSSIBLE INSTALLATIONS

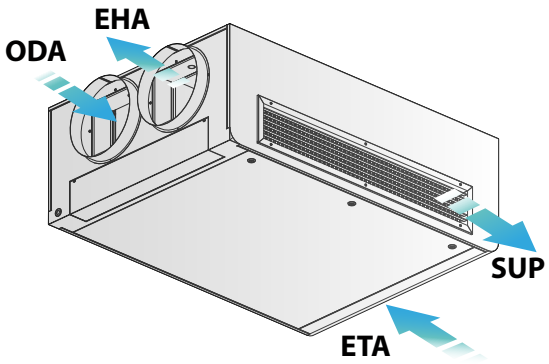
RPS800A





RPS800B





ODA = External air
ETA = Extracted air
SUP = Air introduced
EHA = Exhaust air

ACCESSORIES

AVM: Anti-vibration supports.

KVOC: The kit consists of the VOC probe, the 230V/24V power supply and cables for connecting the VOC probe, power supply and controller.

ACCESSORIES COMPATIBILITY

VOC probe kit

Accessory	RPS800A	RPS800B
KVOC800	•	•

Antivibration

Accessory	RPS800A	RPS800B
AVM	•	•

The accessory is not required for horizontal installation.

PERFORMANCE SPECIFICATIONS

SIZE			RPS800
Power supply			230V ~ 50Hz
Unit type			UVNR - UVB (Non-residential 2-way ventilation unit)
Nominal/maximum fresh air rate		m3/h	800
Nominal/maximum exhaust air rate		m3/h	750
Heat recovery system type			Statico a flussi controcorrente
Winter thermal efficiency	(1)	%	81
Heat capacity recovered in winter	(1)	kW	4,4
Summer thermal efficiency	(2)	%	77
Heat capacity recovered in summer	(2)	kW	1,9
Maximum electric input power		kW	0,300
Sound power L_wA		dB(A)	59,0
Fans			
Type			Plug fan EC
Number			1+1
Filters			
Fresh air filter			EPM1 50% (F7)
Exhaust air filter			EPM10 50% (M5)

(1) Fresh air: Tbs = 0°C; RH = 80%; Exhaust air Tbs = 20°C; RH = 50%; nominal air flow rate
(2) Fresh air: Tbs = 35°C; RH 50%; Exhaust air Tbs = 26°C; RH = 50%; nominal air flow rate

ROOM VENTILATION AIR FLOW RATES

School classrooms

For the calculation of the ventilation rate in school classrooms, reference can be made to the UNI 10339 standard (which sets the air renewal flow rate per student and by type of institution) and to Decree No. 81 of 20/03/2009 (which establishes the minimum and maximum number of students per class and by type of institution).

	UNI10339 - Sheet 3	Presidential decree no. 81 of 20/03/2009		Fresh air rate		Max occupants (fresh air rate 800 m3/h)
	Air flow rate per person	Pupils per class				Persons
	M3/h per person	Min	Max	Min	Max	No.
Schools						
Nursery school	14	18	29	259	418	56
Primary school	18	15	27	270	486	44
Middle school	22	18	30	389	648	37
High school	25	27	30	680	756	32

Bar, restaurants, officies, hotels, shops or stores

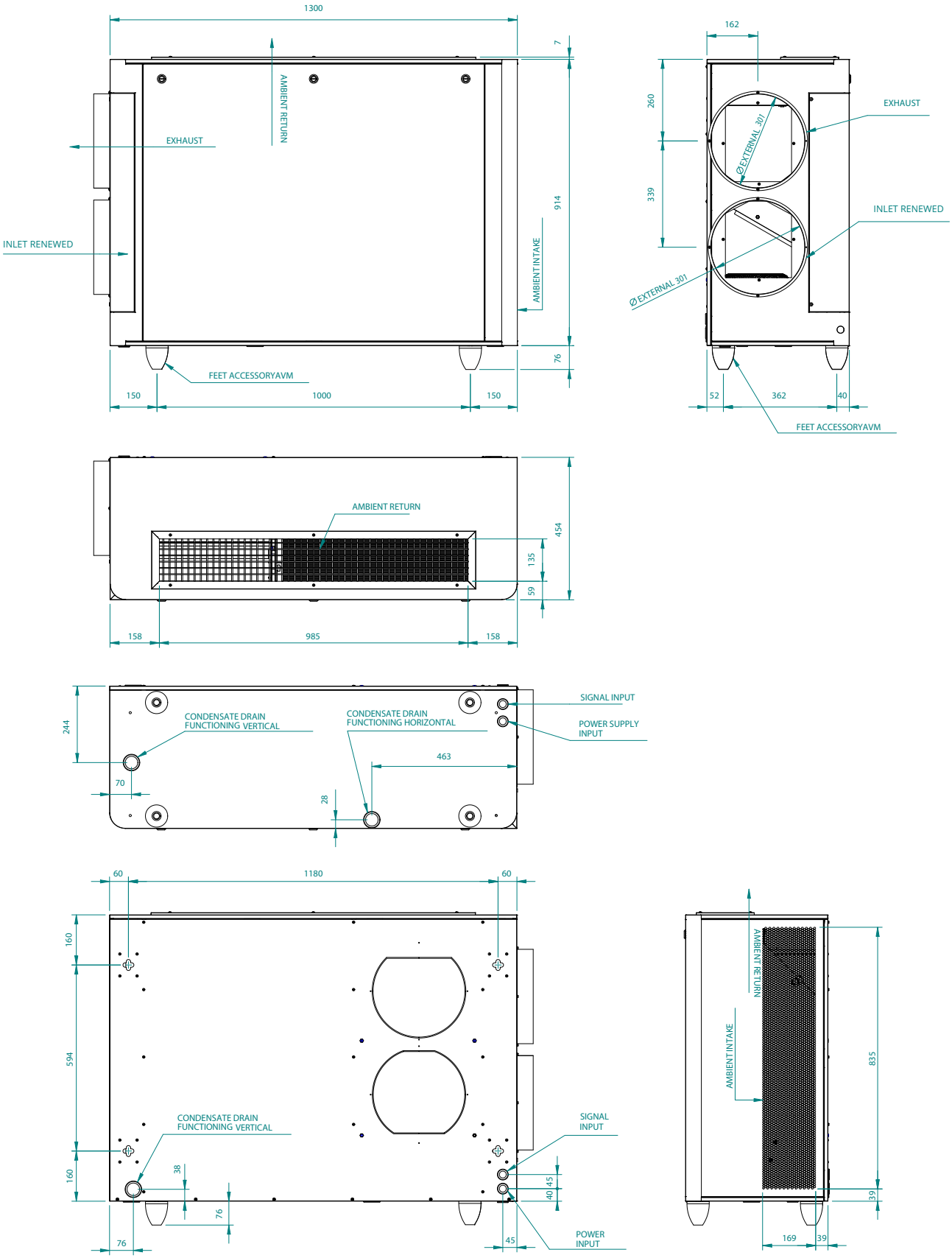
For the calculation of the ventilation rate in other types of buildings, reference can be made to the UNI 10339 standard, which sets the air renewal flow rate per person based on the type of indoor space.

	UNI10339 - Sheet 3	Max occupants (fresh air rate 800 m3/h)
	Air flow rate per person	Persons
	M^3/h per person	No.
Bars, Restaurants		
Bar	40	20
Dining rooms restaurants	36	22
Offices		
Open space offices	40	20
Hotels		
Hall, lounges	40	20
Dining rooms	36	22
Shops		
Beauty salons	50	16
Stores	41	19

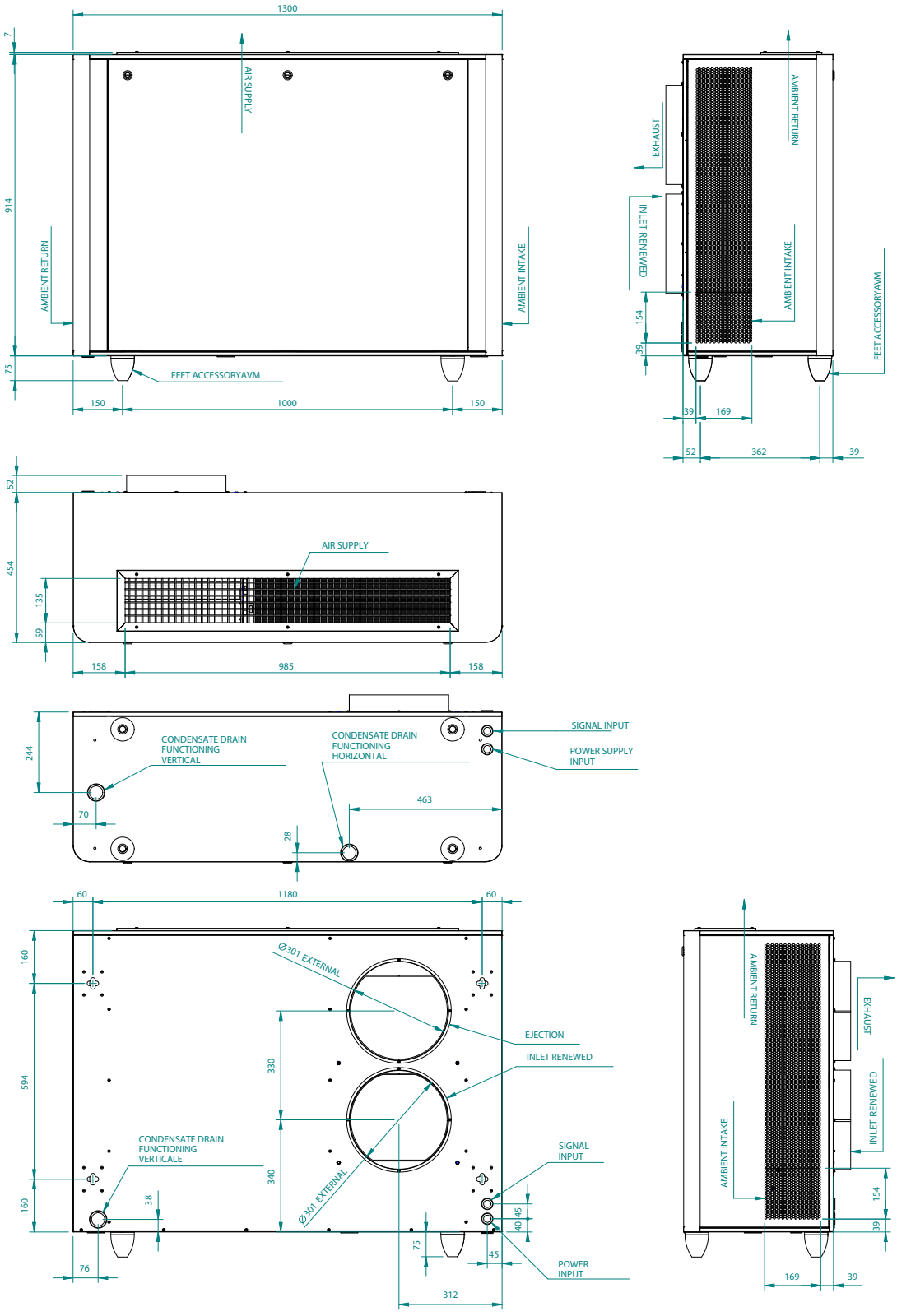
N.B.: the values given are indicative, assess the correct VMC sizing during the design phase.

DIMENSIONS

RPS800B



RPS800A



		RPS800B	RPS800A
Dimensions and weights			
Empty weight	kg	120	116

Aermec reserves the right to make any modifications deemed necessary. All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

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