



Counterflow plate heat recovery exchanger



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 (CO₂, 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

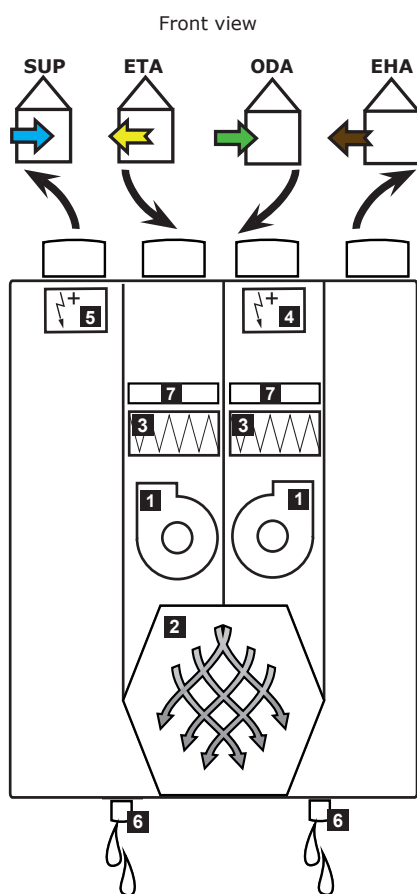
DAPHNE is designed to be operated in a dry indoor environment (relative humidity not exceeding 80%) and at an ambient temperature in the range from +5°C up to +40°C.

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

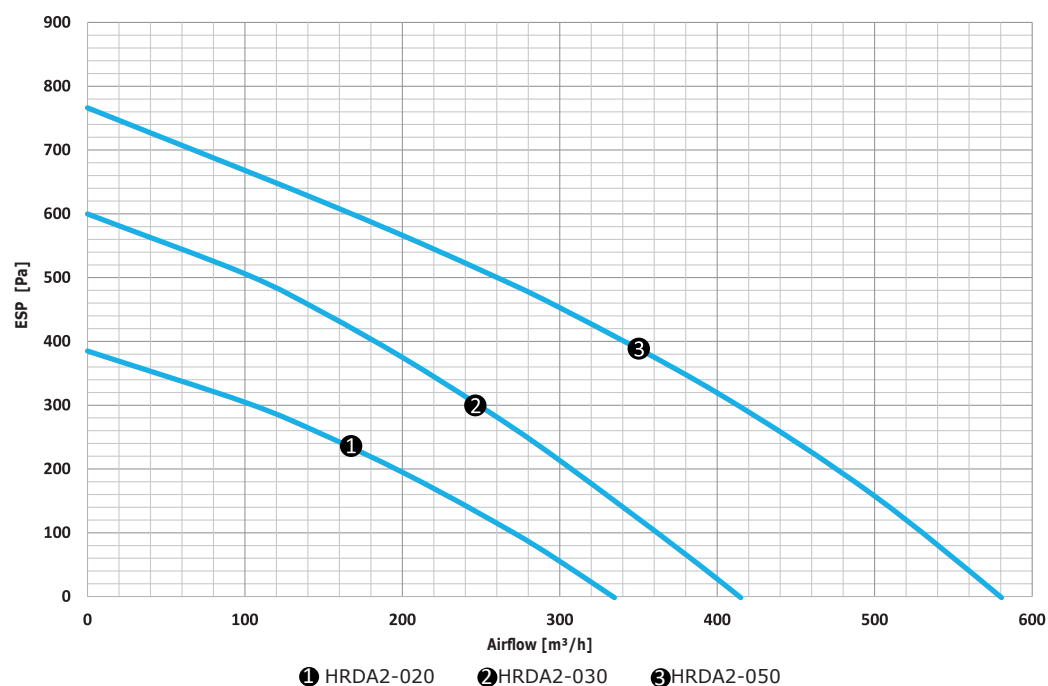


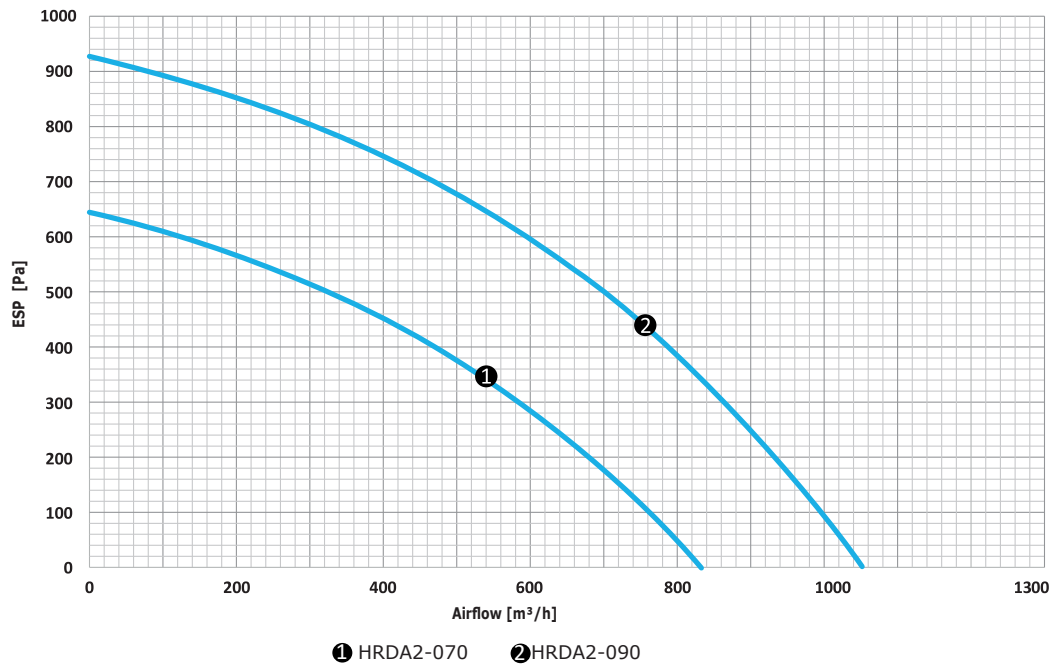
- 1. - Fan
- 2. - Heat exchanger
- 3. - Filter ISO COARSE 60% (G4)
- 4. - Electric preheater
- 5. - Electric post heater
- 6. - Condensate drain
- 7. - Pre-filter Coarse 40% (G2 option)



PRIMARY PARAMETERS

Performance characteristics

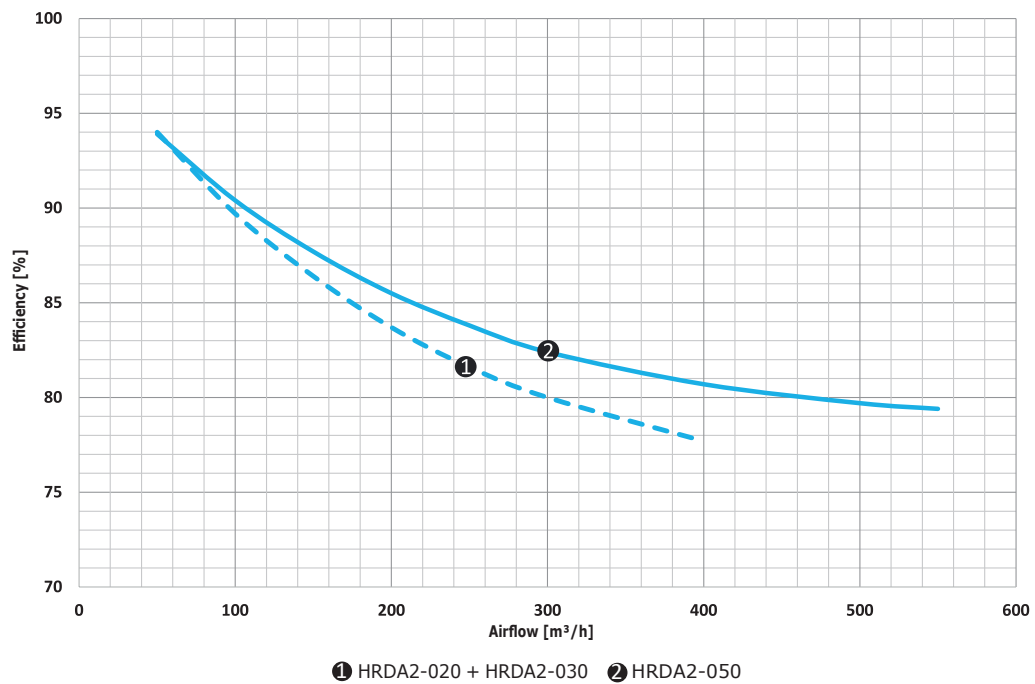


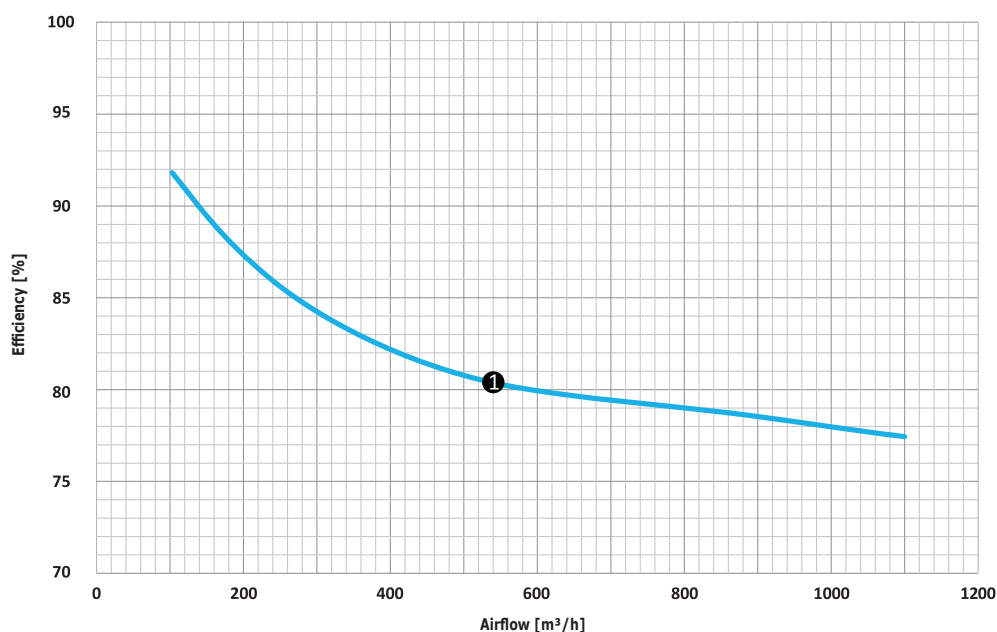
**Heat recovery efficiency:**

According to EN13141-7 (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 %





1 HRDA2-070 + HRDA2-090

COMMISSION DELEGATED REGULATION (EU) No 1254/2014

Type	Class
HRDA2-020	A+
HRDA2-030	A
HRDA2-050	A
HRDA2-070	A
HRDA2-090	A

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	0,8	-	5,1	50
HRDA2-020... EE1C	200	1	230	50/60	120	0,8	0,8	7,5	51
HRDA2-020... XE1C	200	1	230	50/60	120	-	0,8	5,1	50
HRDA2-020... XS0C	200	1	230	50/60	120	-	-	1,6	49
HRDA2-030... ES0C	300	1	230	50/60	170	0,8	-	5,1	50
HRDA2-030... EE1C	300	1	230	50/60	170	0,8	0,8	8,0	51
HRDA2-030... XE1C	300	1	230	50/60	170	-	0,8	5,1	50
HRDA2-030... XS0C	300	1	230	50/60	170	-	-	1,6	49
HRDA2-050... ES0C	500	1	230	50/60	240	1,6	-	7,9	70
HRDA2-050... EE1C	500	1	230	50/60	240	1,6	0,8	11,3	71
HRDA2-050... XE1C	500	1	230	50/60	240	-	0,8	5,5	70
HRDA2-050... XS0C	500	1	230	50/60	240	-	-	2	69
HRDA2-070... ES0C	700	1	230	50/60	400	2,4	-	13,0	88
HRDA2-070... EE1C	700	3	400	50/60	400	2,4	1,2	10,3	89
HRDA2-070... XE1C	700	1	230	50/60	400	-	1,2	10	88
HRDA2-070... XS0C	700	1	230	50/60	400	-	-	4,7	87
HRDA2-090... ES0C	900	1	230	50/60	800	2,4	-	15,4	88
HRDA2-090... EE1C	900	3	400	50/60	800	2,4	1,2	10,3	89
HRDA2-090... XE1C	900	1	230	50/60	800	-	1,2	10	88
HRDA2-090... XS0C	900	1	230	50/60	800	-	-	4,7	87

Noise specifications:**HRDA2-020**

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (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 L _{WA} (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 L _{WA} (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 L _{WA} (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 L _{WA} (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 L _{WA} (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 L _{WA} (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 L _{WA} (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

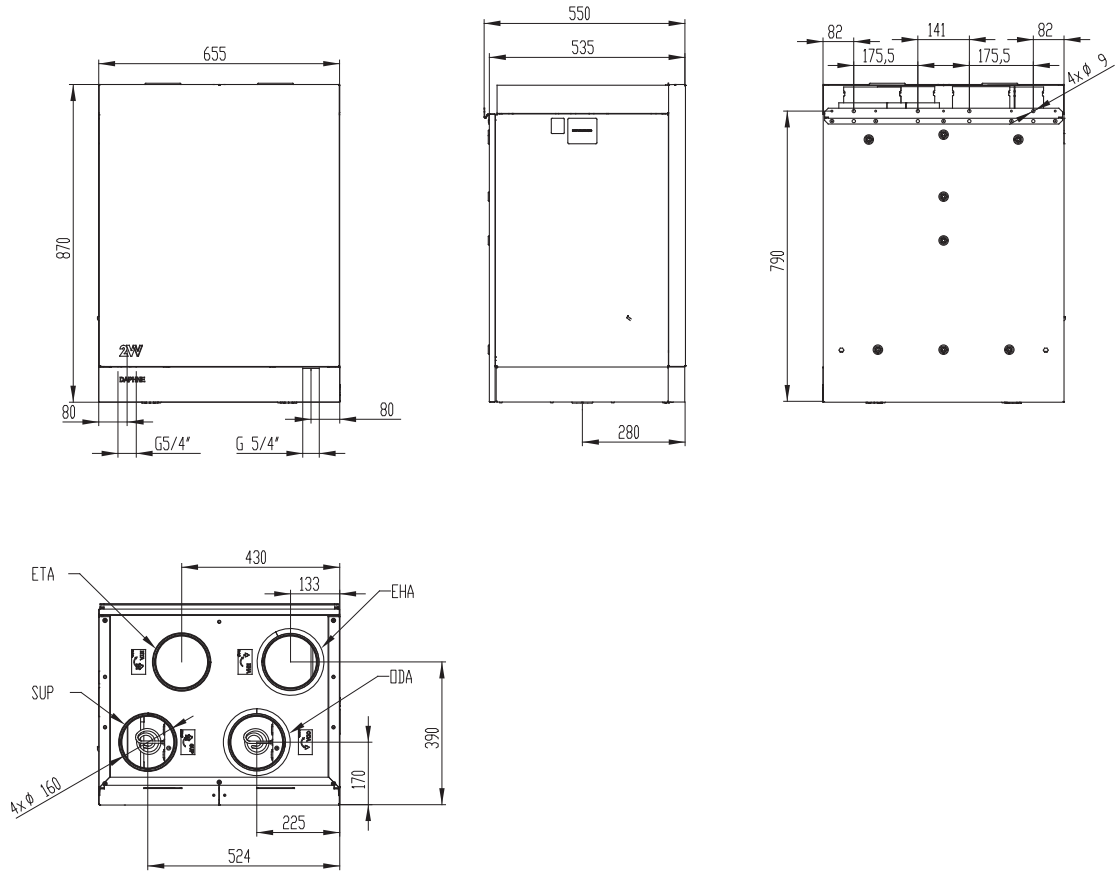
Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
HRDA2-090	900	150	46	53	58	59	58	56	49	45	64	42
	750		41	50	59	56	54	54	44	39	62	40
	600		38	48	58	52	51	50	40	33	60	38
	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 L _{WA} (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	

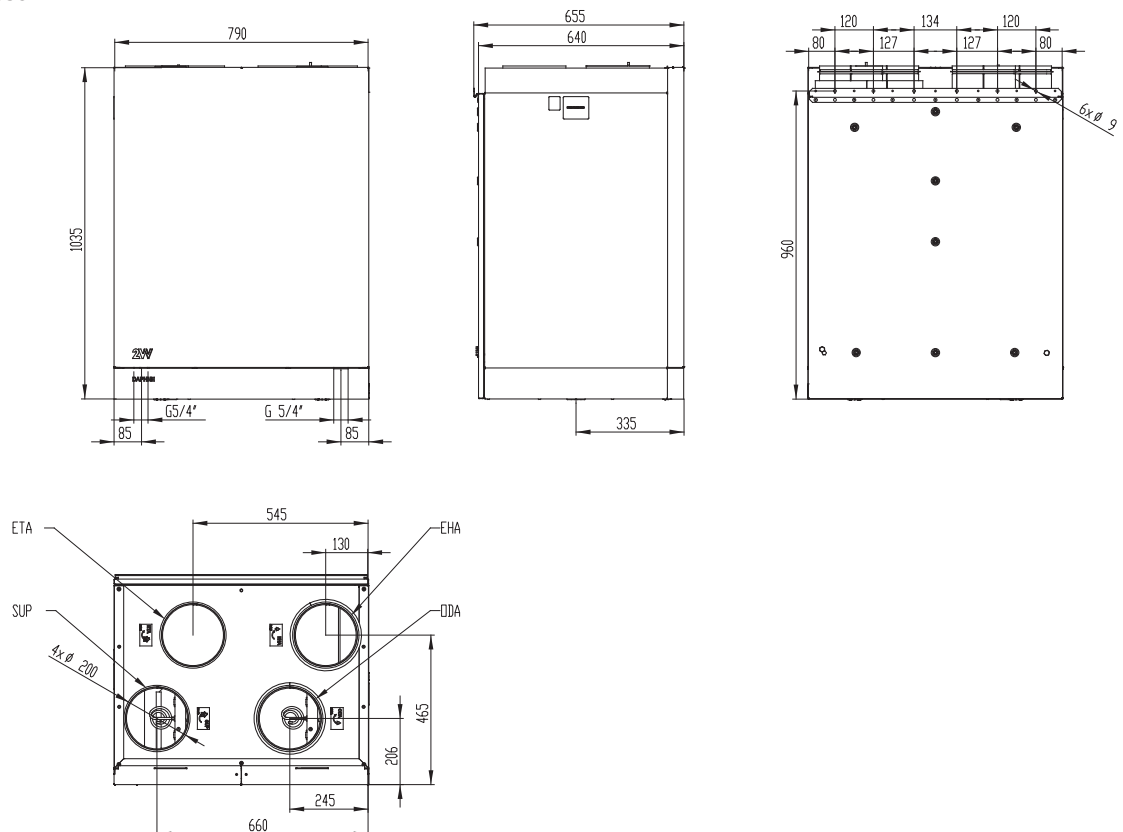


DIMENSIONS

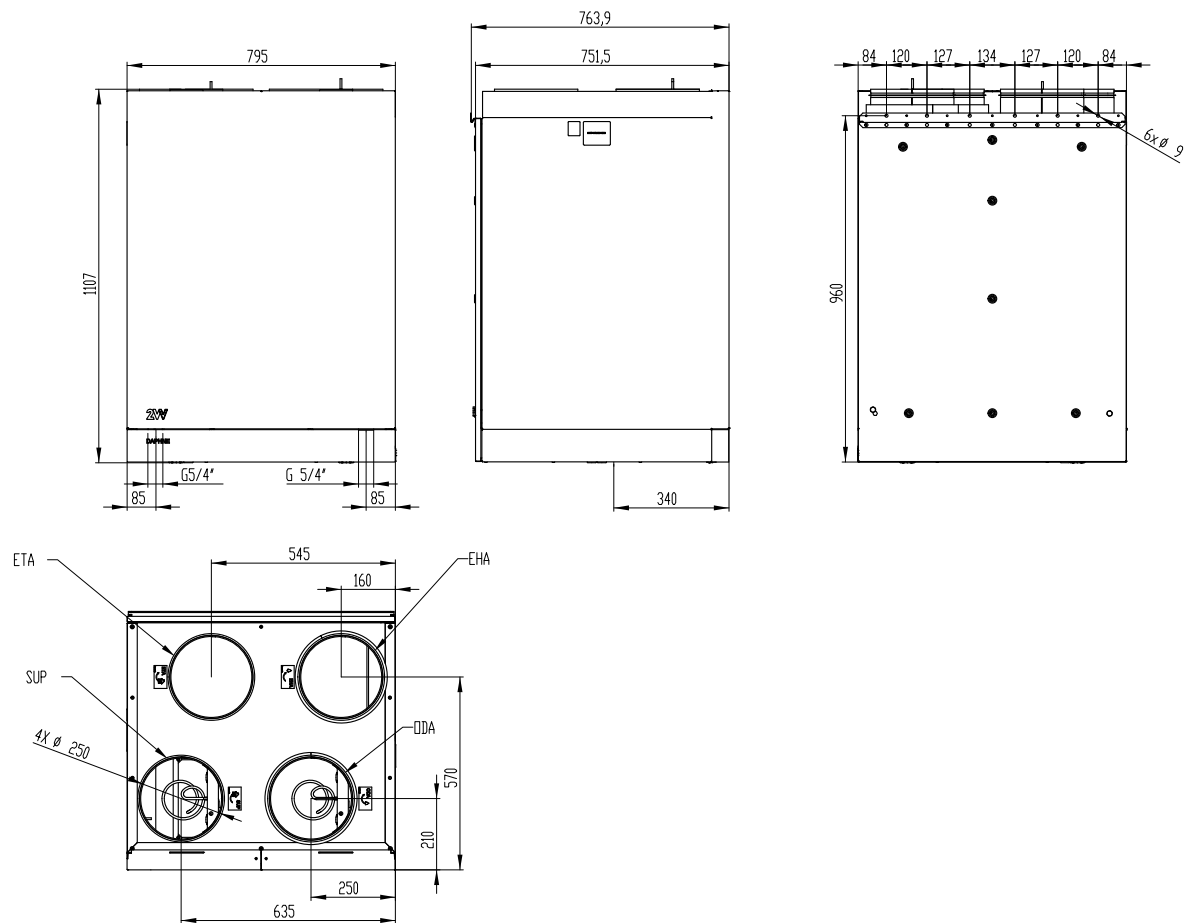
HRDA2-020 + HRDA2-030

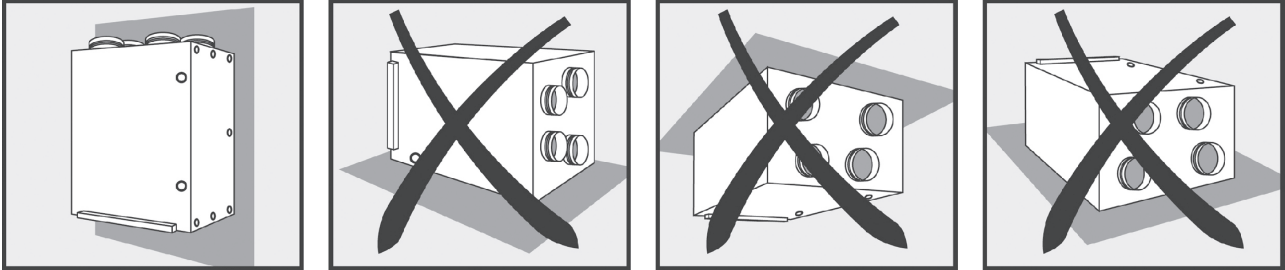


HRDA2-050

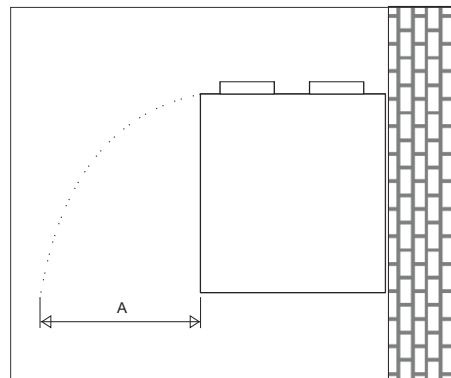
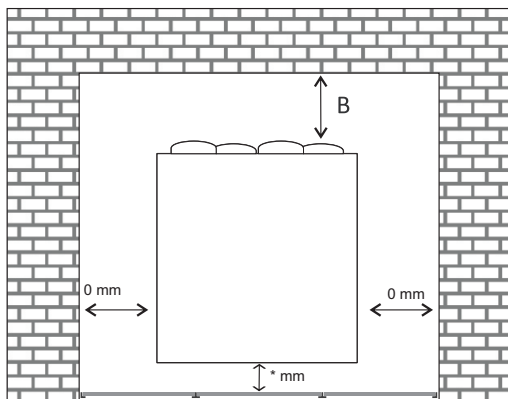


HRDA2-070 + HRDA2-090



**INSTALLATION AND ASSEMBLY**

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

Necessary clearances for service access

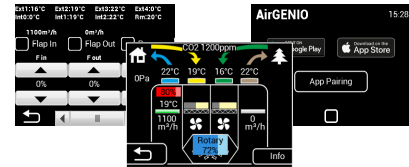
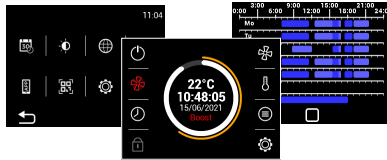
* It is necessary to provide enough space for siphon connection.

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: CO₂, 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

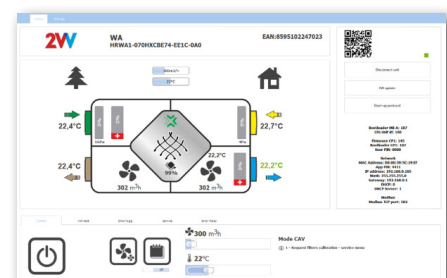
2VV AirGENIO Application:

- 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!



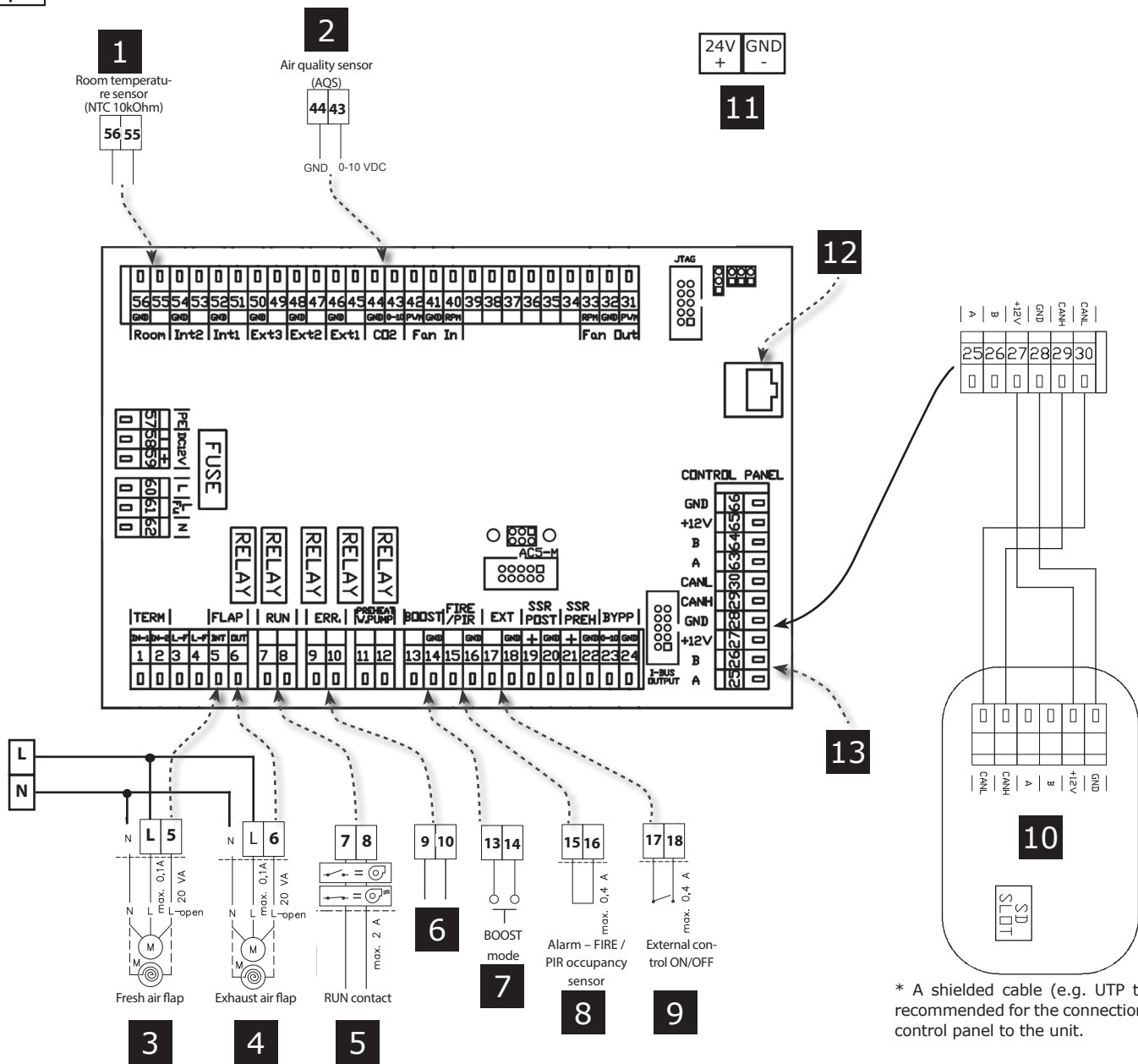
2VV Service software:

- 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****CO₂ 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 CO₂****CI-CO2-R**

Sensor combines CO₂. 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	





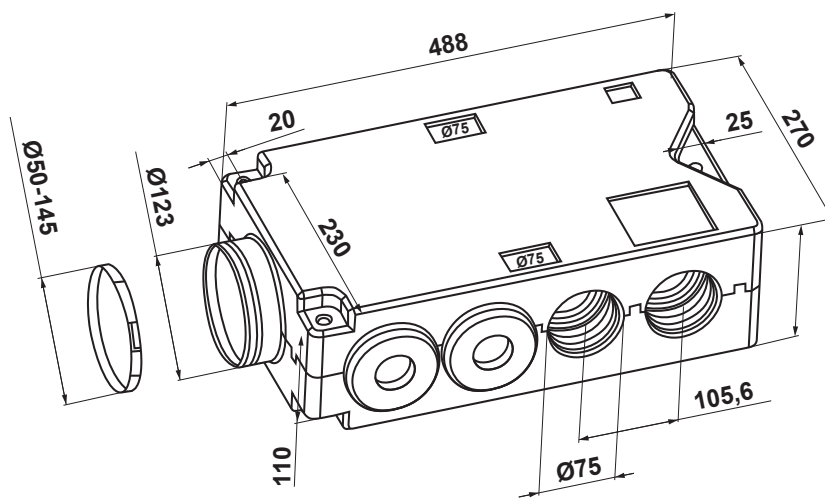
ACCESSORIES

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.

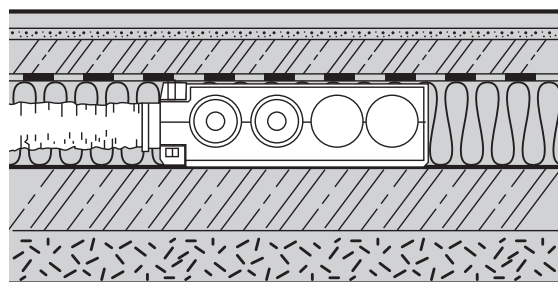
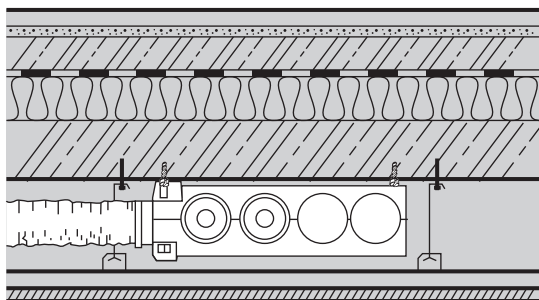




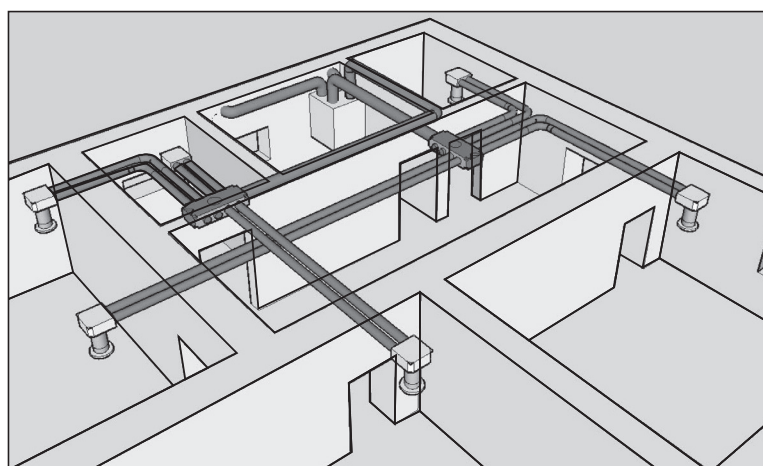
INSTALLATION AND ASSEMBLY

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

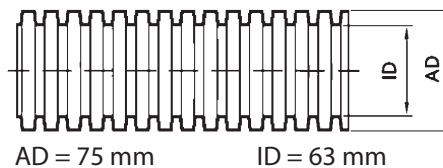
Flexible hose

ROZ-DUOTEC075/061

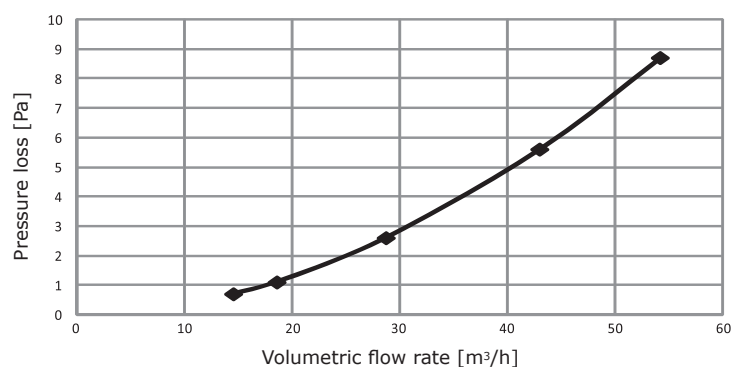
The Duotec flexible hose is intended for the delivery and exhaust of air free of coarse dust, fats, chemical vapours and other pollutants. The hose is suitable for use in ventilation systems with a heat recovery unit. It is recommended that installation is performed at temperatures above 0°C! The recommended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



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
- 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**