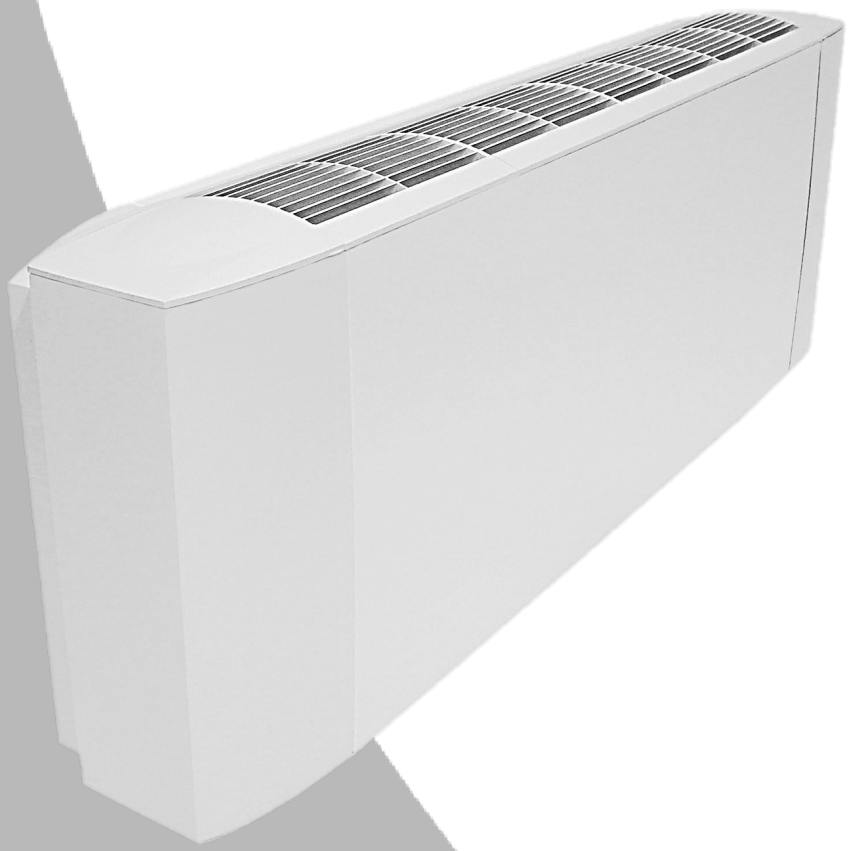
Aertesi airpower

SERIES

ZEFIRO



TECHNICAL MANUAL

FAN COILS

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INTRODUCTION

ZEFIRO series units are designed for air conditioning in the residential and commercial sector, for indoor installation in areas not exposed to freezing conditions or extreme temperatures and in a dust-free, non-explosive atmosphere. The manufacturer may not be held liable for the consequences of incorrect use.
The ZEFIRO units are available in the following variants:

- versions with casing (for exposed, non- ducted installation) and in versions without casing (for non-exposed, ducted installation)
- horizontal and vertical versions
- versions with traditional three-speed motor (AC) and with low consumption motor (EC)

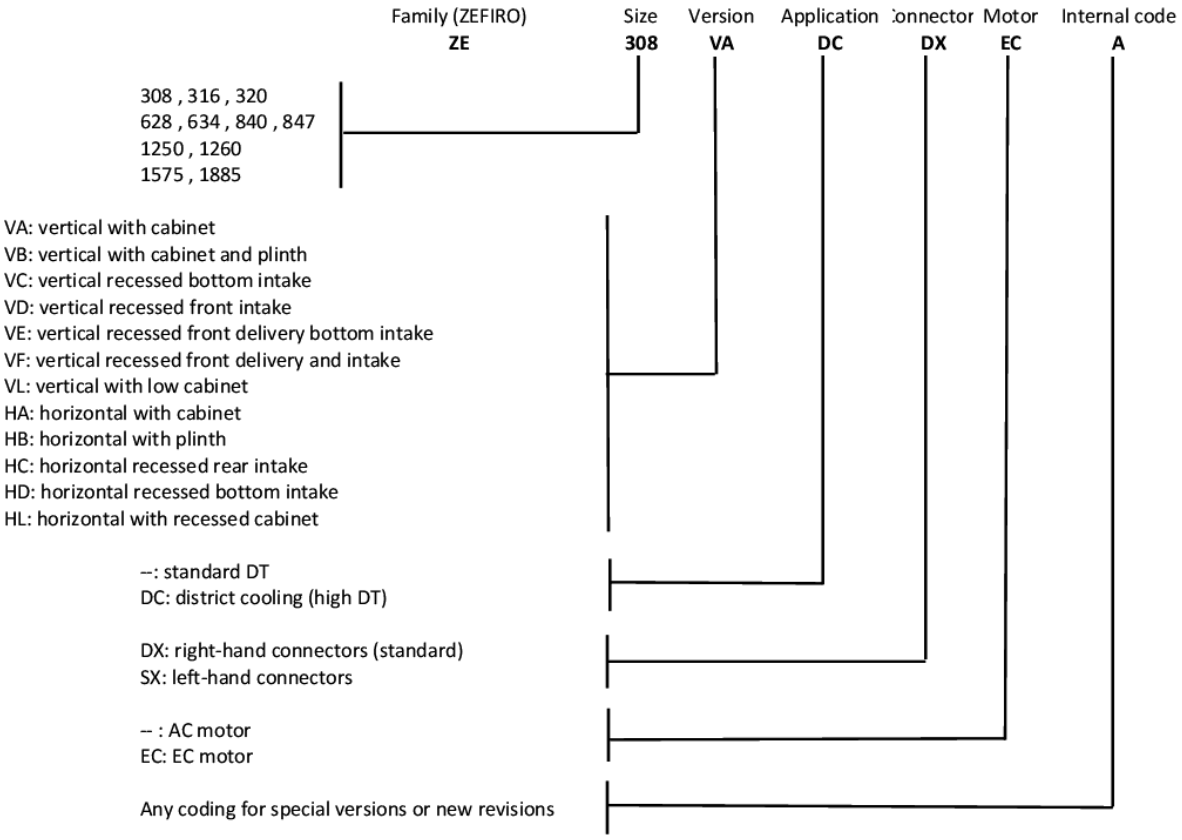
2-APPLICATION LIMITS

Electrical power supply	230V ; 50/60Hz (1)
Coil inlet water temperature	5 / 70°C
Return air temperature	10 / 50°C
Return air relative humidity	15 / 70%

(1) +/- 10% with respect to the supply voltage. All technical data in this manual refer to 230V / 50Hz.

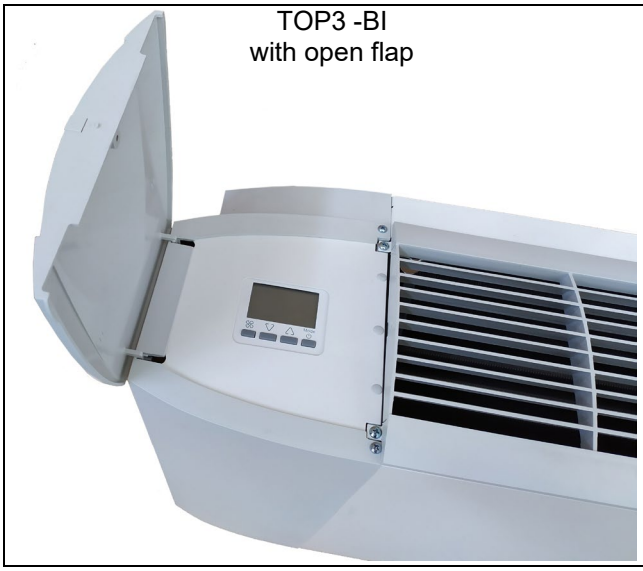
The units should only operate close to their limit operating values for short periods of time, because operation close to limit conditions for prolonged periods can reduce the normal lifetime of unit components.

3-CODES INTERPRETATION KEY



4-CONTROLS

The units of the ZEFIRO series can be controlled by wall-mounted or unit-mounted (BI = Built-In) thermostats.

TOP3 -BI with open flap	Wall-mounted TOP3
	

The controls installed on-board the unit (BI) can only be used for versions with vertical cabinets (VA, VB, VL) because in the other versions (with horizontal or recessed horizontal and vertical cabinets) the temperature probe provided inside the unit would not be able to sense the actual room temperature. In units with vertical cabinets (VA, VB, VL) it is still recommended to use wall-mounted thermostats, rather than built-in ones, because they allow more accurate temperature measurements, thanks to better positioning of the temperature probe.
The built-in controls are positioned under the left or right flap (on the opposite side to the hydraulic connections).
The controls for units with AC motors must have contacts for the three motor speeds sized for at least 1A of inductive load, i.e. the highest power draw from the motor.
Direct connection (in parallel) of more than one unit with AC motor to the same control or to the same relay board is strictly not permitted. In this case, one relay board must be used for each unit (or a single relay board with dedicated contacts for each unit) such as the ETBN-2.5A board.
The controls for units with EC motor must have an output with 0/10V voltage signal sized to provide at least 0.2mA of current for each connected motor (the impedance of the driver's 0/10V input being 50kOhm). 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 ZEFIRO fan-coils, please refer to the dedicated literature. Should you wish to use control types other than those proposed and approved by AERTESI, the manufacturers will not be held liable for any malfunctions caused by them.

5-TECHNICAL SPECIFICATIONS

FRAME: made of 0.80mm thick galvanized sheet steel. This rugged structure prevents the propagation of vibration and comes complete with ceiling fixing brackets.

CABINET: made of 0.8mm thick RAL 9010 painted (or pre-painted) sheet metal. The sides and delivery grilles, made of ABS (RAL 9002 colour), allow cabinets to be obtained with a stylish, modern design that blends seamlessly into any environment. The delivery grille can easily be rotated by 180° to direct the air flow towards the room or towards the wall.

ACCESSIBILITY: the filter can be removed from the front (for vertical versions) or from the bottom (for horizontal versions). Access to the electrical control panel and to the hydraulic connections can be obtained by removing the plastic side panels only and not the entire cabinet. Accessibility to the other internal components (fan, coil) is obtained by removing the whole front panel. The hydraulic connectors are supplied as standard on the right side, and optionally on the left (viewed from in front of the fan-coil); the electrical panel is on the opposite side.

FILTER: ISO COARSE class with ePM10 efficiency <50% (ISO 16890), 6mm thickness, in washable synthetic material. Other types on request.

FAN UNIT: the fans have forward curved blades and dual intake centrifuges directly coupled to the motor. The auger is made of galvanized steel or ABS, the fan is in aluminium or ABS (depending on the version and size of the motor). The motor and fans are balanced after installation on the fan unit plate. The motor is mounted on rubber vibration damping mounts, degree of protection IP20 and has three speeds (AC motor) or a 0-10V control (EC motor).

COIL: made from 3/8" diameter copper tubing (5/16" diameter for District Cooling special coils) with high efficiency corrugated aluminium fins and with manual air venting valve in the upper part of the manifold. Nominal pressure PN8. Direct expansion coils are available on request.

CONDENSATE COLLECTION TRAY: For sizes 308 to 1260, the main tray is made of ABS, a corrosion-proof material suitable for contact with condensate. This material is also a good thermal insulator, which prevents the formation of condensation under the tray.
For the sizes 1575 to 1885 it is made of galvanized steel sheet and painted to prevent the formation of rust. The drain pipe and the edges of the metal trays are suitably sealed to avoid leaks over time. The tray is externally insulated with thermally insulating material.
For all sizes, the tray is shaped and assembled to an angle designed to minimise standing water.

INSULATION: made of 3mm thick polyethylene, it prevents condensation on the metalwork.

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.
If the machine is equipped with a factory-installed built-in (BI) control, all the electrical parts of the fan coil (motor, valves, etc.) are pre-connected to the manufacturer's control.
While if the machine is supplied ready to be connected to a wall-mounted control, the electrical devices are connected to a terminal block, to which the installer will, in turn, connect.

REVERSIBILITY: This feature allows users to change the hydraulic connections side on site, before carrying out the installation. This feature is available for all horizontal units, while for vertical units it is only available for sizes 1575 and 1885.

6-TECHNICAL DATA (AC motors)

This chapter lists the operating specifications of the units with 3-row (sizes 316 to 1250), 4-row (sizes 1575 to 1885) and auxiliary 1-row coils.
The main 4-row coils (sizes 320 to 1260) and District Cooling coils are also available from our selection software.

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		316						628					
		3 rows						3 rows					
Speed		1	2(E)	3	4(E)	5(E)	6	1	2(E)	3	4(E)	5(E)	6
			MIN		MED	MAX			MIN		MED	MAX	
Air flow rate	M3/h	162	174	240	285	328	393	260	280	382	450	524	629
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C													
Total capacity(E)	kW	0,97	1,02	1,28	1,43	1,57	1,77	1,47	1,55	1,95	2,17	2,42	2,74
Sensitive capacity (E)	kW	0,71	0,75	0,97	1,09	1,22	1,39	1,07	1,14	1,45	1,64	1,85	2,10
Water flow rate	l/h	168	177	224	251	276	331	256	271	340	381	422	475
Δp (water) (E)	kPa	3,8	4,2	6,5	8,1	9,7	12,2	3,6	4,1	6,2	7,7	9,3	11,6
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C													
Capacity (E)	kW	1,01	1,08	1,39	1,59	1,76	2,02	1,51	1,61	2,09	2,36	2,65	3,04
Water flow rate	l/h	172	183	236	269	300	343	258	275	356	401	451	518
Δp (water) (E)	kPa	3,6	4,1	6,6	8,5	10,5	13,5	3,4	3,8	6,2	7,7	9,6	12,5
MOTOR ELECTRIC POWER DRAW													
Power draw (E)	W	13	15	22	28	32	41	18	21	30	36	43	54
Max power draw	A	0,19						0,24					
SOUND DATA													
Sound power (E)	dB(A)	31	34	38	42	45	47	31	33	37	40	44	46
Sound pressure (*)	dB(A)	22	25	29	33	36	38	22	24	28	31	35	37

(E): Eurovent certified performance
(*) = 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.

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		840						1250					
		3 rows						3 rows					
Speed		1	2(E)	3	4(E)	5(E)	6	1	2(E)	3	4(E)	5(E)	6
			MIN		MED	MAX			MIN		MED	MAX	
Air flow rate	M3/h	371	399	546	644	759	949	608	653	878	1029	1148	1436
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C													
Total capacity(E)	kW	2,30	2,43	3,04	3,40	3,79	4,37	3,28	3,44	4,17	4,59	4,90	5,57
Sensitive capacity (E)	kW	1,66	1,76	2,24	2,53	2,85	3,35	2,43	2,56	3,17	3,54	3,81	4,44
Water flow rate	l/h	403	425	533	597	667	770	574	603	734	810	866	987
Δp (water) (E)	kPa	10,2	11,2	17	21	25,9	33,8	19,5	21,4	30,9	37,2	42,1	53,8
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C													
Capacity (E)	kW	2,35	2,49	3,19	3,63	4,13	4,87	3,47	3,67	4,60	5,17	5,60	6,55
Water flow rate	l/h	399	424	541	616	699	824	589	623	779	874	945	1104
Δp (water) (E)	kPa	8,9	10,0	15,8	20,1	25,5	34,7	18,5	20,5	31,2	38,8	45,0	60,3
MOTOR ELECTRIC POWER DRAW													
Power draw (E)	W	36	44	60	73	89	108	56	68	96	116	137	167
Max power draw	A	0,47						0,74					
SOUND DATA													
Sound power (E)	dB(A)	32	37	43	46	50	51	41	46	53	57	60	61
Sound pressure (*)	dB(A)	23	28	34	37	41	42	32	37	44	48	51	52

(E): Eurovent certified performance
(*) = 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.

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		1575						1885					
		4 rows						4 rows					
Speed		1	2(E)	3	4(E)	5(E)	6	1	2(E)	3	4(E)	5(E)	6
			MIN		MED	MAX			MIN		MED	MAX	
Air flow rate	M3/h	876	942	1127	1251	1384	1730	1098	1180	1409	1561	1720	2151
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C													
Total capacity(E)	kW	5,20	5,46	6,20	6,64	7,10	8,18	6,64	6,99	7,91	8,47	9,02	10,39
Sensitive capacity (E)	kW	3,82	4,03	4,64	5,01	5,40	6,37	4,84	5,12	5,87	6,34	6,80	8,01
Water flow rate	l/h	911	959	1088	1167	1248	1438	1160	1222	1383	1483	1582	1825
Δp (water) (E)	kPa	15,5	17	21,7	24,8	28,2	36,9	26,5	29,2	37	42,2	47,7	62,6
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C													
Capacity (E)	kW	5,47	5,82	6,71	7,28	7,87	9,30	6,85	7,27	8,37	9,07	9,78	11,61
Water flow rate	l/h	930	986	1138	1234	1334	1577	1166	1237	1423	1542	1662	1965
Δp (water) (E)	kPa	14,9	16,7	22,0	25,6	29,8	41,0	24,7	27,6	36,0	42,0	48,5	66,8
MOTOR ELECTRIC POWER DRAW													
Power draw (E)	W	103	120	131	146	157	176	107	124	143	163	184	207
Max power draw	A	0,85						0,92					
SOUND DATA													
Sound power (E)	dB(A)	49	54	58	61	63	64	51	56	59	61	64	65
Sound pressure (*)	dB(A)	40	45	49	52	54	55	42	47	50	52	55	56

(E): Eurovent certified performance
(*) = 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- 4-pipe unit

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		316+B1						628+B1					
		3 rows+1						3 rows+1					
Speed		1	2(E)	3	4(E)	5(E)	6	1	2(E)	3	4(E)	5(E)	6
			MIN		MED	MAX			MIN		MED	MAX	
Air flow rate	M3/h	162	174	240	285	328	393	260	280	382	450	524	629
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C													
Total capacity(E)	kW	0,97	1,02	1,28	1,43	1,57	1,77	1,47	1,55	1,95	2,17	2,42	2,74
Sensitive capacity (E)	kW	0,71	0,75	0,97	1,09	1,22	1,39	1,07	1,14	1,45	1,64	1,85	2,10
Water flow rate	l/h	168	177	224	251	276	331	256	271	340	381	422	475
Δp (water) (E)	kPa	3,8	4,2	6,5	8,1	9,7	12,2	3,6	4,1	6,2	7,7	9,3	11,6
HEATING - air 20 °C - water inlet 65 °C, outlet 55 °C													
Capacity (E)	kW	1,08	1,15	1,45	1,64	1,81	2,02	1,68	1,77	2,23	2,52	2,81	3,19
Water flow rate	l/h	93	98	124	140	155	172	145	153	192	216	241	274
Δp (water) (E)	kPa	3,3	3,6	5,7	7,2	8,7	10,7	9,1	10	15,5	19,3	23,8	30,5
MOTOR ELECTRIC POWER DRAW													
Power draw (E)	W	13	15	22	28	32	41	18	21	30	36	43	54
Max power draw	A	0,19						0,24					
SOUND DATA													
Sound power (E)	dB(A)	31	34	38	42	45	47	31	33	37	40	44	46
Sound pressure (*)	dB(A)	22	25	29	33	36	38	22	24	28	31	35	37

(E): Eurovent certified performance
(*) = 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.

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		840+B1						1250+B1					
		3 rows+1						3 rows+1					
Speed		1	2(E)	3	4(E)	5(E)	6	1	2(E)	3	4(E)	5(E)	6
			MIN		MED	MAX			MIN		MED	MAX	
Air flow rate	M3/h	371	399	546	644	759	949	608	653	878	1029	1148	1436
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C													
Total capacity(E)	kW	2,30	2,43	3,04	3,40	3,79	4,37	3,28	3,44	4,17	4,59	4,90	5,57
Sensitive capacity (E)	kW	1,66	1,76	2,24	2,53	2,85	3,35	2,43	2,56	3,17	3,54	3,81	4,44
Water flow rate	l/h	403	425	533	597	667	770	574	603	734	810	866	987
Δp (water) (E)	kPa	10,2	11,2	17	21	25,9	33,8	19,5	21,4	30,9	37,2	42,1	53,8
HEATING - air 20 °C - water inlet 65 °C, outlet 55 °C													
Capacity (E)	kW	2,49	2,62	3,30	3,72	4,19	4,79	3,56	3,76	4,54	5,05	5,43	6,27
Water flow rate	l/h	214	225	283	318	357	408	305	322	388	430	462	532
Δp (water) (E)	kPa	6,6	7,3	11,4	14,3	17,9	23,2	13,1	14,6	21,0	25,7	29,5	38,9
MOTOR ELECTRIC POWER DRAW													
Power draw (E)	W	36	44	60	73	89	108	56	68	96	116	137	167
Max power draw	A	0,47						0,74					
SOUND DATA													
Sound power (E)	dB(A)	32	37	43	46	50	51	41	46	53	57	60	61
Sound pressure (*)	dB(A)	23	28	34	37	41	42	32	37	44	48	51	52

(E): Eurovent certified performance
(*) = 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.

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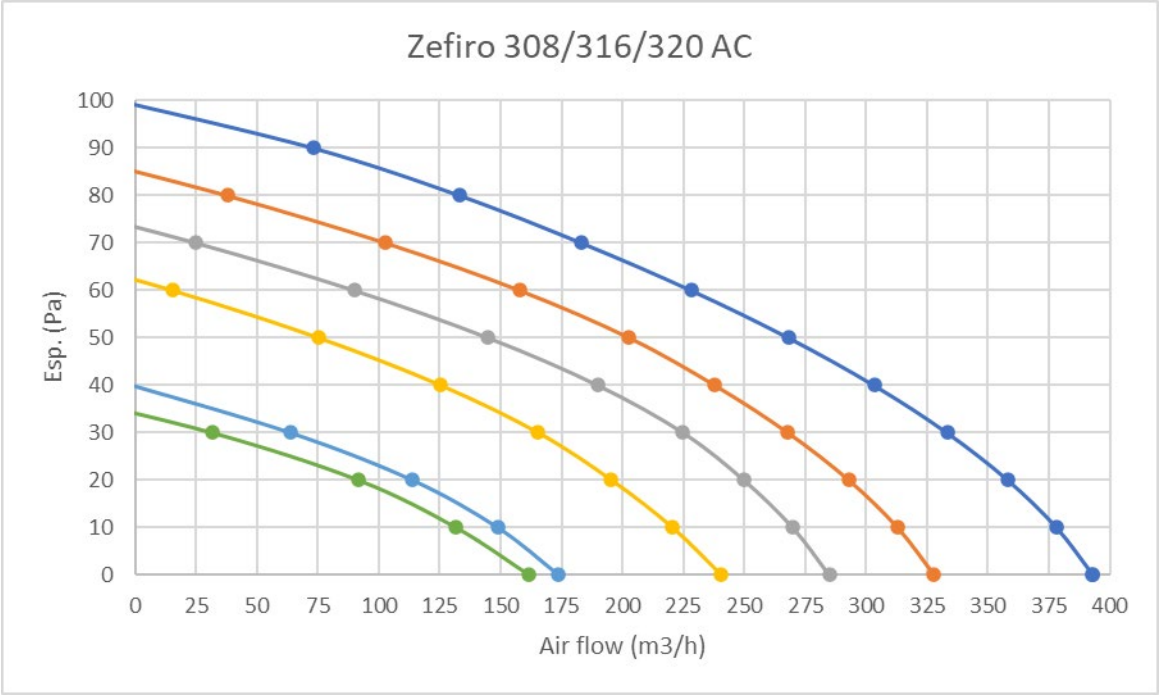
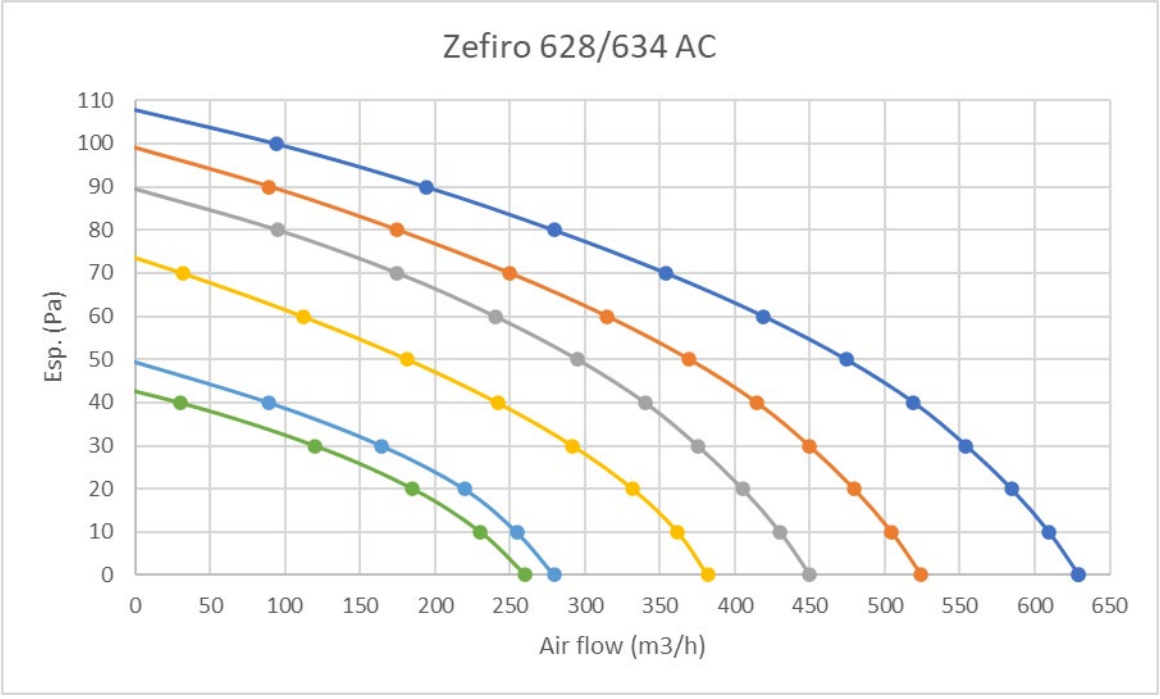
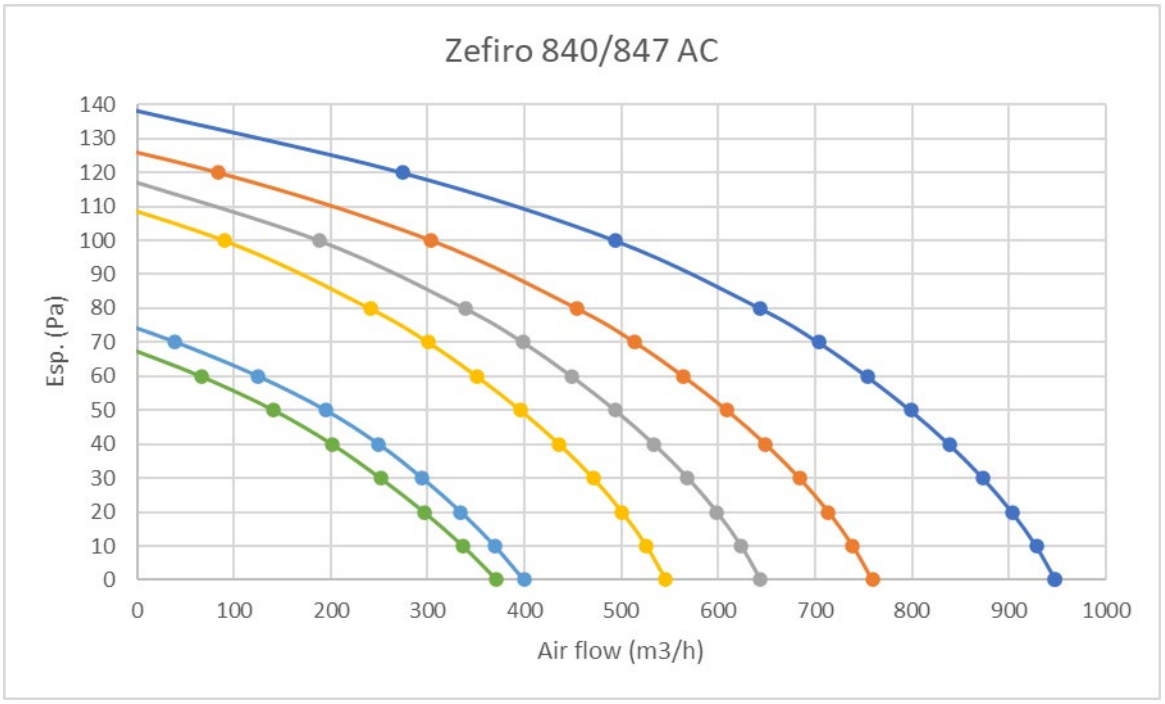
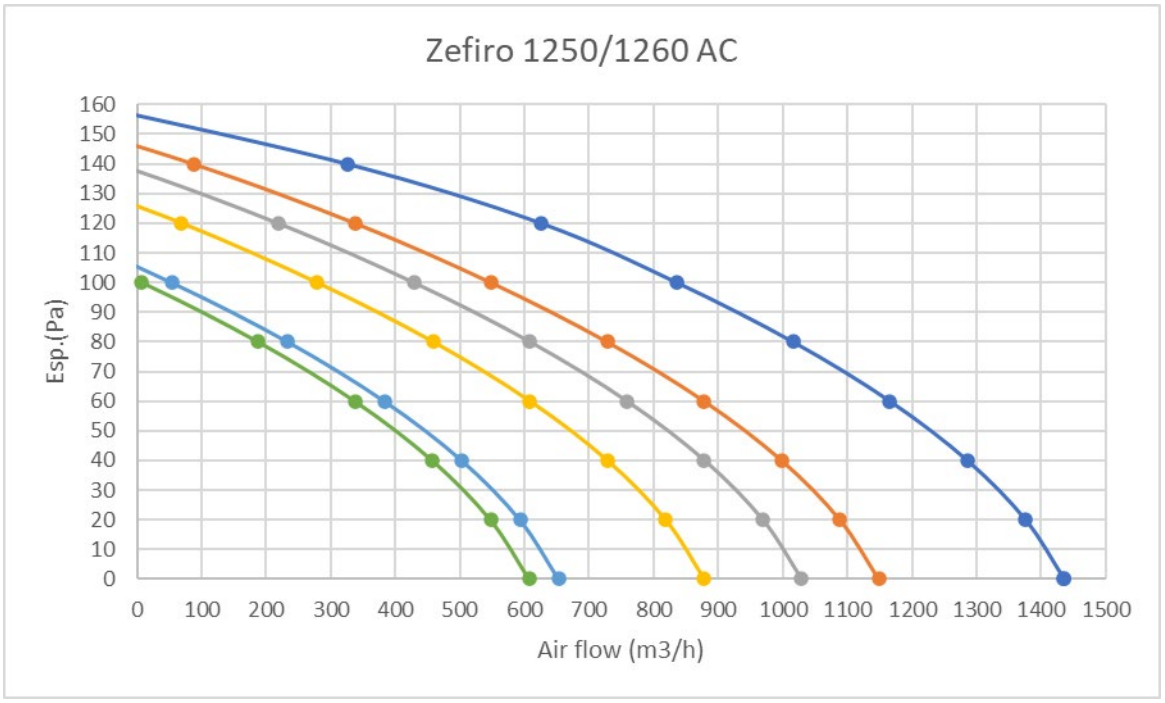
		1575+B1						1885+B1					
		4 rows+1						4 rows+1					
Speed		1	2(E)	3	4(E)	5(E)	6	1	2(E)	3	4(E)	5(E)	6
			MIN		MED	MAX			MIN		MED	MAX	
Air flow rate	M3/h	876	942	1127	1251	1384	1730	1098	1180	1409	1561	1720	2151
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C													
Total capacity(E)	kW	5,20	5,46	6,20	6,64	7,10	8,18	6,64	6,99	7,91	8,47	9,02	10,39
Sensitive capacity (E)	kW	3,82	4,03	4,64	5,01	5,40	6,37	4,84	5,12	5,87	6,34	6,80	8,01
Water flow rate	l/h	911	959	1088	1167	1248	1438	1160	1222	1383	1483	1582	1825
Δp (water) (E)	kPa	15,5	17	21,7	24,8	28,2	36,9	26,5	29,2	37	42,2	47,7	62,6
HEATING - air 20 °C - water inlet 65 °C, outlet 55 °C													
Capacity (E)	kW	5,05	5,33	5,92	6,35	6,78	7,82	6,33	6,66	7,38	7,91	8,44	9,74
Water flow rate	l/h	432	454	504	540	577	666	542	570	632	676	720	831
Δp (water) (E)	kPa	27,3	30,0	36,8	42,1	47,9	63,3	44,5	49,0	59,9	68,2	77,0	101,7
MOTOR ELECTRIC POWER DRAW													
Power draw (E)	W	103	120	131	146	157	176	107	124	143	163	184	207
Max power draw	A	0,85						0,92					
SOUND DATA													
Sound power (E)	dB(A)	49	54	58	61	63	64	51	56	59	61	64	65
Sound pressure (*)	dB(A)	40	45	49	52	54	55	42	47	50	52	55	56

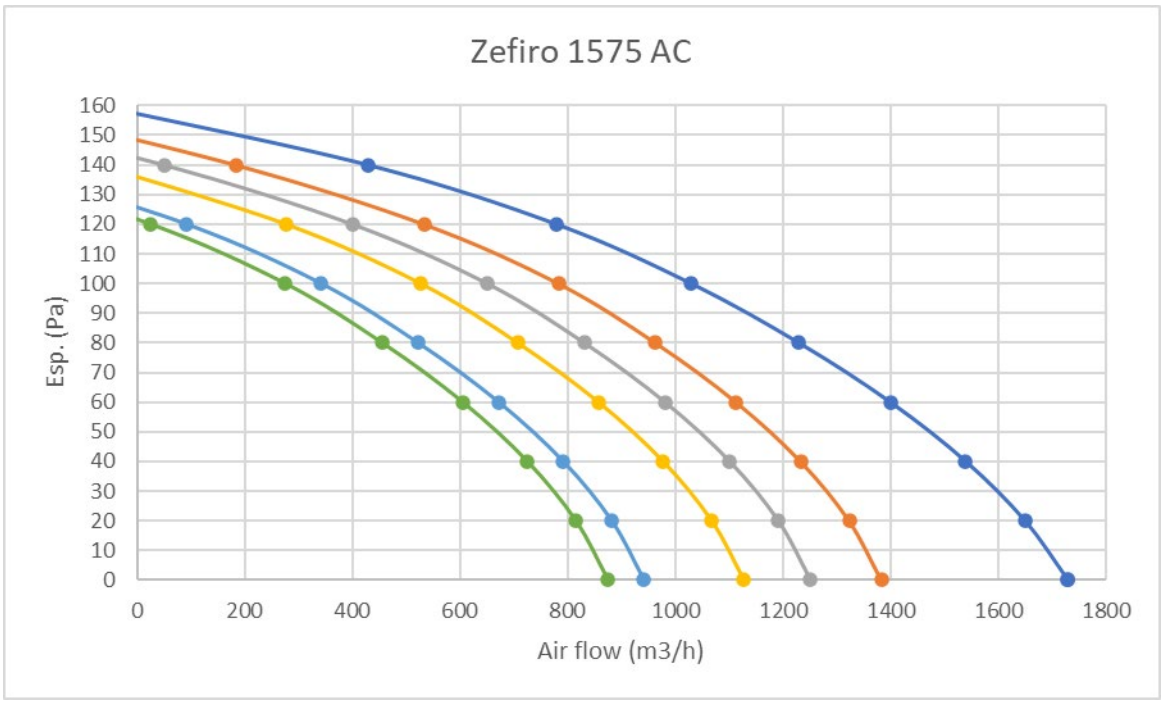
(E): Eurovent certified performance
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

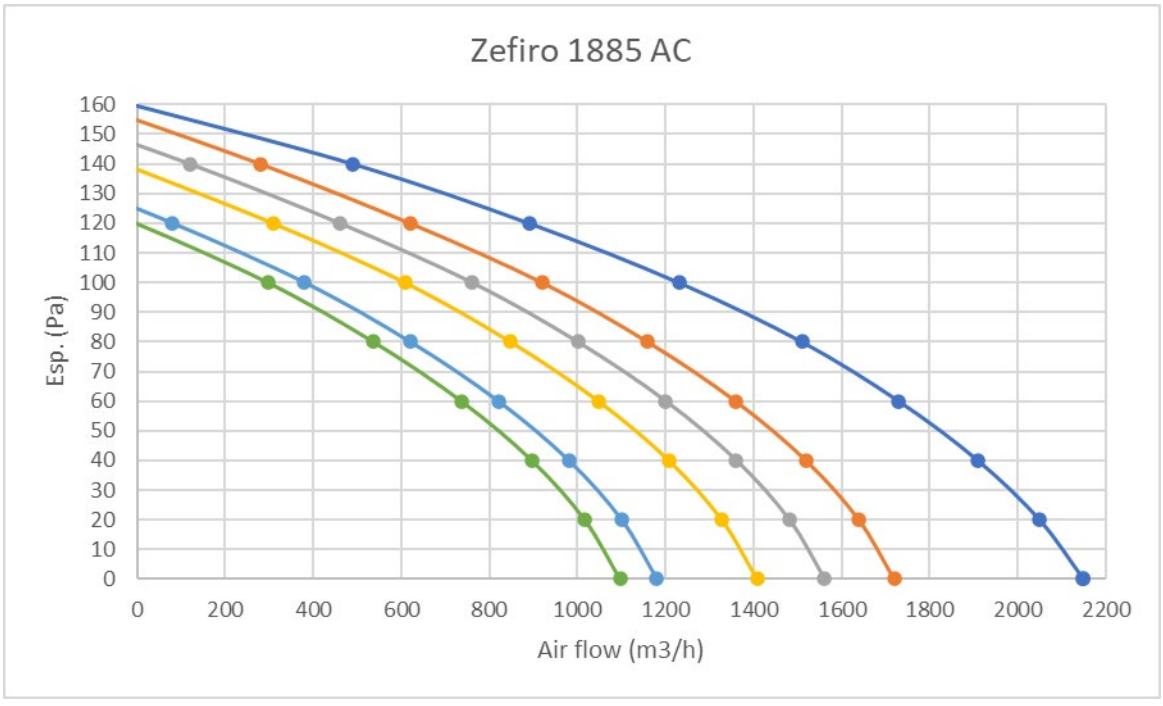

Zefiro 308/316/320 AC
Esp. (Pa)
100
90
80
70
60
50
40
30
20
10
0
0 25 50 75 100 125 150 175 200 225 250 275 300 325 350 375 400
Air flow (m3/h)


Zefiro 628/634 AC
Esp. (Pa)
110
100
90
80
70
60
50
40
30
20
10
0
0 50 100 150 200 250 300 350 400 450 500 550 600 650
Air flow (m3/h)


Zefiro 840/847 AC
Esp. (Pa)
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
0
100
200
300
400
500
600
700
800
900
1000
Air flow (m3/h)


Zefiro 1250/1260 AC
Esp.(Pa)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
Air flow (m3/h)


Zefiro 1575 AC
Esp. (Pa)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
0
200
400
600
800
1000
1200
1400
1600
1800
Air flow (m3/h)


Zefiro 1885 AC
Esp. (Pa)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
Air flow (m3/h)

Sound power level [dB].

	Speed	Band middle frequency [Hz]									Sound pressure	NR
		125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	TOTALE			
		dB	dB	dB	dB	dB	dB	dB	dB	dB(A)	dB(A)	
Zefiro 316	1	39,8	30,5	26,5	20,8	21,7	23,1	24,3	40,7	31	22	22
	2-min	42,6	34,8	31,4	23,7	23,8	25,0	26,1	43,8	34	25	24
	3	45,5	39,3	37,4	30,1	25,5	25,2	25,8	47,1	38	29	24
	4-med	47,1	43,0	41,7	34,8	31,3	26,1	26,6	49,6	42	33	29
	5-max	47,4	45,6	44,4	38,2	36,0	27,1	26,3	51,2	45	36	31
	6	47,9	47,2	46,0	40,7	38,9	29,5	24,5	52,4	47	38	33
Zefiro 628	1	36,0	29,2	25,7	21,1	22,6	23,9	25,0	37,8	31	22	23
	2-min	37,5	33,0	29,7	22,6	23,8	25,1	26,1	39,9	33	24	24
	3	38,2	38,8	36,7	28,1	24,6	25,1	26,1	43,1	37	28	24
	4-med	39,5	41,7	40,0	32,4	27,9	25,2	25,8	45,7	40	31	27
	5-max	40,9	45,2	44,0	36,9	33,8	25,8	26,3	49,0	44	35	31
	6	42,0	46,6	45,8	39,2	37,4	26,6	24,1	50,6	46	37	33
Zefiro 840	1	37,9	32,6	27,9	21,6	22,6	24,2	25,2	39,8	32	23	23
	2-min	41,9	38,8	34,5	27,7	26,3	27,9	28,7	44,5	37	28	27
	3	43,3	44,7	42,3	35,9	33,7	27,8	28,2	48,8	43	34	29
	4-med	44,9	47,0	45,4	38,4	38,6	27,3	27,5	51,2	46	37	33
	5-max	46,7	50,9	50,6	44,1	43,7	34,1	25,3	55,3	51	42	38
	6	47,4	50,5	49,6	42,6	42,8	30,3	28,2	54,7	50	41	37
Zefiro 1250	1	39,2	42,7	41,2	33,5	30,3	23,7	24,4	46,4	41	32	28
	2-min	43,0	47,0	46,3	38,6	36,8	26,6	26,4	51,0	46	37	33
	3	48,4	53,1	52,5	46,2	45,2	36,3	26,9	57,2	53	44	40
	4-med	51,8	56,9	56,1	50,4	49,3	42,7	30,8	61,0	57	48	43
	5-max	54,3	59,7	58,7	53,6	52,1	47,3	35,2	63,8	60	51	46
	6	55,6	60,6	59,6	54,7	52,9	49,2	37,6	64,8	61	52	47
Zefiro 1575	1	51,6	49,9	48,6	41,9	40,3	28,5	25,5	55,3	49	40	36
	2-min	54,4	54,3	53,1	47,3	45,9	37,0	26,9	59,3	54	45	40
	3	56,9	57,9	56,9	51,7	49,8	44,4	30,6	62,7	58	49	44
	4-med	59,5	60,6	59,7	55,0	52,7	48,8	34,6	65,5	61	52	47
	5-max	61,6	62,6	61,6	57,0	54,5	51,4	38,1	67,5	63	54	49
	6	62,6	63,7	62,6	57,9	55,3	52,4	39,9	68,5	64	55	50
Zefiro 1885	1	49,3	50,9	50,6	44,3	43,0	30,0	25,6	55,7	51	42	38
	2-min	53,9	55,7	55,4	49,2	48,2	36,7	27,9	60,5	56	47	42
	3	55,8	60,1	59,8	54,8	53,4	47,8	34,3	64,7	61	52	47
	4-med	56,0	58,4	58,0	52,4	51,7	42,6	30,7	63,1	59	50	46
	5-max	58,4	63,0	62,7	57,9	55,9	52,9	38,9	67,6	64	55	50
	6	58,7	63,8	63,4	58,9	56,5	54,6	40,8	68,4	65	56	51

(*) NR has been evaluated considering a 9 dB difference between sound power and sound pressure level for a 100 m3 volume room with a reverberating time of 0.5 s. The calculus for the value dB(A) inside the technical data has the dB(A) values for all the octave bands and not only the middle one. Consequently there could be a bit difference between the technical data and the one obtained using this table.

7-TECHNICAL DATA (EC motors)

This chapter lists the operating specifications of the units with 3-row (sizes 316 to 1250), 4-row (sizes 1575 to 1885) and auxiliary 1-row coils. **The main 4-row coils (sizes 320 to 1260) and District Cooling coils are also available from our selection software.**

7.1- 2-pipe unit

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		316					628				
		3 rows					3 rows				
Speed (Drive voltage)		1V	3V(E)	4V(E)	7V(E)	10V	1V	4(E)	5(E)	7(E)	10V
			MIN	MED	MAX			Min	MED	MAX	
Air flow rate	M3/h	81	173	215	334	490	176	385	454	593	852
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C											
Total capacity (E)	kW	0,57	1,02	1,19	1,61	2,05	1,10	1,98	2,22	2,65	3,30
Sensitive capacity (E)	kW	0,41	0,76	0,90	1,26	1,65	0,79	1,48	1,68	2,05	2,64
Water flow rate	l/h	99	176	207	279	356	190	342	383	458	573
Δp (water) (E)	kPa	1,4	4,2	5,6	9,9	15,7	2,1	5,6	7,6	10,9	16,6
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C											
Capacity (E)	kW	0,56	1,06	1,27	1,77	2,35	1,08	2,08	2,34	2,88	3,76
Water flow rate	l/h	96	182	218	304	402	185	358	403	495	645
Δp (water) (E)	kPa	1,2	4,1	5,7	10,8	18,3	1,8	6,2	7,8	11,5	19
MOTOR ELECTRIC POWER DRAW											
Power draw (E)	W	4	7	8	13	22	5	10	13	19	34
Max power draw	A	0,19					0,27				
SOUND DATA											
Sound power (E)	dB(A)	28	34	37	45	48	28	37	40	46	49
Sound pressure (*)	dB(A)	19	25	28	36	39	19	28	31	37	40

(E): Eurovent certified performance
(*) = 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 .

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		840					1250				
		3 rows					3 rows				
Speed (Drive voltage)		1V	5V(E)	7V(E)	9V(E)	10V	1V	4V(E)	5(E)	8(E)	10V
			MIN	MED	MAX			MIN	MED	MAX	
Air flow rate	M3/h	206	477	619	749	854	197	587	737	1119	1419
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C											
Total capacity (E)	kW	1,47	2,81	3,36	3,82	4,16	1,43	3,24	3,77	4,89	5,61
Sensitive capacity (E)	kW	1,03	2,06	2,51	2,88	3,17	1,00	2,41	2,85	3,81	4,48
Water flow rate	l/h	254	485	582	661	720	245	561	654	853	980
Δp (water) (E)	kPa	4,3	14,3	20,1	25,4	29,8	4	18,7	24,9	41	53,1
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C											
Capacity (E)	kW	1,40	2,85	3,48	4,03	4,44	1,35	3,34	3,98	5,43	6,42
Water flow rate	l/h	240	492	598	692	763	231	574	683	928	1095
Δp (water) (E)	kPa	3,5	13,2	19	25	30,1	3,2	17,6	24,4	43,4	59,3
MOTOR ELECTRIC POWER DRAW											
Power draw (E)	W	6	13	19	27	31	5	18	28	74	89
Max power draw	A	0,26					0,67				
SOUND DATA											
Sound power (E)	dB(A)	28	40	46	50	51	29	45	50	59	61
Sound pressure (*)	dB(A)	19	31	37	41	42	20	36	41	50	52

(E): Eurovent certified performance
(*) = 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.

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Speed (Driver voltage)		1575					1885				
		4 rows					4 rows				
		1V	4V(E)	6V(E)	8V(E)	10V	1V	5V(E)	6V(E)	8V(E)	10V
			MIN	MED	MAX			MIN	MED	MAX	
Air flow rate	M3/h	340	827	1111	1404	1844	395	1191	1373	1697	2211
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C											
Total capacity (E)	kW	2,52	5,06	6,21	7,23	8,55	3,02	7,11	7,83	9,00	10,62
Sensitive capacity (E)	kW	1,77	3,72	4,65	5,52	6,71	2,10	5,23	5,82	6,80	8,20
Water flow rate	l/h	436	874	1077	1259	1496	521	1230	1359	1568	1856
Δp (water) (E)	kPa	3,8	14,3	21,3	28,6	39,8	5,8	29,6	35,8	46,9	64,6
HEATING - air 20 °C - water inlet 45 °C, outlet 40 °C											
Capacity (E)	kW	2,39	5,16	6,56	7,89	9,71	2,80	7,25	8,13	9,63	11,78
Water flow rate	l/h	412	888	1125	1348	1654	483	1246	1395	1644	2006
Δp (water) (E)	kPa	3,2	13,6	21,5	30,4	45,0	4,6	28,0	34,7	47,5	69,5
MOTOR ELECTRIC POWER DRAW											
Power draw (E)	W	8	29	58	101	154	8	49	68	117	179
Max power draw	A	1,15					1,29				
c											
Sound power (E)	dB(A)	31	51	58	63	65	34	58	60	64	66
Sound pressure (*)	dB(A)	22	42	49	54	56	25	49	51	55	57

(E): Eurovent certified performance
(*) = 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- 4-pipe unit

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		316+B1					628+B1				
		3 rows+1					3 rows+1				
Speed (Driver voltage)		1V	3V(E)	4V(E)	7V(E)	10V	1V	4(E)	5(E)	7(E)	10V
			MIN	MED	MAX			Min	MED	MAX	
Air flow rate	M3/h	81	173	215	334	490	176	385	454	593	852
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C											
Total capacity (E)	kW	0,57	1,02	1,19	1,61	2,05	1,10	1,98	2,22	2,65	3,30
Sensitive capacity (E)	kW	0,41	0,76	0,90	1,26	1,65	0,79	1,48	1,68	2,05	2,64
Water flow rate	l/h	99	176	207	279	356	190	342	383	458	573
Δp (water) (E)	kPa	1,4	4,2	5,6	9,9	15,7	2,1	5,6	7,6	10,9	16,6
HEATING - air 20 °C - water inlet 65 °C, outlet 55 °C											
Capacity (E)	kW	0,64	1,13	1,32	1,81	2,30	1,25	2,22	2,50	3,03	3,80
Water flow rate	l/h	56	98	114	157	199	108	193	217	263	329
Δp (water) (E)	kPa	1,2	3,6	4,8	9	14,1	5,2	15,6	19,5	28,2	43,2
MOTOR ELECTRIC POWER DRAW											
Power draw (E)	W	4	7	8	13	22	5	10	13	19	34
Max power draw	A	0,19					0,27				
SOUND DATA											
Sound power (E)	dB(A)	28	34	37	45	48	28	37	40	46	49
Sound pressure (*)	dB(A)	19	25	28	36	39	19	28	31	37	40

(E): Eurovent certified performance
(*) = 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.

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		840+B1					1250+B1				
		3 rows+1					3 rows+1				
Speed (Drive voltage)			5V(E)	7V(E)	9V(E)	10V	1V	4V(E)	5(E)	8(E)	10V
			MIN	MED	MAX			MIN	MED	MAX	
Air flow rate	M3/h	206	477	619	749	854	197	587	737	1119	1419
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C											
Total capacity (E)	kW	1,47	2,81	3,36	3,82	4,16	1,43	3,24	3,77	4,89	5,61
Sensitive capacity (E)	kW	1,03	2,06	2,51	2,88	3,17	1,00	2,41	2,85	3,81	4,48
Water flow rate	l/h	254	485	582	661	720	245	561	654	853	980
Δp (water) (E)	kPa	4,3	14,3	20,1	25,4	29,8	4	18,7	24,9	41	53,1
HEATING - air 20 °C - water inlet 65 °C, outlet 55 °C											
Capacity (E)	kW	1,59	2,95	3,57	4,09	4,46	1,54	3,44	4,04	5,28	6,14
Water flow rate	l/h	137	257	310	354	386	133	298	350	454	528
Δp (water) (E)	kPa	2,8	9,4	13,6	17,6	20,8	2,6	12,6	17,2	28,5	38,3
MOTOR ELECTRIC POWER DRAW											
Power draw (E)	W	6	13	19	27	31	5	18	28	74	89
Max power draw	A	0,26					0,67				
SOUND DATA											
Sound power (E)	dB(A)	28	40	46	50	51	29	45	50	59	61
Sound pressure (*)	dB(A)	19	31	37	41	42	20	36	41	50	52

(E): Eurovent certified performance
(*) = 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.

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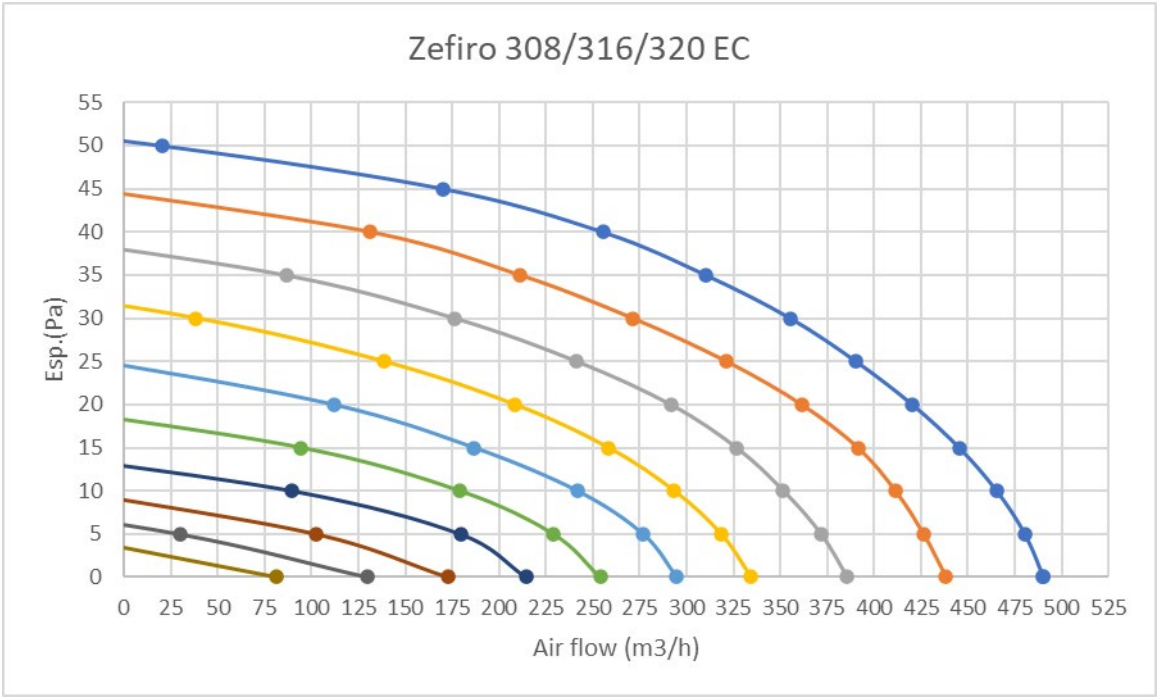
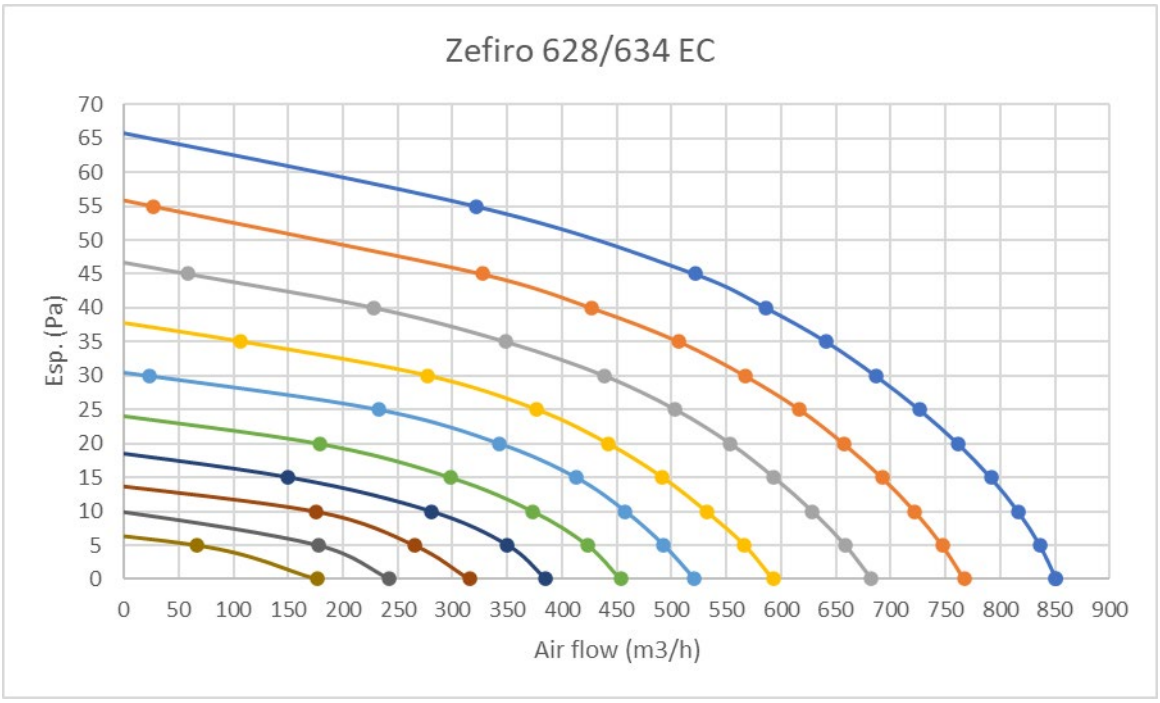
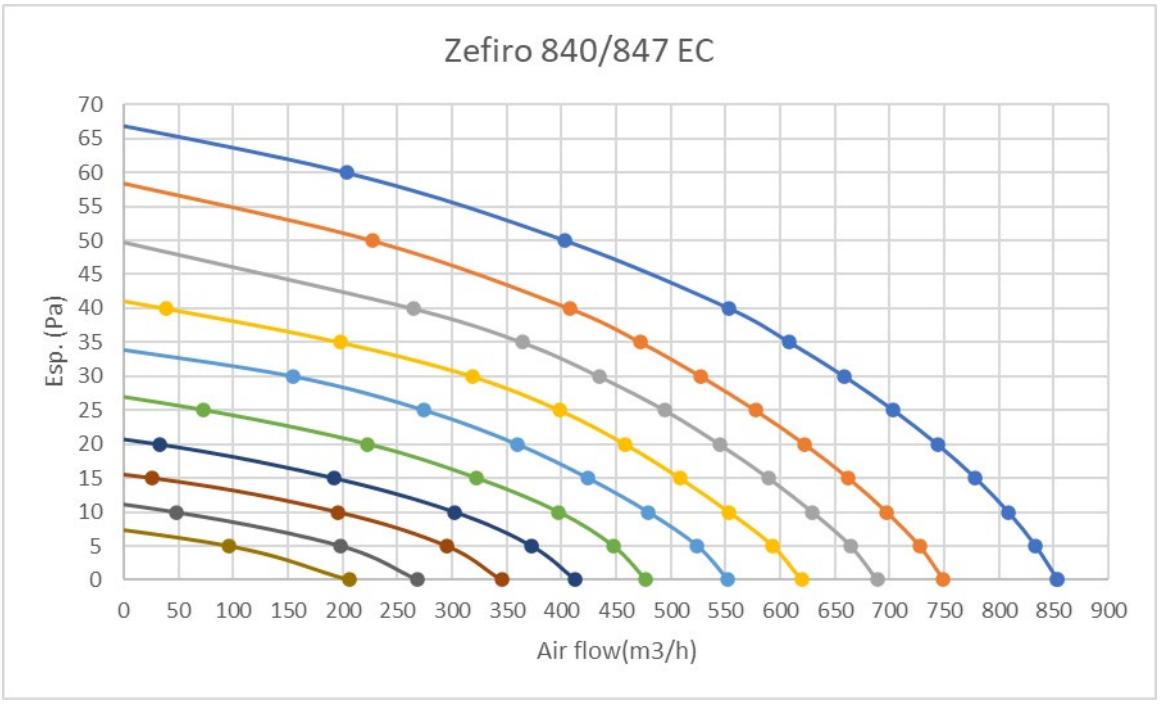
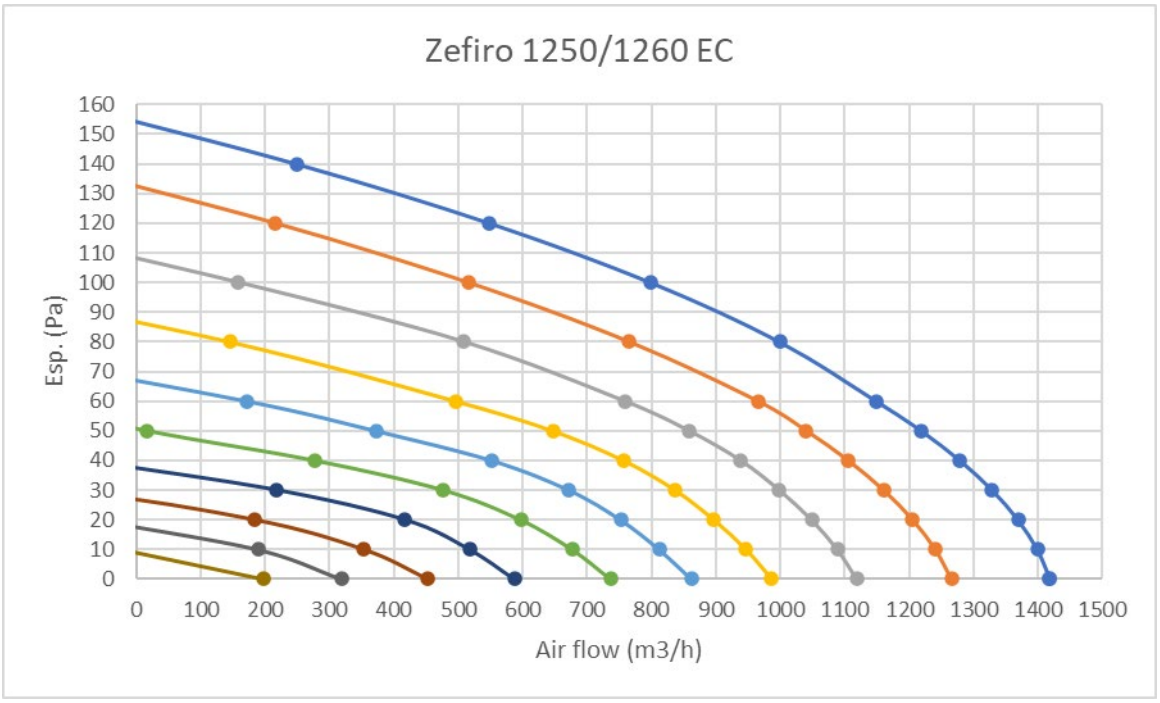
		1575+B1					1885+B1				
		4 rows+1					4 rows+1				
Speed (Driver voltage)		1V	4V(E)	6V(E)	8V(E)	10V	1V	5V(E)	6V(E)	8V(E)	10V
			MIN	MED	MAX			MIN	MED	MAX	
Air flow rate	M3/h	340	827	1111	1404	1844	395	1191	1373	1697	2211
COOLING - air 27 °C (dry bulb) , 19 °C w.b. - water inlet 7 °C, outlet 12 °C											
Total capacity (E)	kW	2,52	5,06	6,21	7,23	8,55	3,02	7,11	7,83	9,00	10,62
Sensitive capacity (E)	kW	1,77	3,72	4,65	5,52	6,71	2,10	5,23	5,82	6,80	8,20
Water flow rate	l/h	436	874	1077	1259	1496	521	1230	1359	1568	1856
Δp (water) (E)	kPa	3,8	14,3	21,3	28,6	39,8	5,8	29,6	35,8	46,9	64,6
HEATING - air 20 °C - water inlet 55 °C, outlet 65 °C											
Capacity (E)	kW	2,49	4,78	5,79	6,78	8,10	2,95	6,63	7,19	8,31	9,88
Water flow rate	l/h	216	414	500	583	693	256	574	621	714	846
Δp (water) (E)	kPa	7,1	25,1	36,2	48,9	68,4	10,5	49,7	57,8	75,8	105,3
MOTOR ELECTRIC POWER DRAW											
Power draw (E)	W	8	29	58	101	154	8	49	68	117	179
Max power draw	A	1,15					1,29				
c											
Sound power (E)	dB(A)	31	51	58	63	65	34	58	60	64	66
Sound pressure (*)	dB(A)	22	42	49	54	56	25	49	51	55	57

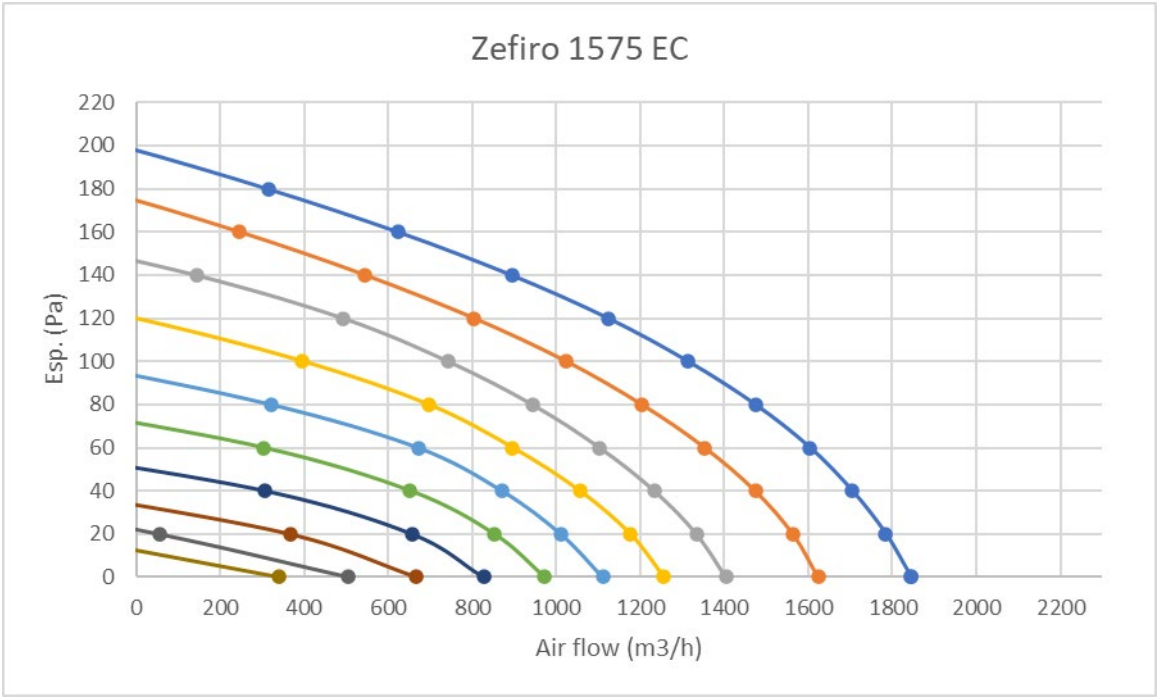
(E): Eurovent certified performance
(*) = the sound pressure levels are lower than power levels by 9 dB(A) for a 100 m3 space and a reverberation time of 0.5 sec.

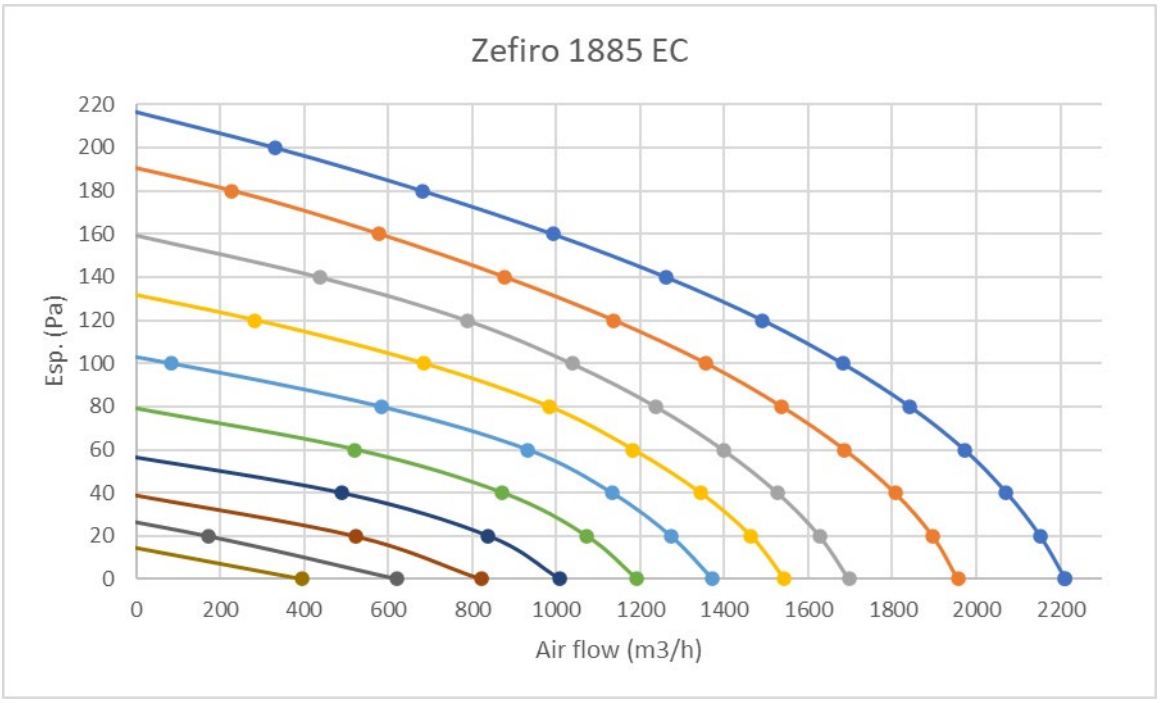

Zefiro 308/316/320 EC
Esp.(Pa)
55
50
45
40
35
30
25
20
15
10
5
0
0 25 50 75 100 125 150 175 200 225 250 275 300 325 350 375 400 425 450 475 500 525
Air flow (m3/h)


Zefiro 628/634 EC
Esp. (Pa)
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900
Air flow (m3/h)


Zefiro 840/847 EC
Esp. (Pa)
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900
Air flow(m3/h)


Zefiro 1250/1260 EC
Esp. (Pa)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500
Air flow (m3/h)


Zefiro 1575 EC
Esp. (Pa)
220
200
180
160
140
120
100
80
60
40
20
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
Air flow (m3/h)


Zefiro 1885 EC
Esp. (Pa)
220
200
180
160
140
120
100
80
60
40
20
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
Air flow (m3/h)

Sound power level [dB].

	Speed [V]	Band middle frequency [Hz]									Sound pressure	NR
		125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	TOTALE			
		dB	dB	dB	dB	dB	dB	dB	dB	dB(A)	dB(A)	
Zefiro 316	1V	37,7	22,3	18,9	17,7	19,9	21,1	22,1	38,2	28	19	**20**
	2V	37,7	27,4	22,8	20,1	21,7	23,0	23,9	38,6	30	21	**22**
	3V	40,0	35,3	31,6	23,6	23,6	25,2	25,9	42,0	34	25	**24**
	4V	42,5	38,8	36,6	27,1	24,5	25,5	26,2	45,0	37	28	**24**
	5V	38,7	40,6	39,6	30,5	26,2	24,8	25,4	44,8	39	30	**27**
	6V	40,2	43,4	42,4	34,3	30,4	24,9	25,4	47,3	42	33	**29**
	7V	41,3	46,2	45,3	37,8	34,7	26,5	26,1	50,0	45	36	**32**
	8V	42,4	46,9	46,0	39,1	36,4	27,6	25,1	50,8	46	37	**32**
	9V	41,6	47,5	46,7	40,3	37,9	29,2	23,9	51,3	47	38	**34**
	10V	42,2	48,3	47,5	41,6	39,3	31,2	23,5	52,2	48	39	**35**
Zefiro 628	1V	33,0	22,0	19,1	17,5	21,7	21,4	22,1	34,4	28	19	**20**
	2V	34,4	28,1	24,5	19,4	22,8	22,9	23,6	36,4	30	21	**22**
	3V	37,2	36,2	31,7	22,9	24,7	25,0	25,6	40,8	34	25	**24**
	4V	38,5	38,9	36,5	27,7	26,0	25,6	26,1	43,2	37	28	**24**
	5V	38,7	41,8	40,2	32,0	28,0	24,8	25,9	45,6	40	31	**27**
	6V	40,2	45,7	42,9	35,5	31,4	25,3	25,8	48,6	43	34	**30**
	7V	41,9	47,0	46,1	39,2	35,9	26,9	26,3	50,8	46	37	**33**
	8V	42,9	47,7	46,9	40,4	37,5	27,8	25,1	51,6	47	38	**34**
	9V	42,7	48,5	47,7	41,6	39,0	29,6	24,0	52,4	48	39	**35**
	10V	43,4	49,3	48,6	42,7	40,3	31,5	23,5	53,2	49	40	**36**
Zefiro 840	1V	33,7	23,7	18,5	17,5	21,7	21,1	22,1	35,0	28	19	**20**
	2V	35,5	28,5	23,5	19,5	22,9	22,7	23,7	37,1	30	21	**22**
	3V	38	35,8	31,3	23,5	25	24,8	25,8	41,0	34	25	**24**
	4V	38,6	39,8	36	27,8	25,6	25	26	43,5	37	28	**24**
	5V	39,1	42,5	39,9	32	27,8	25,3	26,1	45,9	40	31	**27**
	6V	40,8	44,9	43,1	35,9	31,9	25,7	26,4	48,4	43	34	**30**
	7V	42,2	47,4	46,1	39,1	36	26,6	26,6	51,0	46	37	**33**
	8V	43,2	49	47,9	41,4	38,8	28	26,5	52,7	48	39	**35**
	9V	44,6	50,7	49,6	43,4	41,2	30,5	26,3	54,4	50	41	**37**
	10V	45,4	51,5	50,5	44,7	42,6	32,7	25,9	55,3	51	42	**38**

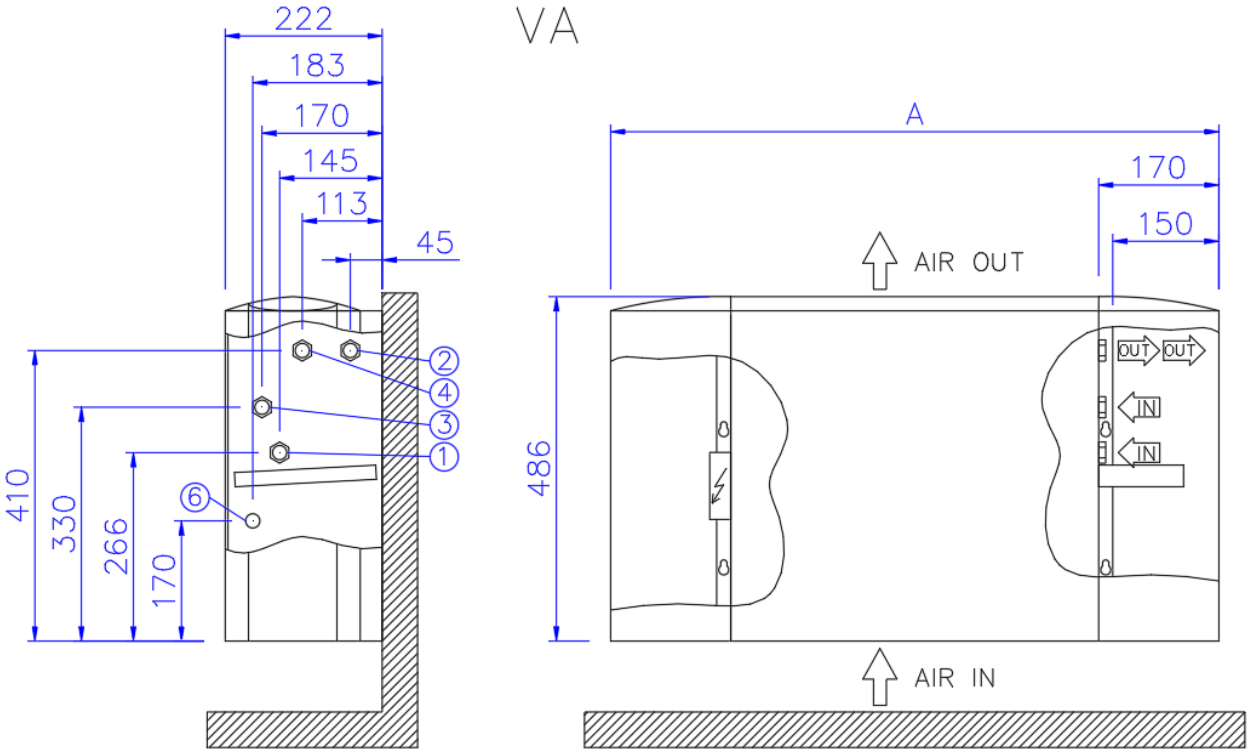
	Speed [V]	Band middle frequency [Hz]									Sound pressure	NR
		125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	TOTALE			
		dB	dB	dB	dB	dB	dB	dB	dB	dB(A)	dB(A)	
Zefiro 1250	**1V**	33,8	23,5	20,1	18,7	22,9	22,2	23,1	35,3	29	20	**21**
	2V	35,4	33,7	29,4	21,5	23,0	22,5	23,9	38,7	32	23	**22**
	3V	37,3	40,3	38,0	30,0	26,2	23,3	24,1	43,9	38	29	**25**
	4V	41,1	46,3	45,0	38,0	35,2	25,8	25,7	49,9	45	36	**32**
	5V	44,7	50,7	49,7	43,3	41,4	30,6	26,5	54,4	50	41	**37**
	6V	47,5	53,2	52,4	46,6	44,9	35,7	27,0	57,2	53	44	**39**
	7V	50,0	55,9	55,0	49,8	48,1	40,8	29,7	59,9	56	47	**42**
	8V	52,9	58,6	57,7	53,1	51,1	45,3	33,8	62,7	59	50	**45**
	9V	53,9	59,5	58,6	54,2	52,1	47,2	36,3	63,7	60	51	**46**
	10V	54,8	60,5	59,5	55,2	53,2	48,4	37,6	64,7	61	52	**47**
Zefiro 1575	**1V**	36,5	31,6	28,0	20,5	21,7	22,6	23,2	38,6	31	22	**21**
	2V	37,7	40,0	37,6	30,5	26,6	23,8	24,3	43,8	38	29	**25**
	3V	41,4	45,5	44,8	37,9	36,3	25,7	24,7	49,6	45	36	**32**
	4V	45,5	50,6	50,7	43,9	43,2	32,4	26,1	55,0	51	42	**38**
	5V	48,9	54,4	53,9	48,4	47,7	39,3	28,3	58,7	55	46	**42**
	6V	51,8	56,9	56,7	51,6	50,6	45,1	31,9	61,5	58	49	**45**
	7V	54,7	59,8	59,5	55,2	53,2	49,4	36,5	64,4	61	52	**47**
	8V	57,1	61,8	61,4	57,1	55,0	51,9	39,8	66,4	63	54	**49**
	9V	58,0	62,7	62,3	58,2	55,9	53,2	41,8	67,4	64	55	**50**
	10V	59,1	63,7	63,2	59,2	56,9	54,4	43,8	68,4	65	56	**51**
Zefiro 1885	**1V**	29,2	26,0	28,1	33,2	21,8	15,5	16,0	36,2	34	25	**24**
	2V	33,8	35,2	35,2	38,8	29,1	18,1	18,4	42,4	40	31	**30**
	3V	37,3	42,1	42,5	44,3	36,2	22,2	20,9	48,5	46	37	**35**
	4V	44,2	48,6	49,1	49,5	43,2	29,0	23,9	54,6	52	43	**41**
	5V	50,3	55,3	55,4	55,1	49,6	37,3	28,1	60,8	58	49	**46**
	6V	55,0	58,0	57,6	56,1	52,4	41,6	30,3	63,3	60	51	**47**
	7V	55,6	60,4	60,2	57,6	54,0	46,6	34,4	65,3	62	53	**49**
	8V	56,8	62,0	61,8	60,1	55,7	50,3	37,8	67,1	64	55	**51**
	9V	59,0	63,1	62,9	60,7	56,4	52,4	40,4	68,2	65	56	**52**
	10V	59,1	64,0	63,6	61,8	57,8	54,1	42,7	69,0	66	57	**53**

(*) NR has been evaluated considering a 9 dB difference between sound power and sound pressure level for a 100 m3 volume room with a reverberating time of 0.5 s. The calculus for the value dB(A) inside the technical data has the dB(A) values for all the octave bands and not only the middle one. Consequently there could be a bit difference between the technical data and the one obtained using this table.

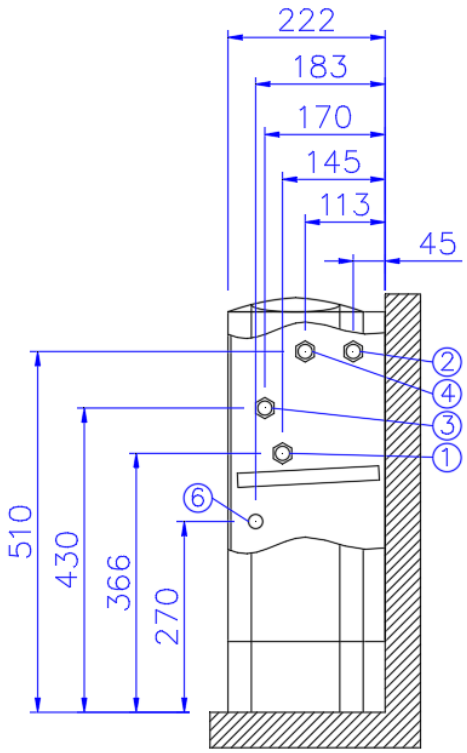
8-DIMENSIONS AND WEIGHTS

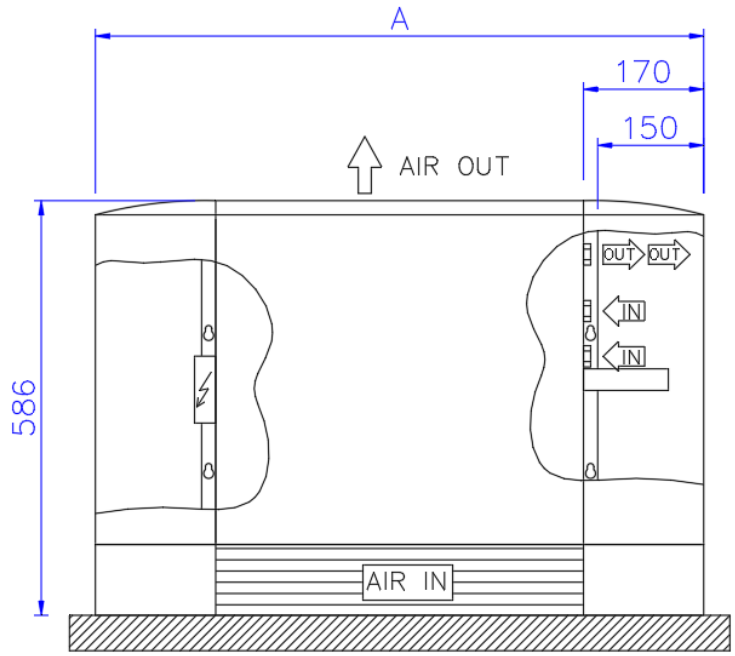
8.1-Dimensions of versions with vertical cabinets

1 - main coil input	2 - main coil output
3 - auxiliary coil input	4 - auxiliary coil output
5 - horizontal units condensate drain	6 - vertical units condensate drain

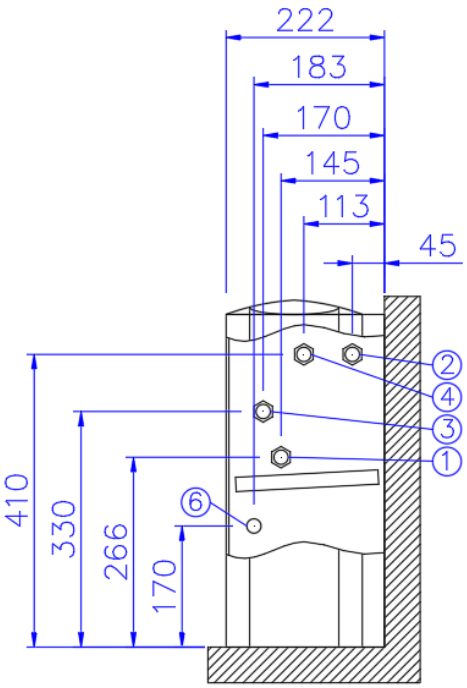


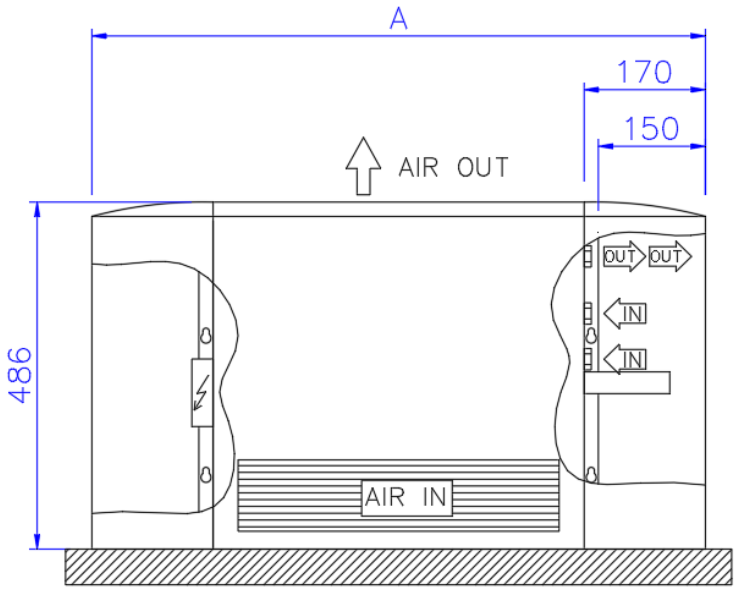
VB


222
183
170
145
113
45
2
4
3
1
6
510
430
366
270


A
170
150
AIR OUT
OUT
OUT
IN
IN
586
AIR IN

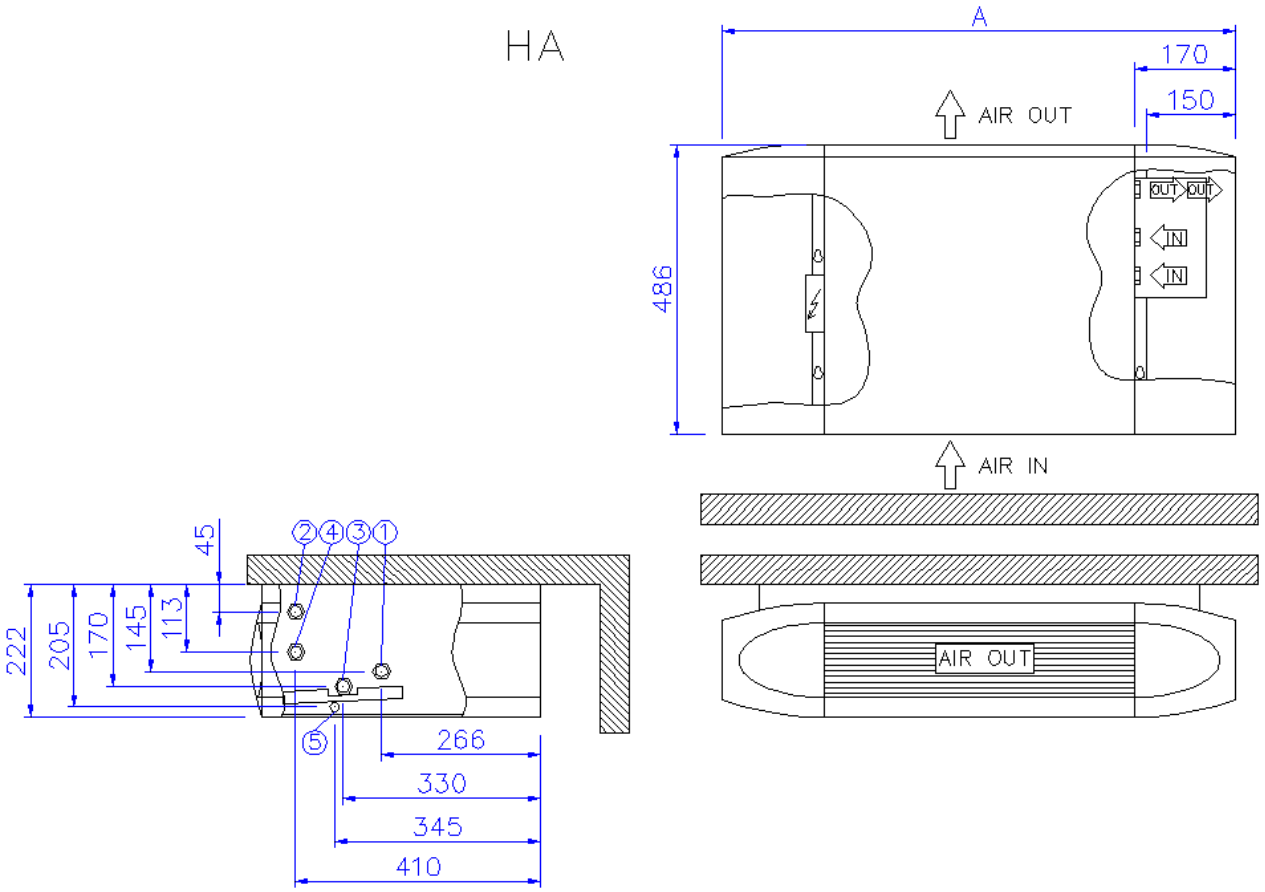
VL


222
183
170
145
113
45
2
4
3
1
6
410
330
266
170

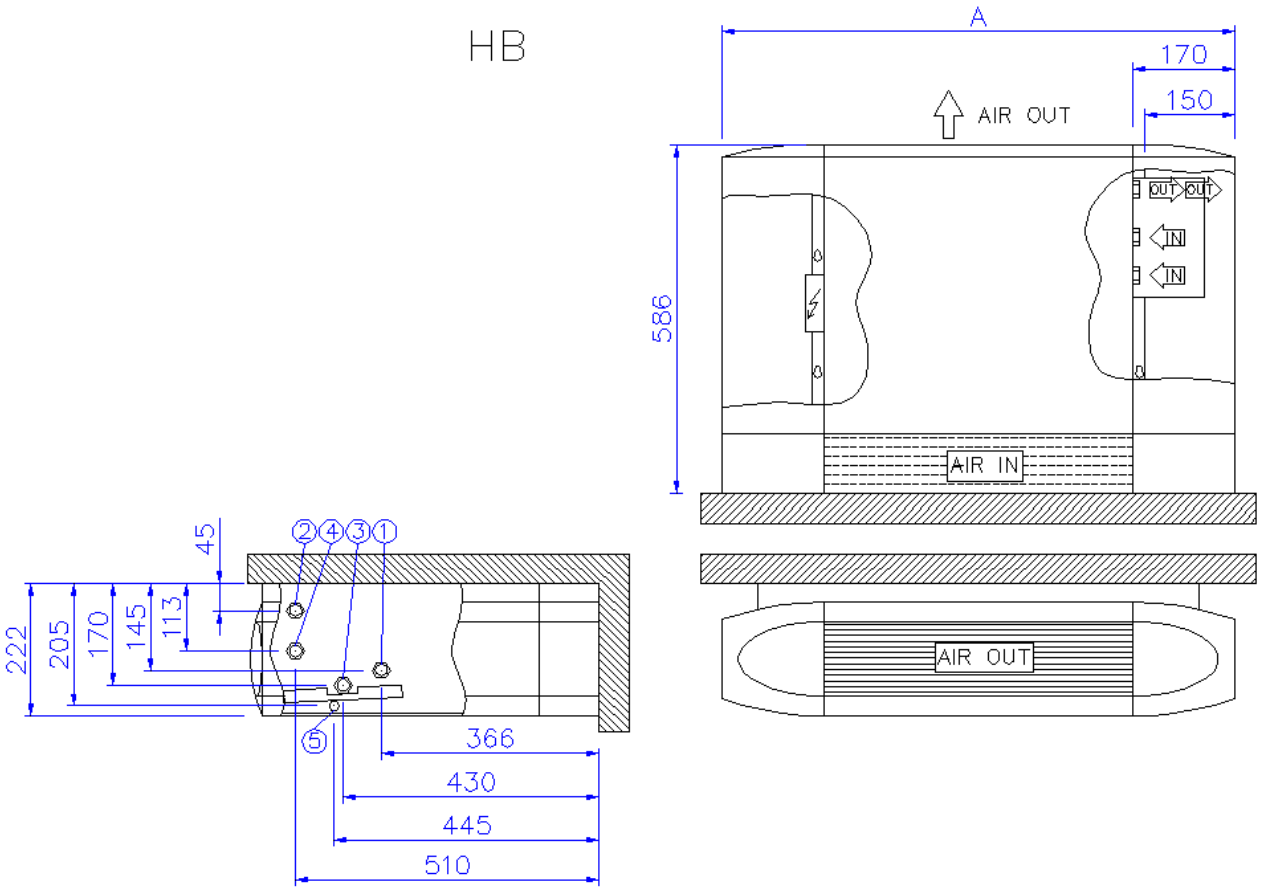

A
170
150
AIR OUT
OUT
OUT
IN
IN
486
AIR IN

8.2-Dimensions of versions with horizontal cabinets

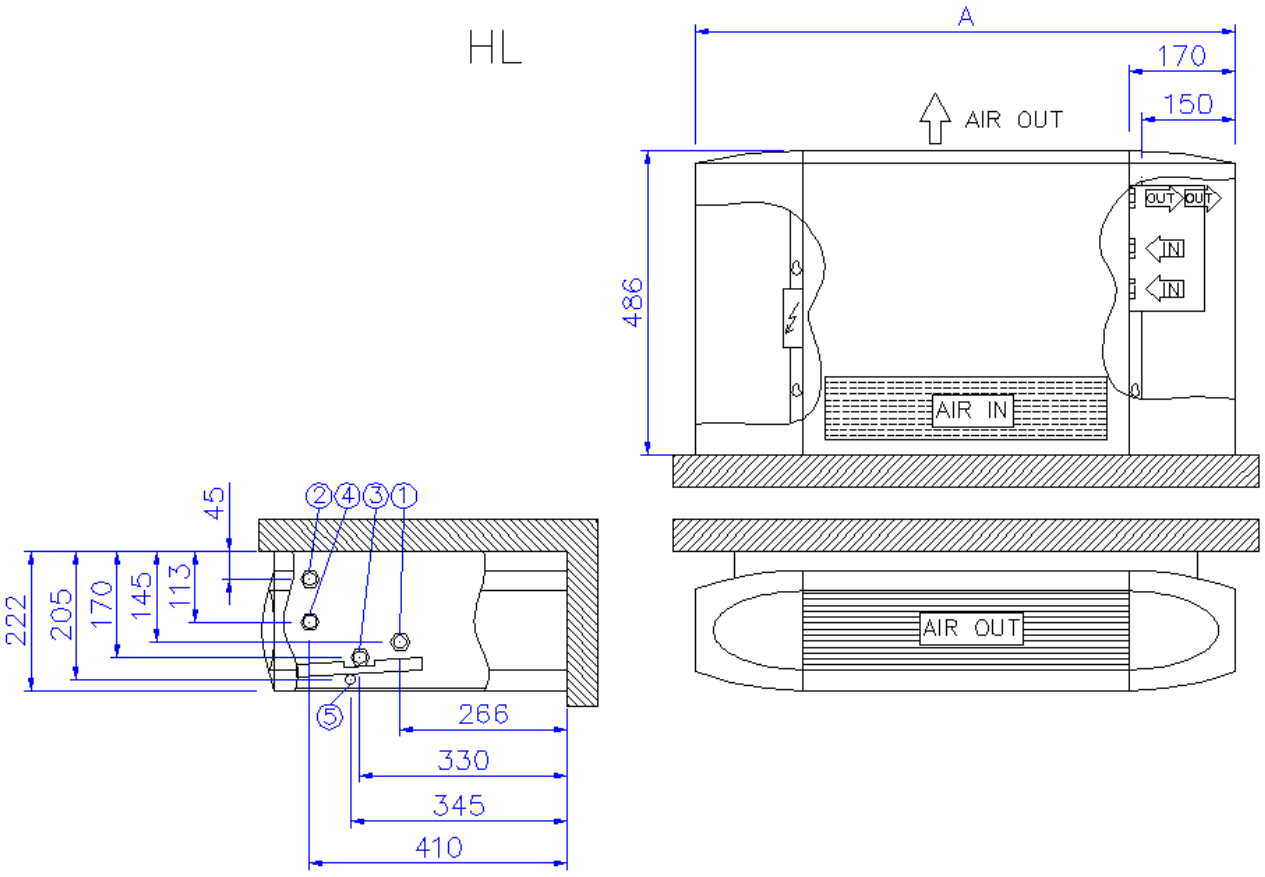
1 - main coil input	2 - main coil output
3 - auxiliary coil input	4 - auxiliary coil output
5 - horizontal units condensate drain	6 - vertical units condensate drain



HB

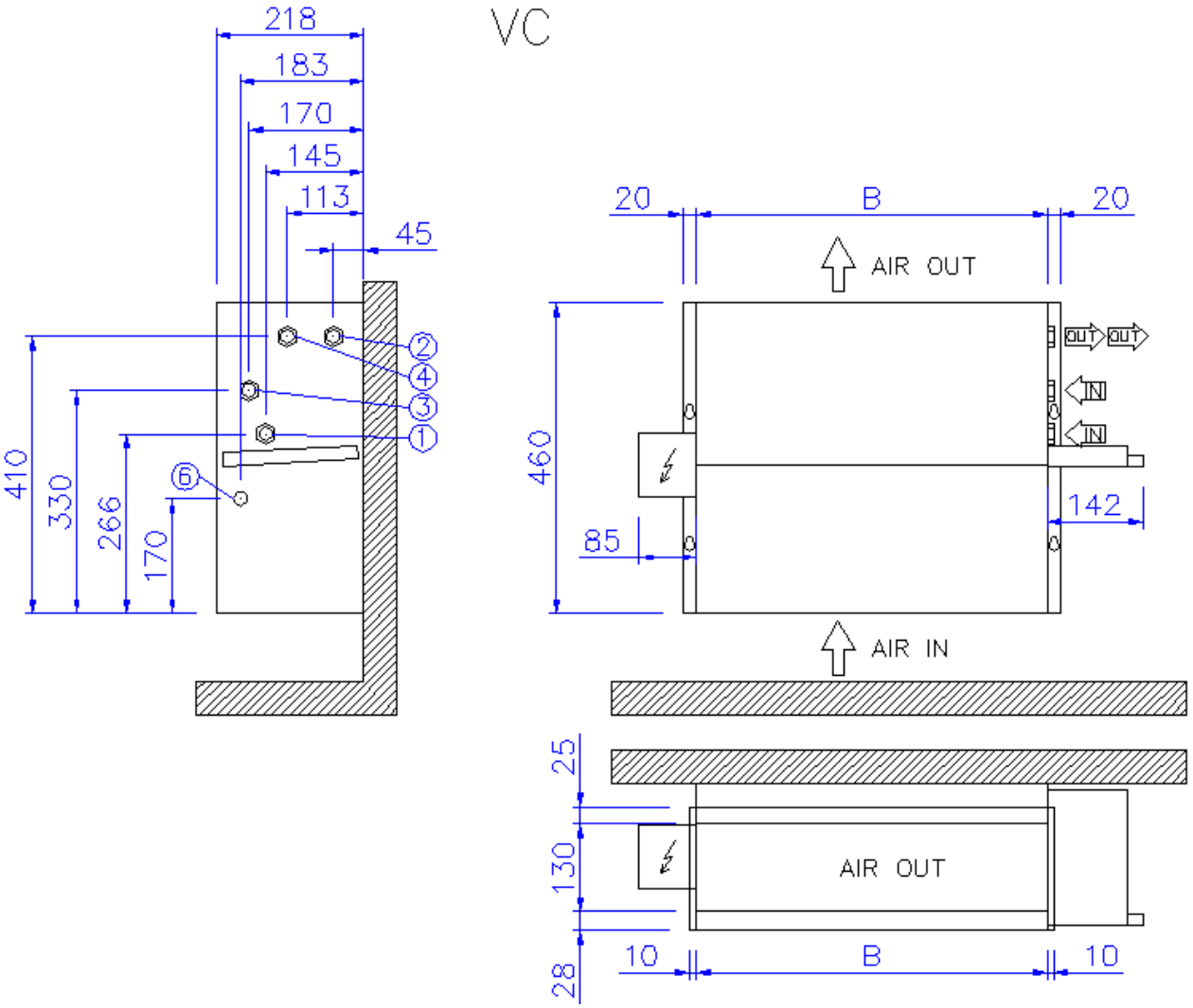

A
170
150
AIR OUT
586
OUT
OUT
IN
IN
AIR IN
AIR OUT
45
2 4 3 1
222
205
170
145
113
5
366
430
445
510

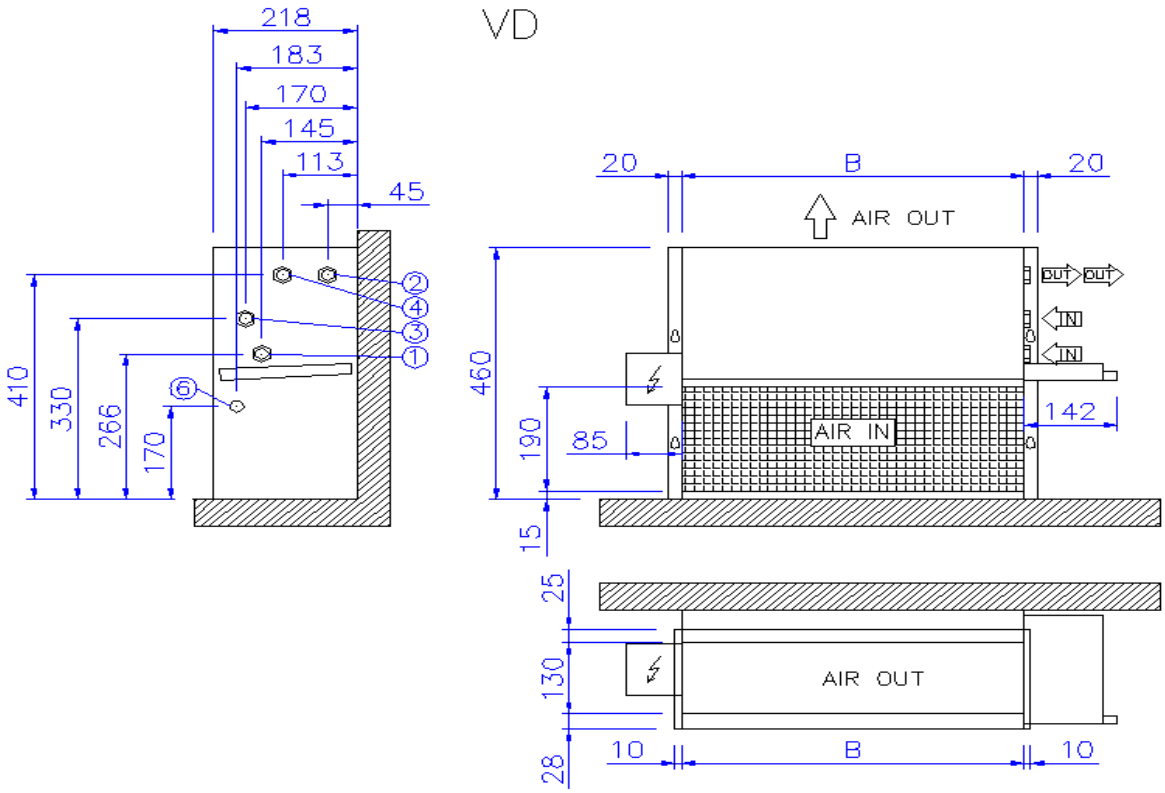
HL

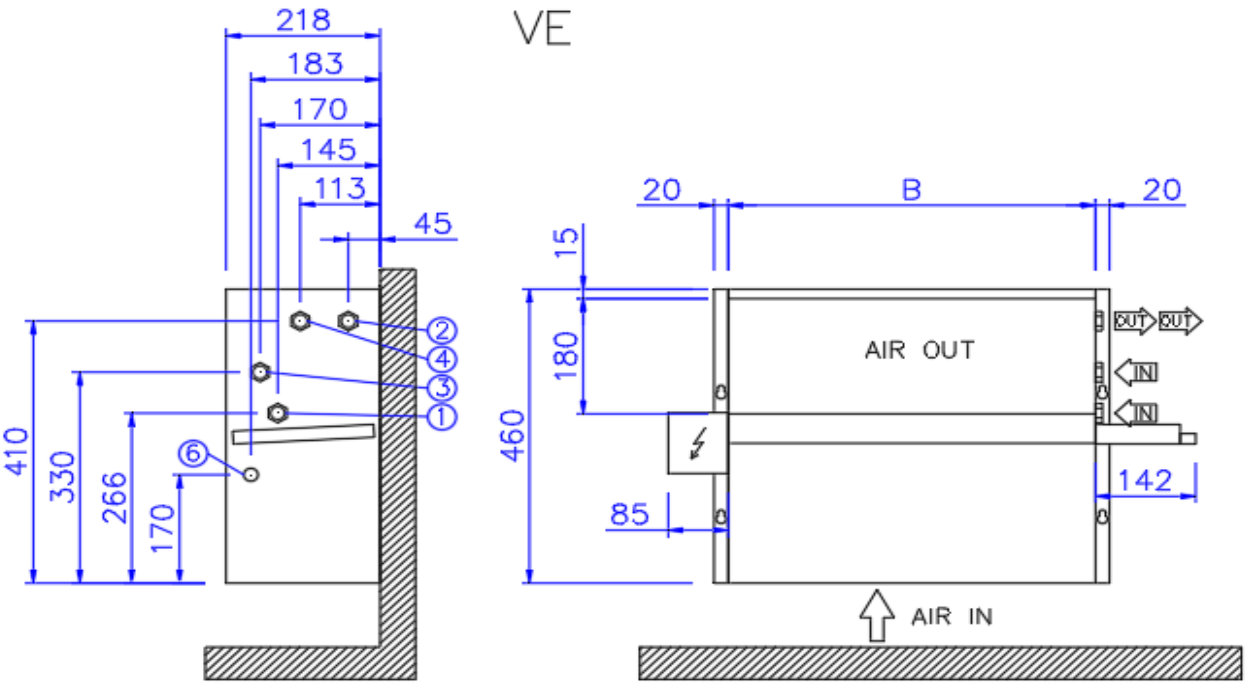

A
170
150
AIR OUT
OUT
OUT
IN
IN
486
AIR IN
AIR OUT
45
2
4
3
1
222
205
170
145
113
5
266
330
345
410

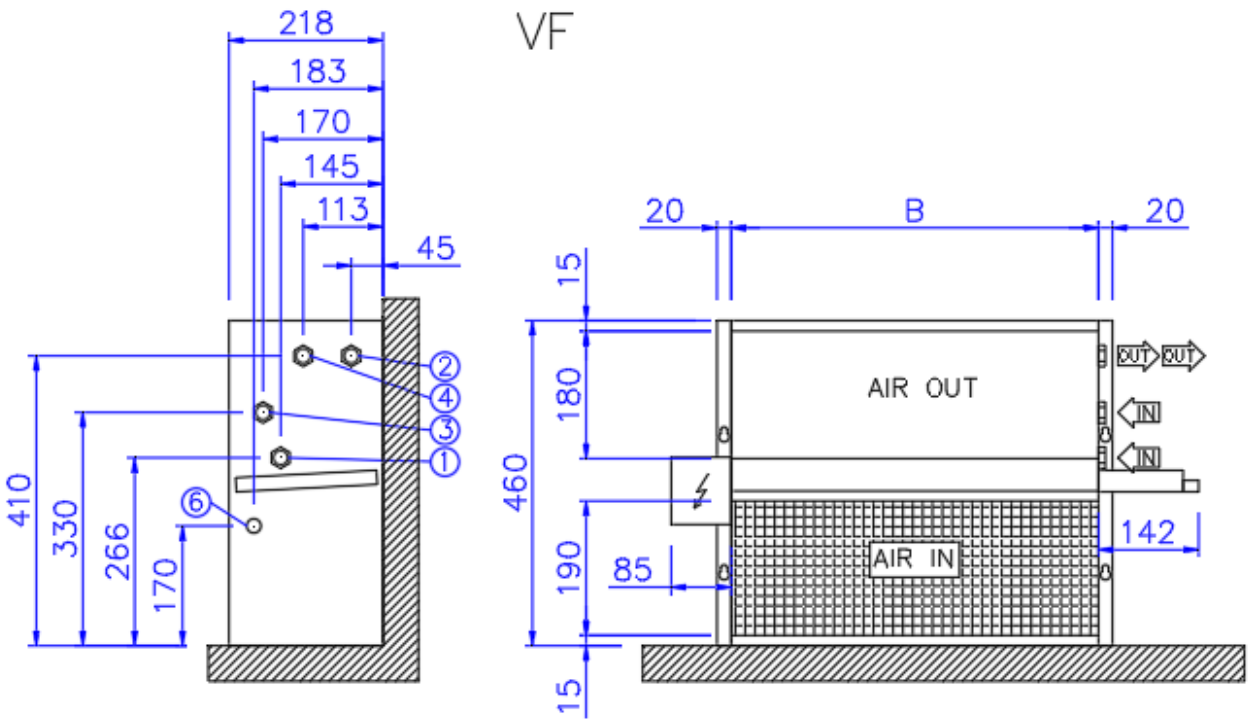
8.3-Dimensions of recessed mounting vertical versions

1 - main coil input	2 - main coil output
3 - auxiliary coil input	4 - auxiliary coil output
5 - horizontal units condensate drain	6 - vertical units condensate drain



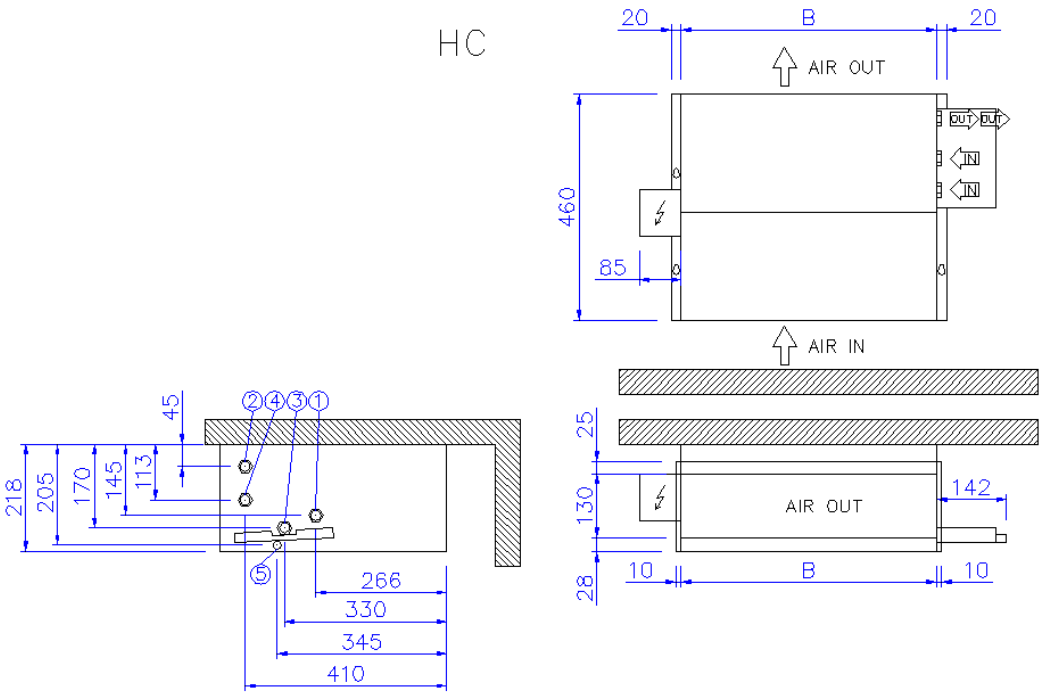

VD
218
183
170
145
113
45
410
330
266
170
20
B
20
AIR OUT
460
190
85
15
142
AIR IN
25
130
28
10
B
10
AIR OUT
OUT
OUT
IN
IN

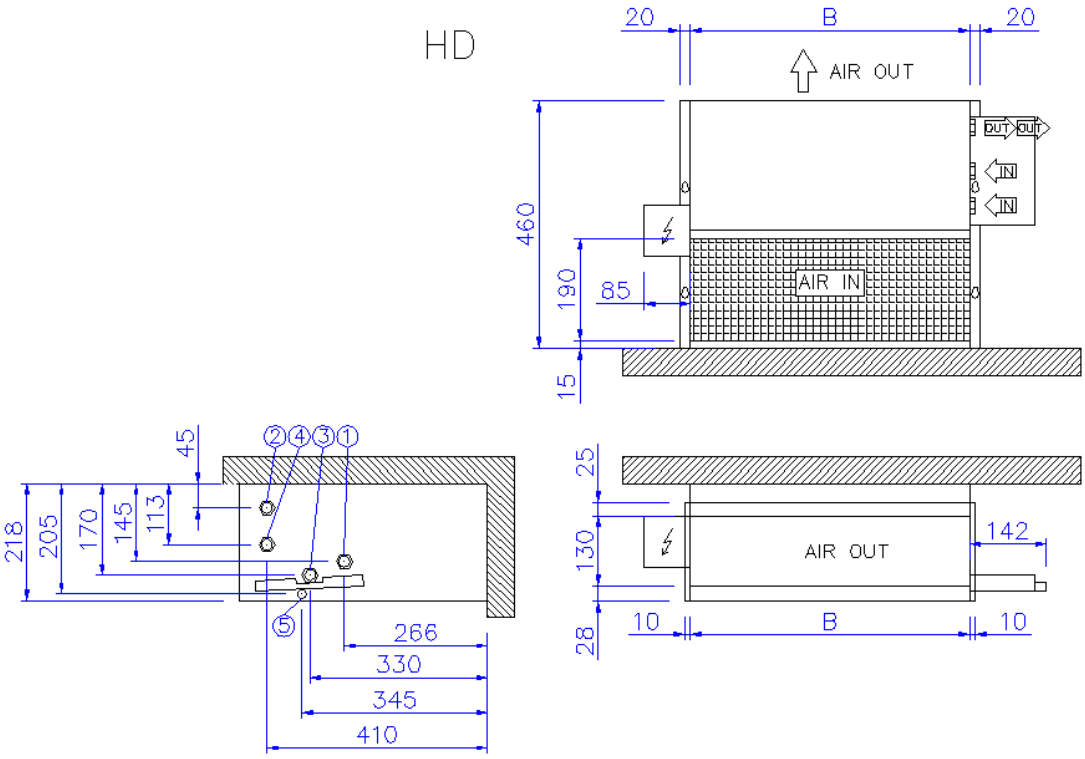

VE
218
183
170
145
113
45
410
330
266
170
20
B
20
15
180
460
85
142
AIR OUT
AIR IN
OUT
OUT
IN
IN


VF
218
183
170
145
113
45
410
330
266
170
20
B
20
15
180
460
190
85
15
142
AIR OUT
AIR IN
OUT
OUT
IN
IN
1
2
3
4
6

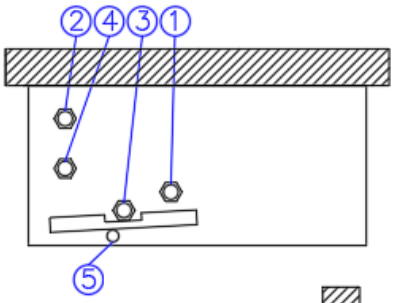
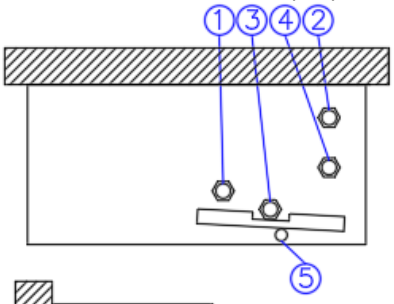
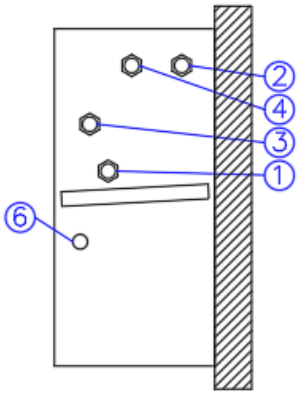
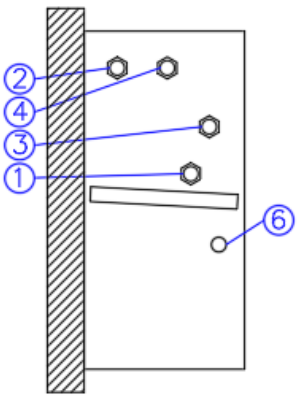
8.4-Dimensions of recessed mounting horizontal versions

1 - main coil input	2 - main coil output
3 - auxiliary coil input	4 - auxiliary coil output
5 - horizontal units condensate drain	6 - vertical units condensate drain





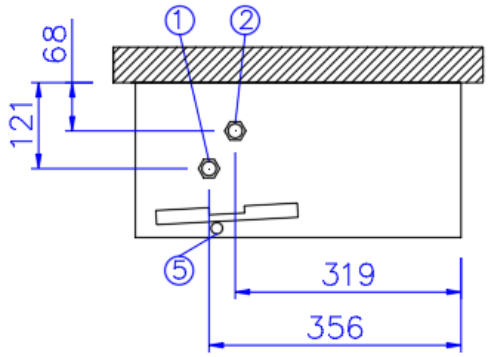
NOTE: The above drawings refer to units with right-hand (R.-H.) connections. The units with left-hand (L.-H.) connections have the same dimensions, but a "mirrored" construction.

Unit with right-hand connections (DX)	*Unit with left-hand connections (SX)*
Horizontal 	Horizontal 
Vertical 	Vertical 

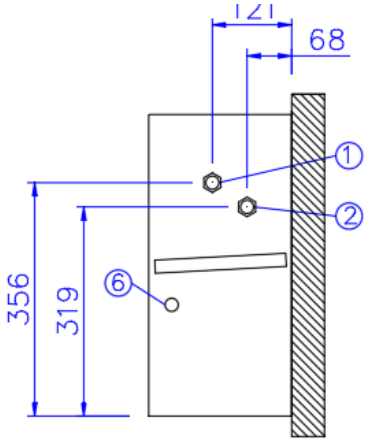
Unit with District Cooling coils have connectors in the positions shown in the drawings below, i.e. non-standard.

DISTRICT COOLING Unit - right-hand connections (DX)

Horizontal

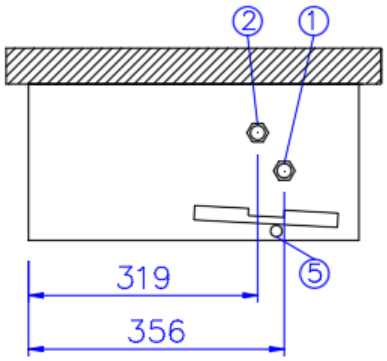


Vertical

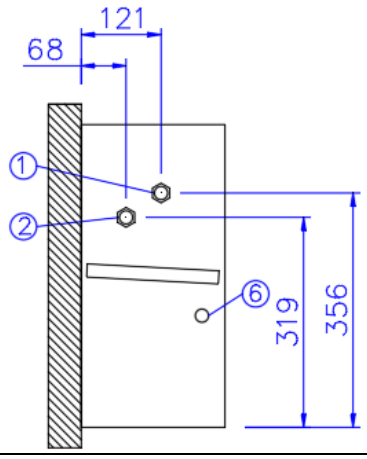


DISTRICT COOLING Unit - left-hand connections (SX)

Horizontal



Vertical



DIMENSIONS		308/320	628/634	840/1260	1575	1885
A	mm	860	1120	1380	1640	1900
B	mm	520	780	1040	1300	1560
1 - Main coil INPUT	“	1/2”				
2 - Main coil OUTPUT	“	1/2”				
3 - Auxiliary coil INPUT	“	1/2”				
4 - Auxiliary coil OUTPUT	“	1/2”				
5 - horizontal condensate drain	mm	d.16				
6 - vertical condensate drain	mm	d.20				

WEIGHTS			308	316	320	628	634
Unit weight	**(1)**	**kg**	14	15	16	19	20
	(2)	**kg**	16	17	18	22	23
Main coil inside volume		**litres**	0.52	0.77	1.02	1.19	1.59
Auxiliary coil inside volume		**litres**	0.26	0.26	0.26	0.40	0.40

WEIGHTS			840	847	1250	1260	1575	1885
Unit weight	**(1)**	**kg**	23	24	23	24	29	33
	(2)	**kg**	28	29	28	29	35	39
Main coil inside volume		**litres**	1.62	2.16	1.62	2.16	2.73	3.30
Auxiliary coil inside volume		**litres**	0.54	0.54	0.54	0.54	0.68	0.82

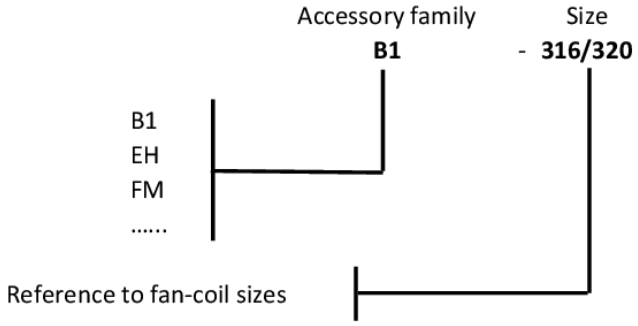
(1) Unit weight without cabinet

(2) Unit weight with cabinet

9-ACCESSORIES

		HYDRAULIC ACCESSORIES
1	**B1**	Auxiliary coil for 4-pipe systems
2	**V**	Valve (for the VBD dynamic balancing valve, see the specific manual)
3	**PSCZE**	Condensate drain pump
4	**DET**	Flexible hoses with ball valves
		ELECTRICAL ACCESSORIES
5	**TR24**	Transformer for modulating valve
6	**ETBN-2.5A**	Power relay board for master-slave
7	**SC3**	Three-speed EC motor control board
8	**EH - EHR**	Electrical heater - relay for electrical heaters
		AERAULIC ACCESSORIES
9	**FRAB**	Return plenum with filter extraction from below
10	**FM**	Flange for duct connection (delivery or return)
11	**P90**	90° plenum (delivery or return)
12	**RT**	Telescopic coupling (delivery or return)
13	**PS**	Plenum with circular connectors (delivery or return)
14	**PA90GF**	90° plenum with return grille and filter
15	**GM2**	Dual adjustment delivery grille
16	**GR**	Return grille
17	**COIB**	Insulation for delivery plenum
		ACCESSORIES FOR INSTALLATION
18	**CCM/VF**	Outer casing for VF unit
19	**MPK/VF**	Panel for outer casing of VF unit
20	**PPV**	Rear panel for VA + CZ and VB vertical unit
21	**PPHA**	Rear panel for HA horizontal unit
22	**PPHB**	Rear panel for HA horizontal unit
23	**PPVL**	Rear panel for VL vertical units
24	**PPHL**	Rear panel for HL horizontal units
25	**CZ**	Pair of feet for VA and HA units
26	**CZF**	Pair of feet with opening intake panel
		FILTRATION
27	**FAG3**	Synthetic fibre filter class ISO COARSE (ISO 16890)
28	**FA/SAN**	Synthetic fibre filter class ISO COARSE (ISO 16890) with Sanitized treatment

Unless otherwise specified, the ordering codes for the accessories consist of the accessory code followed by the fan-coil size:

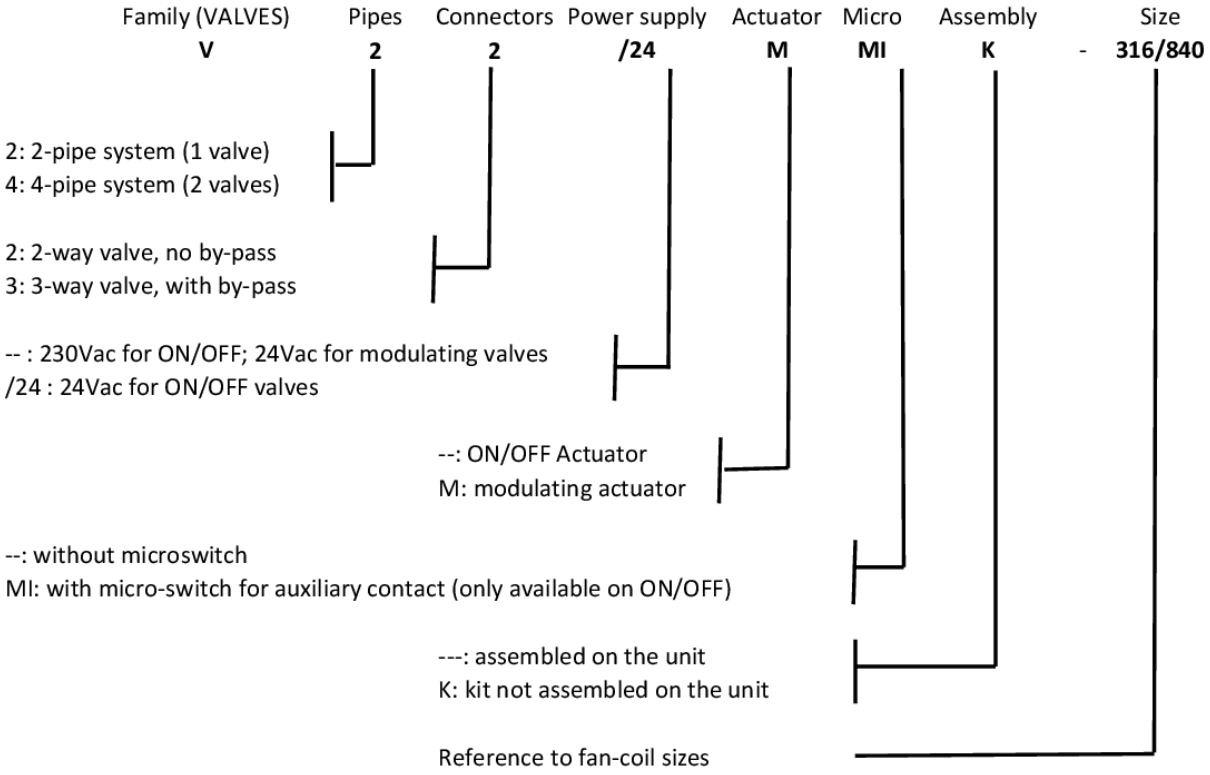


9.1 - Auxiliary coil (B1)

The single-row auxiliary coil (B1) is used for heating purposes in 4-pipe systems. Feeding this coil with chilled water is not allowed, because it has no condensate collection tray. 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 District Cooling main coil and with the electric heater accessory (EH)

9.2-Valves (V)

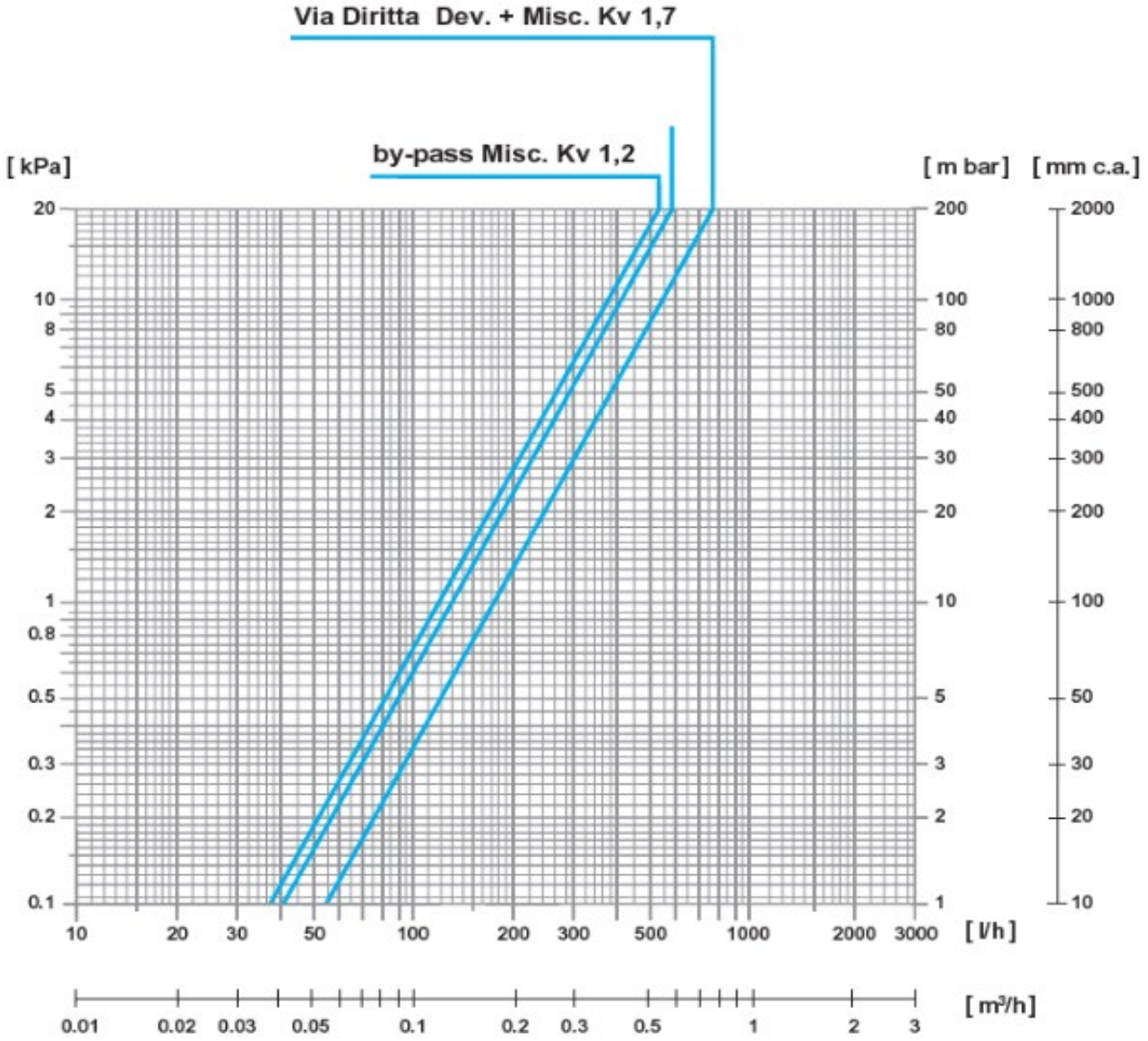
Servo-controlled valves should be used to prevent the formation of condensate on the surface of the unit when the fan has stopped.
The valves can be supplied assembled on the unit or as kits (disassembled components).
The auxiliary condensate collection tray is supplied with the unit as part of the standard equipment, without extra costs (ADPZ).



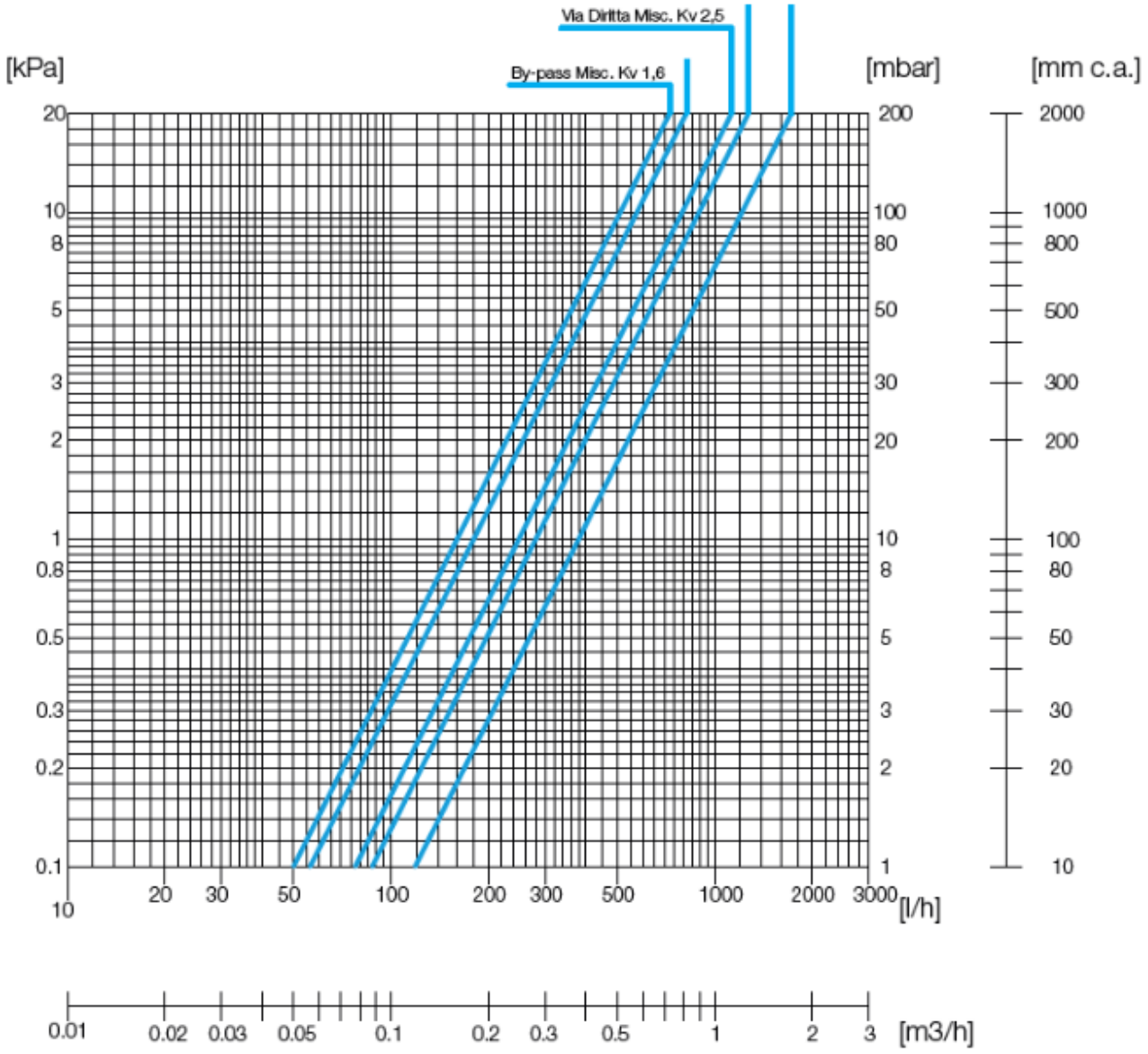
	VALVE FOR MAIN COIL (308/847)	VALVE FOR MAIN COIL (1250/1885)
	VALVE FOR AUXILIARY COIL (308/1885)	
GENERAL CHARACTERISTICS		
Connections size	1/2”	3/4”
Kv (2-way valve)	1.7	2.5
Kv (3-way valve, direct flow)	1.7	2.5
Kv (3-way valve, by-pass)	1.2	1.6
Max differential pressure	2.0bar	1.0bar
Nominal pressure	PN16	
Water temperature	5 – 110°C	

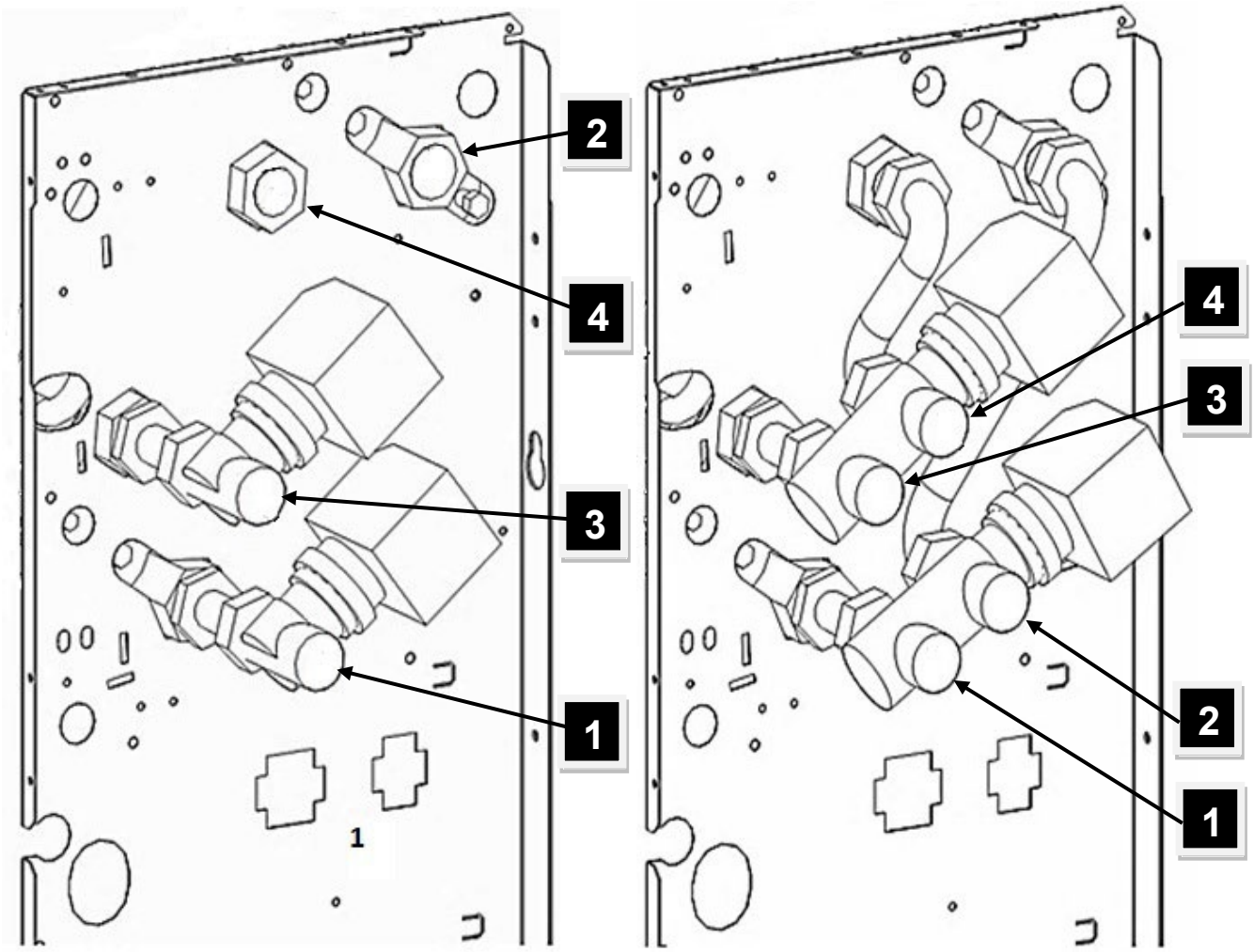
ACTUATOR ON/OFF	
Power supply	230V-50Hz (24V-50Hz on request)
Absorbed power	2.5W
Stroke time	180s
Characteristic (valve+actuator)	N.C. (Normally Closed)
Protection	IP44
MODULATING ACTUATOR	
Power supply	24Vac
Absorbed power	1.5W
Stroke time	8S
Control signal	0/10V
Control signal impedance	100k Ohm
Protection	IP43

1/2" valve pressure drop graph



3/4" valve pressure drop graph



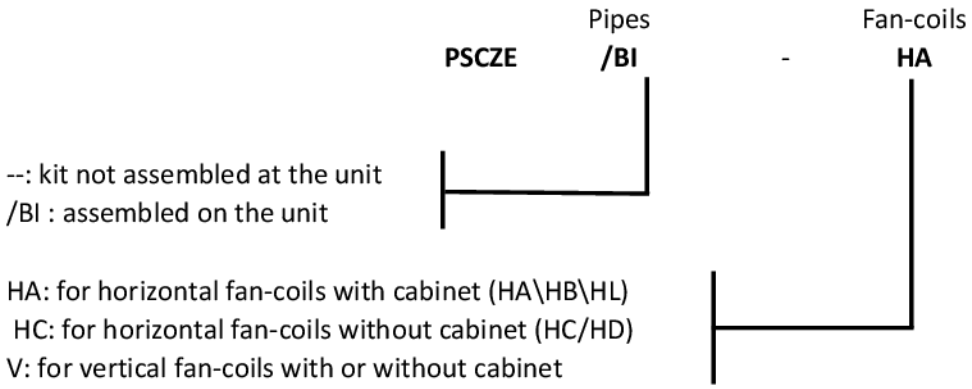


1 - main coil input	2 - main coil output
3 - auxiliary coil input	4 - auxiliary coil output

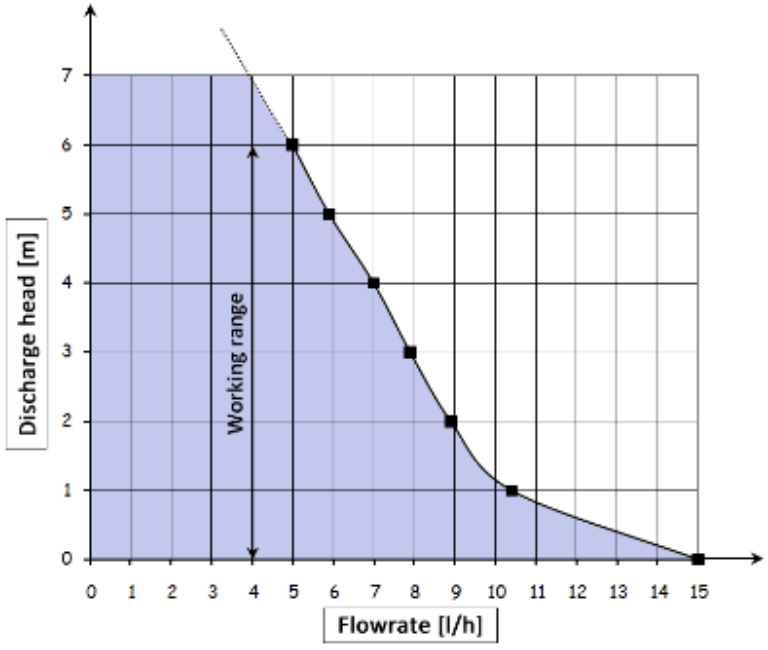
Dynamic balancing valves (VBD) are also available as accessories; for information please refer to the specific technical manual.

9.3-Condensate drain pump (PSCZE)

The condensate drain pumps can be supplied assembled on the unit or as kits (disassembled components). For horizontal units with cabinet (models HA, HB, HL), the condensate drain pump accessory assembled on the unit (PSCZE/BI-HA) is incompatible with the presence of the auxiliary heating coil for 4-pipe systems. In this case, it will be necessary to order a drain pump as an unassembled kit and install it on the outside of the unit.



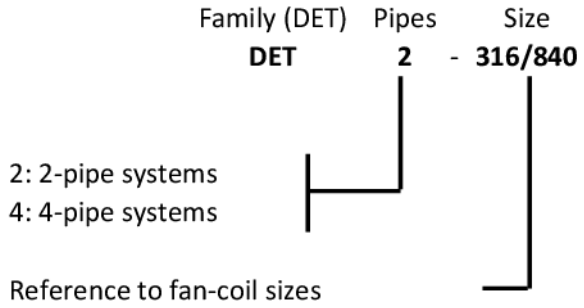
Maximum water flow rate	15 l/h
Maximum drainage height	6m (5 l/h)
Sound pressure at 1 m	20 dB(A)
Power supply	230V – 50/60Hz
Alarm microswitch	Resistive NC 5A 250V
Circuit breaker	automatic reset
Protection	IP64
Power draw	19W



9.4-Flexible hoses with ball valves (DET)

The flexible hoses with ball valves are supplied as kits (disassembled components). Their use simplifies the hydraulic connection of fan-coils and, thanks to the ball valves, allows for valve and coil maintenance without having to completely drain the system.

External metal braid material	AISI304 stainless steel
Internal material	EPDM
Fittings and elbows material	Brass, chrome-plated brass, copper
Ball valve material	Chrome plated brass
Maximum working pressure	10 bar
Water temperature	5 - 85°C
Hose length	190mm
Hose length + valve	240mm (+/- 5)

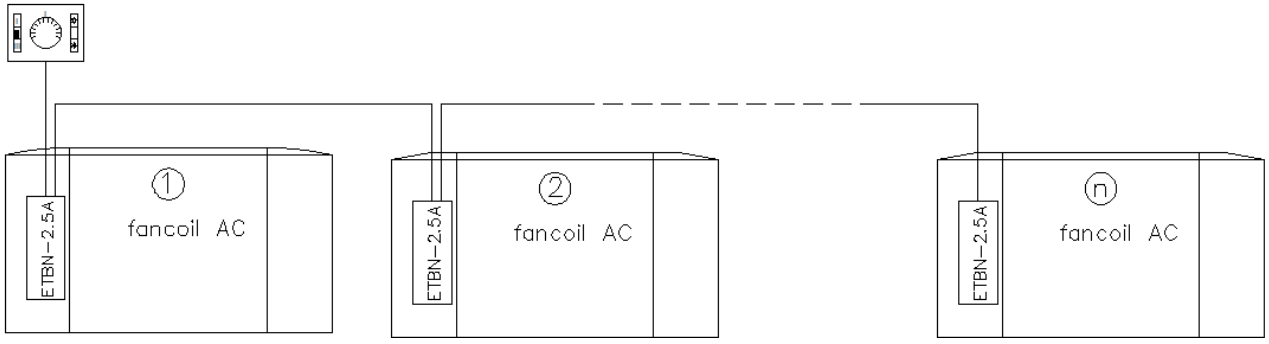


9.5-Transformer for modulating valves (TR24)

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.

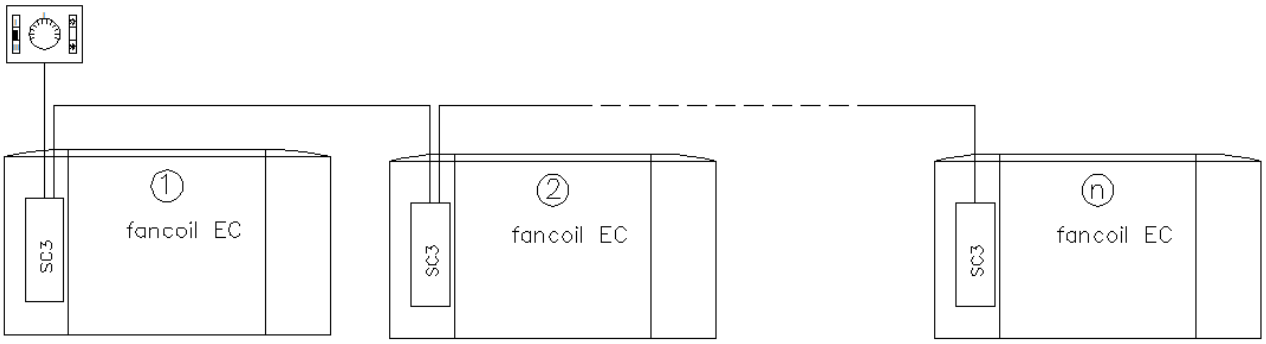
9.6-Power relay board for master-slave (ETBN-2.5A)

The power relay board (ETBN-2.5A) is needed to control more than one unit with AC motor (three speeds) with a single control. In this case, one ETBN-2.5A is required for each unit. This board is also necessary to control a single unit, when the control is not able to carry the highest current draw by the motor. For more information on this accessory, please refer to its specific technical manual.
The ETBN-2.5A board is available in one size, suitable for all unit sizes.



9.7-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.



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

The electric heaters are made of aluminium and are equipped with a manual reset safety thermostat against overheating. They are housed inside the unit downstream from the coil.
This accessory is not compatible with auxiliary coil accessories.
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 any ducts). 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. Otherwise the manufacturer will not be held responsible for any damage to and/or malfunction of the unit.

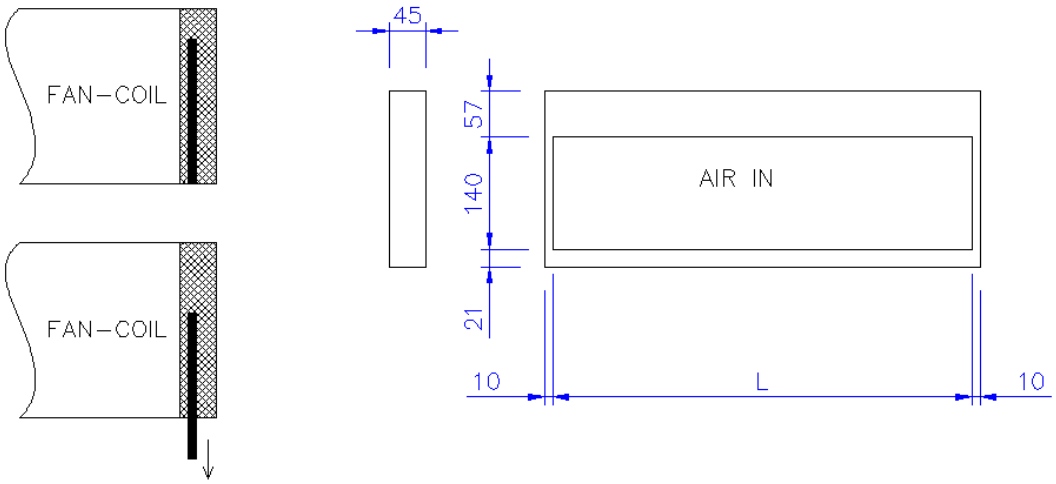
	308/320	628/634	840/1260	1575/1885
Power	1.0 kW	1.25 kW	2.0 kW	3.0 kW
Power supply	230V-50Hz single-phase			
No. of stages	1	1	1	1
Power relays to be used	EHR-8A	EHR-8A	EHR-20A	EHR-20A

Two relay sizes are available, according to the table below:

	EHR-8A	EHR-20A
Maximum contact current (resistive load)	8 A	20 A
Coil power supply	230V-50Hz single-phase	
No. of contacts	2	4

9.9-Return plenum with filter extraction (FRAB)

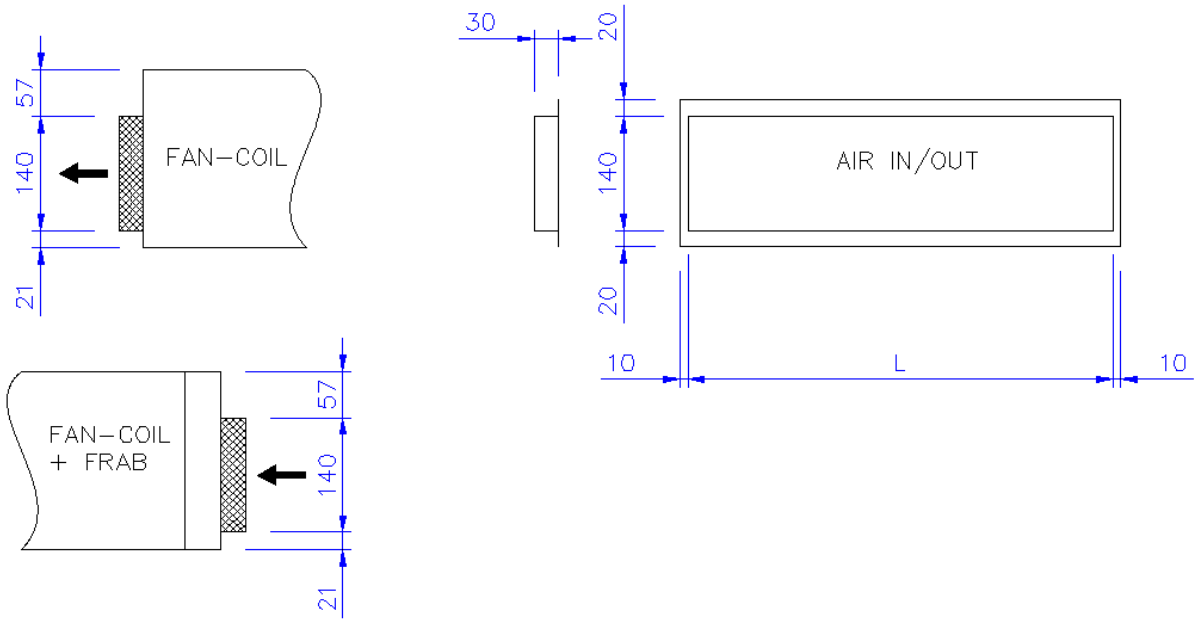
The return plenum with filter extraction is necessary to channel the return flow. The filter can be housed internally, with extraction only from the bottom.
It can be used at the return end of the HC and VC model



Fan-coil size	308/3016	628/634	840/1260	1575	1875
L (mm)	520	780	1040	1300	1560

9.10-Flange for duct connection (FM)

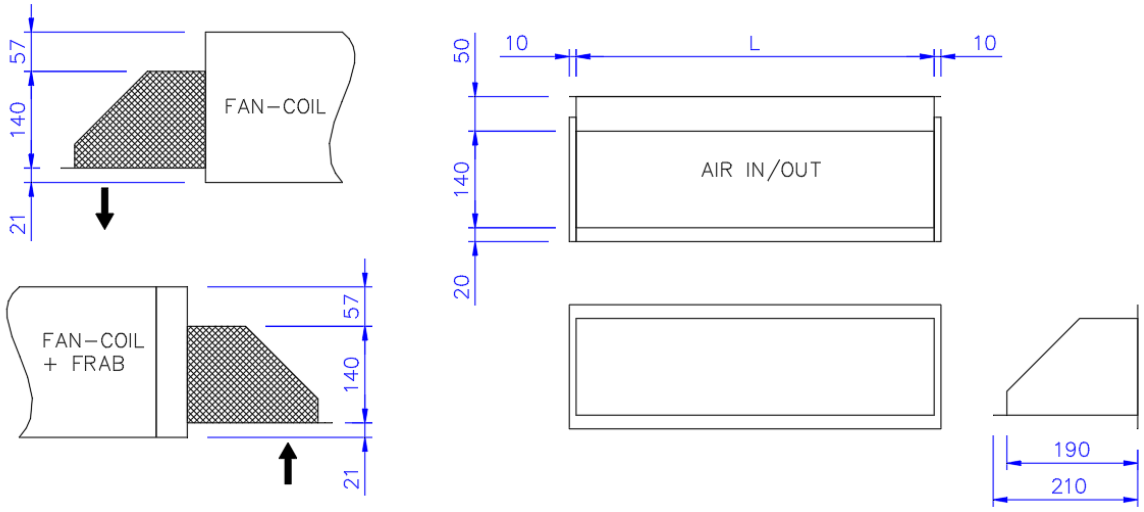
The flange for FM duct connection can be used on the delivery or return section of the following models:
Delivery: HC – VC – HD – VD
Return: HC - VC (with FRAB)
If used on the return end, it is mandatory to interpose the FRAB accessory between the unit and the FM flange.



Fan-coil size	308/3016	628/634	840/1260	1575	1875
L (mm)	520	780	1040	1300	1560

9.11-90° Plenum (P90)

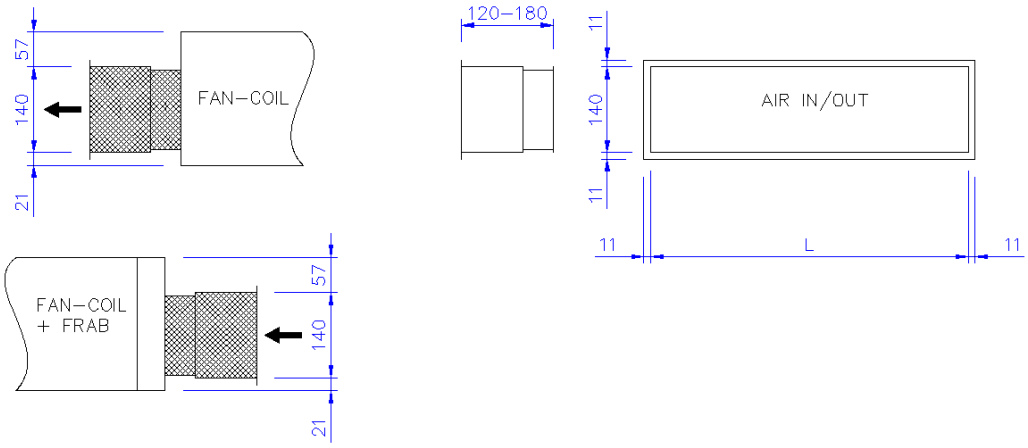
The 90° plenum (P90) can be used on the delivery or return section of the following models:
Delivery: HC – VC – HD – VD
Return: HC - VC (with FRAB)
If used on the return end, it is mandatory to interpose the FRAB accessory between the unit and the 90° plenum (P90).



Fan-coil size	308/3016	628/634	840/1260	1575	1875
L (mm)	520	780	1040	1300	1560

9.12-Telescopic coupling (RT)

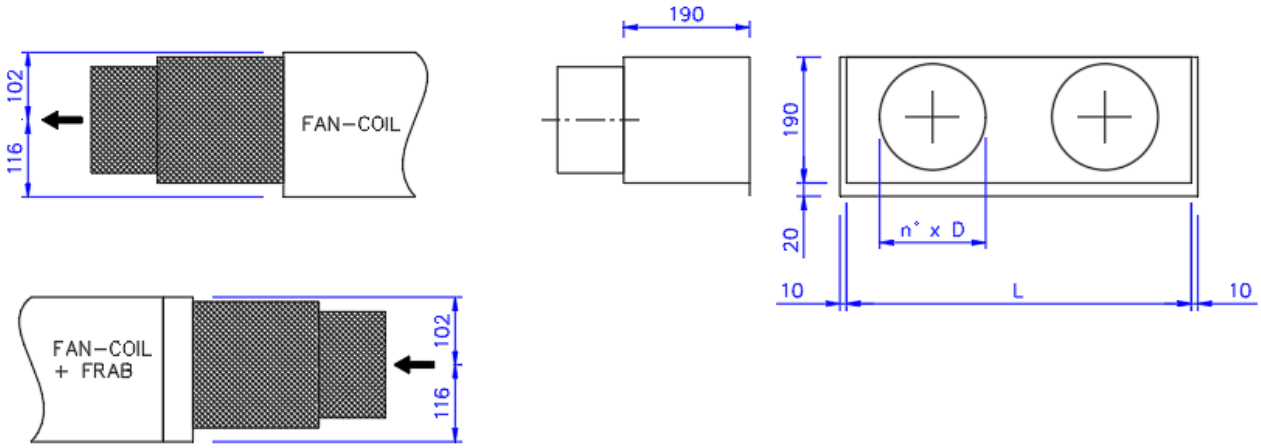
The telescopic coupling (RT) can be used on the delivery or return section of the following models:
Delivery: HC – VC – HD – VD
Return: HC - VC (with FRAB)
If used on the return end, it is mandatory to interpose the FRAB accessory between the unit and the RT coupling.



Fan-coil size	308/3016	628/634	840/1260	1575	1875
L (mm)	520	780	1040	1300	1560

9.13-Plenum with spigot (PS)

The plenum with spigot (PS) can be used on the delivery or return section of the following models:
Delivery: HC – VC – HD – VD
Return: HC - VC (with FRAB)
If used on the return end, it is mandatory to interpose the FRAB accessory between the unit and the PS plenum.
The flared sleeves are of the type suitable for connecting flexible hoses for conditioning systems, therefore the actual outside diameter of the sleeve is approximately 5mm smaller than the nominal inside diameter of the pipe to be connected.



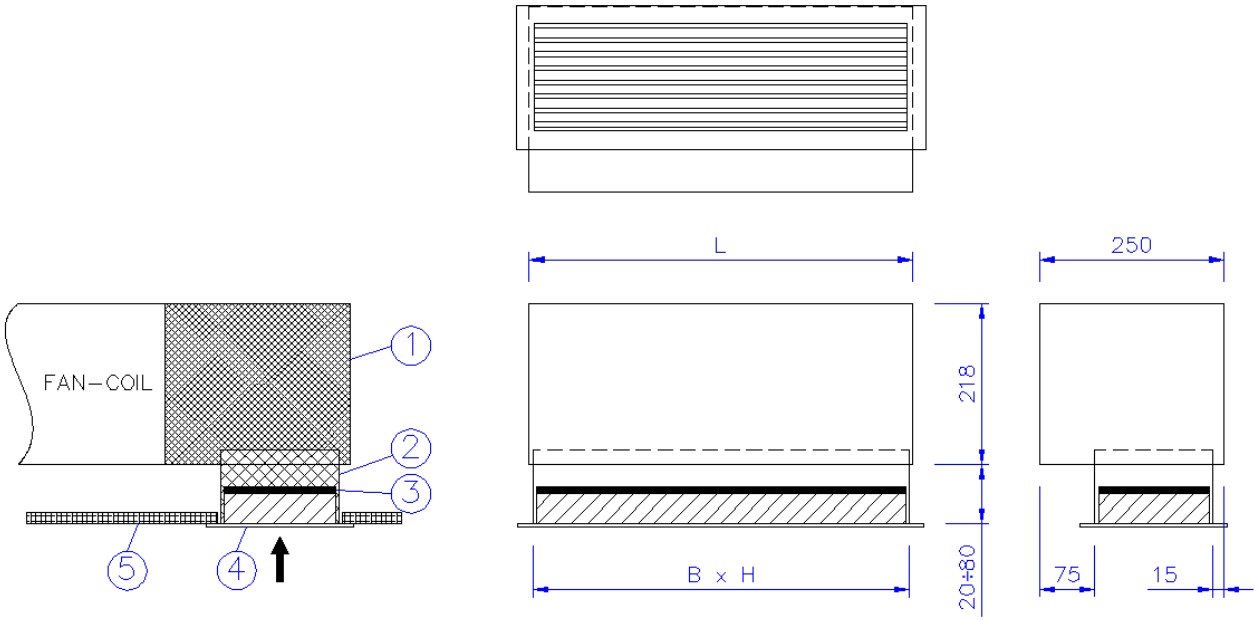
Fan-coil size	308/3016	628/634	840/1260	1575	1875
L (mm)	520	780	1040	1300	1560
n. x D (mm)	1 x ø160	2 x ø160	3 x ø160	4 x ø160	5 x ø160
D = nominal inside diameter of the hose to be connected					

9.14-90° plenum with return grille and filter (PA90GF)

The 90° return plenum can be applied directly to the unit return end (therefore without having to interpose a FRA) of the HC and VC models. This accessory is a kit consisting of the following components:

- 90° return plenum
- Telescopic return fitting, to adapt to the height of the false ceiling
- Return grille with inspectable filter

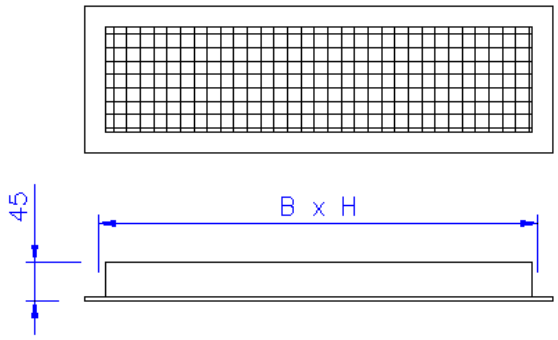
1	90° return plenum
2	Telescopic coupling
3	Filter
4	Return grille
5	False ceiling



Fan-coil size	308/3016	628/634	840/1260	1575	1875
L (mm)	520	780	1040	1300	1560
B x H (mm)	520x160	780x160	1040x160	1300x160	1560x160
B x H: nominal dimensions of the hole					

9.15-Dual adjustment delivery grille (GM2)

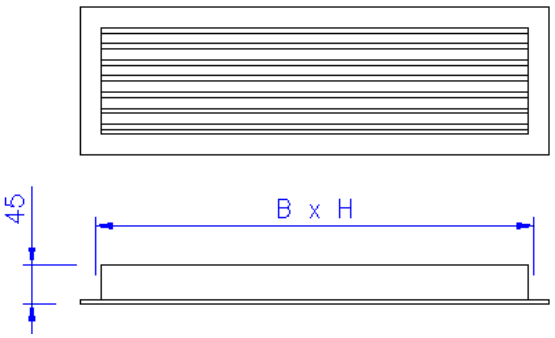
The delivery grille is made of RAL 9016 (white) painted aluminium. It is equipped with two rows of fins, which allow for double adjustment of the air flow: vertically and horizontally.
The frame is provided with holes for fixing the grille by means of screws (not supplied) which must be chosen according to the support material.



Fan-coil size	308/3016	628/634	840/1260	1575	1875
B x H (mm)	520x140	780x140	1040x140	1300x140	1560x140
B x H: nominal dimensions of the hole					

9.16-Return grille (GR)

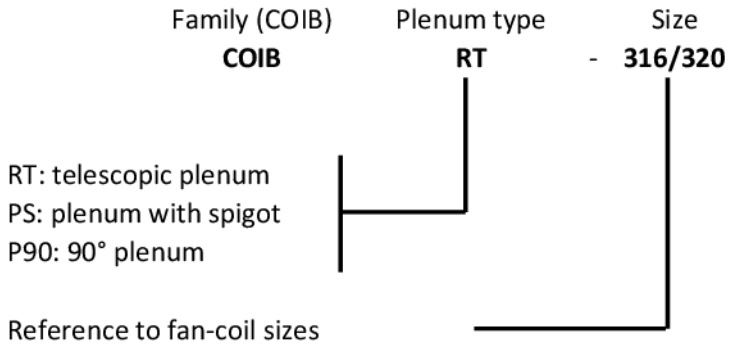
The return grille is made of RAL 9016 (white) painted aluminium. It has fixed horizontal fins, making the inside of the duct barely visible.
The frame is provided with holes for fixing the grille by means of screws (not supplied) which must be chosen according to the support material.



Fan-coil size	308/3016	628/634	840/1260	1575	1875
B x H (mm)	520x140	780x140	1040x140	1300x140	1560x140
B x H: nominal dimensions of the hole					

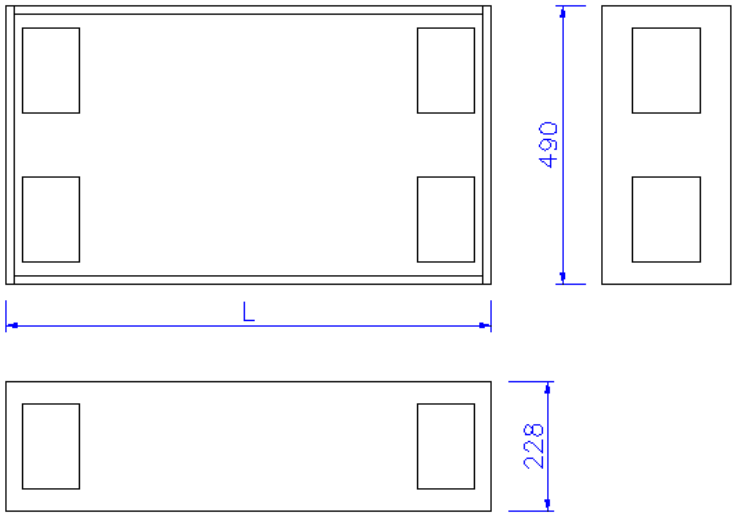
9.17- Insulation for plenum (COIB)

When the plenums are installed on the delivery end, the COIB accessory must also be added, since the plenums supplied as part of the standard equipment are NOT insulated. The insulation, made of 3mm thick closed cell polyethylene, prevents condensation from collecting on the outside of the plenum when cold air flows through it.



9.18-Outer casing (CCM/VF)

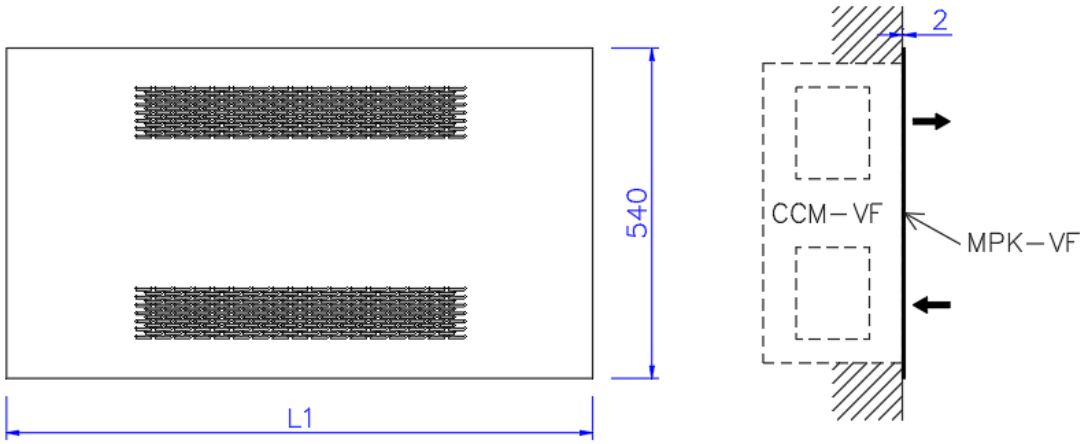
The CCM-VF outer casing is made of galvanised steel and can only be installed vertically, for VF model fan coils. There are pre-sections for pipe inlet in the side, rear and bottom areas. Thanks to its configuration (front air delivery and return), the height of the outer casing and its cover panel is as low as possible.



Fan-coil size	308/3016	628/634	840/1260	1575	1875
L (mm)	860	1120	1380	--	--

9.19-Panel for outer casing (MPK/VF)

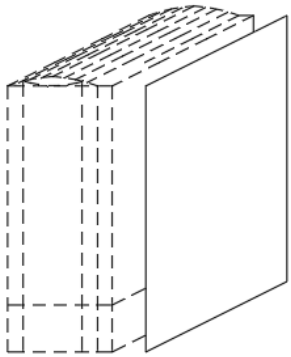
The MPK-VF outer casing panel is made of galvanised RAL9010 white (other colours on request) painted metal plate, and can only be installed vertically on the CCM-VF outer casing. Its design flush with the wall (only 2mm thicker than the wall surface) makes the panel suitable for seamlessly blending with any environment and decoration style.



Fan-coil size	308/3016	628/634	840/1260	1575	1875
L1 (mm)	960	1220	1480	--	--

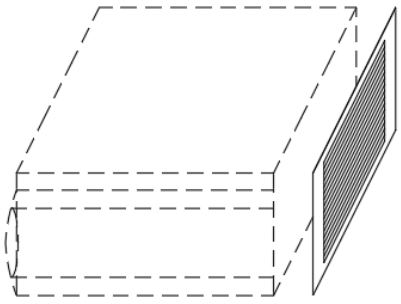
9.20-Rear panel for VA+CZ and VB vertical units (PPV)

This accessory, for vertical units with feet (VA+CZ and VB), consists of a galvanized RAL9010 painted metal plate that closes the rear of the unit. This accessory is required, for aesthetic reasons, when the fan coil is installed against glazed walls.



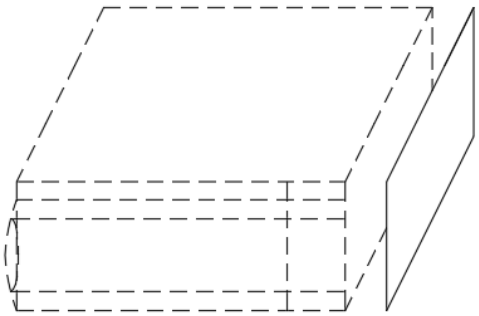
9.21-Rear panel for HA horizontal unit (PPHA)

This accessory, for horizontal units without feet (HA), consists of a galvanized RAL9010 painted metal plate that closes the rear of the unit. This accessory is required, for aesthetic reasons, when the fan coil is installed on a ceiling away from the wall. The metal plate has holes to allow the flow of intake air and is removable to allow for replacement of the filter.



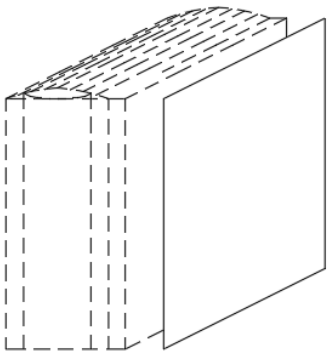
9.22-Rear panel for HB horizontal unit (PPHB)

This accessory, for horizontal units with feet (HB), consists of a galvanized RAL9010 painted metal plate that closes the rear of the unit. This accessory is required, for aesthetic reasons, when the fan coil is installed on a ceiling away from the wall.



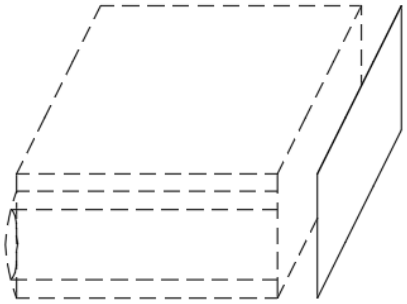
9.23-Rear panel for VL low-down vertical unit (PPVL)

This accessory, for vertical low units (VL), consists of a galvanized RAL9010 painted metal plate that closes the rear of the unit. This accessory is required, for aesthetic reasons, when the fan coil is installed against glazed walls.



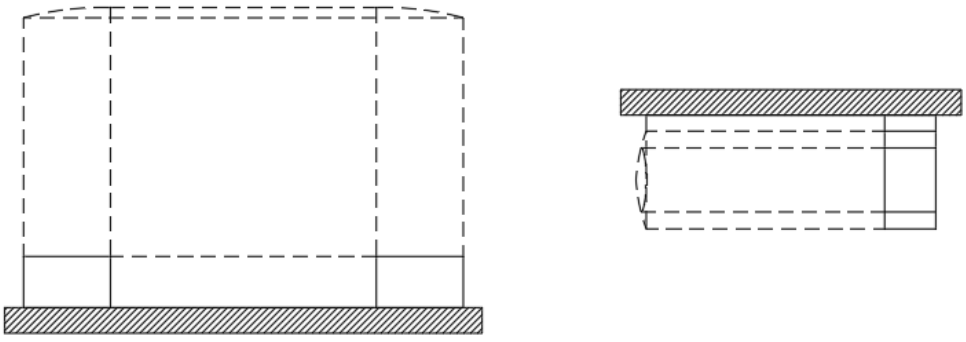
9.24-Rear panel for HL horizontal low unit (PPHL)

This accessory, for horizontal low units (LH), consists of a galvanized RAL9010 painted metal plate that closes the rear of the unit. This accessory is required, for aesthetic reasons, when the fan coil is installed on a ceiling away from the wall.



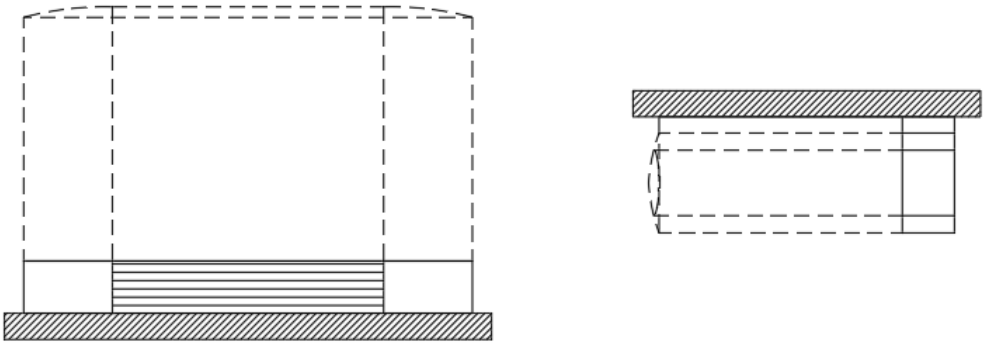
9.25-Pair of feet for VA and HA units (CZ)

The pair of feet made of galvanized RAL9010 painted metal plate allows the vertical VA units to be rested on the ground and the pipes coming from floor level to be covered. In HA units, they are designed to hide the pipes and the condensate drain coming from the wall. The overall height of the unit (VA + CZ or HA + CZ) is therefore identical to that of a VB or HB unit.
The pair of feet is available in one size, suitable for all unit sizes.



9.26-Pair of feet with suction panel for VA and HA units (CZF)

The pair of feet with suction panel allows the VA units to be converted into VB and HA into HB. It is therefore possible to support the vertical units on the floor and to cover the pipes coming from the floor. In horizontal units, they are designed to hide the pipes and the condensate drain coming from the wall. The overall height of the unit (VA + CZF or HA + CZF) is therefore identical to that of a VB or HB unit.
The pair of feet allows the vertical VA units to be rested on the ground and the pipes coming from floor level to be covered. In HA units, too, they are designed to hide the pipes and the condensate drain coming from the wall. The overall height of the unit (VA + CZ or HA + CZ) is therefore identical to that of a VB or HB unit.



9.27-Synthetic fibre filter (FAG3)

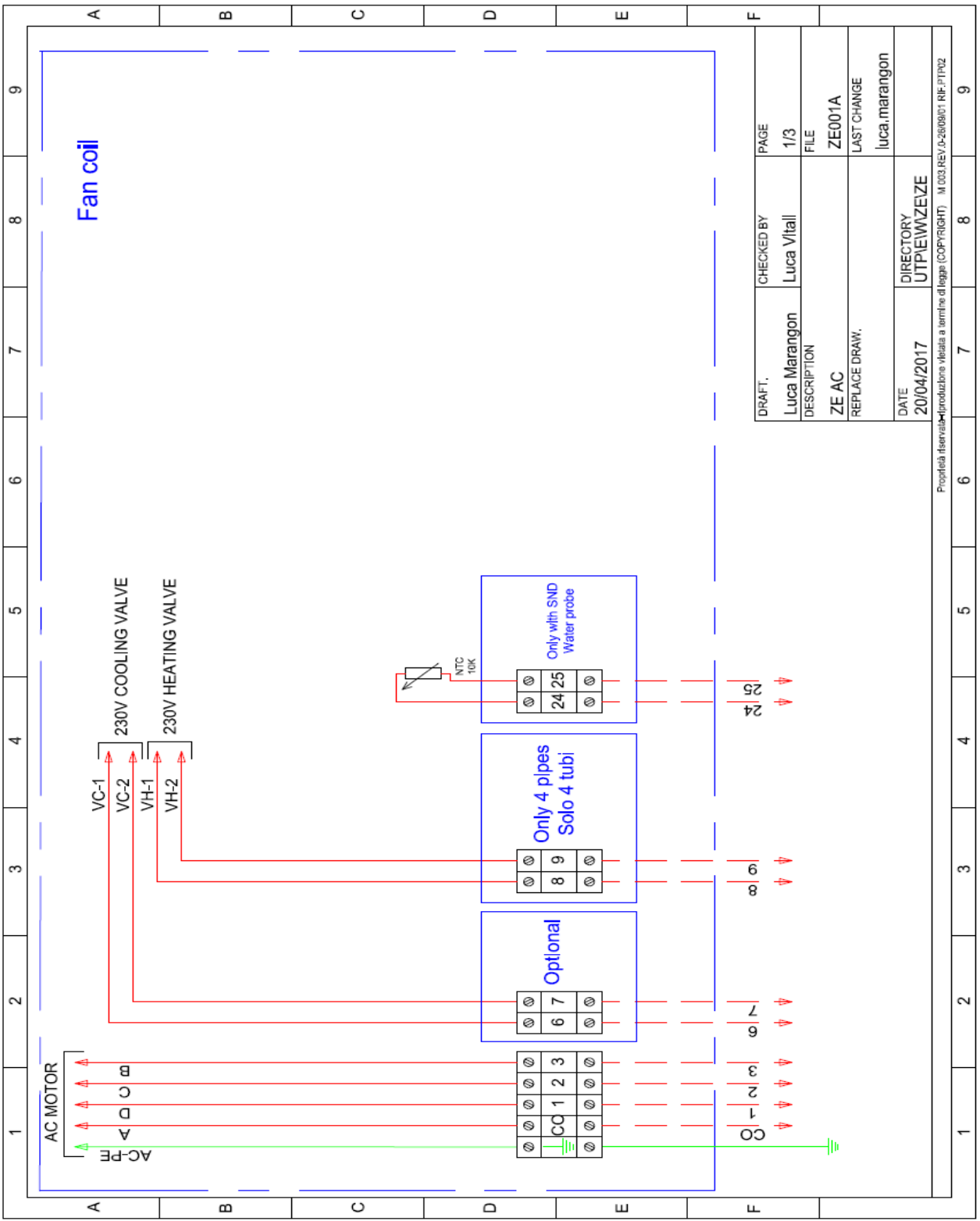
The FAG3 synthetic fibre filter, classified ISO COARSE (ISO 16890) guarantees greater filtration efficiency than a standard filter, although it falls in the same class of filtration. This filter is NOT washable and must be replaced when it is dirty.

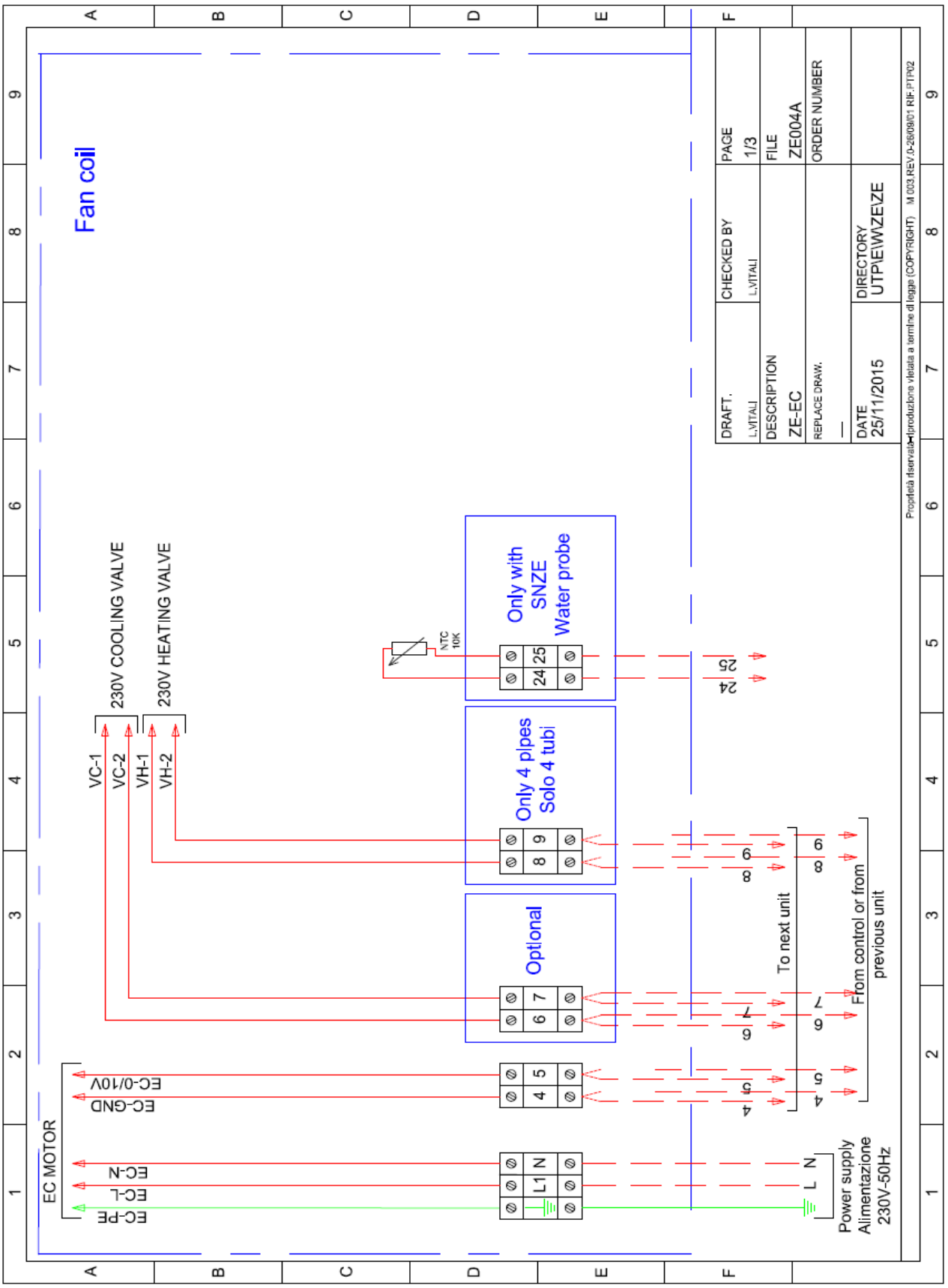
9.28-Filter in synthetic fibre with Sanitized treatment (FA/SAN)

The FA/SAN synthetic fibre filter, classified ISO COARSE (ISO 16890) guarantees greater filtration efficiency than a standard filter, although it falls in the same class of filtration. Additionally, thanks to the special Sanitized treatment, it has an antibacterial effect and prevents fungal growth. This filter is NOT washable and must be replaced when it is dirty. More information and certificates relating to the tests carried out are available from our sales office.

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 or EC motor with 0/10V signal and 230V valves. Each machine is supplied with its specific wiring diagram, based on the chosen equipment.




Fan coil
230V COOLING VALVE
230V HEATING VALVE
VC-1
VC-2
VH-1
VH-2
NTC 10K
Only with SNZE Water probe
Only 4 pipes Solo 4 tubi
Optional
To next unit
From control or from previous unit
EC MOTOR
EC-PE
EC-L
EC-N
EC-GND
EC-0/10V
Power supply Alimentazione 230V-50Hz
DRAFT. L.VITALI
CHECKED BY L.VITALI
PAGE 1/3
DESCRIPTION ZE-EC
FILE ZE004A
REPLACE DRAW. —
ORDER NUMBER
DATE 25/11/2015
DIRECTORY UTP\EW\ZE\ZE
Proprietà riservata e produzione vietata a termine di legge (COPYRIGHT) M 003 REV 0-26/09/01 RIF: PTP02

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
MADE IN ITALY

something different

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