Simx

TSEK

VHR EC HEAT RECOVERY UNITS

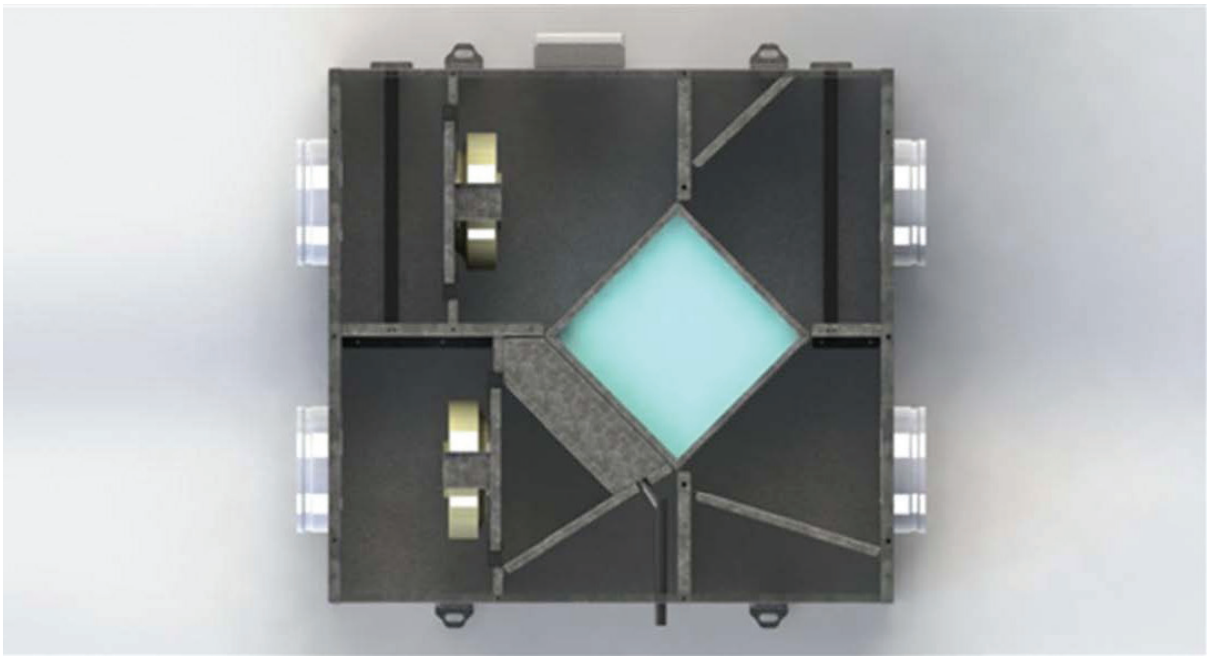


EC FAN

TÜV Rheinland®

TS EN ISO 9001:2008
SN: 01 100 901925

General Information



VENCO Heat Recovery Ventilation Units (VHR) are designed for saving energy and also improving indoor air quality. VHR units provide the facilities of air-conditioning applications (residential, commercial and industrial areas) by using plate type exchangers, recovering heat from air to air. The heat is effectively transferred from warm to cold air by the exchangers with high conductivity, efficiency and performance.

- 7 standard models, with TSEK certification, CE marked and GOST-R certification in compliance with applicable directives,
- High efficient, direct driven EC Fans with low noise level,
- Proper ventilation with two 5-speed fans controlled separately,
- The compact design provides easy installation and maintenance,
- Aluminum plate type heat exchangers with high conductivity and performance. Energy recovery exchangers also available
- Indoor air quality with polyurethane filters,
- Excellent sound and heat isolation with fully insulated powder coated cabinet

Electronic Controller

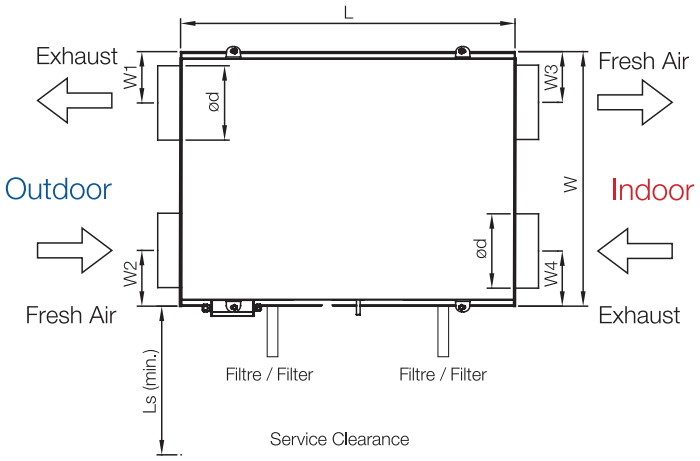
“Supplied with the unit as standard”



Specifications

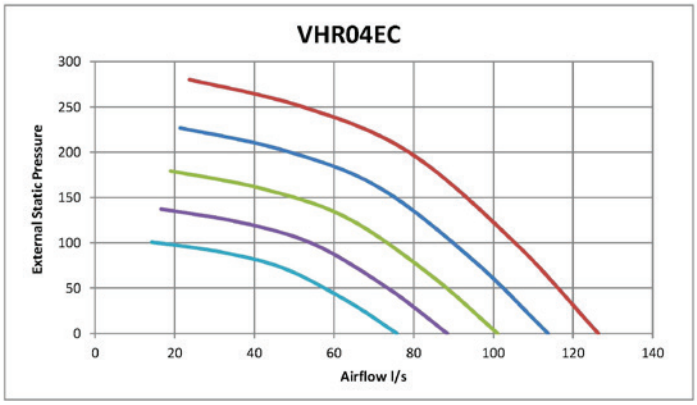
SIMX MODEL		VHR 04 EC	VHR 07 EC	VHR 09 EC	VHR 11 EC	VHR 16 EC	VHR 29 EC	VHR 36 EC	VHR 51 EC
Air Flow 0 Pa*	l/s	126	200	235	324	454	660	860	1078
Air Flow 150 Pa*	l/s	92	151	195	275	395	600	924	980
Heat Recovery Efficiency	%	Efficiency up to 70%, depending on working conditions							
Electrical Data		230 Volt / 50 Hz / 1~							
	W	2x85	2x85	2X170	2X170	2X450	2X500	2X740	2X750
Specific Fan Power SFP**	SFP	1,01	1,01	1,29	1,09	1,73	1,4	1,53	1,36
Air Filter		Polyurethane Filters for Fresh and Exhaust Air							
*External static pressure **According to EN 13779 at 150 Pa operating point									

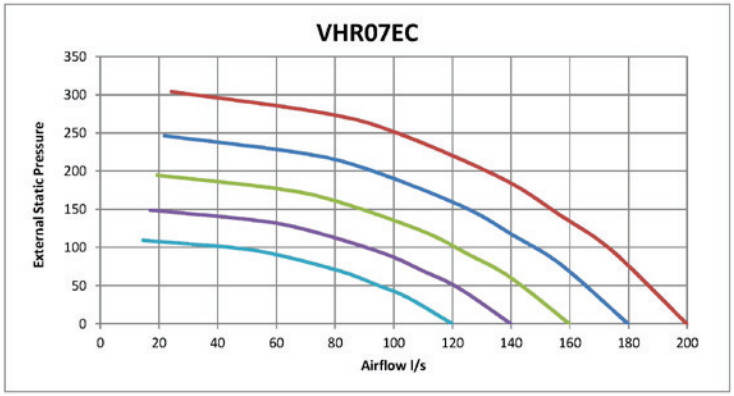


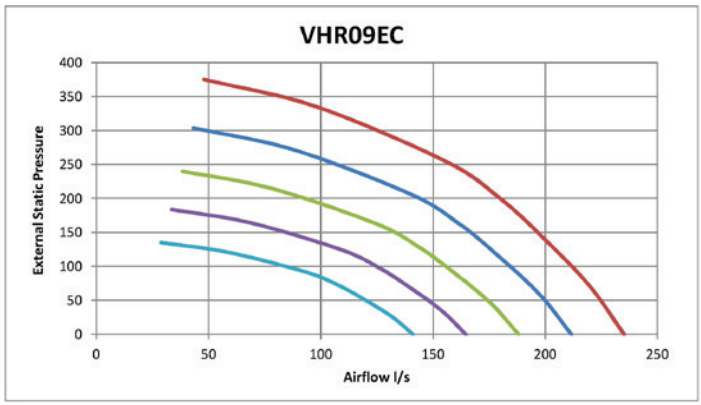


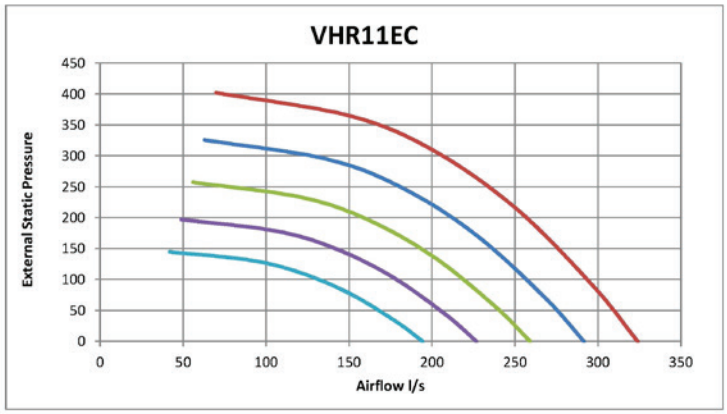
SIMX MODEL		VHR 04 EC	VHR 07 EC	VHR 09 EC	VHR 11 EC	VHR 16 EC	VHR 29 EC	VHR 36 EC	VHR 51 EC
Length (mm)	L	800	900	900	940	1.115	1.585	1.635	1.700
Width (mm)	W	740	860	860	1.020	1.030	1.030	1.150	1.210
Height (mm)	H	295	335	335	450	430	435	680	700
Duct Connection (mm)	Ø d	160	200	200	200	300	355	400	450
Weight (kg)		28	40	40	63	65	90	140	155
Other Dimensions (mm)	W1	180	215	215	250	255	255	260	290
	W2	195	225	225	270	265	265	250	270
	W3	180	215	215	250	255	255	300	350
	W4	195	225	225	270	265	265	245	270
Service Clearance (mm)	LS	400	450	450	500	550	550	600	600

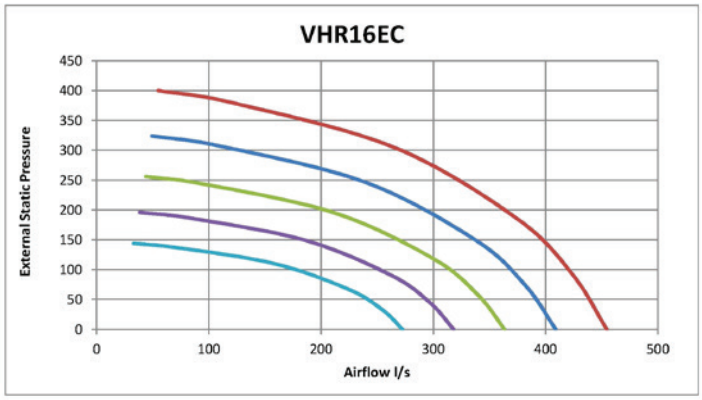
Air Flow - External Static Pressure

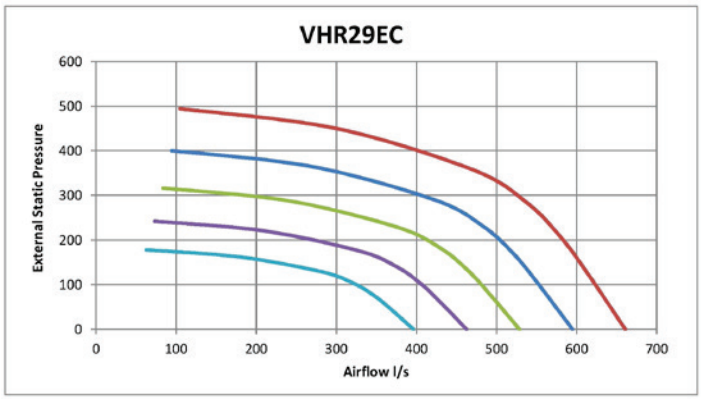


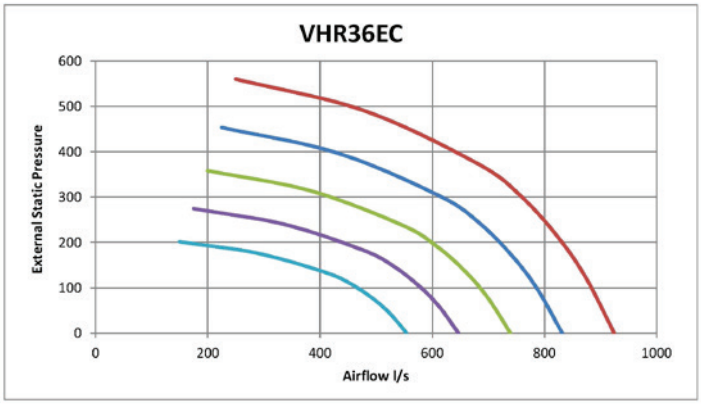


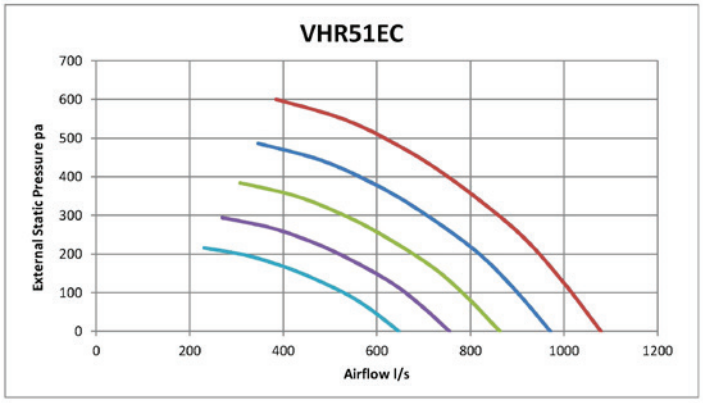












Electronic Control & Sensors

FEC - Functional Electronic Controller

FEC is supplied with Venco Heat Recovery Units as standard and it has the following features.

Unit On/Off Control

Adjusting Fresh Air Speed and Exhaust Air Speed Separately (5 Stages)
It is possible to supply and exhaust the air depending on the request. Also positive or negative pressure can be obtained in the ventilation room.

Control of Electrical Heater Manually or Automatically
Venco Electrical Heaters can be controlled with FEC. Thus, there is no need another controller. It is possible to turn the heater On or Off and adjust stages manually. Also it can be controlled automatically depending on the set temperature. If heat recovery unit or its supply air fan is turned off, fresh air fan keeps working for 30 seconds to cool the heater. And FEC doesn't allow the electrical heater to run if fresh air fan of heat recovery unit isn't working.

Control of Hot / Cold Water Coil Valve Manually or Automatically
The 2-way valve or 3-way valve of the hot water coil can be controlled as On/Off by FEC. It is possible to open or close the valve of the water coil manually. Also it can be controlled automatically depending on the set temperature by FEC.

Connectability to Building Management System (BMS) and VRV/VRF Systems
FEC can turn the heat recovery unit on or off depending on the signal from BMS, VRV/VRF System or similar automation systems. And it can send a status signal of being On or Off to these applications.

Timer Function
It is possible to set the requested running hours of the heat recovery unit. Thus, heat recovery unit can run differently on the requested working days, Saturday and Sunday.

By-pass Damper Control (Optional)
Please look at the accessories page for more information about by-pass damper.

Control of Air Quality (Optional) and Carbon Dioxide (Optional) Sensors
It is possible to improve indoor air quality by using air quality or carbon dioxide sensors. The fan speed is adjusted automatically from the carbondioxide sensor or air quality sensor that could be connected to the unit.

PIR Detector(optional)
Heat Recovery Unit can run depending on the signal from the PIR detector that is connected to the unit by using FEC.

Control with Modbus
FEC can communicate with a BMS through Modbus Network. This allows the BMS to monitor the heat recovery unit and control all parameters of the unit.

Warning for Clogged Filter (Optional)
FEC gives warning when the filters are dirty.

Frost Protection for Heat Exchanger (Optional)
When the freezing temperature is detected, fresh air fan switches to minimum stage and exhaust air fan switches to maximum stage automatically.



Electronic Controller Functional (FEC)

ACCESSORIES

Duct Type Electrical Heater (VCE)

VENCO electrical heaters have TSEK certification, CE marked and GOST-R certification. The technical specifications of products meet the essential requirements in the directives EMC 89/336/EEC and are tested according to the standards EN 55014-1, EN 61000-3-2/3-3 for EMC. Electrical heaters are produced in single phase or three phase upon request in standard spiral duct dimensions. The heaters have two overheating protections. VENCO electrical heaters are used with heat recovery units frequently. The electrical heaters can be used for two different purposes.

- It can be used when the outdoor temperature is low as a preheater to prevent freezing inside the heat exchanger
- It can be used as post heater to bring the fresh air temperature to the comfort conditions.



The standard electrical heaters' capacity and their specifications are at the following table.

Electrical Heater	VCE 04	VCE 07	VCE 09	VCE 11	VCE 16	v	VCE 36	VCE 51
Capacity	1(0,5+0,5) KW	2(1+1) kW	3(1,5+1,5) kW	3(1,5+1,5) kW	4(2+2) kW	7(3,5+,3,5) kW	10(5+5) kW	12(6+6) kW
Electrical Data	230 V / 1~				400 V / 3~			

Duct Type Water Coil (HWC-CWC)

VENCO duct water coils are produced as hot water coil (HWC) or cold water coil (CWC) at standard capacities. High efficient heat transfer can be achieved with high performance heat exchangers. The design provides fast and easy installation and maintenance.



Hot Water Coil		HWC 04	HWC 07	HWC 09	HWC 11	HWC 16	HWC 29	HWC 36	HWC 51
Heating Capacity	kW	2,2	3,7	5,3	5,7	7,5	14,4	21,2	28,9
Pressure Drop	Pa	9	21	20	22	22	25	25	25

Cold Water Coil		CWC 04	CWC 07	CWC 09	CWC 11	CWC 16	CWC 29	CWC 36	CWC 51
Heating Capacity	kW	1,5	1,9	3,1	3,2	4,1	8,6	11,2	17,3
Pressure Drop	Pa	23	38	36	40	40	45	45	44

By-Pass Connection Kit (BCK)

VENCO Heat recovery units are used to transfer the heat from the exhaust air to supply air. In the transition seasons, it is much more suitable to supply the fresh air directly to indoor by not passing through the heat exchanger. By-pass connection kit allows controlling the outdoor air automatically and supplying the outdoor air directly to the indoor when it is necessary. Heat recovery units with BCK have the following heights and weights.



By-Pass Kit Model		BCK 04	BCK 07	BCK 09	BCK 11	BCK 16	BCK 20	BCK 23	BCK 29	BCK 36	BCK 51
Height*	**mm**	340	400	400	475	520	520	520	520	700	920
Weight*	**kg**	40	45	45	75	75	85	100	125	145	190
* Total values for the units with BCK											



Simx

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