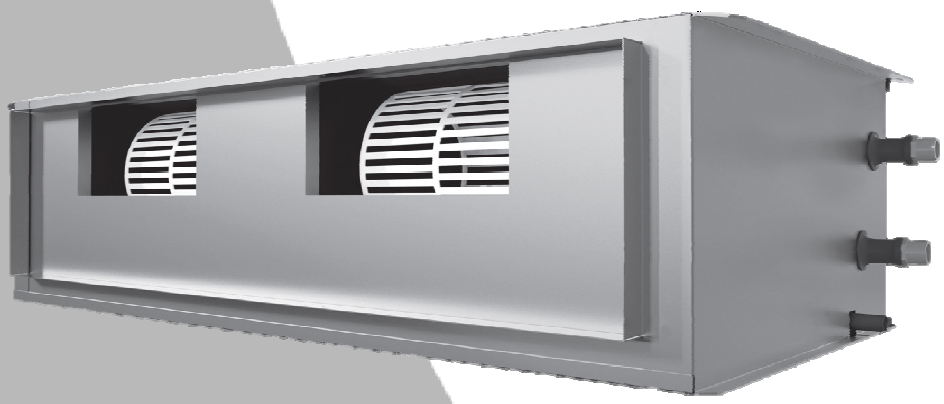
Aertesi airpower

SERIES

SOFFIO HP

TECHNICAL MANUAL



DUCTED AIR UNIT

CONTENTS

1-INTRODUCTION

The units of the SOFFIO HP series are designed for air conditioning in the residential and retail sectors, for indoor installation not exposed to freezing or otherwise extreme temperatures, in non-dusty, non-explosive and non-aggressive environments (in particular with regard to the aluminium fins and the galvanized coating and/or paint finishing of the metal plates). The manufacturer may not be held liable for the consequences of incorrect use.
The units are designed to be ducted. Do not install them without ducting, as this might cause unit malfunction or damage.
The basic unit consists of a fan section (motor and fan) and heat exchange section (coil and condensate collection tray). A wide range of optional sections is also available as accessories (see the dedicated chapter), including filtering sections (strongly recommended), plenums and silencers.
The SOFFIO HP units are available in the following variants:

- single panel and double panel versions
- versions with traditional three-speed motor (AC) and with low consumption motor (EC).

2-APPLICATION LIMITS

Electrical power supply	230V / 50 - 60Hz (1) (2)
Coil inlet water temperature	3 / 90°C
Maximum air delivery temperature (3)	45°C
Return air temperature	10 / 50°C

(1) +/-10% with respect to the supply voltage. All technical data in this manual refer to 230V / 50Hz.
(2) For size 121 with AC motor, power supply with 60Hz frequency is not allowed
(3) In the case of water with a delivery flow temperature higher than 45°C, check the air delivery temperature using the TESI10 selection software.

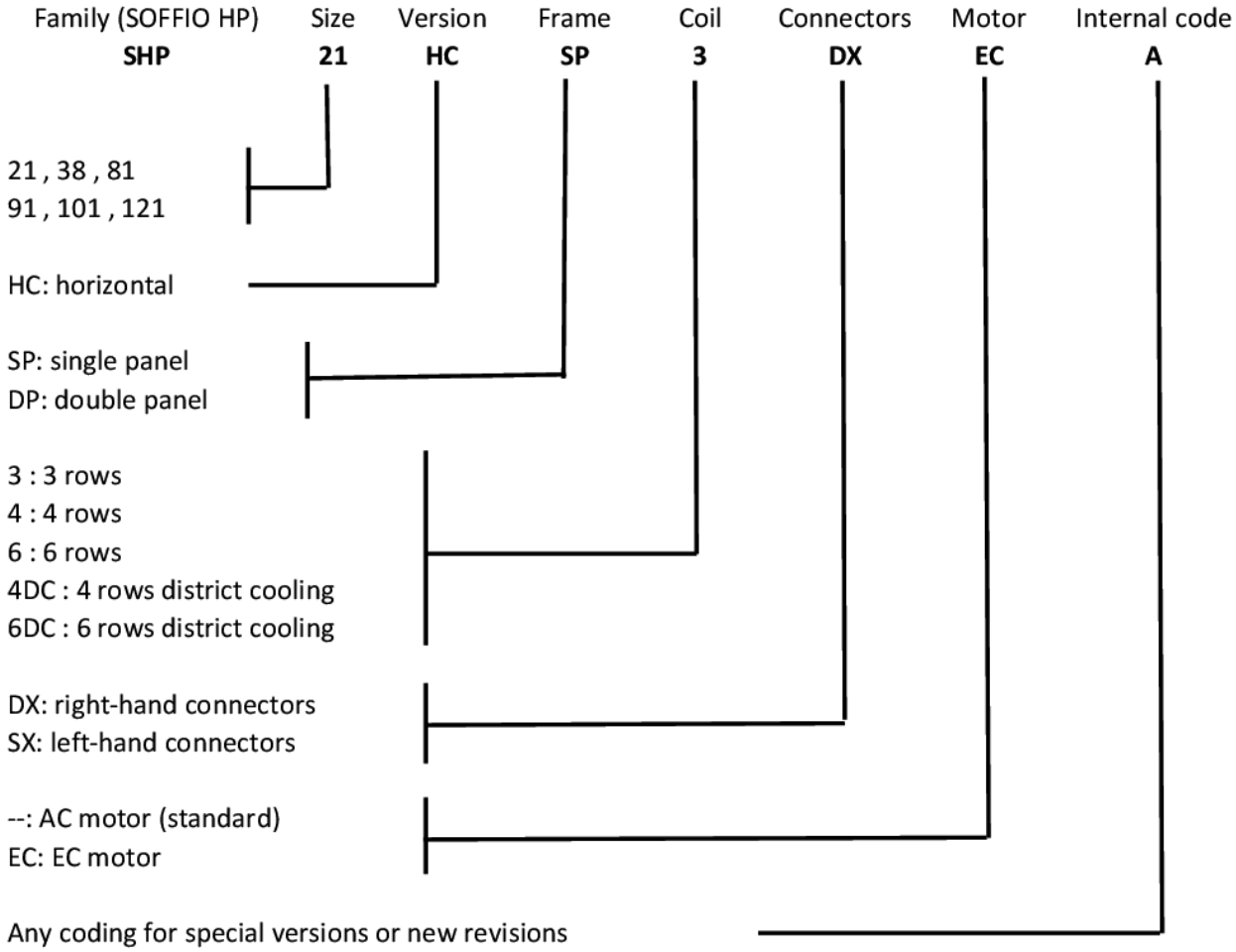
	Minimum external pressure head (motor working range)					
	21	**38**	**81**	**91**	**101**	**121**
50Hz	50 Pa	50 Pa	50 Pa	50 Pa	50 Pa	50 Pa

Working with low external heads, even within the motor's working range, could cause dripping from the coil during summertime operation (also depending on the degree of humidity in the environment). To prevent this, it is recommended to work at flow rates not exceeding the following values:

	Max air flow rate					
	21	**38**	**81**	**91**	**101**	**121**
	1250 cu.m/h	2300 cu.m/h	4500 cu.m/h	6000 cu.m/h	7000 cu.m/h	9500 cu.m/h

The units should only operate close to their limit operating values for short periods of time, because operation close to limit conditions for prolonged periods can reduce the normal lifetime of unit components.

3-CODES INTERPRETATION KEY



4-CONTROLS

The units of the SOFFIO HP series can be controlled via wall-mounted thermostats, with a temperature probe inside the wall thermostat or in the unit intake section.
However, it is recommended to use thermostats with wall temperature probes, rather than intake temperature probes, because this ensures more accurate temperature detection thanks to better positioning.

	21	**38**	**81**	**91**	**101**	**121**
N. of motors	1	2	2	2	3	2
Max draw by each AC motor	1.6 A	1.6 A	4 A	4 A	4 A	8 A

For AC motor unit controls it is necessary to interpose (between the unit and the control) a relay board having one contact for each motor speed, such as the ETBN-6A board. Each contact on the relay board must be sized for an inductive load equal to the highest motor draw (see table above).
Direct (parallel) connection of multiple motors of the same unit to the same control or to the same contacts on the relay board is strictly not permitted. Direct connection (in parallel) of more than one unit with AC motor to the same control or to the same relay board is also strictly not permitted.

	21	**38**	**81**	**91**	**101**	**121**
Input impedance 0/10V (total of N EC motors in parallel)	50 kΩ	25 kΩ	25 kΩ	25 kΩ	16 kΩ	25 kΩ
Input current 0/10V (total of N EC motors in parallel)	0.2mA	0.4mA	0.4mA	0.4mA	0.6mA	0.4mA

The controls for units with EC motor must have an output with 0/10V voltage signal sized to supply at least the current value shown in the table for each connected unit. It is possible to connect several units with EC motor in parallel to the same control, until the maximum current rating of that control is reached, without interposing other boards.
Using the SC3 accessory it is also possible to control the EC motor units using a traditional three-speed AC motor control.
For information on the proposed and approved controls for SOFFIO HP units, please refer to the dedicated literature. Should you intend to use other types of control, their compatibility should be carefully evaluated before using them

5- TECHNICAL SPECIFICATIONS

FRAME: made of 1.00-1.50mm thick galvanized sheet steel. This rugged structure prevents the propagation of vibration and comes complete with ceiling fixing brackets. Upon request, it can be paint-finished.
For the double panel version (DP), the frame is a sandwich panel with internal plate thickness of 0.6 - 0.8mm and external plate thickness of 1.50 - 0.80mm.

ACCESSIBILITY: accessibility to internal components is obtained by removing the lower panel. The fan unit can be removed without having to disconnect the ducting and the operation can be carried out from the bottom, without removing the sides or front of the machine.

FILTER: It is not supplied with the base unit but is available as an accessory with a wide range of filter sections and it is strongly recommended. All capacity data refer to the standard "FS" filter (see the dedicated section of the manual for further information).

FAN UNIT (AC motors): the fans have forward curved blades and dual intake centrifuges directly coupled to the motor. The auger and fan are made of galvanized steel. The motor and fans are balanced after assembly. The motor is mounted on rubber vibration damping mounts, degree of protection IP20 and has three speeds.

FAN UNIT (EC motors): the fans have forward curved blades and dual intake centrifuges directly coupled to the motor. The auger and fan are made of galvanized steel. The motor and fans are balanced after assembly. The motor is mounted on rubber vibration damping mounts, degree of protection IP20, control signal 0-10V.

COIL: made from 3/8" diameter copper tubing (or d.1/2” for 6 row coils size 91,101,121) with high efficiency corrugated aluminium fins and with manual air venting valve in the upper part of the manifold. The connectors are supplied as standard on the right side, and optionally on the left (viewed from in front of the air flow). Nominal pressure PN8.
The (optional) direct expansion coils are made with diameter 5/16” copper tubing and are suitable for working with R410A refrigerant (up to 45bar). Other refrigerants on request.

CONDENSATE COLLECTION TRAY: made of galvanized steel sheet and painted to prevent the formation of rust. The drain pipe and the edges are welded to avoid leaks over time. The tray is externally insulated with thermal insulation and is installed to an angle in the direction of the drain pipe to avoid standing water.

INSULATION: made with 10mm thick cross-linked polyethylene foam, class B-s2d0 BL-s1d0 according to the EN13501-1 standard.
For the double panel version (DP), the insulation is made of 20mm thick polyurethane in the fire reaction class HF1 according to the UL94 standard.

ELECTRICAL CONTROL PANEL: made of galvanized sheet steel or plastic and positioned on the opposite side with respect to the hydraulic connections. On request it can be built with a watertight plastic enclosure and positioned on the same side as the hydraulic connections.

6-TECHNICAL DATA (AC motors)

This chapter lists the operating specifications of the units with 3-4-6 row main coils and auxiliary coils with 1-2 rows.
The main coils are optimized to work with a water temperature difference dT = 5K or similar values.
The auxiliary coils are optimized to work with a water temperature difference dT = 10K or similar values.

The 4-6 row main coils for District Cooling (DC) are also available from our selection software. These coils are optimized to work with a water temperature difference dT = 9K and/or a water flow equal to about half the nominal flow of the standard main coils.

The sound level data refer to single panel units (SP). In double panel units (DP) the sound emission radiated from the structure is lower.

6.1- 2-pipe unit with 3-row coil

		21			38			81		
Speed		min	med	max	Min	med	max	min	med	max
Air flow rate	m3/h	857	1080	1257	1643	2000	2330	2725	3598	4510
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	3.94	4.49	4.88	7.52	8.41	9.14	13.42	15.81	17.89
Sensitive capacity	kW	3.31	3.88	4.28	6.31	7.20	7.97	11.12	13.41	15.59
Water flow rate	l/h	677	773	838	1294	1447	1571	2309	2722	3084
Δp (water)	kPa	17.9	22.6	26.1	20.9	25.4	29.4	21.7	29.0	36.1
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C										
Capacity	kW	4.72	5.53	6.10	8.96	10.25	11.34	15.70	19.08	22.13
Water flow rate	l/h	816	957	1056	1550	1773	1959	2713	3296	3832
Δp (water)	kPa	19.0	25.1	29.9	21.8	27.7	33.0	22.0	30.9	40.5
MOTOR ELECTRIC POWER DRAW										
Power draw	W	276	220	261	310	350	420	859	983	1258
Max power draw	A		1.9			3.8			7.0	
SOUND DATA										
Return + radiated sound power	dB(A)	62	66	67	67	68	68	69	72	75
Delivery sound power	dB(A)	67	68	70	70	71	73	74	74	78
Return + radiated sound pressure (*)	dB(A)	53	57	58	58	59	59	60	63	66
Delivery sound pressure (*)	dB(A)	58	59	61	61	62	64	65	65	69

Note: sizes 91, 101, 121 are not available with 3 row main coils
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

6.2- 2-pipe unit with 4-row coil

		21			38			81		
Speed		min	med	max	Min	med	max	min	med	max
Air flow rate	m3/h	857	1080	1257	1643	2000	2330	2725	3598	4510
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	4.76	5.52	5.98	9.00	10.16	11.13	15.91	19.03	21.74
Sensitive capacity	kW	3.88	4.60	5.10	7.35	8.46	9.42	12.75	15.70	18.42
Water flow rate	l/h	818	948	1028	1548	1746	1909	2738	3269	3742
Δp (water)	kPa	11.3	14.7	22.5	15.0	18.6	21.8	15.4	21.0	26.7
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C										
Capacity	kW	5.50	6.53	7.26	10.45	12.10	13.41	18.09	22.35	26.27
Water flow rate	l/h	953	1129	1257	1808	2088	2327	3136	3864	4542
Δp (water)	kPa	15.0	20.3	24.4	15.1	19.4	23.5	15.0	21.6	28.7
MOTOR ELECTRIC POWER DRAW										
Power draw	W	276	220	261	310	350	420	859	983	1258
Max power draw	A		1.9			3.8			7.0	
SOUND DATA										
Return + radiated sound power	dB(A)	62	66	67	67	68	68	69	72	75
Delivery sound power	dB(A)	67	68	70	70	71	73	74	74	78
Return + radiated sound pressure (*)	dB(A)	53	57	58	58	59	59	60	63	66
Delivery sound pressure (*)	dB(A)	58	59	61	61	62	64	65	65	69

		91			101			121		
Speed		min	med	max	Min	med	max	min	med	max
Air flow rate	m3/h	2638	3570	4980	3955	5400	6828	5900	7100	8800
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	17.06	20.90	25.90	24.02	29.43	34.01	35.88	40.56	46.38
Sensitive capacity	kW	13.41	16.79	21.36	19.08	23.98	28.34	28.34	32.48	37.93
Water flow rate	l/h	2935	3598	4445	4138	5066	5838	6173	6971	9152
Δp (water)	kPa	6.0	11.6	16.9	17.0	24.3	31.1	22.2	27.5	34.9
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C										
Capacity	kW	18.75	23.76	30.52	26.81	33.90	40.11	39.79	45.78	53.63
Water flow rate	l/h	3246	4113	5276	4633	5863	6941	6880	7920	9277
Δp (water)	kPa	7.4	11.2	17.4	15.8	23.9	32.2	20.5	26.3	34.7
MOTOR ELECTRIC POWER DRAW										
Power draw	W	758	993	1327	1297	1400	1822	1500	1600	2240
Max power draw	A		7.0			10.5			15	
SOUND DATA										
Return + radiated sound power	dB(A)	63	67	71	70	74	77	74	77	79
Delivery sound power	dB(A)	68	69	74	75	76	80	78	81	83
Return + radiated sound pressure (*)	dB(A)	54	58	62	61	65	68	65	68	70
Delivery sound pressure (*)	dB(A)	59	60	65	66	67	71	69	72	74

(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

6.3- 2-pipe unit with 6-row coil

		21			38			81		
Speed		min	med	max	Min	med	max	min	med	max
Air flow rate	m3/h	857	1080	1257	1643	2000	2330	2725	3598	4510
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	6.05	7.16	7.88	11.65	13.42	14.87	20.59	25.17	29.43
Sensitive capacity	kW	4.67	5.60	6.28	8.93	10.42	11.77	15.48	19.40	23.11
Water flow rate	l/h	1041	1229	1355	2001	2298	2548	3533	4330	5061
Δp (water)	kPa	14.0	18.9	29.9	24.8	31.6	37.9	36.8	52.6	69.2
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C										
Capacity	kW	6.54	7.90	8.91	12.54	14.72	16.57	21.47	27.03	32.37
Water flow rate	l/h	1133	1368	1540	2163	2538	2863	3708	4674	5598
Δp (water)	kPa	16.6	23.1	28.5	21.6	28.7	35.4	30.5	45.8	63.0
MOTOR ELECTRIC POWER DRAW										
Power draw	W	276	220	261	310	350	420	859	983	1258
Max power draw	A		1.9			3.8			7.0	
SOUND DATA										
Return + radiated sound power	dB(A)	62	66	67	67	68	68	69	72	75
Delivery sound power	dB(A)	67	68	70	70	71	73	74	74	78
Return + radiated sound pressure (*)	dB(A)	53	57	58	58	59	59	60	63	66
Delivery sound pressure (*)	dB(A)	58	59	61	61	62	64	65	65	69

		91			101			121		
Speed		min	med	max	Min	med	max	min	med	max
Air flow rate	m3/h	2638	3570	4980	3955	5400	6828	5900	7100	8800
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	20.49	25.69	32.45	29.33	36.50	42.74	49.61	57.93	68.43
Sensitive capacity	kW	15.26	19.62	25.40	22.13	28.23	33.79	36.62	43.16	51.88
Water flow rate	l/h	3527	4424	5581	5034	6283	7344	8535	9954	11757
Δp (water)	kPa	23.6	35.1	52.9	50.2	74.2	97.6	19.9	26.2	35.4
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C										
Capacity	kW	21.15	27.25	35.64	30.63	39.46	47.31	50.90	60.28	73.14
Water flow rate	l/h	3656	4720	6170	5290	6819	8188	9485	10428	12657
Δp (water)	kPa	19.1	30.0	48.1	41.7	65.3	90.1	21.0	28.3	39.8
MOTOR ELECTRIC POWER DRAW										
Power draw	W	758	993	1327	1297	1400	1822	1500	1600	2240
Max power draw	A		7.0			10.5			15	
SOUND DATA										
Return + radiated sound power	dB(A)	63	67	71	70	74	77	74	77	79
Delivery sound power	dB(A)	68	69	74	75	76	80	78	81	83
Return + radiated sound pressure (*)	dB(A)	54	58	62	61	65	68	65	68	70
Delivery sound pressure (*)	dB(A)	59	60	65	66	67	71	69	72	74

(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

6.4- 4-pipe unit with 3-row main coil and 1-row auxiliary coil

		21			38			81		
Speed		min	med	max	Min	med	max	min	med	max
Air flow rate	m3/h	857	1080	1257	1643	2000	2330	2725	3598	4510
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	3.94	4.49	4.88	7.52	8.41	9.14	13.42	15.81	17.89
Sensitive capacity	kW	3.31	3.88	4.28	6.31	7.20	7.97	11.12	13.41	15.59
Water flow rate	l/h	677	773	838	1294	1447	1571	2309	2722	3084
Δp (water)	kPa	17.9	22.6	26.1	20.9	25.4	29.4	21.7	29.0	36.1
HEATING - air 20 °C - water inlet 65°C, outlet 55°C										
Capacity	kW	3.60	4.11	4.47	6.88	7.71	8.39	12.43	14.72	16.68
Water flow rate	l/h	314	359	390	600	671	731	1087	1281	1455
Δp (water)	kPa	3.2	4.1	4.7	5.1	6.2	7.2	6.5	8.6	10.8
MOTOR ELECTRIC POWER DRAW										
Power draw	W	276	220	261	310	350	420	859	983	1258
Max power draw	A		1.9			3.8			7.0	
SOUND DATA										
Return + radiated sound power	dB(A)	62	66	67	67	68	68	69	72	75
Delivery sound power	dB(A)	67	68	70	70	71	73	74	74	78
Return + radiated sound pressure (*)	dB(A)	53	57	58	58	59	59	60	63	66
Delivery sound pressure (*)	dB(A)	58	59	61	61	62	64	65	65	69

Note: sizes 91, 101, 121 are not available with 3 row main coil and 1-row auxiliary coil
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

6.5- 4-pipe unit with 3-row main coil and 2-row auxiliary coil

		21			38			81		
Speed		min	med	max	Min	med	max	min	med	max
Air flow rate	m3/h	857	1080	1257	1643	2000	2330	2725	3598	4510
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	3.94	4.49	4.88	7.52	8.41	9.14	13.42	15.81	17.89
Sensitive capacity	kW	3.31	3.88	4.28	6.31	7.20	7.97	11.12	13.41	15.59
Water flow rate	l/h	677	773	838	1294	1447	1571	2309	2722	3084
Δp (water)	kPa	17.9	22.6	26.1	20.9	25.4	29.4	21.7	29.0	36.1
HEATING - air 20 °C - water inlet 65°C, outlet 55°C										
Capacity	kW	6.35	7.35	8.03	12.10	13.63	14.93	21.36	25.51	29.21
Water flow rate	l/h	555	641	701	1052	1188	1303	1864	2224	2548
Δp (water)	kPa	5.9	7.6	8.8	6.7	8.3	9.8	4.9	6.7	8.6
MOTOR ELECTRIC POWER DRAW										
Power draw	W	276	220	261	310	350	420	859	983	1258
Max power draw	A		1.9			3.8			7.0	
SOUND DATA										
Return + radiated sound power	dB(A)	62	66	67	67	68	68	69	72	75
Delivery sound power	dB(A)	67	68	70	70	71	73	74	74	78
Return + radiated sound pressure (*)	dB(A)	53	57	58	58	59	59	60	63	66
Delivery sound pressure (*)	dB(A)	58	59	61	61	62	64	65	65	69

Note: sizes 91, 101, 121 are not available with 3 row main coils
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

6.6- 4-pipe unit with 4-row main coil and 1-row auxiliary coil

		21			38			81		
Speed		min	med	max	Min	med	max	min	med	max
Air flow rate	m3/h	857	1080	1257	1643	2000	2330	2725	3598	4510
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	4.76	5.52	5.98	9.00	10.16	11.13	15.91	19.03	21.74
Sensitive capacity	kW	3.88	4.60	5.10	7.35	8.46	9.42	12.75	15.70	18.42
Water flow rate	l/h	818	948	1028	1548	1746	1909	2738	3269	3742
Δp (water)	kPa	11.3	14.7	22.5	15.0	18.6	21.8	15.4	21.0	26.7
HEATING - air 20 °C - water inlet 65°C, outlet 55°C										
Capacity	kW	3.60	4.11	4.47	6.88	7.71	8.39	12.43	14.72	16.68
Water flow rate	l/h	314	359	390	600	671	731	1087	1281	1455
Δp (water)	kPa	3.2	4.1	4.7	5.1	6.2	7.2	6.5	8.6	10.8
MOTOR ELECTRIC POWER DRAW										
Power draw	W	276	220	261	310	350	420	859	983	1258
Max power draw	A		1.9			3.8			7.0	
SOUND DATA										
Return + radiated sound power	dB(A)	62	66	67	67	68	68	69	72	75
Delivery sound power	dB(A)	67	68	70	70	71	73	74	74	78
Return + radiated sound pressure	dB(A)	53	57	58	58	59	59	60	63	66
Delivery sound pressure	dB(A)	58	59	61	61	62	64	65	65	69

Note: sizes 91, 101, 121 are not available with 1 row auxiliary coils
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

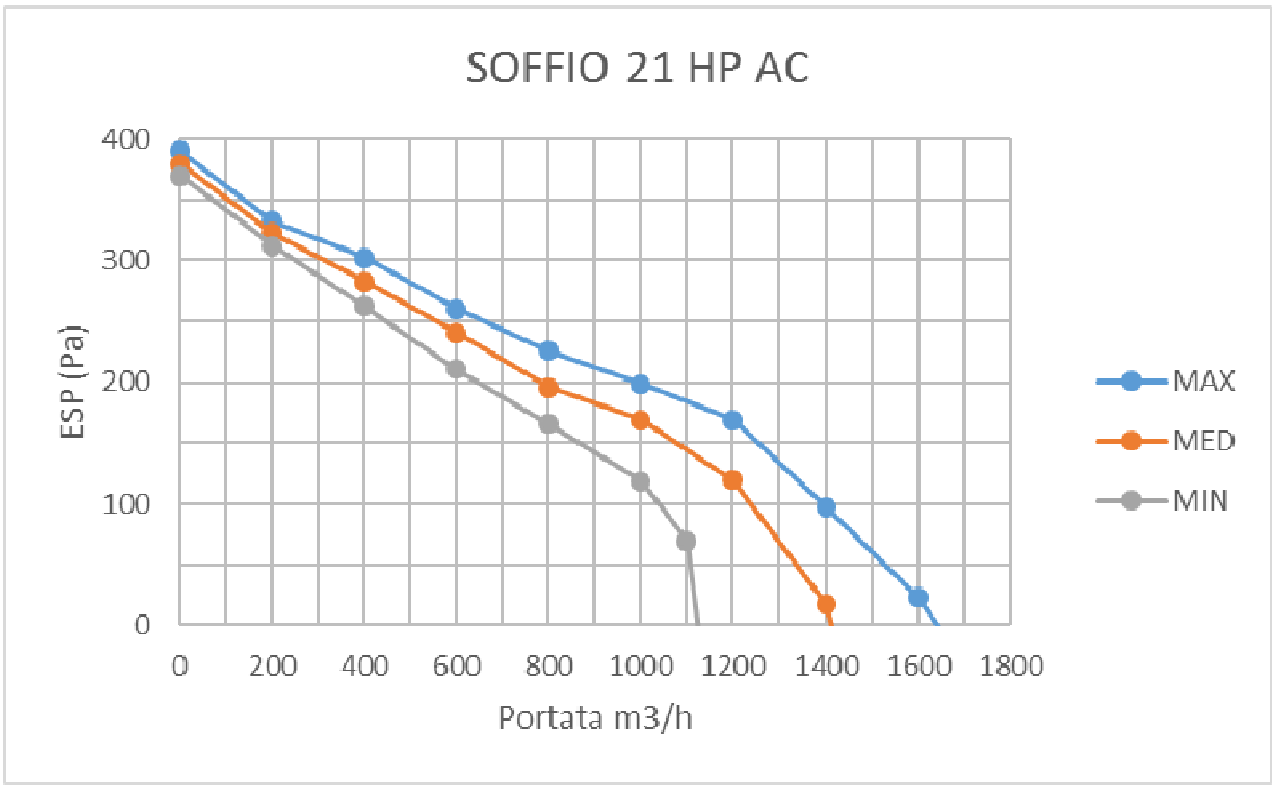
6.7- 4-pipe unit with 4-row main coil and 2-row auxiliary coil

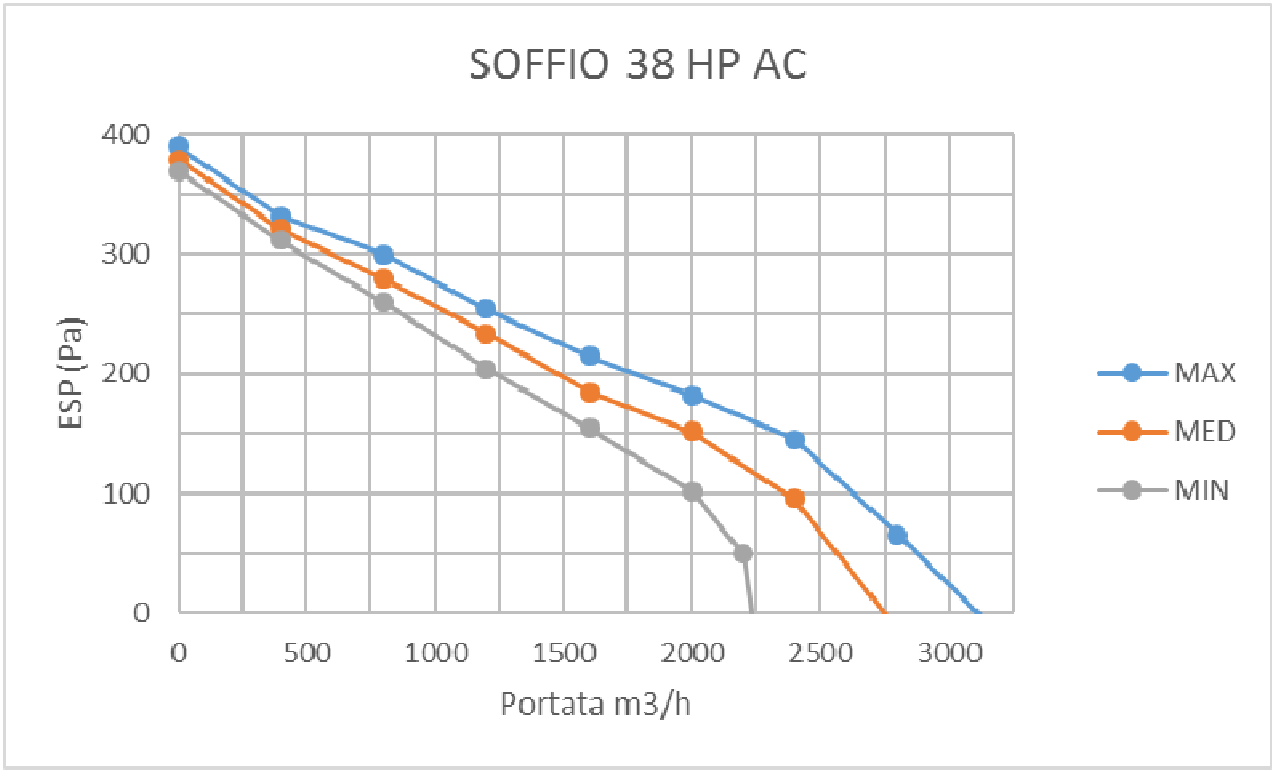
		21			38			81		
Speed		min	med	max	Min	med	max	min	med	max
Air flow rate	m3/h	857	1080	1257	1643	2000	2330	2725	3598	4510
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	4.76	5.52	5.98	9.00	10.16	11.13	15.91	19.03	21.74
Sensitive capacity	kW	3.88	4.60	5.10	7.35	8.46	9.42	12.75	15.70	18.42
Water flow rate	l/h	818	948	1028	1548	1746	1909	2738	3269	3742
Δp (water)	kPa	11.3	14.7	22.5	15.0	18.6	21.8	15.4	21.0	26.7
HEATING - air 20 °C - water inlet 65°C, outlet 55°C										
Capacity	kW	6.35	7.35	8.03	12.10	13.63	14.93	21.36	25.51	29.21
Water flow rate	l/h	555	641	701	1052	1188	1303	1864	2224	2548
Δp (water)	kPa	5.9	7.6	8.8	6.7	8.3	9.8	4.9	6.7	8.6
MOTOR ELECTRIC POWER DRAW										
Power draw	W	276	220	261	310	350	420	859	983	1258
Max power draw	A		1.9			3.8			7.0	
SOUND DATA										
Return + radiated sound power	dB(A)	62	66	67	67	68	68	69	72	75
Delivery sound power	dB(A)	67	68	70	70	71	73	74	74	78
Return + radiated sound pressure (*)	dB(A)	53	57	58	58	59	59	60	63	66
Delivery sound pressure (*)	dB(A)	58	59	61	61	62	64	65	65	69

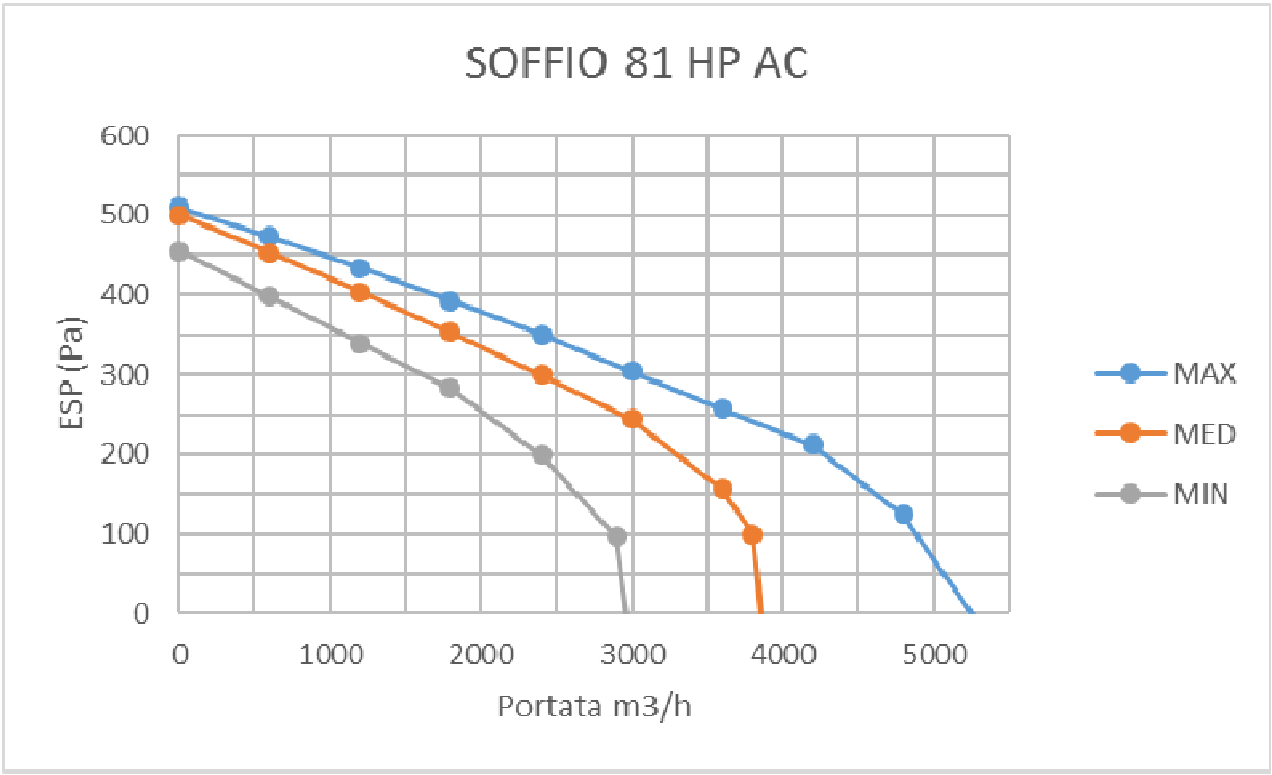
		91			101			121		
Speed		min	med	max	Min	med	max	min	med	max
Air flow rate	m3/h	2638	3570	4980	3955	5400	6828	5900	7100	8800
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	17.06	20.90	25.90	24.02	29.43	34.01	35.88	40.56	46.38
Sensitive capacity	kW	13.41	16.79	21.36	19.08	23.98	28.34	28.34	32.48	37.93
Water flow rate	l/h	2935	3598	4445	4138	5066	5838	6173	6971	9152
Δp (water)	kPa	6.0	11.6	16.9	17.0	24.3	31.1	22.2	27.5	34.9
HEATING - air 20 °C - water inlet 65°C, outlet 55°C										
Capacity	kW	23.22	28.45	35.21	32.26	39.46	45.45	46.22	52.10	59.51
Water flow rate	l/h	2027	2480	3065	2812	3437	3964	4325	4539	5186
Δp (water)	kPa	7.6	10.8	15.7	15.4	21.9	28.1	3.6	4.4	5.6
MOTOR ELECTRIC POWER DRAW										
Power draw	W	758	993	1327	1297	1400	1822	1500	1600	2240
Max power draw	A		7.0			10.5			15	
SOUND DATA										
Return + radiated sound power	dB(A)	63	67	71	70	74	77	74	77	79
Delivery sound power	dB(A)	68	69	74	75	76	80	78	81	83
Return + radiated sound pressure (*)	dB(A)	54	58	62	61	65	68	65	68	70
Delivery sound pressure (*)	dB(A)	59	60	65	66	67	71	69	72	74

(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

6.8-Flow rate-head curves



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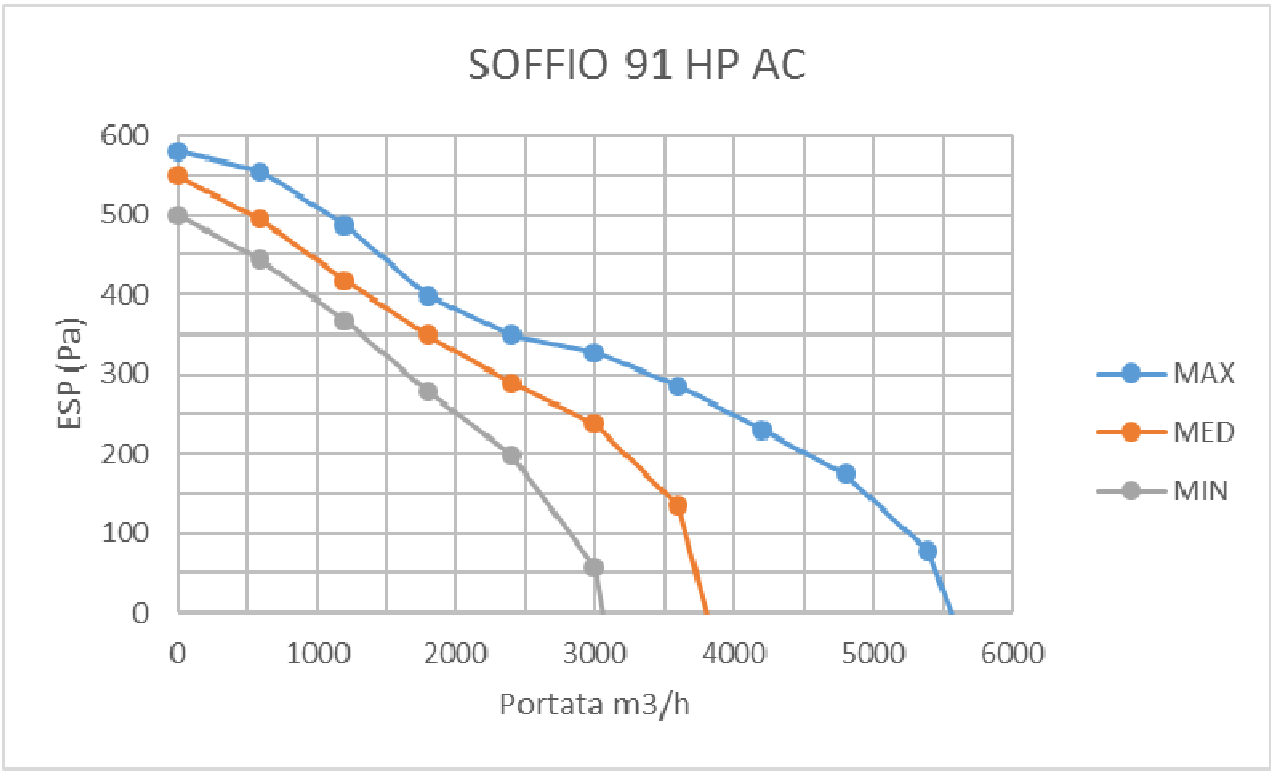
500
400
300
200
100
0
ESP (Pa)
0
1000
2000
3000
4000
5000
Portata m3/h
MAX
MED
MIN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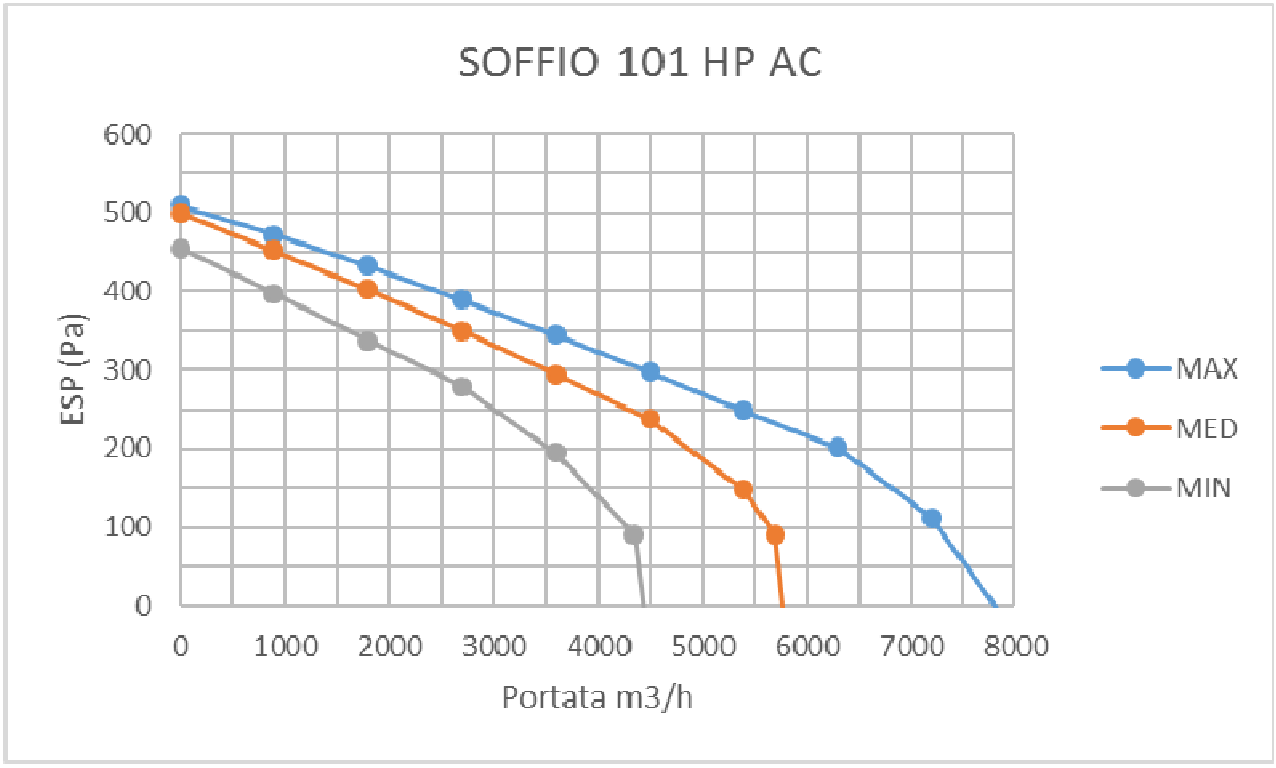
500
400
300
200
100
0
ESP (Pa)
0
1000
2000
3000
4000
5000
6000
Portata m3/h
MAX
MED
MIN

SOFFIO HP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ESP (Pa)
600
500
400
300
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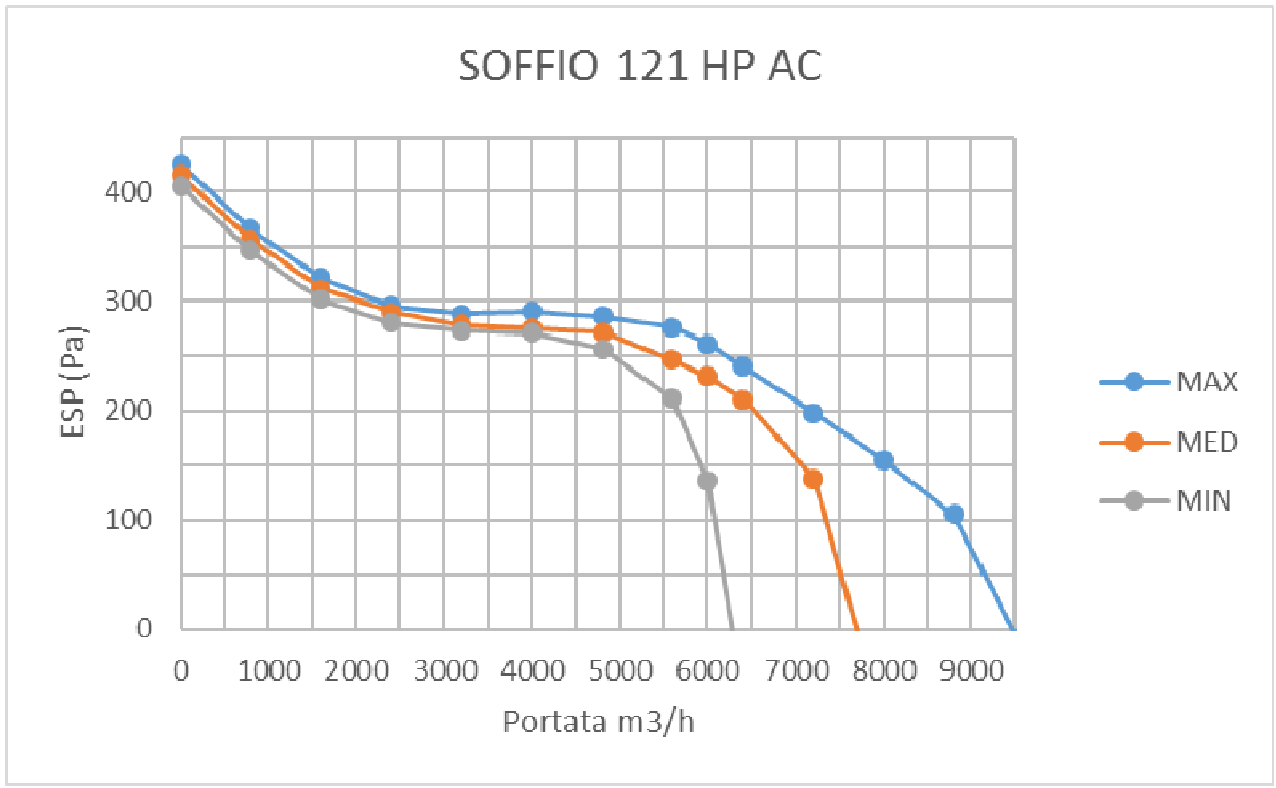
0
1000
2000
3000
4000
5000
6000
7000
8000
Portata m3/h
MAX
MED
MIN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ESP (Pa)
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300
200
100
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
Portata m3/h
MAX
MED
MIN

7-TECHNICAL DATA (EC motors)

This chapter lists the operating specifications of the units with 3-4-6 row main coils and auxiliary coils with 1-2 rows.
The main coils are optimized to work with a water temperature difference dT = 5K or similar values.
The auxiliary coils are optimized to work with a water temperature difference dT = 10K or similar values.

The 4-6 row main coils for District Cooling (DC) are also available from our selection software. These coils are optimized to work with a water temperature difference dT = 9K and/or a water flow equal to about half the nominal flow of the standard main coils.

The sound level data refer to single panel units (SP). In double panel units (DP) the sound emission radiated from the structure is lower.

7.1- 2-pipe unit with 3-row coil

		21			38			81		
Speed (Drive voltage)	V	6V	8V	10V	6V	8V	10V	5V	7V	10V
Air flow rate	m3/h	494	906	1211	976	1719	2290	1867	3054	4447
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	2.79	4.07	4.78	5.44	7.73	9.06	10.50	14.35	17.78
Sensitive capacity	kW	2.23	3.44	4.17	4.35	6.51	7.88	8.41	11.99	15.48
Water flow rate	l/h	478	699	822	935	1328	1557	1814	2473	3060
Δp (water)	kPa	9.7	19.0	26.3	11.8	21.9	28.9	14.1	24.5	35.7
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C										
Capacity	kW	3.16	4.91	5.96	6.15	9.24	11.23	11.88	17.00	21.91
Water flow rate	l/h	546	848	1031	1063	1599	1937	2055	2942	3798
Δp (water)	kPa	9.4	20.3	28.7	11.3	23.1	32.4	13.5	25.3	39.8
MOTOR ELECTRIC POWER DRAW										
Power draw	W	71	140	240	126	262	447	226	470	1086
Max power draw	A		1.7			3.4			4.2	
SOUND DATA										
Return + radiated sound power	dB(A)	54	57	60	63	67	69	64	70	76
Delivery sound power	dB(A)	58	61	64	65	71	73	66	74	80
Return + radiated sound pressure (*)	dB(A)	45	48	51	54	58	60	55	61	67
Delivery sound pressure (*)	dB(A)	49	52	55	56	62	64	57	65	71

Note: sizes 91, 101, 121 are not available with 3 row main coils
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

7.2- 2-pipe unit with 4-row coil

		21			38			81		
Speed (Drive voltage)	V	6V	8V	10V	6V	8V	10V	5V	7V	10V
Air flow rate	m3/h	494	906	1211	976	1719	2290	1867	3054	4447
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	3.27	4.94	5.84	6.35	9.26	11.02	12.27	17.16	21.63
Sensitive capacity	kW	2.54	4.04	4.95	4.96	7.59	9.31	9.58	13.95	18.20
Water flow rate	l/h	562	850	1006	1093	1591	1891	2111	2948	3711
Δp (water)	kPa	5.7	12.1	21.7	6.0	15.8	21.4	7.2	17.6	26.3
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C										
Capacity	kW	3.59	5.73	7.07	6.99	10.81	13.30	13.52	19.73	26.05
Water flow rate	l/h	619	993	1224	1208	1869	2298	2329	3420	4498
Δp (water)	kPa	7.0	16.1	23.4	7.4	16.0	23.0	8.8	17.4	28.1
MOTOR ELECTRIC POWER DRAW										
Power draw	W	71	140	240	126	262	447	226	470	1086
Max power draw	A		1.7			3.4			4.2	
SOUND DATA										
Return + radiated sound power	dB(A)	54	57	60	63	67	69	64	70	76
Delivery sound power	dB(A)	58	61	64	65	71	73	66	74	80
Return + radiated sound pressure (*)	dB(A)	45	48	51	54	58	60	55	61	67
Delivery sound pressure (*)	dB(A)	49	52	55	56	62	64	57	65	71

		91			101			121		
Speed (Drive voltage)	V	5V	7V	10V	5V	7V	10V	5V	7V	10V
Air flow rate	m3/h	1911	3147	4530	2800	4516	6637	5200	6900	8050
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	13.42	19.24	24.44	18.93	26.31	33.38	32.97	39.83	43.89
Sensitive capacity	kW	10.31	15.26	19.95	14.61	21.04	27.69	25.72	31.83	35.64
Water flow rate	l/h	2312	3307	4193	3252	4519	5742	5665	6843	7546
Δp (water)	kPa	3.9	10.0	15.2	11.1	19.8	30.2	19.1	26.7	31.7
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C										
Capacity	kW	14.39	21.58	28.45	20.38	29.65	39.35	36.08	44.80	50.25
Water flow rate	l/h	2505	3731	4921	3524	5128	6805	6237	7752	8695
Δp (water)	kPa	4.7	9.5	15.4	9.8	18.9	31.1	17.2	25.3	31.0
MOTOR ELECTRIC POWER DRAW										
Power draw	W	259	466	1034	387	726	1945	640	1020	1440
Max power draw	A		4.2			6.3			11	
SOUND DATA										
Return + radiated sound power	dB(A)	57	63	70	60	66	73	70	74	77
Delivery sound power	dB(A)	61	67	74	64	70	77	74	78	81
Return + radiated sound pressure (*)	dB(A)	48	54	61	51	57	64	61	65	68
Delivery sound pressure (*)	dB(A)	52	58	65	55	61	68	65	69	72

(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

7.3- 2-pipe unit with 6-row coil

		21			38			81		
Speed (Drive voltage)	V	6V	8V	10V	6V	8V	10V	5V	7V	10V
Air flow rate	m3/h	494	906	1211	976	1719	2290	1867	3054	4447
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	3.96	6.31	7.70	7.82	12.06	14.66	15.29	22.36	29.12
Sensitive capacity	kW	2.95	4.88	6.10	5.81	9.25	11.55	11.23	17.00	22.78
Water flow rate	l/h	681	1086	1323	1345	2068	2519	2630	3846	5013
Δp (water)	kPa	6.5	15.1	28.6	9.1	26.2	37.1	21.8	42.7	68.0
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C										
Capacity	kW	4.08	6.86	8.65	8.01	12.97	16.35	15.48	23.54	32.05
Water flow rate	l/h	705	1186	1497	1386	2244	2823	2672	4082	5537
Δp (water)	kPa	7.2	18.0	27.1	9.9	23.1	34.6	17.1	36.1	61.7
MOTOR ELECTRIC POWER DRAW										
Power draw	W	71	140	240	126	262	447	226	470	1086
Max power draw	A		1.7			3.4			4.2	
SOUND DATA										
Return + radiated sound power	dB(A)	54	57	60	63	67	69	64	70	76
Delivery sound power	dB(A)	58	61	64	65	71	73	66	74	80
Return + radiated sound pressure (*)	dB(A)	45	48	51	54	58	60	55	61	67
Delivery sound pressure (*)	dB(A)	49	52	55	56	62	64	57	65	71

		91			101			121		
Speed (Drive voltage)	V	5V	7V	10V	5V	7V	10V	5V	7V	10V
Air flow rate	m3/h	1911	3147	4530	2800	4516	6637	5200	6900	8050
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	17.3	26.4	35.5	24.9	37.0	50.2	44.82	56.37	63.75
Sensitive capacity	kW	12.4	19.5	26.9	18.0	27.6	38.4	32.81	42.07	48.07
Water flow rate	l/h	2975	4545	6098	4281	6365	8644	7708	9695	10952
Δp (water)	kPa	4.1	8.78	14.9	8.98	18.3	31.8	16.5	25	31.1
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C										
Capacity	kW	17.00	27.25	38.04	24.74	38.59	54.50	45.24	58.75	67.58
Water flow rate	l/h	2943	4710	6576	4273	6671	9437	7825	10160	11685
Δp (water)	kPa	4.14	9.48	17.1	9.09	19.9	36.7	17.1	27	34.6
MOTOR ELECTRIC POWER DRAW										
Power draw	W	259	466	1034	387	726	1945	640	1020	1440
Max power draw	A		4.2			6.3			11	
SOUND DATA										
Return + radiated sound power	dB(A)	57	63	70	60	66	73	70	74	77
Delivery sound power	dB(A)	61	67	74	64	70	77	74	78	81
Return + radiated sound pressure (*)	dB(A)	48	54	61	51	57	64	61	65	68
Delivery sound pressure (*)	dB(A)	52	58	65	55	61	68	65	69	72

(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

7.4- 4-pipe unit with 3-row main coil and 1-row auxiliary coil

		21			38			81		
Speed (Drive voltage)	V	6V	8V	10V	6V	8V	10V	5V	7V	10V
Air flow rate	m3/h	494	906	1211	976	1719	2290	1867	3054	4447
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	2.79	4.07	4.78	5.44	7.73	9.06	10.50	14.35	17.78
Sensitive capacity	kW	2.23	3.44	4.17	4.35	6.51	7.88	8.41	11.99	15.48
Water flow rate	l/h	478	699	822	935	1328	1557	1814	2473	3060
Δp (water)	kPa	9.7	19.0	26.3	11.8	21.9	28.9	14.1	24.5	35.7
HEATING - air 20 °C - water inlet 65°C, outlet 55°C										
Capacity	kW	2.61	3.72	4.38	5.09	7.06	8.31	10.00	13.30	16.57
Water flow rate	l/h	227	324	382	444	616	725	871	1163	1444
Δp (water)	kPa	1.8	3.4	4.6	3.0	5.3	7.1	4.4	7.3	10.6
MOTOR ELECTRIC POWER DRAW										
Power draw	W	71	140	240	126	262	447	226	470	1086
Max power draw	A		1.7			3.4			4.2	
SOUND DATA										
Return + radiated sound power	dB(A)	54	57	60	63	67	69	64	70	76
Delivery sound power	dB(A)	58	61	64	65	71	73	66	74	80
Return + radiated sound pressure (*)	dB(A)	45	48	51	54	58	60	55	61	67
Delivery sound pressure (*)	dB(A)	49	52	55	56	62	64	57	65	71

Note: sizes 91, 101, 121 are not available with 3 row main coil and 1-row auxiliary coil
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

7.5- 4-pipe unit with 3-row main coil and 2-row auxiliary coil

		21			38			81		
Speed (Drive voltage)	V	6V	8V	10V	6V	8V	10V	5V	7V	10V
Air flow rate	m3/h	494	906	1211	976	1719	2290	1867	3054	4447
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	2.79	4.07	4.78	5.44	7.73	9.06	10.50	14.35	17.78
Sensitive capacity	kW	2.23	3.44	4.17	4.35	6.51	7.88	8.41	11.99	15.48
Water flow rate	l/h	478	699	822	935	1328	1557	1814	2473	3060
Δp (water)	kPa	9.7	19.0	26.3	11.8	21.9	28.9	14.1	24.5	35.7
HEATING - air 20 °C - water inlet 65°C, outlet 55°C										
Capacity	kW	4.41	6.58	7.87	8.57	12.43	14.72	16.57	23.00	28.99
Water flow rate	l/h	385	574	686	748	1082	1287	1449	2006	2529
Δp (water)	kPa	3.1	6.2	8.5	3.7	7.1	9.6	3.2	5.6	8.4
MOTOR ELECTRIC POWER DRAW										
Power draw	W	71	140	240	126	262	447	226	470	1086
Max power draw	A		1.7			3.4			4.2	
SOUND DATA										
Return + radiated sound power	dB(A)	54	57	60	63	67	69	64	70	76
Delivery sound power	dB(A)	58	61	64	65	71	73	66	74	80
Return + radiated sound pressure (*)	dB(A)	45	48	51	54	58	60	55	61	67
Delivery sound pressure (*)	dB(A)	49	52	55	56	62	64	57	65	71

Note: sizes 91, 101, 121 are not available with 3 row main coils
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

7.6- 4-pipe unit with 4-row main coil and 1-row auxiliary coil

		21			38			81		
Speed (Drive voltage)	V	6V	8V	10V	6V	8V	10V	5V	7V	10V
Air flow rate	m3/h	494	906	1211	976	1719	2290	1867	3054	4447
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	3.27	4.94	5.84	6.35	9.26	11.02	12.27	17.16	21.63
Sensitive capacity	kW	2.54	4.04	4.95	4.96	7.59	9.31	9.58	13.95	18.20
Water flow rate	l/h	562	850	1006	1093	1591	1891	2111	2948	3711
Δp (water)	kPa	5.7	12.1	21.7	6.0	15.8	21.4	7.2	17.6	26.3
HEATING - air 20 °C - water inlet 65°C, outlet 55°C										
Capacity	kW	2.61	3.72	4.38	5.09	7.06	8.31	10.00	13.30	16.57
Water flow rate	l/h	227	324	382	444	616	725	871	1163	1444
Δp (water)	kPa	1.8	3.4	4.6	3.0	5.3	7.1	4.4	7.3	10.6
MOTOR ELECTRIC POWER DRAW										
Power draw	W	71	140	240	126	262	447	226	470	1086
Max power draw	A		1.7			3.4			4.2	
SOUND DATA										
Return + radiated sound power	dB(A)	54	57	60	63	67	69	64	70	76
Delivery sound power	dB(A)	58	61	64	65	71	73	66	74	80
Return + radiated sound pressure (*)	dB(A)	45	48	51	54	58	60	55	61	67
Delivery sound pressure (*)	dB(A)	49	52	55	56	62	64	57	65	71

Note: sizes 91, 101, 121 are not available with 1 row auxiliary coils
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

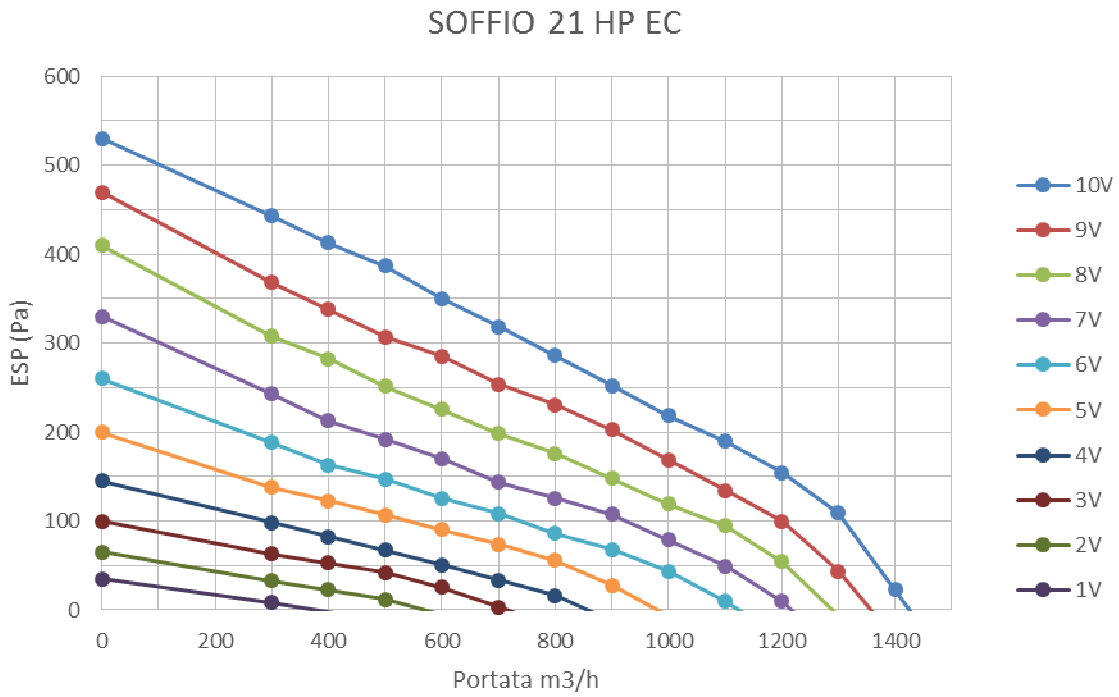
7.7- 4-pipe unit with 4-row main coil and 2-row auxiliary coil

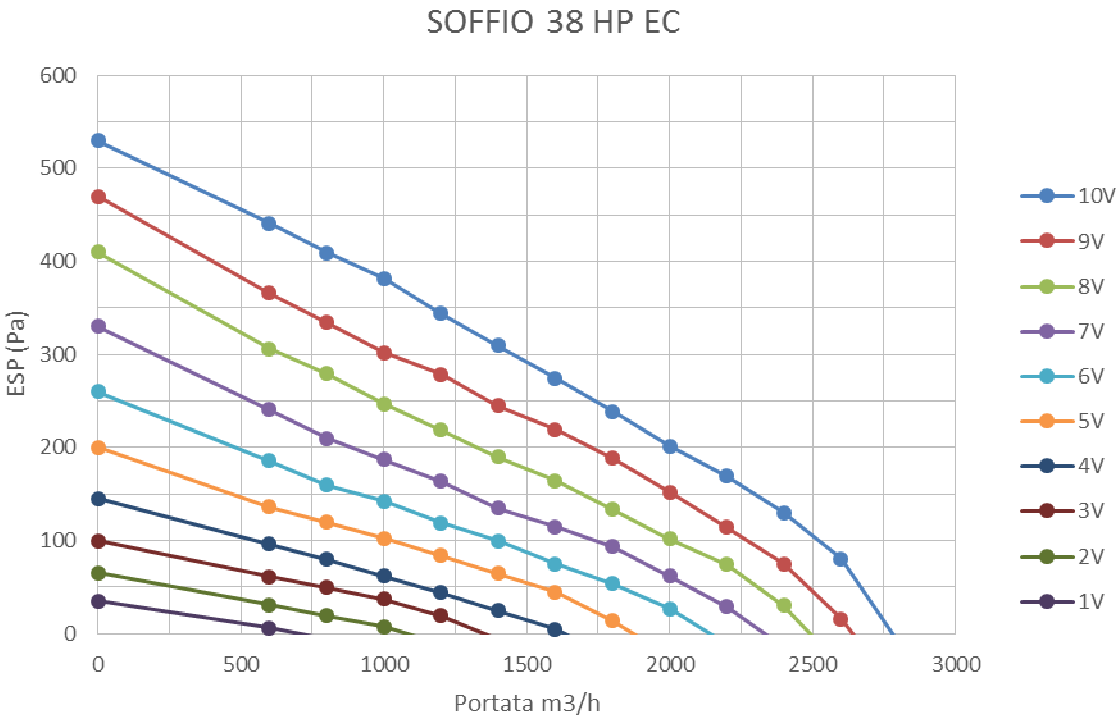
		21			38			81		
Speed (Drive voltage)	V	6V	8V	10V	6V	8V	10V	5V	7V	10V
Air flow rate	m3/h	494	906	1211	976	1719	2290	1867	3054	4447
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	3.27	4.94	5.84	6.35	9.26	11.02	12.27	17.16	21.63
Sensitive capacity	kW	2.54	4.04	4.95	4.96	7.59	9.31	9.58	13.95	18.20
Water flow rate	l/h	562	850	1006	1093	1591	1891	2111	2948	3711
Δp (water)	kPa	5.7	12.1	21.7	6.0	15.8	21.4	7.2	17.6	26.3
HEATING - air 20 °C - water inlet 65°C, outlet 55°C										
Capacity	kW	4.41	6.58	7.87	8.57	12.43	14.72	16.57	23.00	28.99
Water flow rate	l/h	385	574	686	748	1082	1287	1449	2006	2529
Δp (water)	kPa	3.1	6.2	8.5	3.7	7.1	9.6	3.2	5.6	8.4
MOTOR ELECTRIC POWER DRAW										
Power draw	W	71	140	240	126	262	447	226	470	1086
Max power draw	A		1.7			3.4			4.2	
SOUND DATA										
Return + radiated sound power	dB(A)	54	57	60	63	67	69	64	70	76
Delivery sound power	dB(A)	58	61	64	65	71	73	66	74	80
Return + radiated sound pressure (*)	dB(A)	45	48	51	54	58	60	55	61	67
Delivery sound pressure (*)	dB(A)	49	52	55	56	62	64	57	65	71

		91			101			121		
Speed (Drive voltage)	V	5V	7V	10V	5V	7V	10V	5V	7V	10V
Air flow rate	m3/h	1911	3147	4530	2800	4516	6637	5200	6900	8050
Head	Pa	150	150	150	150	150	150	150	150	150
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C										
Total capacity	kW	13.42	19.24	24.44	18.93	26.31	33.38	32.97	39.83	43.89
Sensitive capacity	kW	10.31	15.26	19.95	14.61	21.04	27.69	25.72	31.83	35.64
Water flow rate	l/h	2312	3307	4193	3252	4519	5742	5665	6843	7546
Δp (water)	kPa	3.9	10.0	15.2	11.1	19.8	30.2	19.1	26.7	31.7
HEATING - air 20 °C - water inlet 65°C, outlet 55°C										
Capacity	kW	18.53	26.16	33.14	25.62	35.21	44.69	42.51	51.12	56.35
Water flow rate	l/h	1619	2282	2890	2229	3066	3899	3710	4457	4910
Δp (water)	kPa	5.1	9.3	14.1	10.2	17.9	27.3	3.1	4.3	5.1
MOTOR ELECTRIC POWER DRAW										
Power draw	W	259	466	1034	387	726	1945	640	1020	1440
Max power draw	A		4.2			6.3			11	
SOUND DATA										
Return + radiated sound power	dB(A)	57	63	70	60	66	73	70	74	77
Delivery sound power	dB(A)	61	67	74	64	70	77	74	78	81
Return + radiated sound pressure (*)	dB(A)	48	54	61	51	57	64	61	65	68
Delivery sound pressure (*)	dB(A)	52	58	65	55	61	68	65	69	72

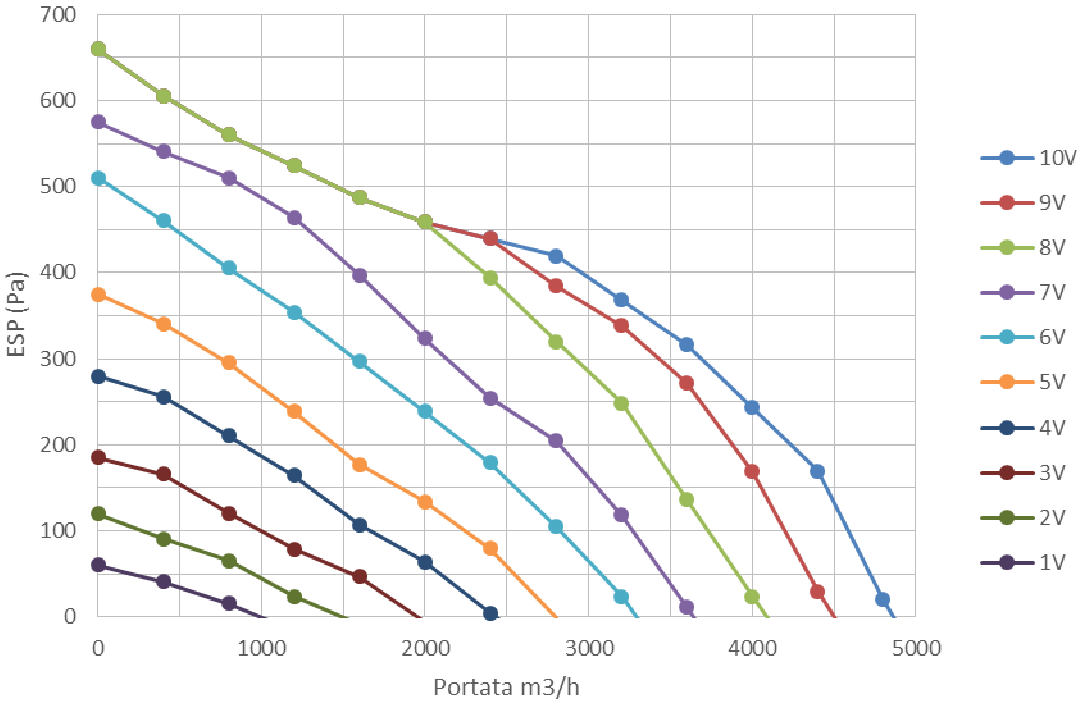
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

7.8-Flow rate-head curves

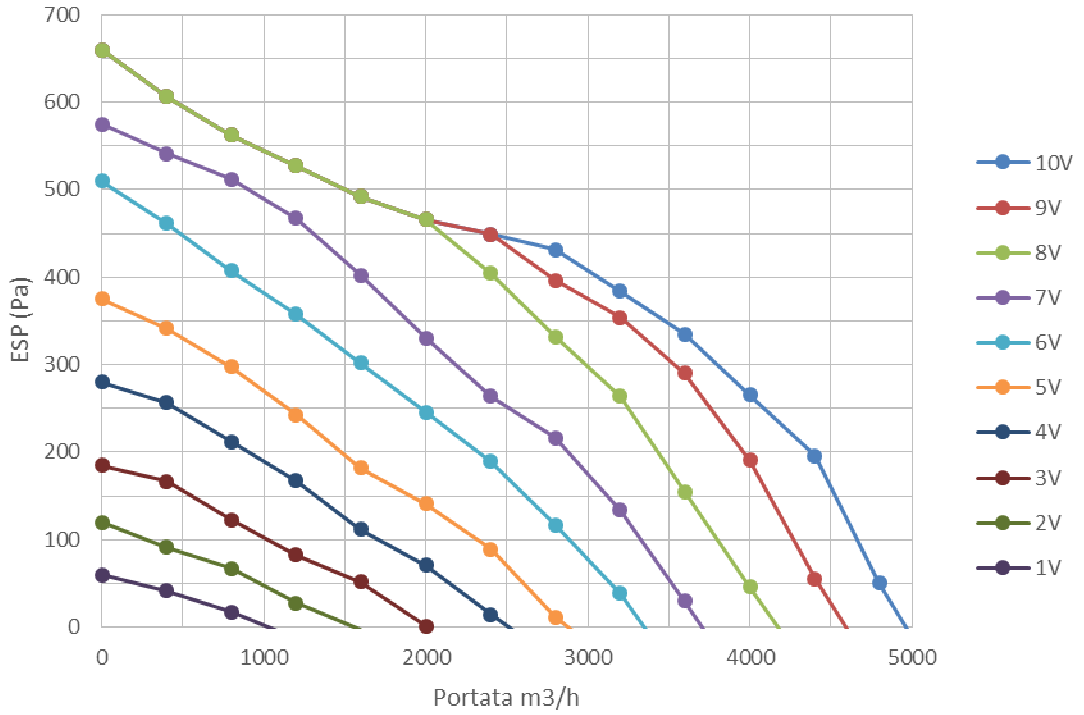




SOFFIO 81 HP EC

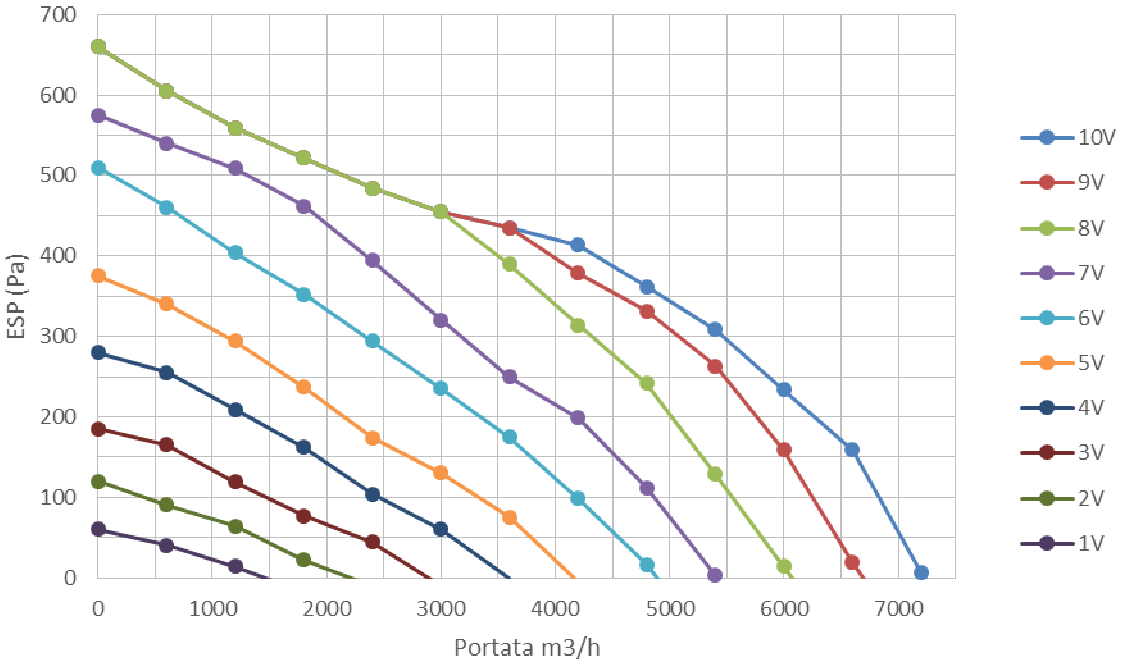


SOFFIO 91 HP EC

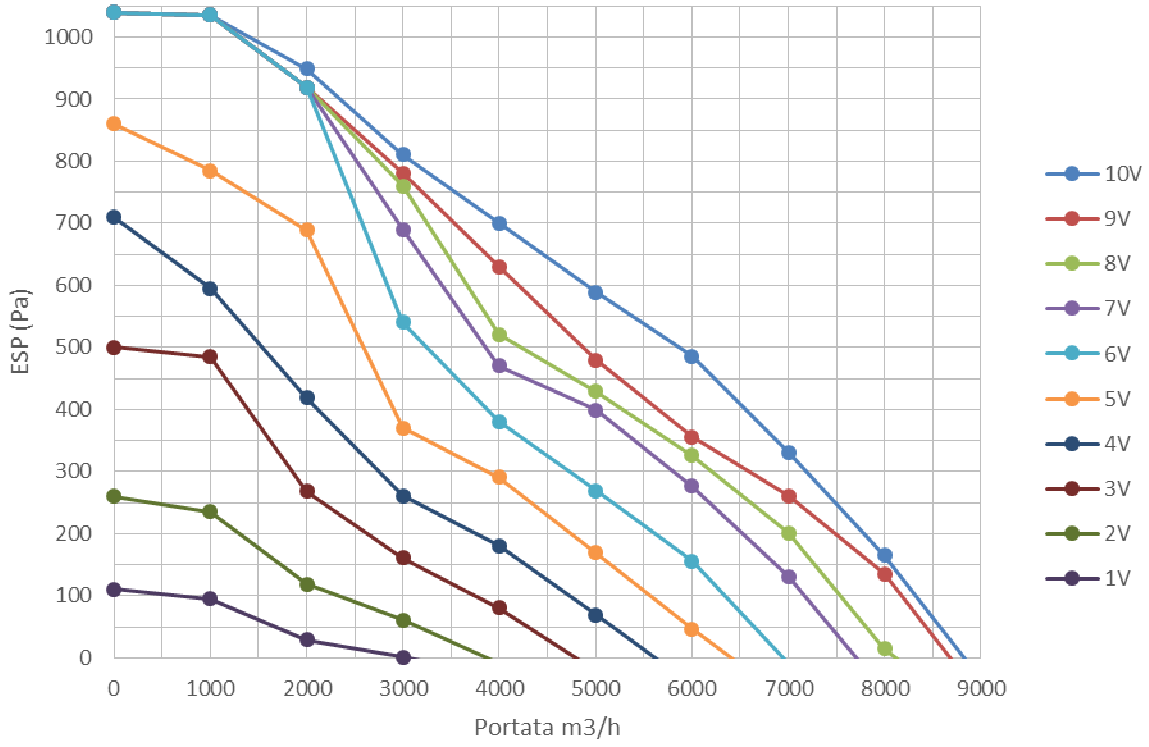


SOFFIO HP

SOFFIO 101 HP EC



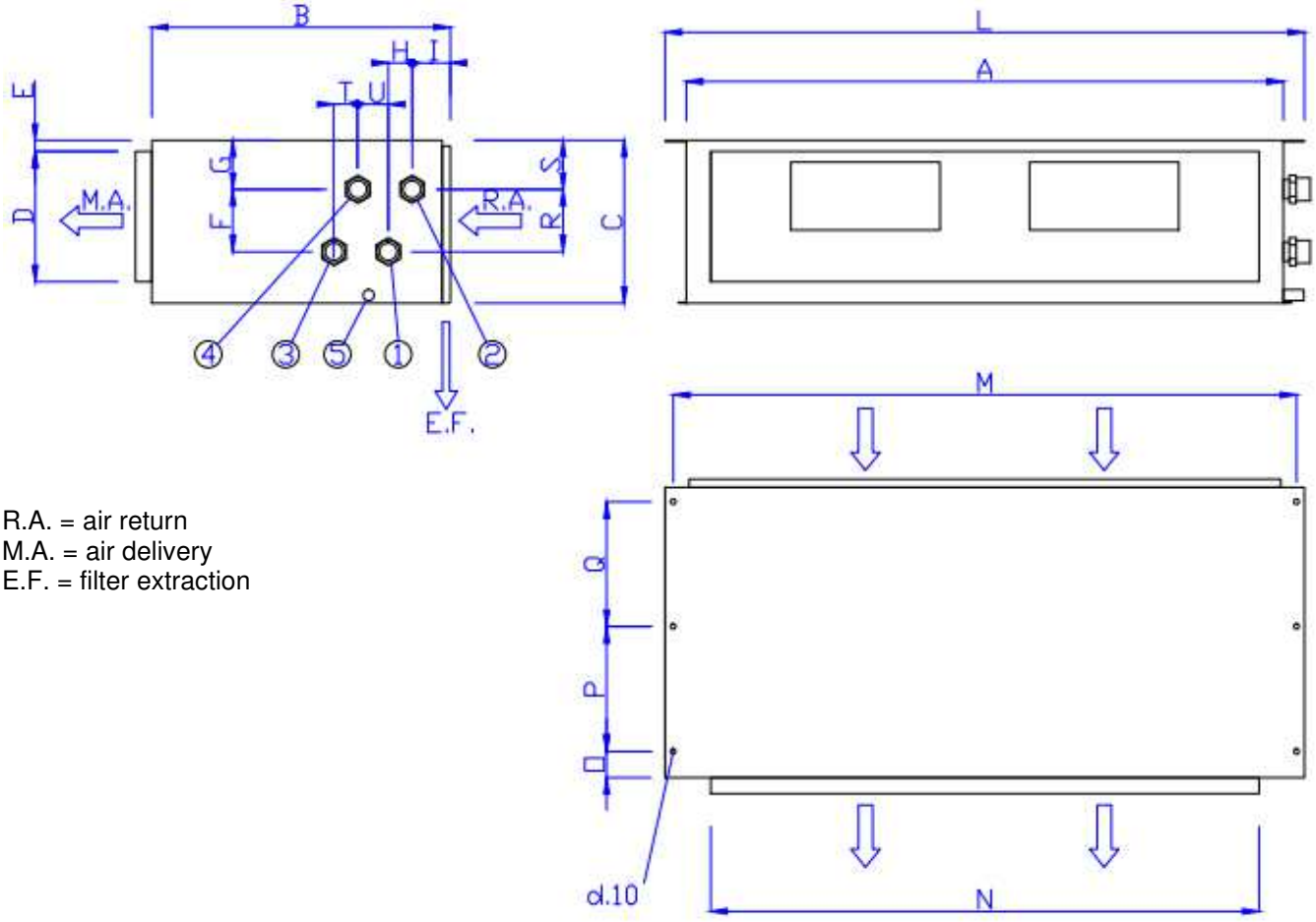
SOFFIO 121 HP EC



8-DIMENSIONS AND WEIGHTS

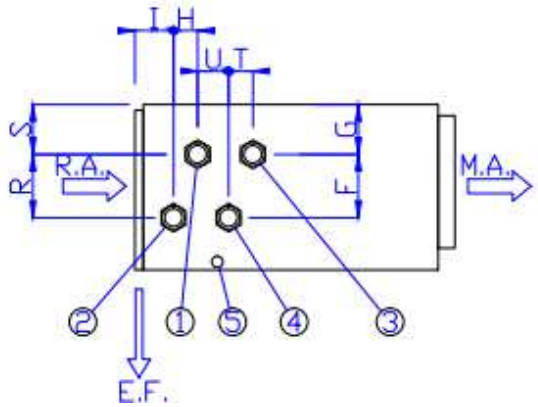
8.1-Dimensions and weights - single panel (SP)

Standard outfitting (right-hand connections)



R.A. = air return
M.A. = air delivery
E.F. = filter extraction

Optional outfitting (left-hand connections)



1	Main coil IN
2	Main coil OUT
3	Auxiliary coil IN
4	Auxiliary coil OUT
5	Condensate drain

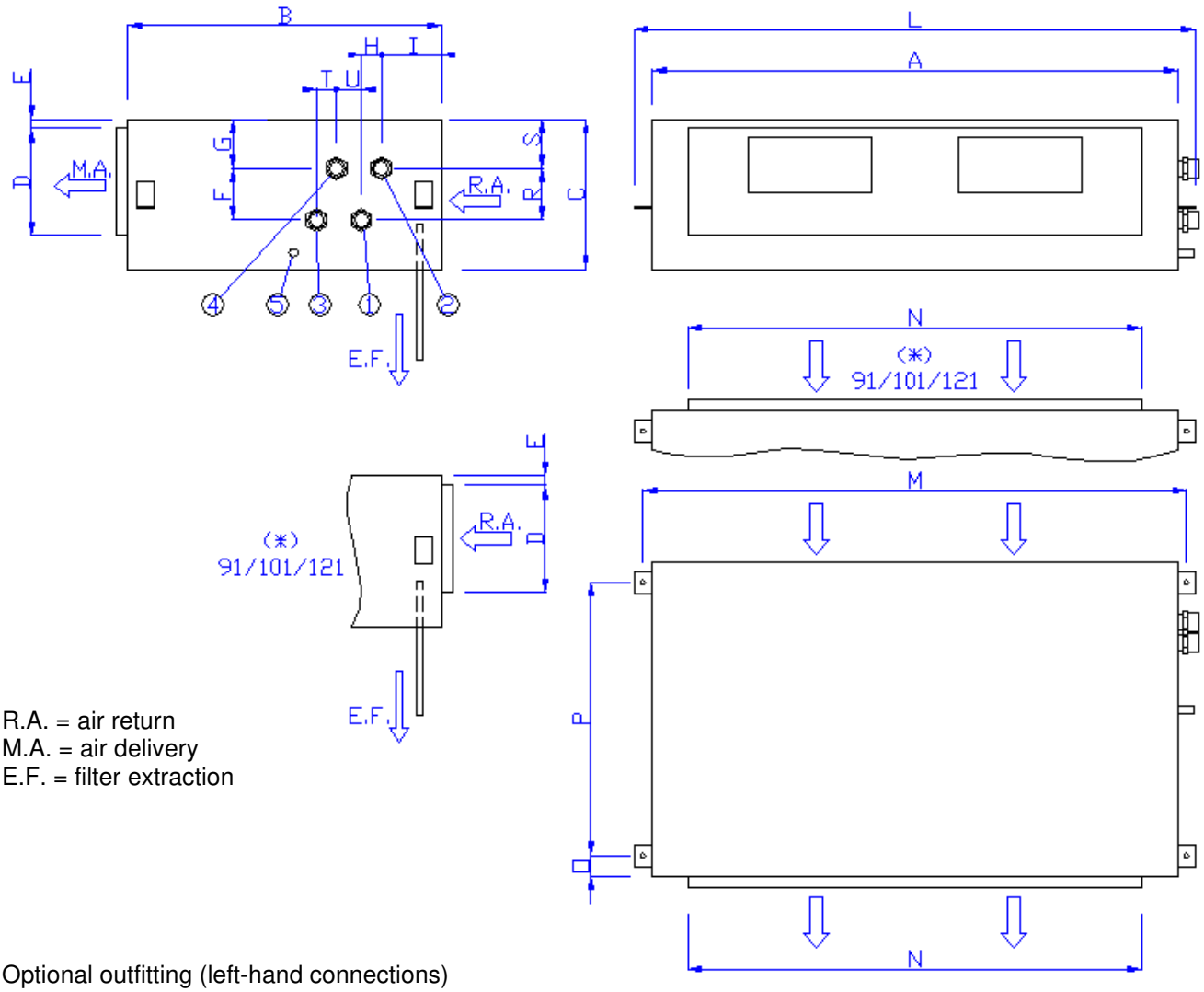
	DIMENSIONS (mm)								DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**			**21**	**38**	**81**	**91**	**101**	**121**
A	660	1100	1650	1700	1950	2100		**M**	708	1148	1698	1748	1998	2153
B	650	650	750	795	795	915		**N**	570	1010	1560	1600	1850	2000
C	370	370	435	485	485	635		**O**	50	50	60	40	40	40
D	240	240	300	400	400	550		**P**	280	280	325	350	350	273
E	25	25	25	30	30	30		**Q**	280	280	325	350	350	273
F	120	120	120	270	270	320		**R**	115	115	190	270	270	320
G	160	160	150	105	105	155		**S**	160	160	150	105	105	155
H	44	44	44	65	65	65		**T**	30	30	30	30	30	40
H1	44	44	44	130	130	130		**U**	68	68	68	100	100	106
I	70	70	70	95	95	95								
L	738	1178	1728	1778	2028	2178								

H: for units with 3 or 4 row coil
H1: for units with 6 row coil

	UNIT WEIGHT (kg)					
	21	**38**	**81**	**91**	**101**	**121**
3 rows	48	65	100	-	-	-
3 rows +1 (4 pipes)	50	68	104	-	-	-
3 rows +2 (4 pipes)	52	71	108	-	-	-
4 rows	50	68	104	135	150	198
4 rows +1 (4 pipes)	52	72	108	140	155	203
4 rows +2 (4 pipes)	54	74	112	145	160	208
6 rows	54	74	112	145	160	208

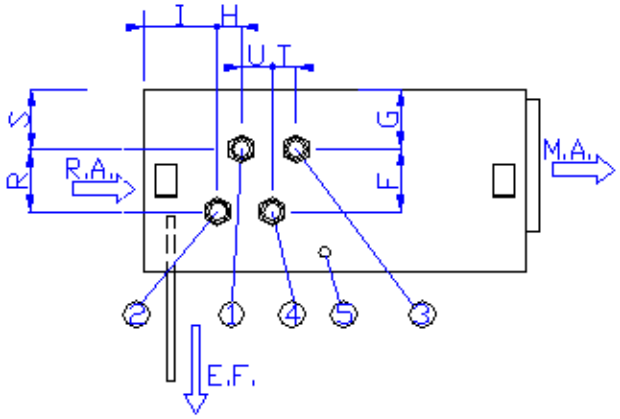
8.2-Dimensions and weights - double panel (DP)

Standard outfitting (right-hand connections)



R.A. = air return
M.A. = air delivery
E.F. = filter extraction

Optional outfitting (left-hand connections)



1	Main coil IN
2	Main coil OUT
3	Auxiliary coil IN
4	Auxiliary coil OUT
5	Condensate drain

(*) Only for sizes 91, 101, 121, with double panel structure (DP version), the steelwork also includes the flange for the return ducting.

	DIMENSIONS (mm)								DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**			**21**	**38**	**81**	**91**	**101**	**121**
A	730	1170	1720	1740	1990	2140		**M**	772	1212	1762	1982	2032	2187
B	750	750	800	950	950	1070		**N**	570	1010	1560	1695	1945	2095
C	405	405	470	530	530	680		**O**	45	45	45	75	75	75
D	240	240	300	400	400	550		**P**	660	660	710	800	800	460
E	25	25	25	25	25	35		**Q**	--	--	--	--	--	460
F	120	120	120	270	270	320		**R**	115	115	190	270	270	320
G	180	180	205	125	125	175		**S**	180	180	170	125	125	175
H	44	44	44	65	65	65		**T**	30	30	30	30	30	40
H1	44	44	44	130	130	130		**U**	68	68	68	100	100	106
I	135	135	135	195	195	195								
L	810	1250	1800	1820	2070	2220								

H: for units with 3 or 4 row coil
H1: for units with 6 row coil

	UNIT WEIGHT (kg)					
	21	**38**	**81**	**91**	**101**	**121**
3 rows	62	85	130	-	-	-
3 rows +1 (4 pipes)	65	88	135	-	-	-
3 rows +2 (4 pipes)	68	92	140	-	-	-
4 rows	65	88	135	176	195	260
4 rows +1 (4 pipes)	68	94	140	182	202	265
4 rows +2 (4 pipes)	70	96	146	189	208	270
6 rows	70	96	146	189	208	270

8.3-Hydraulic connections and coil volume

		HYDRAULIC CONNECTIONS					
		21	**38**	**81**	**91**	**101**	**121**
1	Main coil IN	3/4”	3/4”	1"	1"1/4	1"1/4	1"1/2
2	Main coil OUT	3/4”	3/4”	1"	1"1/4	1"1/4	1"1/2
3	Auxiliary coil IN	3/4”	3/4”	3/4”	1"	1"	1"1/4
4	Auxiliary coil OUT	3/4”	3/4”	3/4”	1"	1"	1"1/4
5	Condensate drain	20mm	20mm	25mm	25mm	25mm	25mm
	Direct liquid exp. R410A (welding)	d.6	d.10	d.16	d.18	d.18	-
	Direct gas exp. R410A (welding)	d.10	d.16	d.18	d.22	d.22	-

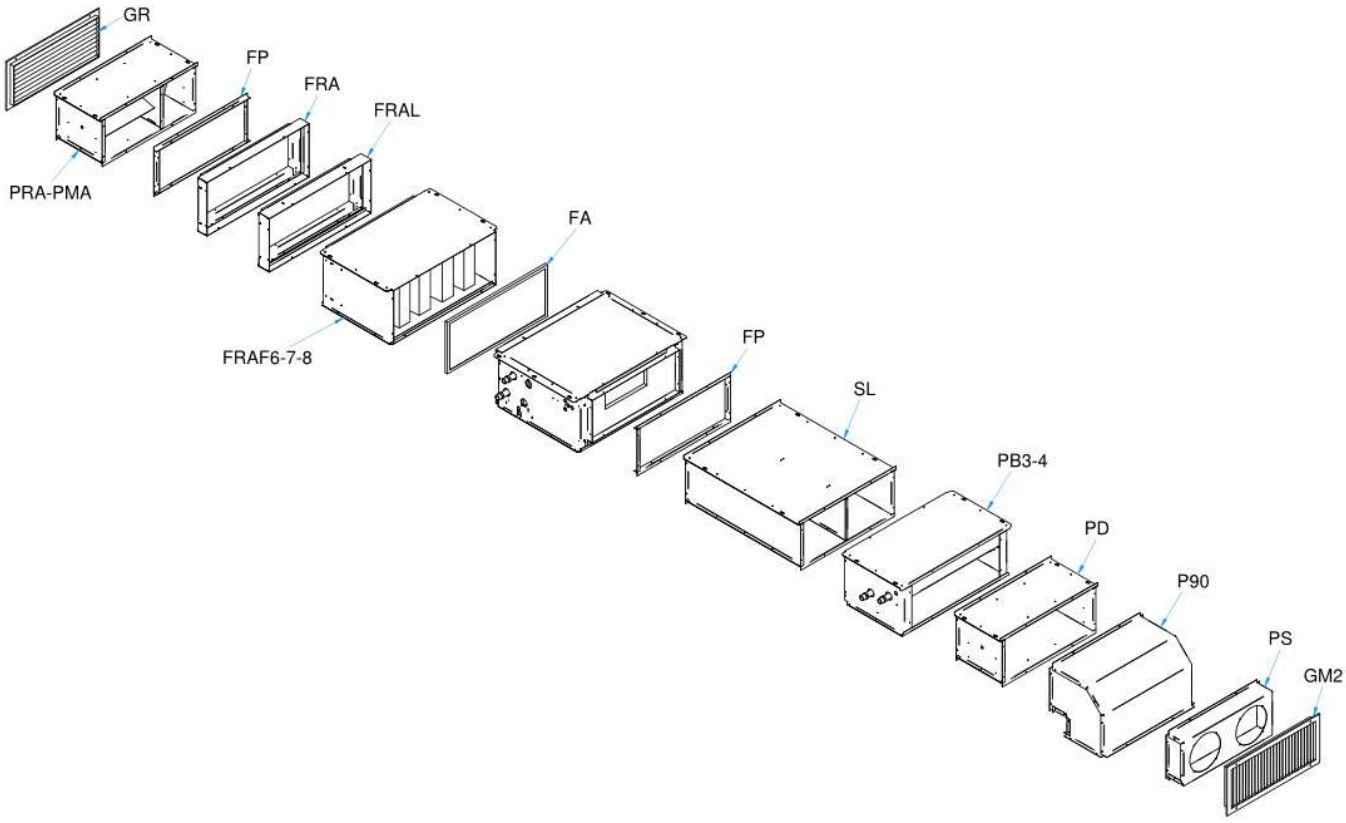
	COIL INSIDE VOLUME (litres)					
	21	**38**	**81**	**91**	**101**	**121**
3 rows	1.1	2.0	4.0	-	-	-
4 rows	1.5	2.7	5.4	7.0	8.2	14.4
6 rows	2.2	4.0	8.1	14.2	16.5	29.0
2 rows auxiliary	0.7	1.3	2.7	3.5	4.1	7.2
4 row direct exp. R410A	1.0	1.8	3.6	4.8	5.5	-

9-ACCESSORIES

The following accessories are available:

		HYDRAULIC ACCESSORIES	A/K/B
1	**B1-B2**	1- or 2-row auxiliary coil for 4-pipe systems	A
2	**V**	Valve (for the VBD dynamic balancing valve, see the specific manual)	K
3	**VCS**	Auxiliary condensate collection tray for valves	K
4	**PSC**	Condensate drain pump	K
5	**BLV**	Static balancing and calibration valve	K
6	**SOV**	Shut-off ball valves	K
7	**FLEX**	Flexible hoses for hydraulic connections	K
		ELECTRICAL ACCESSORIES	
8	**TR24**	Transformer for modulating valve	A
9	**ETBN-2.5A**	Power relay board size 2.5A (for SOFFIO HP 21)	A
10	**ETBN-6A**	Power relay board size 9A (for SOFFIO HP 38 to 121)	A
11	**SC3**	Three-speed EC motor control board	A
12	**EH - EHR**	Electrical heater - relay for electrical heaters	A
13	**IPB**	Fluid-tight electrical panel	A
		AERAULIC ACCESSORIES	
14	**FP**	Flat flange (return or delivery)	A
15	**FRAB**	Return flange with filter extraction from below	A
16	**FRAL**	Return flange with filter extraction from the side	A
17	**P90**	90° plenum (return or delivery)	B
18	**PMA**	Return air mixing plenum	B
19	**PD**	Straight plenum (return or delivery)	B
20	**PS**	Plenum with spigot (return or delivery)	B
21	**PRA**	Return air regulation plenum	B
22	**PB3-PB4**	Plenum with 3 or 4 row post-heating coil	B
23	**PEH**	Plenum with electric heaters	
24	**GM2**	Dual adjustment delivery grille	B
25	**GR**	Return grille	B
26	**COIB**	Insulation for plenum	**B**
27	**SL**	**D**uct silencer	B
		FILTRATION	
28	**FS-FA1…7**	Low and medium efficiency filters	A
29	**FRAF6-7-8**	Return flange with high efficiency pocket filter	B

A/**K**/**B**: A = accessory supplied mounted on the base unit; K = accessory supplied in a kit i.e. not assembled; B = accessory supplied assembled, but not mounted on the base unit



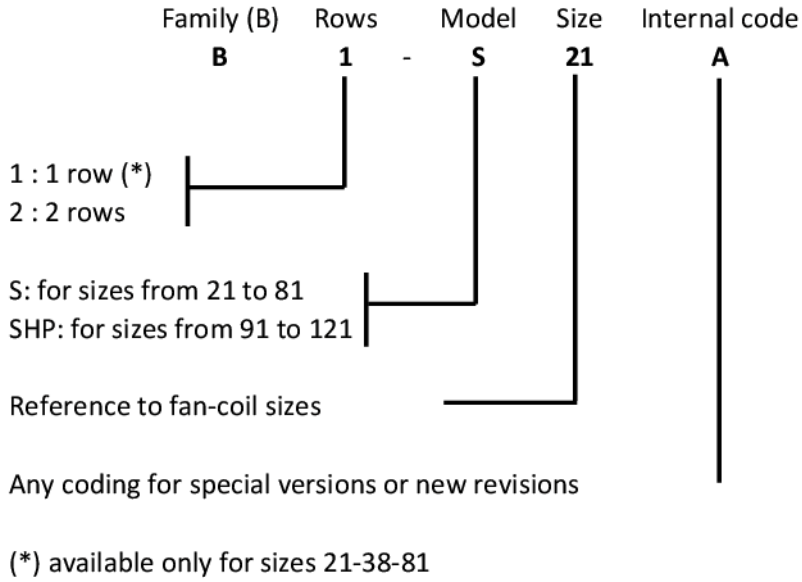
As per the table below, the accessories of the "G1" group can be connected directly to the machine structure:
The accessories of the "G2" group need the FP (if connected to delivery) or FRA + FP (if connected to return) accessory in order to be connected to the machine frame. In addition, the accessories of the "G2" group can be connected in series with each other.

	Group	DELIVERY	RETURN
FP	G1	X	X (after FRA)
FRAB / FLAL	G1	-	X
P90	G2	X (after FP)	X (after FRA+FP)
PMA	G2	-	X (after FRA+FP)
PD	G2	X (after FP)	X (after FRA+FP)
PS	G2	X (after FP)	X (after FRA+FP)
PRA	G2	-	X (after FRA+FP)
PB3 - PB4	G1	X	-
PEH	G2	X (after FP)	-
GM2	-	X (after ducting)	-
GR	-	-	X (after ducting)
FRAF6 - 7 - 8	G1	-	X
SL	G2	X (after FP+PD/P90)	X (after FRA+FP)

Unless otherwise specified, the same accessories are compatible with both single-panel (SP) and double-panel (DP) units and therefore, in this case, the ordering code for the accessory is the same.
All plenums, unless otherwise specified, have a structure similar to single panel units, i.e. a metal plate possibly insulated internally (optional).
In the event that there are two separate accessories for single and double panel units, two separate codes are specified.

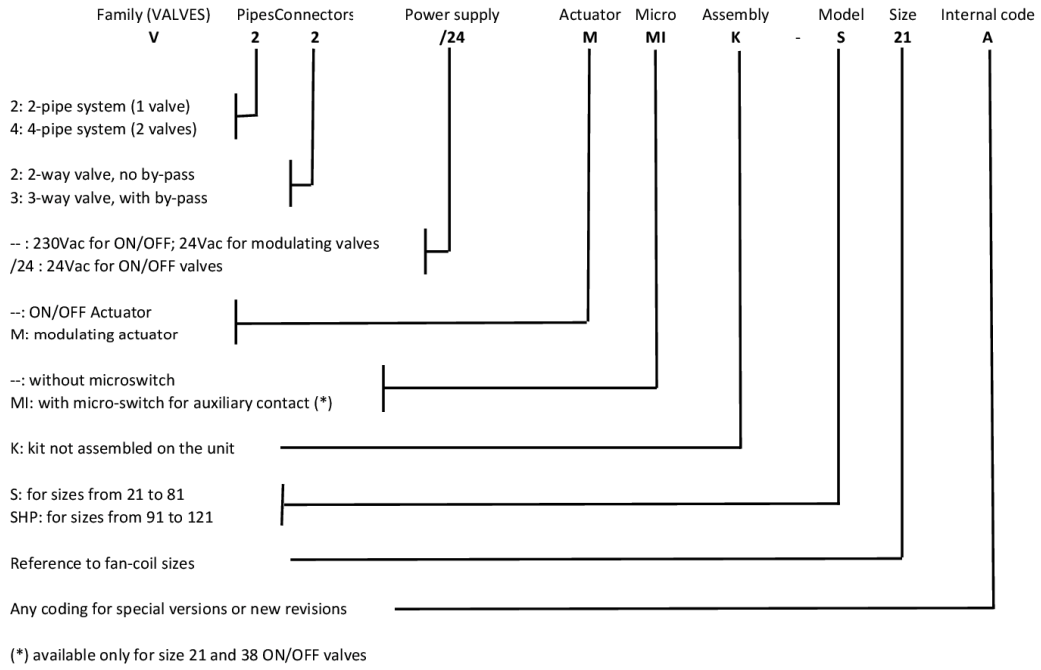
9.1-Auxiliary coil with 1 or 2 rows (B1-B2)

The auxiliary coil (B1-B2) is used for heating purposes in 4-pipe systems. For correct management of heating and cooling, in 4-pipe systems it is necessary to provide motorized valves on both coils (main and auxiliary) ensuring that only one of the two coils is active.
This accessory is not compatible with the electrical heater accessory (EH) and with the 6-row main coils.



9.2-Valves (V)

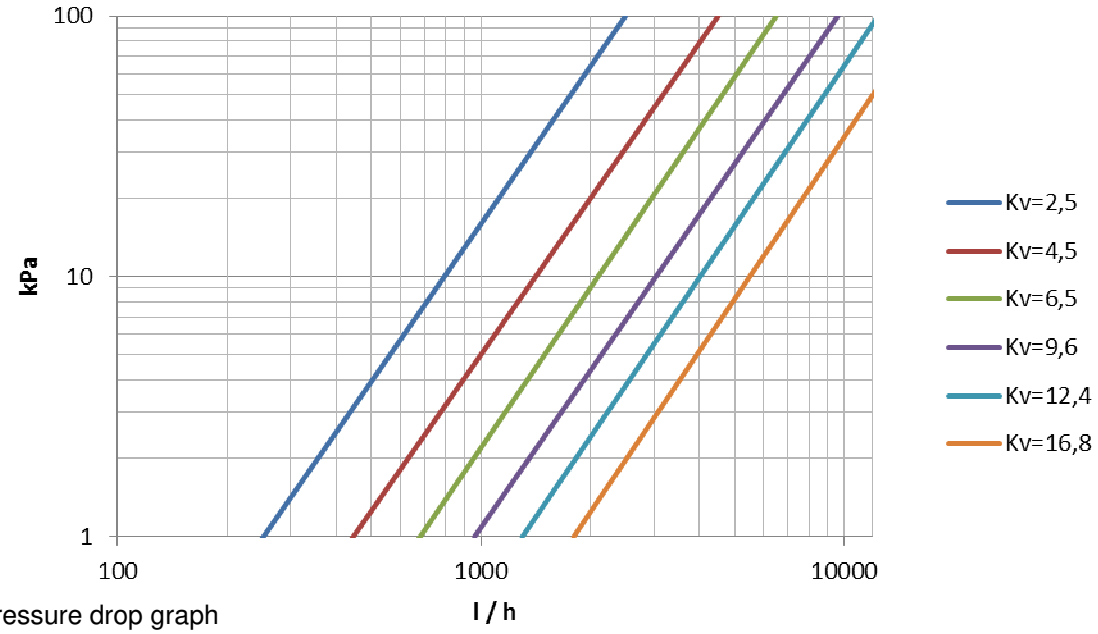
Servo-controlled valves should be used to prevent the formation of condensate on the surface of the unit when the fan has stopped.
The valves are supplied disassembled in kit form to eliminate the risk of damage during transport and installation.



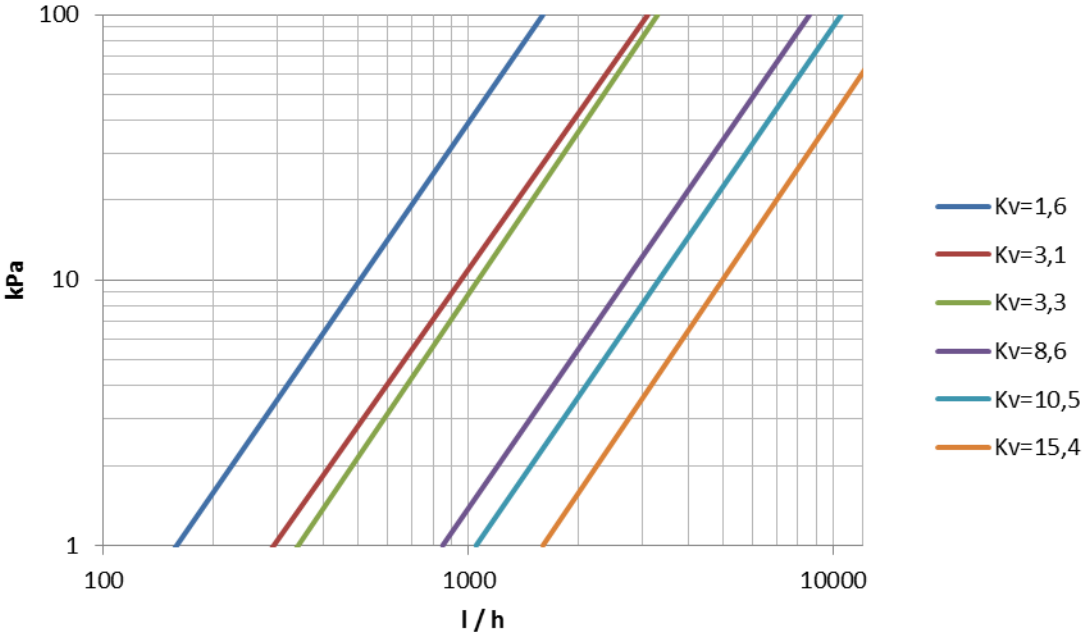
VALVES FOR MAIN COIL						
	21	**38**	**81**	**91**	**101**	**121**
GENERAL CHARACTERISTICS						
Valve size	3/4”	1”	1”	1”1/4	1”1/4	1”1/2
Connection fitting size	3/4”	3/4”	1”	1”1/4	1”1/4	1”1/2
Kvs (2-way valve)	2.5	4.5	9.6	12.4	12.4	16.8
Kvs (3-way valve, direct flow)	2.5	4.5	9.6	12.4	12.4	16.8
Kvs (3-way valve, by-pass)	1.6	3.1	8.6	10.5	10.5	15.4
Max differential pressure	1.0bar	0.7bar	1.4bar	1.0bar	1.0bar	0.9bar
Nominal pressure	16bar					
Water temperature	4 – 110°C					
ACTUATOR ON/OFF						
Power supply	230V-50Hz (24V-50Hz on request)					
Number of wires	2 wires		3 wires			
Absorbed power	2.5W		4.0VA - 2.0W			
Stroke time	180s		120s			
Characteristic (valve+actuator)	N.C. (Normally Closed)					
Protection	IP44		IP54			
MODULATING ACTUATOR						
Power supply	24V-50Hz					
Absorbed power	2.5VA - 1.5W		8.7VA – 4.9W			
Stroke time	8s		240s			
Control signal	0-10V					
Control signal impedance	100k					
Protection	IP43		IP54			

VALVES FOR AUXILIARY COIL						
	21	**38**	**81**	**91**	**101**	**121**
GENERAL CHARACTERISTICS						
Valve size	3/4”	3/4”	1”	1”	1”	1”1/4
Connection fitting size	3/4”	3/4”	1”	1”	1”	1”1/4
Kvs (2-way valve)	2.5	2.5	6.5	9.6	9.6	12.4
Kvs (3-way valve, direct flow)	2.5	2.5	6.5	9.6	9.6	12.4
Kvs (3-way valve, by-pass)	1.6	1.6	3.3	8.6	8.6	10.5
Max differential pressure	1.0bar	1.0bar	1.5bar	1.4bar	1.4bar	1.0bar
Nominal pressure	16bar					
Water temperature	4 – 110°C					
ACTUATOR ON/OFF						
Power supply	230V-50Hz (24V-50Hz on request)					
Number of wires	2 wires		2 wires	3 wires		
Absorbed power	2.5W		18W	4.0VA - 2.0W		
Stroke time	180s		240s	120s		
Characteristic (valve+actuator)	N.C. (Normally Closed)					
Protection	IP44		IP20	IP54		
MODULATING ACTUATOR						
Power supply	24V-50Hz					
Absorbed power	2.5VA - 1.5W		18W	8.7VA – 4.9W		
Stroke time	8s		240s	240s		
Control signal	0-10V					
Control signal impedance	100k					
Protection	IP43		IP42	IP54		

Straight flow pressure drop graph



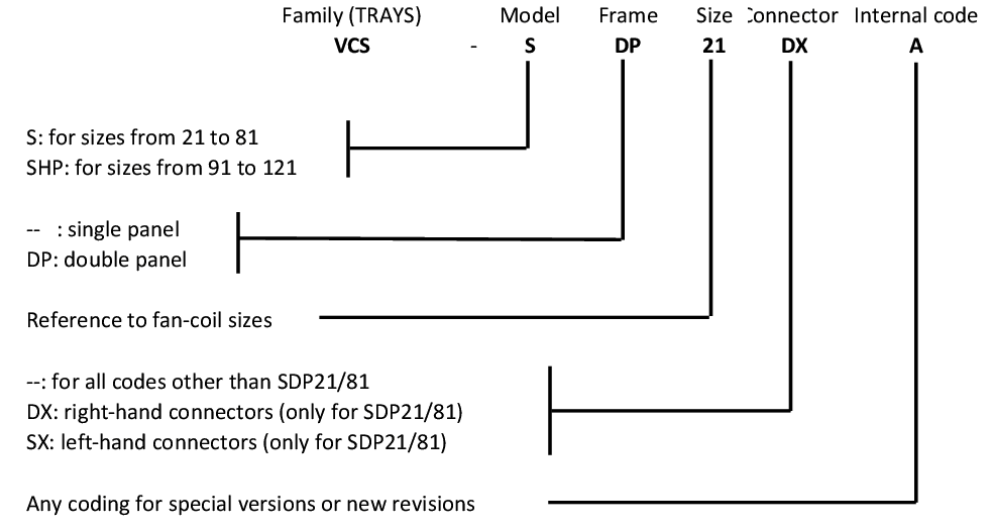
By-pass pressure drop graph

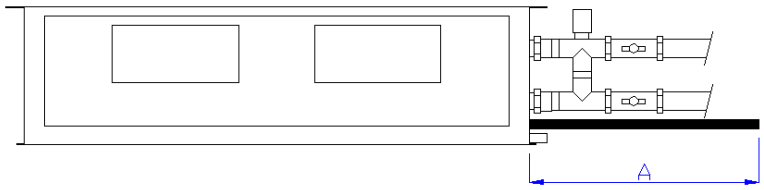


Dynamic balancing valves (VBD) are also available as accessories; for information please refer to the specific technical manual

9.3-Auxiliary condensate collection tray (VCS)

The auxiliary condensate collection tray is made of galvanized and painted sheet metal. It is fixed to the external side of the unit, below the valves. It allows to collect any condensate dripping from the valves and connection fittings to the unit. This condensate is conveyed through a main pipe to the main tank inside the unit. Its dimensions are suitable for covering the footprint not just of the valves (V), but also of any other accessories connected in series to the valves (BLV calibration and balancing valves, SOV ball valves etc.)

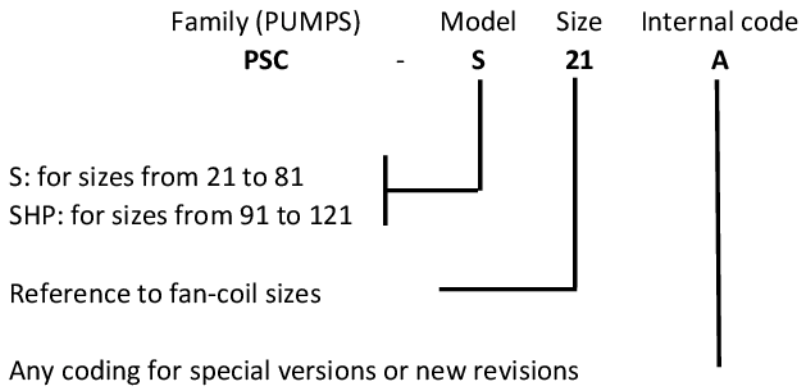




	DIMENSIONS (mm)					
	21	38	81	91	101	121
A	500	500	500	600	600	600

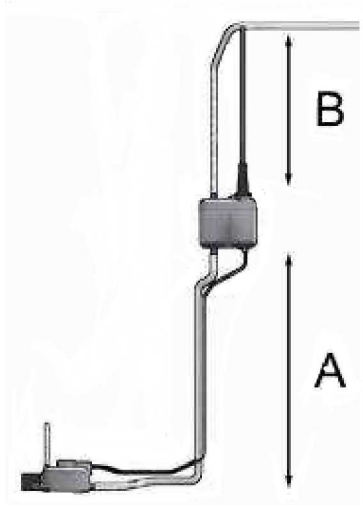
9.4-Condensate drain pump (PSC)

The condensate drain pump is supplied as an unassembled kit to avoid damage during transport and installation.

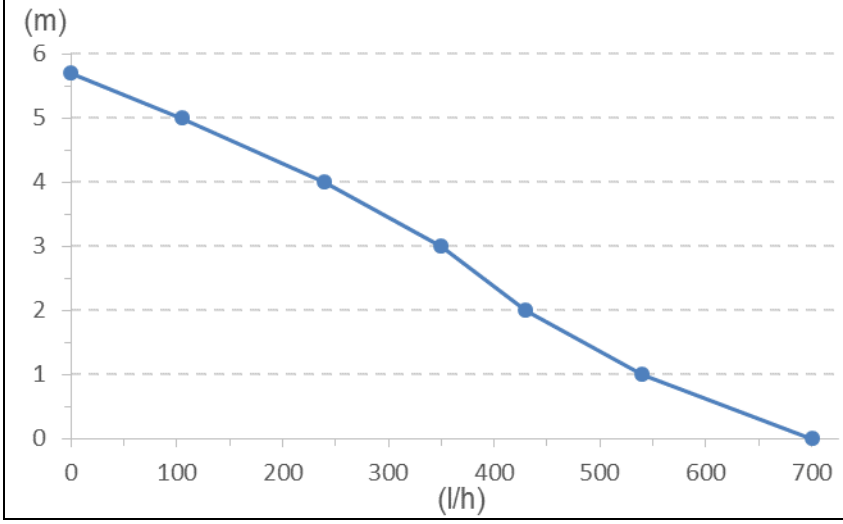


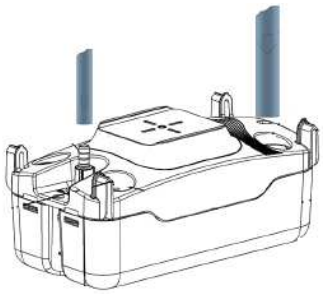
	21-38-81	91-101-121
Maximum water flow rate	30 l/h	700 l/h
Maximum suction height (A)	4m	---
Maximum drain height (B)	13m (8 l/h)	5.4 m (65 l/h)
Sound pressure at 1 m	34dB(A)	---
Power supply	230V – 50/60Hz	230V – 50/60Hz
Electrical power draw	21W	115W
Alarm microswitch	Resistive NC 8A 250V	Resistive NC 5A 250V
Circuit breaker	90°C (automatic reset)	120°C (automatic reset)
Protection	IP20	IP44
Operating conditions	Continuous	7% not continuous

SIZE 21-38-81



SIZE 91-101-121



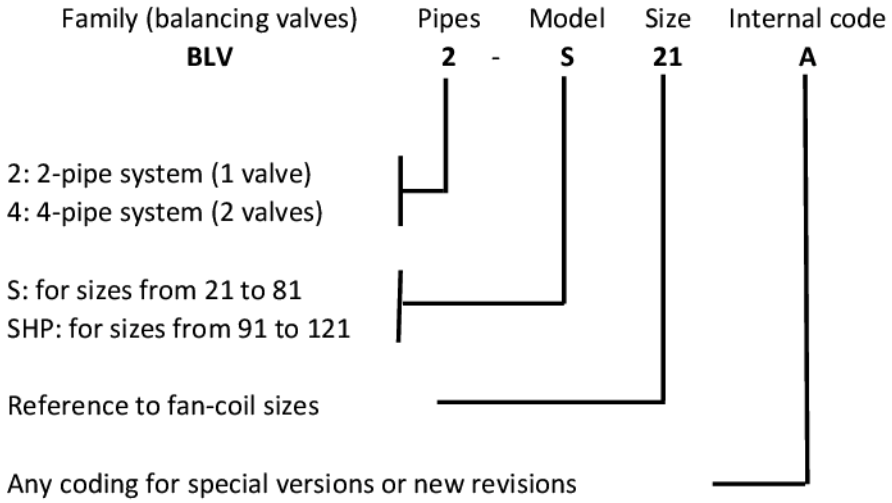


9.5-Static balancing and calibration valve (BLV)

The static balancing valve is supplied as an unassembled kit. It allows the regulation of the water flow.
In an unbalanced system, the fan units closest to the central heating unit will receive an excessive flow of water, while the units furthest away will not receive enough: the temperature differences that can be detected in different areas, in addition to creating discomfort, will increase consumption.
The installation of calibration and balancing valves on each unit, once the calibration operations have been completed, guarantee correct flow distribution with an immediate beneficial impact in terms of comfort and lower consumption, in addition to enhancing the regulation system efficiency.

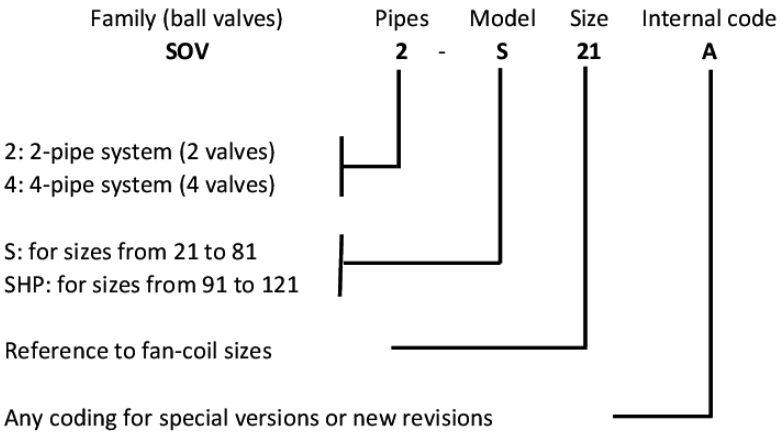
CALIBRATION VALVES FOR MAIN COIL						
	21	**38**	**81**	**91**	**101**	**121**
Valve size	3/4”	3/4”	1”	1”1/4	1”1/4	1”1/2
Connection fitting size	3/4”	3/4”	1”	1”1/4	1”1/4	1”1/2
Kvs	2.15	5.7	8.7	14.2	14.2	19.2
Max pressure	10 bar	20 bar	20 bar	20 bar	20 bar	20 bar

CALIBRATION VALVES FOR AUXILIARY COIL						
	21	**38**	**81**	**91**	**101**	**121**
Valve size	3/4”	3/4”	1”	1”	1”	1”1/4
Connection fitting size	3/4”	3/4”	1”	1”	1”	1”1/4
Kvs	2.15	2.15	8.7	8.7	8.7	14.2
Max pressure	10 bar	10 bar	20 bar	20 bar	20 bar	20 bar



9.6-Shut-off ball valve (SOV)

The shut-off ball valve is supplied as an unassembled kit. Its installation allows to bypass the unit in the hydraulic system to carry out maintenance on the coil or valve. These being "full bore" valves, the pressure drop is very limited.



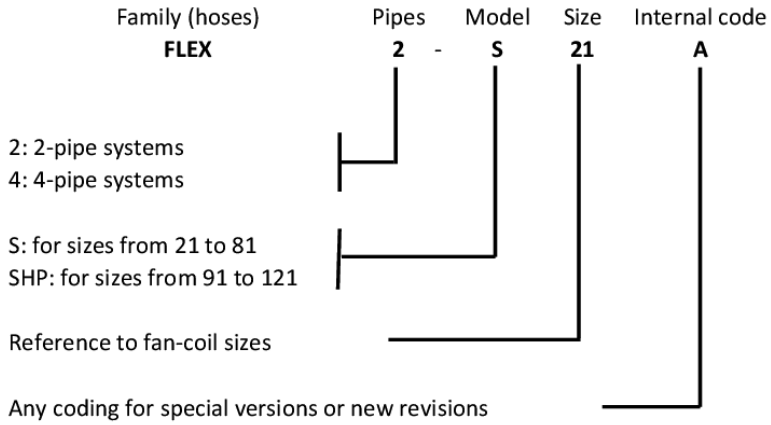
BALL VALVES FOR MAIN COIL						
	21	**38**	**81**	**91**	**101**	**121**
Valve size	3/4”	3/4”	1”	1”1/4	1”1/4	1”1/2
Connection fitting size	3/4”	3/4”	1”	1”1/4	1”1/4	1”1/2
Kvs	2.15	5.7	8.7	14.2	14.2	19.2
Max pressure	40 bar	40 bar	40 bar	30 bar	30 bar	30 bar

BALL VALVES FOR AUXILIARY COIL						
	21	**38**	**81**	**91**	**101**	**121**
Valve size	3/4”	3/4”	1”	1”	1”	1”1/4
Connection fitting size	3/4”	3/4”	1”	1”	1”	1”1/4
Kvs	2.15	2.15	8.7	8.7	8.7	14.2
Max pressure	40 bar	40 bar	40 bar	40 bar	40 bar	30 bar

9.7-Flexible hoses (FLEX)

The flexible hoses are supplied as kits (disassembled components). Their use makes the hydraulic connection of the unit easier

External metal braid material	AISI304 stainless steel
Internal material	EPDM
Fittings and elbows material	Brass, chrome-plated brass, copper
Maximum working pressure	See table, according to the diameter
Water temperature	5 - 85°C



FLEXIBLE HOSES FOR MAIN COIL						
	21	**38**	**81**	**91**	**101**	**121**
Pipe size	DN20	DN20	DN25	DN32	DN32	DN40
Length	200mm	200mm	200mm	200mm	200mm	300mm
Connection fitting size	3/4”	3/4”	1”	1”1/4	1”1/4	1”1/2
Max pressure	10 bar	10 bar	10 bar	6 bar	6 bar	6 bar

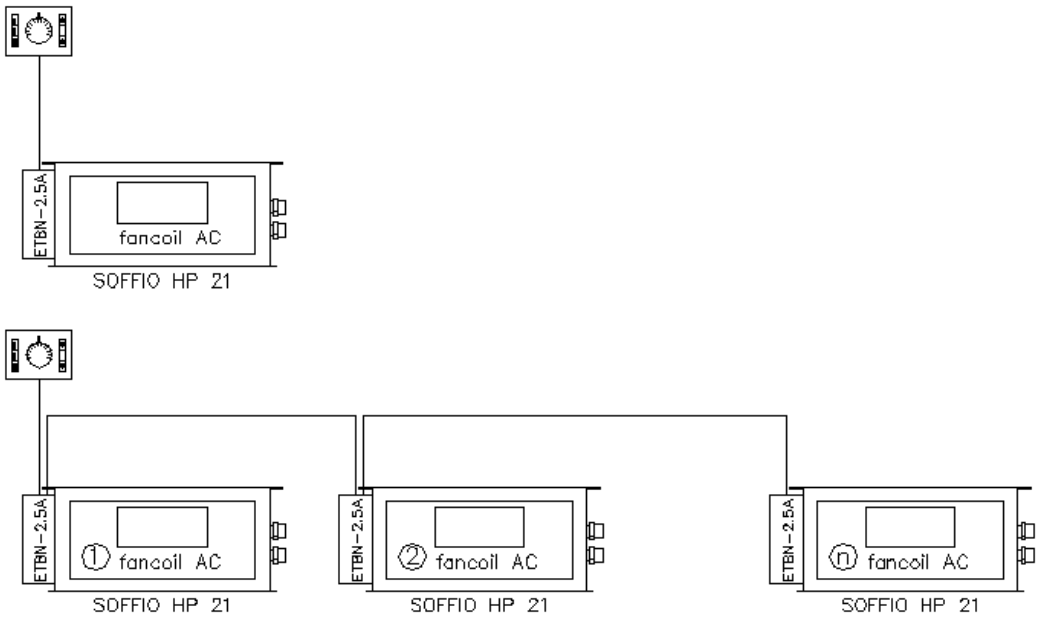
FLEXIBLE HOSES FOR AUXILIARY COIL						
	21	**38**	**81**	**91**	**101**	**121**
Pipe size	DN20	DN20	DN25	DN25	DN25	DN32
Length	200mm	200mm	200mm	200mm	200mm	200mm
Connection fitting size	3/4”	3/4”	1”	1”	1”	1”1/4
Max pressure	10 bar	10 bar	10 bar	10 bar	10 bar	6 bar

9.8-Transformer for modulating valves (TR24)

The TR24 accessory is a 230Vac - 24Vac 20VA transformer needed to power the modulating valves. In the event that there are two modulating valves for the same unit (4-pipe system), only one transformer is sufficient to supply both valves.
TR24 is available in one size, suitable for all unit sizes.

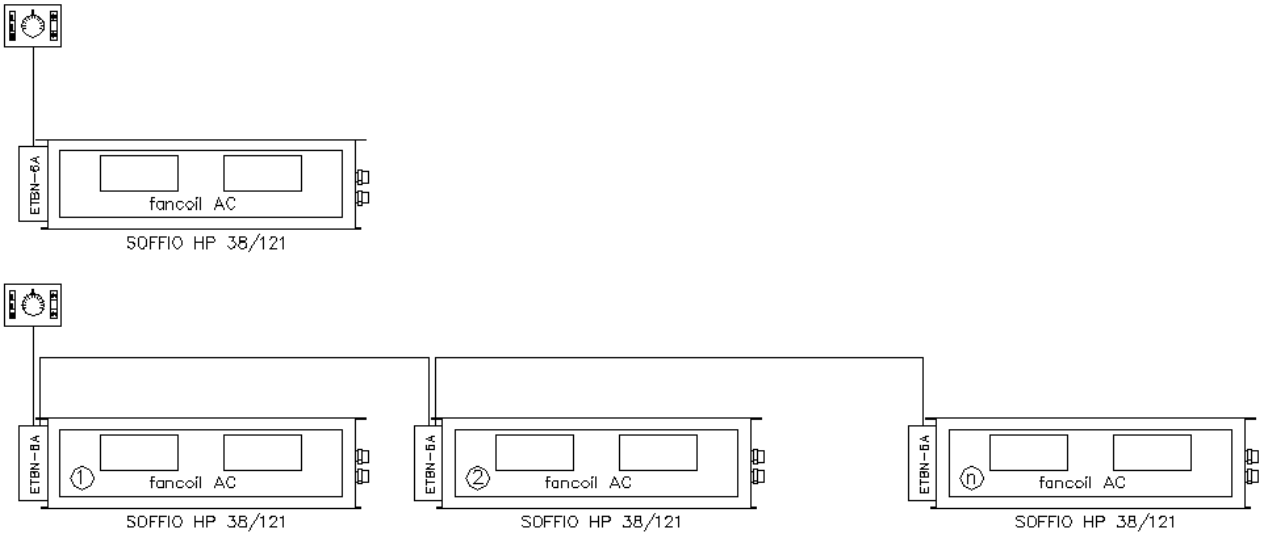
9.9-Power relay board (ETBN-2.5A)

The power relay board (ETBN-2.5A) is necessary when a unit equipped with a single (three speeds) AC motor must be controlled with a thermostat that is unable to carry the maximum current absorbed by the motor. It is also possible to control more than one unit with (three speeds) AC motor through a single control, providing all the units with an ETBN-2.5A board.
For more information on this accessory, please refer to its specific technical manual.
The ETBN-2.5A board can be used for the SOFFIO HP 21 size



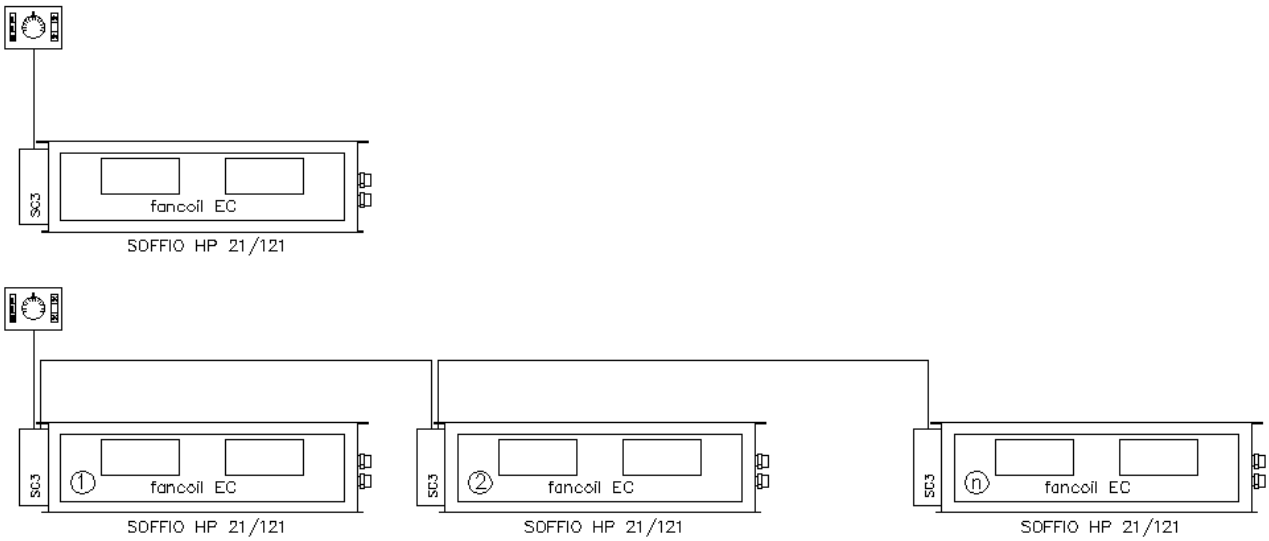
9.10-Power relay board (ETBN-6A)

The power relay board (ETBN-6A) is needed to control a unit with AC motor (three speeds) with one thermostat. This accessory, correctly connected and used, allows to decouple the motor speeds and prevent the possible formation of dangerous currents induced in the unused windings. It is also possible to control more than one unit with (three speeds) AC motor through a single control, providing all the units with an ETBN-6A board.
For more information on this accessory, please refer to its specific technical manual.
The ETBN-6A board can be used for the SOFFIO HP sizes 38 to 121.



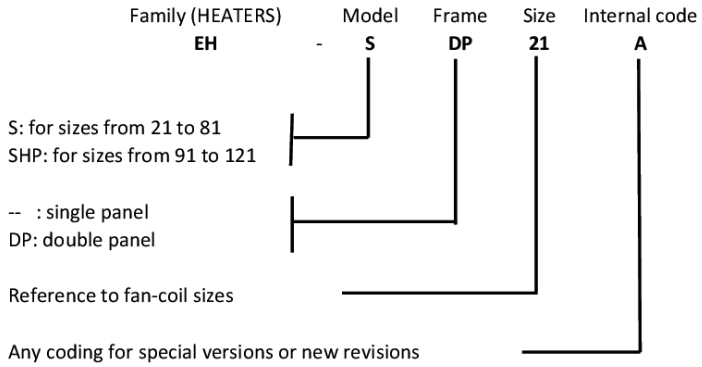
9.11-Three-speed EC motor control board (SC3)

The SC3 board allows an EC motor (with 0/10V signal) to be controlled through a common three speed control for AC motors. It is possible to control several (up to 20) units equipped with SC3 through a single control. For more information on this accessory, please refer to its specific technical manual.
The SC3 board is available in one size, suitable for all unit sizes.



9.12-Electrical heater (EH) and relay (EHR)

The electric heaters are made of aluminium and are equipped with a safety thermostat against overheating. They are housed inside the machine between the coil and the fan unit.
This accessory is not compatible with the auxiliary coil accessories and with the 6-row coil.
To control the heaters, it is recommended to use the EHR (power relay) accessory.
We recommend not to use the electric heater if the main coil is fed chilled water or if there is humidity or condensation on the coil or heater. Before turning on the electric heater, make sure that the cooling system is turned off and that the valves of the main coil are closed.
For correct dissipation of the heat generated by the electric heaters, it is recommended to never use the minimum fan speed and to use instead the maximum and medium speed settings (to be chosen also in relation to the pressure drops in the ducting). After the heaters are turned off, it is recommended to leave the fan on for a few minutes (at least two minutes) to allow the electric heaters to cool.
Incorrect management of ventilation and some occasional events (e.g. sudden fan unit stop due to a blackout) could overheat and damage the motor. Therefore, in the event that very frequent activation of the electric heaters is expected, it is safer to use the electric heaters in a delivery plenum, externally to the unit.



	21	38	81	91/101	121
Power	2.0 kW	4.0 kW	6.0 kW	9.0 kW	12.0 kW
Power supply	230V-50Hz single-phase				
N. of stages / N. of elements	1 / 1	1 / 2	1 / 2	1 / 3	1 / 4
Power relays to be used	EHR-20A			2 x EHR-20A	

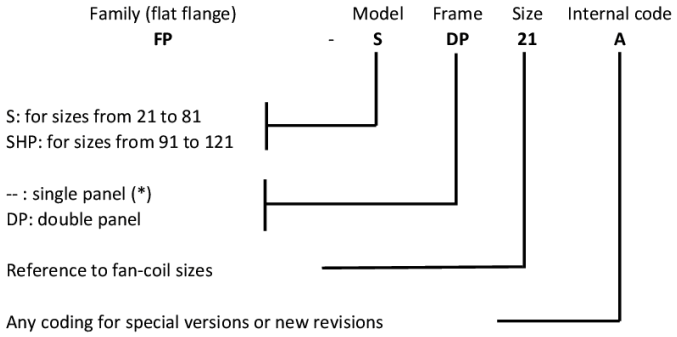
	EHR-20A
Maximum contact current (resistive load)	20 A
Coil power supply	230V-50Hz single-phase
No. of contacts	4

9.13-Fluid-tight electrical panel (IPB)

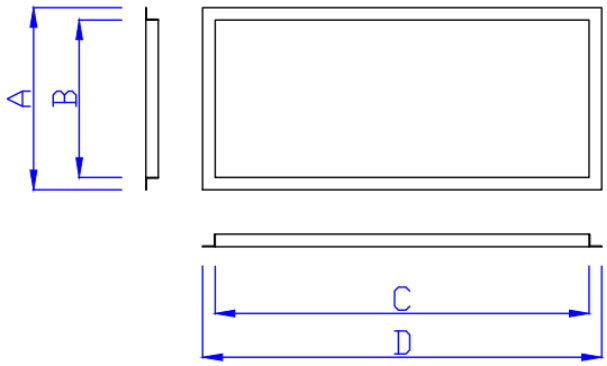
This accessory allows the terminal block and electrical devices inside the electrical panel (fixed to the side of the unit) to be better protected from water spray and splashes. It consists of a plastic box, with special seals and cable glands.

9.14-Flat flange (FP)

The flat flange is required to connect the accessories of the “G2” group (see the table at the beginning of the paragraph) to the delivery flange or to the return flange accessory (FRA).



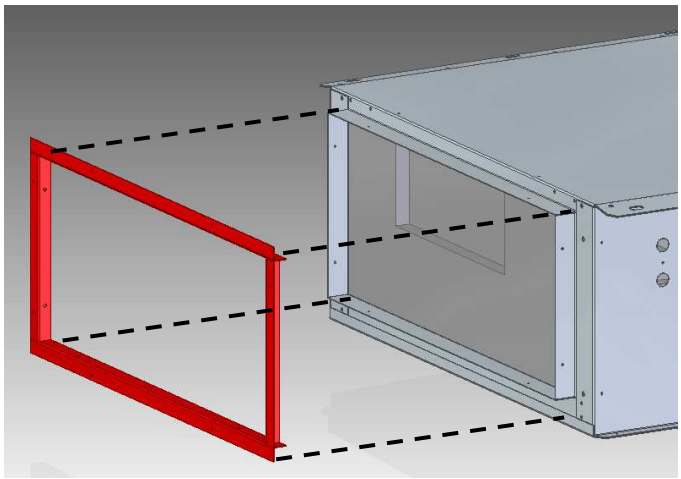
(*) For sizes 21 to 81, the codes of the FP accessory for single panel units can also be used for double panel units.

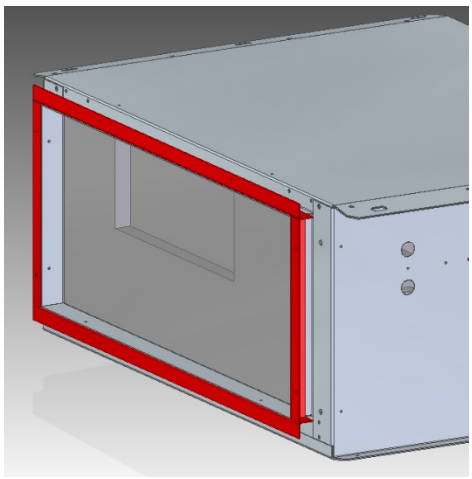


	Double panel unit (DP) DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	(*)	(*)	(*)	458	458	608
B	(*)	(*)	(*)	400	400	550
C	(*)	(*)	(*)	1605	1855	2005
D	(*)	(*)	(*)	1695	1945	2095

(*) For sizes 21 to 81, the codes of the FP accessory for single panel units (SP) can also be used for double panel units (DP)

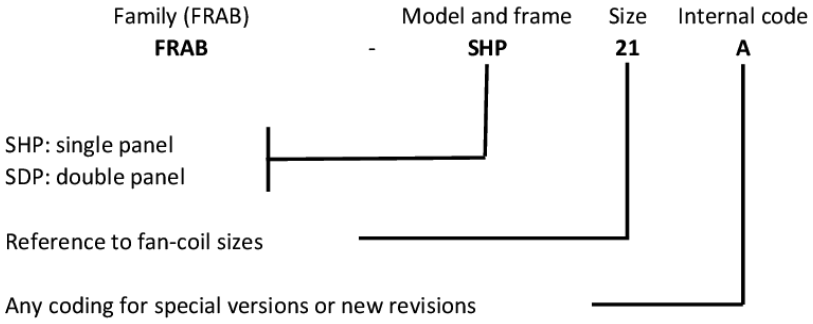
	Single panel unit (SP) DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	278	278	338	458	458	608
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2000
D	608	1048	1598	1658	1908	2058

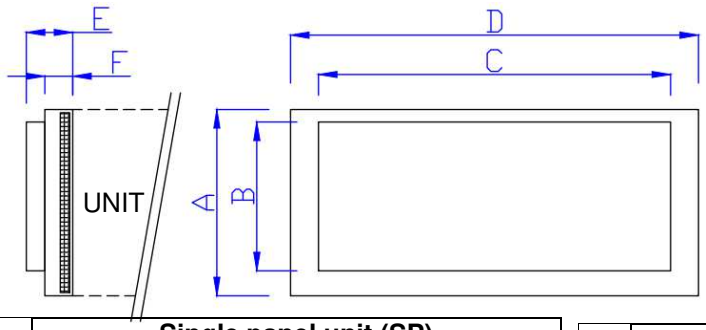




9.15-Return flange (FRAB)

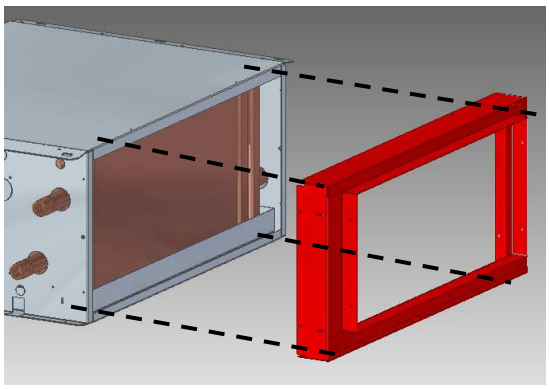
The return flange is needed to channel the return flow. The 6-15-20-25mm thick filter can be housed internally, with extraction only from the bottom. For double panel units (DP) the filter is already housed inside the unit, therefore the accessory only includes the return flange. This accessory is not available for double panel units (DP) in sizes 91-101-121 as the return flange is already included in the standard unit structure.

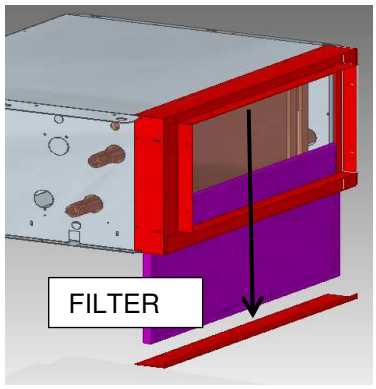




	Single panel unit (SP) DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	370	370	435	485	485	635
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2000
D	660	1100	1650	1700	1950	2100
E	75	75	75	95	95	95
F	45	45	45	65	65	65

	Double panel unit (DP) DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	335	335	410	--	--	--
B	240	240	300	--	--	--
C	570	1010	1560	--	--	--
D	730	1170	1720	--	--	--
E	45	45	45	--	--	--
F	20	20	20	--	--	--





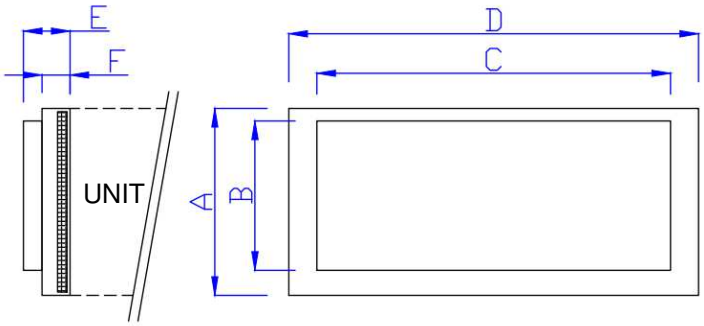
9.16-Return flange (FRAL)

The return flange is needed to channel the return flow. The 6-15-20-25mm thick filter can be housed internally, with extraction only from the side.
This accessory is not compatible with double panel units (DP) because the filter is already housed inside the unit with extraction only from the bottom.

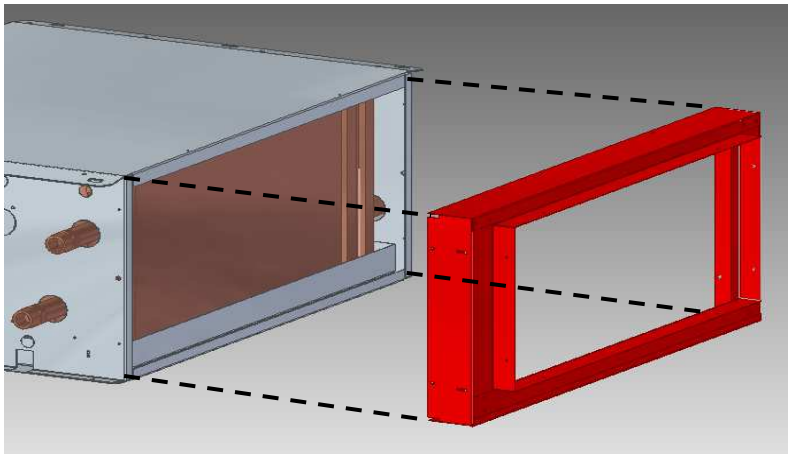
Family (FRAL)		Model	Size	Internal code
FRAL	-	**SHP**	**21**	**A**

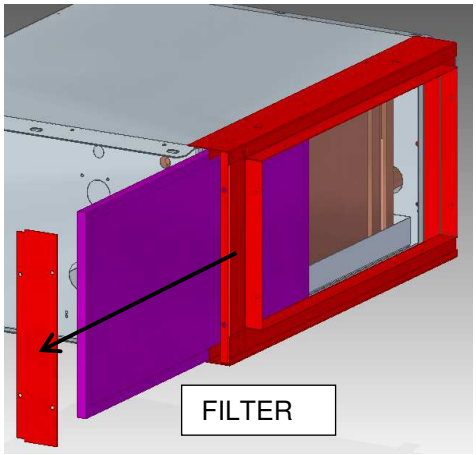
Reference to fan-coil sizes

Any coding for special versions or new revisions



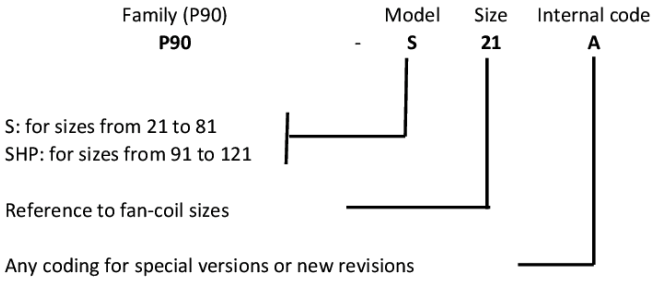
	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	370	370	435	485	485	635
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2000
D	660	1100	1650	1700	1950	2100
E	85	85	85	105	105	105
F	55	55	55	75	75	75

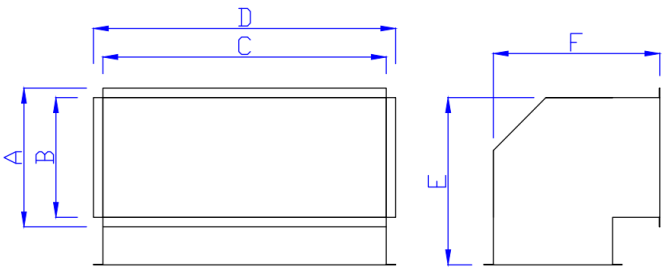




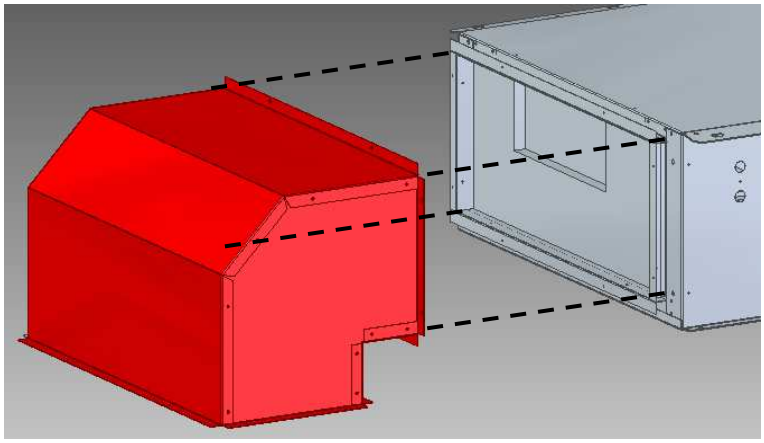
9.17-90° Plenum (P90)

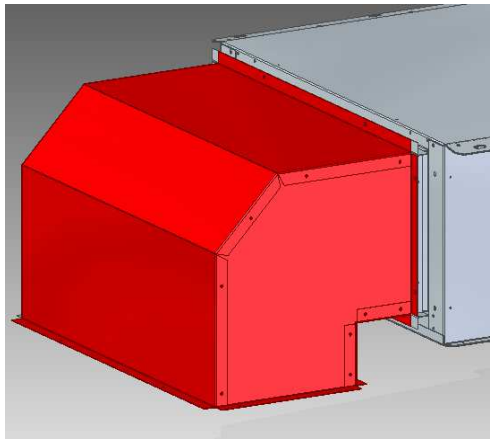
The 90° plenum can be installed both on the delivery and on the return end.





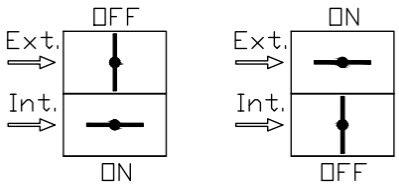
	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	278	278	338	458	458	608
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2000
D	608	1048	1598	1658	1908	2058
E	335	335	395	545	545	695
F	335	335	395	545	545	695

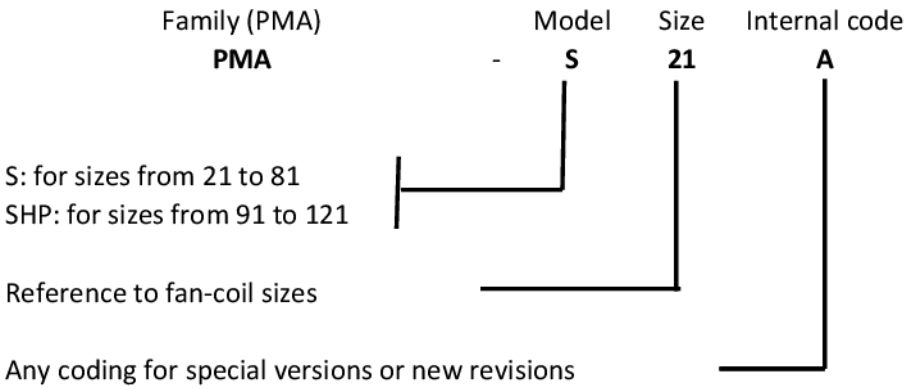


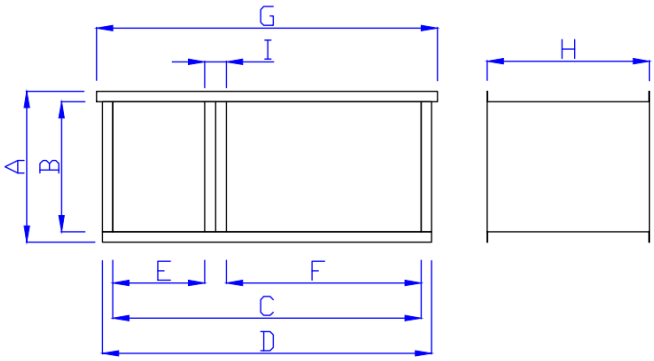


9.18-Return air mixing plenum (PMA)

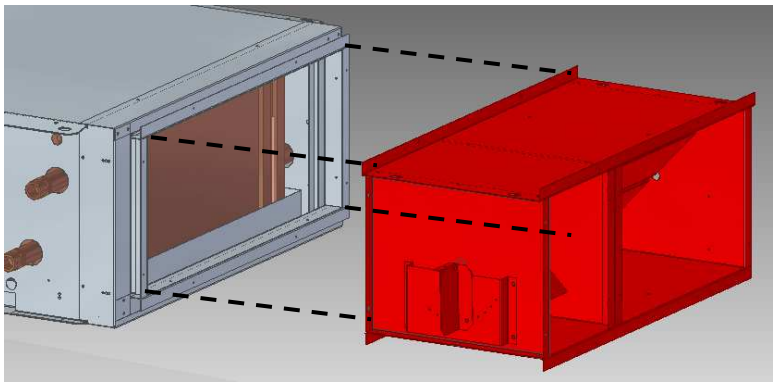
The air mixing plenum is installed in the return section and allows for manual adjustment of the recirculation and fresh air flow rate (approximately 67-33%). On request, it is possible to add an electric servo control.
The fresh air must be previously treated through a heat recovery unit or similar units. Direct intake of outdoor air is not allowed.

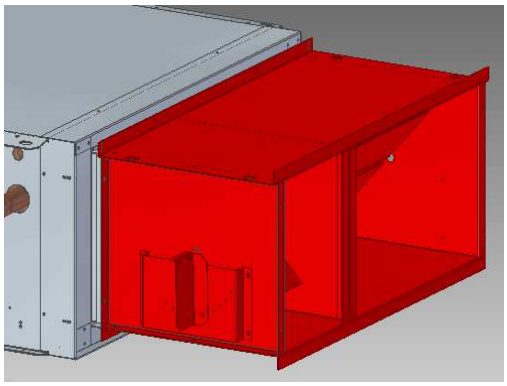






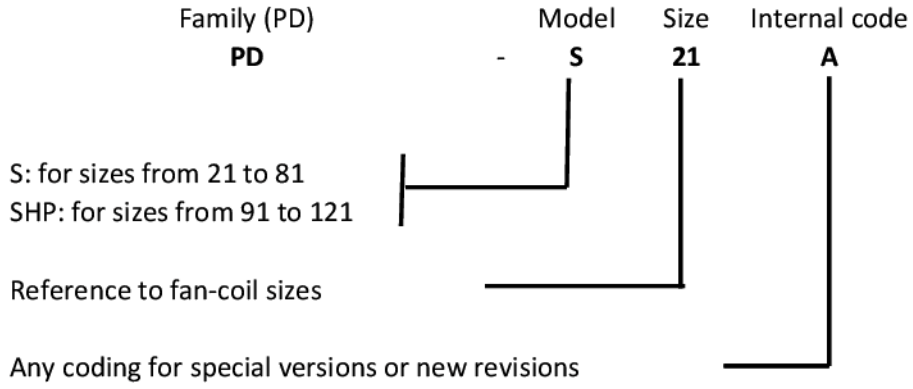
	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	278	278	338	470	470	608
B	240	240	300	410	410	510
C	570	1010	1560	1600	1850	2000
D	608	1148	1598	1660	1910	2060
E	170	315	500	500	600	650
F	360	655	1020	1040	1190	1290
G	630	1070	1620	1660	1910	2060
H	300	300	350	120	120	120
I	40	40	40	60	60	60

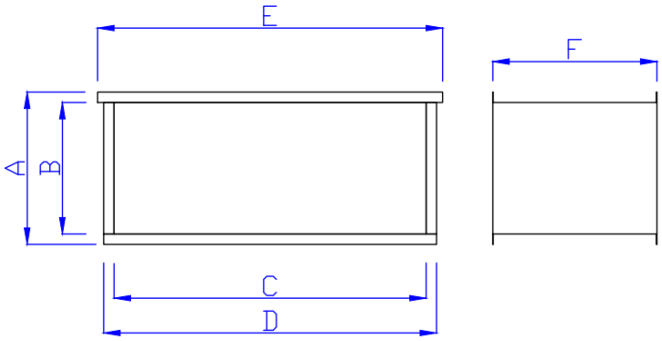




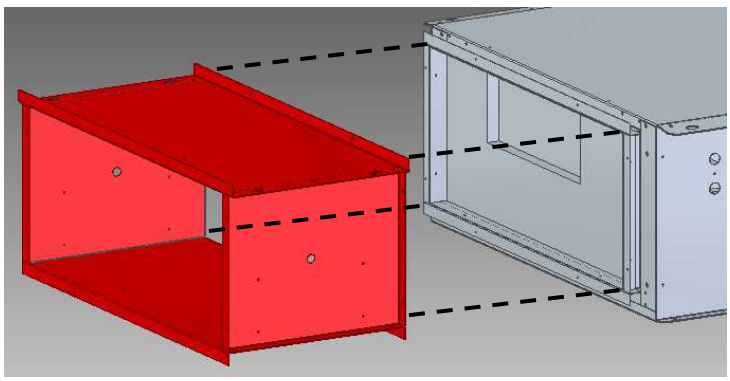
9.19-Straight plenum (PD)

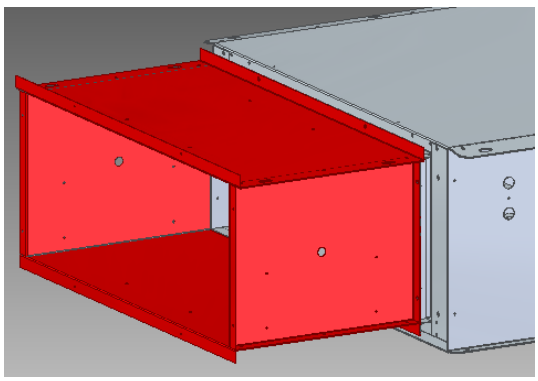
The straight plenum can be installed both on the delivery and on the return end.





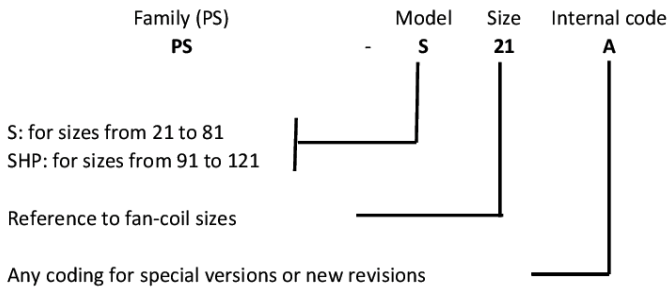
	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	278	278	338	458	458	608
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2000
D	608	1148	1598	1658	1908	2058
E	630	1070	1620	1660	1910	2060
F	300	300	350	400	400	400



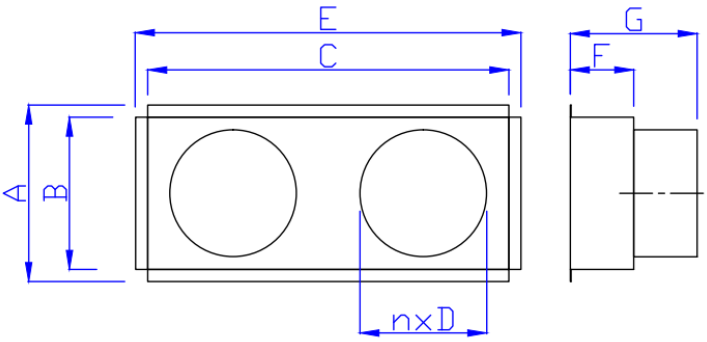


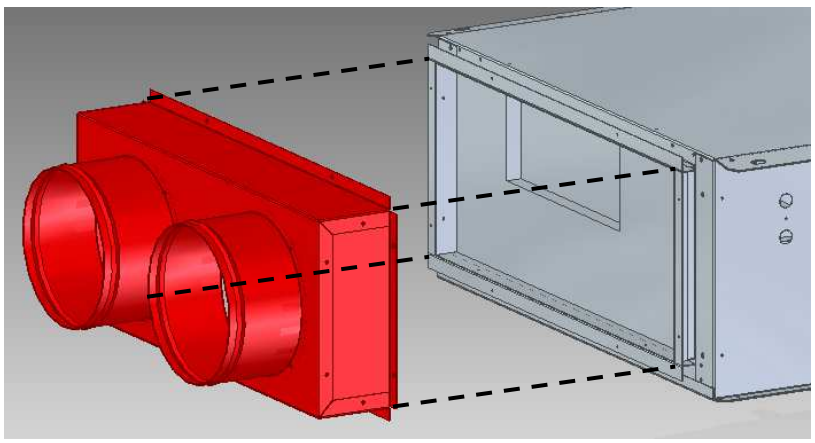
9.20-Plenum with spigot (PS)

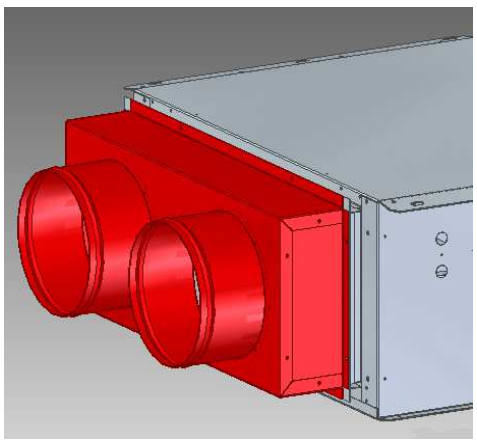
The plenum with spigot can be installed both in the delivery and in the recovery section and is suitable for connecting circular ducting.



	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	278	278	338	458	458	--
B	240	240	300	400	400	--
C	570	1010	1560	1600	1850	--
N.	2	3	4	4	5	--
D	200	200	250	300	300	--
E	608	1048	1598	1658	1908	--
F	100	100	100	150	150	--
G	200	200	200	250	250	--

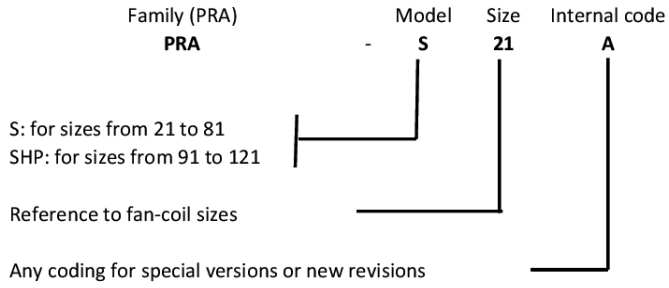


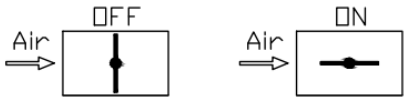


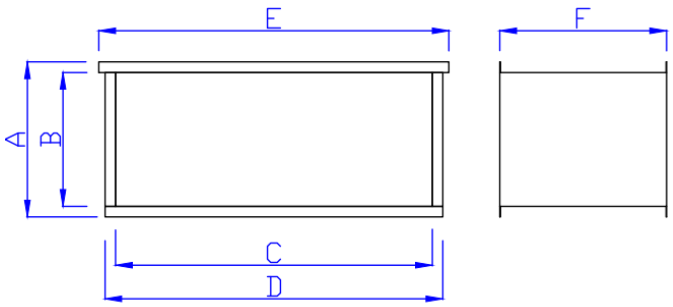


9.21-Air regulation plenum (PRA)

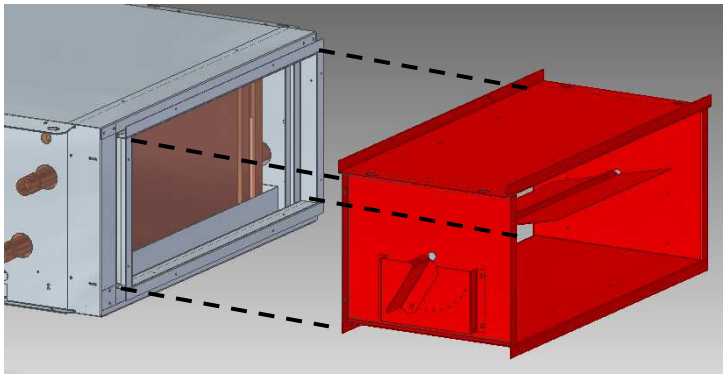
The air regulation plenum is installed in the intake section and allows for adjustment of the air flow, creating a pressure drop on intake. The damper is manually adjusted, an electric servomotor is available on request.

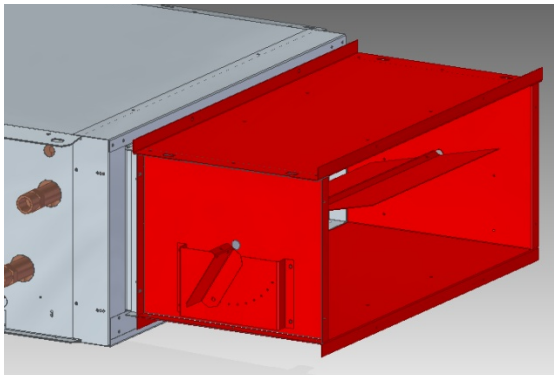






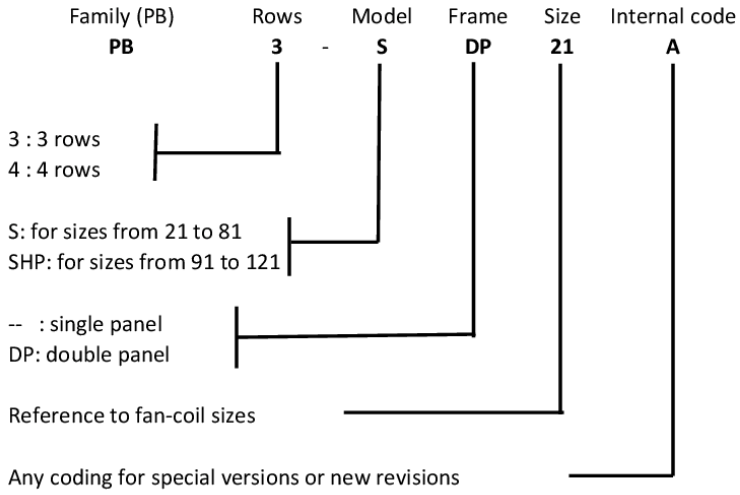
	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	278	278	338	470	470	608
B	240	240	300	410	410	510
C	570	1010	1560	1600	1850	2000
D	608	1148	1598	1660	1910	2060
E	630	1070	1620	1660	1910	2060
F	300	300	350	120	120	120





9.22-Plenum with 3 or 4 row post-heating coil (PB3 – PB4)

The post-heating plenum can be used in 4-pipe systems, when auxiliary coils with 1 or 2 rows are not sufficient.
The pressure drop of the post-heating coil must be deducted from the available pressure head of the base machine.



POST-HEATING COIL SOFFIO 21								
Air flow rate	m3/h	500	600	700	800	900	1000	1100
Pressure drop PB3	Pa	10	13	16	20	27	28	32
Pressure drop PB4	Pa	14	18	22	26	31	37	42

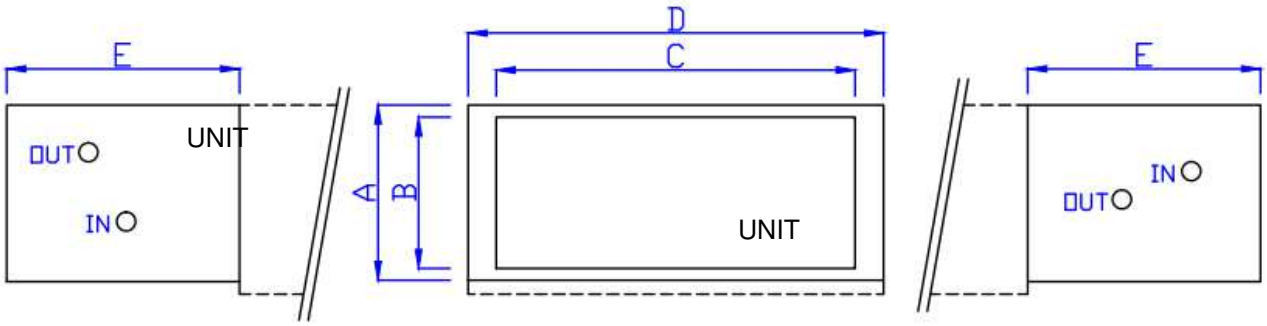
POST-HEATING COIL SOFFIO 38								
Air flow rate	m3/h	1000	1200	1400	1600	1800	2000	2200
Pressure drop PB3	Pa	12	15	19	23	27	32	37
Pressure drop PB4	Pa	15	20	25	30	36	42	48

POST-HEATING COIL SOFFIO 81								
Air flow rate	m3/h	2500	2750	3000	3250	3500	3750	4000
Pressure drop PB3	Pa	16	18	21	23	26	29	32
Pressure drop PB4	Pa	21	24	27	31	34	38	42

POST-HEATING COIL SOFFIO 91								
Air flow rate	m3/h	2500	3000	3500	4000	4500	5000	5500
Pressure drop PB3	Pa	-	-	-	-	-	-	-
Pressure drop PB4	Pa	15	19	23	28	33	39	45

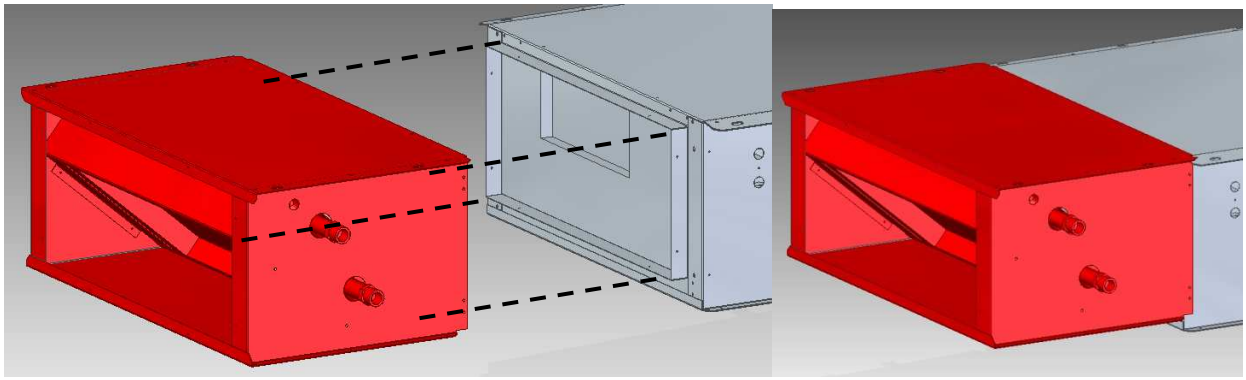
POST-HEATING COIL SOFFIO 101								
Air flow rate	m3/h	3500	4000	4500	5000	5500	6000	6500
Pressure drop PB3	Pa	-	-	-	-	-	-	-
Pressure drop PB4	Pa	19	23	27	31	36	41	46

POST-HEATING COIL SOFFIO 121								
Air flow rate	m3/h	4000	5000	6000	7000	8000	9000	-
Pressure drop PB3	Pa	-	-	-	-	-	-	-
Pressure drop PB4	Pa	12	18	24	30	38	46	-



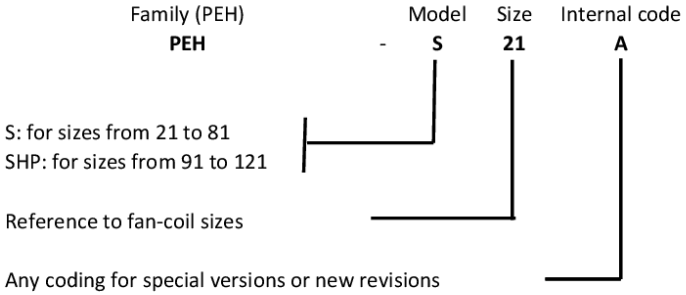
	Single panel unit (SP)					
	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	278	278	342	458	458	608
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2000
D	660	1100	1650	1700	1950	2100
E	370	370	470	530	530	680

	Double panel unit (DP)					
	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	278	278	342	458	458	608
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2000
D	730	1170	1720	1740	1990	2140
E	370	370	470	530	530	680



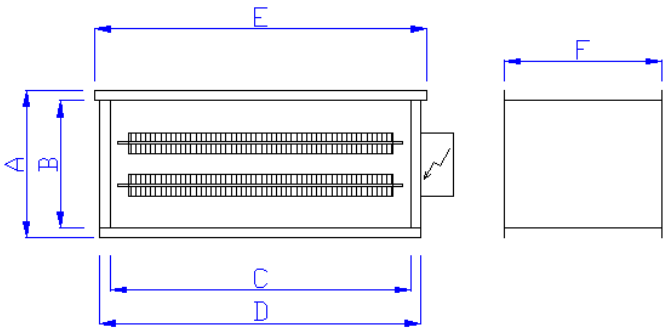
9.23-Plenum with electric heaters (PEH)

The plenum with electric heaters must be installed on the delivery end. It is made of galvanized sheet metal and includes an electrical box containing the relay or power contactor (EHR). The electric heaters are made of aluminium and are equipped with a safety thermostat against overheating. For correct dissipation of the heat generated by the electric heaters, it is recommended to never use the minimum fan speed and to use instead the maximum and medium speed settings (to be chosen also in relation to the pressure drops in the ducting). After the heaters are turned off, it is recommended to leave the fan on for a few minutes (at least two minutes) to allow the electric heaters to cool.

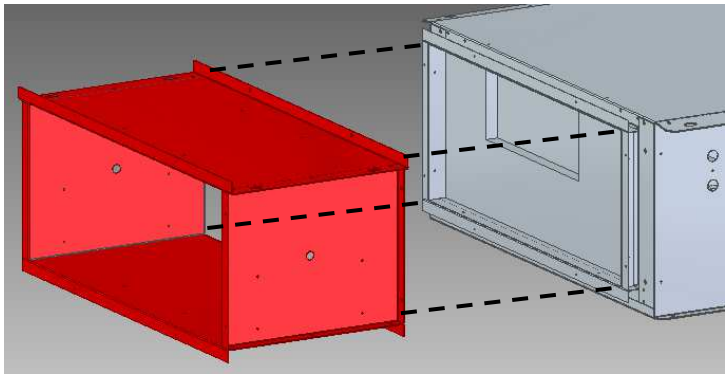


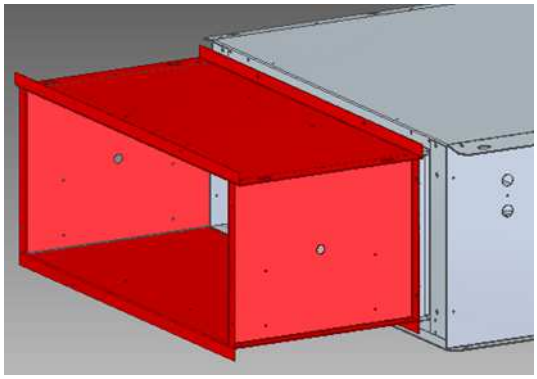
	21	38	81	91/101	121
Power	2.0 kW	4.0 kW	6.0 kW	9.0 kW	12.0 kW
Power supply	230V-50Hz single-phase				
N. of stages / N. of elements	1 / 1	1 / 2	1 / 2	1 / 3	1 / 4
Power relay (included)	EHR-20A			2 x EHR-20A	

	EHR-20A
Maximum contact current (resistive load)	20 A
Coil power supply	230V-50Hz single-phase
No. of contacts	4



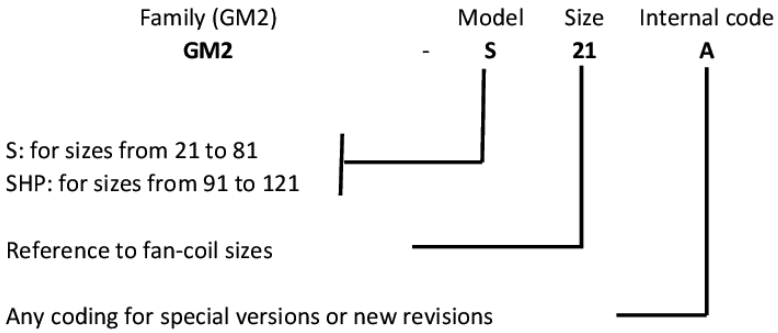
	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	278	278	338	458	458	608
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2000
D	608	1148	1598	1658	1908	2058
E	630	1070	1620	1660	1910	2060
F	300	300	350	400	400	400

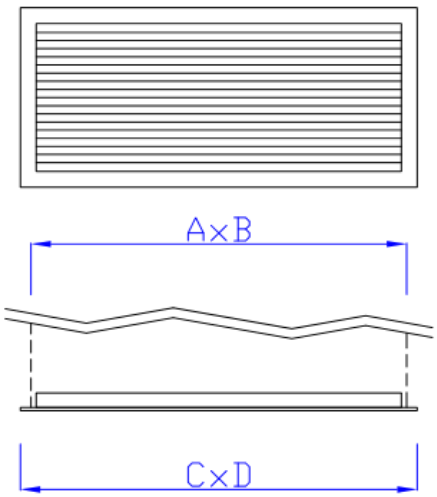




9.24-Delivery grille (GM2)

The delivery grille is made of anodised aluminium. It is equipped with two rows of fins, which allow for double adjustment of the air flow: vertically and horizontally.
The frame is provided with holes for fixing the grille by means of screws (not supplied) which must be chosen according to the support material.

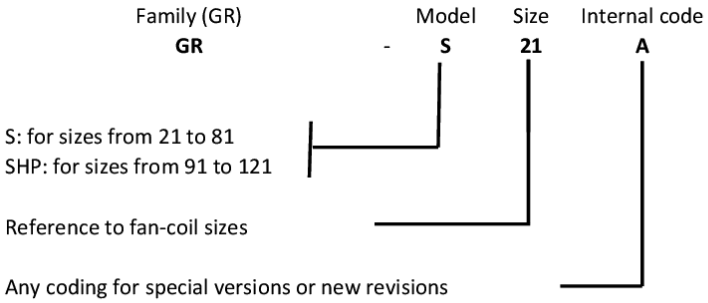


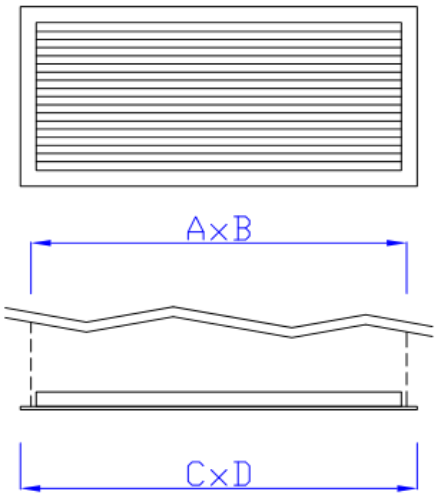


	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	570	1010	1560	1600	1850	2000
B	240	240	300	400	400	550
C	602	1042	1592	1632	1882	2032
D	272	272	332	432	432	582
A, B: nominal hole dimensions						
C, D can vary by +/- 10mm						

9.25-Return grille (GR)

The return grille is made of anodised aluminium. It has fixed horizontal fins, making the inside of the duct barely visible.
The frame is provided with holes for fixing the grille by means of screws (not supplied) which must be chosen according to the support material.

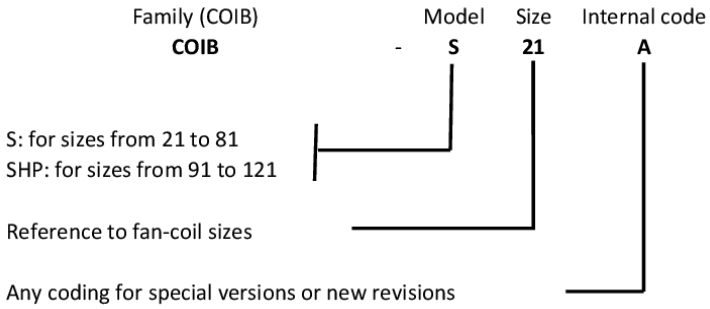




	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	570	1010	1560	1600	1850	2000
B	240	240	300	400	400	550
C	602	1042	1592	1632	1882	2032
D	272	272	332	432	432	582
A, B: nominal hole dimensions						
C, D can vary by +/- 10mm						

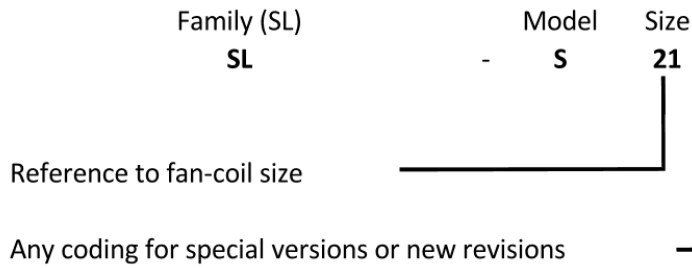
9.26- Insulation for plenum (COIB)

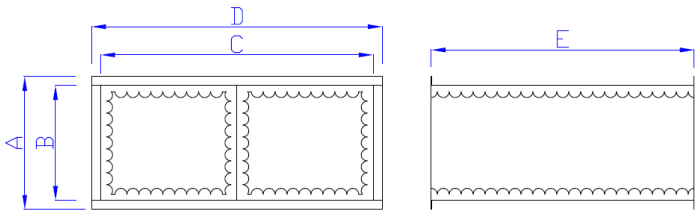
When the plenums are installed on delivery, the COIB accessory must also be added, since the plenums supplied as part of the standard equipment are NOT insulated. The insulation, made of 10mm thick class HF1 polyurethane according to the UL94 standard, prevents condensation from collecting on the outside of the plenum when cold air flows through it.



9.27- Duct silencer (SL)

The channel silencer is used when it is necessary to reduce the sound power radiated in the delivery or return channel. Acoustic absorption is obtained by internal insulation with rock wool. For its delivery installation it is also necessary to use the flat flange (FP) and one between the straight plenum (PD) and the 90 ° plenum (P90). The FRA (FRAB, FRAL depending on the needs) and the FP flat flange must also be used for its installation on the second floor.





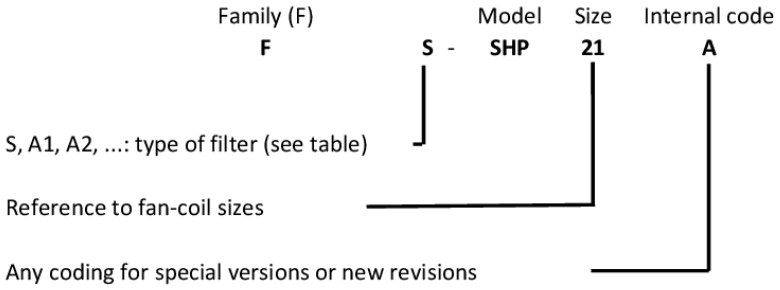
	DIMENSIONI (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	280	300	360	460	460	610
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2000
D	610	1070	1620	1660	1910	2060
E	600	600	900	900	900	900

	REDUCTION dB(A)							
	Frequency (Hz)							
	63	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
21	2	5	10	15	21	20	15	12
38	2	5	10	15	21	20	15	12
81	2	5	11	19	24	19	12	7
91	2	5	11	19	24	19	12	7
101	2	5	11	19	24	19	12	7
121	2	5	11	19	24	19	12	7

	PRESSURE DROP
	At nominal air flow
	Pa
21	9
38	9
81	6
91	6
101	6
121	6

9.28-Filter (F)

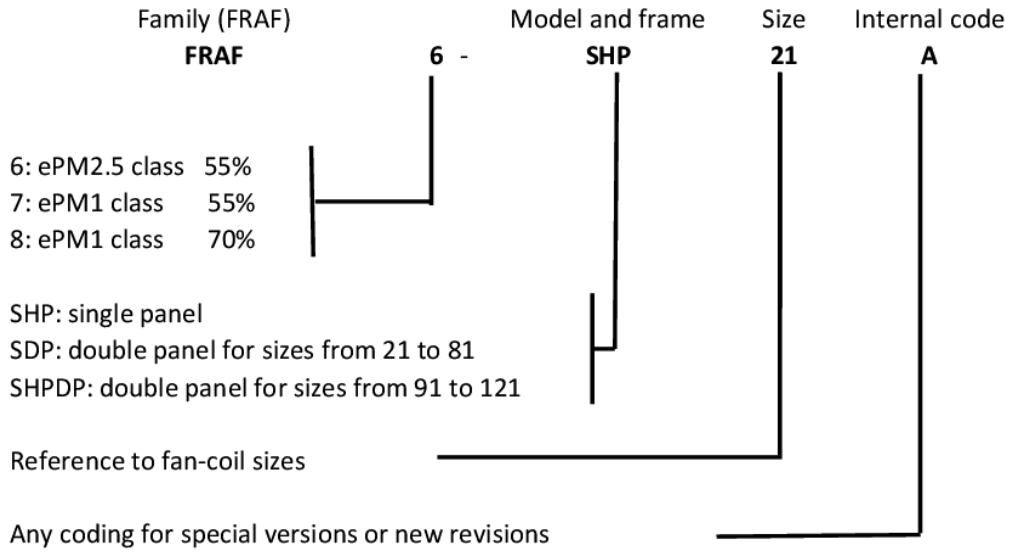
A wide range of filter sections are available as highly recommended accessories. All capacity data refer to the standard "FS" filter (see the dedicated section of the manual for further information).



Type	Material (frame)	Material (filter)	Thickness (mm)	Washable (*)	Efficiency (ISO 16890)	dP (**) (Pa)
FS	Galvanized steel	Synthetic fibre	15	NO	COARSE (ePM10 <50%)	--
FA1	Galvanized steel	Polypropylene	6	YES	COARSE (ePM10 <50%)	--
FA2	Galvanized steel	Synthetic fibre	20	NO	ePM10 65%	15
FA3	Galvanized steel	Synthetic fibre	25	NO	ePM10 75%	15
FA4	Galvanized steel	Galvanised steel mesh	15	YES	COARSE (ePM10 <50%)	--
FA5	Galvanized steel	Galvanised steel mesh	25	YES	COARSE (ePM10 <50%)	--
FA6	Galvanized steel	Aluminium mesh	15	YES	COARSE (ePM10 <50%)	--
FA7	Galvanized steel	Aluminium mesh	25	YES	COARSE (ePM10 <50%)	--
(*) If the filter is washable, it is recommended to dry it quickly to avoid the formation of oxides in the metal parts.						
(**) Additional pressure drop (approximate value, referred to the maximum nominal air flow) relative to the FS filter						

9.29-Air return flange with pocket filter (FRAF6, FRAF7, FRAF8)

The return flange with pocket filter allows the filter to be removed only from the bottom. The pocket filter can be of class F6-F7-F8. The standard filter is moved to the inside of the plenum, upstream from the pocket filter.
The pressure drop of the filter must be deducted from the available pressure head of the base machine.



	FRAF6	**FRAF7**	**FRAF8**
ISO 16890 class	ePM2.5 55%	ePM1 55%	ePM1 70%
Class EN 779	M6	F7	F8
Suggested final pressure drop	200 Pa	200 Pa	300 Pa
Max pressure drop	450 Pa	450 Pa	450 Pa

SOFFIO 21 POCKET FILTER							
Air flow rate	m3/h	500	600	700	800	900	1000	1100
Pressure drop FRAF6	Pa	20	25	30	35	40	45	50
Pressure drop FRAF7	Pa	30	35	40	45	50	55	60
Pressure drop FRAF8	Pa	40	45	50	55	60	65	70

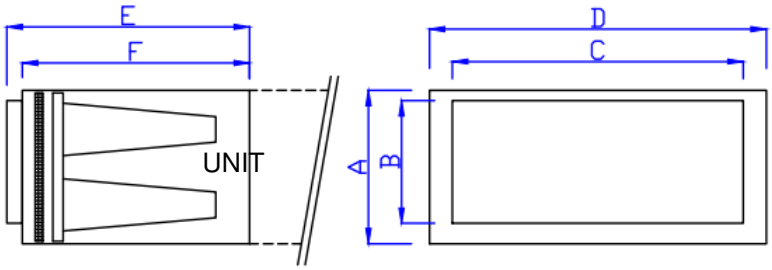
SOFFIO 38 POCKET FILTER							
Air flow rate	m3/h	800	1000	1200	1400	1600	1800	2000
Pressure drop FRAF6	Pa	40	45	50	60	70	80	90
Pressure drop FRAF7	Pa	45	55	65	75	85	95	105
Pressure drop FRAF8	Pa	50	60	70	80	90	105	120

SOFFIO 81 POCKET FILTER							
Air flow rate	m3/h	1600	2000	2400	2800	3200	3600	4000
Pressure drop FRAF6	Pa	40	45	50	60	70	80	90
Pressure drop FRAF7	Pa	45	55	65	75	85	95	105
Pressure drop FRAF8	Pa	50	60	70	80	90	105	120

SOFFIO 91 POCKET FILTER								
Air flow rate	m3/h	2500	3000	3500	4000	4500	5000	5500
Pressure drop FRAF6	Pa	40	45	50	55	60	70	80
Pressure drop FRAF7	Pa	45	50	55	60	70	80	90
Pressure drop FRAF8	Pa	50	55	65	75	85	95	105

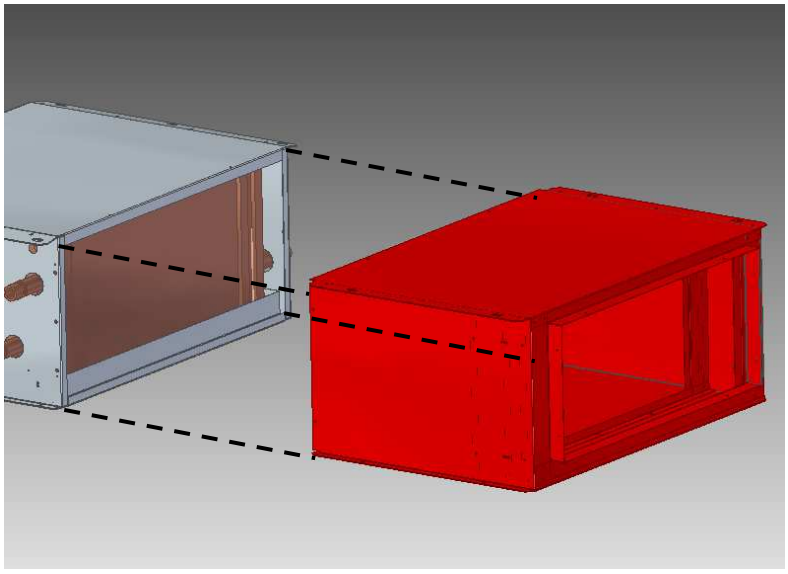
SOFFIO 101 POCKET FILTER								
Air flow rate	m3/h	3000	3500	4000	4500	5000	5500	6000
Pressure drop FRAF6	Pa	45	50	55	60	70	80	85
Pressure drop FRAF7	Pa	50	55	60	70	80	90	95
Pressure drop FRAF8	Pa	55	65	75	85	95	105	115

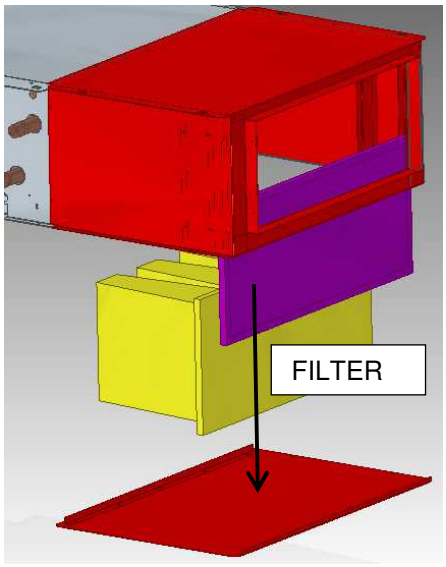
SOFFIO 121 POCKET FILTER								
Air flow rate	m3/h	3000	4000	5000	6000	7000	8000	9000
Pressure drop FRAF6	Pa	30	40	50	60	70	80	90
Pressure drop FRAF7	Pa	35	45	55	65	75	90	105
Pressure drop FRAF8	Pa	45	55	65	75	90	105	120



	Single panel unit (SP)					
	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	300	300	375	510	510	635
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2000
D	660	1100	1650	1700	1950	2100
E	475	475	475	530	530	530
F	445	445	445	500	500	500

	Double panel unit (DP)					
	DIMENSIONS (mm)					
	21	**38**	**81**	**91**	**101**	**121**
A	300	300	375	510	510	680
B	240	240	300	400	400	550
C	570	1010	1560	1600	1850	2095
D	730	1170	1720	1740	1990	2140
E	475	475	475	530	530	530
F	445	445	445	500	500	500

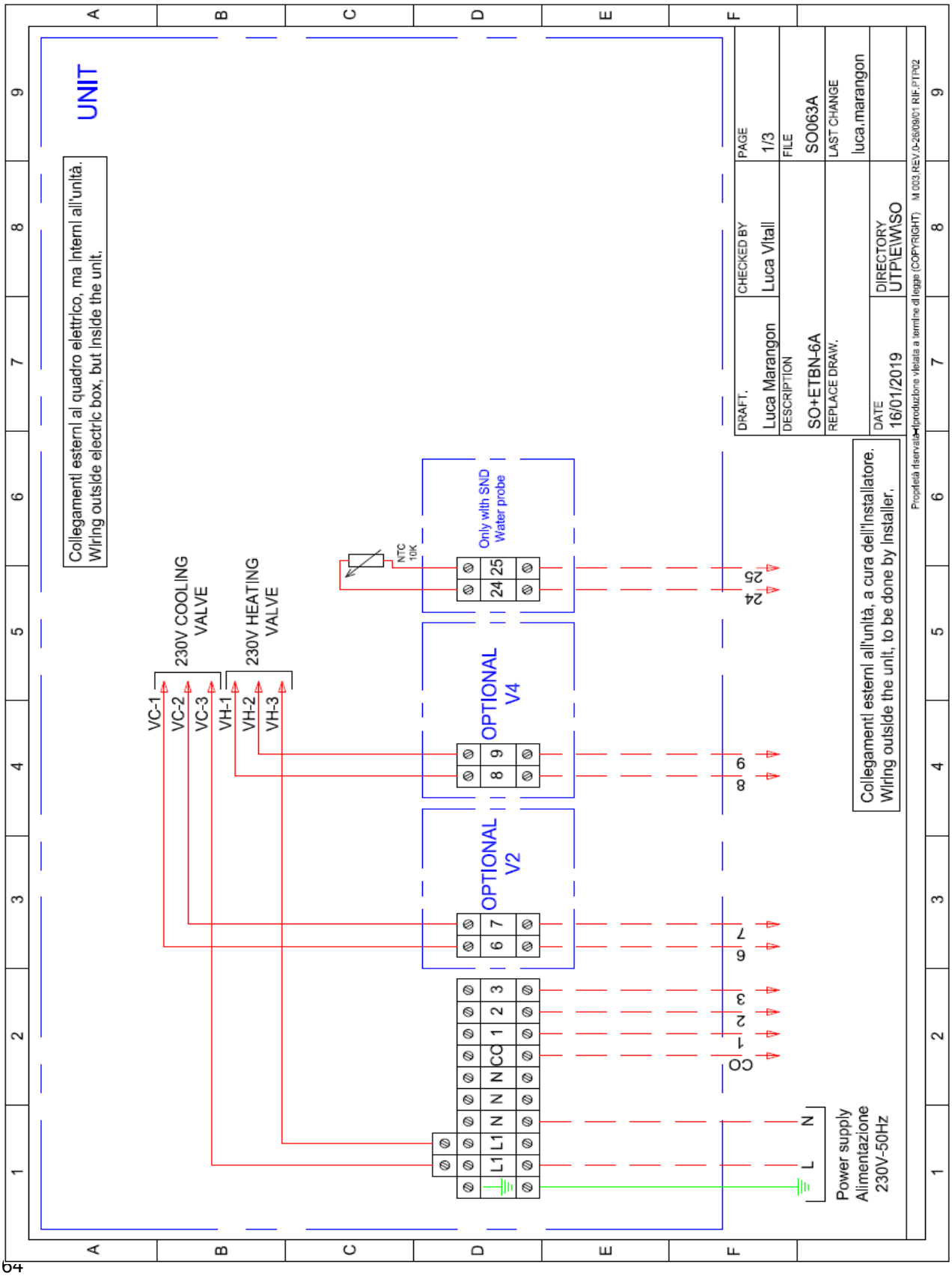




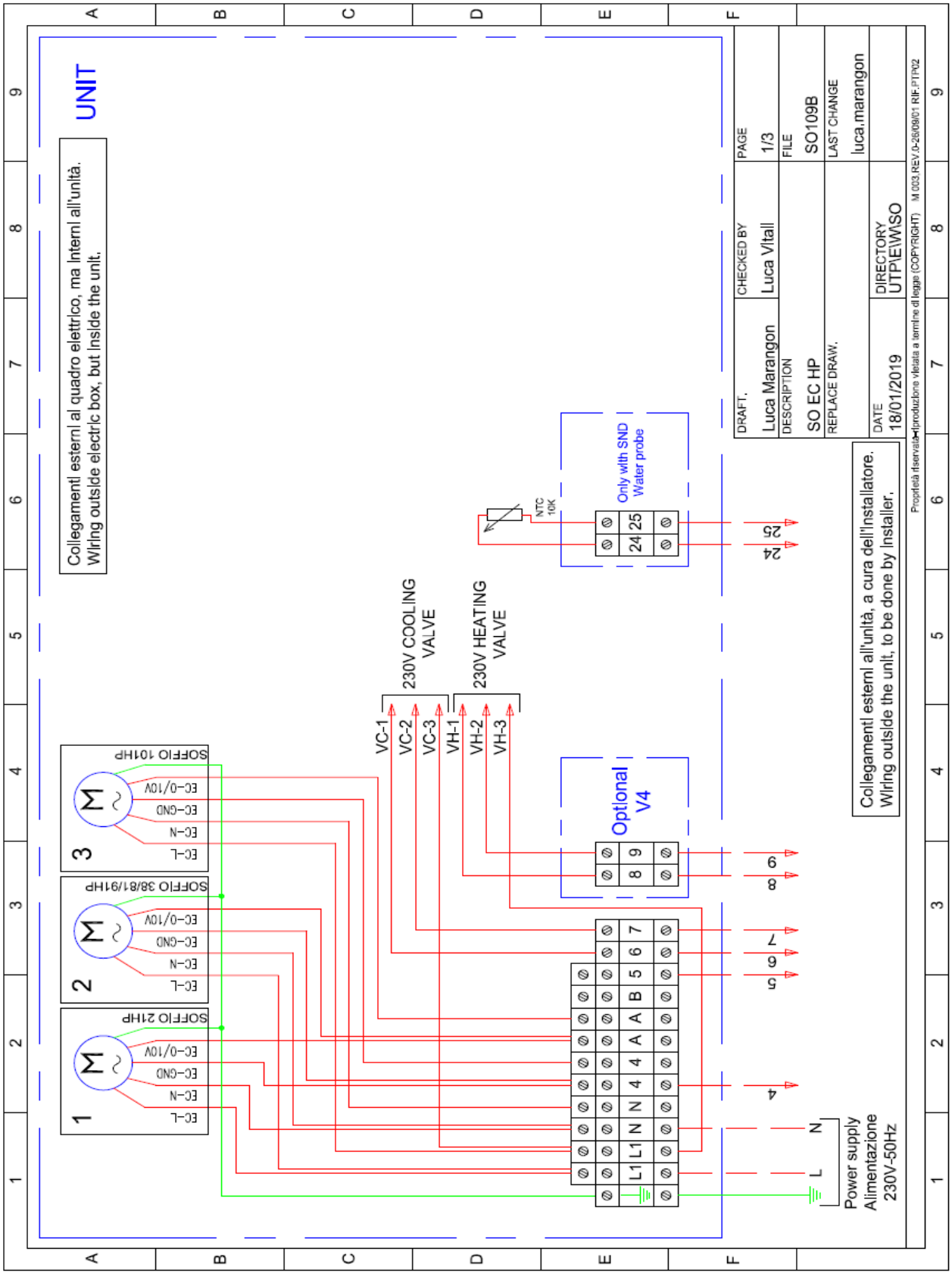
10-Electrical connections

The electrical panel, based on the chosen configuration of the accessories, can consist of a sheet metal box or a plastic box.
Given the wide range of available accessories and their combinations, this manual only shows the wiring diagram of the "basic" unit, i.e. a three-speed AC motor or EC with 0/10V signal and 230V valves. Each machine is supplied with its specific wiring diagram, based on the chosen equipment.

10.1-AC motor with ETBN 2.5A or ETBN-6A board



10.2-EC Motor


UNIT
Collegamenti esterni al quadro elettrico, ma interni all'unità.
Wiring outside electric box, but inside the unit.
SOFFIO 10/14HP
SOFFIO 38/81/91HP
SOFFIO 21HP
EC-L
EC-N
EC-GND
EC-0/10V
Only with SND Water probe
NTC 10K
24 25
230V COOLING VALVE
230V HEATING VALVE
VC-1
VC-2
VC-3
VH-1
VH-2
VH-3
Optional V4
8 9
L1 L1 N N 4 4 A A B 5 6 7
Power supply
Alimentazione
230V-50Hz
L
N
Collegamenti esterni all'unità, a cura dell'installatore.
Wiring outside the unit, to be done by installer.
DRAFT. Luca Marangon
CHECKED BY Luca Vitali
PAGE 1/3
DESCRIPTION SO EC HP
FILE SO109B
REPLACE DRAW.
LAST CHANGE luca.marangon
DATE 18/01/2019
DIRECTORY UTP\E\WSO
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EXTERNAL THERMOSTAT CONTROLS	
CO	Common fan
1	Minimum fan speed (line)
2	Medium fan speed (line)
3	Maximum fan speed (line)
4	Reference with 0-10V signal
5	0-10V signal for motor control
6	Common 2-pipe valve / 4-pipe cold valve (neutral)
7	Common 2-pipe valve / 4-pipe cold valve (line)
8	Common 4-pipe hot valve (neutral) - only if available
9	Common 4-pipe hot valve (line) - only if available
24-25	NTC water probe - only if available
26-27	NTC remote air probe - only if available

NOTES:

Aertesi srl reserves the right to introduce any changes considered necessary to improve the product by editing the related technical data at any time

Aertesi
MADE IN ITALY

ICIM
UNI EN ISO 9001:2015
SISTEMA DI GESTIONE CERTIFICATO

something different

AER.MT.SHP.GB.004.09.20

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