ErP A+

Counterflow plate heat recovery exchanger

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

BASIC FEATURES

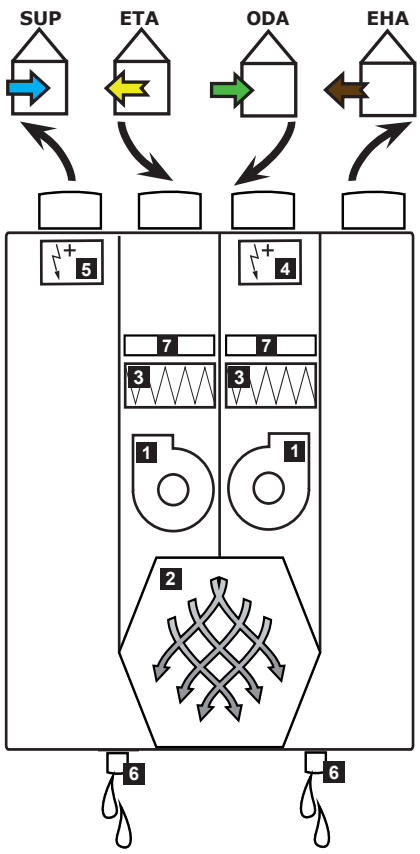
DAPHNE is an energy efficient heat recovery unit designed for installation on a wall in residential applications such as **houses, apartment buildings and low-energy houses.**

- **Nominal air flows: 200, 300, 500, 700 and 900 m³/h**
- Energy class **A / A+**; compliant with Ecodesign directive 1253/2014
- Aluminium counterflow heat exchanger with heat recovery efficiency up to 93% (EN13141-7)
- Quiet operation and low consumption thanks to energy efficient EC fans with low SFP
- **AirGENIO** control system with stepless and fully automatic bypass-damper control (temperature control, free-cooling, anti-freeze protection).
- Manual or automatic control in DCV mode based on AQS sensors (CO_2, RH, VOC)
- Control via ModBUS RTU, TCP or BACnet
- Control via smart device
- Collars with insulated connections for trouble-free installation
- Easy commissioning and user-friendly maintenance

DAPHNE 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.
The unit has an IP rating of IP 20.
It is recommended that the heat recovery project always be **designed by a qualified HVAC designer, engineer or architect.**

OPERATIONAL DIAGRAM

Front view



1. - Fan
2. - Heat exchanger
3. - Filter ISO COARSE 60% (G4)
4. - Electric preheater
5. - Electric post heater
6. - Condensate drain
7. - Pre-filter Coarse 40% (G2 option)

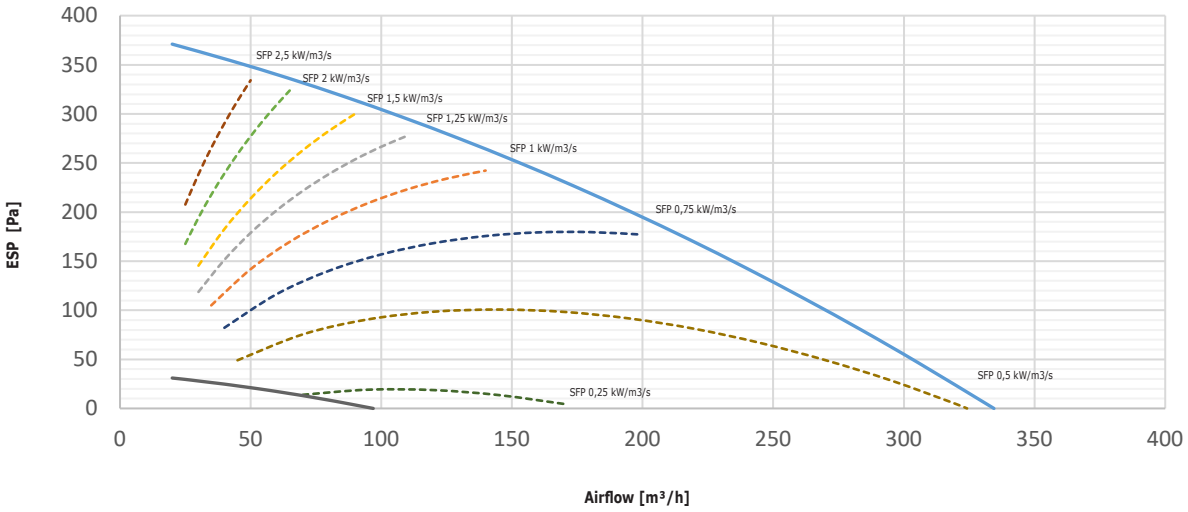
PRIMARY PARAMETERS

COMMISSION DELEGATED REGULATION (EU) No 1254/2014

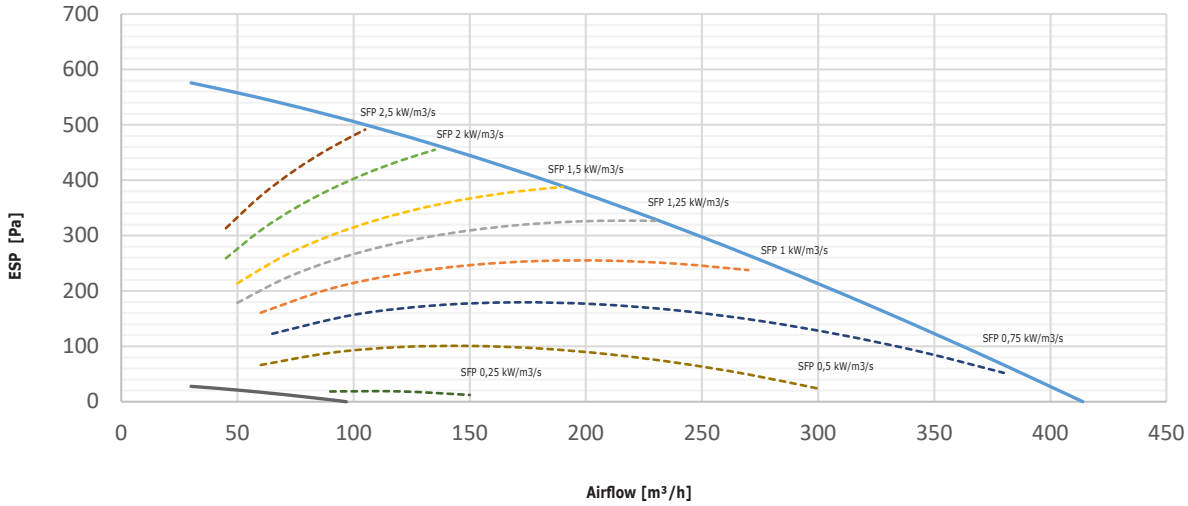
Type	Class
HRDA2-020-CB	A+
HRDA2-020-EB	A
HRDA2-030-CB/EB	A
HRDA2-050-CB/EB	A
HRDA2-070-CB/EB	A
HRDA2-090-CB/EB	A

SFP=fan power input/supply airflow (kW/m3/s)

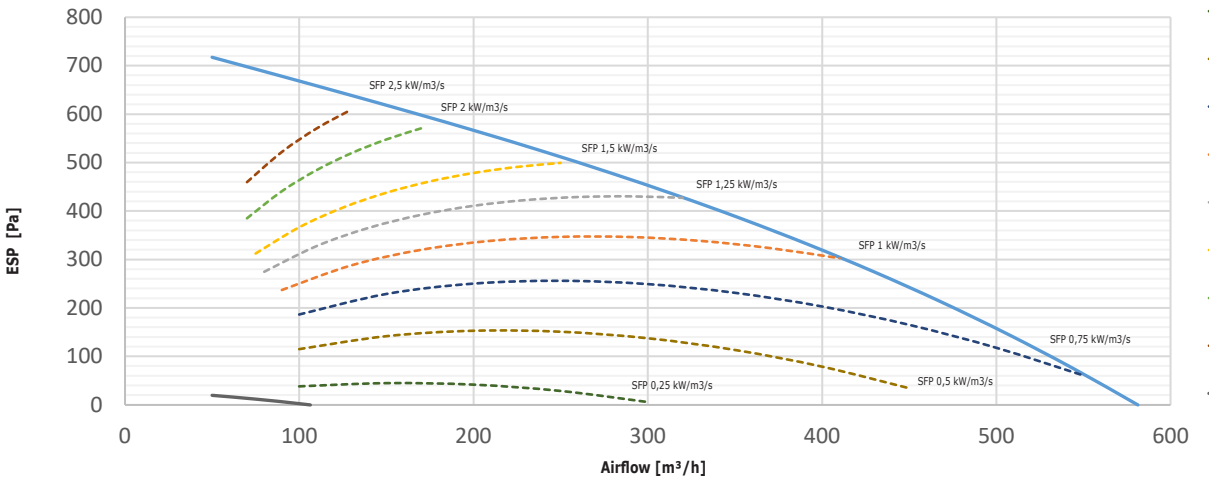
HRDA-020 - CB/EB



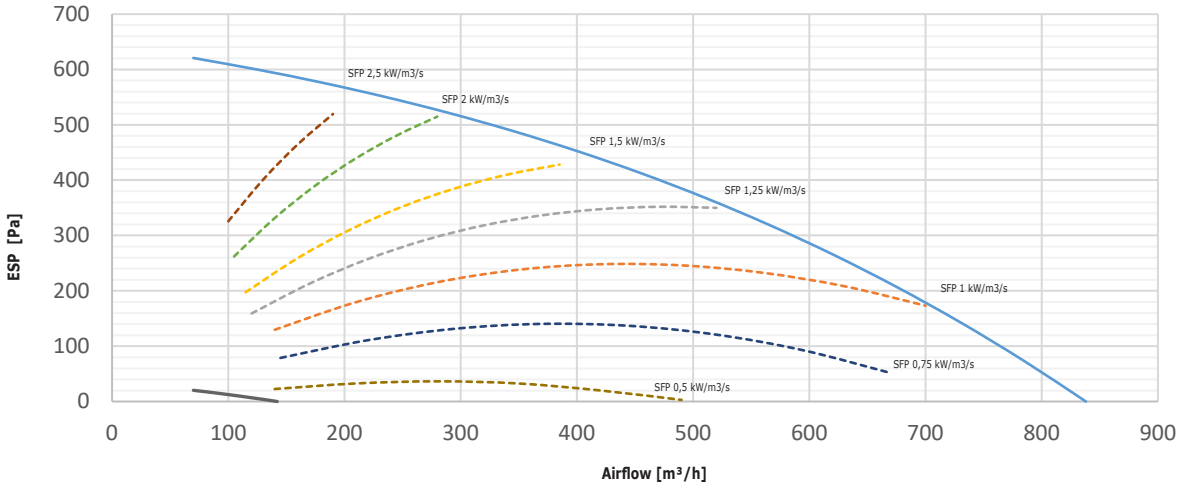
HRDA-030 - CB/EB



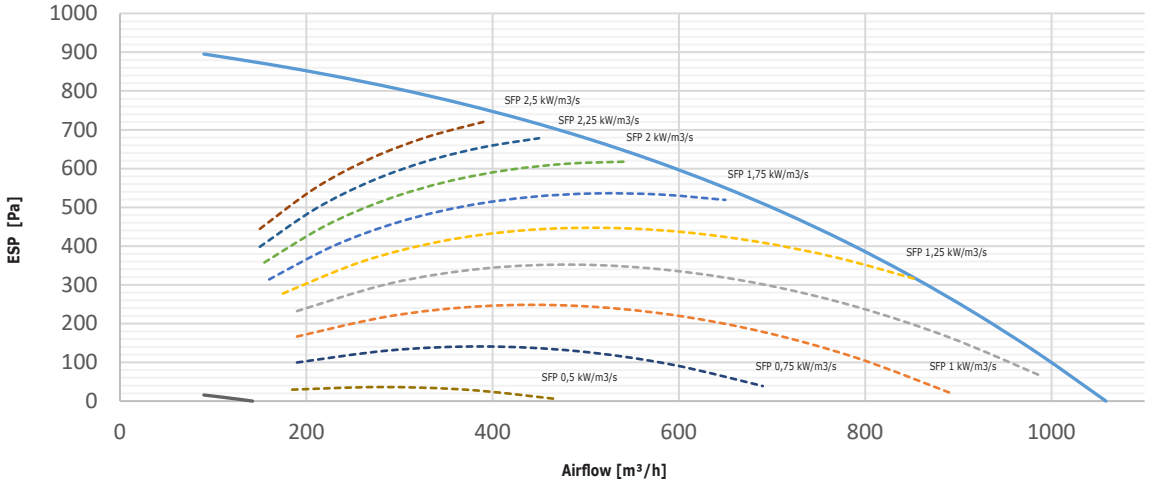
HRDA-050 - CB/EB



HRDA-070 - CB/EB

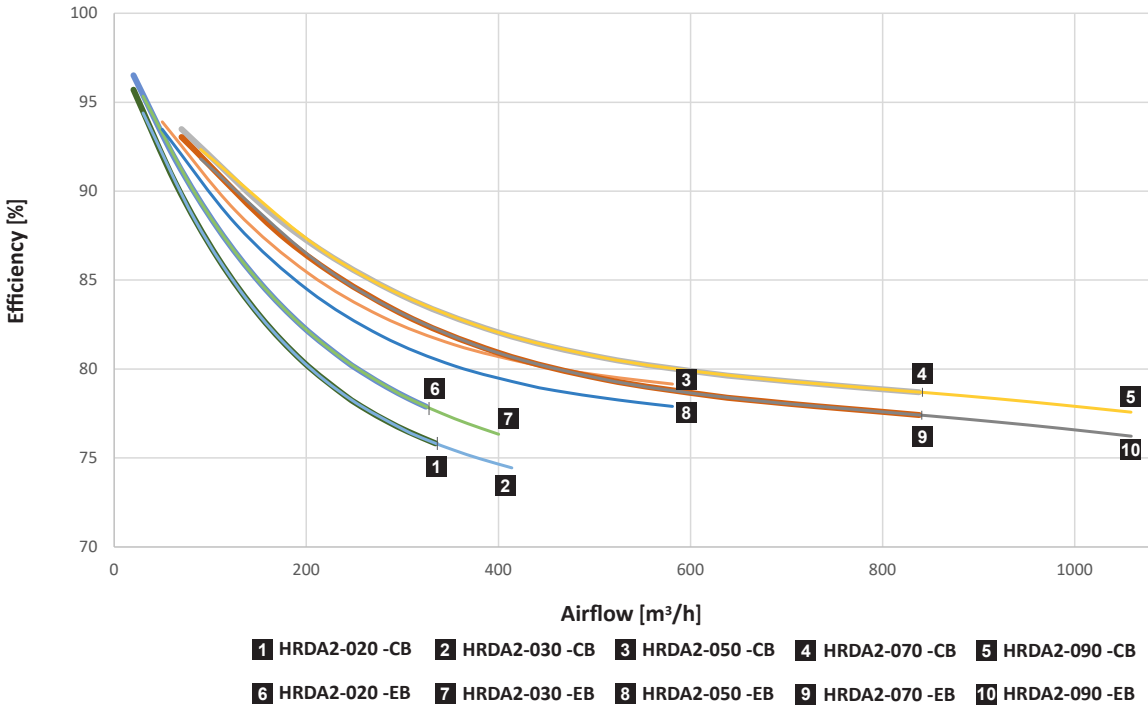


HRDA-090 - CB/EB



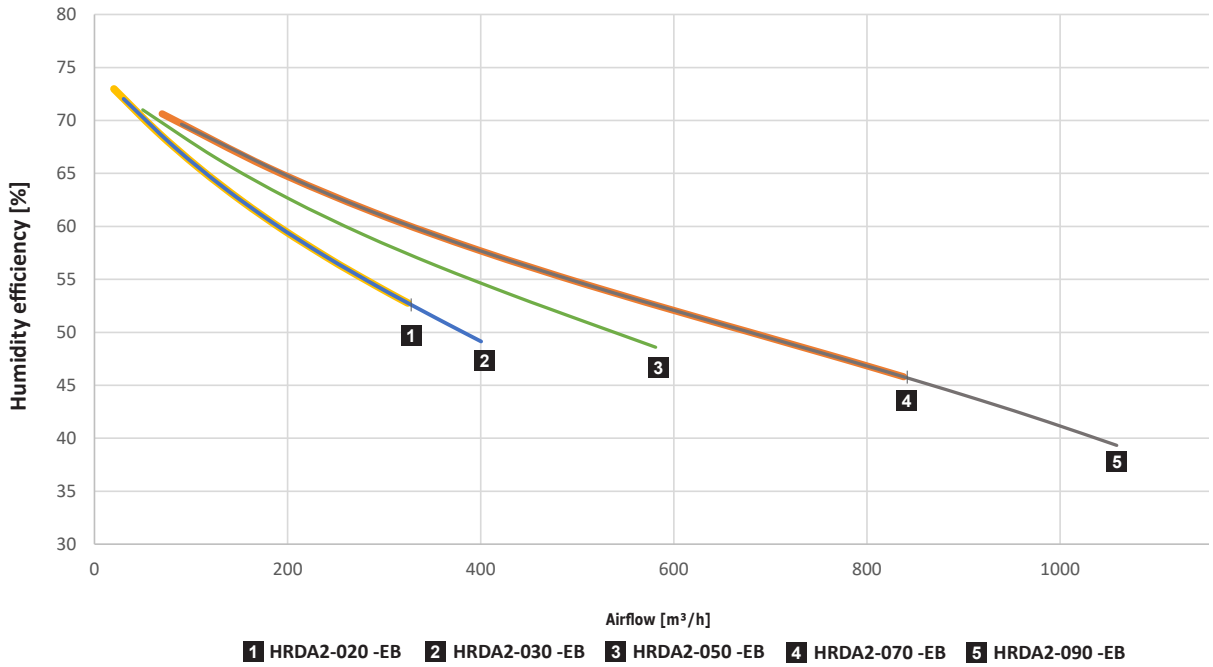
Heat recovery efficiency

According to EN13141-7 ... T1 (with a balanced mass flow)
Temperature - Supply in 7°C, Relative humidity - supply in 80%
Temperature - Exhaust in 20°C, Relative humidity - exhaust in 38%



Humidity recovery efficiency:

The data is measured under following conditions EN 13141-7 ... T2:
Outdoor air temperature is +2°C, relative humidity 84%
Indoor air temperature is +20°C, relative humidity 59%



Basic technical parameters:

Type	Air flow [m³/h]	Phase [No.]	Voltage [V]	Frequency [Hz]	Max. fan power [W]	Power input of preheater [kW]	Power input of afterheater [kW]	Total current [A]	Weight [kg]
HRDA2-020... ES0C	200	1	230	50/60	120	0,6	-	3,3	50
HRDA2-020... EE1C	200	1	230	50/60	120	0,6	0,8	6,8	51
HRDA2-020... XE1C	200	1	230	50/60	120	-	0,8	4,2	50
HRDA2-020... XS0C	200	1	230	50/60	120	-	-	0,7	49
HRDA2-030... ES0C	300	1	230	50/60	170	0,6	-	3,9	50
HRDA2-030... EE1C	300	1	230	50/60	170	0,6	0,8	7,4	51
HRDA2-030... XE1C	300	1	230	50/60	170	-	0,8	4,8	50
HRDA2-030... XS0C	300	1	230	50/60	170	-	-	1,3	49
HRDA2-050... ES0C	500	1	230	50/60	240	1,2	-	6,9	70
HRDA2-050... EE1C	500	1	230	50/60	240	1,2	0,8	10,4	71
HRDA2-050... XE1C	500	1	230	50/60	240	-	0,8	5,2	70
HRDA2-050... XS0C	500	1	230	50/60	240	-	-	1,7	68
HRDA2-070... ES0C	700	1	230	50/60	400	1,8	-	10,5	88
HRDA2-070... EE1C	700	3	400	50/60	400	1,8	1,2	7,8	89
HRDA2-070... XE1C	700	1	230	50/60	400	-	1,2	7,9	88
HRDA2-070... XS0C	700	1	230	50/60	400	-	-	2,7	87
HRDA2-090... ES0C	900	1	230	50/60	800	1,8	-	12,8	88
HRDA2-090... EE1C	900	3	400	50/60	800	1,8	1,2	7,8	89
HRDA2-090... XE1C	900	1	230	50/60	800	-	1,2	10,2	88
HRDA2-090... XS0C	900	1	230	50/60	800	-	-	5	87

Noise specifications:

HRDA2-020

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
HRDA2-020	200	150	25	40	51	44	39	37	28	22	**52**	**31**
	150		24	40	51	43	37	35	27	20	**52**	**30**
	100		24	37	49	39	34	32	25	19	**49**	**27**
	50		25	34	45	35	31	29	24	19	**45**	**24**

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	200	150	42	50	52	42	41	40	32	18	**55**
SUP			43	51	53	43	43	41	33	19	**55**
ETA			47	55	60	50	44	46	41	30	**61**
ODA			48	56	61	51	45	48	43	32	**62**

HRDA2-030

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
HRDA2-030	300	150	33	41	50	58	50	47	38	32	**59**	**38**
	250		34	39	52	49	47	45	36	28	**55**	**33**
	200		33	38	51	45	44	43	33	26	**53**	**31**
	150		32	37	49	44	42	40	32	25	**51**	**29**

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	300	150	50	57	59	56	55	51	43	33	**63**
SUP			51	59	59	58	56	52	44	36	**64**
ETA			54	61	64	67	56	58	55	49	**70**
ODA			55	62	64	71	57	59	55	50	**72**

HRDA2-050

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
HRDA2-050	500	150	28	44	50	51	48	49	37	28	**55**	**33**
	400		29	42	47	49	44	46	32	24	**53**	**31**
	300		26	40	46	44	41	43	31	22	**50**	**28**
	200		23	39	45	40	38	40	31	21	**48**	**26**

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	500	150	43	52	51	51	48	50	43	36	**57**
SUP			44	52	52	50	48	51	44	35	**57**
ETA			49	57	57	57	55	58	54	49	**64**
ODA			49	57	58	57	56	59	55	49	**65**

HRDA2-070

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
HRDA2-070	700	150	39	48	58	53	52	52	42	36	**61**	**39**
	600		37	47	57	50	50	49	39	32	**59**	**37**
	500		36	46	55	47	48	47	37	29	**57**	**35**
	400		35	45	53	44	45	44	35	26	**55**	**33**
	300		34	46	51	41	43	41	34	26	**53**	**31**
	200		34	47	49	39	40	38	33	27	**51**	**29**
	100		34	49	47	36	38	36	33	32	**51**	**29**

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	150	47	55	58	55	52	51	42	35	**62**
SUP			48	56	58	55	53	52	43	36	**62**
ETA			54	62	65	62	60	57	54	49	**69**
ODA			54	62	65	63	61	58	54	49	**69**

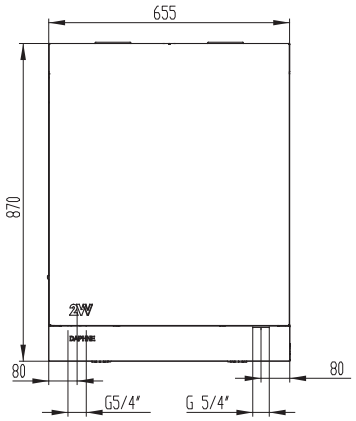
HRDA2-090

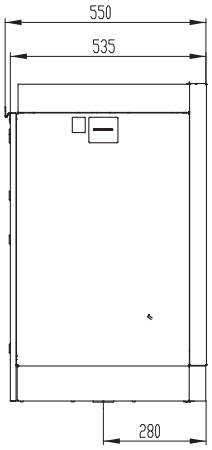
Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]	L_{PA} [dB] at 3m
HRDA2-090	900	150	46	53	58	59	58	56	49	45	**64**	**42**
	750		41	50	59	56	54	54	44	39	**62**	**40**
	600		38	48	58	52	51	50	40	33	**60**	**38**
	450		36	46	56	47	47	46	37	28	**57**	**35**
	300		34	46	52	42	44	42	35	26	**54**	**32**
	150		34	48	48	38	39	38	33	29	**52**	**30**

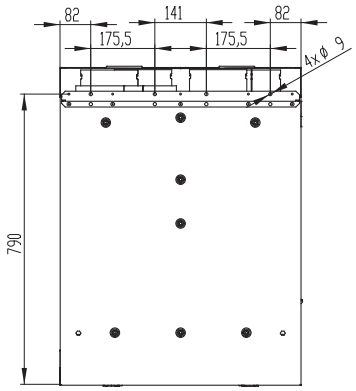
Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band LwA (dB(A))								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]
EHA	900	150	50	58	59	60	58	57	48	43	**65**
SUP			50	59	59	60	58	57	48	43	**65**
ETA			56	65	65	69	66	63	59	56	**73**
ODA			57	65	65	69	66	63	59	55	**73**

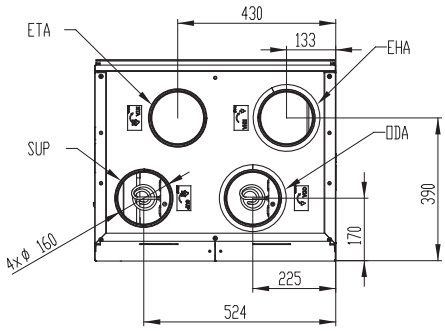
DIMENSIONS

HRDA2-020 + HRDA2-030

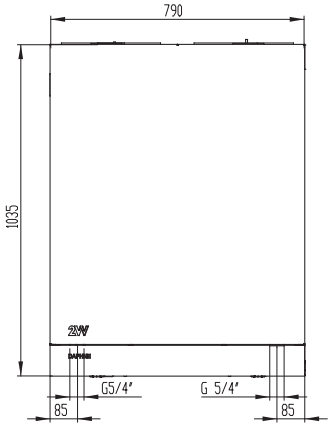


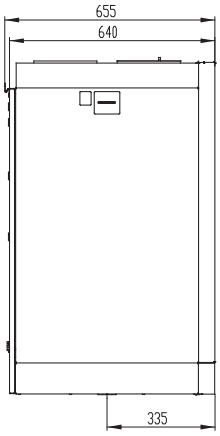


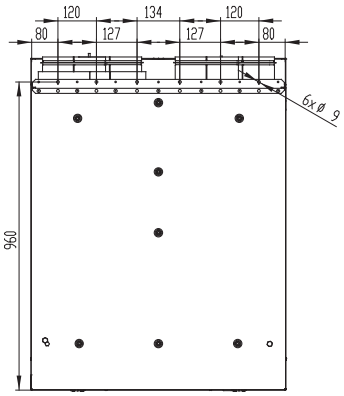


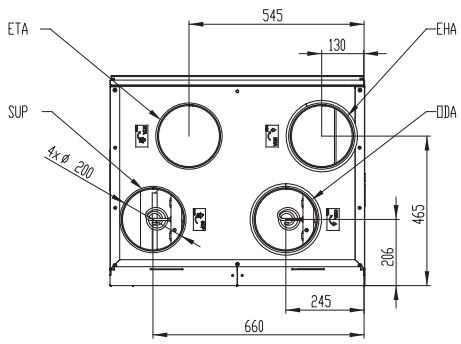


HRDA2-050

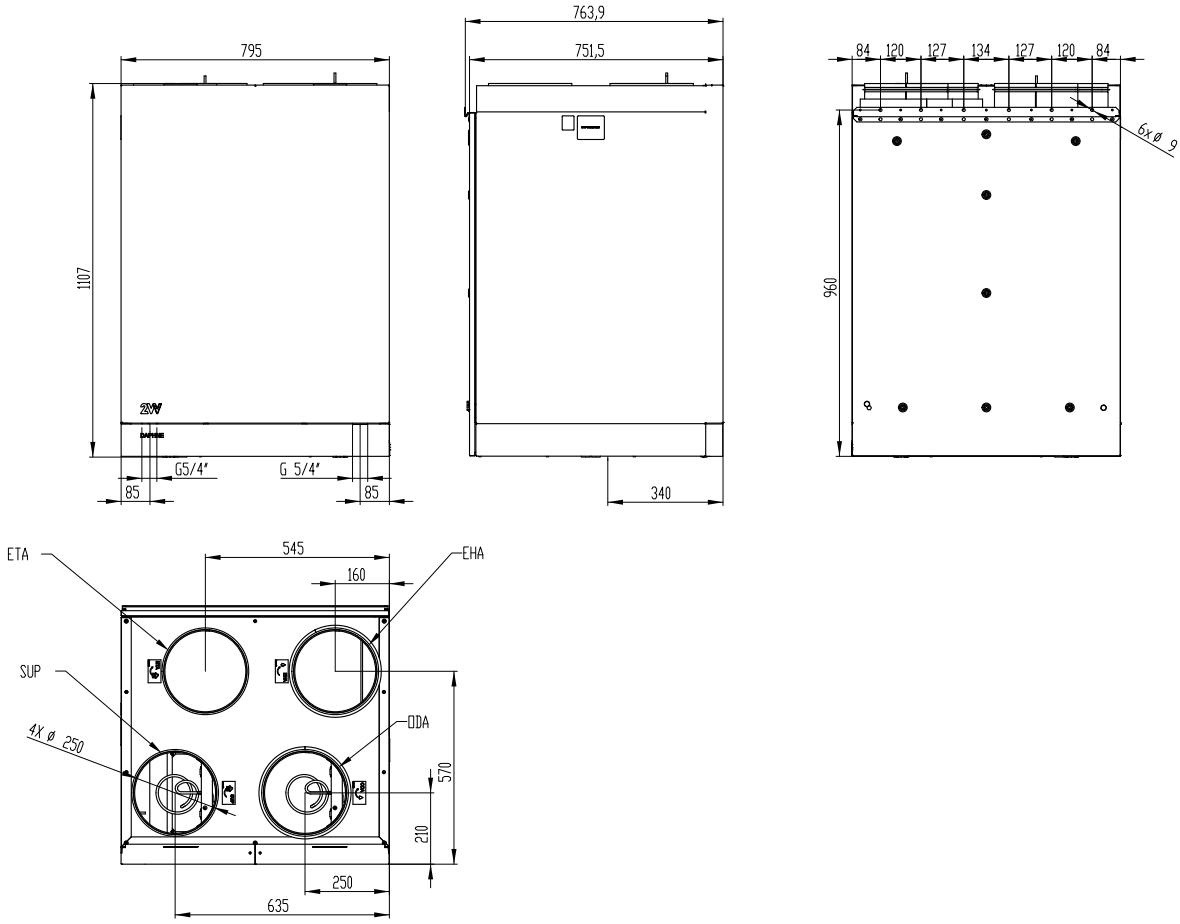




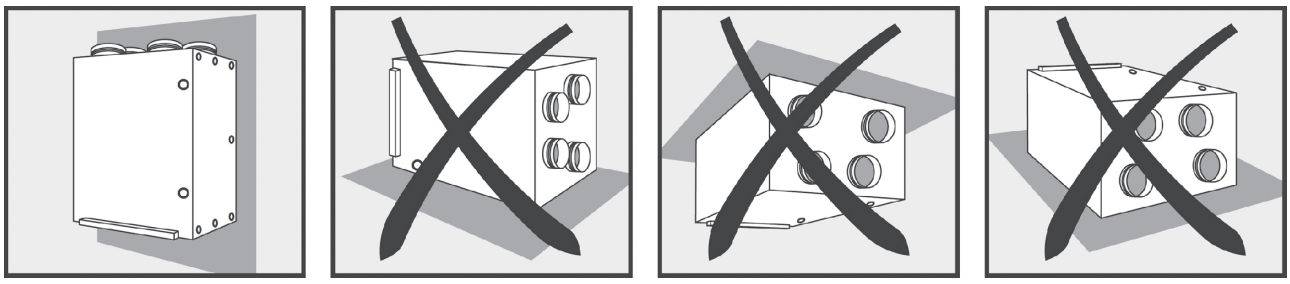




HRDA2-070 + HRDA2-090

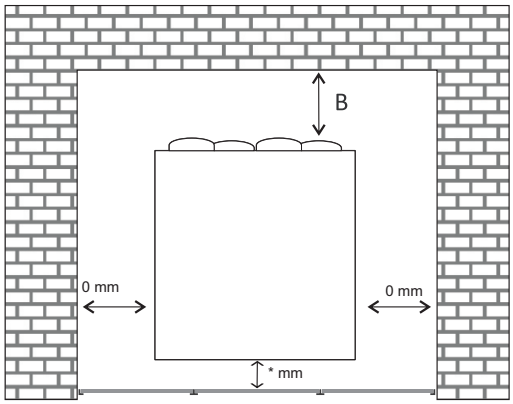


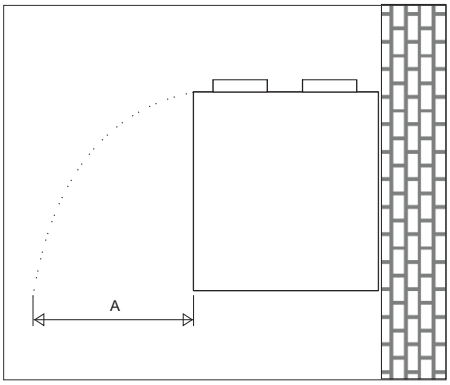
INSTALLATION AND ASSEMBLY



- The unit must be installed so there is adequate access for maintenance, servicing or disassembly.

Necessary clearances for service access



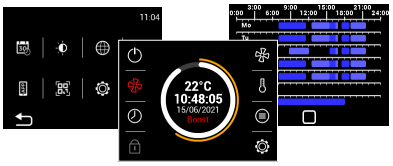


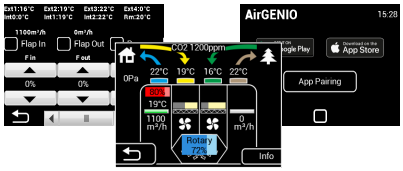
* It is necessary to provide enough space for siphon connection.

Type	Dimension A (mm)	Dimension B (mm)
HRDA2-020	500	350
HRDA2-030	500	350
HRDA2-050	600	500
HRDA2-070	1100	700
HRDA2-090	1100	700

CONTROLS

AirGENIO COMFORT - Main control functions





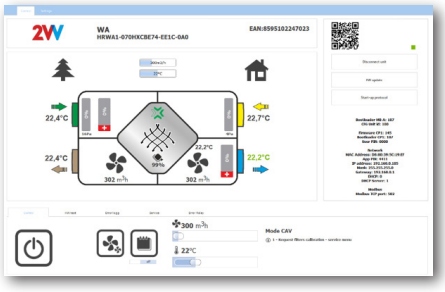
- Touch control
- Stepless fans (0-10V)
- Stepless afterheating (internal Electrical: SSR)
- Stepless automatic regulation of preheating
- Integrated timer (daily, weekly)
- Optional connection of sensors: $C0_2$, RH, VOC (0-10)
- Stepless Bypass (temperature control: freecooling, antifreeze protection)
- Offset fan adjustment (over-pressure and underpressure)
- Indication of filter clogging
- DCV ventilation mode
- BOOST function - intensive air flow at maximum power 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:

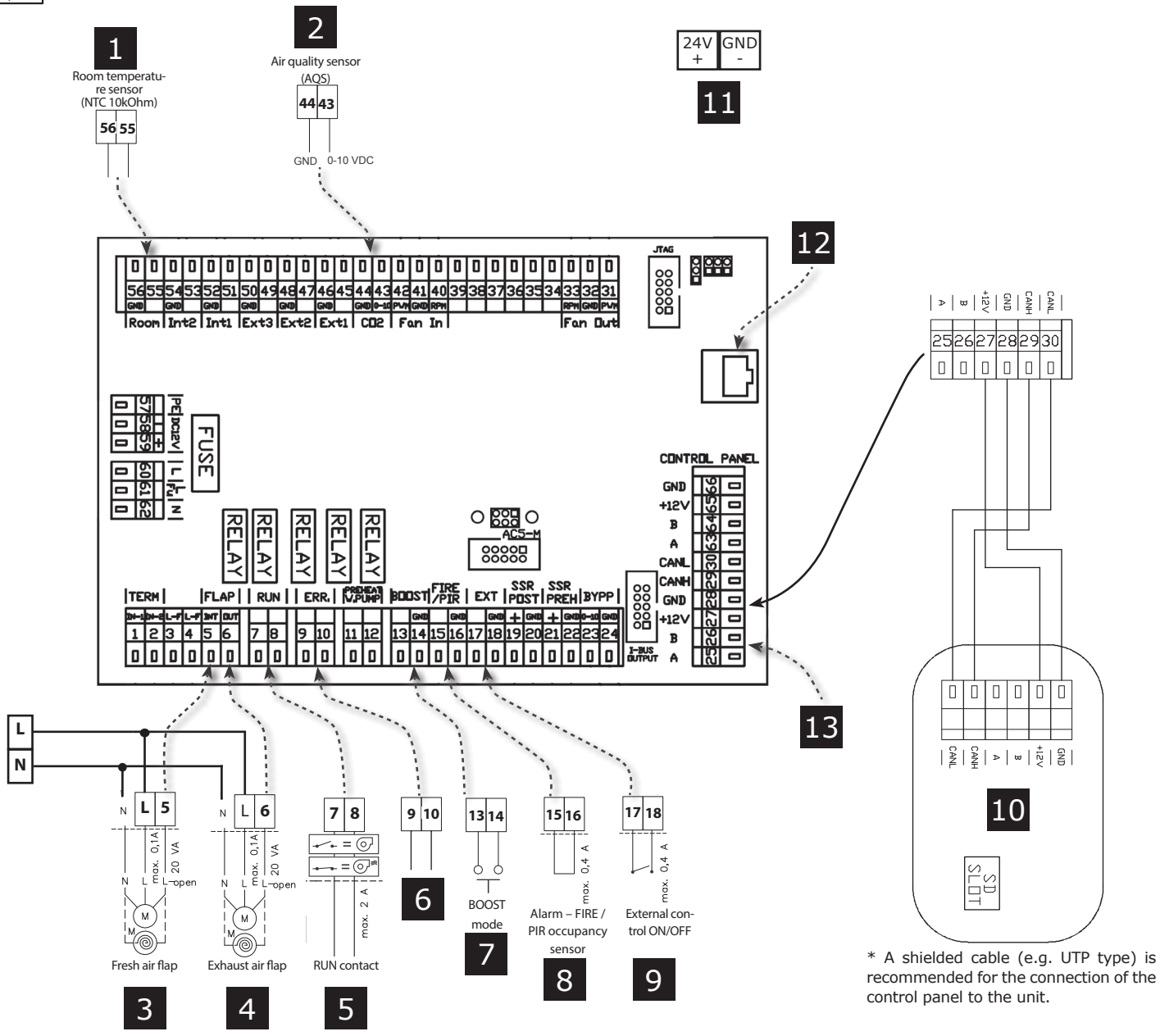
- Product control on your smartphone
- Info about operation status
- Notifications – request for service, filter exchange, error status, etc.
- Download the 2VV AirGENIO APP and control it remotely from your smart phone!

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



* 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)

ACCESSORIES

REQUIRED ACCESSORIES

Condensate siphon

SK-AKS3

Ball Siphon for direct connection to the unit.

RECOMMENDED ACCESSORIES

Filtration inserts

Replacement filtration inserts of various filtration classes and configurations.

Unit type	COARSE 40%	COARSE 60% - standard	COARSE 90%	ePM1 60%
HRDA-020	HRDA2-20-30-FI-G2	HRDA2-20-30-FI-G4	HRDA2-20-30-FI-M5	HRDA2-20-30-FI-F7
HRDA-030				
HRDA-050	HRDA2-50-FI-G2	HRDA2-50-FI-G4	HRDA2-50-FI-M5	HRDA2-50-FI-F7
HRDA-070	HRDA2-70-90-FI-G2	HRDA2-70-90-FI-G4	HRDA2-70-90-FI-M5	HRDA2-70-90-FI-F7
HRDA-090				

Frame for pre-filter

Necessary for pre-filter COARSE 40%

Unit type	Frame for pre-filter COARSE 40%
HRDA-020	HRDA2-20-30-G2-RA
HRDA-030	
HRDA-050	HRDA2-50-G2-RA
HRDA-070	HRDA2-70-90-G2-RA
HRDA-090	

ACCESSORIES

CO_2 duct sensor
CI-EE850-C3xx-FP

The transmitter is ideally suited for duct mounting in the fields of building management and demand controlled ventilation. The elegant, compact housing enables easy installation directly at the ventilation duct using a mounting flange.

Relative humidity duct sensor
CI-LCN-FTK140VV

Duct sensor for measuring relative humidity in air-conditioning systems

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

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.

Servodrive
SERVO-LM230-05

Necessary accessory for automatic control of the closing flap.

Shutting flap
KRTK-A

Type	Shutting flap
HRDA2-020	KRTK-A160
HRDA2-030	KRTK-A160
HRDA2-050	KRTK-A200
HRDA2-070	KRTK-A250
HRDA2-090	KRTK-A250

ACCESSORIES

Shutting flap with servo drive
KRTK-A-SB

Type	Shutting flap
HRDA2-020	KRTK-A-160-SB
HRDA2-030	KRTK-A-160-SB
HRDA2-050	KRTK-A-200-SB
HRDA2-070	KRTK-A-250-SB
HRDA2-090	KRTK-A-250-SB

Back drought shutter
RSKR-Z

Type	shutter
HRDA2-020	RSKR-Z160
HRDA2-030	RSKR-Z160
HRDA2-050	RSKR-Z200
HRDA2-070	RSKR-Z250
HRDA2-090	RSKR-Z250

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

Base
HRDA2-BASE-xxx

Type	Base
HRDA2-020	HRDA2-BASE-300
HRDA2-030	
HRDA2-050	HRDA2-BASE-500
HRDA2-070	HRDA2-BASE-900
HRDA2-090	

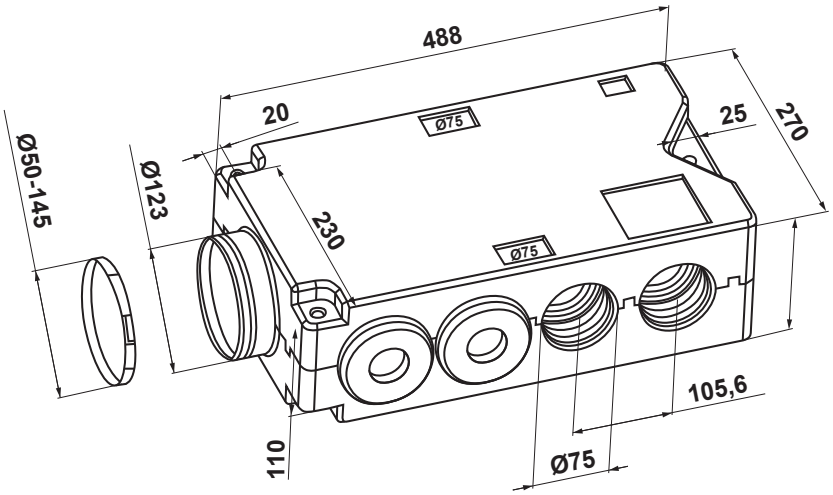
ACCESSORIES

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.

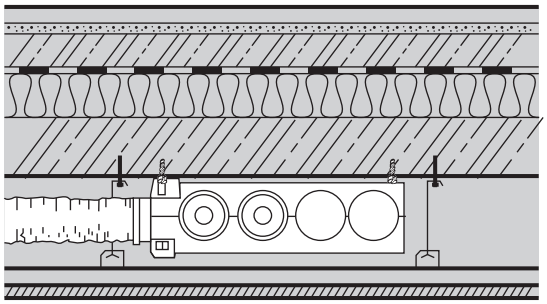
The package includes: Box (inlet with a connection diameter of 125 mm), four removable plugs.

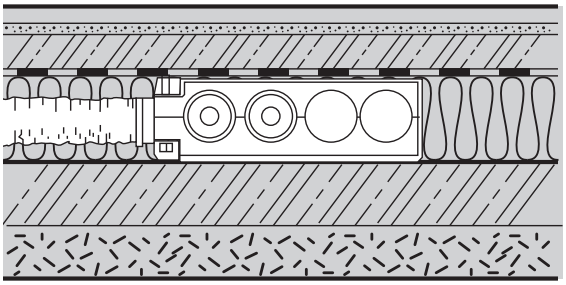


INSTALLATION AND ASSEMBLY

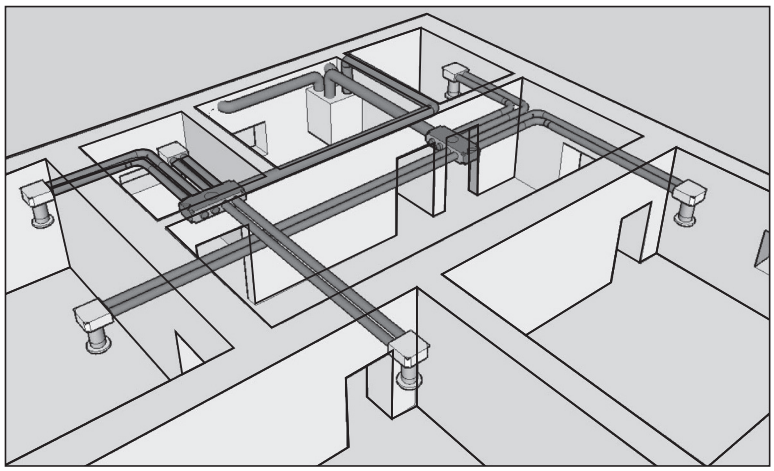
The box can be suspended under a ceiling using three threaded rods or installed into the floor (a layer for spreading the load is necessary).

Ceiling installation





Example of installation



KEY TO CODING

ROZ-EPP-125

125 – Connection diameter 125 mm

ROZ-EPP – Universal distribution, EPP, 8 outlets

ACCESSORIES

RECOMMENDED ACCESSORIES

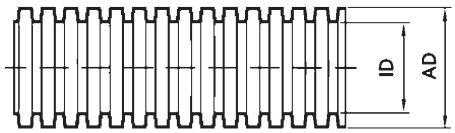
Flexible hose

ROZ-DUOTEC075/061

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.

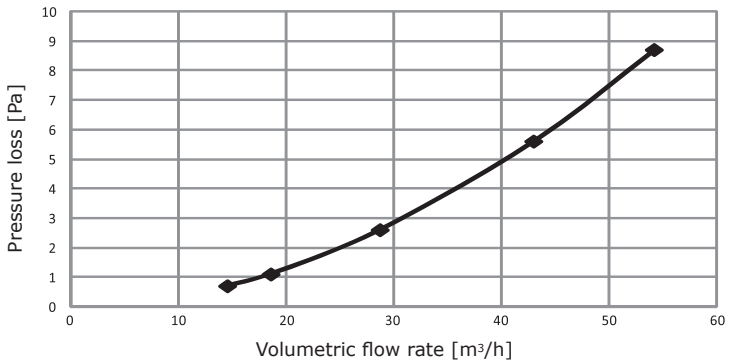
Material: The material used is environmentally friendly. PE is resistant to practically all agents (alcohol, fats, mineral oils, fuels). Only highly concentrated oxidising acids can damage the PE. 450N pressure test. The duct dimensions correspond to the requirements of DIN EN 50086-24.

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



AD = 75 mm ID = 63 mm

Pressure loss per 1m of hose length



KEY TO CODING

ROZ-DUOTEC075/061

ROZ-DUOTEC 075/061 – Duotec PE flexible hose, diameter 075/061 mm, length 50 m

KEY TO CODING

HRDA2-020 U X CB E 44-E E1 C-0 A 0

0 Reserve code

A Version
A Standard

0 Surface coating
0 Standard RAL9016

C Controls
C AirGENIO Comfort control

E1 After heater
S0 Without after heater
E1 Electric after heater

E Preheater
E Electric preheater
X Without preheater

44 Filtration (inlet / outlet)
44 Inlet COARSE 60%
Outlet COARSE 60%

E Typ of fans
E EC fans

CB Heat exchanger
CB Counter flow aluminium heat exchanger with bypass
EB Counter flow enthalpy exchanger with bypass

X Version of access
X Universal

U Installation
U Upper outlets

020 Nominal airflow
020 Nominal flow rate 200 m³/h
030 Nominal flow rate 300 m³/h
050 Nominal flow rate 500 m³/h
070 Nominal flow rate 700 m³/h
090 Nominal flow rate 900 m³/h

HRDA2 type
HRDA2 Heat recovery unit unit **DAPHNE**