



High Wall Fan Coil Carisma Fly Carisma Fly-ECM

TECHNICAL CATALOG

Carisma Fly

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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
- 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
- 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
- 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

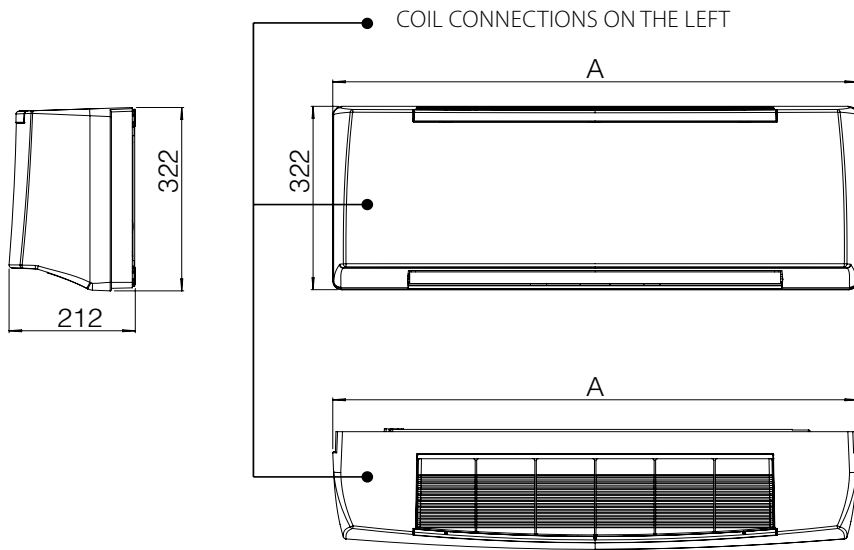
It is manufactured from drawn copper tube and the aluminium fins are mechanically bonded onto the tube by an expansion process. The coil has two 1/2 inch BSP internal connections and 1/8 inch BSP air vent and drain. The heat exchanger is not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion. The connections are on the left side facing the unit only.

Condensate Collection Tray

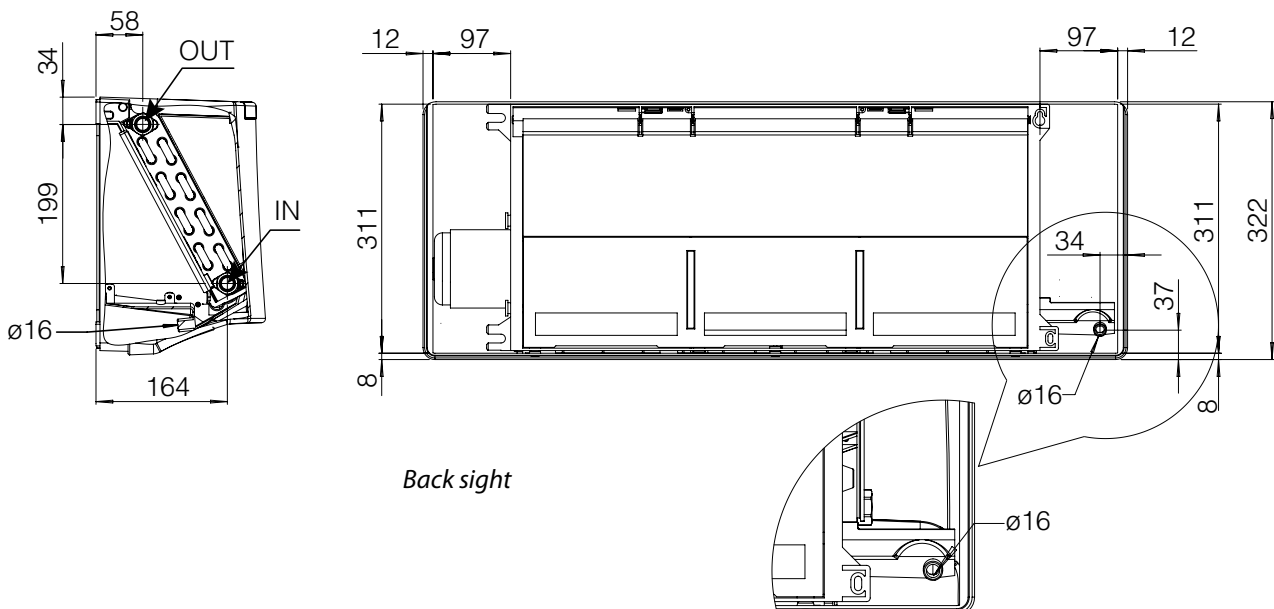
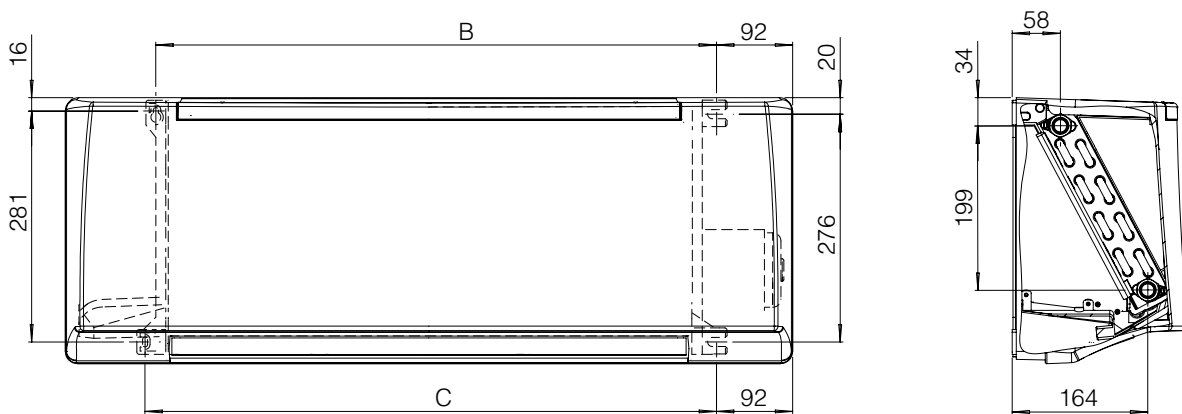
Made from polypropylene; the outside diameter of the condensate discharge pipe is 16mm.

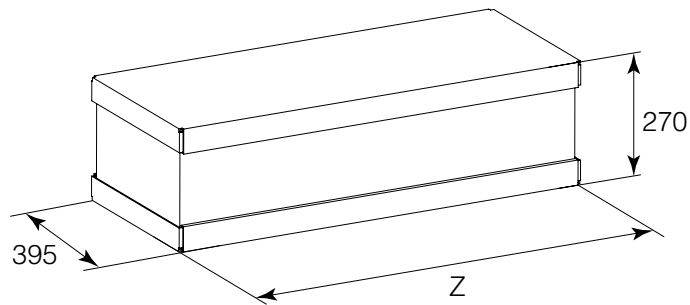
Installation template

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
<i>without valve</i>	12	12	16	16	10	10	13	13
<i>with valve</i>	13	13	17	17	11	11	14	14

WATER CONTENT (l)

MODEL	CVP 1	CVP 2	CVP 3	CVP 4
<i>litres</i>	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)	2 (E)	3	4 (E)	5	6	1 (E)	2	3 (E)	4	5 (E)	6
Speed		MIN	MED		MAX			MIN		MED		MAX	
Air flow	m ³ /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	35	41	46	48	52	53	39	43	47	49	53	55
Sound pressure (*)	Lp	26	32	37	39	43	44	30	34	38	40	44	46

MODEL		CVP 3						CVP 4					
		1 (E)	2 (E)	3	4 (E)	5	6	1	2 (E)	3	4 (E)	5	6 (E)
Speed		MIN	MED		MAX				MIN		MED		MAX
Air flow	m ³ /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	35	40	45	48	55	57	36	43	46	51	54	57
Sound pressure (*)	Lp	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.

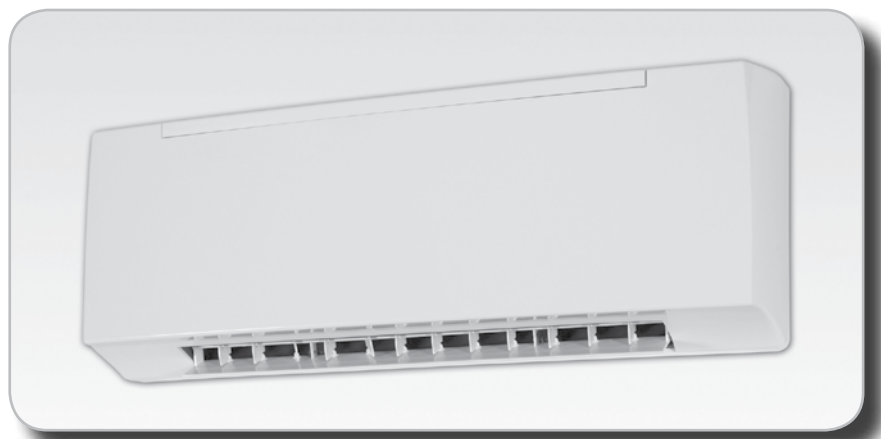
Max. entering water temperature..... + 70 °C
 Min. entering water temperature..... + 6 °C
for entering water temperatures below + 6°C, contact "SABIANA" technical department
 Max. rated pressure 1000 kPa (10 bars)

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



Cooling emission

Entering air temperature: +27°C - Relative Humidity: 50%

Model	Speed	WT: 7/12 °C					WT: 8/13 °C					WT: 10/15 °C					WT: 12/17 °C				
		Qv	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)			
		m³/h	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa			
CVP 1	VI	500	2,37	1,73	413	15,8	2,12	1,65	370	12,9	1,66	1,56	291	8,3	1,28	1,28	224	5,2			
	V	470	2,29	1,66	399	14,8	2,05	1,59	357	12,1	1,61	1,49	281	7,8	1,23	1,23	216	4,8			
	IV MAX	375	2,00	1,42	347	11,6	1,79	1,35	311	9,5	1,39	1,25	243	6,0	1,06	1,06	185	3,6			
	III	340	1,88	1,32	326	10,3	1,68	1,25	292	8,4	1,31	1,16	228	5,3	0,99	0,99	173	3,2			
	II MED	270	1,61	1,11	279	7,8	1,44	1,05	250	6,4	1,12	0,96	194	4,0	0,84	0,84	146	2,4			
I MIN	205	1,32	0,90	229	5,5	1,19	0,85	207	4,5	0,92	0,76	160	2,8	0,68	0,68	120	1,7				
CVP 2	VI	545	2,49	1,83	434	17,3	2,23	1,76	390	14,2	1,75	1,66	307	9,1	1,35	1,35	237	5,7			
	V MAX	480	2,32	1,69	404	15,2	2,08	1,61	361	12,4	1,63	1,51	284	7,9	1,25	1,25	219	4,9			
	IV	400	2,08	1,49	362	12,5	1,86	1,41	324	10,2	1,45	1,31	253	6,5	1,11	1,11	194	3,9			
	III MED	365	1,97	1,39	341	11,2	1,76	1,32	306	9,1	1,37	1,22	239	5,8	1,04	1,04	182	3,5			
	II	305	1,75	1,22	303	9,0	1,57	1,15	272	7,4	1,21	1,06	211	4,7	0,92	0,92	160	2,8			
I MIN	250	1,52	1,05	264	7,1	1,37	0,99	238	5,8	1,06	0,90	184	3,6	0,79	0,79	138	2,2				
CVP 3	VI	780	4,01	2,86	698	44,5	3,61	2,71	629	36,6	2,83	2,53	495	23,6	2,17	2,17	381	14,6			
	V	730	3,86	2,74	671	41,4	3,47	2,59	604	34,1	2,72	2,41	475	21,9	2,08	2,08	365	13,5			
	IV MAX	545	3,22	2,23	558	29,7	2,90	2,10	504	24,6	2,26	1,92	393	15,6	1,71	1,71	299	9,4			
	III	480	2,95	2,02	512	25,4	2,66	1,91	463	21,1	2,07	1,73	360	13,3	1,56	1,56	273	8,0			
	II MED	375	2,46	1,66	427	18,3	2,22	1,56	386	15,2	1,73	1,40	300	9,6	1,29	1,27	225	5,7			
I MIN	280	2,00	1,33	347	12,6	1,82	1,26	315	10,6	1,41	1,12	245	6,7	1,05	1,00	183	3,9				
CVP 4	VI MAX	790	4,04	2,88	704	51,3	3,63	2,73	633	42,2	2,85	2,56	499	27,2	2,19	2,19	384	16,9			
	V	675	3,69	2,60	640	43,2	3,32	2,45	576	35,7	2,59	2,27	452	22,8	1,98	1,98	346	14,0			
	IV MED	610	3,46	2,42	601	38,6	3,12	2,28	542	31,9	2,44	2,10	424	20,4	1,85	1,85	324	12,4			
	III	500	3,04	2,09	527	30,4	2,74	1,97	476	25,2	2,13	1,79	371	16,0	1,61	1,61	281	9,6			
	II MIN	440	2,78	1,90	482	26,0	2,51	1,79	436	21,5	1,95	1,62	340	13,6	1,47	1,47	256	8,1			
I	300	2,11	1,41	365	15,8	1,91	1,33	332	13,2	1,49	1,18	258	8,3	1,10	1,06	193	4,9				

Entering air temperature: +26°C - Relative Humidity: 50%

Model	Speed	WT: 7/12 °C					WT: 8/13 °C					WT: 10/15 °C					WT: 12/17 °C				
		Qv	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)			
		m³/h	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa			
CVP 1	VI	500	2,11	1,65	368	12,9	1,88	1,60	329	10,4	1,46	1,46	256	6,6	1,11	1,11	196	4,1			
	V	470	2,04	1,58	355	12,0	1,82	1,53	316	9,7	1,41	1,41	246	6,1	1,07	1,07	188	3,8			
	IV MAX	375	1,78	1,35	310	9,4	1,58	1,30	275	7,6	1,22	1,20	213	4,7	0,92	0,92	161	2,8			
	III	340	1,67	1,25	291	8,4	1,48	1,20	258	6,7	1,14	1,11	199	4,2	0,86	0,86	150	2,5			
	II MED	270	1,43	1,05	249	6,4	1,27	1,00	221	5,1	0,97	0,92	169	3,1	0,72	0,72	127	1,8			
I MIN	205	1,18	0,85	205	4,5	1,04	0,80	182	3,6	0,79	0,73	139	2,2	0,59	0,59	103	1,3				
CVP 2	VI	545	2,22	1,75	387	14,1	1,98	1,70	345	11,4	1,54	1,54	270	7,3	1,18	1,18	208	4,5			
	V MAX	480	2,07	1,61	360	12,3	1,84	1,56	320	10,0	1,43	1,43	250	6,3	1,09	1,09	191	3,9			
	IV	400	1,86	1,41	323	10,1	1,65	1,36	287	8,2	1,27	1,27	222	5,1	0,96	0,96	169	3,1			
	III MED	365	1,75	1,32	304	9,1	1,55	1,27	270	7,3	1,20	1,18	209	4,6	0,90	0,90	158	2,7			
	II	305	1,56	1,15	270	7,4	1,38	1,10	240	5,9	1,06	1,01	184	3,6	0,79	0,79	139	2,2			
I MIN	250	1,36	0,99	236	5,8	1,20	0,94	209	4,6	0,92	0,86	160	2,8	0,68	0,68	120	1,7				
CVP 3	VI	780	3,59	2,71	625	36,5	3,20	2,62	558	29,6	2,49	2,45	435	18,8	1,89	1,89	333	11,5			
	V	730	3,46	2,59	601	34,0	3,08	2,50	536	27,5	2,39	2,32	417	17,4	1,81	1,81	318	10,6			
	IV MAX	545	2,88	2,10	501	24,5	2,56	2,01	446	19,7	1,97	1,84	344	12,3	1,48	1,48	259	7,3			
	III	480	2,65	1,91	460	21,0	2,35	1,82	409	16,9	1,80	1,66	315	10,4	1,35	1,35	236	6,2			
	II MED	375	2,21	1,57	384	15,1	1,96	1,48	341	12,2	1,50	1,33	261	7,5	1,11	1,11	194	4,4			
I MIN	280	1,80	1,26	313	10,5	1,61	1,18	279	8,5	1,22	1,05	213	5,2	0,90	0,90	157	3,0				
CVP 4	VI MAX	790	3,62	2,73	630	42,1	3,22	2,64	562	34,1	2,51	2,47	439	21,7	1,90	1,90	336	13,2			
	V	675	3,30	2,45	574	35,5	2,93	2,36	511	28,6	2,27	2,18	397	18,0	1,72	1,72	302	10,9			
	IV MED	610	3,10	2,29	539	31,8	2,76	2,19	480	25,7	2,13	2,02	372	16,0	1,61	1,61	282	9,6			
	III	500	2,72	1,97	473	25,1	2,42	1,88	420	20,2	1,86	1,71	324	12,5	1,39	1,39	243	7,4			
	II MIN	440	2,49	1,79	433	21,4	2,22	1,70	385	17,2	1,70	1,54	296	10,6	1,26	1,26	221	6,2			
I	300	1,90	1,33	329	13,1	1,69	1,25	293	10,6	1,28	1,12	224	6,4	0,95	0,95	166	3,7				

Correction factors for different R.H.

R.H.	WT:	7/12°C	8/13°C	10/15°C	12/17°C
48%	Pc	0,95	0,94	1,00	1,00
	Ps	1,00	1,00	1,00	1,00
46%	Pc	0,90	0,88	1,00	1,00
	Ps	1,00	1,00	1,00	1,00

Legend

- WT** = Water temperature
- Pc** = Cooling Total emission
- Ps** = Cooling Sensible emission
- Qw** = Water flow
- Dp(c)** = Water side pressure drop
- Speed** = Fan speed
- MAX** = High speed
- MED** = Medium speed
- MIN** = Low speed
- Qv** = Air flow

Cooling emission

Entering air temperature: +25°C - Relative Humidity: 50%

Model	Speed	WT: 7/12 °C					WT: 8/13 °C					WT: 10/15 °C					WT: 12/17 °C				
		Qv	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)			
		m³/h	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa			
CVP 1	VI	500	1,87	1,60	328	10,4	1,66	1,55	290	8,3	1,28	1,28	225	6,9	1,06	1,06	188	3,7			
	V	470	1,81	1,53	315	9,7	1,60	1,48	279	7,8	1,23	1,23	216	6,4	1,00	1,00	177	3,4			
	IV MAX	375	1,58	1,30	274	7,6	1,39	1,25	242	6,0	1,06	1,06	186	4,9	0,81	0,81	143	2,3			
	III	340	1,48	1,20	257	6,7	1,30	1,15	227	5,3	0,99	0,99	173	4,3	0,74	0,74	130	1,9			
	II MED	270	1,26	1,00	220	5,1	1,11	0,96	193	4,0	0,84	0,84	147	3,2	0,62	0,62	109	1,4			
	I MIN	205	1,04	0,81	181	3,6	0,91	0,76	159	2,8	0,69	0,69	120	2,2	0,50	0,50	89	1,0			
CVP 2	VI	545	1,97	1,70	345	11,4	1,75	1,65	306	9,2	1,35	1,35	238	7,7	1,13	1,13	201	4,2			
	V MAX	480	1,83	1,55	319	9,9	1,62	1,50	283	8,0	1,25	1,25	219	6,6	1,03	1,03	181	3,5			
	IV	400	1,64	1,36	286	8,1	1,45	1,31	253	6,5	1,11	1,11	194	5,3	0,86	0,86	152	2,5			
	III MED	365	1,55	1,27	269	7,3	1,36	1,22	238	5,8	1,04	1,04	182	4,7	0,79	0,79	139	2,2			
	II	305	1,37	1,11	239	5,9	1,21	1,06	210	4,7	0,92	0,92	160	3,8	0,68	0,68	120	1,7			
	I MIN	250	1,20	0,95	208	4,6	1,05	0,90	183	3,6	0,80	0,80	139	2,9	0,59	0,59	103	1,3			
CVP 3	VI	780	3,19	2,61	556	29,5	2,82	2,52	493	23,7	2,18	2,18	382	17,8	1,64	1,64	290	9,0			
	V	730	3,07	2,49	534	27,4	2,72	2,40	474	22,0	2,09	2,09	366	16,5	1,57	1,57	277	8,2			
	IV MAX	545	2,55	2,01	444	19,7	2,25	1,92	392	15,7	1,72	1,72	300	11,5	1,28	1,28	225	5,6			
	III	480	2,34	1,82	407	16,9	2,06	1,73	359	13,4	1,57	1,57	274	9,8	1,16	1,16	204	4,8			
	II MED	375	1,96	1,48	340	12,2	1,72	1,40	299	9,6	1,29	1,27	226	6,9	0,95	0,95	167	3,3			
	I MIN	280	1,60	1,19	277	8,4	1,40	1,12	244	6,7	1,05	1,00	183	4,8	0,77	0,77	135	2,2			
CVP 4	VI MAX	790	3,21	2,64	560	34,0	2,84	2,54	497	27,3	2,19	2,19	385	20,5	1,66	1,66	293	10,4			
	V	675	2,92	2,35	509	28,6	2,58	2,26	450	22,9	1,98	1,98	347	17,0	1,49	1,49	262	8,5			
	IV MED	610	2,75	2,19	478	25,6	2,43	2,10	423	20,4	1,86	1,86	325	15,1	1,39	1,39	244	7,5			
	III	500	2,41	1,88	419	20,2	2,12	1,79	370	16,0	1,61	1,61	282	11,7	1,20	1,20	211	5,7			
	II MIN	440	2,21	1,70	384	17,2	1,94	1,62	338	13,6	1,47	1,47	257	9,9	1,09	1,09	191	4,8			
	I	300	1,68	1,26	292	10,5	1,48	1,18	257	8,3	1,11	1,06	193	5,9	0,81	0,81	142	2,8			

Heating emission

Entering air temperature: +20°C

Model	Speed	WT: 70/60 °C				WT: 60/50 °C				WT: 50/40 °C				WT: 50/45 °C				WT: 45/40 °C			
		Qv	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)				
		m³/h	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa				
CVP 1	VI	500	5,46	470	15,0	4,22	363	9,7	2,96	254	5,3	3,32	571	22,6	2,71	465	15,9				
	V	470	5,22	449	13,8	4,03	346	9,0	2,83	244	4,9	3,17	546	20,8	2,58	444	14,7				
	IV MAX	375	4,40	378	10,1	3,40	293	6,6	2,40	206	3,6	2,67	460	15,3	2,18	375	10,8				
	III	340	4,07	350	8,8	3,16	271	5,8	2,23	191	3,2	2,48	426	13,3	2,02	347	9,4				
	II MED	270	3,39	292	6,4	2,63	226	4,2	1,86	160	2,3	2,06	354	9,6	1,68	289	6,8				
	I MIN	205	2,71	233	4,2	2,11	181	2,8	1,50	129	1,6	1,64	283	6,4	1,34	231	4,5				
CVP 2	VI	545	5,82	501	16,8	4,49	386	10,9	3,15	271	6,0	3,54	609	25,4	2,88	496	17,8				
	V MAX	480	5,30	456	14,2	4,09	352	9,2	2,87	247	5,0	3,22	554	21,4	2,62	451	15,1				
	IV	400	4,62	397	11,1	3,57	307	7,2	2,52	216	4,0	2,81	483	16,7	2,29	394	11,8				
	III MED	365	4,31	370	9,8	3,33	287	6,4	2,35	202	3,5	2,62	450	14,7	2,13	367	10,4				
	II	305	3,74	322	7,6	2,90	249	4,9	2,05	176	2,7	2,27	391	11,4	1,85	319	8,1				
	I MIN	250	3,19	274	5,7	2,47	213	3,7	1,75	151	2,1	1,93	333	8,5	1,58	272	6,1				
CVP 3	VI	780	8,54	734	36,7	6,61	569	24,0	4,68	403	13,4	5,19	893	55,5	4,24	729	39,2				
	V	730	8,13	699	33,6	6,31	542	22,0	4,46	384	12,3	4,94	850	50,8	4,04	694	35,9				
	IV MAX	545	6,51	560	22,5	5,06	435	14,8	3,59	309	8,3	3,95	680	34,0	3,23	556	24,1				
	III	480	5,89	507	18,8	4,58	394	12,4	3,26	280	7,0	3,57	615	28,4	2,93	503	20,1				
	II MED	375	4,78	411	12,9	3,72	320	8,5	2,66	229	4,8	2,90	498	19,4	2,37	408	13,8				
	I MIN	280	3,79	326	8,5	2,96	255	5,7	2,13	183	3,2	2,30	395	12,8	1,89	324	9,1				
CVP 4	VI MAX	790	8,62	741	46,6	6,68	574	30,5	4,72	406	16,9	5,24	902	70,5	4,28	736	49,8				
	V	675	7,66	659	37,7	5,95	511	24,7	4,21	362	13,8	4,66	801	57,0	3,80	654	40,3				
	IV MED	610	7,11	611	32,9	5,52	475	21,6	3,92	337	12,1	4,32	743	49,7	3,53	607	35,2				
	III	500	6,08	523	24,9	4,73	407	16,4	3,37	290	9,2	3,69	635	37,5	3,02	520	26,6				
	II MIN	440	5,49	472	20,7	4,28	368	13,7	3,05	262	7,7	3,34	574	31,2	2,73	469	22,2				
	I	300	4,02	346	11,8	3,14	270	7,8	2,25	193	4,4	2,43	419	17,7	2,00	344	12,7				

Legend

- WT** = Water temperature
- Ph** = Emission
- Pc** = Cooling Total emission
- Ps** = Cooling Sensible emission
- Qw** = Water flow
- Dp(c)** = Water side pressure drop
- Speed** = Fan speed
- MAX** = High speed
- MED** = Medium speed
- MIN** = Low speed
- Qv** = Air flow

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.

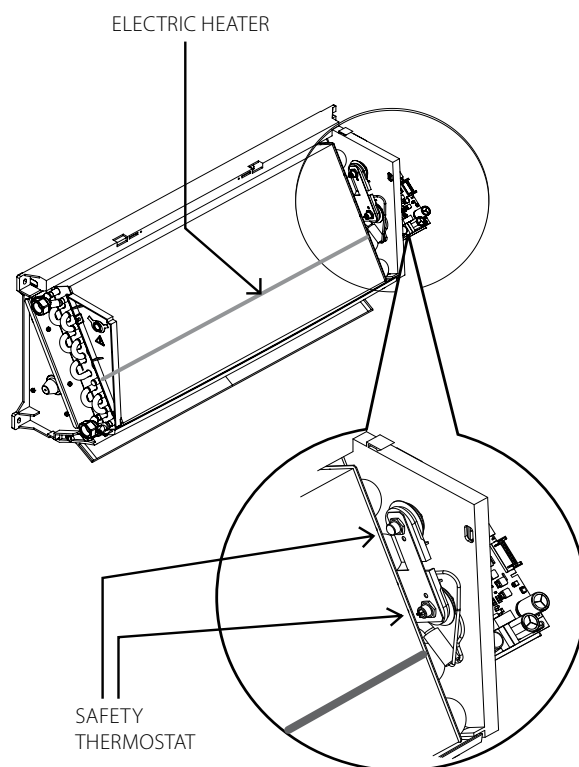
The heater is hermetically sealed and supplied inside the battery pipes and therefore can be only factory mounted.

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.



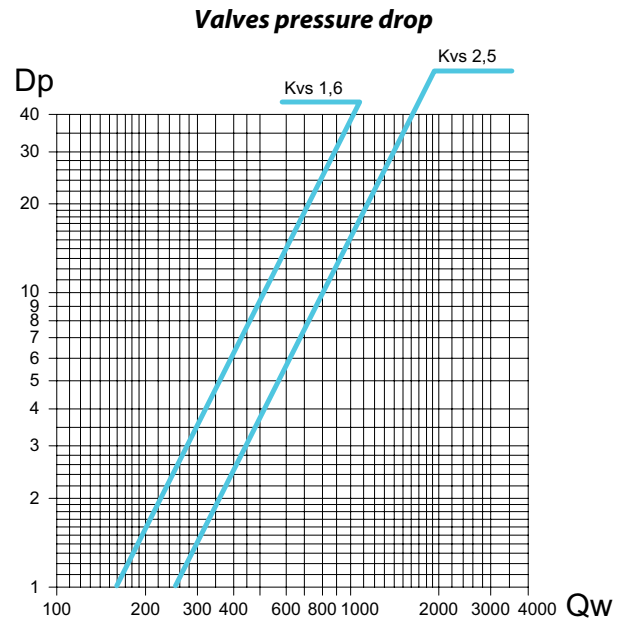
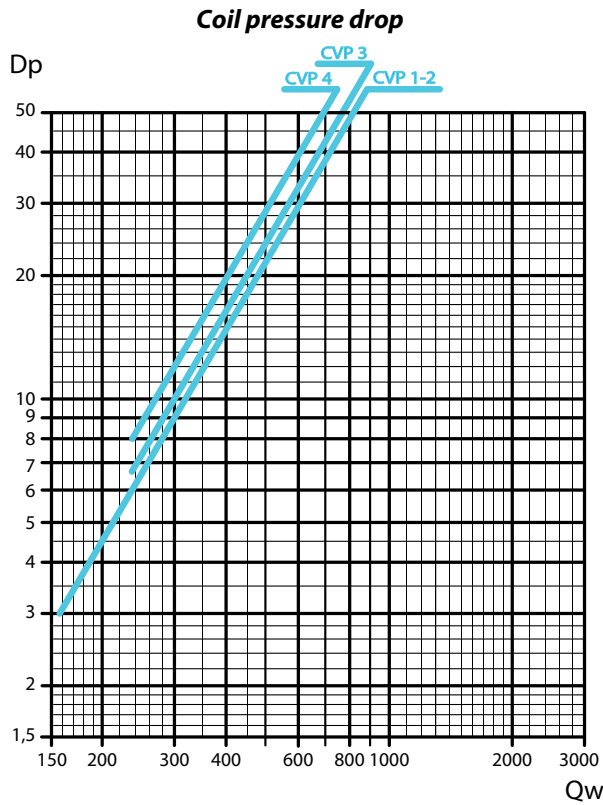
Main technical characteristics

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



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

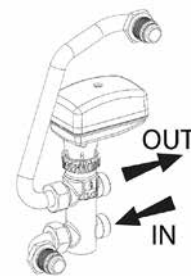
Pressure drop for mean water temperature of 10°C; for different temperatures multiply the pressure drop figure by the K correction factors in the table.

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

ACCESSORIES

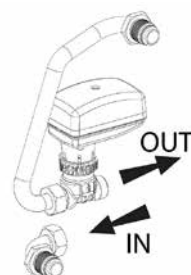
FV3S 3 way valve

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

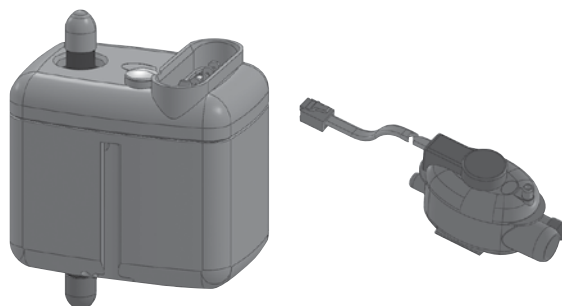


ACCESSORIES

PCF condensate drain pump

	ID	Code
Fitted on the unit	PCF-M	9025319
Not fitted on the unit	PCF-S	9025309

Height for vertical flow (m)	Water flow (l/h) depending on the length of horizontal flow	
	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:

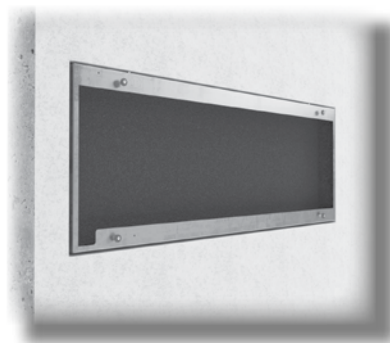
- Recessed box installation
- Wall installation with aesthetic frame.

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.

Recessed box installation

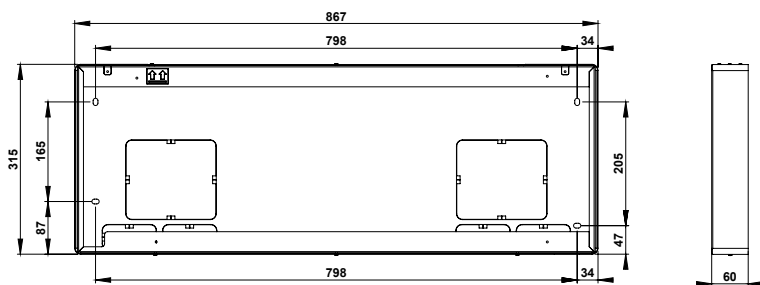


Wall installation

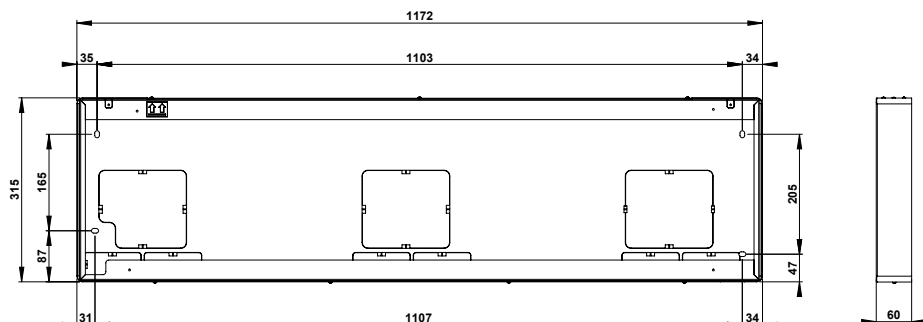


Dimensions

Gr. 1 - 2

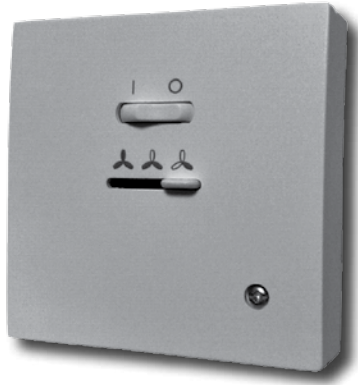


Gr. 3 - 4



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

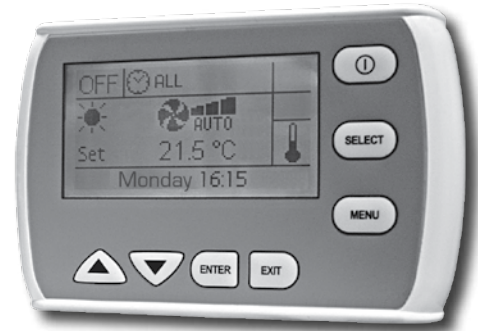
All the controls are described in detail in the "Fan Coil Control Range" literature.

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

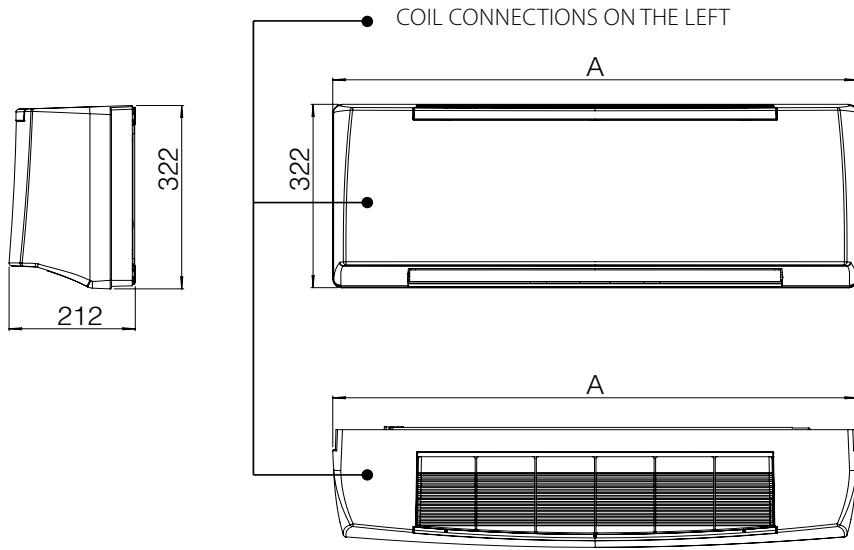
It is manufactured from drawn copper tube and the aluminium fins are mechanically bonded onto the tube by an expansion process. The coil has two 1/2 inch BSP internal connections and 1/8 inch BSP air vent and drain. The heat exchanger is not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion. The connections are on the left side facing the unit only.

Condensate Collection Tray

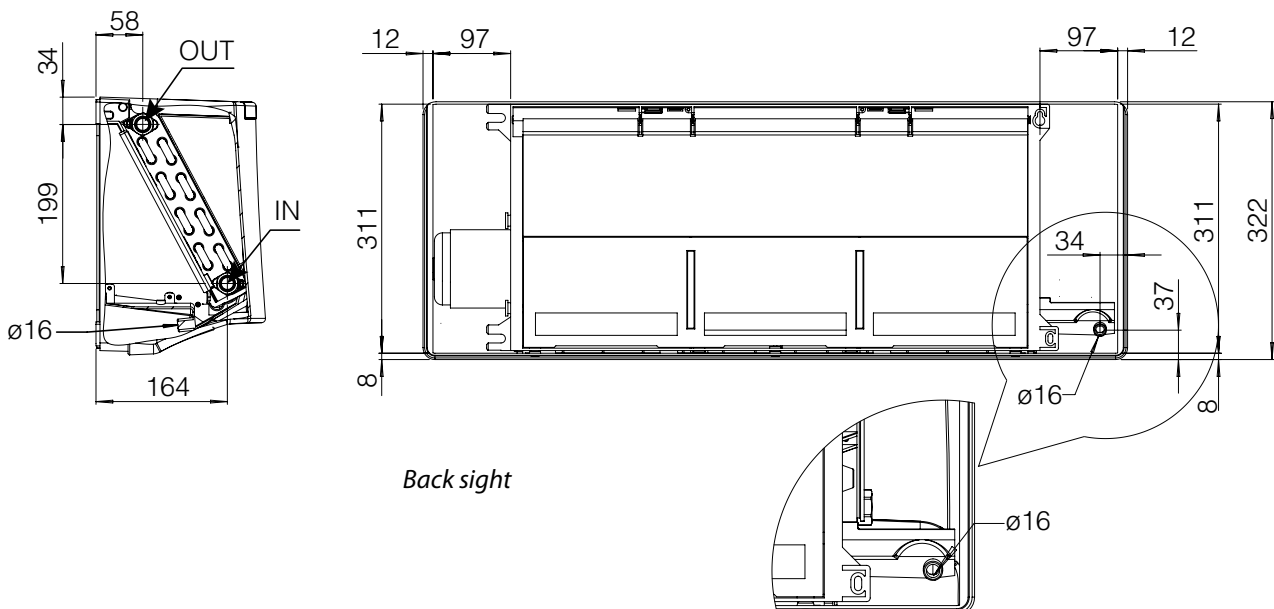
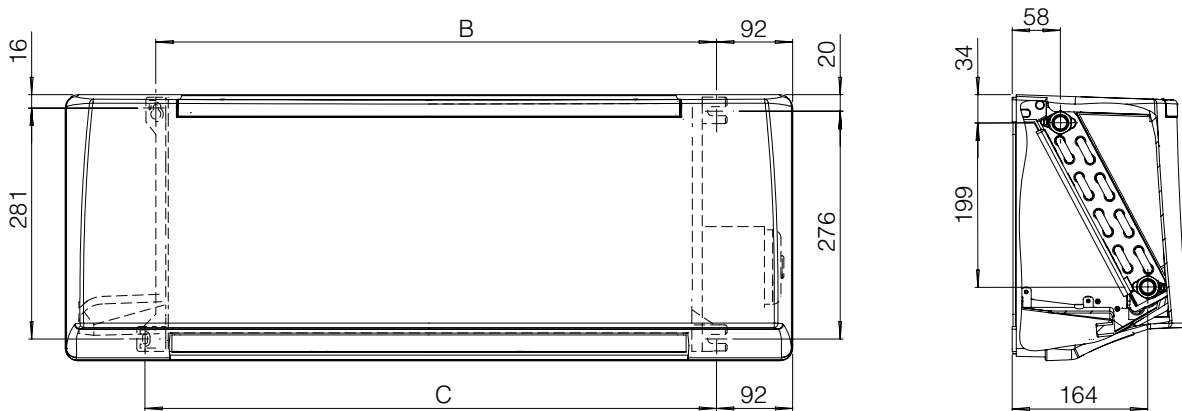
Made from polypropylene; the outside diameter of the condensate discharge pipe is 16mm.

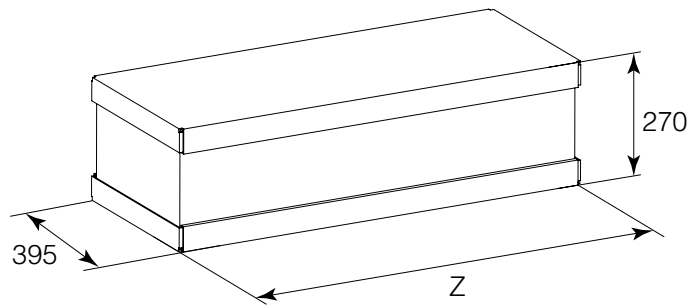
Installation template

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



MOUNTING DIMENSION





DIMENSION (mm)

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

WATER CONTENT (l)

MODEL	CVP-ECM 1	CVP-ECM 2	CVP-ECM 3	CVP-ECM 4
<i>litres</i>	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		MAX
Air flow	m ³ /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	35	39	46	48	52	40	44	47	51	55
Sound pressure (*)	Lp	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		MAX
Air flow	m ³ /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	37	42	45	49	53	43	46	49	53	57
Sound pressure (*)	Lp	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.

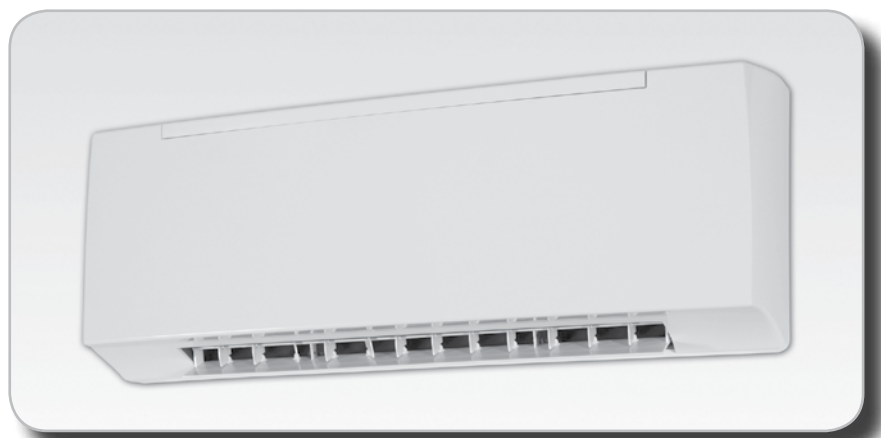
Max. entering water temperature..... + 70 °C
 Min. entering water temperature..... + 6 °C
 for entering water temperatures below + 6°C, contact "SABIANA" technical department
 Max. rated pressure 1000 kPa (10 bars)

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



Cooling emission

Entering air temperature: +27°C - Relative Humidity: 50%

Model	Vdc	WT: 7/12 °C					WT: 8/13 °C					WT: 10/15 °C					WT: 12/17 °C				
		Qv	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)			
		m³/h	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa			
CVP-ECM 1	10 MAX	415	2,14	1,53	370	12,9	1,91	1,46	331	10,5	1,49	1,36	259	6,7	1,14	1,14	198	4,1			
	7,5	355	1,94	1,37	335	10,8	1,74	1,30	300	8,8	1,35	1,20	234	5,6	1,03	1,03	178	3,4			
	5 MED	290	1,69	1,18	293	8,5	1,52	1,11	263	7,0	1,18	1,02	204	4,4	0,89	0,89	154	2,6			
	3	240	1,49	1,02	257	6,7	1,34	0,96	231	5,5	1,03	0,88	179	3,4	0,77	0,77	134	2,0			
CVP-ECM 2	10 MAX	510	2,41	1,76	418	16,1	2,16	1,69	375	13,2	1,69	1,59	295	8,5	1,30	1,30	227	5,3			
	7,5	440	2,21	1,59	383	13,8	1,98	1,52	343	11,2	1,55	1,42	269	7,2	1,18	1,18	206	4,4			
	5 MED	375	2,01	1,43	347	11,5	1,80	1,35	311	9,4	1,40	1,26	243	6,0	1,07	1,07	185	3,6			
	3	315	1,79	1,26	309	9,4	1,61	1,19	278	7,7	1,25	1,09	216	4,8	0,94	0,94	164	2,9			
CVP-ECM 3	10 MAX	620	3,51	2,46	607	34,6	3,16	2,32	547	28,6	2,47	2,14	428	18,2	1,88	1,88	327	11,1			
	7,5	520	3,13	2,16	541	28,1	2,83	2,04	489	23,3	2,20	1,86	381	14,8	1,67	1,67	289	8,9			
	5 MED	420	2,70	1,84	467	21,5	2,44	1,74	422	17,9	1,90	1,57	329	11,3	1,43	1,43	247	6,7			
	3	345	2,35	1,58	405	16,7	2,13	1,49	367	13,9	1,65	1,34	286	8,8	1,24	1,21	214	5,2			
CVP-ECM 4	10 MAX	770	4,00	2,85	693	44,0	3,60	2,70	624	36,2	2,83	2,53	491	23,3	2,17	2,17	378	14,4			
	7,5	665	3,67	2,58	634	37,5	3,30	2,43	571	30,9	2,58	2,26	448	19,8	1,97	1,97	343	12,1			
	5 MED	550	3,25	2,25	562	30,1	2,93	2,12	507	24,9	2,29	1,95	396	15,8	1,73	1,73	301	9,6			
	3	465	2,90	1,99	501	24,5	2,62	1,87	453	20,3	2,04	1,70	353	12,8	1,54	1,54	267	7,7			
1 MIN	375	2,50	1,69	431	18,7	2,26	1,59	390	15,5	1,75	1,43	303	9,8	1,32	1,30	228	5,8				

Entering air temperature: +26°C - Relative Humidity: 50%

Model	Vdc	WT: 7/12 °C					WT: 8/13 °C					WT: 10/15 °C					WT: 12/17 °C				
		Qv	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)			
		m³/h	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa			
CVP-ECM 1	10 MAX	415	1,90	1,46	330	10,5	1,69	1,40	293	8,5	1,31	1,31	227	5,3	0,99	0,99	173	3,2			
	7,5	355	1,73	1,30	299	8,8	1,53	1,25	265	7,1	1,18	1,16	205	4,4	0,89	0,89	155	2,6			
	5 MED	290	1,51	1,12	261	6,9	1,34	1,07	232	5,5	1,03	0,98	178	3,4	0,77	0,77	134	2,0			
	3	240	1,33	0,97	230	5,5	1,17	0,92	203	4,4	0,90	0,84	155	2,7	0,67	0,67	116	1,6			
CVP-ECM 2	10 MAX	510	2,15	1,68	373	13,1	1,91	1,63	333	10,6	1,49	1,49	260	6,7	1,14	1,14	199	4,1			
	7,5	440	1,97	1,52	342	11,2	1,75	1,47	304	9,0	1,36	1,36	236	5,7	1,03	1,03	180	3,5			
	5 MED	375	1,79	1,35	310	9,4	1,59	1,30	275	7,5	1,22	1,21	213	4,7	0,92	0,92	161	2,8			
	3	315	1,60	1,19	276	7,6	1,42	1,14	245	6,1	1,09	1,05	188	3,8	0,82	0,82	142	2,3			
CVP-ECM 3	10 MAX	620	3,15	2,32	545	28,5	3,27	2,48	565	30,4	2,16	2,05	375	14,4	1,83	1,83	318	26,6			
	7,5	520	2,81	2,04	486	23,2	2,92	2,17	504	24,8	1,92	1,78	333	11,6	1,62	1,62	282	21,4			
	5 MED	420	2,43	1,74	420	17,8	2,52	1,85	436	19,0	1,65	1,49	286	8,8	1,39	1,39	242	16,2			
	3	345	2,11	1,50	365	13,8	2,19	1,59	379	14,8	1,44	1,27	248	6,8	1,21	1,19	209	12,5			
CVP-ECM 4	10 MAX	770	4,00	2,70	621	36,0	3,19	2,61	554	29,2	2,48	2,43	432	18,5	1,89	1,89	330	11,3			
	7,5	665	3,28	2,44	568	30,7	2,92	2,34	506	24,8	2,26	2,17	393	15,6	1,71	1,71	298	9,4			
	5 MED	550	2,91	2,13	504	24,8	2,59	2,03	449	20,0	2,00	1,87	346	12,4	1,50	1,50	261	7,4			
	3	465	2,60	1,88	450	20,2	2,32	1,79	400	16,3	1,78	1,63	308	10,0	1,33	1,33	231	5,9			
1 MIN	375	2,24	1,60	387	15,4	2,00	1,51	345	12,4	1,53	1,36	264	7,6	1,13	1,13	196	4,4				

Correction factors for different R.H.

R.H.	WT:	7/12°C	8/13°C	10/15°C	12/17°C
48%	Pc	0,95	0,94	1,00	1,00
	Ps	1,00	1,00	1,00	1,00
46%	Pc	0,90	0,88	1,00	1,00
	Ps	1,00	1,00	1,00	1,00

Legend

- WT = Water temperature
- Pc = Cooling Total emission
- Ps = Cooling Sensible emission
- Qw = Water flow
- Dp(c) = Water side pressure drop
- Vdc = Inverter power
- MAX = High speed
- MED = Medium speed
- MIN = Low speed
- Qv = Air flow

Cooling emission

Entering air temperature: +25°C - Relative Humidity: 50%

Model	Vdc	WT: 7/12 °C					WT: 8/13 °C					WT: 10/15 °C					WT: 12/17 °C				
		Qv	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)			
		m³/h	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa	kW	kW	l/h	kPa			
CVP-ECM 1	10 MAX	415	1,68	1,40	292	8,5	1,49	1,35	258	6,7	1,14	1,14	199	4,2	0,90	0,90	157	2,7			
	7,5	355	1,53	1,25	264	7,1	1,35	1,20	233	5,6	1,03	1,03	179	3,4	0,77	0,77	135	2,1			
	5 MED	290	1,33	1,07	231	5,5	1,17	1,02	203	4,4	0,89	0,89	155	2,7	0,66	0,66	116	1,6			
	3	240	1,17	0,92	202	4,4	1,03	0,87	178	3,4	0,78	0,78	135	2,1	0,57	0,57	100	1,2			
CVP-ECM 2	10 MAX	510	1,90	1,63	331	10,6	1,69	1,58	294	8,5	1,31	1,31	228	5,3	1,09	1,09	191	3,9			
	7,5	440	1,75	1,46	303	9,0	1,54	1,41	268	7,2	1,19	1,19	207	4,5	0,95	0,95	166	3,0			
	5 MED	375	1,58	1,30	274	7,5	1,40	1,25	242	6,0	1,07	1,07	186	3,7	0,82	0,82	143	2,3			
	3	315	1,41	1,14	244	6,1	1,24	1,09	215	4,9	0,95	0,95	164	3,0	0,71	0,71	123	1,7			
CVP-ECM 3	10 MAX	620	2,79	2,23	483	22,9	2,46	2,13	427	18,3	1,89	1,89	328	11,3	1,42	1,42	247	6,7			
	7,5	520	2,49	1,95	430	18,6	2,19	1,86	380	14,8	1,67	1,67	290	9,0	1,25	1,25	217	5,3			
	5 MED	420	2,15	1,65	371	14,3	1,89	1,57	328	11,3	1,43	1,42	248	6,8	1,06	1,06	185	4,0			
	3	345	1,87	1,41	323	11,1	1,65	1,34	284	8,8	1,24	1,20	215	5,3	0,91	0,91	159	3,0			
CVP-ECM 4	10 MAX	770	3,18	2,60	551	29,1	2,82	2,51	490	23,4	2,17	2,17	379	14,6	1,64	1,64	288	8,8			
	7,5	665	2,91	2,34	504	24,8	2,57	2,25	446	19,8	1,98	1,98	344	12,3	1,49	1,49	259	7,3			
	5 MED	550	2,58	2,03	447	19,9	2,28	1,95	395	15,9	1,74	1,74	302	9,7	1,30	1,30	226	5,7			
	3	465	2,31	1,79	399	16,2	2,03	1,70	351	12,9	1,54	1,54	268	7,8	1,15	1,15	199	4,6			
1	375	1,99	1,51	343	12,4	1,75	1,43	302	9,8	1,32	1,29	229	5,9	0,97	0,97	169	3,4				

Heating emission

Entering air temperature: +20°C

Model	Vdc	WT: 70/60 °C				WT: 60/50 °C				WT: 50/40 °C				WT: 50/45 °C				WT: 45/40 °C			
		Qv	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)				
		m³/h	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa				
CVP-ECM 1	10 MAX	415	4,75	409	11,7	3,67	316	7,6	2,58	222	4,2	2,89	497	17,6	2,35	405	12,4				
	7,5	355	4,22	363	9,4	3,26	281	6,1	2,30	198	3,4	2,56	441	14,2	2,09	359	10,0				
	5 MED	290	3,59	309	7,0	2,79	240	4,6	1,97	169	2,6	2,18	375	10,6	1,78	306	7,5				
	3	240	3,08	265	5,3	2,39	206	3,5	1,70	146	2,0	1,87	322	8,1	1,53	263	5,7				
CVP-ECM 2	10 MAX	510	5,55	477	15,4	4,28	368	10,0	3,00	258	5,5	3,37	580	23,3	2,74	472	16,3				
	7,5	440	4,97	427	12,6	3,83	330	8,2	2,70	232	4,5	3,02	519	19,1	2,46	423	13,4				
	5 MED	375	4,40	378	10,1	3,40	293	6,6	2,40	206	3,6	2,67	460	15,3	2,18	375	10,8				
	3	315	3,84	330	7,9	2,97	256	5,2	2,10	181	2,9	2,33	401	12,0	1,90	327	8,4				
CVP-ECM 3	10 MAX	620	7,19	618	26,9	5,58	480	17,7	3,96	340	9,9	4,36	751	40,6	3,57	614	28,8				
	7,5	520	6,27	539	21,1	4,87	419	13,8	3,47	298	7,8	3,81	655	31,8	3,11	536	22,5				
	5 MED	420	5,29	455	15,5	4,12	354	10,2	2,94	253	5,8	3,21	553	23,4	2,63	452	16,6				
	3	345	4,51	388	11,6	3,52	303	7,7	2,52	216	4,4	2,74	471	17,5	2,24	386	12,5				
CVP-ECM 4	10 MAX	770	8,45	727	36,1	6,55	564	23,6	4,64	399	13,1	5,14	884	54,5	4,20	722	38,6				
	7,5	665	7,58	652	29,6	5,88	506	19,4	4,17	359	10,8	4,61	792	44,7	3,76	647	31,7				
	5 MED	550	6,55	563	22,8	5,09	438	15,0	3,62	311	8,4	3,98	685	34,4	3,26	560	24,4				
	3	465	5,74	494	18,0	4,47	384	11,8	3,18	274	6,7	3,49	600	27,1	2,85	491	19,3				
1	375	4,83	415	13,2	3,76	324	8,7	2,69	231	4,9	2,93	504	19,8	2,40	413	14,1					

Legend

- WT** = Water temperature
- Ph** = Emission
- Pc** = Cooling Total emission
- Ps** = Cooling Sensible emission
- Qw** = Water flow
- Dp(c)** = Water side pressure drop
- Vdc** = Inverter power
- MAX** = High speed
- MED** = Medium speed
- MIN** = Low speed
- Qv** = Air flow

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

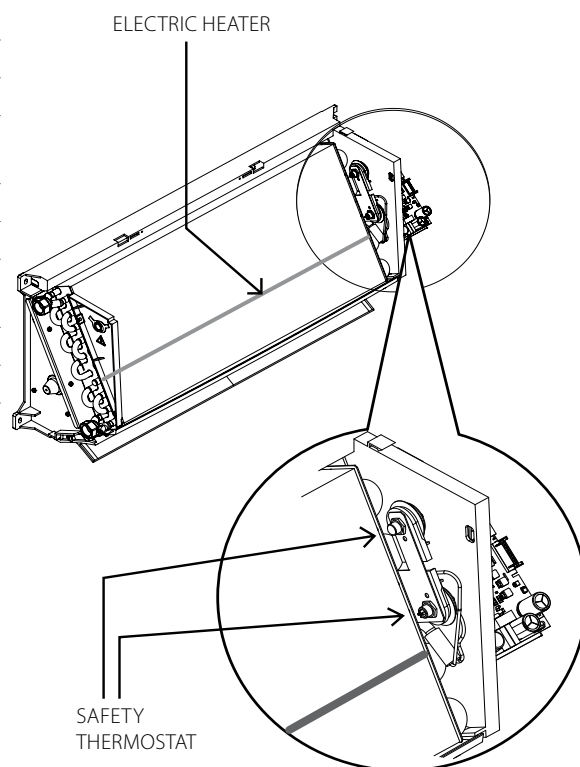
The heater is hermetically sealed and supplied inside the battery pipes and therefore can be only factory mounted.

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.

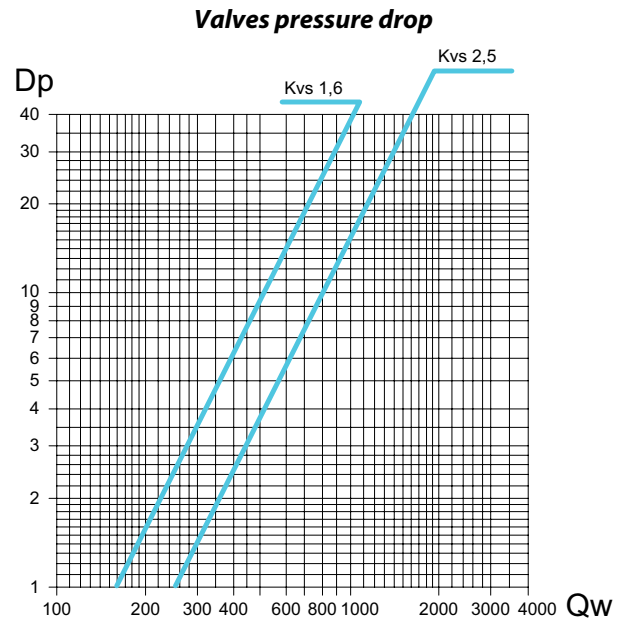
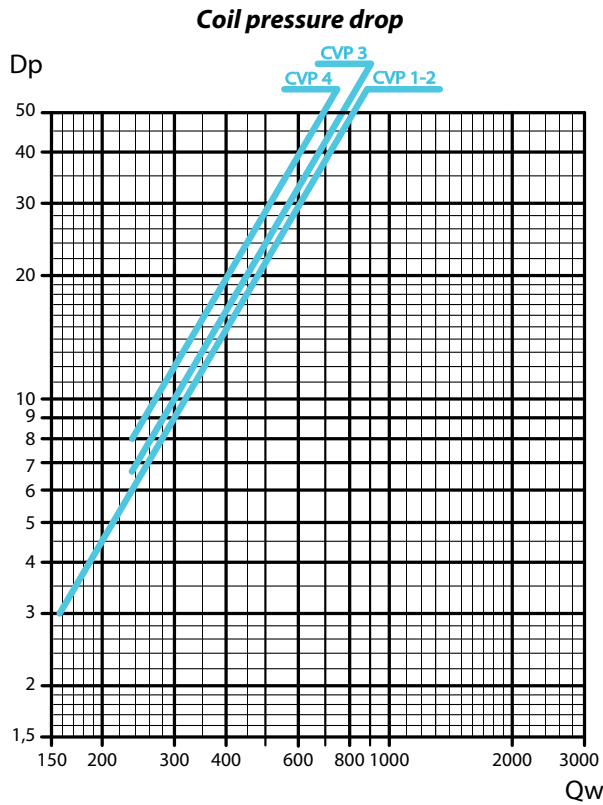

Main technical characteristics

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



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

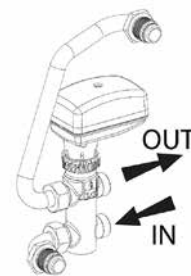
Pressure drop for mean water temperature of 10°C; for different temperatures multiply the pressure drop figure by the K correction factors in the table.

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

ACCESSORIES

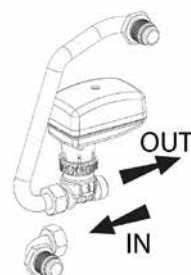
FV3S 3 way valve

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

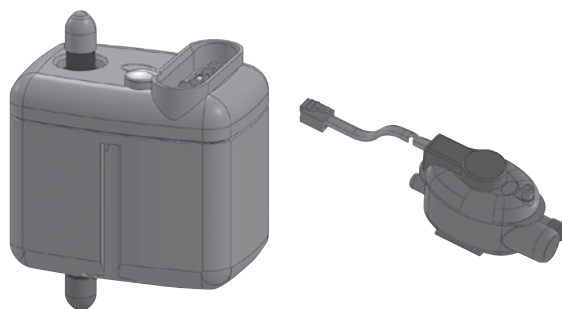
Mod.	Valve			ID	Code
	DN	(Ø)	Kvs		Not fitted
1-2	15	1/2"	1,6	FV2S 1-2	9025311H
3-4	20	3/4"	2,5	FV2S 3-4	9025313H



PCF condensate drain pump

	ID	Code
Fitted on the unit	PCF-M	9025319
Not fitted on the unit	PCF-S	9025309

Height for vertical flow (m)	Water flow (l/h) depending on the length of horizontal flow	
	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:

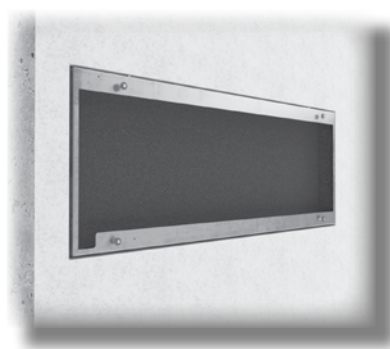
- Recessed box installation
- Wall installation with aesthetic frame.

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.

Recessed box installation

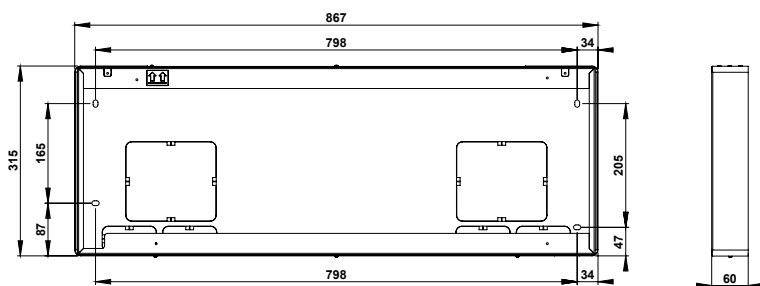


Wall installation

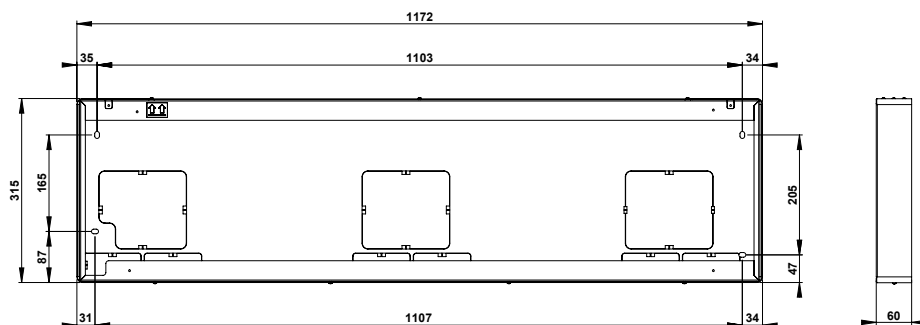


Dimensions

Gr. 1 - 2



Gr. 3 - 4



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:

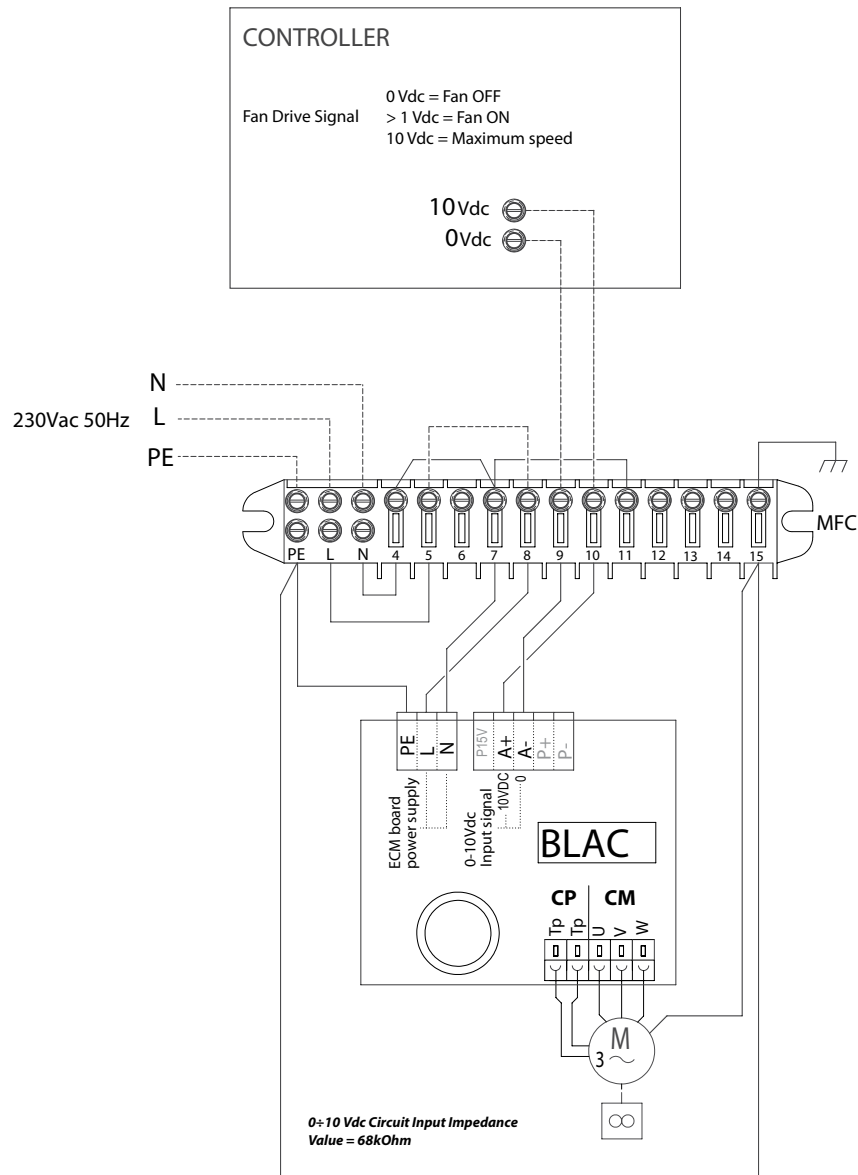
CONTROLLER Fan Drive Signal

- 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

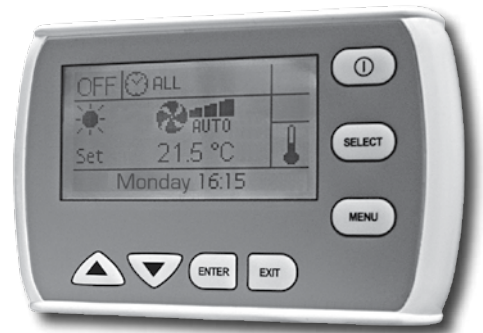
All the controls are described in detail in the “Fan Coil Control Range” literature.

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



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