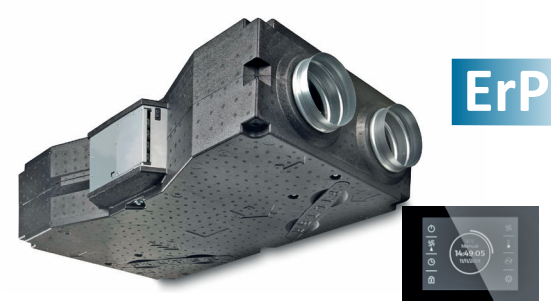


ErP A+

Counterflow plate heat recovery exchanger

ENERGY SAVING | LOW NOISE | ANTI FREEZE | Choose &GO | SERVICE SW

BASIC FEATURES

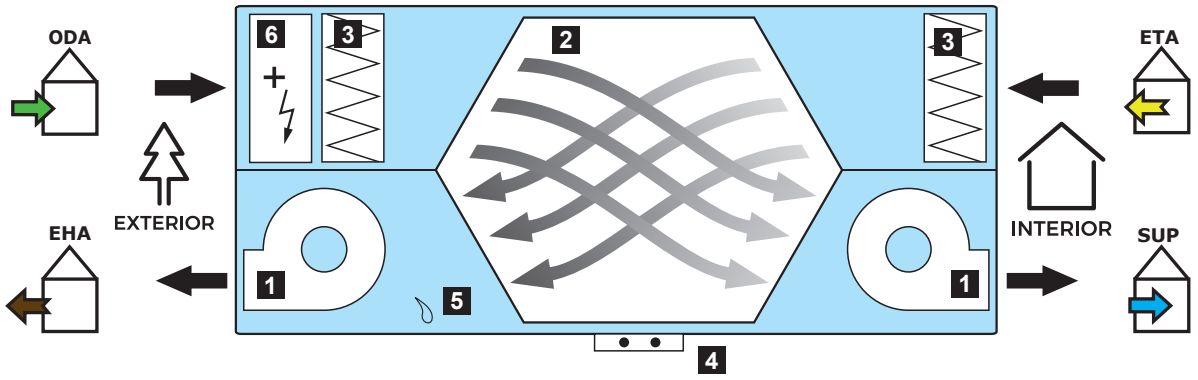
VENUS is a series of a compact and high-performance residential heat recovery units designed for under-ceiling installations in **flats, residential houses, family houses and low-energy and passive houses**. VENUS heat recovery units are available with two different control types – VENUS Comfort and VENUS AirGENIO (available for EC version only).

– Nominal air flows: 140, 150, 300, 500 and 700 m³/h
– Energy class **A / A+**; compliant with Ecodesign directive 1253/2014
– High heat recovery efficiency up to 93% (EN13141-7)
– Low noise level
– Available in two different designs – with EC or AC fans
– Low installation height from 270 mm
– Shell made from EPP ensuring high tightness and low weight of the unit (Passivhaus ready)
– High filtration class up to ePM 2,5 50%
– VENUS **Standard** providing manual or DCV control based on air quality sensors.
– VENUS **AirGENIO Comfort** (EC version only) with advanced automatic control, additional modes, control via ModBUS RTU, TCP or BACnet and control via smart device.

VENUS heat recovery unit is designed to be operated in a dry indoor environment (relative humidity not exceeding 80 %) and at an ambient temperature in the range from +5 °C up to +40 °C.
Conditions of use of the enthalpy exchanger: if the outside temperature does not drop below -5°C, the indoor relative humidity is less than 45%, the indoor temperature is up to 23°C so there is no need for condensate drainage. In case of other conditions such as lower outdoor temperature or higher indoor temperature or higher indoor humidity, a condensate drain must be installed.

The unit is designed for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities. Housing of the unit is made of expanded polypropylene. The unit has an IP rating of IP 20 when installed in the duct system.
It is recommended that the heat recovery project **always be designed by a qualified HVAC designer, engineer or architect**.

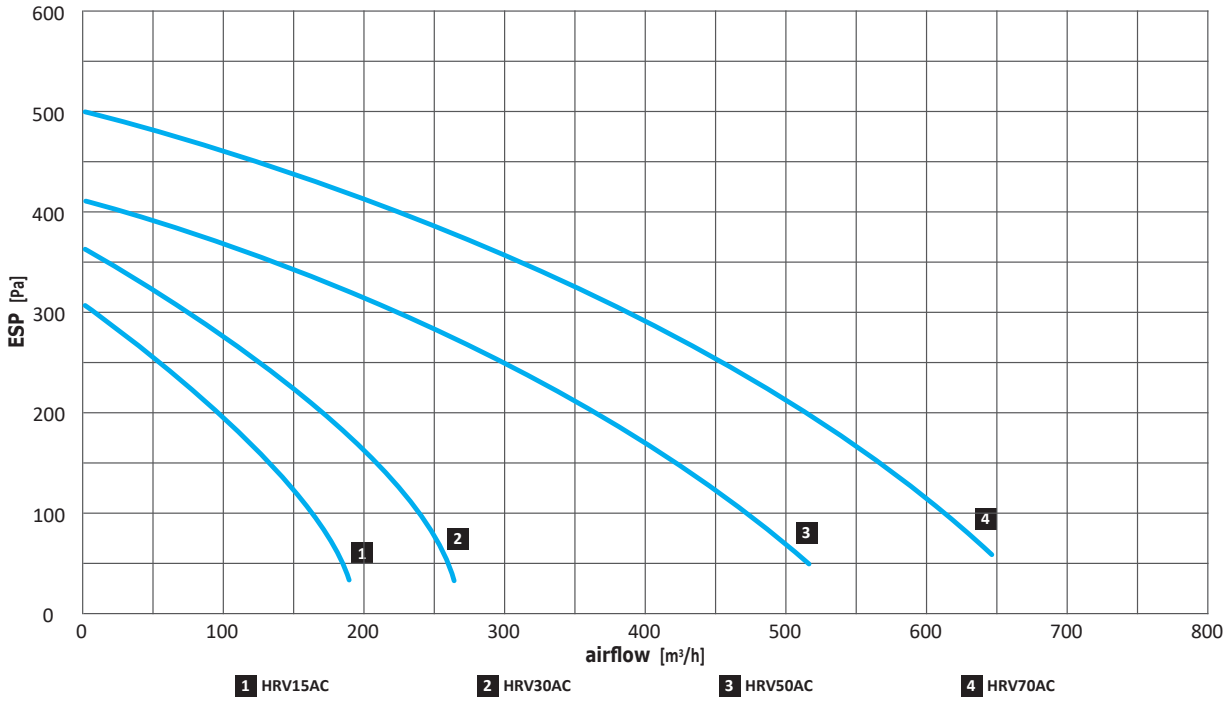
Operational diagram



1 - Fan
2 - Heat exchanger
3 - Filter
4 - Electrical connection (box of regulation)
5 - Condensate exhaust
6 - Preheater

PRIMARY PARAMETERS

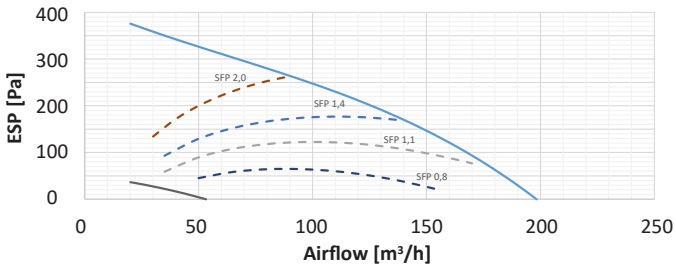
Output power characteristic



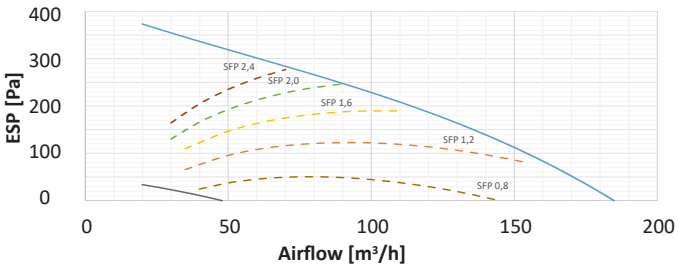
PRIMARY PARAMETERS

Output power characteristic

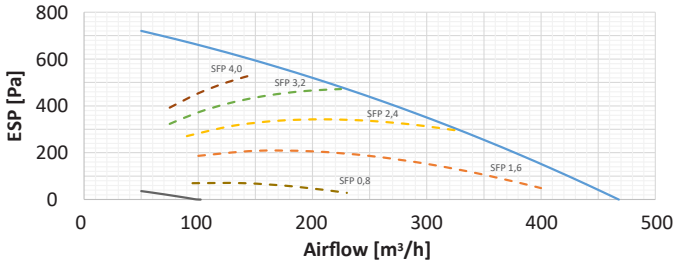
HRV-14EC CF



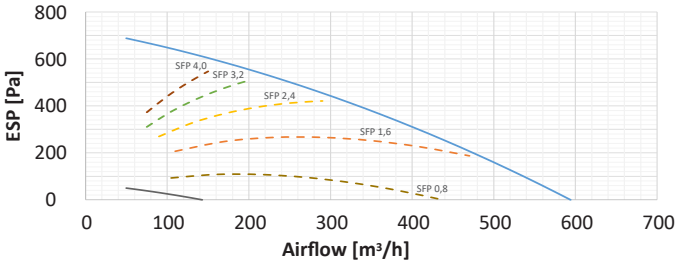
HRV-15EC CF



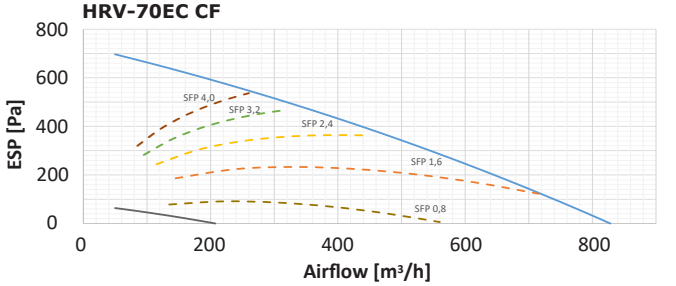
HRV-30EC CF



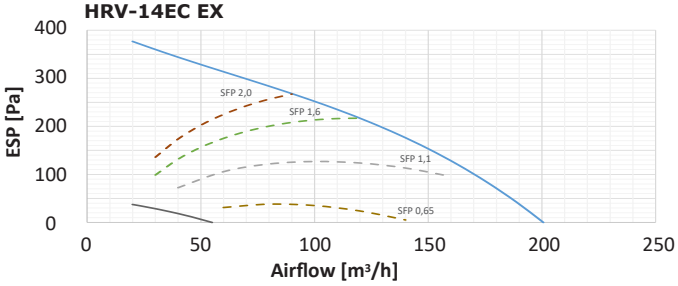
HRV-50EC CF



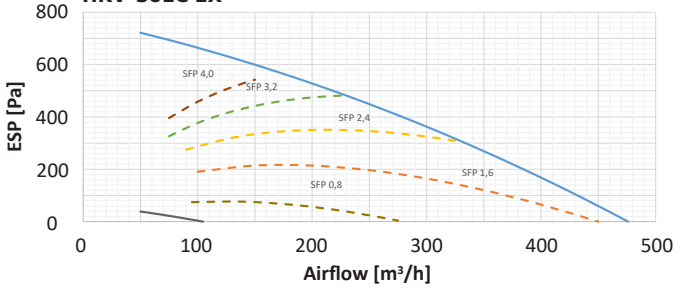
HRV-70EC CF



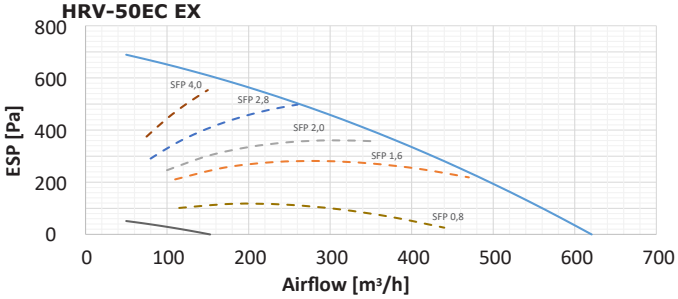
HRV-14EC EX



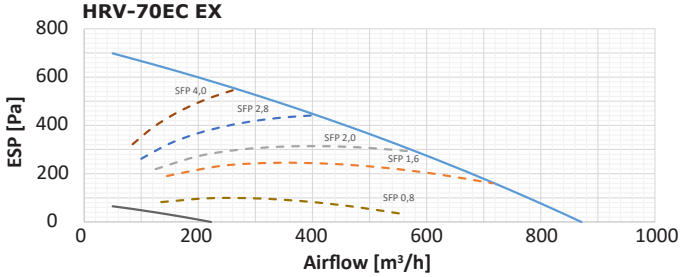
HRV-30EC EX



HRV-50EC EX

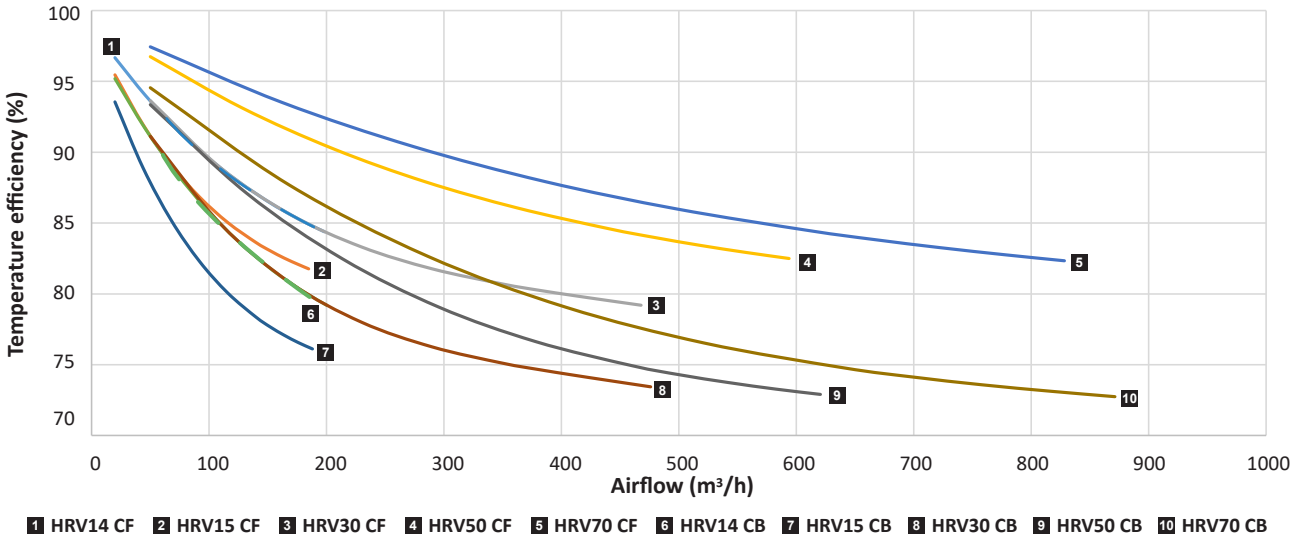


HRV-70EC EX



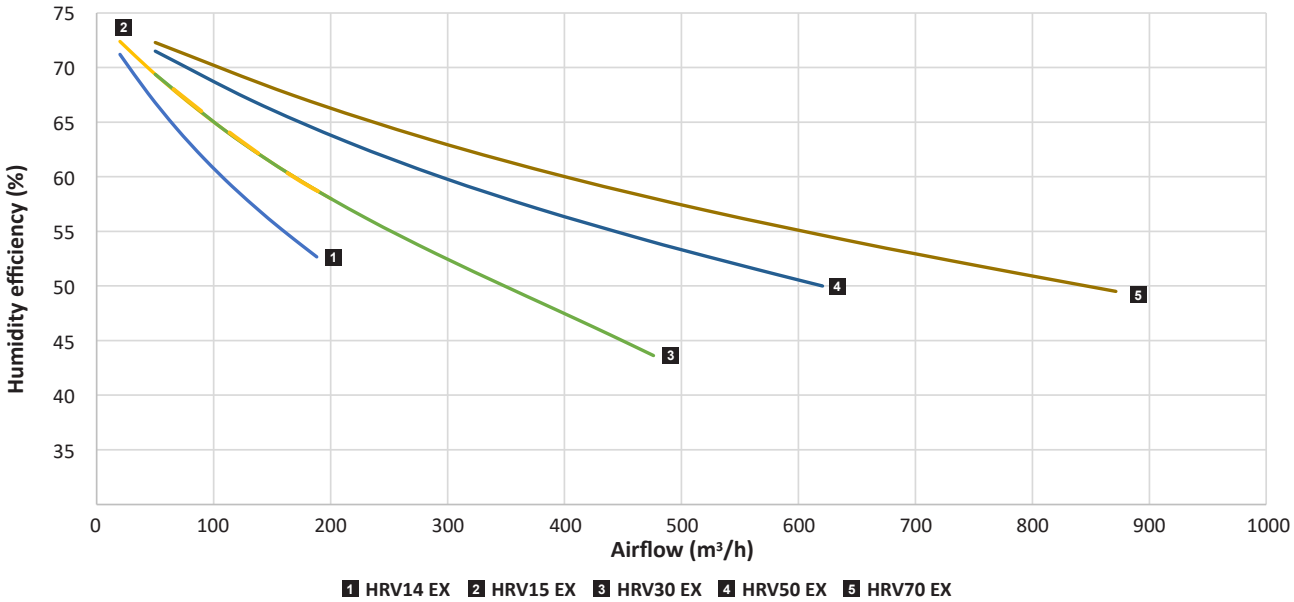
Heat recovery efficency

According to EN 13141-7 ... T1
Temperature - Supply in 7°C, Relative humidity - supply in 80%
Temperature - Exhaust in 20°C, Relative humidity - exhaust in 38%



Humidity efficiency

According to EN 13141-7 ... T2
Temperature - Supply in 2°C, Relative humidity - supply in 84%
Temperature - Exhaust in 20°C, Relative humidity - exhaust in 59%



Noise data

Type	Into the environment	Into the environment	Inlet duct (supply branch)	Outlet duct branches
	L_{pA} 3m (dB)	L_{wA} (dB)	L_{wA} (dB)	L_{wA} (dB)
HRV15AC	37	59	55	65
HRV30AC	39	60	59	66
HRV50AC	47	69	59	70
HRV70AC	43	65	59	67

Noise specifications

HRV-14EC

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]	L_{pA} [dB] at 3m
HRV-14EC	160	100	56,2	45,2	50,6	48,6	48,6	44,5	41,9	33,8	**52,6**	**31,3**
	125		54,1	43,7	50,4	51,4	46,1	40,2	37,6	28,2	**51,6**	**30,3**
	100		51,0	42,5	49,8	47,7	43,0	37,3	33,8	25,0	**48,6**	**27,3**
	50		45,3	41,4	47,4	37,9	36,4	32,4	27,6	20,6	**42,7**	**21,4**

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]
EHA	160	100	69,5	68,7	67,2	67,1	49,2	52,2	51,5	41,7	**65,9**
SUP			68,7	68,1	66,3	70,9	52,1	53,9	52,5	43,2	**68,7**
ETA			66,2	62,5	59,8	59,9	42,6	35,3	29,7	21,5	**58,3**
ODA			67,7	63,7	63,3	63,1	43,1	35,2	30,7	18,7	**61,3**

HRV-15EC

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]	L_{pA} [dB] at 3m
HRV-15EC	160	100	56,2	45,2	50,7	48,4	48,6	44,5	41,9	33,7	**52,6**	**31,3**
	125		54,1	43,7	50,4	51,4	46,1	40,2	37,6	28,3	**51,6**	**30,3**
	100		51,0	42,5	49,8	47,8	42,9	37,3	33,8	25,0	**48,6**	**27,3**
	50		45,3	41,4	47,4	37,9	36,4	32,4	27,6	20,6	**42,7**	**21,4**

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]
EHA	160	100	75,0	72,2	68,1	65,7	55,7	60,5	59,8	52,1	**68,0**
SUP			70,4	69,5	67,4	61,8	53,2	56,6	55,4	47,5	**64,8**
ETA			71,0	66,6	64,5	56,0	46,3	39,6	32,8	31,5	**58,9**
ODA			69,3	64,0	62,7	58,5	44,4	36,4	31,1	20,4	**58,5**

HRV-30EC

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]	L_{PA} [dB] at 3m
HRV-30EC	260	150	59,7	51,9	53,4	53	51,6	46,7	40,4	34,5	**55,5**	**34,2**
	200		54,1	49,6	52,4	48,6	47,9	43,7	36,8	30,4	**52,1**	**30,8**
	150		50,7	48,8	51,2	45,1	45,1	41,4	33,9	27,3	**49,5**	**28,2**
	50		52,6	51,9	47,1	40,6	42,4	37,7	28,2	22,6	**46,3**	**25,0**

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]
EHA	260	150	73,3	68,2	67,5	63,4	55,0	56,3	52,0	45,4	**65,0**
SUP			72,8	67,4	69,0	63,4	53,5	55,1	50,5	43,6	**65,0**
ETA			73,6	66,9	66,6	63,9	51,0	45,5	34,8	23,9	**63,3**
ODA			70,7	65,6	65,6	62,7	49,0	42,6	30,6	20,3	**62,1**

HRV-50EC

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]	L_{PA} [dB] at 3m
HRV-50EC	400	200	69,5	54,6	56,4	61,1	54,8	50,7	44,1	37,8	**60,8**	**39,1**
	300		60,9	52,6	55,7	59,8	51,0	47,1	39,1	29,3	**58,6**	**36,9**
	200		55,7	52,7	56,1	58,5	47,1	44,8	36,0	22,8	**57,0**	**35,3**
	100		57,6	56,3	57,5	56,6	45,9	44,7	36,7	24,5	**56,0**	**34,3**

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]
EHA	400	200	75,6	70,5	67,8	67,4	58,3	59,9	56,0	50,7	**68,0**
SUP			73,9	68,6	68,3	73,1	56,2	57,9	54,1	48,9	**71,0**
ETA			69,9	64,9	61,5	58,3	46,8	39,7	33,1	25,0	**58,3**
ODA			73,9	64,0	61,2	61,4	47,1	39,4	32,8	21,1	**60,1**

HRV-70EC

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]	L_{PA} [dB] at 3m
HRV-70EC	700	200	76,5	62,8	63,2	62,3	58,7	54,3	47,1	44,6	**63,9**	**42,2**
	500		57,6	56,5	58,8	60,7	55	49,8	41,6	37,2	**60,6**	**38,9**
	400		55,3	56,4	57,1	58,7	53,6	48,1	38,9	31,9	**58,8**	**37,2**
	200		58,2	58,9	54,5	55	51,1	44,4	34,3	24,6	**55,8**	**34,1**

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]
EHA	700	200	76,7	70,1	61,3	63,2	58,3	56,3	49,8	57,8	**65,3**
SUP			81,5	75,9	68,9	63,9	60,2	60,7	53,9	58,1	**68,4**
ETA			77,9	76,3	58,2	54,0	48,3	39,6	32,6	29,3	**61,7**
ODA			86,0	73,8	63,0	54,9	49,4	39,8	34,7	26,8	**63,1**

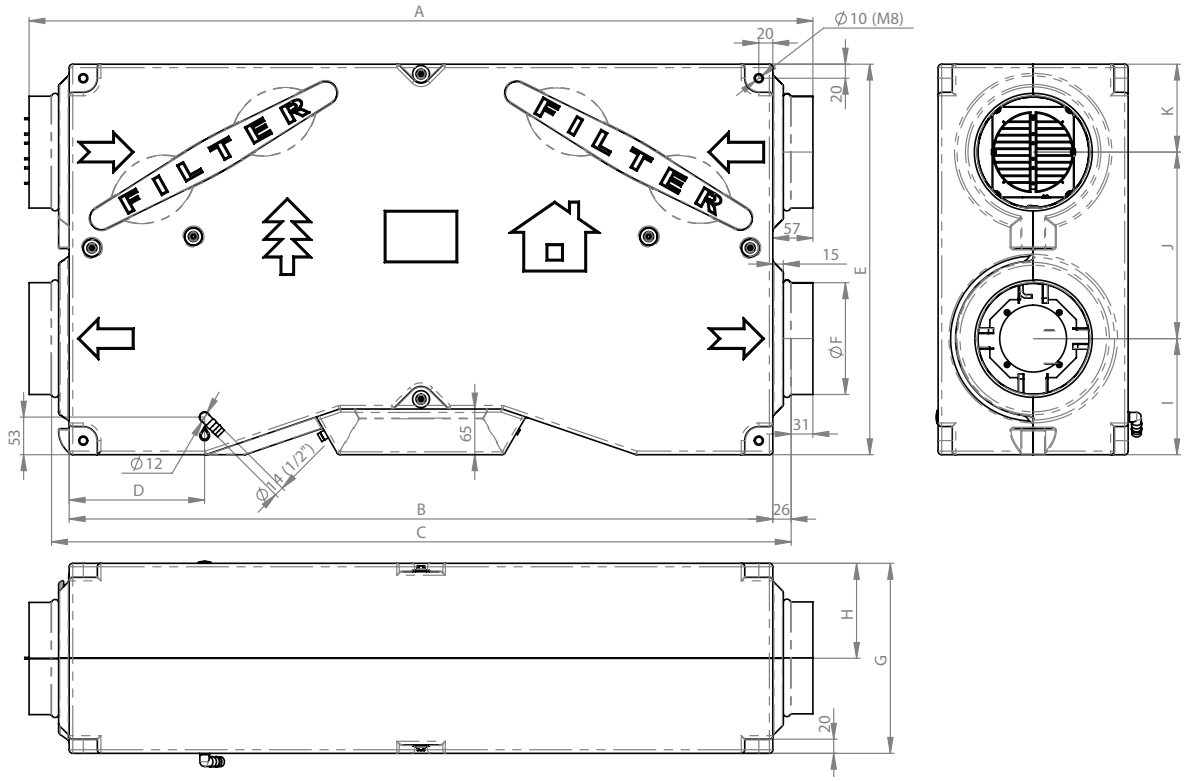
Table of the main parameters

Type	Maximal air flow [m³/h]	Supply filter class	Exhaust filter class	Phase [pcs]	Voltage [V]	Frequency [Hz]	Fans power [W]	Pre-heater Input [kW]	Weight [kg]	Duct diameter [mm]	Unit height [mm]	Unit width [mm]	Unit length [mm]
HRV14EC	185	ePM 2,5 50%	Coarse 60%	1	230	50/60	54	0,6	19,5	160	270	555	1000
HRV15AC	185	ePM 10 50%		1	230	50	105	1	17,4	160	270	555	1000
HRV15EC	175	ePM 2,5 50%		1	230	50/60	54	1	17,2	160	270	555	1000
HRV30AC	265	ePM 10 50%		1	230	50	145	1,3	19,5	160	270	555	1000
HRV30EC	315	ePM 2,5 50%		1	230	50/60	240	1,3	19,3	160	270	555	1000
HRV50AC	515	ePM 10 50%		1	230	50	230	2,5	35	250	360	846	1391
HRV50EC	535	ePM 2,5 50%		1	230	50/60	238	2,5	35,5	250	360	846	1391
HRV70AC	650	ePM 10 50%		1	230	50	270	2,5	40	250	360	846	1391
HRV70EC	785	ePM 2,5 50%		1	230	50/60	340	2,5	40,7	250	360	846	1391

COMMISSION DELEGATED REGULATION (EU) No 1254/2014

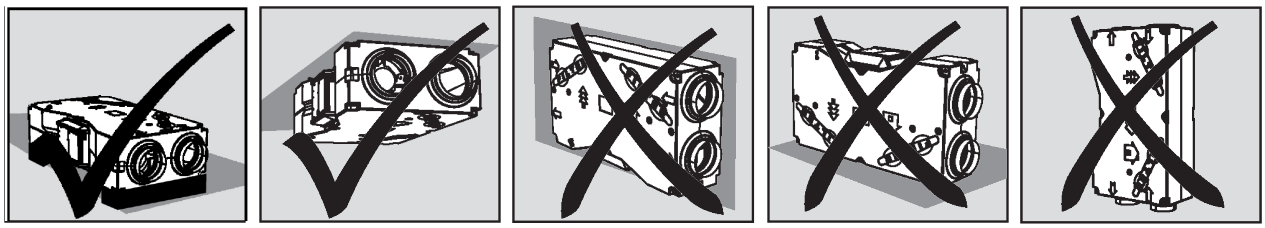
Type	Regulation	
	VENUS AirGENIO	***VENUS*** *Comfort*
HRV14EC CF	A+	A+
HRV15AC CF	A	A
HRV15EC CF	A	A
HRV30AC CF	A	A
HRV30EC CF	A	A
HRV50AC CF	A	A
HRV50EC CF	A	A+
HRV70AC CF	A	A
HRV70EC CF	A+	A
HRV14EC EX	A	A
HRV15EC EX	A	A
HRV30EC EX	A	A
HRV50EC EX	A	A
HRV70EC EX	A	A

Dimensions



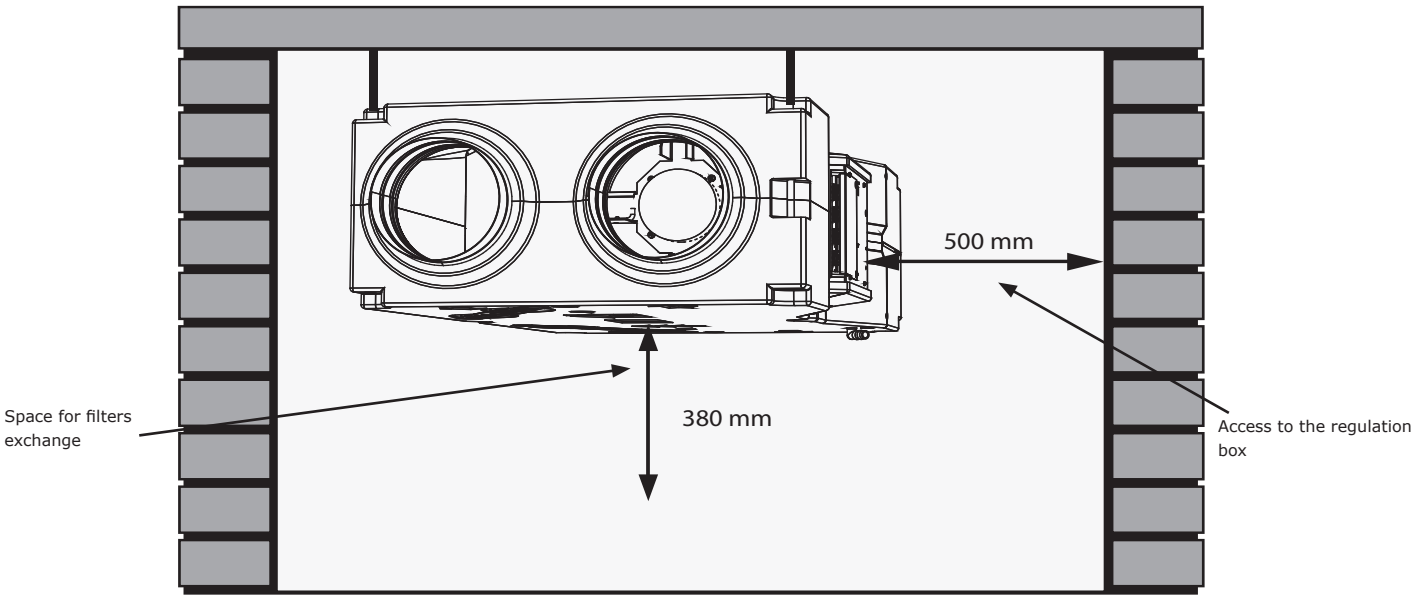
Type	A	B	C	D	E	F	G	H	I	J	K
HRV14, HRV15, HRV30	1114	1000	1051	193	555	159	270	135	165	265	125
HRV50, HRV70	1505	1391	1441	248	846	249	360	180	235	420	190

INSTALLATION AND ASSEMBLY



The unit can be suspended using threaded rods (M8) from the ceiling. The unit must be installed with a view to correct position of condensate exhaust. Other installation position is not possible.
Installation of the unit shall allow a sufficient access for performing maintenance, servicing, and dismounting operations.

Necessary space for service



– The unit shall be fixed safely to avoid its dropping.
– The air duct is connected by slipping it over the circular neck.

CONTROL

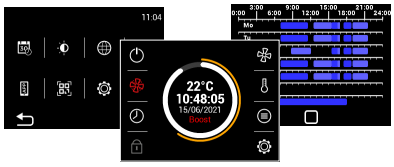
VENUS heat recovery units are available with two different control types – VENUS Standard and VENUS AirGENIO Comfort (available for EC version only).
VENUS Standard is a control system providing manual and automatic DCV control with possible use of up to 3 CO_2 sensor, 1 RH sensor and 1 PIR sensor. It is equipped with compact control panel (85x85x12mm) and 10 m long connection cable.
VENUS AirGENIO Comfort is a control system providing manual and advanced automatic DCV control, fluent by-pass control ensuring efficient temperature control (free-cooling, anti-freeze protection), BMS control via ModBUS RTU, TCP or BACnet, control via smart device. It is equipped with touch-screen control panel and 10m long UTP cable.

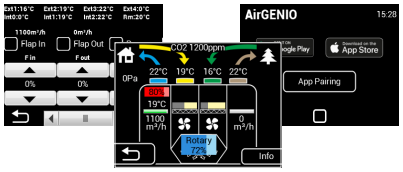
WIRING DIAGRAMS

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.

CONTROLS

VENUS AirGENIO Comfort - Main control functions:





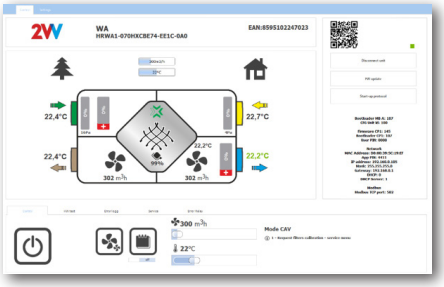
- Touch control
- Stepless fans (0-10V)
- Stepless afterheating (internal electrical: SSR)
- Stepless automatic control of preheating
- Integrated timer (daily, weekly)
- Optional connection of sensors: C02, RH, VOC (0-10)
- Offset fan adjustment (over-pressure and underpressure)
- Indication of filter clogging
- DCV ventilation mode
- BOOST function - intensive airflow for a set period
- Freecooling functions - night ventilation (cooling)
- Occupancy functions - reducing ventilation according to the PIR sensor
- BMS - connection via Modbus RTU / TCP, BACnet

2VV AirGENIO Application:

- Product control on your smartphone
- Info about operation status
- Notifications – request for service, filter exchange, error status, etc.
- Download the 2VV AirGENIO APP and control it remotely from your smart phone!

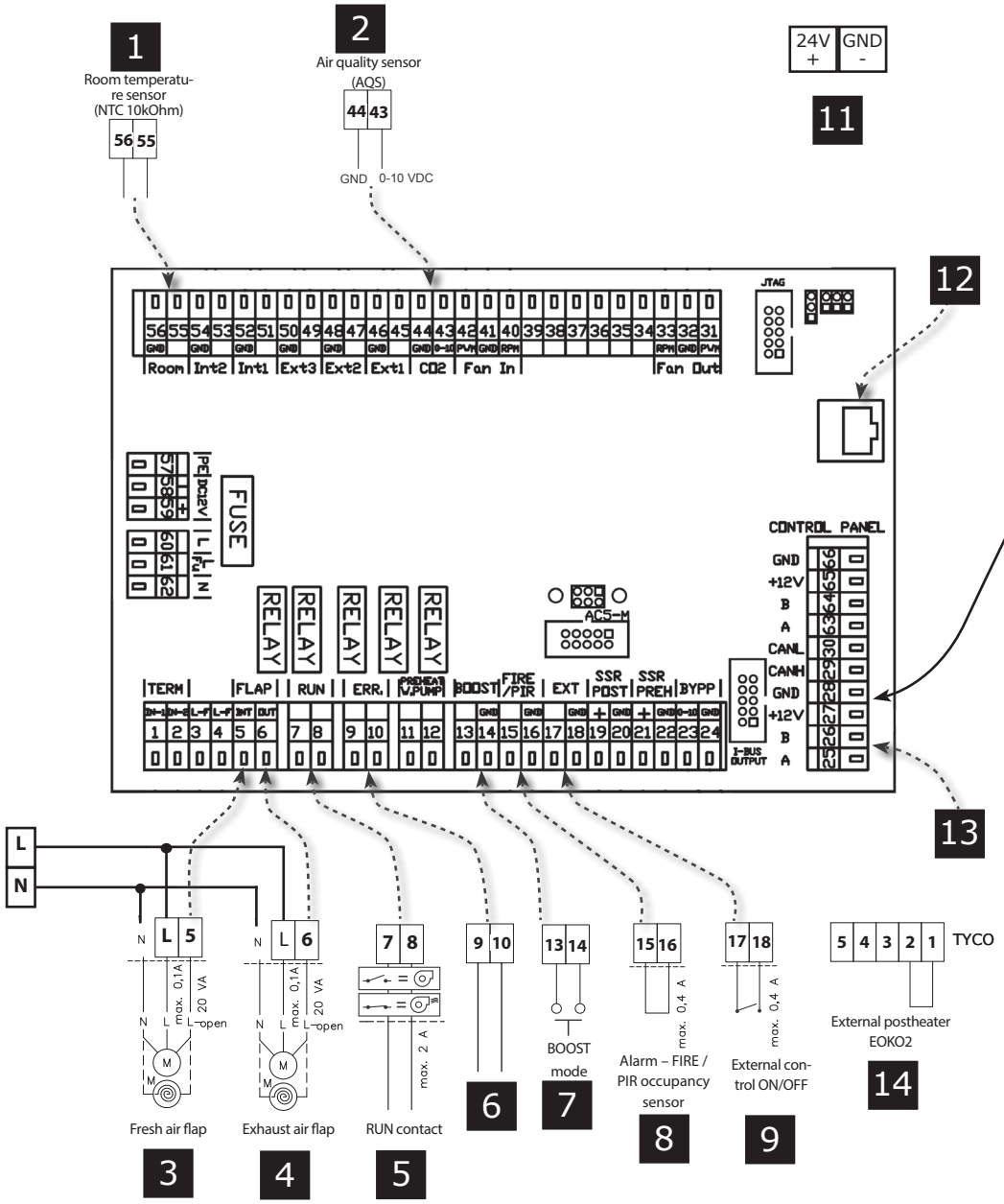
2VV Service software:

- Easy and quick commissioning from your computer
- Error log – error display and identification
- Easy service (device status loading/reset to backup setting)
- Fast FW update
- OFFLINE version



WIRING DIAGRAMS

VENUS AirGENIO Comfort control



* A shielded cable (e.g. UTP type) is recommended for the connection of the control panel to the unit.

1	Room temperature sensor (input)
2	The air quality sensor - control signal (input)
3	Inlet air damper (L-in, L-out)
4	Exhaust air damper (L-in, L-out)
5	RUN contact (relay contact)
6	ERROR contact (relay contact)
7	BOOST regime (input)
8	Alarm - FIRE (input) or PIR (input)
9	External control - ON/OFF
10	Control panel
11	24V power supply (accessories)
12	RJ45 plug - Ethernet, Modbus TCP, BACnet
13	Modbus RTU (A-25, B-26, 28 or 66-GND)
14	Duct postheater - EOKO (output)

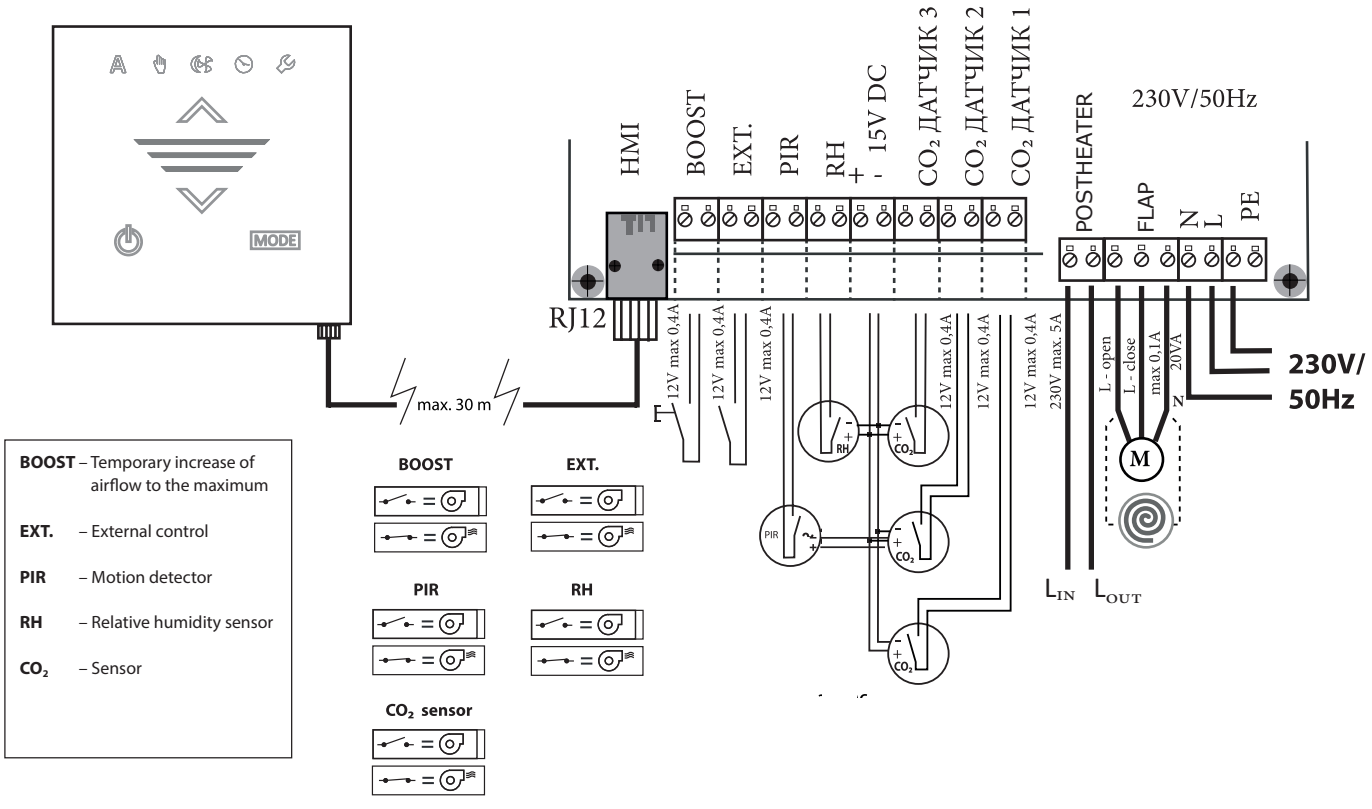
CONTROLS

VENUS AIRGENIO Comfort - main control functions:

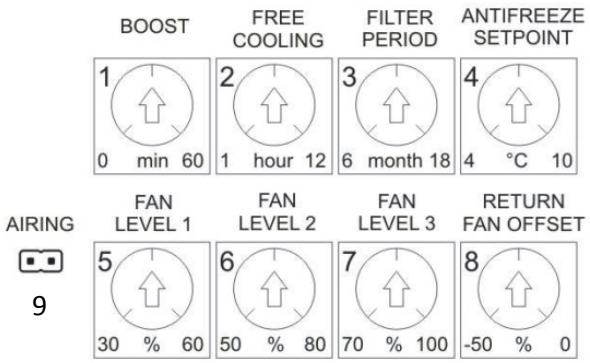
- Control using a remote control (optional accessories)
- Control based on CO_2 concentration (relative humidity or presence of persons)
- 3 steps of fan speed
- Manual adjustment of each fan speed (EC only)
- Stepless regulation of el. heater power (Only for units with preheating)
- El. heater overheating protection (Only for units with preheating)
- Control of shutting flaps
- Diagnostics of malfunctions and their reporting
- Boost – Time adjustable ventilation on maximum airflow
- Freecooling
- Possibility of time period setting for filter replacement
- Antifreeze protection setpoint adjustment
- Adjustable offset of exhaust fan (EC only)

WIRING DIAGRAMS

VENUS Standard control



VENUS Standard - Functions settings



1 – Boost function adjustment. 0–60 min (30 min default)
2 – Freecooling function adjustment. 1–12 hour (6 hours default)
3 – Filter cleaning period adjustment. 6–18months (12 months default)
4 – Antifreeze set point adjustment. 4–10 °C (7 °C default)
5 – 1st fan speed adjustment. 30–60 % (30 % default) – only EC motors version
6 – 2nd fan speed adjustment. 50–80 % (65 % default) – only EC motors version
7 – 3rd fan speed adjustment. 70–100 % (100 % default) – only EC motors version
8 – Return fan speed adjustment. -50–0 % (0 % default) – only EC motors version
9 – Airing – possibility of regular ventilation once per hour for 8 min.

ACCESSORIES

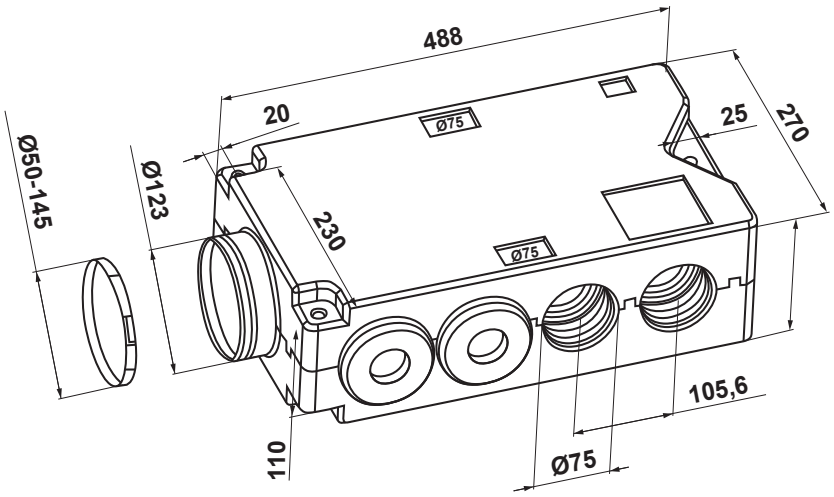
RECOMMENDED ACCESSORIES

Distribution box
ROZ-EPP-125

The distributor/collector is a distribution box designed for the distribution of air. It helps to divide air in to up to 8 distribution/collection ducts. It provides a solution for the connection between flexible air ducts (e.g. Isovac, Sonovac, Semivac and Aluv DN 125) and Duotec flexible hoses. The distributor/collector can be connected to up to 8 Duotec flexible hoses. The flexible hoses are attached by insertion. To ensure the correct position of the flexible hoses it is necessary to insert the hose into the box until it clicks in. The distributor /collector is intended for operation in standard indoor areas for the distribution/collector of clean air without coarse dust, fats, chemical vapours and other pollutants with a temperature of up to 40 °C.

Material: The distributor/collector is produced from black-coloured extruded polypropylene and is not load bearing.

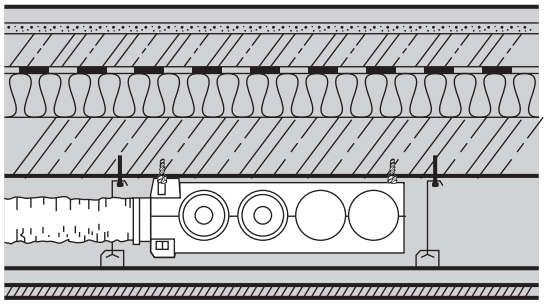
The package includes: Box (inlet with a connection diameter of 125 mm), four removable plugs.



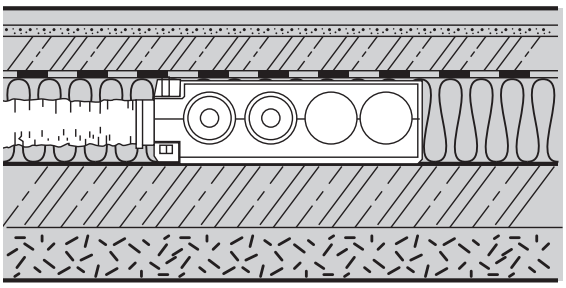
INSTALLATION AND ASSEMBLY

The box can be suspended under a ceiling using three threaded rods or installed into the floor (a layer for spreading the load is necessary).

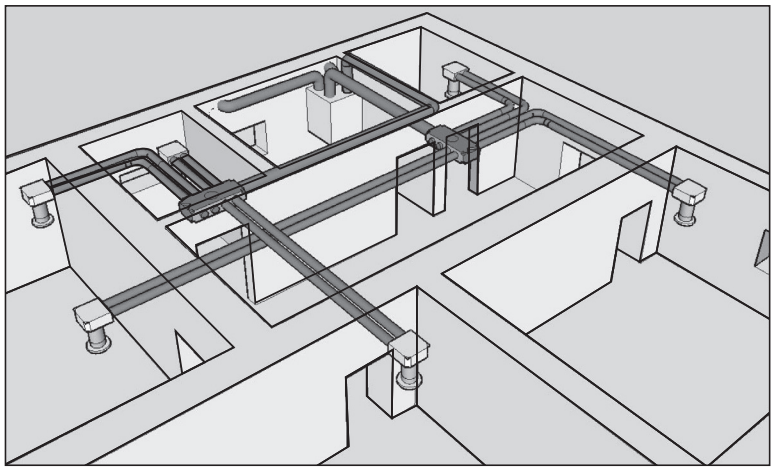
Ceiling installation



Floor installation



Example of installation



KEY TO CODING

ROZ-EPP-125

125 – Connection diameter 125 mm

ROZ-EPP – Universal distribution, EPP, 8 outlets

ACCESSORIES

RECOMMENDED ACCESSORIES

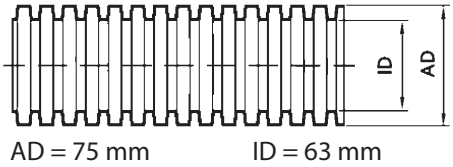
Flexible hose

ROZ-DUOTEC075/063

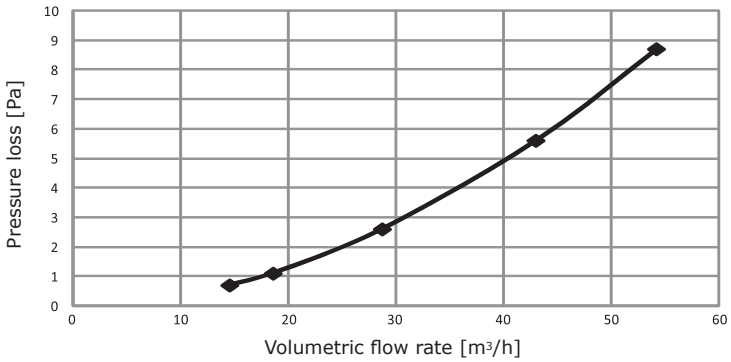
The Duotec flexible hose is intended for the delivery and exhaust of air free of coarse dust, fats, chemical vapours and other pollutants. The hose is suitable for use in ventilation systems with a heat recovery unit. It is recommended that installation is performed at temperatures above 0°C! The recommended air flow rate through the hose is 15-30 m³/h.

Material: The material used is environmentally friendly. PE is resistant to practically all agents (alcohol, fats, mineral oils, fuels). Only highly concentrated oxidising acids can damage the PE. 450N pressure test. The duct dimensions correspond to the requirements of DIN EN 50086-24.

The package includes: 50 m roll with two plugs and one coupling.



Pressure loss per 1m of hose length



KEY TO CODING

ROZ-DUOTEC075/063

ROZ-DUOTEC 075/063 – Duotec PE flexible hose, diameter 075/063 mm, length 50 m

ACCESSORIES

RECOMMENDED ACCESSORIES

Spatial sensor CO_2
CI-CO2-R

Sensor combines CO_2. The snap-in mounting concept stands for easy installation

Spatial sensor RH
CI-RH-R

Capacitive relative humidity sensor with 0-10V analog and relay output.

Signal combiner
CI-AQS-COMBI

The signal combiner for AQS sensors using 0-10V logic which you can connect up to 10 different sensors. The input signal with the highest voltage will be the signal that is on the output terminal.

PIR sensor
CI-PS 1003
Spatial infrared sensor for automatic ventilation based on presence of people in the ventilated area.

Shutting flap
KRTK-A
Shutting flap for tight closing of inlet branch when unit is not in use.

Type of unit	Flap type
HRV14, HRV15, HRV30	KRTK-A160
HRV50, HRV70	KRTK-A250

Servodrive
SERVO-LM230-05
Necessary accessory for automatic control of the closing flap.

Shutting flap with servodrive
KRTK-A-SB
Shutting flap with servodrive for tight closing of the inlet branch when the unit is not in use.

Type of unit	Flap type
HRV14, HRV15, HRV30	KRTK-A-160-SB
HRV50, HRV70	KRTK-A-250-SB

OPTIONAL ACCESSORIES

More details can be found on the relevant page in this catalog

Spare air filters

Filter replacements of different classes and configurations

Type of unit Gerätetyp	Supply air filter Zuluftfilter		Exhaust air filter Abluftfilter	
	Filter code Filtercode	Class of filtration Klasse der Filtrierung	Filter code Filtercode	Class of filtration Klasse der Filtrierung
HRV14EC	HRV-30-FI-F7	ePM 2,5 50%	HRV-30-FI-G4	Coarse 60%
HRV15AC	HRV-30-FI-M5	ePM 10 50%	HRV-30-FI-G4	Coarse 60%
HRV15EC	HRV-30-FI-F7	ePM 2,5 50%	HRV-30-FI-G4	Coarse 60%
HRV30AC	HRV-30-FI-M5	ePM 10 50%	HRV-30-FI-G4	Coarse 60%
HRV30EC	HRV-30-FI-F7	ePM 2,5 50%	HRV-30-FI-G4	Coarse 60%
HRV50AC	HRV-70-FI-M5	ePM 10 50%	HRV-70-FI-G4	Coarse 60%
HRV50EC	HRV-70-FI-F7	ePM 2,5 50%	HRV-70-FI-G4	Coarse 60%
HRV70AC	HRV-70-FI-M5	ePM 10 50%	HRV-70-FI-G4	Coarse 60%
HRV70EC	HRV-70-FI-F7	ePM 2,5 50%	HRV-70-FI-G4	Coarse 60%

Connection sleeve

MK

connection sleeve for easier removal of unit when servicing and for elimination of vibrations in duct.

Electric postheater - (versions **VENUS AirGENIO Comfort** only)

EOKO2 – The postheater

Type of unit	Postheater type
HRV14, HRV15, HRV30 (AirGENIO Comfort)	EOKO2-160-0,8-1-VE
HRV50, HRV70 (AirGENIO Comfort)	EOKO2-250-1,5-1-VE

Communication cable PTPM-RJ11

(version **VENUS Standard** only)

Spare communication cable for control panel and regulation connection.

KP-VK-XX

10,20,30 – length of cable

Threaded rods

ZTZ-M8-1,0 – threaded rod, thread M8, length 1m, suitable for all types of under the ceiling type units.

KEY TO CODING

HRV15AC-CF-P-N-NN-54-R-P0

0 **Spare code**
0 2VV version

P **Access type**
P Right side service access

R **Regulation**
R **VENUS** Standard
C **VENUS** AirGENIO Comfort (EC only)

54 **Filtration (Supply/Exhaust)**
54 Filter class ePM 10 50% / Coarse 60% (version with AC fans only)
74 Filter class ePM 2,5 50% / Coarse 60% (version with EC fans only)

N **Afterheater**
N Without afterheater

N **Preheater**
N Without preheater
E Electric preheater

N **By - pass**
N Without by - pass

P **Installation**
P Installation under the ceiling

CF **Heat exchanger**
CF Counter flow aluminium heat exchanger
EX Counter flow enthalpy heat exchanger

AC **Type of fan**
AC fans
EC fans

15 **Unit size**
14 Unit size 14 (EC version only)
15 Unit size 15
30 Unit size 30
50 Unit size 50
70 Unit size 70

HRV **Type**
HRV Heat recovery unit **VENUS**