



BASIC FEATURES

DAPHNE FLAT is a highly energy-efficient heat recovery unit designed for either ceiling or wall mounting installation and thanks to its super-low profile the unit is highly convenient for interiors with limited space. DAPHNE FLAT is designed for installations in residential premises such as **family houses, apartment buildings, low-energy and passive houses.**

- Nominal airflow **350, 520, 770 m³/h** (at 100Pa)
- Energy class **A / A+**; compliant with Ecodesign directive 1253/2014
- **Super quiet** operation
- Ceiling and Wall installation
- Slim profile convenient for use in premises with limited space
- Energy-efficient EC fans with low SFP and quiet operation
- Aluminium counterflow heat exchanger with recovery efficiency up to 96% (EN13141-7)
- 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)
- BMS control via ModBUS RTU, ModBUS TCP or BACnet
- Control via Smart Device
- Easy installation and maintenance

The 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.

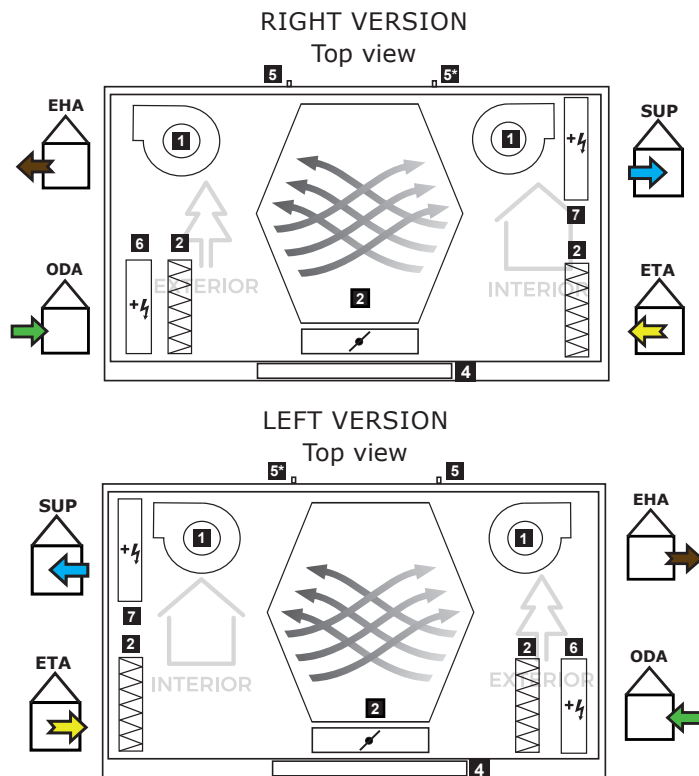
Conditions of use of the enthalpy exchanger: if the outside temperature does not drop below -5°C, the indoor relative humidity is less than 45%, the indoor temperature is up to 23°C so there is no need for condensate drainage. In case of other conditions such as lower outdoor temperature or higher indoor 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.

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 with by-pass flap
- 3 - Air filter
- 4 - Electrical connection (control box)
- 5 - Condensate drain
- 5*- Second condensate drain in places where summer conditions require it
- 6 - Electric preheater
- 7 - Electric post heater



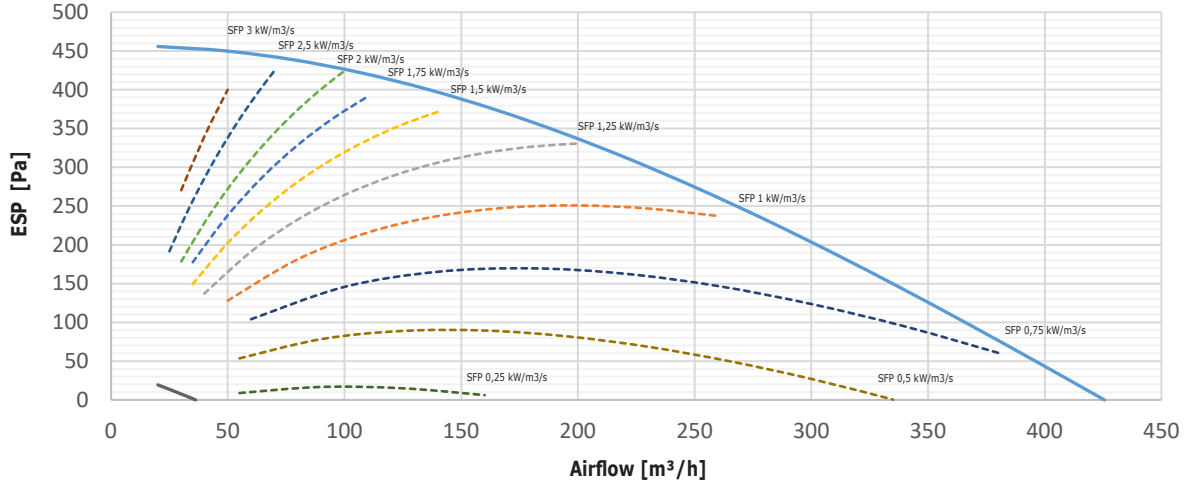
PRIMARY PARAMETERS

COMMISSION DELEGATED REGULATION (EU) No 1254/2014

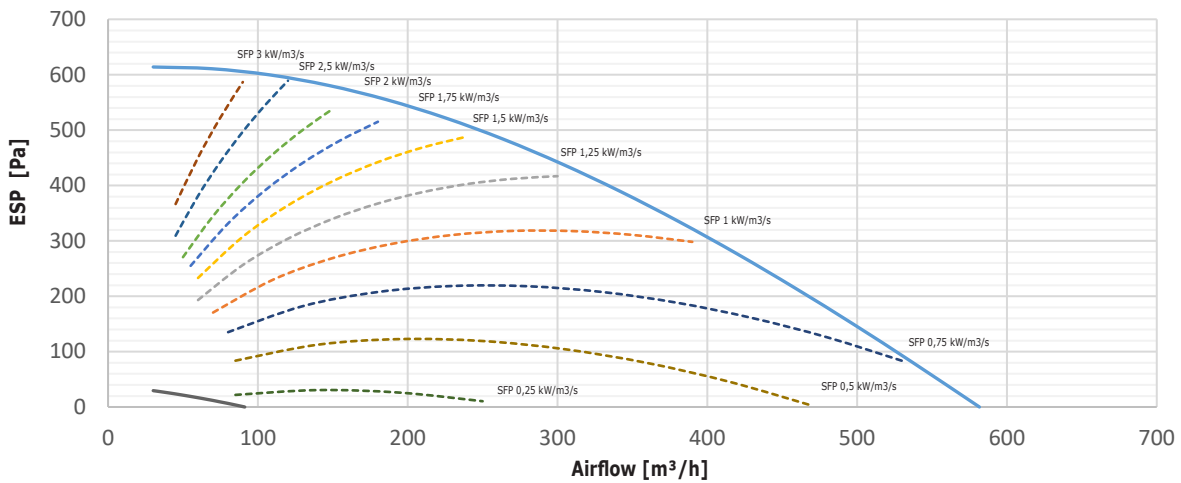
Type	Class
HRDF1-030-CB	A
HRDF1-050-CB	A+
HRDF1-070-CB	A+
HRDF1-030-EB	A
HRDF1-050-EB	A
HRDF1-070-EB	A

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

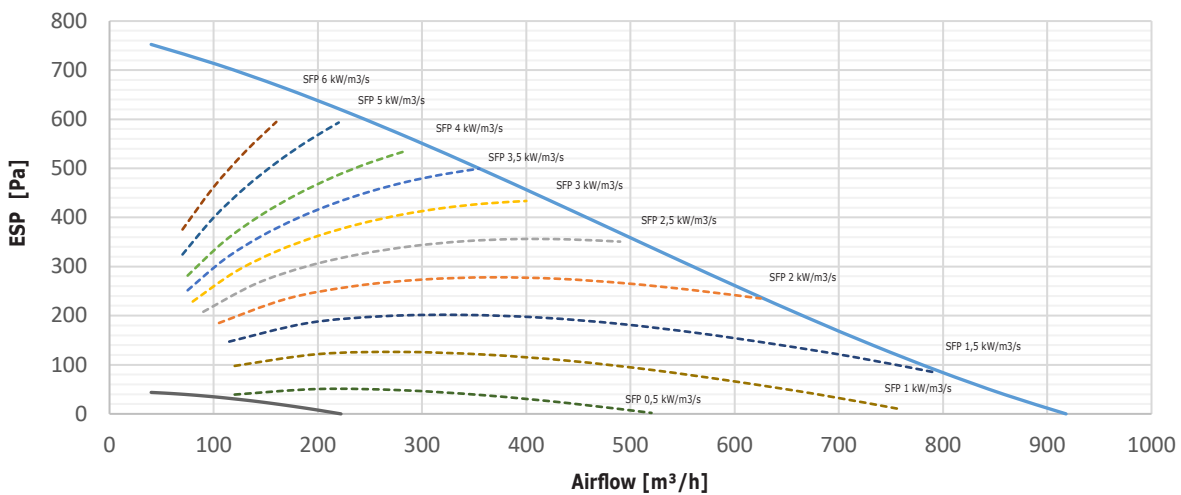
HRDF1-030 - CB/EB



HRDF1-050 - CB/EB

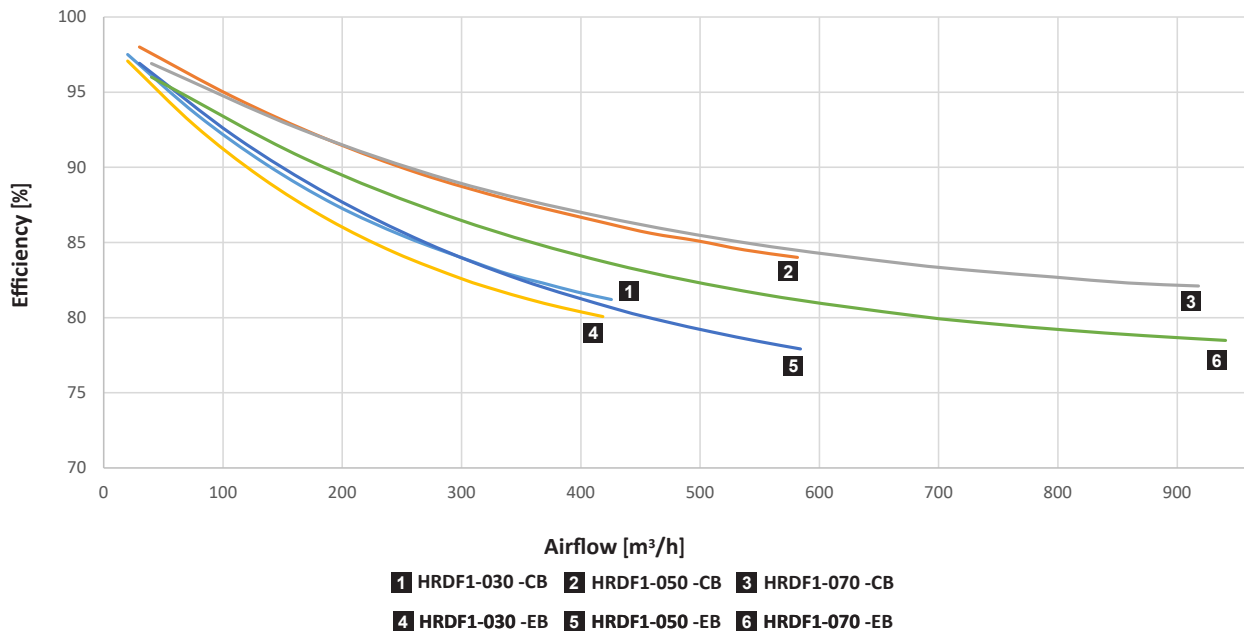


HRDF1-070 - CB/EB



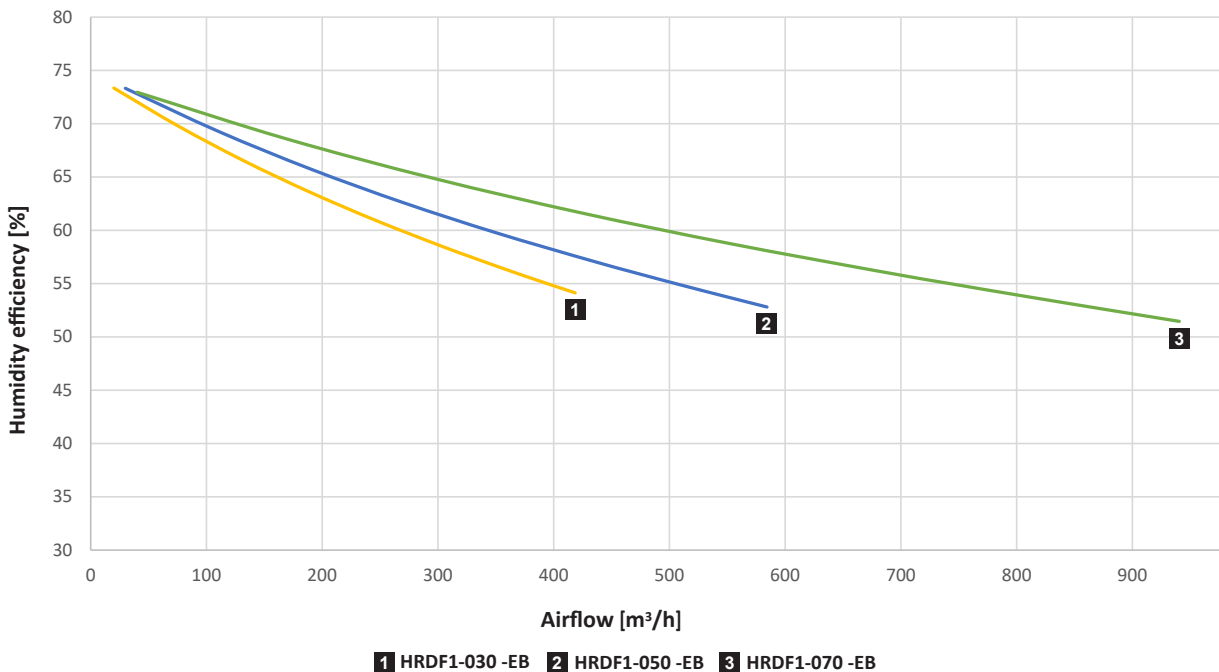
Heat recovery efficiency

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 [m ³ /h]	Phase [No.]	Voltage [V]	Frequency [Hz]	Fan power [W]	Power input of preheater [kW]	Power input of afterheater [kW]	Total current [A]	Weight [kg]
HRDF1-030-...-XS	300	1	230	50/60	120	-	-	2,0	62
HRDF1-030-...-ES	300	1	230	50/60	120	1,2	-	7,2	64
HRDF1-030-...-EE	300	1	230	50/60	120	1,2	1,2	12,4	66
HRDF1-050-...-XS	500	1	230	50/60	120	-	-	2	70
HRDF1-050-...-ES	500	1	230	50/60	120	2	-	10,7	72
HRDF1-050-...-EE	500	1	230	50/60	120	2	0,8	14,2	74
HRDF1-070-...-XS	700	1	230	50/60	170	-	-	2,6	110
HRDF1-070-...-ES	700	1	230	50/60	170	2,4	-	13,0	112
HRDF1-070-...-EE	700	3	400	50/60	170	2,4	1,2	10,4	114

Noise specifications:

HRDF1-030

Type	Airflow [m ³ /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 ¹⁾
HRDF1-030	100	100	50	53	48	48	39	36	29	26	48	26
	200		49	53	51	50	42	40	33	27	50	29
	300		52	54	55	53	46	44	35	28	54	32

Ducts	Airflow [m ³ /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	100	75	69	66	60	56	56	48	37	64
SUP			75	69	66	60	56	56	48	37	64
ETA			69	61	56	45	35	29	20	15	51
ODA			69	61	56	45	35	29	20	14	51

1) Sound pressure levels calculated at 3 meters for Q=2

HRDF1-050

Type	Airflow [m ³ /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 ¹⁾
HRDF1-050	200	150	48	52	52	49	41	40	34	29	50	28
	300		51	54	55	51	44	42	36	33	52	30
	400		55	58	58	53	47	46	40	38	55	33
	500		59	60	63	56	50	48	43	40	59	37

Ducts	Airflow [m ³ /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	70	66	65	59	56	56	50	45	63
SUP			70	66	65	59	56	56	49	44	63
ETA			69	66	55	46	39	35	26	21	53
ODA			69	66	55	45	39	35	26	21	53

1) Sound pressure levels calculated at 3 meter for Q=2

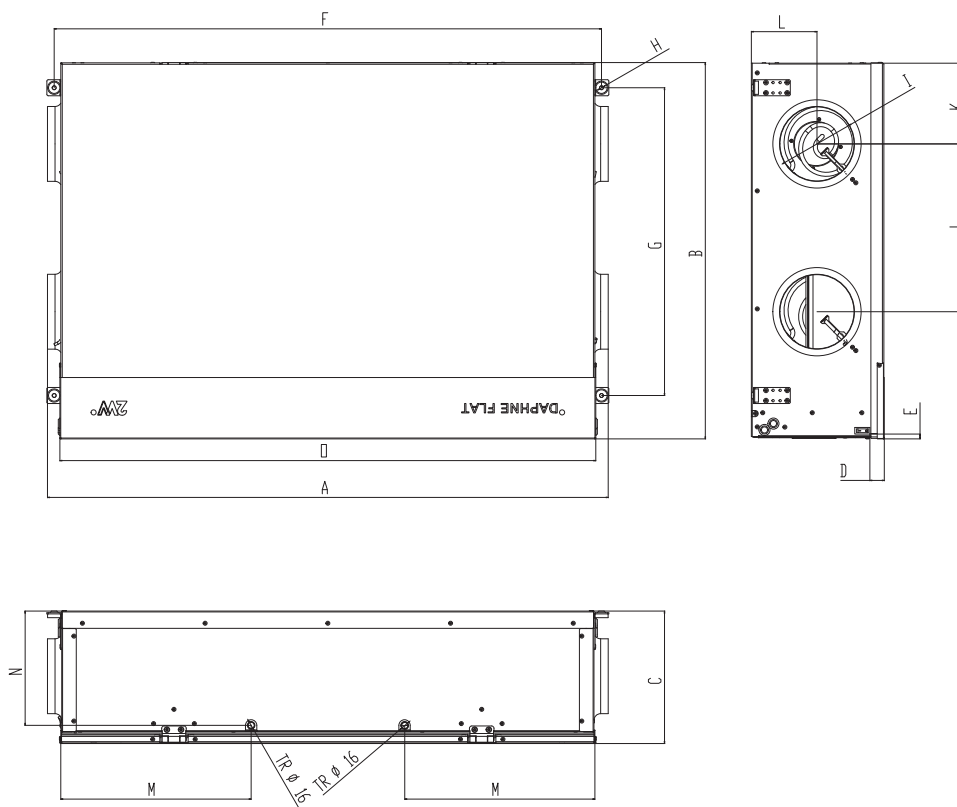
HRDF1-070

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 ¹⁾
HRDF1-070	300	150	56	60	51	49	45	43	30	29	51	29
	400		56	60	53	50	46	44	31	33	52	31
	500		57	60	56	51	48	46	33	37	54	32
	600		58	61	58	54	49	47	36	40	56	34
	700		61	64	59	56	51	49	39	43	58	36

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	74	71	69	61	58	58	48	52	66
SUP			74	72	69	61	58	59	49	52	66
ETA			70	68	60	45	39	34	24	24	56
ODA			70	69	60	45	40	34	24	24	56

1) Sound pressure levels calculated at 3 meters for Q=2

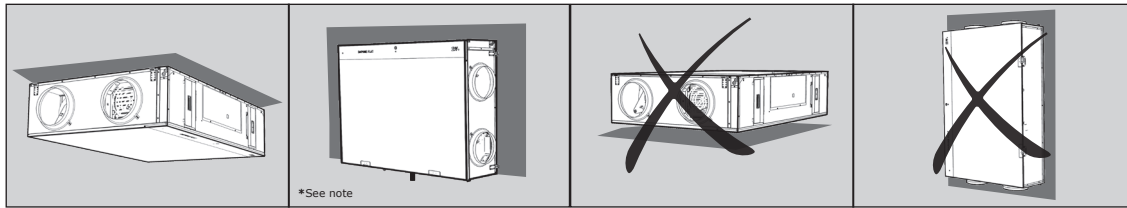
DIMENSIONS



Type	[mm]														
	A	O	B	C	D	E	F	G	H	I	J	K	L	M	N
HRDF1-030	1188	1135	797	281	30	10	1160	652	Ø8	Ø160	355	171	139	403	242
HRDF1-050	1432	1347	885	322	30	10	1380	702	Ø8	Ø200	400	195	157	517	285
HRDF1-070	1646	1547	1065	364	30	10	1580	902	Ø8	Ø250	508	228	180	619	326



INSTALLATION AND ASSEMBLY

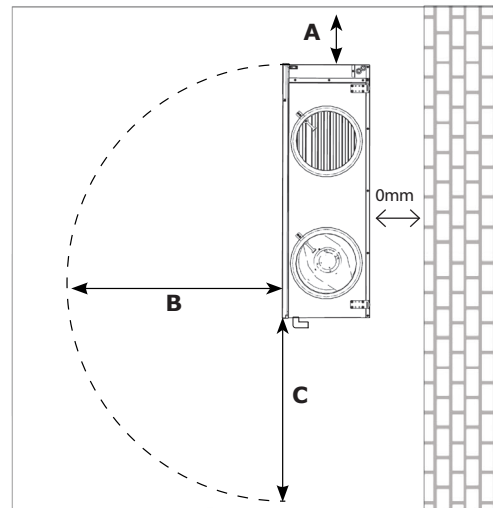
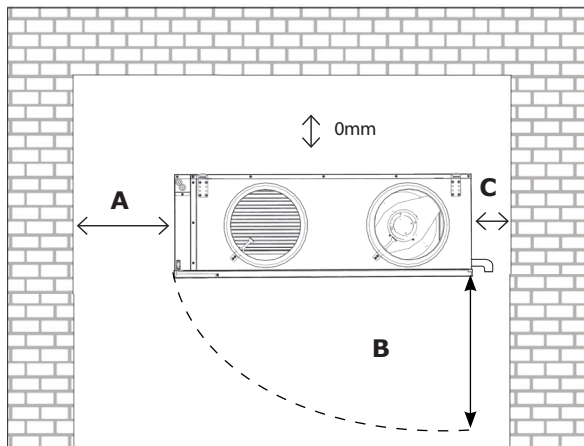


- * Installation on the wall possible only for HRDF1-030
- * Installing HRDF1-030 on the wall is possible only when the position of the condensate drain points downwards

The unit can be suspended using threaded rods (M8) from the ceiling or wall. The unit must be installed with a respect to a correct position of the condensate drain.

The installation of the unit must allow sufficient access for maintenance, service and disassembling operations.

Necessary service access distances



	A	B	C
HRDF1-030	min. 450mm	min. 850mm	min. 150mm
HRDF1-050	min. 500mm	min. 950mm	min. 150mm
HRDF1-070	min. 600mm	min. 1150mm	min. 150mm

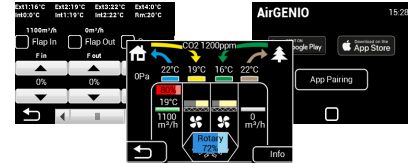
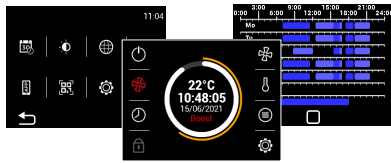
	A	B	C
HRDF1-030	min. 450mm	min. 850mm	min. 850mm
HRDF1-050	not possible	not possible	not possible
HRDF1-070	not possible	not possible	not possible

- The unit must be securely fastened to prevent it from falling.
- The air ducting is connected by sliding it over the circular air spigots.



CONTROL

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: 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 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

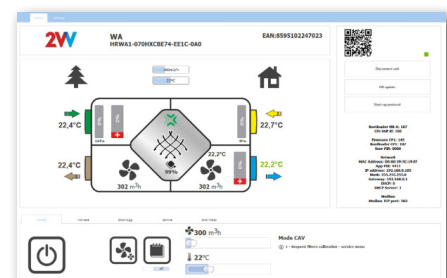
2VW AirGENIO Application:

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



2VW 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

AirGENIO Comfort

1

Room temperature sensor (NTC 10kOhm)



2

Air quality sensor (AQS)

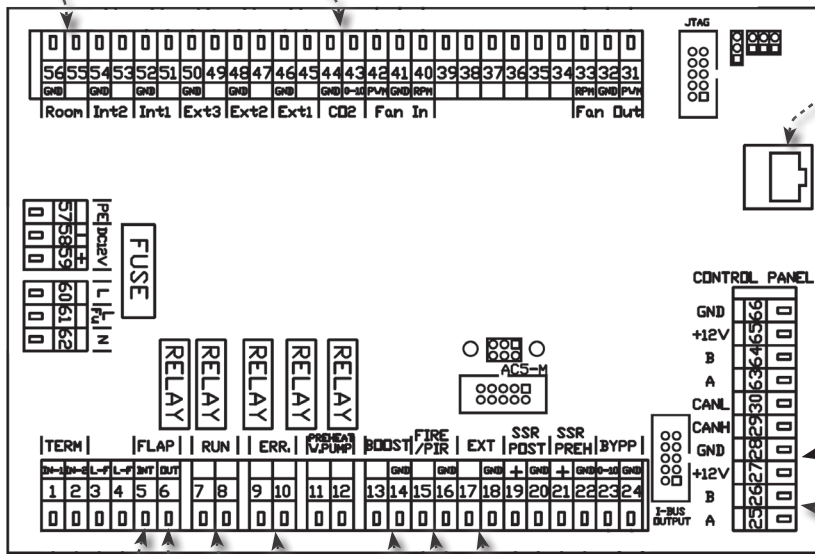


GND 0-10 VDC

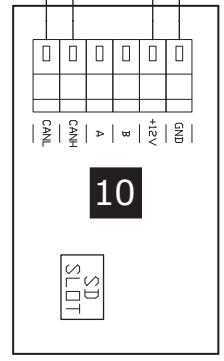
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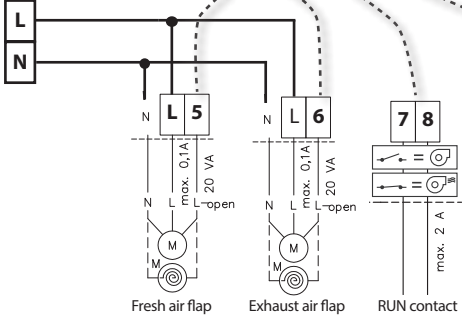
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* A shielded cable (e.g. UTP type) is recommended for the connection of the control panel to the unit.

1	Room temperature sensor (input)
2	The air quality sensor - control signal (input)
3	Inlet air damper (L-in)
4	Exhaust air damper (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
12	RJ45 plug - Ethernet, Modbus TCP, BACnet
13	Modbus RTU (A-25, B-26, 28 or 66-GND)



ACCESSORIES

RECOMMENDED ACCESSORIES

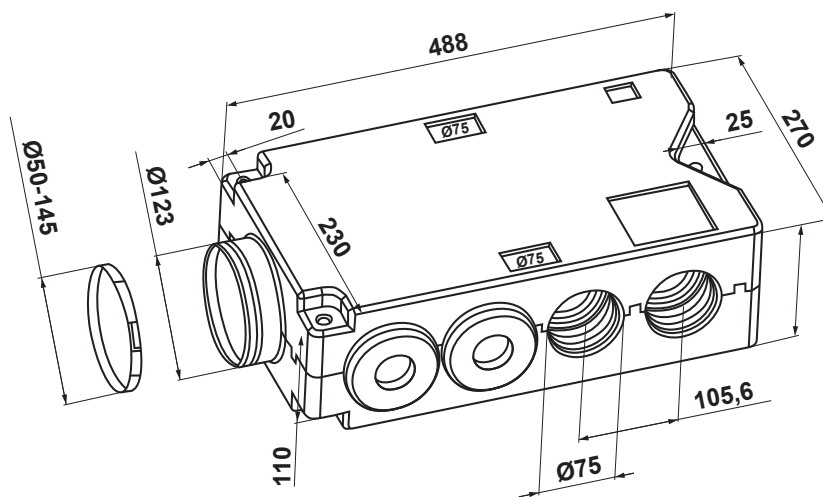


Distribution box
ROZ-EPP-125

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.

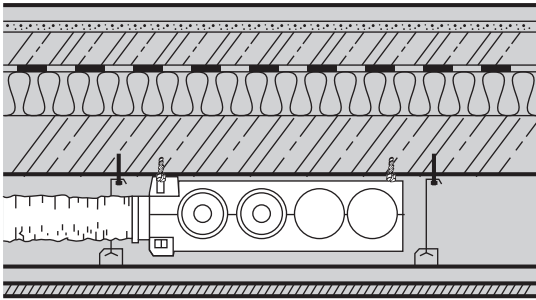
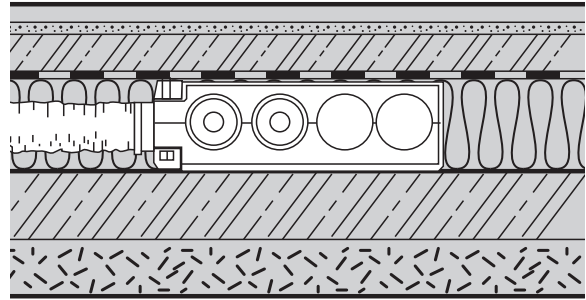
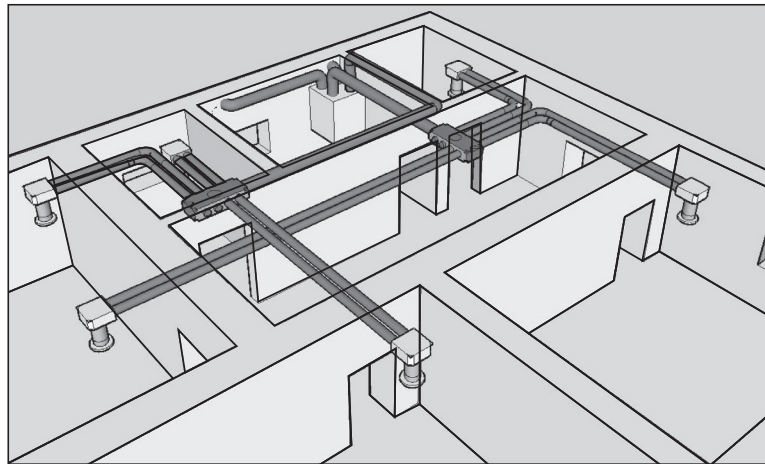
Material: The distributor/collector is produced from black-coloured extruded polypropylene and is not load bearing.

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

ROZ-EPP - Universal distribution, EPP, 8 outlets



ACCESSORIES

RECOMMENDED ACCESSORIES

Flexible hose

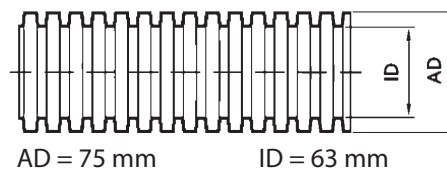
ROZ-DUOTEC075/063



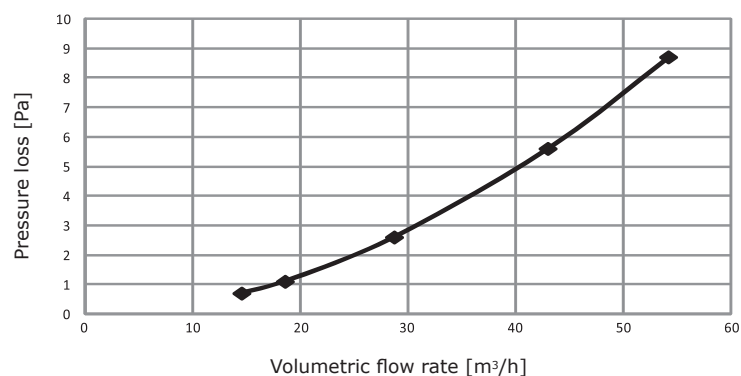
The Duotec flexible hose is intended for the delivery and exhaust of air free of coarse dust, fats, chemical vapours and other pollutants. The hose is suitable for use in ventilation systems with a heat recovery unit. It is recommended that installation is performed at temperatures above 0°C! The recommended 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 075/063mm, length 50m



ACCESSORIES

RECOMMENDED ACCESSORIES

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.



CI-AQS-COMBI

is a 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.



CT-ROOM

Temperature sensor for air temperature measurement in a reference room.



Shutting flap

KRTK-A

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



Type of unit	Flap type
HRDF1-030	KRTK-A160
HRDF1-050	KRTK-A200
HRDF1-070	KRTK-A250

Shutting flap with servo drive

KRTK-A-SB

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



Type of unit	Flap type
HRDF1-030	KRTK-A-160-SB
HRDF1-050	KRTK-A-200-SB
HRDF1-070	KRTK-A-250-SB

Servodrive

SERVO-LM230-05

Necessary accessory for automatic control of the closing flap.



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	Supply air filter			Exhaust air filter
	COARSE 60%	COARSE 90%	ePM 1 60%	COARSE 60%
HRDF1-030	HRDF1-030-FI-G4	HRDF1-030-FI-M5	HRDF1-030-FI-F7	HRDF1-030-FI-G4
HRDF1-050	HRDF1-050-FI-G4	HRDF1-050-FI-M5	HRDF1-050-FI-F7	HRDF1-050-FI-G4
HRDF1-070	HRDF1-070-FI-G4	HRDF1-070-FI-M5	HRDF1-070-FI-F7	HRDF1-070-FI-G4

Connection sleeve

MK

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

Type of unit	Connection sleeve
HRDF1-030	MK160
HRDF1-050	MK200
HRDF1-070	MK250



Threaded rods

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



Siphon for condensate**SK-HL138**

Siphon with a ball for installation on the wall or flush mounting.

**Back drought shutter****RSKR-Z**

Type	Shutter
HRDF1-030	RSKR-Z160
HRDF1-050	RSKR-Z200
HRDF1-070	RSKR-Z250





KEY TO CODING

HRDF1-030 H P CB E 44 - E E1 C- 0 A0

	A0	2V version
	0	Standard RAL9016
	C	AirGENO Comfort control
	S0	Without post-heater
	E1	With el.post-heater
	X	Without pre-heater
	E	With pre-heater
	44	COARSE 60% supply filter COARSE 60% exhaust filter
	E	EC fans
	CB	Counteflow exchanger with by-pass
	EB	Enthalpy exchanger with by-pass
	P	Right side version
	L	Left side version
	H	Horizontal
	030	Size 300
	050	Size 500
	070	Size 700
	HRDF1	Heat recovery unit DAPHNE FLAT 1st generation