



Maestro

High Pressure Fan Coil Unit with Asynchronous Motor

TECHNICAL LEAFLET

Maestro MTL

High Pressure Fan Coil Unit with Asynchronous Motor



The **Maestro high pressure** fan coils are produced in 7 sizes.

Designed and built for concealed installations, they have small dimensions, are very silent and have a particularly interesting price in relation to their performance (all sizes, even at the lowest speed, have a residual pressure head of at least 160 Pa).

They are suitable for climate control for small and medium commercial and sports environments or for large civil environments and integrate perfectly in regular false ceilings.

The sizes 1÷5 are equipped with **5 speed** fans, 3 of which are connected to the terminal board while the sizes 6-7 are equipped with 3 speed fans.

The base models call for a 4 row coil but upon request, units with 3 row coils or additional coils (for 4 pipe systems) with one or two rows can be provided.

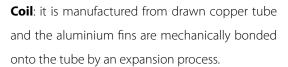
A complete set of accessories solves any type of system problem.

TECHNICAL CHARACTERISTICS

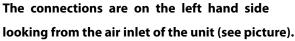


Casing: made of galvanized steel, 1 mm thick for sizes 1÷3 and 1,2 mm for sizes 4÷7, insulated with 10 mm polyolefin (PO) foam (class M1).

Fan assembly: consists of quiet centrifugal fans with two impellers (made of plastic for sizes 1÷5 and made of aluminium for sizes 6÷7) and a directly driven single phase motor (230V 50Hz).



The Maestro Sabiana range is available with the combination of either 3 or 4 row coils (sizes 1÷5) with the possibility to add a 1 or 2 row coil (3+1, 4+1, 3+2, 4+2 versions for 4 pipe systems), and 4 or 6 row coils (sizes 6-7) with the possibility to add a 2 row coil (4+2, 6+2 versions for 4 pipe systems).



On request or on site the connections can be moved to the other side.

The coil is not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion.

Filter: polypropylene cellular fabric regenerating filter.

The filter frame of galvanized steel is inserted into sliding guides fastened to the internal structure for easy insertion and removal of the filter.

Condensate collection tray: made from galvanized steel insulated with 3 mm polyolefin (PO) foam (class M1).

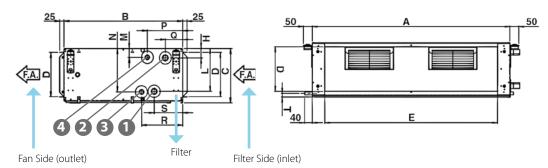
All range is compliant with the new (EU) Regulation No. 327/2011 which requires very low electric consumption ratings in relation to performances provided.



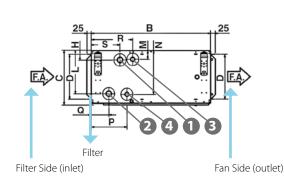


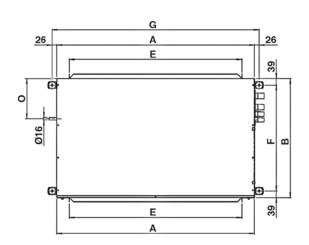
Maestro MTL | dimensions, weight, water content

Left connections (standard)



Right connections (on request)





Model		Dimensi	ons (mm)	
Model	0	P	Q	R
MTL 1÷5	209	103	169	243
MTL 6-7	304	154	264	338

													Co	oil	
Model					D	imensio	ns					Ma	ain	Addit	tional
Model	Α	В	С	D	Е	F	G	Н	L	M	N	1	2	3	4
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	IN	OUT	IN	OUT
MTL 1	1133	698	310	255	991	620	1185	54	245	50	249	3/4"	3/4"	3/4"	3/4"
MTL 2	1133	698	310	255	991	620	1185	54	245	50	249	1"	1″	3/4"	3/4"
MTL 3	1133	698	360	305	991	620	1185	54	295	50	299	1"	1″	3/4"	3/4"
MTL 4	1445	853	360	293	1302	775	1497	58	291	54	295	1 1/4"	1 1/4"	1″	1"
MTL 5	1445	853	435	368	1302	775	1497	58	367	54	370	1 1/4"	1 1/4"	1″	1"
MTL 6	1535	1100	488	421	1393	1022	1587	59	416	55	421	1 1/4"	1 1/4"	1″	1"
MTL 7	1535	1100	588	521	1393	1022	1587	59	516	55	521	1 1/4"	1 1/4"	1"	1"

Model		Weight	without	packag	ing (kg)			Weig	ht with p	ackagin	ng (kg)		Wa	ter con	tent (lit	res)
Model	3R	3+1R	3+2R	4R	4+1R	4+2R	3R	3+1R	3+2R	4R	4+1R	4+2R	3R	4R	1R	2R
MTL 1	45	48	50	47	50	51	48	51	53	50	53	54	2,0	2,6	0,9	1,5
MTL 2	46	50	52	48	51	53	49	53	55	51	54	56	2,9	3,7	1,1	1,8
MTL 3	54	58	60	56	60	62	57	61	63	59	63	65	3,5	4,6	1,4	2,4
MTL 4	75	80	83	78	83	86	79	84	87	82	87	90	4,7	6,0	2,0	3,2
MTL 5	85	90	94	88	94	98	89	94	98	92	98	102	5,7	7,1	2,7	4,1
	40		4 - 20	CD.		C . 2D	40		4 - 2D	CD.		C - 2D	40		D.	20
	4R		4+2R	6R	,	6+2R	4R		4+2R	6R		6+2R	4R	6	R	2R
MTL 6	124	1	134	130		140	127		137	133		143	7.6	1 1 1	1.1	4.1

155

151

163

13,8

5,5

MTL 7

152

148

160





Units with 4 row coil

2 pipe units. The following standard rating conditions are used:

COOLING (summer mode)

Water temperature:

Entering air temperature: +27 °C d.b. +19°C w.b. +7 °C E.W.T. +12°C L.W.T. **HEATING** (winter mode)

Entering air temperature: +20 °C

Water temperature: +45 °C E.W.T. +40 °C L.W.T.

Model MTL		14		24		34		44			54 (**)				54 (**)	7	74 (**)			
Speed (E)		1	3	5	1	3	5	1	3	5	1	3	5	1	3	5	1	3	5	1	3	5
Air flow (E)	m³/h	790	1125	1410	840	1410	1825	1710	2075	2440	2070	2580	3020	2740	3280	3850	1880	3385	4800	3925	5070	7100
Available pressure (E)	Pa	25	50	75	15	50	80	30	50	70	35	50	70	35	50	70	150	150	150	150	150	150
Cooling total emission (E)	kW	4,17	5,21	5,92	4,99	7,01	8,15	8,71	9,76	10,71	10,90	12,40	13,60	14,54	16,19	17,76	12,42	18,73	22,89	21,54	25,33	30,63
Cooling sensible emission (E)	kW	3,25	4,26	5,03	3,66	5,48	6,62	6,67	7,68	8,65	8,25	9,70	10,90	11,21	12,80	14,37	8,88	14,16	17,98	16,05	19,46	24,53
Heating (E)	kW	4,98	6,44	7,67	5,57	8,27	10,10	10,20	11,75	13,19	12,79	14,92	16,53	17,67	20,32	22,93	20,86	33,52	43,60	39,34	47,85	61,14
Dp Cooling (E)	kPa	5,1	7,6	9,6	6,9	12,7	16,8	16,0	19,8	23,4	13,9	17,7	20,9	13,3	16,3	19,4	7,4	15,3	22,6	14,4	19,3	27,6
Dp Heating (E)	kPa	5,2	8,2	11,3	6,2	17,0	18,3	15,6	23,0	24,8	13,4	17,7	21,3	14,2	18,3	22,8	3,9	9,1	14,7	8,5	12,1	18,8
Fan (E)	W	115	154	191	170	230	285	350	420	470	390	490	570	500	617	760	574	778	1304	1518	1758	2460
Sound power outlet (E)	dB(A)	44	52	58	44	56	61	57	62	65	59	63	66	63	67	70	63	71	77	71	75	81
Sound power inlet + radiated (E)	dB(A)	47	55	60	47	59	64	60	64	67	61	65	68	65	69	72	-	-	-	-	-	-
Sound pressure outlet (*)	dB(A)	35	43	49	35	47	52	48	53	56	50	54	57	54	58	61	54	62	68	62	66	72
Sound pressure inlet + radiated (*)	dB(A)	38	46	51	38	50	55	51	55	58	52	56	59	56	60	63	-	-	-	-	-	-
Plenum code (E)		9	03420	0	9	03420	00	9	03422	0	9	03423	0	ç	03424	0	9	03428	0	9	903429	0

Units with additional coil

4 pipe units. The following standard rating conditions are used:

COOLING (summer mode)

Entering air temperature: $+27 \,^{\circ}\text{C} \, \text{d.b.}$ +19 °C w.b.

Water temperature: +7 °C E.W.T. +12 °C L.W.T. **HEATING** (winter mode)

Entering air temperature: +20 °C

+65 °C E.W.T. +55 °C L.W.T. Water temperature:

Model MTL		14+1		24+1		34+1		44+1			54+1 (**)			64	1+2 (³	**)	74	4+2 (³	**)			
Speed (E)		1	3	5	1	3	5	1	3	5	1	3	5	1	3	5	1	3	5	1	3	5
Air flow (E)	m³/h	770	1090	1350	840	1390	1775	1680	2045	2390	2055	2545	2960	2700	3245	3800	1860	3330	4680	3920	5040	6980
Available pressure (E)	Pa	25	50	75	15	50	80	30	50	70	35	50	70	35	50	70	150	150	150	150	150	150
Cooling total emission (E)	kW	4,09	5,11	5,79	4,99	6,96	8,03	8,61	9,67	10,58	10,85	12,34	13,46	13,75	15,31	16,73	12,33	18,56	22,52	21,53	25,25	30,36
Cooling sensible emission (E)	kW	3,18	4,16	4,87	3,66	5,42	6,49	6,58	7,60	8,51	8,21	9,61	10,72	10,62	12,13	13,56	8,81	14,02	17,62	16,05	19,39	24,28
Heating (E)	kW	3,96	4,87	5,47	4,63	6,28	7,16	7,62	8,47	9,20	9,83	11,07	12,00	12,67	14,00	15,28	19,81	29,78	37,13	35,50	41,88	51,31
Dp Cooling (E)	kPa	4,90	7,30	9,20	6,90	12,50	16,30	15,70	19,40	22,90	13,80	17,40	20,50	12,00	14,70	17,40	7,30	15,00	22,00	14,40	19,10	27,10
Dp Heating (E)	kPa	11,7	17,0	21,0	14,5	25,2	31,9	15,9	19,3	22,3	27,6	34,1	39,5	26,0	31,1	36,3	11,9	24,9	37,0	23,8	32,0	46,1
Fan (E)	W	115	154	191	170	230	285	350	420	470	390	490	570	500	617	760	565	750	1327	1499	1727	2376
Sound power outlet (E)	dB(A)	44	52	58	44	56	61	57	62	65	59	63	66	63	67	70	63	71	77	71	75	81
Sound power inlet + radiated (E)	dB(A)	47	55	60	47	59	64	60	64	67	61	65	68	65	72	72	-	-	-	-	-	-
Sound pressure outlet (*)	dB(A)	35	43	49	35	47	52	48	53	56	50	54	57	54	58	61	54	62	68	62	66	72
Sound pressure inlet + radiated (*)	dB(A)	38	46	51	38	50	55	51	55	58	52	56	59	56	60	63	-	-	-	-	-	-
Plenum code (E)		9	03420	0	9	03420	0	9	03422	0	9	03423	0	g	03424	0	g	03428	0	9	903429	0

⁽E) = EUROVENT certified performance.

^{(*) =} The sound pressure levels are 9 dB(A) lower than the sound power levels and apply to the reverberant field of a 100 m³ room and a reverberation time of 0.5 sec.

^{(**) =} Models not covered by EUROVENT certification program.

Maestro MTL | ACCESSORIES

Kit 230V

Main and auxiliary coil valve kit

(to be used only with ON/OFF 230 V controls: QCV-MB, WM-T and WM-TQR)

230 V, ON-OFF valve.



Kit 24V

Main and auxiliary coil valve kit

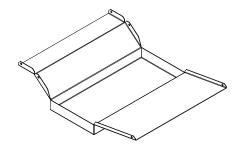
(to be used only with QCV-MB modulating valve control board)

Valve with 3 points - 24 Volt actuator.



BCM

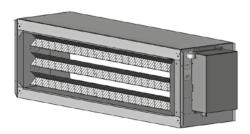
External auxiliary condensate collection tray



BEM

Electric coil

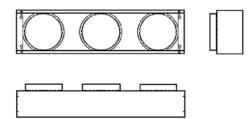
Consists of electric resistances and a security thermostat, which are inside a galvanized steel and insulated casing.



PMM

Intake/supply spigot plenum

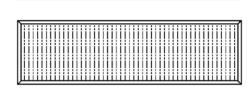
Intake/supply spigot plenum with 3 spigots (Sizes 1 - 2 - 3) or 4 spigots (Sizes 4 - 5)..



SFM

G3 synthetic filter

The filter is a washable synthetic fibre, flame-proof according to Class F1 DIN 53438. Efficiency of ASHRAE 84%, Eurovent EU3.

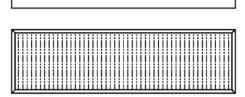




SFM-F6 **F6 Synthetic Filter**

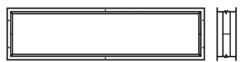
(for sizes $6 \div 7$ only)

High efficiency compact filter in glass microfiber paper, Class F6 according to EN779.



GAV Antivibrating connection

Intake/supply antivibrating connection, made of two galvanized frames and a PVC flexible connection.



Electronic controls included

СОМ	Speed selector with 4 positions: OFF, first speed, second speed, third speed
WM-3V	3 speed control
WM-T	3 speed control with electronic thermostat and manual summer/winter switch
WM-TQR	3 speed control with electronic thermostat and centralized/manual summer/winter switch
SEL-S	Receiving board for centralized control

Electronic controls for MB boards

QCV-MB	MB version control board (T-MB wall control included)
PSM-DI	Multifunction control (to be used with QCV-MB control board only)

	Sabianet management system for a network of fan coils
Sabianet	Sabianet (to be used with QCV-MB control board only)
Router-S	Router for Sabianet (default) or for BMS systems not provided by Sabiana
SIOS	Relay output board for Sabianet

Maestro MTL-ECM

High Pressure Fan Coil Unit with EC Brushless Electronic Motor and Inverter Board



The Maestro MTL-ECM high pressure fan coils are produced in 4 sizes.

Designed and built for concealed installations, they have small dimensions, are very silent and have a particularly interesting price in relation to their performance (all sizes, even at the lowest speed, have a residual pressure head of at least 160 Pa).

They are suitable for climate control for small and medium commercial and sports environments or for large civil environments and integrate perfectly in regular false ceilings.

In high pressure ducted fan coils, the ability to **continuously** vary the air flow gives great regulation and control flexibility, at the same time ensuring excellent environmental conditions and extremely low electrical consumption.

The ECM range makes use of the excellent experience gained with the SkyStar Cassette fan coils with inverter board, first in the world in production since 2009, and which have had great success on all markets.

The innovative electronic motor with permanent magnets, is controlled electronic board (inverter).

TECHNICAL CHARACTERISTICS



The air flow rate can be varied in continuously by means of a 1-10 V signal generated by Sabiana controls or by independent control systems.

The continuous air flow control improves the acoustic comfort and allows a more punctual reply to the variation of the thermal loads and a greater stability of the requested ambient temperature.

The extreme efficiency, also at low speed, makes possible a great reduction in electric consumption (in comparison to the yet efficient MTL motor) under normal operating conditions. The excellent values of the MTL-ECM range have been maintained in all working conditions, without any resonance phenomenon at any frequency.

The full compliance with the Electromagnetic Compatibility Directive and with the other severe Standards in force is certified by an independent institute.

For the technical characteristics of the various components refer to High Pressure Fan Coil Maes-

tro MTL unit, except for **Electronic motor**: three phase permanent magnet electronic one that is controlled with current reconstructed according to a **BLAC** sinusoidal wave.

The inverter board that controls the motor operation is powered by 230 Volt, single-phase and, with a switching system, it generates a three-phase frequency modulated, wave form power supply. The electric power supply required for the machine is therefore single-phase with voltage of 230 V and frequency of 50 - 60 Hz.

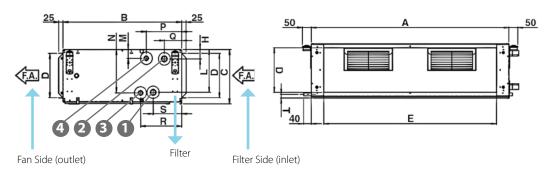
All range is compliant with the new (EU) Regulation No. 327/2011 which requires very low electric consumption ratings in relation to performances provided.



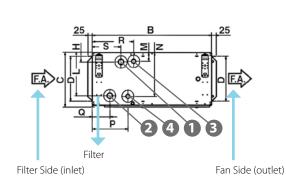


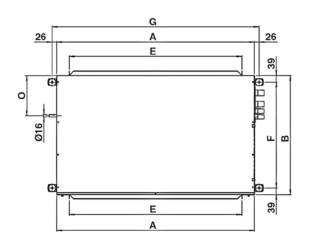
Maestro MTL-ECM | dimensions, weight, water content

Left connections (standard)



Right connections (on request)





Model		Dimensi	ons (mm))
Model	0	Р	Q	R
MTL-ECM 1÷4	209	103	169	243

						imensio							Co	Coil		
Model					U	imensio	115					Ma	ain	Addit	ditional	
Wiodei	Α	В	C	D	Е	F	G	Н	L	М	N	1	2	3	4	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	IN	OUT	IN	OUT	
MTL-ECM 1	1133	698	310	255	991	620	1185	54	245	50	249	3/4"	3/4"	3/4"	3/4"	
MTL-ECM 2	1133	698	310	255	991	620	1185	54	245	50	249	1″	1″	3/4"	3/4"	
MTL-ECM 3	1133	698	360	305	991	620	1185	54	295	50	299	1"	1″	3/4"	3/4"	
MTL-ECM 4	1445	853	360	293	1302	775	1497	58	291	54	295	1 1/4"	1 1/4"	1″	1″	

Model		Weight	without	packag	ing (kg)			Weigh	nt with p	ackagir		Water content (litri)				
Wiodei	3R	3+1R	3+2R	4R	4+1R	4+2R	3R	3+1R	3+2R	4R	4+1R	4+2R	3R	4R	1R	2R
MTL-ECM 1	45	48	50	47	50	51	48	51	53	50	53	54	2,0	2,6	0,9	1,5
MTL-ECM 2	46	50	52	48	51	53	49	53	55	51	54	56	2,9	3,7	1,1	1,8
MTL-ECM 3	54	58	60	56	60	62	57	61	63	59	63	65	3,5	4,6	1,4	2,4
MTL-ECM 4	75	80	83	78	83	86	79	84	87	82	87	90	4,7	6,0	2,0	3,2





Units with 4 row coil

2 pipe units. The following standard rating conditions are used:

COOLING (summer mode)

Water temperature:

Entering air temperature: +27 °C d.b. +19°C w.b. +7 °C E.W.T. +12°C L.W.T. **HEATING** (winter mode)

Entering air temperature: +20 °C

Water temperature: +45 °C E.W.T. +40 °C L.W.T.

Model MTL-ECM			14			24			34		44			
Tensione Pilotaggio Inverter (E)	٧	4,5	7	9	4	6	8	4,5	6,5	8	5,5	7,5	10	
Speed (E)		MIN	MED	мах	MIN	MED	мах	MIN	MED	MAX	MIN	MED	MAX	
Air flow (E)	m³/h	780	1100	1310	940	1360	1780	1380	1950	2390	1840	2440	3080	
Available pressure (E)	Pa	26	50	70	24	50	85	25	50	75	28	50	80	
Cooling total emission (E)	kW	4,14	5,11	5,61	5,44	6,86	7,94	7,87	9,70	10,81	10,47	12,39	13,99	
Cooling sensible emission (E)	kW	3,24	4,18	4,72	4,08	5,36	6,44	5,93	7,61	8,72	7,90	9,65	11,23	
Heating (E)	kW	5,18	6,80	7,76	6,42	8,64	10,62	8,64	11,25	13,06	12,13	15,15	18,08	
Dp Cooling (E)	kPa	4,9	7,2	8,7	7,7	11,8	15,8	11,7	17,4	21,6	12,2	16,9	21,7	
Dp Heating (E)	kPa	5,3	8,7	11,1	7,5	12,9	18,8	10,1	16,4	21,4	11,6	17,4	23,9	
Fan (E)	W	40	88	144	44	110	225	80	195	340	110	253	530	
Sound power outlet (E)	dB(A)	45	52	59	45	55	61	52	60	64	55	62	67	
Sound power inlet + radiated (E)	dB(A)	48	55	61	48	57	63	55	62	66	58	64	69	
Sound pressure outlet (*)	dB(A)	36	43	50	36	46	52	43	51	55	46	53	58	
Sound pressure inlet + radiated (*)	dB(A)	39	46	52	39	48	54	46	53	57	49	55	60	
Plenum code (E)		9034200				9034200			9034220		9034230			

Units with additional coil

4 pipe units. The following standard rating conditions are used:

COOLING (summer mode)

Entering air temperature: $+27 \,^{\circ}\text{C} \, \text{d.b.}$ +19 °C w.b. Water temperature:

+7 °C E.W.T. +12 °C L.W.T. **HEATING** (winter mode)

Entering air temperature: +20 °C

+65 °C E.W.T. +55 °C L.W.T. Water temperature:

Model MTL-ECM		14+1			24+1			34+1			44+1		
Tensione Pilotaggio Inverter (E)	٧	4,5	7	9	4	6	8	4,5	6,5	8	5,5	7,5	10
Speed (E)		MIN	MED	MAX	MIN	MED	MAX	MIN	MED	MAX	MIN	MED	MAX
Air flow (E)	m³/h	750	1040	1250	920	1340	1750	1350	1920	2350	1810	2400	3040
Available pressure (E)	Pa	26	50	72	24	50	85	25	50	75	28	50	80
Cooling total emission (E)	kW	4,04	4,94	5,46	5,36	6,79	7,87	7,76	9,59	10,70	10,36	12,27	13,90
Cooling sensible emission (E)	kW	3,14	4,01	4,55	4,01	5,30	6,35	5,83	7,51	8,61	7,79	9,53	11,13
Heating (E)	kW	3,43	4,18	4,62	4,33	5,42	6,25	5,90	7,20	8,02	8,06	9,48	10,75
Dp Cooling (E)	kPa	4,6	6,8	8,3	7,5	11,6	15,5	11,4	17,1	21,2	12,0	16,6	21,4
Dp Heating (E)	kPa	9,4	13,4	16,0	13,6	20,4	26,4	9,9	14,3	17,3	19,6	26,3	33,0
Fan (E)	W	40	88	144	44	115	225	80	200	340	110	253	530
Sound power outlet (E)	dB(A)	45	52	59	45	55	61	52	60	64	55	62	67
Sound power inlet + radiated (E)	dB(A)	48	55	61	48	57	63	55	62	66	58	64	69
Sound pressure outlet (*)	dB(A)	36	43	50	36	46	52	43	51	55	46	53	58
Sound pressure inlet + radiated (*)	dB(A)	39	46	52	39	48	54	46	53	57	49	55	60
Plenum code (E) 9034200			9034200			9034220			9034230				

⁽E) = EUROVENT certified performance.

^{(*) =} The sound pressure levels are 9 dB(A) lower than the sound power levels and apply to the reverberant field of a 100 m³ room and a reverberation time of 0.5 sec.

Maestro MTL-ECM | ACCESSORIES

Kit 230V

Main and auxiliary coil valve kit

(to be used only QCV-MB control board, WM-AU and T-MB controls)

230 V, ON-OFF valve.



Kit 24V

Main and auxiliary coil valve kit

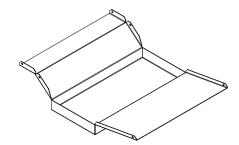
(to be used only with QCV-MB control board)

Valve with 3 points - 24 Volt actuator.



BCM

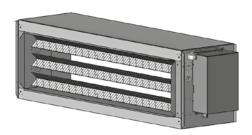
External auxiliary condensate collection tray



BEM

Electric coil

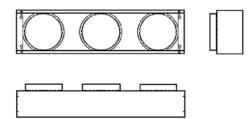
Consists of electric resistances and a security thermostat, which are inside a galvanized steel and insulated casing.



PMM

Intake/supply spigot plenum

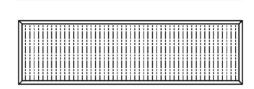
Intake/supply spigot plenum with 3 spigots (Sizes 1 - 2 - 3) or 4 spigots (Sizes 4).



SFM

G3 synthetic filter

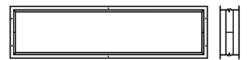
The filter is a washable synthetic fibre, flame-proof according to Class F1 DIN 53438. Efficiency of ASHRAE 84%, Eurovent EU3.





GAV Antivibrating connection

Intake/supply antivibrating connection, made of two galvanized frames and a PVC flexible connection.



Wall electronic controls

Standard models			
WM-AU	Automatic speed control with electronic thermostat and summer/winter switch (to be used with UPM-AU or UP-AU only)		
Т-МВ	Wall control (to be used with UPM-AU or UP-AU only)		
UPMM-AU	Power unit for WM-AU and T-MB remote controls, fitted on the unit		
UP-AU	Power unit for WM-AU and T-MB remote controls, not fitted on the unit		

Electronic controls for MB boards

QCV-MB	MB version control board (T-MB wall control included)			
PSM-DI	Multifunction control (to be used with QCV-MB control board only)			

Sabianet management system for a network of fan coils				
Sabianet	Sabianet (to be used with QCV-MB control board only)			
Router-S	Router for Sabianet (default) or for BMS systems not provided by Sabiana			
SIOS	Relay output board for Sabianet			



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