



Cert. n° 0545



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High Wall Fan Coil Carisma Fly Carisma Fly-ECM

TECHNICAL CATALOG

Carisma Fly

CONTENTS

CVP Version

- Versions and Main Components **Page 3**
- Dimension, Weight, Water content **Page 4**
- EUROVENT certifications **Page 6**
- Working conditions **Page 7**
- Emissions **Page 8**
- Water side pressure drop **Page 10**
- Accessories **Page 11**
- Wall electronic controls **Page 13**
- Controls and units T and MB versions **Page 14**

CVP-ECM Version

- Versions and Main Components **Page 15**
- Dimension, Weight, Water content **Page 16**
- EUROVENT certifications **Page 18**
- Working conditions **Page 19**
- Emissions **Page 20**
- Models with electric heater **Page 22**
- Water side pressure drop **Page 23**
- Accessories **Page 23**
- Fly ECM configuration **Page 25**
- Wall electronic controls **Page 26**
- Controls and units T and MB versions **Page 27**

INTRODUCTION

Carisma Fly is the high wall fan coil unit designed and manufactured in Italy by Sabiana, in 4 sizes and many different models.

Fly is easy to install like a standard fan coil: without decreasing the emission and without any extra frame, 2 way or 3 way valves and condensate pump can be mounted into the casing.

The modern and appealing design of the unit in RAL 9003 colour allows the use of Fly in any environment.

Fly is available with standard AC motors or low energy EC motors and in the following versions: with wired wall control, infra-red remote control, MB electronic board for Modbus management and electric heating coil.

The units are for 2 pipe installations only.

All the Fly models perform very low electric consumption and extremely quite sound levels according to the request of today's new projects.



Sabiana take part to the Eurovent program of fan coil performance certification.
The official figures are published in the Eurovent web sites www.eurovent-certification.com.
The tested performances are:

- Cooling total emission at the following conditions:
 - water temperature +7°C E.W.T. +12°C L.W.T.
 - air temperature +27°C dry bulb +19°C wet bulb
- Heating emission (2-pipe units) at the following conditions:
 - water temperature +45°C E.W.T. +40°C L.W.T.
 - air temperature +20°C
- Fan absorption
- Water pressure drop
- Cooling sensible emission at the following conditions:
 - water temperature +7°C E.W.T. +12°C L.W.T.
 - air temperature +27°C dry bulb +19°C wet bulb
- Sound power

FLY MODELS WITHOUT ELECTRIC HEATER

All versions are available without valves, with 2 way valve or with 3 way valve fitted in the unit.
There are four sizes available in the following versions:

CVP	without infra-red remote control and without valve
CVP-2V	without infra-red remote control with fitted 2 way valve
CVP-3V	without infra-red remote control with fitted 3 way valve
CVP-T	with infra-red remote control and without valve
CVP-T-2V	with infra-red remote control with fitted 2 way valve
CVP-T-3V	with infra-red remote control with fitted 3 way valve
CVP-MB	with MB electronic board and without valve
CVP-MB-2V	with MB electronic board with fitted 2 way valve
CVP-MB-3V	with MB electronic board with fitted 3 way valve

CONSTRUCTIONAL FEATURES OF THE MAIN COMPONENTS

Casing

Made of auto-extinguishing ABS UL94 HB plastic with high specifications and great resistance to aging.
The diffusion flap is adjusted manually in CVP version, with remote control in CVP-T version and with T-MB control in CVP-MB version.

Air Filter

Washable-regenerable synthetic filter, readily accessible.

Fan Assembly

Made of plastic tangential fan.

Electric motor

The motor is for single phase supply and has six speeds, three of which are connected, with capacitor. The motor is fitted on sealed for life bearings and is secured on anti-vibration and self-lubricating mountings. Internal thermal protection with automatic reset, protection IP 20, class B. The speeds connected in the factory are indicated by "MIN, MED and MAX" in the following tables.

Heat exchange coil

It is manufactured from drawn copper tube and the aluminium fins are mechanically bonded onto the tube by an expansion process. The coil has two 1/2 inch BSP internal connections and 1/8 inch BSP air vent and drain.

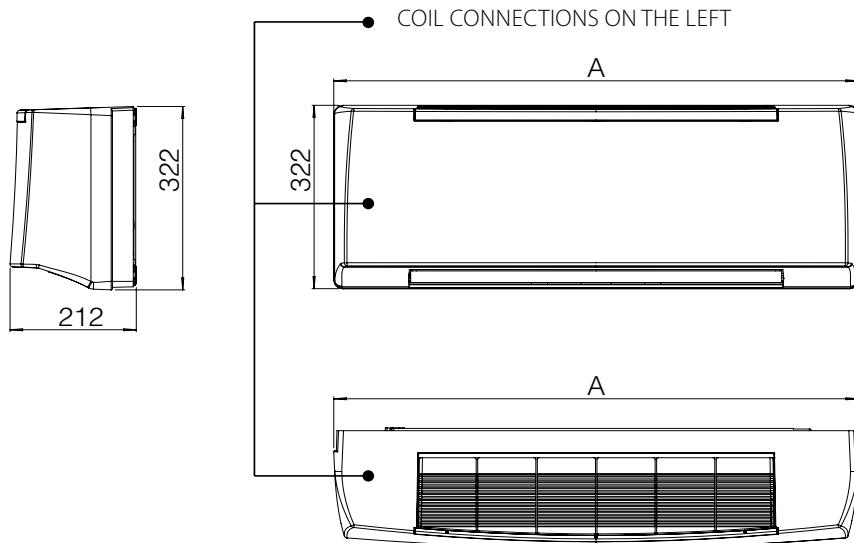
The heat exchanger is not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion. The connections are on the left side facing the unit only.

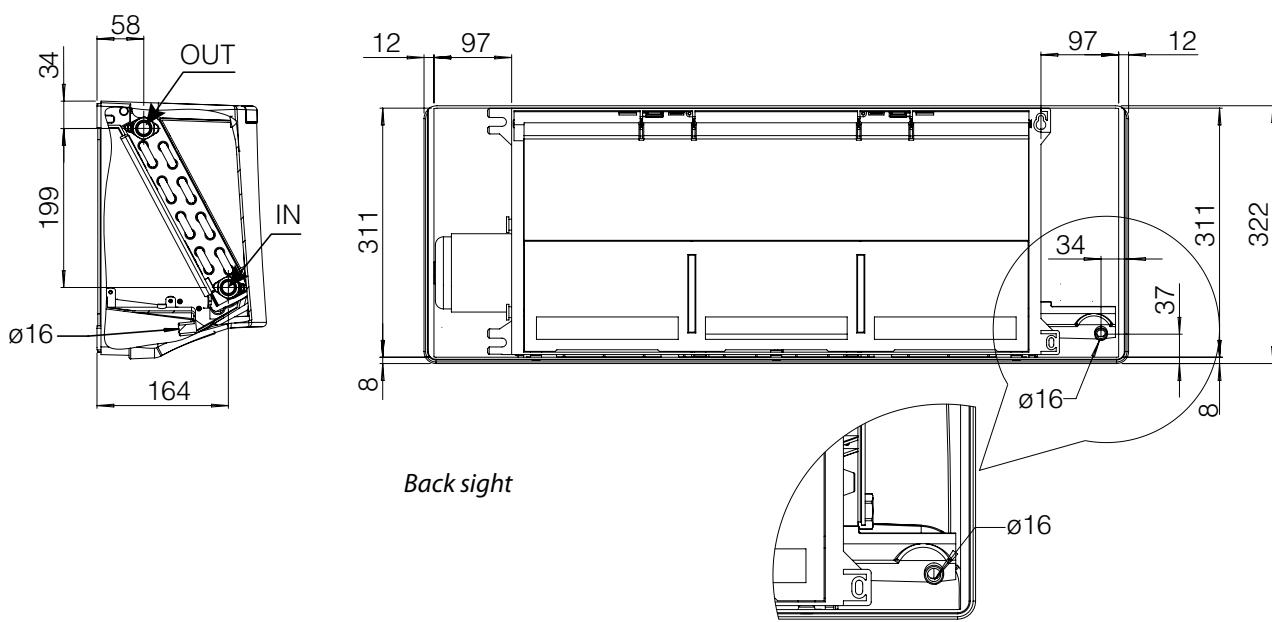
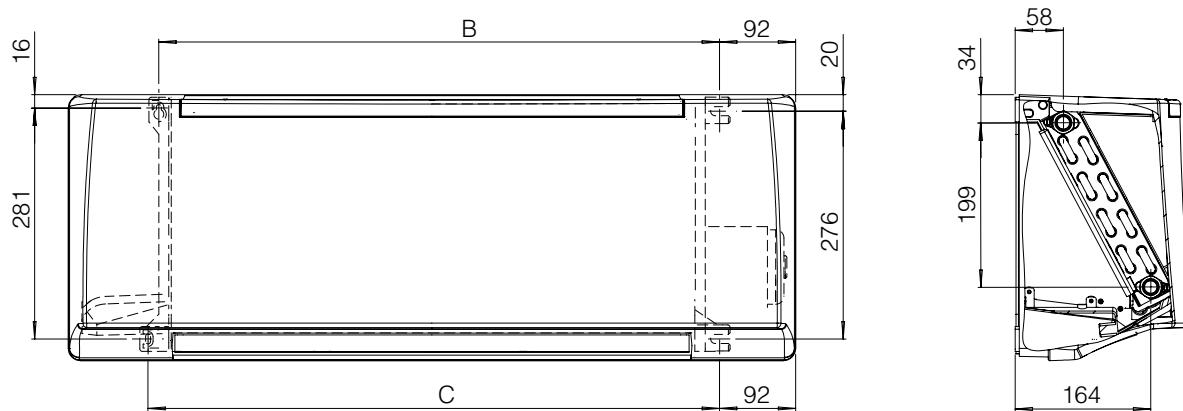
Condensate Collection Tray

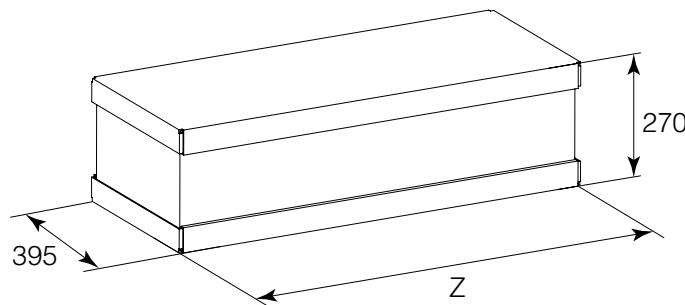
Made from polypropylene; the outside diameter of the condensate discharge pipe is 16mm.

Installation template

A cardboard installation template is supplied with every unit to help the mounting on the wall.


MOUNTING DIMENSION



**DIMENSION (mm)**

MODEL	CVP 1	CVP 2	CVP 3	CVP 4
A	880	880	1185	1185
B	678	678	983	983
C	691	691	996	996
Z	950	950	1255	1255

WEIGHT (kg)

MODEL	Weight packed unit				Weight unpacked unit			
	CVP 1	CVP 2	CVP 3	CVP 4	CVP 1	CVP 2	CVP 3	CVP 4
without valve	12	12	16	16	10	10	13	13
with valve	13	13	17	17	11	11	14	14

WATER CONTENT (l)

MODEL	CVP 1	CVP 2	CVP 3	CVP 4
litres	0,85	0,85	1,28	1,28



Technical features

2-pipe units

The following standard rating conditions are used:

COOLING (summer operation)

Entering air temperature: + 27°C d.b. / + 19°C w.b.

Water temperature: + 7°C E.W.T. / + 12°C L.W.T.

HEATING (winter operation)

Entering air temperature: + 20°C

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

MODEL		CVP 1						CVP 2					
		1 (E) MIN	2 (E) MED	3 MAX	4 (E) MIN	5 MED	6 MAX	1 (E) MIN	2 MED	3 (E) MAX	4 MIN	5 (E) MAX	6
Air flow	m³/h	205	270	340	375	470	500	250	305	365	400	480	545
Cooling total emission (E)	kW	1,23	1,49	1,74	1,85	2,13	2,20	1,42	1,62	1,82	1,93	2,16	2,32
Cooling sensible emission (E)	kW	0,91	1,13	1,34	1,44	1,70	1,77	1,06	1,23	1,41	1,51	1,73	1,89
Heating (E)	kW	1,34	1,68	2,02	2,18	2,58	2,71	1,58	1,85	2,13	2,29	2,62	2,88
ΔP Cooling (E)	kPa	4,8	6,8	9,0	10,1	12,9	13,8	6,2	7,9	9,8	10,8	13,2	15,1
ΔP Heating (E)	kPa	4,5	6,8	9,4	10,8	14,7	15,9	6,1	8,1	10,4	11,8	15,1	17,8
Fan (E)	W	12	14	17	18	24	30	12	14	18	20	24	32
Sound power (E)	Lw dB(A)	35	41	46	48	52	53	39	43	47	49	53	55
Sound pressure (*)	Lp dB(A)	26	32	37	39	43	44	30	34	38	40	44	46

MODEL		CVP 3						CVP 4					
		1 (E) MIN	2 (E) MED	3 MAX	4 (E) MIN	5 MED	6 MAX	1 MIN	2 (E) MED	3 MAX	4 (E) MIN	5 MED	6 (E) MAX
Air flow	m³/h	280	375	480	545	730	780	300	440	500	611	675	790
Cooling total emission (E)	kW	1,87	2,30	2,75	3,00	3,59	3,73	1,97	2,60	2,83	3,23	3,43	3,76
Cooling sensible emission (E)	kW	1,33	1,67	2,03	2,24	2,77	2,90	1,41	1,91	2,10	2,44	2,62	2,93
Heating (E)	kW	1,89	2,37	2,93	3,23	4,04	4,24	2,00	2,73	3,02	3,53	3,80	4,28
ΔP Cooling (E)	kPa	11,2	16,2	22,5	26,3	36,4	39,1	14,1	23,0	27,2	34,0	38,5	45,1
ΔP Heating (E)	kPa	9,1	13,8	20,1	24,1	35,9	39,2	12,7	22,2	26,7	35,2	40,4	49,8
Fan (E)	W	16	21	26	29	38	46	17	23	27	32	35	48
Sound power (E)	Lw dB(A)	35	40	45	48	55	57	36	43	46	51	54	57
Sound pressure (*)	Lp dB(A)	26	31	36	39	46	48	27	34	37	42	45	48

(E) = Eurovent certified performance.

MIN-MED-MAX = Standard connected speeds.

(*) = 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.

Max. entering water temperature..... + 70 °C

Min. entering water temperature..... + 6 °C

for entering water temperatures below + 6°C, contact "SABIANA" technical department

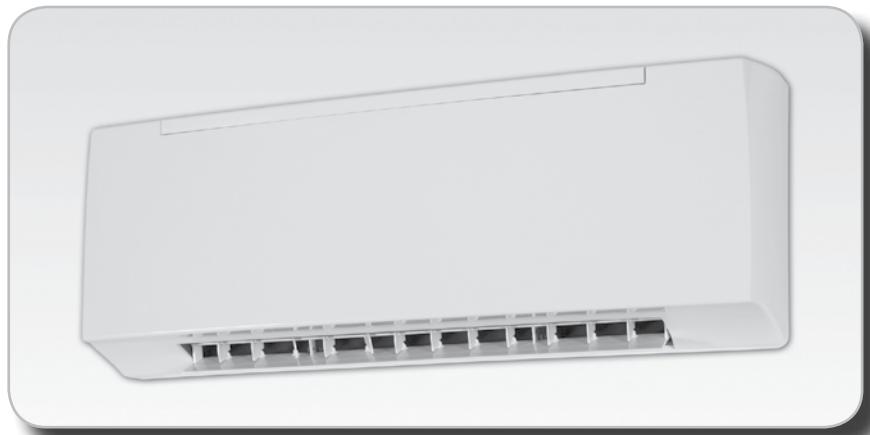
Max. rated pressure 1000 kPa (10 bars)

Installation height (m)

MODEL	CVP 1 ÷ 4
Minimum	2
Maximum	3

Motor electrical data (max. absorption)

MODEL		CVP 1	CVP 2	CVP 3	CVP 4
230/1 50Hz	W	30	32	46	48
	A	0,16	0,16	0,23	0,23





FLY MODELS WITH ELECTRIC HEATER

All versions are available without valves, with 2 way valve or with 3 way valve fitted in the unit.
There are four sizes available in the following versions:

CVP-E	without infra-red remote control and without valve
CVP-E-2V	without infra-red remote control with fitted 2 way valve
CVP-E-3V	without infra-red remote control with fitted 3 way valve
CVP-T-E	with infra-red remote control and without valve
CVP-T-E-2V	with infra-red remote control with fitted 2 way valve
CVP-T-E-3V	with infra-red remote control with fitted 3 way valve
CVP-MB-E	with MB electronic board and without valve
CVP-MB-E-2V	with MB electronic board with fitted 2 way valve
CVP-MB-E-3V	with MB electronic board with fitted 3 way valve

According to the control provided, the electrical heater can be used as an alternative or as a supplement to the hot water; in the first case controls such as WM-T can be chosen, in the second case controls such as WM-TQR.

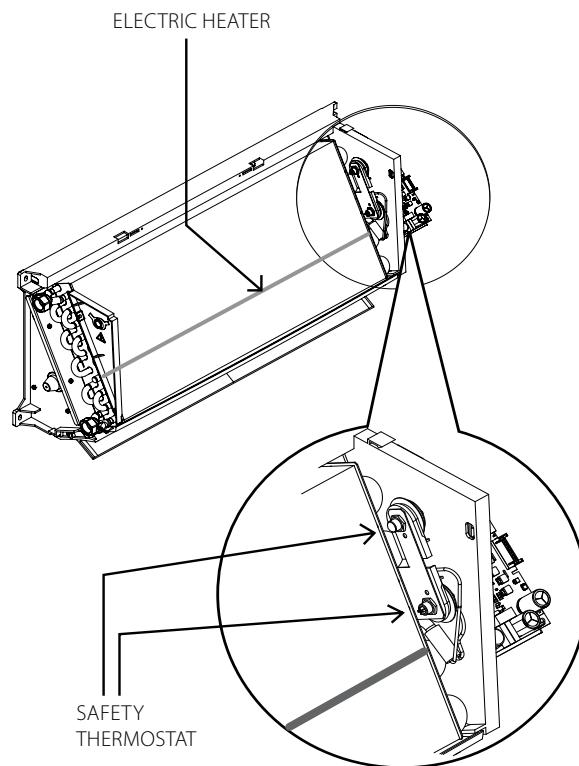
The heater is hermetically sealed and supplied inside the battery pipes and therefore can be only factory mounted.

The electric heaters of the **Fly** units are single phase 230V supply.

The electric heater is fitted with a overheat protection.

The unit is fitted with two safety thermostats:

- one thermostat with manual reset;
- one thermostat with automatic reset.



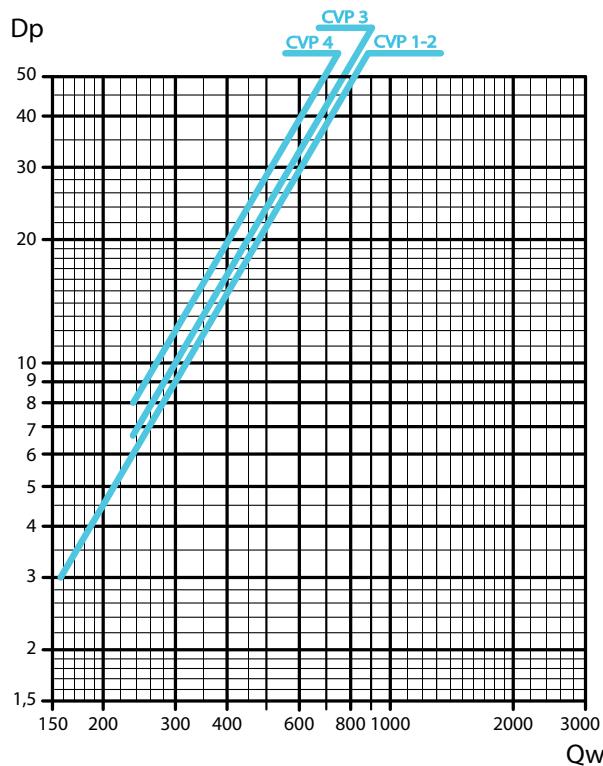
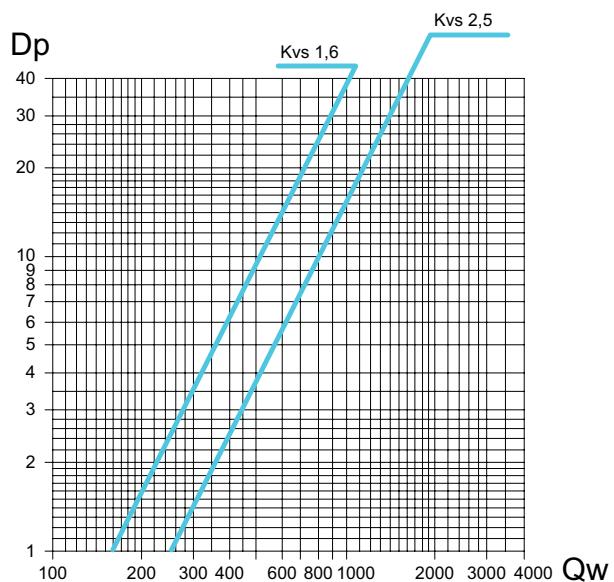
Main technical characteristics

MODEL	CVP 1	CVP 2	CVP 3	CVP 4
<i>Nominal installed power</i>	1000 Watt	1000 Watt	1500 Watt	1500 Watt
<i>Nominal power voltage</i>	230V ~	230V ~	230V ~	230V ~
<i>Number and section of connecting wires</i>	3 x 1,5mm ²			
<i>Current input</i>	4,5 A	4,5 A	7 A	7 A
<i>Recommended fuse (Type gG) for overload protection</i>	6 A	6 A	8 A	8 A

Fly operating limits with electric heater

Max. ambient temperature for **Fly** with electric coil in heating mode: 25°C.

WATER SIDE PRESSURE DROP

Coil pressure drop**Valves pressure drop****Legend****Qw** = water flow (l/h)**Dp** = pressure drop (kPa)

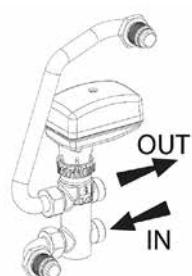
Pressure drop for mean water temperature of 10°C; for different temperatures multiply the pressure drop figure by the K correction factors in the table.

°C	20	30	40	50	60	70	80
K	0,94	0,90	0,86	0,82	0,78	0,74	0,70

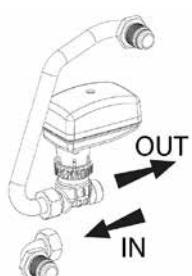
ACCESSORIES

FV3S 3 way valve

Mod.	Valve			ID	Code
	DN	(Ø)	Kvs		Not fitted
1-2	15	1/2"	1,6	FV3S 1-2	9025321H
3-4	20	3/4"	2,5	FV3S 3-4	9025323H

**FV2S 2 way valve**

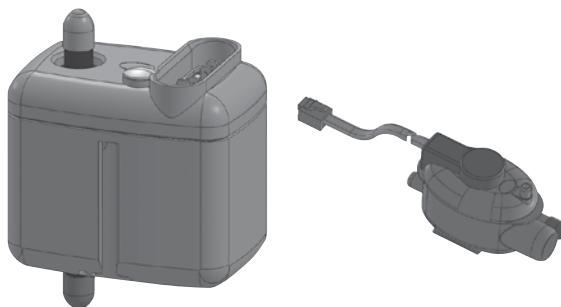
Mod.	Valve			ID	Code
	DN	(Ø)	Kvs		Not fitted
1-2	15	1/2"	1,6	FV2S 1-2	9025311H
3-4	20	3/4"	2,5	FV2S 3-4	9025313H



ACCESSORIES

PCF condensate drain pump

	ID	Code
<i>Fitted on the unit</i>	PCF-M	9025319
<i>Not fitted on the unit</i>	PCF-S	9025309
<i>Height for vertical flow (m)</i>		<i>Water flow (l/h) depending on the length of horizontal flow</i>
	<i>5m</i>	<i>10m</i>
1	7,6	7,2
2	5,6	5,2
3	4,0	3,7
4	3,2	2,9



KIF wall or concealed installation kit

Model	ID	Code
1-2	KIF 1-2	9025191
3-4	KIF 3-4	9025193

Wall or concealed installation kit to be used as an installation template or in case the right connections are previously designed (the units are provided only with left connections).

The technical space within the frame allows to unit the right connections of the installation and the left connections of the unit.

Two variants are available:

- Recessed box installation
- Wall installation with aesthetic frame.

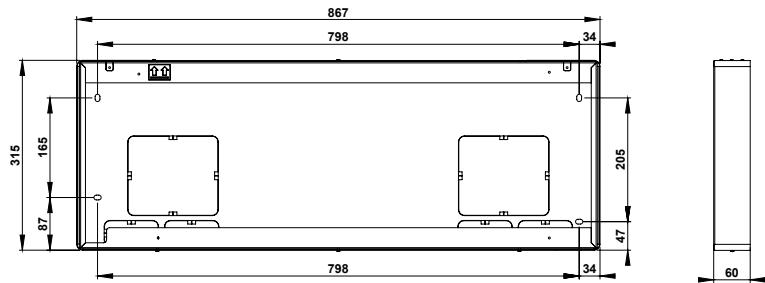
In the first case the frame is recessed, whereas in the second case it fits the unit esthetically.

The aesthetic frame characteristics are:

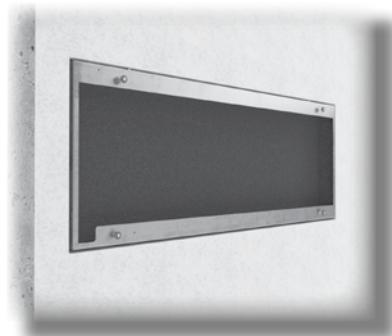
- Galvanized steel painted RAL 9003
- Pre-drilled panels for cables and ductworks
- Internal insulation.

Dimensions

Gr. 1 - 2



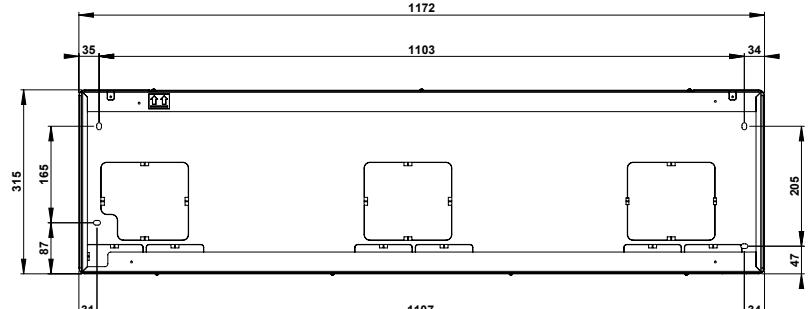
Recessed box installation



Wall installation



Gr. 3 - 4



All the **Carisma Fly CVP** can be supplied with a wide range of electronic wall controls that allows managing one single unit or several units (by using Dip-Switches or the power unit).

The options range from the basic 3 speed control **WM-3V** to the highly sophisticated **WM-T** and **WM-TQR** electronic room thermostats that regulate the room temperature and are suitable when the user wants to set the fan speed.



WM-3V



WM-T



WM-TQR



T2T

All the controls are described in detail in the “Fan Coil Control Range” literature.



All the **CVP** units can be supplied in **T version** and in **MB version**.

- The **T version** includes the infra-red remote control that allows the management of a single unit (the units can not be controlled in a network).
- The **MB version** includes a wide range of controls, including the infra-red remote control (optional extra), which allows to manage one single unit or several units by using the Modbus RTU - RS 485 communication protocol.

Units can be managed according to the Master/Slave logic (up to 20 units) or by supervisory controls.

The system consists in a MB power board (mounted on models CVP-MB) and a series of controls, such as the T-MB wall mounted control, the RT03 infra-red remote control, the PSM-DI multifunction control and the Sabianet supervisory program.



T-MB WALL CONTROL



PSM-DI MULTIFUNCTION CONTROL



RT03 INFRA-RED REMOTE CONTROL



Sabianet SOFTWARE



FLY-ECM MODELS WITHOUT ELECTRIC HEATER

All versions are available without valves, with 2 way valve or with 3 way valve fitted in the unit.
There are four sizes available in the following versions:

CVP-ECM	without infra-red remote control and without valve
CVP-ECM-2V	without infra-red remote control with fitted 2 way valve
CVP-ECM-3V	without infra-red remote control with fitted 3 way valve
CVP-ECM-T	with infra-red remote control and without valve
CVP-ECM-T-2V	with infra-red remote control with fitted 2 way valve
CVP-ECM-T-3V	with infra-red remote control with fitted 3 way valve
CVP-ECM-MB	with MB electronic board and without valve
CVP-ECM-MB-2V	with MB electronic board with fitted 2 way valve
CVP-ECM-MB-3V	with MB electronic board with fitted 3 way valve

CONSTRUCTIONAL FEATURES OF THE MAIN COMPONENTS

Casing

Made of auto-extinguishing ABS UL94 HB plastic with high specifications and great resistance to aging.
The diffusion flap is adjusted manually in CVP version, with remote control in CVP-T version and with T-MB control in CVP-MB version.

Air Filter

Washable-regenerable synthetic filter, readily accessible.

Fan Assembly

Made of plastic tangential fan.

Electric motor

The motor is for single phase supply and has six speeds, three of which are connected, with capacitor. The motor is fitted on sealed for life bearings and is secured on anti-vibration and self-lubricating mountings. Internal thermal protection with automatic reset, protection IP 20, class B. The speeds connected in the factory are indicated by "MIN, MED and MAX" in the following tables.

Heat exchange coil

It is manufactured from drawn copper tube and the aluminium fins are mechanically bonded onto the tube by an expansion process. The coil has two 1/2 inch BSP internal connections and 1/8 inch BSP air vent and drain.

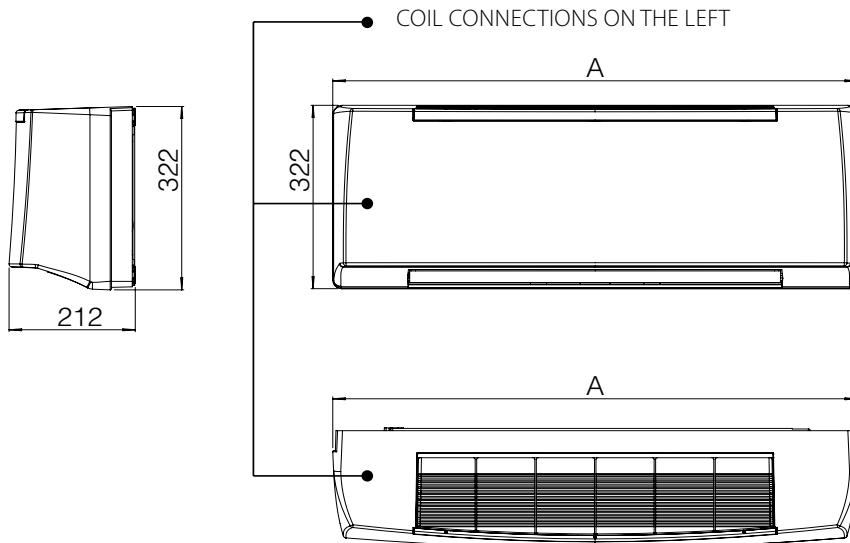
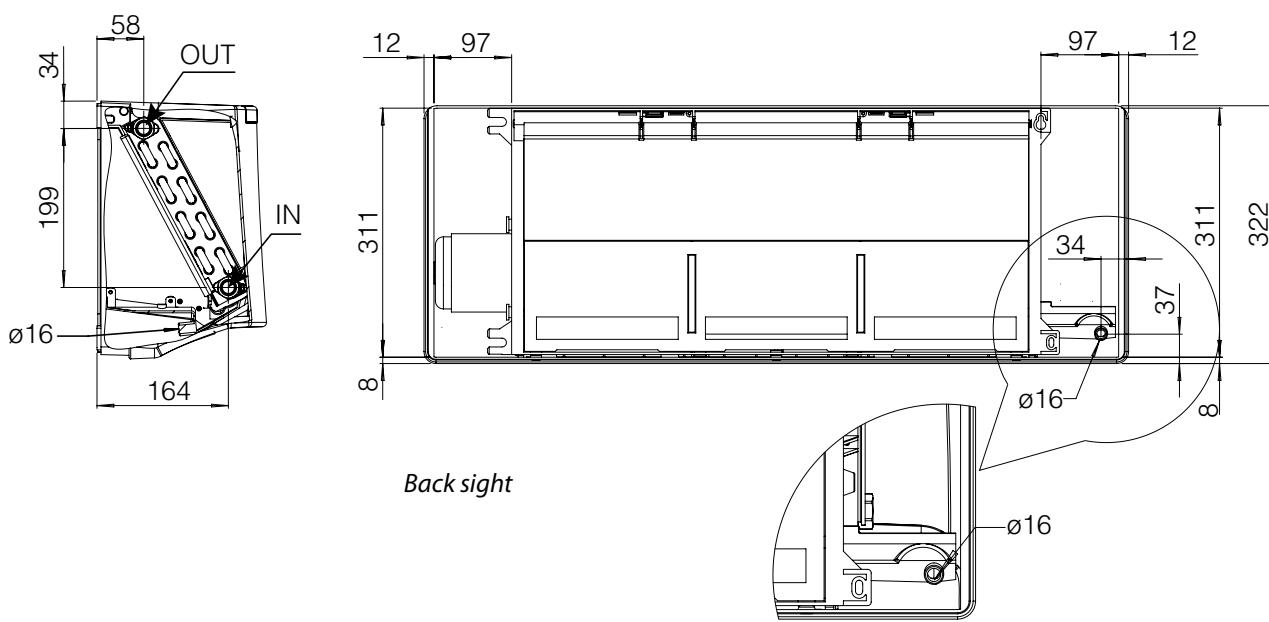
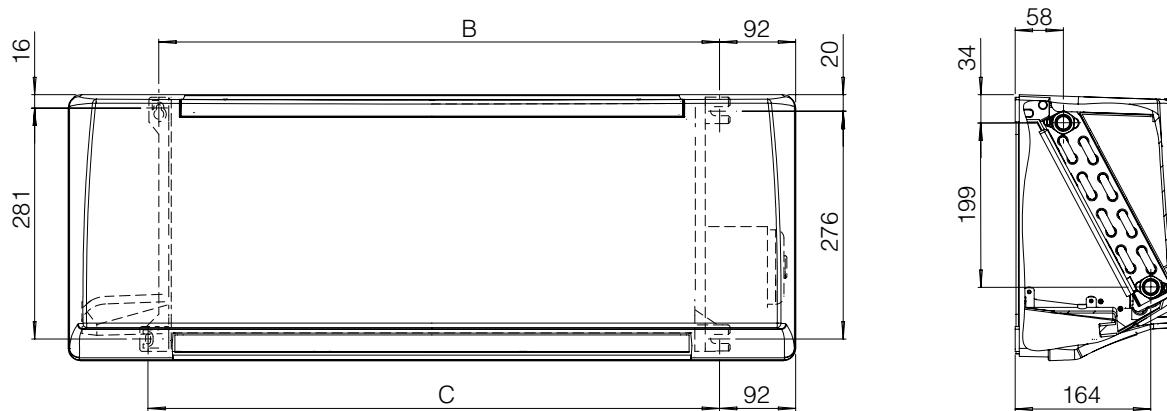
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The connections are on the left side facing the unit only.

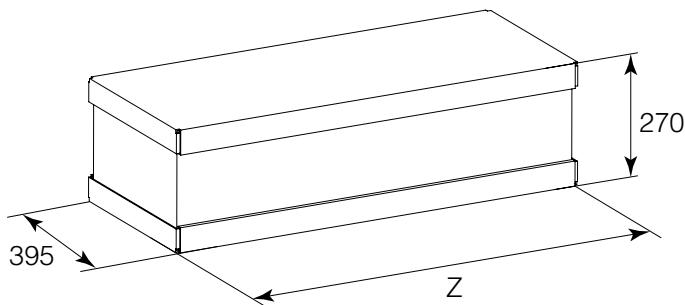
Condensate Collection Tray

Made from polypropylene; the outside diameter of the condensate discharge pipe is 16mm.

Installation template

A cardboard installation template is supplied with every unit to help the mounting on the wall.

**MOUNTING DIMENSION**

**DIMENSION (mm)**

MODEL	CVP-ECM 1	CVP-ECM 2	CVP-ECM 3	CVP-ECM 4
A	880	880	1185	1185
B	678	678	983	983
C	691	691	996	996
Z	950	950	1255	1255

WEIGHT (kg)

MODEL	<i>Weight packed unit</i>				<i>Weight unpacked unit</i>			
	CVP-ECM 1	CVP-ECM 2	CVP-ECM 3	CVP-ECM 4	CVP-ECM 1	CVP-ECM 2	CVP-ECM 3	CVP-ECM 4
without valve	12	12	16	16	10	10	13	13
with valve	13	13	17	17	11	11	14	14

WATER CONTENT (l)

MODEL	CVP-ECM 1	CVP-ECM 2	CVP-ECM 3	CVP-ECM 4
litres	0,85	0,85	1,28	1,28



Technical features

2-pipe units

The following standard rating conditions are used:

COOLING (summer operation)

Entering air temperature: + 27°C d.b. / + 19°C w.b.

Water temperature: + 7°C E.W.T. / + 12°C L.W.T.

HEATING (winter operation)

Entering air temperature: + 20°C

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

MODEL		CVP-ECM 1					CVP-ECM 2					
		1 (E)	3	5 (E)	7,5	10 (E)	1 (E)	3	5 (E)	7,5	10 (E)	
Speed	MIN		MED		MAX	MIN		MED	<th>MAX</th>	MAX		
	Air flow	m³/h	190	240	290	355	415	260	315	375	440	510
Cooling total emission (E)	kW	1,16	1,38	1,57	1,80	1,98	1,46	1,66	1,86	2,05	2,24	
Cooling sensible emission (E)	kW	0,85	1,03	1,19	1,39	1,56	1,09	1,27	1,45	1,63	1,81	
Heating (E)	kW	1,26	1,53	1,78	2,09	2,35	1,63	1,90	2,18	2,46	2,74	
ΔP Cooling (E)	kPa	5,0	5,9	7,7	9,4	11,2	6,9	8,2	10,1	12,0	14,1	
ΔP Heating (E)	kPa	4,0	5,7	7,5	10,0	12,4	6,4	8,4	10,8	13,4	16,3	
Fan (E)	W	6	7	9	11	15	7	9	12	16	21	
Sound power (E)	Lw	dB(A)	35	39	46	48	52	40	44	47	51	55
Sound pressure (*)	Lp	dB(A)	26	30	37	39	43	31	35	38	42	46

MODEL		CVP-ECM 3					CVP-ECM 4					
		1 (E)	3	5 (E)	7,5	10 (E)	1 (E)	3	5 (E)	7,5	10 (E)	
Speed	MIN		MED		MAX	MIN		MED	<th>MAX</th>	MAX		
	Air flow	m³/h	270	345	420	520	620	375	465	550	665	770
Cooling total emission (E)	kW	1,82	2,19	2,52	2,92	3,27	2,33	2,71	3,03	3,41	3,72	
Cooling sensible emission (E)	kW	1,30	1,59	1,85	2,17	2,48	1,69	2,00	2,27	2,61	2,89	
Heating (E)	kW	1,83	2,24	2,63	3,11	3,57	2,40	2,85	3,26	3,76	4,20	
ΔP Cooling (E)	kPa	10,7	14,8	19,0	24,8	30,4	16,5	21,6	26,6	32,9	38,7	
ΔP Heating (E)	kPa	8,7	12,5	16,6	22,5	28,8	14,1	19,3	24,4	31,7	38,6	
Fan (E)	W	6	8	11	15	20	9	12	16	22	30	
Sound power (E)	Lw	dB(A)	37	42	45	49	53	43	46	49	53	57
Sound pressure (*)	Lp	dB(A)	28	33	36	40	44	34	37	40	44	48

(E) = Eurovent certified performance.

MIN-MED-MAX = Standard connected speeds.

(*) = 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.

Max. entering water temperature..... + 70 °C

MIn. entering water temperature..... + 6 °C

for entering water temperatures below + 6°C, contact "SABIANA" technical department

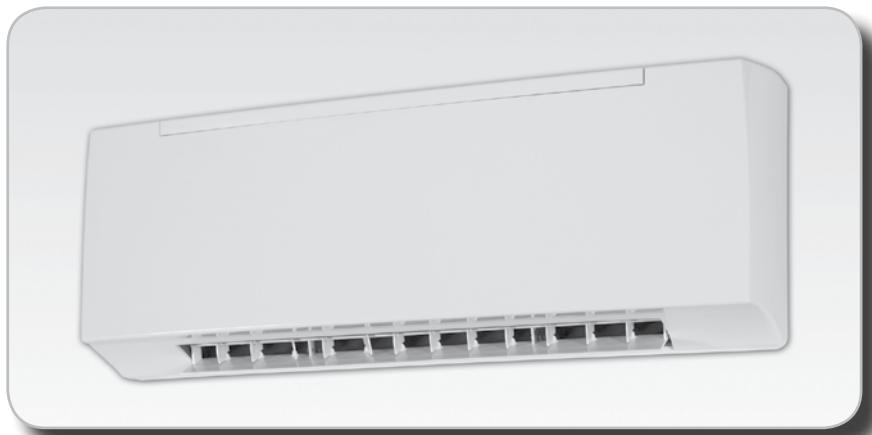
Max. rated pressure 1000 kPa (10 bars)

Installation height (m)

MODEL	CVP-ECM 1 ÷ 4
Minimum	2
Maximum	3

Motor electrical data (max. absorption)

MODEL		CVP-ECM 1	CVP-ECM 2	CVP-ECM 3	CVP-ECM 4
230/1 50Hz	W	15	21	20	30
	A	0,14	0,19	0,18	0,26



FLY-ECM MODELS WITH ELECTRIC HEATER

All versions are available without valves, with 2 way valve or with 3 way valve fitted in the unit.
There are four sizes available in the following versions:

CVP-ECM-E	without infra-red remote control and without valve
CVP-ECM-E-2V	without infra-red remote control with fitted 2 way valve
CVP-ECM-E-3V	without infra-red remote control with fitted 3 way valve
CVP-ECM-T-E	with infra-red remote control and without valve
CVP-ECM-T-E-2V	with infra-red remote control with fitted 2 way valve
CVP-ECM-T-E-3V	with infra-red remote control with fitted 3 way valve
CVP-ECM-MB-E	with MB electronic board and without valve
CVP-ECM-MB-E-2V	with MB electronic board with fitted 2 way valve
CVP-ECM-MB-E-3V	with MB electronic board with fitted 3 way valve

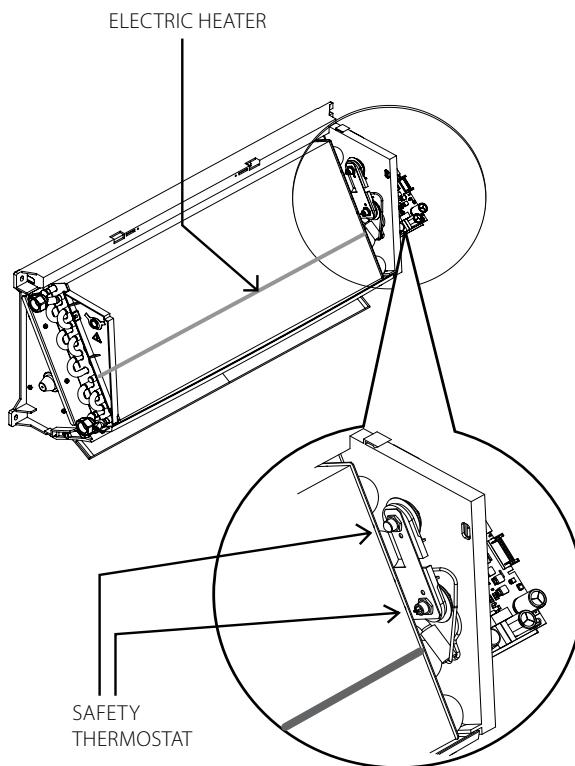
The heater is hermetically sealed and supplied inside the battery pipes and therefore can be only factory mounted.

The electric heaters of the **Fly-ECM** units are single phase 230V supply.

The electric heater is fitted with a overheat protection.

The unit is fitted with two safety thermostats:

- one thermostat with manual reset;
- one thermostat with automatic reset.



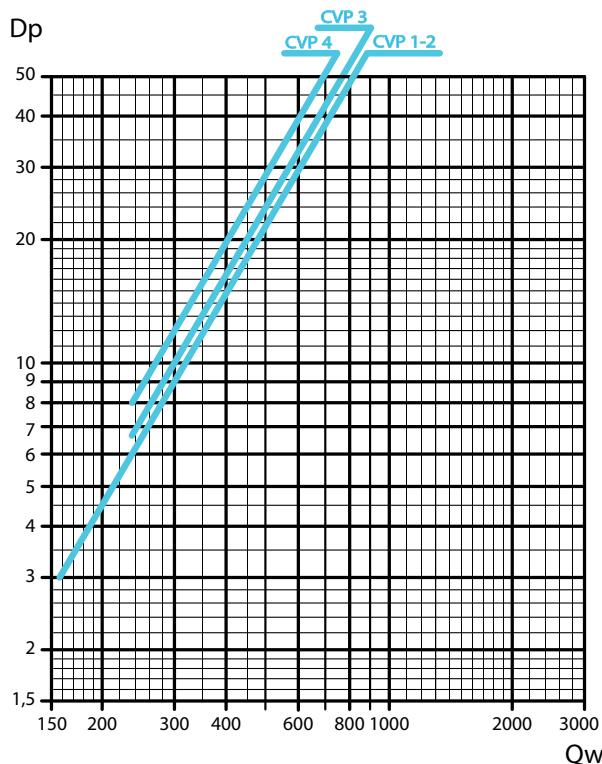
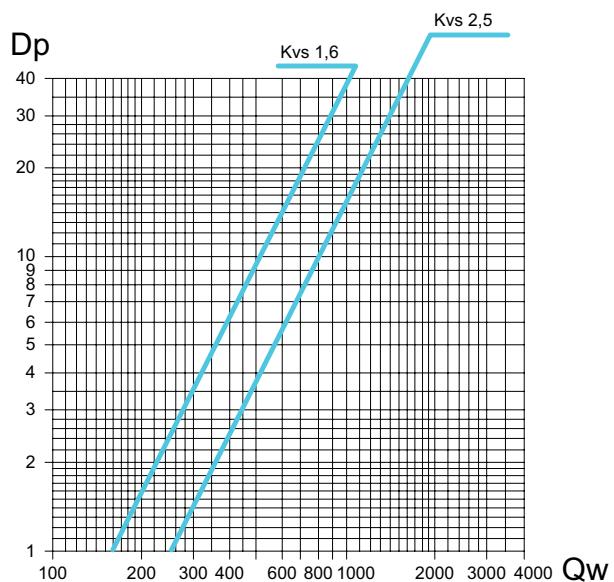
Main technical characteristics

MODEL	CVP-ECM-ECM 1	CVP-ECM 2	CVP-ECM 3	CVP-ECM 4
<i>Nominal installed power</i>	1000 Watt	1000 Watt	1500 Watt	1500 Watt
<i>Nominal power voltage</i>	230V ~	230V ~	230V ~	230V ~
<i>Number and section of connecting wires</i>	3 x 1,5mm ²			
<i>Current input</i>	4,5 A	4,5 A	7 A	7 A
<i>Recommended fuse (Type gG) for overload protection</i>	6 A	6 A	8 A	8 A

Fly operating limits with electric heater

Max. ambient temperature for **Fly-ECM** with electric coil in heating mode: 25°C.

WATER SIDE PRESSURE DROP

Coil pressure drop**Valves pressure drop****Legend****Qw** = water flow (l/h)**Dp** = pressure drop (kPa)

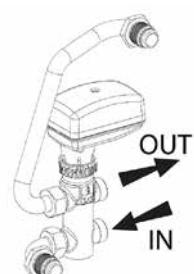
Pressure drop for mean water temperature of 10°C; for different temperatures multiply the pressure drop figure by the K correction factors in the table.

°C	20	30	40	50	60	70	80
K	0,94	0,90	0,86	0,82	0,78	0,74	0,70

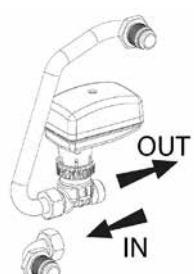
ACCESSORIES

FV3S 3 way valve

Mod.	Valve			ID	Code
	DN	(Ø)	Kvs		Not fitted
1-2	15	1/2"	1,6	FV3S 1-2	9025321H
3-4	20	3/4"	2,5	FV3S 3-4	9025323H

**FV2S 2 way valve**

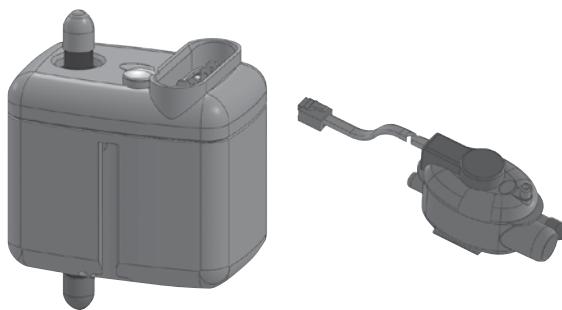
Mod.	Valve			ID	Code
	DN	(Ø)	Kvs		Not fitted
1-2	15	1/2"	1,6	FV2S 1-2	9025311H
3-4	20	3/4"	2,5	FV2S 3-4	9025313H





PCF condensate drain pump

	ID	Code
<i>Fitted on the unit</i>	PCF-M	9025319
<i>Not fitted on the unit</i>	PCF-S	9025309
<i>Height for vertical flow (m)</i>		<i>Water flow (l/h) depending on the length of horizontal flow</i>
	5m	10m
1	7,6	7,2
2	5,6	5,2
3	4,0	3,7
4	3,2	2,9



KIF wall or concealed installation kit

Model	ID	Code
1 - 2	KIF 1-2	9025191
3 - 4	KIF 3-4	9025193

Wall or concealed installation kit to be used as an installation template or in case the right connections are previously designed (the units are provided only with left connections).

The technical space within the frame allows to unit the right connections of the installation and the left connections of the unit. Two variants are available:

- Recessed box installation
- Wall installation with aesthetic frame.

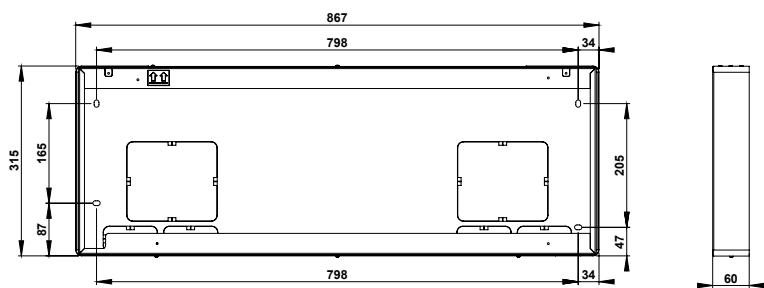
In the first case the frame is recessed, whereas in the second case it fits the unit esthetically.

The aesthetic frame characteristics are:

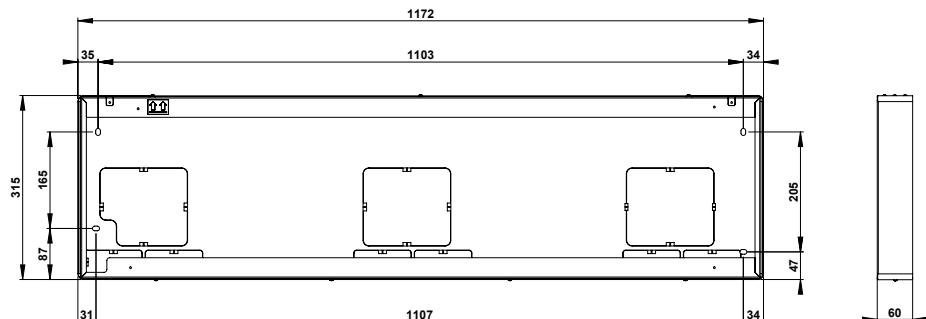
- Galvanized steel painted RAL 9003
- Pre-drilled panels for cables and ductworks
- Internal insulation.

Dimensions

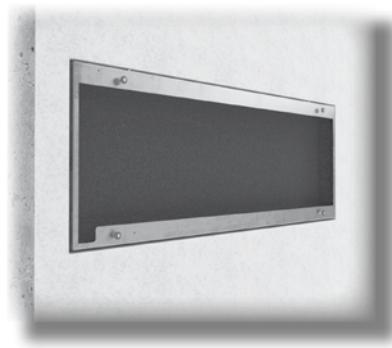
Gr. 1 - 2



Gr. 3 - 4



Recessed box installation



Wall installation



For this fan coil configuration, the 1-10 Vdc signal, which controls the inverter, must be supplied by a controller with the following signal specifications:

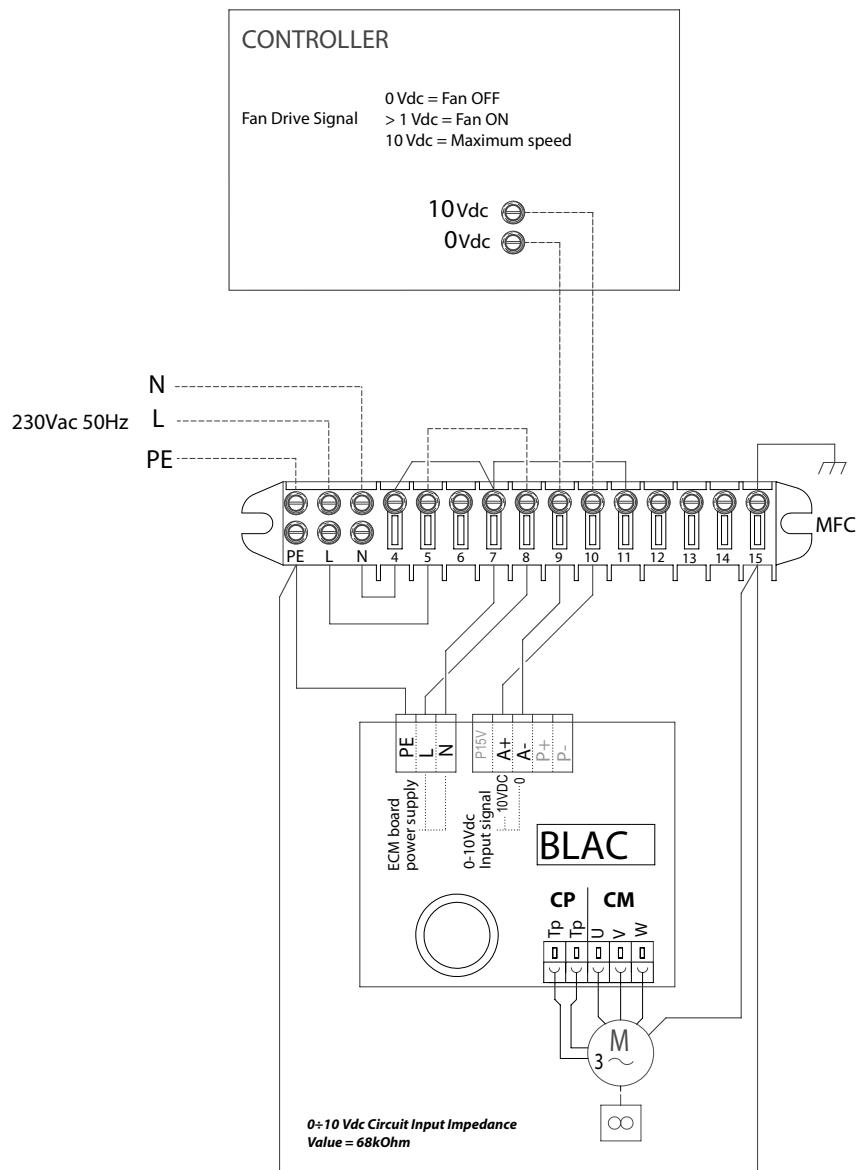
CONTROLLER Fan Drive Signal

- 0 Vdc = Fan OFF
- > 1 Vdc = Fan ON
- 10 Vdc = Maximum Speed

BLAC

- 0÷10 Vdc Input Circuit
- Impedance = 68kohm

Fly-ECM electric wiring diagram



Legend

- | | |
|-------------------|---|
| CONTROLLER | = Controller |
| BLAC | = Inverter circuit board |
| M | = Brushless electronic motor |
| CM | = Motor fan connection |
| CP | = Motor fan thermal protection connection |



The room temperature can be controlled through the electronic room thermostat **WM-S-ECM**, with different solutions according to every ambient conditions.

The electronic thermostat **WM-S-ECM** rules the room temperature precisely and is suitable for each of those situations into which it is the user to decide between the manual or the automatic fan speed.



WM-S-ECM WALL CONTROL

All the controls are described in detail in the “Fan Coil Control Range” literature.

All the **CVP-ECM** units can be supplied in **T version** and in **MB version**.

- The **T version** includes the infra-red remote control that allows the management of a single unit (the units can not be controlled in a network).
- The **MB version** includes a wide range of controls, including the infra-red remote control (optional extra), which allows to manage one single unit or several units by using the Modbus RTU - RS 485 communication protocol.
Units can be managed according to the Master/Slave logic (up to 20 units) or by supervisory controls.
The system consists in a MB power board (mounted on models CVP-ECM-MB) and a series of controls, such as the T-MB wall mounted control, the RT03 infra-red remote control, the PSM-DI multifunction control and the Sabianet supervisory program.



T-MB WALL CONTROL



PSM-DI MULTIFUNCTION CONTROL



RT03 INFRA-RED REMOTE CONTROL



Sabianet SOFTWARE



The descriptions and illustrations provided in this publication are not binding: Sabiana reserves the right, whilst maintaining the essential characteristics of the types described and illustrated, to make, at any time, without the requirement to promptly update this piece of literature, any changes that it considers useful for the purpose of improvement or for any other manufacturing or commercial requirements.



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