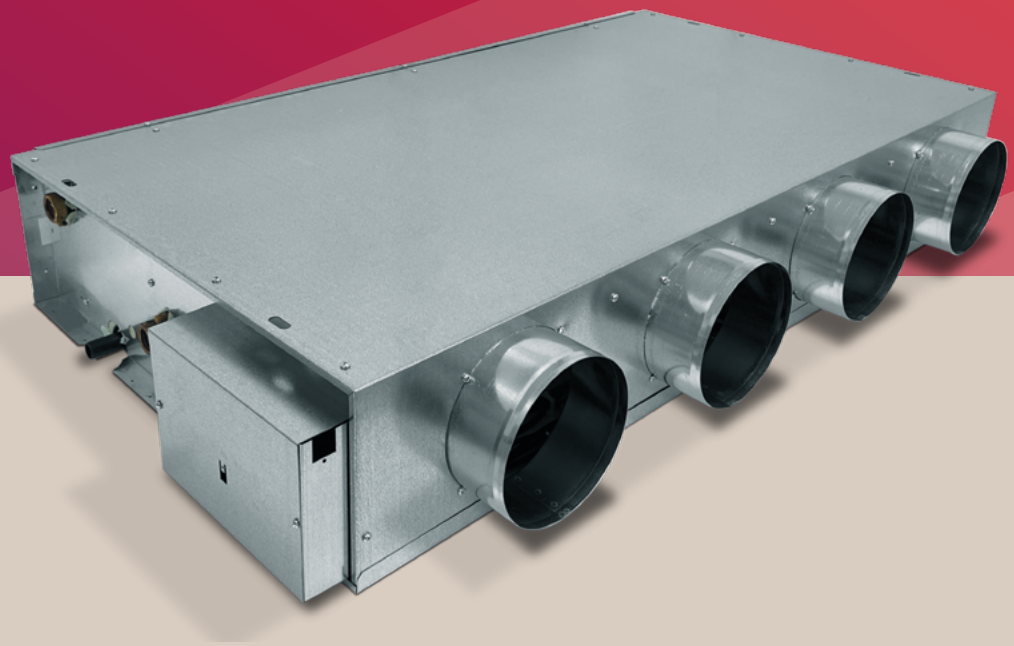
Ventilclima

FLÒ-MULTIFAN-ECM

Ductable multifan and multizone unit



Rel. 26_04_01_00

ENG Technical Manual

GENERAL DESCRIPTION

The Flò Multifan series ducted fan coil unit with integrated multi-zone control is a hydronic terminal unit operating with hot water for winter heating and chilled water for summer cooling.
It differs from conventional ducted fan coil units through the use of independent fans (from 2 to 5), allowing individual comfort control for each zone.

Versions are available for horizontal or vertical installation. Thanks to a wide range of accessories, all installation requirements can be accommodated.

Its high performance, compact dimensions, reduced thickness, and low sound pressure level make it suitable for use in multi-zone ducted systems serving residential environments, such as apartments, private dwellings, and hotel suites.

PLUS

Maximum acoustic comfort:
The double-inlet centrifugal fans ensure high airflow rates at low rotational speed, significantly reducing sound emissions under all operating conditions.

Independent fans:
Thanks to the use of independent fans, the comfort of each zone can be controlled individually and autonomously.

Flexible control:
The unit can be controlled using an EC fan coil thermostat for each zone, or via any controller or building automation system providing a 0–10 V control signal for each fan.

High energy efficiency:
High energy savings are achieved through the use of inverter-driven BLDC motor fans, which continuously modulate the airflow according to room demand.
The 4-row air-to-water heat exchanger delivers high cooling and heating capacities, while minimizing fan power consumption and sound levels.

Reduced thickness:
The overall thickness of only 195 mm allows installation even where ceiling void space is limited.

Customizable configuration:
The complete range of versions and both air-side and water-side accessories greatly simplifies fan coil installation. The valves, available in a wide range of versions and actuator options, allow further optimization of system integration.

Simplified maintenance:
The electrical control panel, water connections, and filter removal are all located on the same side, allowing routine maintenance from a single access point.
The optional folding (book-type) filter further reduces the required lateral clearance.

COMPONENT DESCRIPTION

LOAD-BEARING STRUCTURE

The unit load-bearing frame is made of Z200 galvanized steel sheet, 0.8 mm thick. The structure is internally lined with 3 mm closed-cell anti-condensation insulation, certified in accordance with DIN EN ISO 846 and featuring a fire reaction classification Euroclass B-s2,d0 according to EN 13501-1.

On two opposite sides, on projecting flanges, properly shaped fixing slots are provided to facilitate installation.

CONDENSATE COLLECTION AND DRAINAGE

A main condensate drain pan, made of pre-painted steel sheet, is installed beneath the heat exchanger. The pan is inclined to minimize the risk of condensate stagnation and is externally lined with 3 mm closed-cell anti-condensation insulation, certified according to DIN EN ISO 846 and classified Euroclass B-s2,d0 in accordance with EN 13501-1.

CONTROL VALVES

Several valve configurations are available, 2-way or 3-way ON/OFF type, complete with fittings, gaskets, and ball or balancing (lockshield) valves.

HEAT EXCHANGER

The heat exchanger is fastened to the load-bearing structure via the side panels and is constructed of copper tubes with aluminum fins, mechanically expanded onto the tubes. The side panels are made of Z200 galvanized steel. The headers are made of brass and are equipped with female gas-thread connections and air vent/drain valves, easily accessible. Hydraulic connections are standard on the left-hand side; right-hand side connections are available on request.

FILTER

Located on the rear side of the unit (or bottom side for the vertical version), the filter is easily accessible and removable. It consists of a galvanized steel frame housing a polypropylene mesh filter media. The filtration class is ISO COARSE 30%; optional filters with higher filtration classes are available.

The filter is secured by two locking elements preventing accidental removal and ensuring user safety. Provided it is not damaged or excessively dirty, the filter is regenerable by vacuum cleaning, followed by washing with suitable detergents and drying.

FAN ASSEMBLY

The fan assembly consists of double-inlet centrifugal fans with horizontally developed galvanized steel impellers, statically and dynamically balanced. Each fan is directly coupled to a single-phase BLDC inverter motor, equipped with overload protection and mounted on elastic supports to reduce vibration and noise.

From 2 to 5 fans are installed, each with its own independent motor. Each motor speed is controlled via a 0–10 V signal, ensuring precise and modulating airflow control, matching energy input to the actual thermal load without unnecessary energy consumption.

COMPONENT DESCRIPTION

BLDC fans start operating at minimum speed at 2 V and reach maximum speed at 10 V. To stop the fans, the control signal must be set to 0 V. Control signal values between 0 V and 2 V, or above 10 V, are not permitted.

ELECTRICAL CONNECTIONS

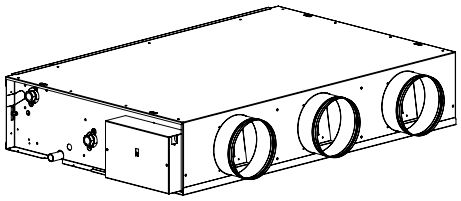
The electrical control panel is located on the same side as the hydraulic connections and is easily accessible. It is made of Z200 galvanized steel sheet, 0.8 mm thick.

PACKAGING

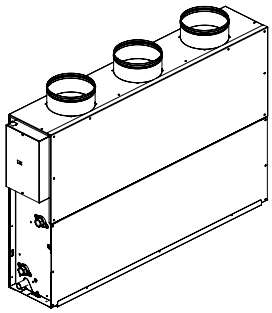
The unit is supplied packed in a dedicated cardboard box.

2-PIPE FAN COIL UNIT

FLÒ-MULTIFAN H
Multi-zone ducted fan coil unit
Horizontal configuration
inlet from the back



FLÒ-MULTIFAN V
Multi-zone ducted fan coil unit
Vertical configuration
inlet from the bottom

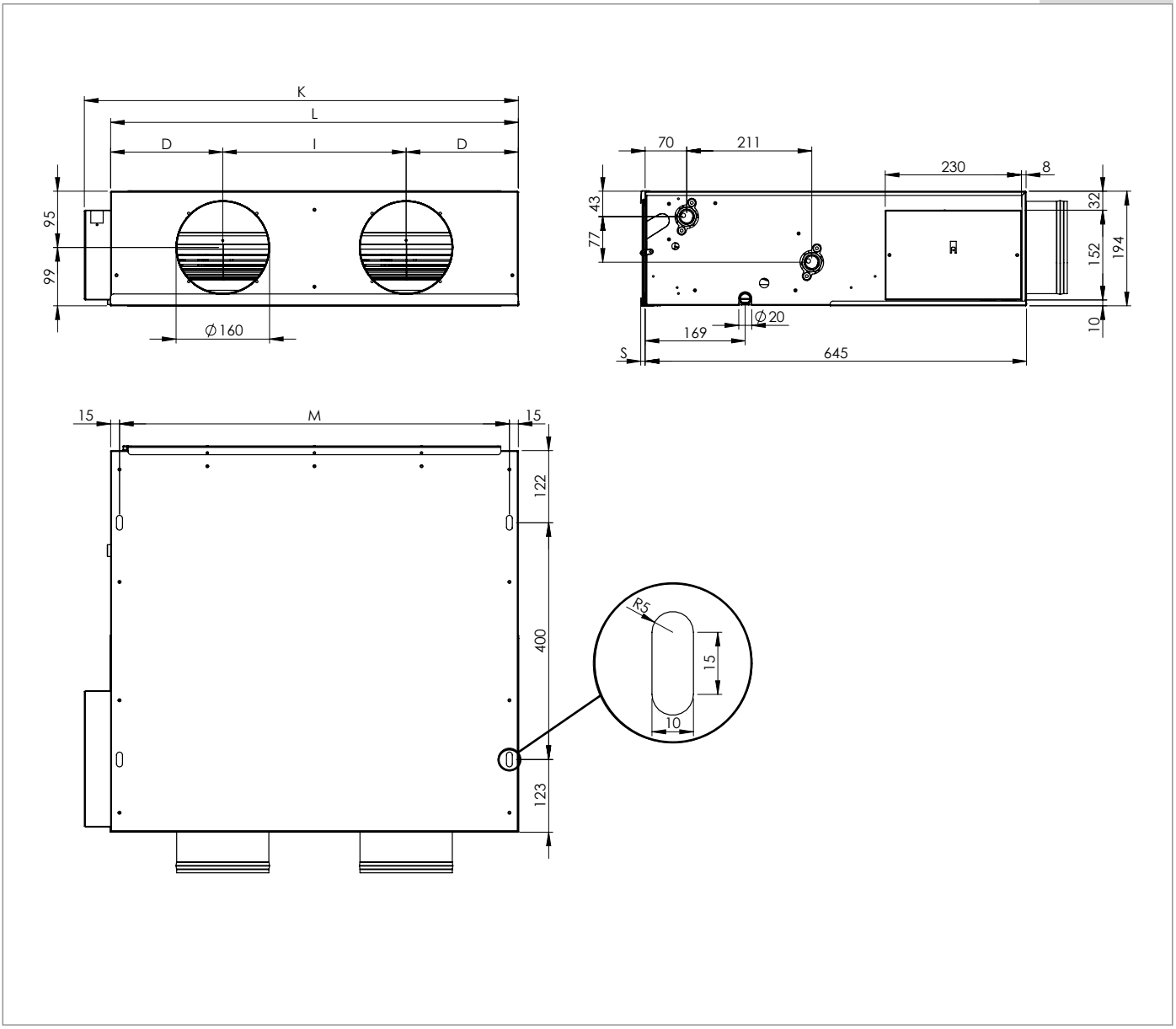


GENERAL DIMENSIONS

General Dimensions		2	3	4	5
Length	L (mm)	689	989	1139	1439
Height	H (mm)	194	194	194	194
Depth	P (mm)	645	645	645	645
	D (mm)	190	190	171	171
	I (mm)	310	305	266	274
	K (mm)	734	1034	1184	1484
	M (mm)	659	959	1109	1409
Filter	S (mm)	8	8	8	8

Unità orizzontale / Horizontal unit / Unité horizontale / Horizontales gerät / Unidad horizontal

MOD. H

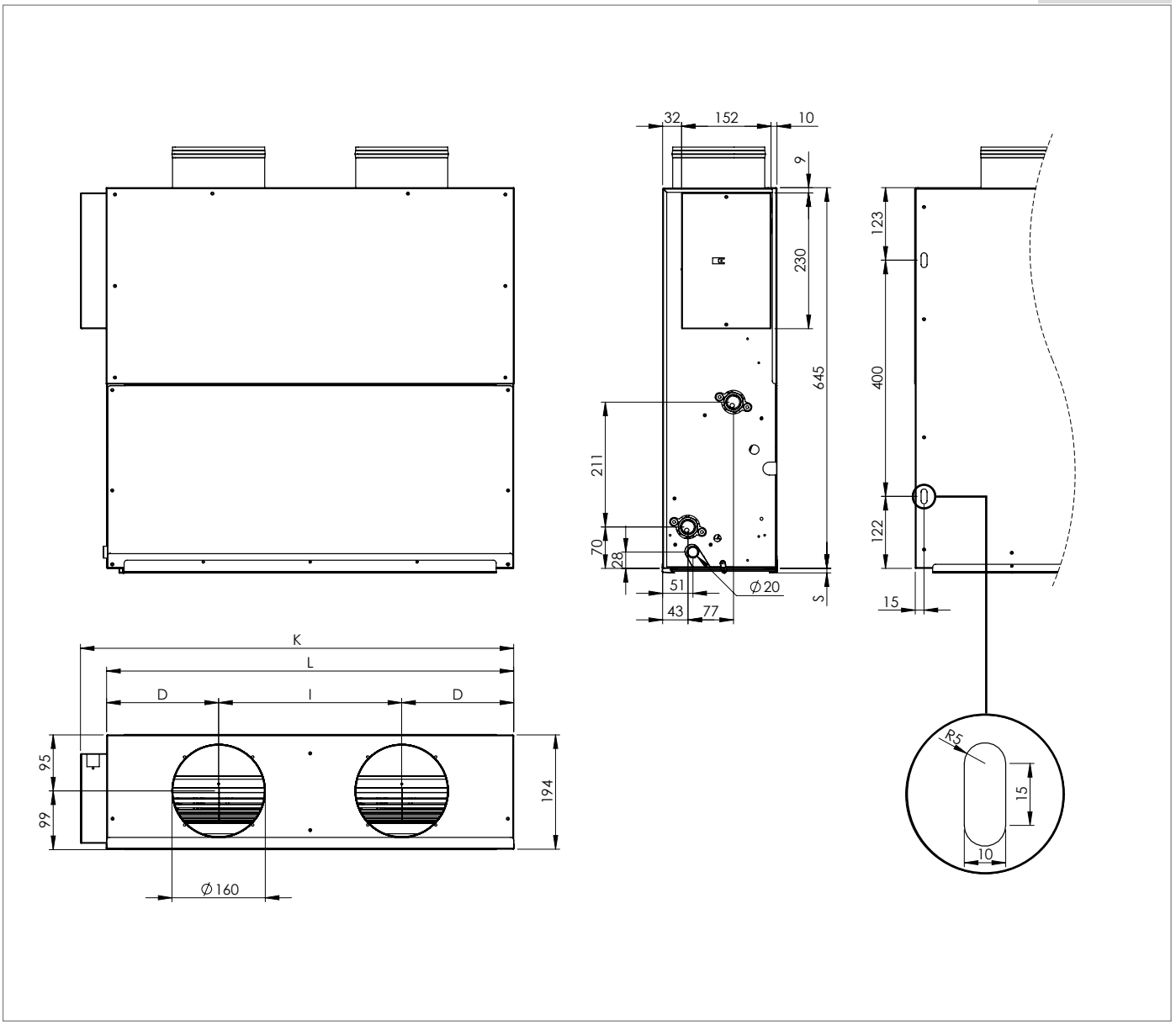


CONSTRUCTION FEATURES

Construction Features			2	3	4	5
Number of Fans			2	3	4	5
Number of motors			2	3	4	5
Main 4-row coil	Hydraulic Connections		1/2”	3/4”	3/4”	3/4”
	Water Content	Liters	1,6	2,4	2,8	3,6

Unità verticale / Vertical unit / Unité verticale / Vertikales gerät / Unidad vertical

MOD. V



TECHNICAL DATA

2 tubi - pipes - tubes
Leiter - tubos

Motore ECM - ECM motor Moteur ECM - ECM-Motor - Motor ECM				2	3	4	5
7/12°C 27°C d.b. 19°C w.b.	Potenza frigorifera totale Total cooling capacity Puissance frigorifique totale Kälteleistung gesamt Potencia frigorífica total	kW	5	3,89	6,01	7,67	9,86
		kW	4	3,47	5,34	6,84	8,74
		kW	3	2,97	4,57	5,87	7,50
		kW	2	2,52	3,88	5,02	6,38
		kW	1	1,69	2,57	3,33	4,26
	Potenza frigorifera sensibile Sensible cooling capacity Puissance frigorifique sensible Sensible Kälteleistung Potencia frigorífica total sensible	kW	5	2,86	4,37	5,64	7,17
		kW	4	2,52	3,84	4,97	6,31
		kW	3	2,14	3,25	4,22	5,36
		kW	2	1,80	2,74	3,57	4,51
		kW	1	1,18	1,78	2,32	2,95
	Portata acqua Water flow Débit d'eau Wassermenge Flujo de agua	l/h	5	686	1059	1353	1737
		l/h	4	610	941	1205	1539
		l/h	3	518	798	1025	1309
		l/h	2	437	672	870	1106
		l/h	1	292	444	576	736
	Perdite di carico lato acqua Water pressure drop Pertes charge côté eau Wasserseitiger Druckverlust Caídas de presión lado agua	kPa	5	24,2	32,0	30,0	34,4
		kPa	4	19,7	26,0	24,5	28,0
		kPa	3	11,0	19,4	18,4	21,1
		kPa	2	8,1	14,4	13,8	15,7
		kPa	1	3,9	5,1	4,9	7,7
	Potenza frigorifera totale (SINGOLA ZONA) Total cooling capacity (SINGLE ZONE) Puissance frigorifique totale (ZONE UNIQUE) Kälteleistung gesamt (EINZELNE ZONE) Potencia frigorífica total (ZONA ÚNICA)	kW	5	2,14	2,20	2,11	2,17
		kW	4	1,91	1,96	1,88	1,92
		kW	3	1,63	1,68	1,61	1,65
		kW	2	1,39	1,42	1,38	1,40
		kW	1	0,93	0,94	0,92	0,94
	Potenza frigorifera sensibile (SINGOLA ZONA) Sensible cooling capacity (SINGLE ZONE) Puissance frigorifique sensible (ZONE UNIQUE) Sensible Kälteleistung (EINZELNE ZONE) Potencia frigorífica total sensible (ZONA ÚNICA)	kW	5	1,57	1,60	1,55	1,58
		kW	4	1,38	1,41	1,37	1,39
		kW	3	1,17	1,19	1,16	1,18
		kW	2	0,99	1,00	0,98	0,99
		kW	1	0,65	0,65	0,64	0,65
45/40°C 20°C	Potenza termica Heating capacity Puissance thermique Heizleistung Energía térmica	kW	5	4,16	6,31	8,21	10,35
		kW	4	3,63	5,52	7,19	9,07
		kW	3	3,01	4,55	5,94	7,50
		kW	2	2,47	3,76	4,91	6,18
		kW	1	1,59	2,39	3,14	3,97
	Portata acqua Water flow Débit d'eau Wassermenge Flujo de agua	l/h	5	698	1059	1377	1737
		l/h	4	610	927	1207	1524
		l/h	3	511	770	1006	1271
		l/h	2	421	641	837	1054
		l/h	1	272	408	537	678
	Perdite di carico lato acqua Water pressure drop Pertes charge côté eau Wasserseitiger Druckverlust Caídas de presión lado agua	kPa	5	20,9	26,8	25,9	29,1
		kPa	4	16,6	21,2	20,5	23,1
		kPa	3	12,0	15,3	14,9	16,8
		kPa	2	8,6	11,1	10,8	12,1
		kPa	1	4,0	5,0	4,9	5,5
	Potenza termica (SINGOLA ZONA) Heating capacity (SINGLE ZONE) Puissance thermique (ZONE UNIQUE) Heizleistung (EINZELNE ZONE) Energía térmica (ZONA ÚNICA)	kW	5	2,29	2,31	2,26	2,28
		kW	4	2,00	2,02	1,98	2,00
		kW	3	1,66	1,67	1,63	1,65
		kW	2	1,36	1,38	1,35	1,36
		kW	1	0,87	0,87	0,86	0,87
	Portata aria Air flow Débit d'air Luftstrom Flujo de aire	m3/h	5	600	900	1200	1500
		m3/h	4	510	765	1020	1275
		m3/h	3	410	615	820	1025
		m3/h	2	330	495	660	825
		m3/h	1	200	300	400	500

(*) Livello di pressione sonora atteso in ambiente a 3m dalla bocchetta di mandata, con un'attenuazione acustica del canale di 10dB. / **Dati riferiti ad alimentazione:** ~230V / 1ph / 50Hz - Expected sound pressure level in a room 3m from the outlet vent, with a duct acoustic attenuation of 10dB. / **Data relating to power supply:** ~230V / 1ph / 50Hz - Niveau de pression acoustique attendu dans une pièce à 3 m de la bouche de sortie, avec une atténuation acoustique du conduit de 10 dB. / **Données relatives à l'alimentation électrique:** ~230V / 1ph / 50Hz - Erwarteter Schalldruckpegel in einem Raum 3 m von der Auslassöffnung entfernt, mit einer akustischen Kanaldämpfung von 10 dB. / **Unterstützte Stromversorgung:** ~230V / 1ph / 50Hz - Nivel de presión sonora esperado en una estancia a 3m del respiradero de salida, con una atenuación acústica del conducto de 10dB. / **Datos relativos al suministro eléctrico:** ~230V / 1ph / 50Hz

2 tubi - pipes - tubes
Leiter - tubos

Motore ECM - ECM motor Moteur ECM - ECM-Motor - Motor ECM			2	3	4	5
Portata aria (SINGOLA ZONA) Air flow (SINGLE ZONE) Débit d'air (ZONE UNIQUE) Luftstrom (EINZELNE ZONE) Flujo de aire (ZONA ÚNICA)	m3/h	5	300	300	300	300
	m3/h	4	255	255	255	255
	m3/h	3	205	205	205	205
	m3/h	2	165	165	165	165
	m3/h	1	100	100	100	100
Pressione statica Static pressure Pression statique Statischer Druck Presión estática	Pa	5	100	100	100	100
	Pa	4	72	72	72	72
	Pa	3	47	47	47	47
	Pa	2	30	30	30	30
	Pa	1	11	11	11	11
Livello di potenza sonora aspirazione + radiata / Sound power level inlet + radiated / Niveaux de puissance acoustique aspiration + rayonné / Schallleistungspegel Austritt und Abgestrahlt / Nivel de potencia acústica de admisión + resonancia	dB(A)	5	62	63	65	66
	dB(A)	4	55	56	58	59
	dB(A)	3	48	49	51	52
	dB(A)	2	41	42	44	45
	dB(A)	1	34	35	37	38
Livello di potenza sonora mandata Sound power level outlet Niveaux de puissance acoustique soufflage Schallleistungspegel Austritt Nivel de potencia sonora de salida	dB(A)	5	65	66	68	69
	dB(A)	4	58	59	61	62
	dB(A)	3	51	52	54	55
	dB(A)	2	44	45	47	48
	dB(A)	1	37	38	40	41
(*) Livello pressione sonora in ambiente / (*) Sound pressure level in the environment / (*) Niveau de pression acoustique dans l'environnement / (*) Schalldruckpegel in der Umgebung / (*) Nivel de presión sonora en el ambiente	dB(A)	5	40	41	43	44
	dB(A)	4	33	34	36	37
	dB(A)	3	26	27	29	30
	dB(A)	2	19	20	22	23
	dB(A)	1	12	13	15	16
Assorbimento elettrico motore Motor electrical consumption Consommation électrique du moteur Elektrischer Verbrauch des Motors Consumo eléctrico del motor	W	5	98	147	196	245
	W	4	84	126	168	210
	W	3	44	66	88	110
	W	2	20	30	40	50
	W	1	10	15	20	25
Max corrente motori Maximum motors current Courant maximal du moteur Maximaler Motorstrom Corriente máxima del motor	A		1,10	1,65	2,20	2,75
Max assorbimento elettrico motori Maximum electrical absorption of motors Absorption électrique maximale des moteurs Maximale elektrische Aufnahme von Motoren Máxima absorción eléctrica de los motores	W		150	225	300	375
Segnale di controllo 0/10V 0/10V control signal Signal de commande 0/10V 0/10V Steuersignal Señal de control de 0/10 V	V	5	10,0	10,0	10,0	10,0
	V	4	8,0	8,0	8,0	8,0
	V	3	6,0	6,0	6,0	6,0
	V	2	4,0	4,0	4,0	4,0
	V	1	2,0	2,0	2,0	2,0

(*) Livello di pressione sonora atteso in ambiente a 3m dalla bocchetta di mandata, con un'attenuazione acustica del canale di 10dB. / **Dati riferiti ad alimentazione:** ~230V / 1ph / 50Hz - Expected sound pressure level in a room 3m from the outlet vent, with a duct acoustic attenuation of 10dB. / **Data relating to power supply:** ~230V / 1ph / 50Hz - Niveau de pression acoustique attendu dans une pièce à 3 m de la bouche de sortie, avec une atténuation acoustique du conduit de 10 dB. / **Données relatives à l'alimentation électrique:** ~230V / 1ph / 50Hz - Erwarteter Schalldruckpegel in einem Raum 3 m von der Auslassöffnung entfernt, mit einer akustischen Kanaldämpfung von 10 dB. / **Unterstützte Stromversorgung:** ~230V / 1ph / 50Hz - Nivel de presión sonora esperado en una estancia a 3m del respiradero de salida, con una atenuación acústica del conducto de 10dB. / **Datos relativos al suministro eléctrico:** ~230V / 1ph / 50Hz

CALCULATION OF COOLING AND HEATING CAPACITY

To calculate the cooling and heating capacity at operating conditions different from the catalogue conditions (air 27 °C, 47% RH, water 7/12 °C in cooling mode; and air 20 °C, water 45/40 °C in heating mode), the following formulas can be used:

Cooling capacity:
Pc = Pc_cat × Kc × Kpc
where: Pc_cat = catalogue cooling capacity (at the nominal air flow rate of 300 m³/h for each zone)
Kc and Kpc = correction factors taken from the tables below

Cooling correction coefficient (Kc)		Water temperature		
		7/12 °C	9/14 °C	11/16 °C
Air temperature	29°C 47%	1,23	1,02	0,82
	27°C 47%	1,00	0,81	0,64
	25°C 47%	0,80	0,64	0,51

	Percentage of nominal air flow rate (300 m³/h for each zone)				
	40%	55%	70%	85%	100%
Cooling correction coefficient (Kc)	0,50	0,65	0,78	0,89	1,00

Thermal (Heating) capacity:
Ph = Ph_cat × Kh × Kph
where:
Ph_cat = catalogue heating capacity (at the nominal air flow rate of 300 m³/h for each zone)
Kh and Kph = correction factors taken from the tables below

Correction coefficient (Kh)		Water temperature		
		35/30 °C	45/40 °C	55/50 °C
Air temperature	18°C	0,64	1,09	1,52
	20°C	0,55	1,00	1,45
	22°C	0,46	0,91	1,36
	24°C	0,37	0,83	1,27

	Percentage of nominal air flow rate (300 m³/h for each zone)				
	40%	55%	70%	85%	100%
Correction coefficient (Kph)	0,45	0,60	0,74	0,88	1,00

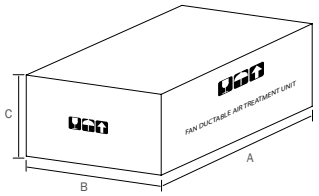
WORKING LIMITS

Limiti di funzionamento *Working limits*	2 - 3 - 4 - 5
Tensione di alimentazione / *Supply voltage*	230V (+/-10%) – 1ph – 50/60Hz
Temperatura aria ambiente / *Ambient air temperature*	Min. 5°C – Max. 35°C
Massima umidità aria ambiente / *Maximum ambient air humidity*	65%
Massima pressione di esercizio acqua / *Max water pressure*	8 Bar
Massima temperatura acqua / *Max water temperature*	60°C
Minima temperatura acqua / *Min water temperature*	5°C

- **Raffreddamento:** Per evitare formazione di condensa sulle superfici esterne dell'unità, soprattutto in condizioni di elevata umidità ambiente, si raccomanda di interrompere il flusso dell'acqua refrigerata tramite una elettrovalvola quando il ventilatore non è in funzione.
- **Cooling:** To avoid condensation forming on the external surfaces of the unit, especially in conditions of high ambient humidity, it is recommended to interrupt the flow of chilled water via a solenoid valve when the fan is not in operation.

WEIGHTS AND PACKAGING

	dimensioni *dimension*	peso *weight*	bancale *palette*		
	[mm] (AxBxC)	[kg]	L x P [mm]	[n.] unità - *units*	[kg] tot.
MOD. 2	720 x 740 x 200	24	1000 x 800	5	140
MOD. 3	720 x 1040 x 200	33	1100 x 800	5	185
MOD. 4	720 x 1190 x 200	40	1200 x 800	5	220
MOD. 5	720 x 1490 x 200	50	1500 x 800	5	270



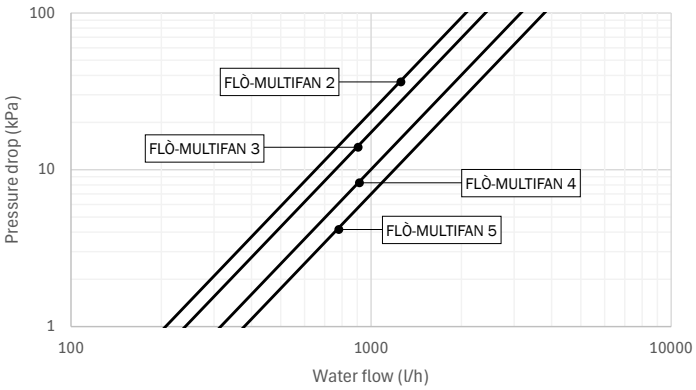
SOUND POWER SPECTRUM – SUPPLY AIR

		Cablaggio elettrico standard / *Standard electrical wiring*	Spettro frequenze in banda d'ottava (Hz) / *Octave band frequency spectrum (Hz)*							Potenza sonora totale [db(A)] / *Total sound power [db(A)]*
			125	250	500	1000	2000	4000	8000	
Singola mandata / *Single supply air outlet*	**6**	10V	59	63	60	57	53	45	38	**62**
	5	8V	52	55	53,8	49,8	46	38	32	**55**
	4	6V	47	48,5	47	43	37	30	25	**48**
	3	4V	38	42	39	37	29	22	21	**41**
	2	2V	32	39	32,3	24,9	20,5	17	19	**34**
2	**6**	10V	62	66	63	60	56	48	41	**65**
	5	8V	55	58	56,8	52,8	49	41	35	**58**
	4	6V	50	51,5	50	46	40	33	28	**51**
	3	4V	41	45	42	40	32	25	24	**44**
	2	2V	35	42	35,3	27,9	23,5	20	22	**37**
3	**6**	10V	63	67	64	61	57	49	42	**66**
	5	8V	56	59	57,8	53,8	50	42	36	**59**
	4	6V	51	52,5	51	47	41	34	29	**52**
	3	4V	42	46	43	41	33	26	25	**45**
	2	2V	36	43	36,3	28,9	24,5	21	23	**38**
4	**6**	10V	65	69	66	63	59	51	44	**68**
	5	8V	58	61	59,8	55,8	52	44	38	**61**
	4	6V	53	54,5	53	49	43	36	31	**54**
	3	4V	44	48	45	43	35	28	27	**47**
	2	2V	38	45	38,3	30,9	26,5	23	25	**40**
5	**6**	10V	66	70	67	64	60	52	45	**69**
	5	8V	59	62	60,8	56,8	53	45	39	**62**
	4	6V	54	55,5	54	50	44	37	32	**55**
	3	4V	45	49	46	44	36	29	28	**48**
	2	2V	39	46	39,3	31,9	27,5	24	26	**41**

PRESSURE DROPS ON THE WATER SIDE OF THE BATTERIES

The pressure drops refer to an average water temperature of 10 °C.

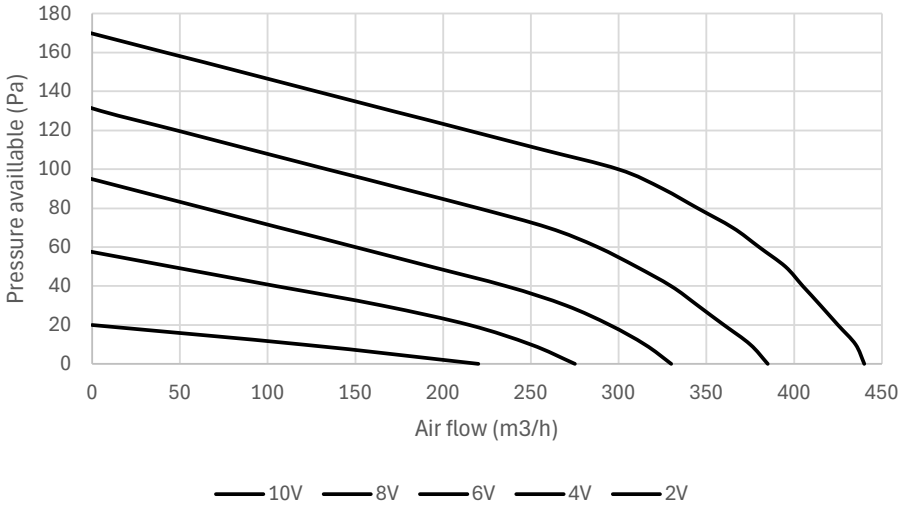
4-ROW COIL



AIRFLOW/PRESSURE CURVE

The following airflow/pressure curves refer to a single fan.

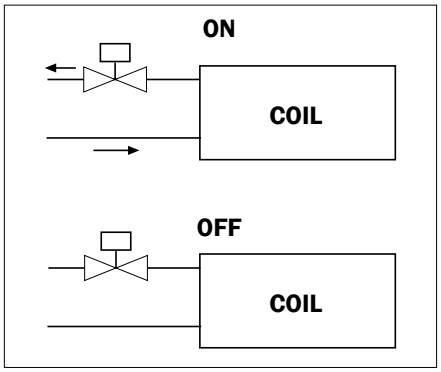
Although the fan is capable of achieving high available static pressure, it is recommended to size the air distribution system to minimize pressure losses. This allows the fans to operate at lower rotational speeds than the maximum, resulting in reduced electrical consumption and lower noise emissions.



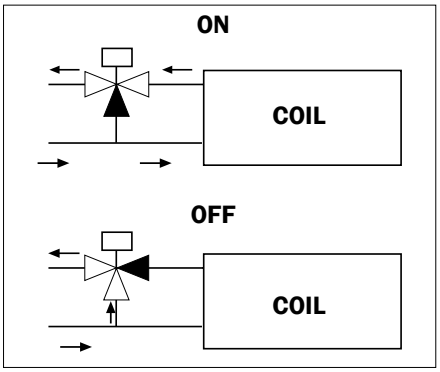
2-WAY AND 3-WAY VALVE KIT

2-way or 3-way valve kits are available.

Operating principle of a 2-way valve



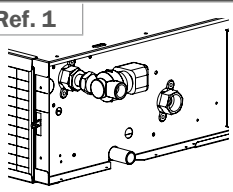
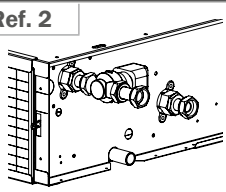
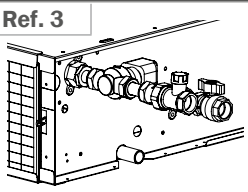
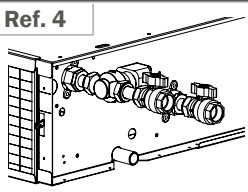
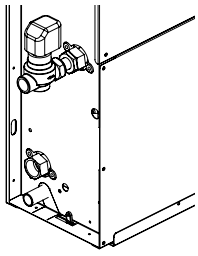
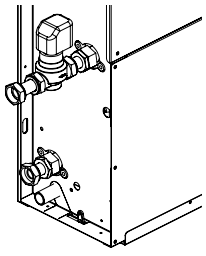
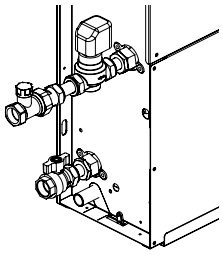
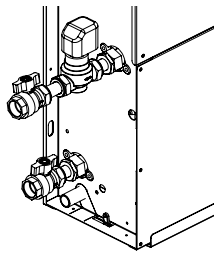
Operating principle of a 3-way valve



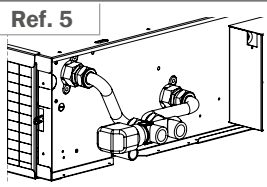
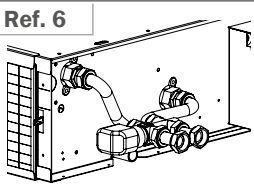
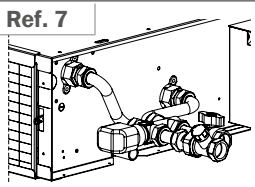
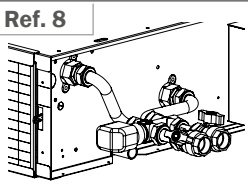
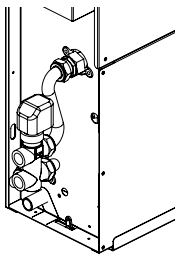
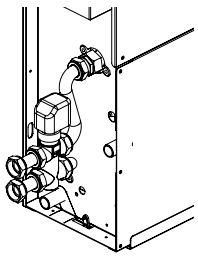
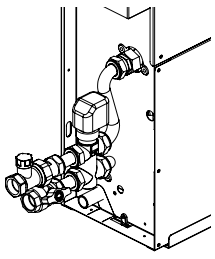
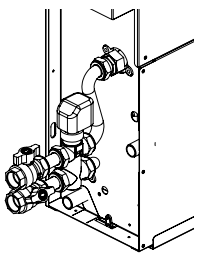
The valve body and hydraulic fittings are made of brass, with copper connection pipes.
The 2-way or 3-way valves are equipped with a fully silent electric actuator, available in ON/OFF versions with 230 V or 24 V power supply.
The basic kit includes the valve body, electric actuator, copper pipes, locking nuts, and gaskets for mounting on the fan coil unit.
Additional valve kits are also available, including copper pipes for system connection, ball valve and lockshield, or a double ball valve assembly.

index	
Ref. 1, 5	2/3 way valve only kit
Ref. 2, 6	2/3 way kit with system pipes
Ref. 3, 7	2/3 way kit with shut off valve and balancing valve
Ref. 4, 8	2/3 way kit with 2 shut off valves

2 WAY VALVE KIT

	Ref. 1	Ref. 2	Ref. 3	Ref. 4
Horizontal version				
Vertical version				

3 WAY VALVE KIT

	Ref. 5	Ref. 6	Ref. 7	Ref. 8
Horizontal version				
Vertical version				

VALVES

TECHNICAL DATA 2 AND 3 WAY VALVE KIT (*)	
Maximum pressure	10 bar
Minimum Fluid Temperature	4°C
Maximum Fluid Temperature	100°C
Applicable Fluids	water with glycol< 40%
Shutter Stroke	2,5 mm
Bypass Leakage	< 0,02 % Kvs
Connection for Actuator with Threaded Nut	M 30 x 1,5
Characteristic with Actuator	Normally closed
BALANCING VALVE TECHNICAL DATA (*)	
Maximum Pressure	8 bar
Minimum Fluid Temperature	4°C
Maximum Fluid Temperature	80°C
Applicable Fluids	water with glycol < 30%

*** Technical data refers to the valve kit or the balancing only.**

ELECTRICAL DATA FOR 2-WAY AND 3-WAY VALVE ACTUATORS

230V ON-OFF ACTUATOR	
Power supply	230 V ac
Power consumption in service	1,8W
Initial opening time	90s
Protection rating	IP54
24V ON-OFF ACTUATOR	
Power supply	24V ac/dc 50/60Hz
Power consumption in service	1,6W
Initial opening time	3min
Protection rating	IP54

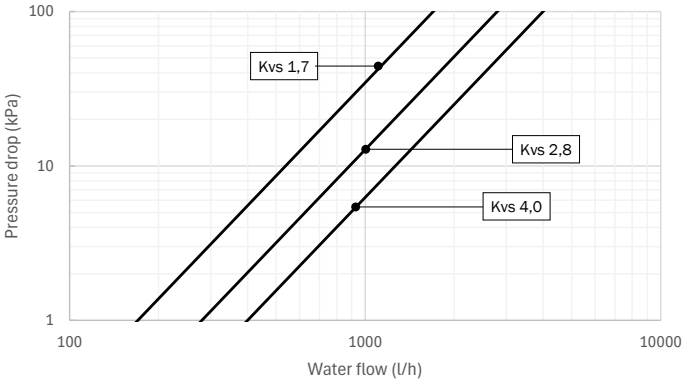
HYDRAULIC DATA VALVES AND BALANCING VALVE

4-ROW MAIN COIL					
		2	3	4	5
Ø valve connections		1/2"	3/4"	3/4"	
2-way valve	Kvs	1,7	2,8	4,0	
	ΔP max closing (bar)	2,5	1,5	1,0	
3-way valve	Kvs straight way	1,7	2,8	4,0	
	Kvs by-pass	1,2	1,8	1,8	
	ΔP max closing (bar)	2,0	1,0	0,8	
balancing valve	Kvs	1,5	3,5	3,5	

PRESSURE DROP IN VALVES AND BALANCING VALVE

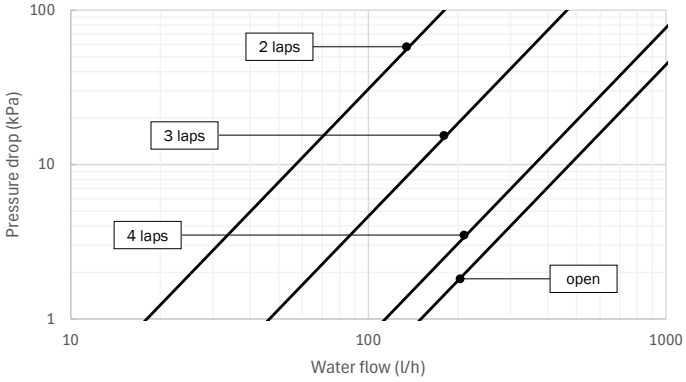
VALVE PRESSURE DROPS

Pressure drops of 2-way valves and 3-way valves (straight way)



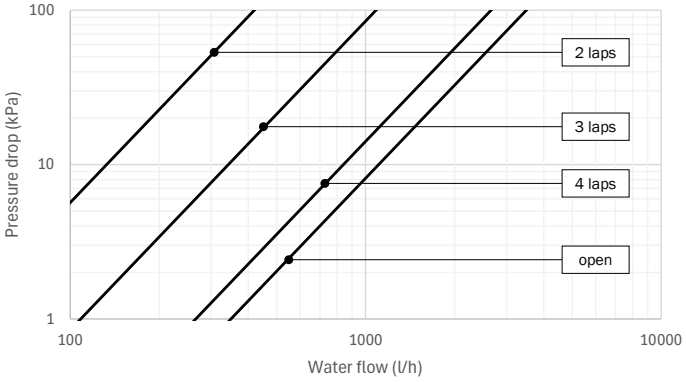
BALANCING VALVE PRESSURE DROPS

Pressure drops 1/2” Kvs 1.5 balancing



BALANCING VALVE PRESSURE DROPS

Pressure drops 3/4” Kvs 3,5 balancing

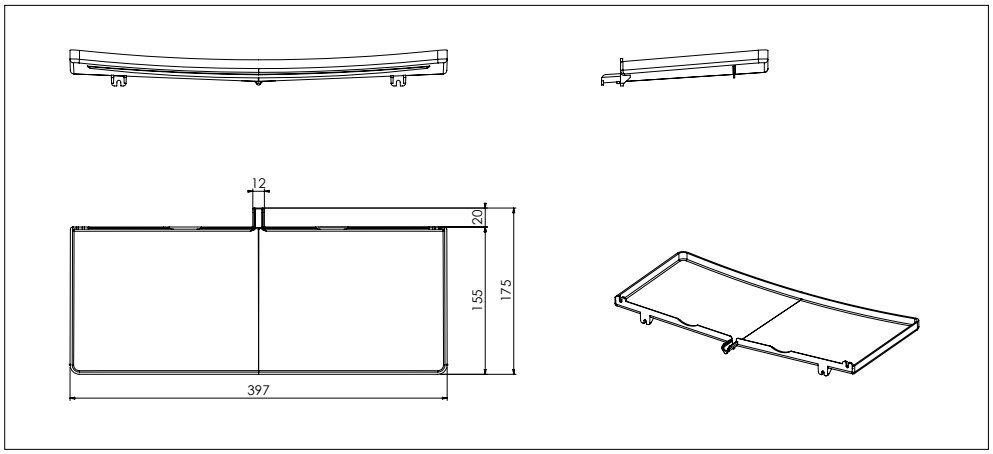


ACCESSORIES

AUXILIARY DRAIN PAN

The auxiliary condensate dray pan is made of ABS and is designed to collect condensate droplets dripping from the valve surfaces and from the copper pipes connecting to the coil.

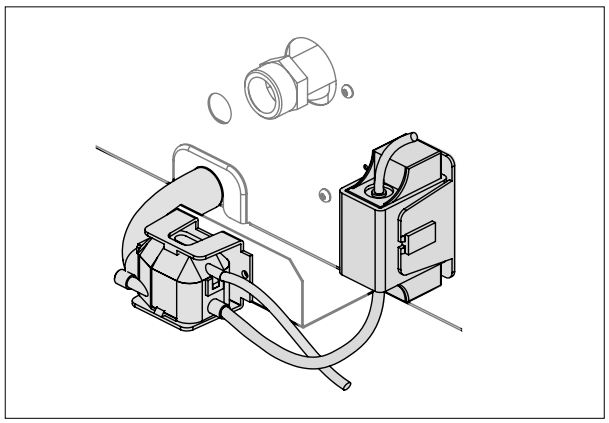
It is compatible with horizontal units only.



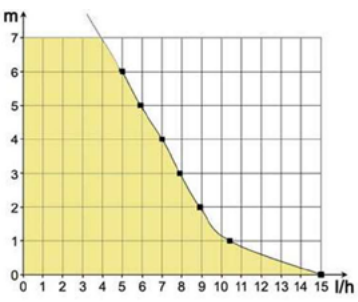
CONDENSATE DRAIN PUMP

The condensate drain pump is used when gravity drainage is not possible. The kit includes a float switch that automatically starts the pump when water is present in the tray and stops it once the condensate has been completely discharged.

The float switch is also equipped with an alarm contact that can be used to shut off the chilled water solenoid valve if the condensate level inside the tray becomes excessive.

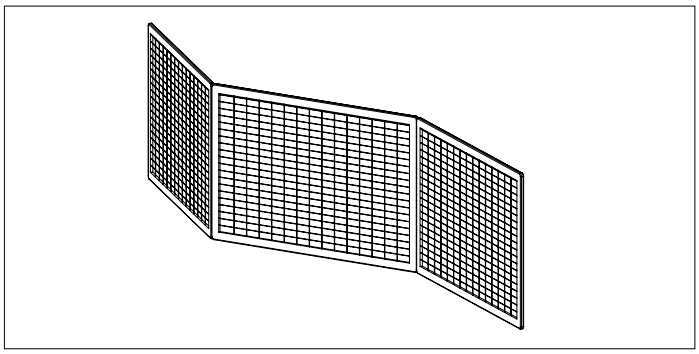


Power supply	230V – 1ph – 50/60Hz
Power consumption	19W
Maximum capacity	15 l/h
Maximum thrust height	10m
Maximum alarm contact current	3A
Protection rating	IP64
Thermal protection	Yes
Operation	100%



AIR FILTER FOLDABLE LIKE A BOOK

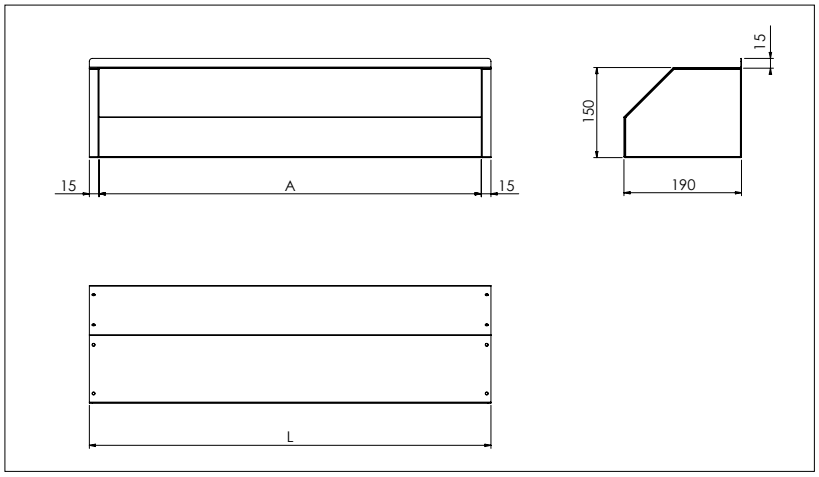
The air filter consists of a polypropylene filter media enclosed in a metal frame. It is interchangeable with the standard filter, having the same overall dimensions. Filtration class: COARSE 30% in accordance with ISO 16890.
The filter is made up of pleated modules with a maximum length of 330 mm (Flò Multifan 2–3) or 480 mm (Flò Multifan 4–5). Compared to the standard filter, this design reduces the lateral clearance required for filter removal.



90° PLENUM

The 90° plenum is made of galvanized sheet steel and is available in an uninsulated version for return-air installation. When this accessory is installed, the filter and filter guides must be removed from the fan coil unit, and a filter integrated into the return air grille is mandatory.

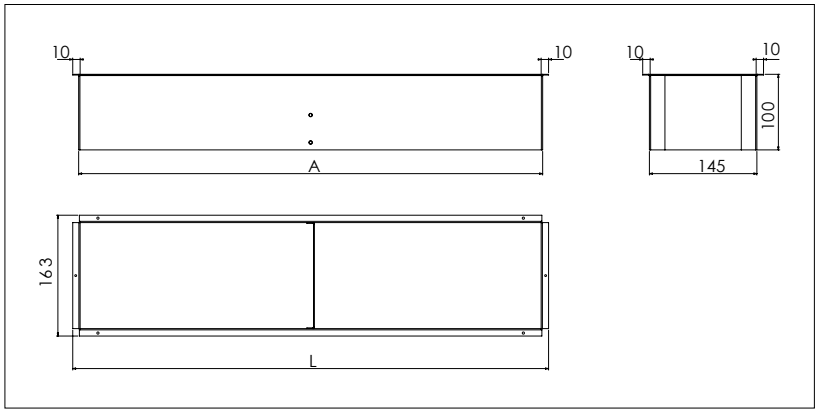
Model	L (mm)	A (mm)
2	660	630
3	960	930
4	1110	1080
5	1410	1380



TELESCOPIC EXTENSION FOR 90° PLENUM

The telescopic extension, used in combination with 90° plenums, allows adjustment of the plenum length to suit installation requirements. It is made of galvanized sheet steel and is supplied without insulation.

Model	L (mm)	A (mm)
2	642	625
3	942	925
4	1092	1075
5	1392	1375

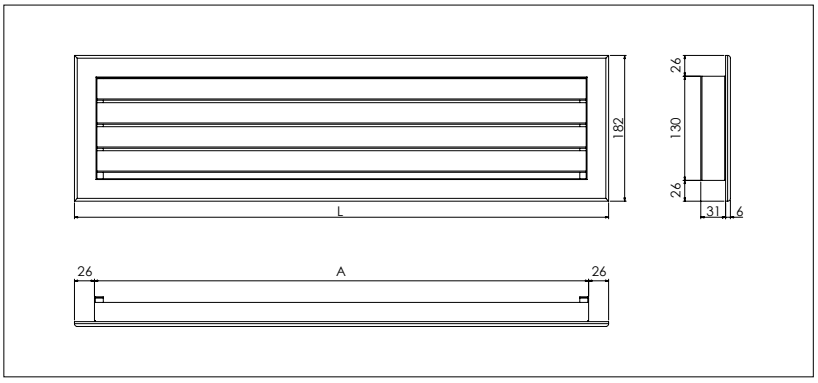


RETURN AIR GRILLE FOR TELESCOPIC EXTENSION

Return air grille with fixed horizontal louvers. The grille is made of aluminum with an anodized finish and is provided with fixing holes for screw mounting (screws not included and to be selected according to the supporting material).

The grille includes an internal filter; therefore, the filter supplied with the fan coil unit must be removed.

Model	L (mm)	A (mm)
2	667	615
3	967	915
4	1117	1065
5	1417	1365

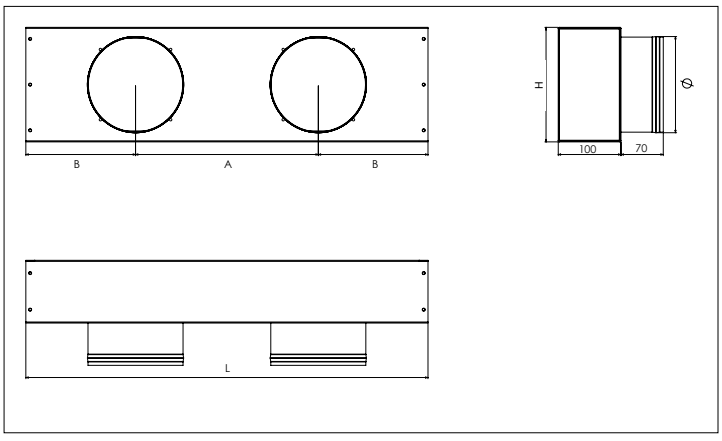


INTAKE SECTION WITH CIRCULAR CONNECTION

The intake section with circular connection is made of galvanized sheet steel and is available uninsulated for return-air installation. It includes filter guides, on which the filter supplied with the fan coil unit must be placed to allow removal from below.

The circular connections are compatible with flexible ducting for air distribution systems.

Model	L (mm)	A(mm)	B(mm)	H(mm)	Connection
2	660	300	180	190	2x Ø160
3	960	305	175	190	3x Ø160
4	1110	260	165	190	4x Ø160
5	1410	275	155	190	5x Ø160

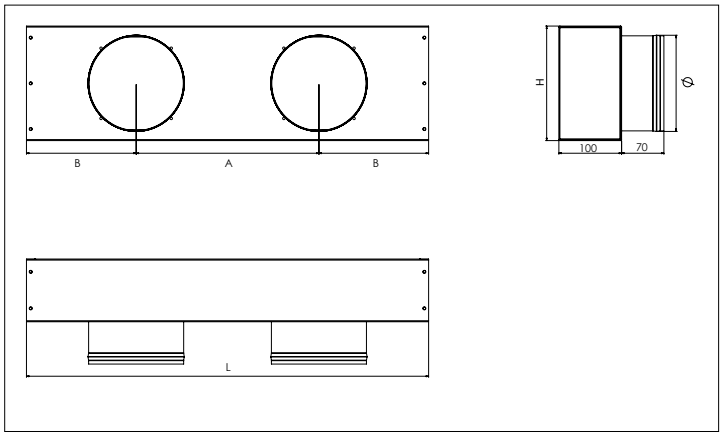


PLENUM WITH CIRCULAR CONNECTIONS

The supply or return plenum with circular spigot is manufactured from galvanized steel and is available insulated with anti-condensation material for installation in supply or return air systems.

The circular connections are compatible with flexible ducting for HVAC air distribution systems.

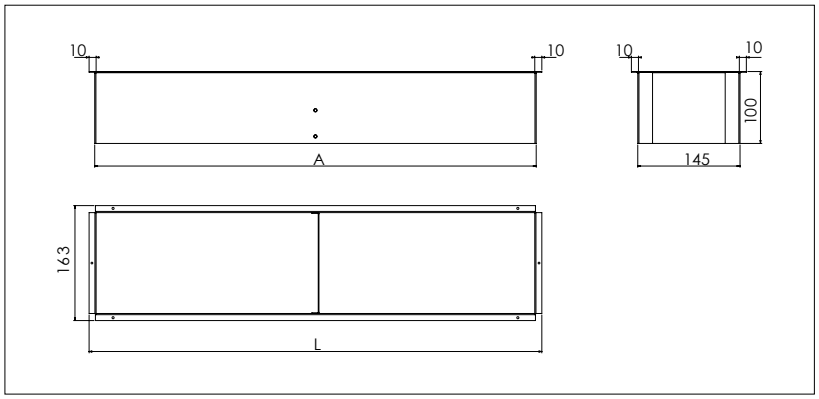
Model	L (mm)	A(mm)	B(mm)	H(mm)	Connection
2-3-4-5	360	-	180	190	1x Ø160
2-3-4-5	510	240	135	190	2x Ø160



TELESCOPIC EXTENSION SECTION FOR PLENUM WITH CIRCULAR AIR CONNECTION

The telescopic extension, used in combination with plenums with circular spigot, allows the adjustment of the plenum length to suit specific installation requirements. It is manufactured from galvanized steel sheet and is supplied without insulation. When installed on the supply air side and when the fan coil unit operates with chilled water, it is recommended to insulate the extension with anti-condensation material.

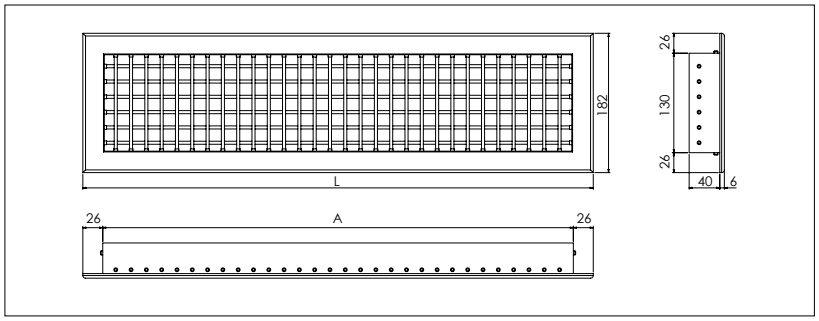
Model	L (mm)	A (mm)
2-3-4-5	342	325
2-3-4-5	492	475



SUPPLY AIR GRILLE FOR TELESCOPIC PLENUM EXTENSION

Double-row supply air grille with horizontally and vertically adjustable blades. The grille is manufactured from aluminium with anodized finish and is provided with mounting holes for screw fixing (screws not included, to be selected according to the supporting surface).

Model	L (mm)	A (mm)
2-3-4-5	362	310
2-3-4-5	512	460

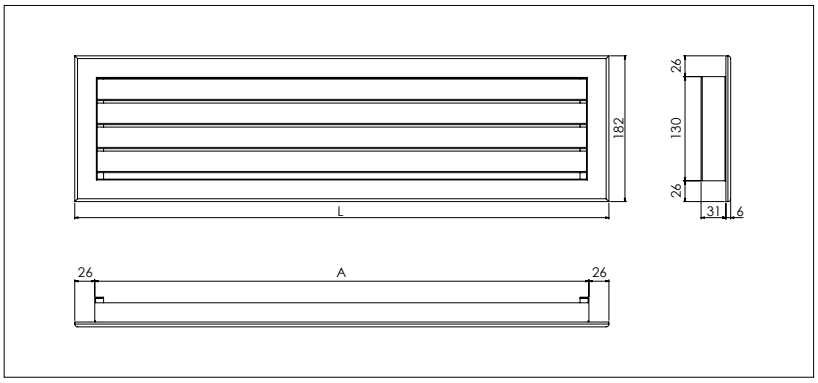


AIR INTAKE GRILLE FOR TELESCOPIC EXTENSION SECTION

Return air grille with fixed horizontal blades.
The grille is manufactured from aluminium with anodized finish and is provided with mounting holes for screw fixing (screws not included, to be selected according to the supporting surface).

The grille is available without filter.

Model	L (mm)	A (mm)
2-3-4-5	367	315
2-3-4-5	517	465



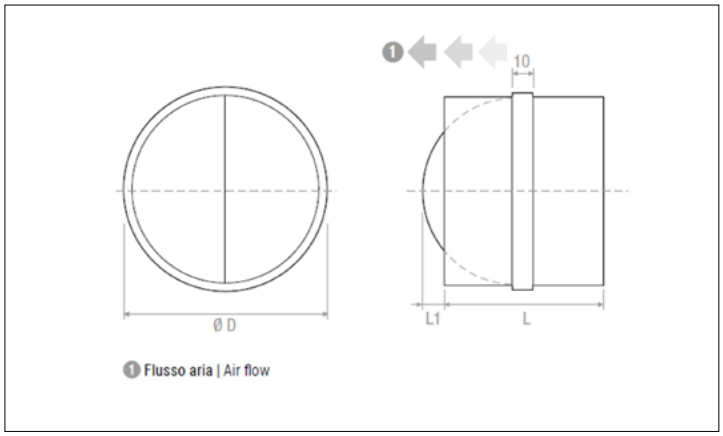
NON-RETURN AIR DAMPER WITH SPRING MECHANISM

The spring-loaded non-return damper, manufactured from galvanized steel sheet, is installed inside a sleeve with connection for Ø160 flexible HVAC ducting. Installed in each supply air duct, it prevents operating fans from drawing air from the supply ducts of non-operating fans. It is supplied loose, to be integrated into the ductwork by the installer.

When the fan coil unit operates with chilled water, it is recommended to externally insulate the damper with anti-condensation material.

NOTE: the damper must always be installed with the blade rotation axis perfectly vertical and in compliance with the blade opening direction (same direction as the airflow).

Model	L (mm)	L1 (mm)	D (mm)
2-3-4-5	130	36	Ø160



ACOUSTIC FLEXIBLE DUCT

Pre-insulated flexible duct with internal micro-perforated aluminium liner for sound attenuation, 25 mm polyester fiber insulation, and reinforced aluminium laminate vapor barrier outer jacket.

Fire reaction classification: C - s1, d0.

The duct is suitable for HVAC air distribution systems, both supply and return, with a nominal internal diameter of Ø160 mm. It is supplied in 10 m coils.

Octave band frequency (Hz)	125	250	500	1000	2000	4000	8000
Acoustic attenuation (dB) (*)	4	6	11	23	32	21	15

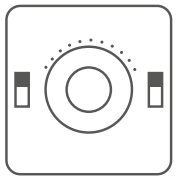
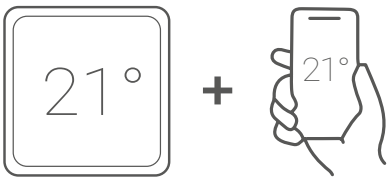
(*) Data refers to a 3 m length of duct.

Airflow (m^3/h)	100	150	200	250	300	350	400
Pressure drop (Pa) (**)	0,3	0,6	1,1	1,8	2,5	3,4	4,5

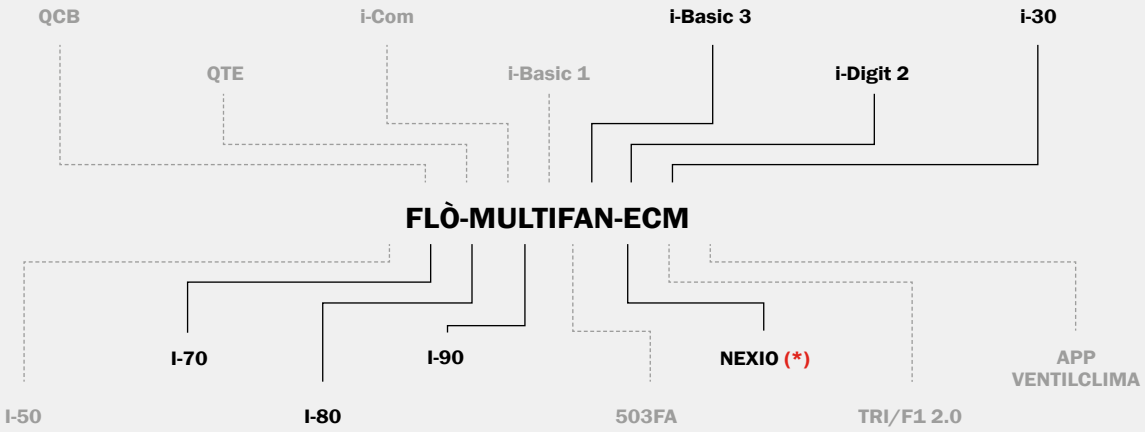
(**) Data refers to a 1 m length of straight duct (no bends).

Minimum bending radius: 100 mm. The installation conditions of the flexible duct can significantly affect the pressure drop. It is recommended to avoid sharp bends and constrictions.

CONTROLLER COMPATIBILITY

	Control	Descrizione - *Description*
TERMOSTATI BASE - *BASIC THERMOSTATS*		
	**QCB**	Controllo base con selettore di velocità e stagione (senza gestione della temperatura ambiente) *Base control with speed and season selector (without room temperature control)*
	QTE	Termostato base elettronico con selettore di velocità e stagione *Base electronic thermostat with speed and season selector*
	i-Com	Controllo base con selettore di velocità e stagione (senza gestione della temperatura ambiente) *Base control with speed and season selector (without room temperature control)*
	i-Basic 1	Termostato base elettronico con selettore di velocità e stagione *Base electronic thermostat with speed and season selector*
	i-Basic 3	Termostato elettronico con selettore di velocità, stagione e DIP-SWITCH di programmazione *Base electronic thermostat with speed and season selector and programming DIP switch*
TERMOSTATI EVOLUTI - *ADVANCED THERMOSTATS*		
	**i-Digit 2**	Cronotermostato elettronico parametrico con diplay LCD e protocollo Modbus *Electronic parametric chronothermostat with LCD display and Modbus protocol*
	i-30	Termostato elettronico parametrico con diplay LCD *Electronic parametric thermostat with LCD display*
	i-50	Termostato elettronico parametrico con diplay LCD *Electronic parametric thermostat with LCD display*
	i-70	Termostato elettronico touch parametrico con diplay LCD, protocollo Modbus e Bacnet *Electronic parametric touch thermostat with LCD display, Modbus and Bacnet protocol*
	503FA	Termostato elettronico parametrico da incasso con diplay LCD *Built-in electronic parametric thermostat with LCD display*
	NEXIO	Controllo elettronico di temperatura con protocollo KNX; abbinabile ad interfaccia da parete touch con display LCD *Electronic temperature control with KNX protocol; compatible with wall-mounted touch interface thermostat with LCD display*
	TRI/F1 2.0	Controllo elettronico di temperatura con protocollo Modbus; abbinabile a telecomando (IR-C) o a interfaccia da parete (RWI ECM1-2) *Electronic temperature control with Modbus protocol; compatible with remote control (IR-C) or wall-mounted interface (RWI ECM1-2)*
TERMOSTATI EVOLUTI + APP - *ADVANCED THERMOSTATS + APP*		
	**i-80**	Cronotermostato elettronico touch parametrico con diplay, protocollo Modbus e connettività Wi-fi per gestione tramite App *Electronic parametric touch chronothermostat with display, Modbus protocol, and Wi-Fi connectivity for App-based control*
	i-90	Cronotermostato elettronico touch parametrico con diplay a colori e connettività Wi-fi per gestione tramite App *Electronic parametric touch chronothermostat with color display and Wi-Fi connectivity for App-based control*
APP VENTILCLIMA - *VENTILCLIMA APP*		
	**APP** VENTILCLIMA	Controllo elettronico di temperatura con connettività Wi-fi per gestione tramite App *Electronic temperature control with Wi-Fi connectivity for App-based management*
SISTEMI DI SUPERVISIONE - BMS *SUPERVISION SYSTEMS*		
	**EFLO**	Sistema di gestione centralizzata di reti di ventilconvettori, idoneo per applicazioni civili e terziarie quali abitazioni, uffici, strutture collettive, B&B e complessi alberghieri *Centralized management system for fan coil networks, designed for residential, office, and hospitality applications, from homes to shared spaces, B&Bs, and large hotels*

CONTROLLER COMPATIBILITY



(*) Installazione a bordo macchina non consentita - *Installation on board the machine is not permitted*

——— Compatibile
Compatible
Compatible
Kompatibel
Compatible

- - - - - - - - Non compatibile
Not compatible
Non compatible
Nicht kompatibel
NO compatible

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ALISEO GROUP

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ICIM UNI EN ISO 9001:2015 CERTIFIED MANAGEMENT SYSTEM

CISQ

CERTIFIED IQNet QUALITY SYSTEM

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