

High wall fan coils Climmy FHW/FHW-ECM



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Астана (7172)727-132
Астрахань (8512)99-46-04
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Оренбург (3532)37-68-04
Пенза (8412)22-31-16

Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
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Ставрополь (8652)20-65-13

Сургут (3462)77-98-35
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Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
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FHW-ECM Series

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FHW / FHW-ECM Series

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Introduction

Climmy FHW is a high wall fan coil unit designed and manufactured in the EU/Italy in 4 sizes and many different models.

Climmy FHW 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 installation in any environment.

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



Versions and Main components

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:

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

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.

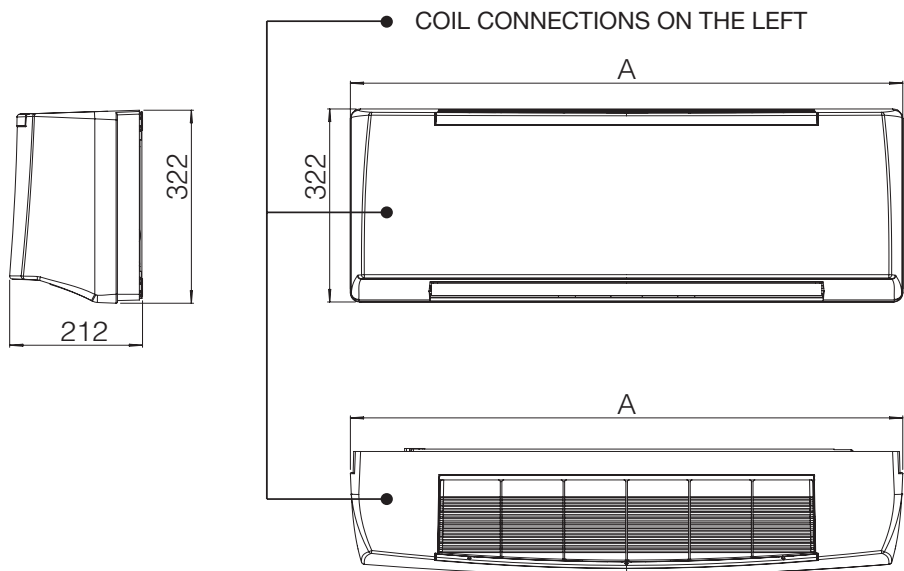
Condensate Collection Tray

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

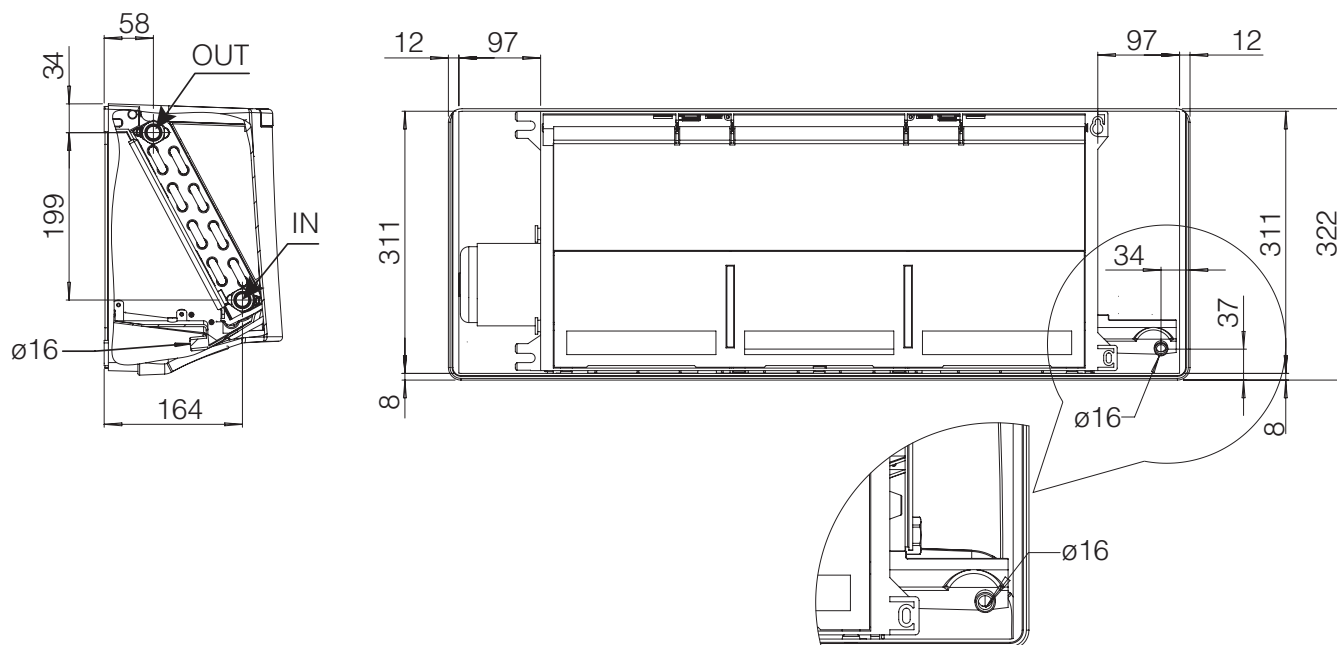
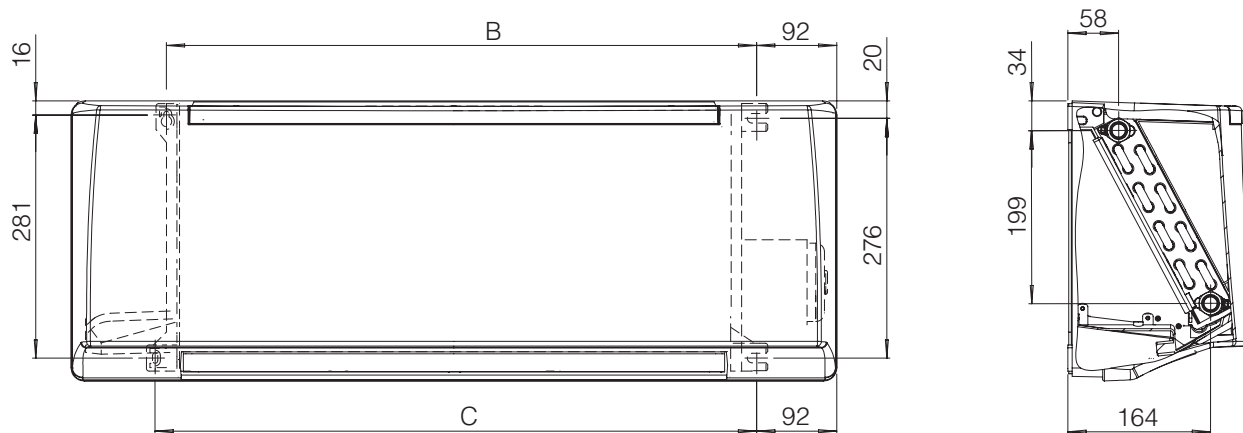
Installation template

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

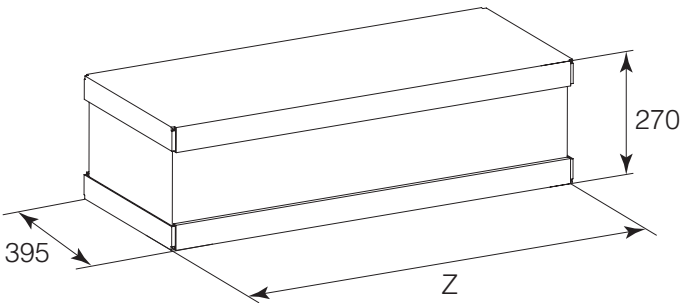
Dimensions, Weight, Water content



MOUNTING DIMENSIONS



Dimensions, Weight, Water content



DIMENSIONS (mm)

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

WEIGHT (kg)

	Weight packed unit				Weight unpacked unit			
MODEL	1	2	3	4	1	2	3	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	1	2	3	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: + 50°C E.W.T.

Water flow rate as for the cooling conditions

MODEL		1						2					
Speed		1 (E)	2 (E)	3	4 (E)	5	6	1 (E)	2	3 (E)	4	5 (E)	6
		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	1,24	1,50	1,76	1,87	2,15	2,23	1,43	1,63	1,84	1,95	2,18	2,35
Cooling sensible emission (E)	kW	0,92	1,14	1,36	1,46	1,72	1,80	1,07	1,25	1,43	1,53	1,75	1,92
Heating (E)	kW	1,60	2,00	2,38	2,57	3,04	3,17	1,92	2,24	2,58	2,76	3,16	3,46
ΔP Cooling (E)	kPa	6,4	9,0	12,0	13,4	17,2	18,4	8,2	10,5	13,0	14,4	17,6	20,1
ΔP Heating (E)	kPa	4,9	7,1	9,3	10,7	14,1	14,8	6,4	8,3	10,4	11,5	14,3	16,5
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		3						4					
Speed		1 (E)	2 (E)	3	4 (E)	5	6	1	2 (E)	3	4 (E)	5	6 (E)
		MIN	MED		MAX				MIN		MED		MAX
Air flow	m ³ /h	280	375	480	545	730	780	300	440	500	610	675	790
Cooling total emission (E)	kW	1,89	2,32	2,78	3,03	3,63	3,78	1,99	2,62	2,86	3,26	3,46	3,81
Cooling sensible emission (E)	kW	1,35	1,69	2,06	2,27	2,81	2,95	1,43	1,93	2,12	2,47	2,66	2,98
Heating (E)	kW	2,30	2,90	3,57	3,99	4,90	5,15	2,44	3,33	3,69	4,30	4,63	5,20
ΔP Cooling (E)	kPa	13,5	19,5	27,0	31,5	43,7	47,0	14,8	24,2	28,4	36,0	40,2	47,7
ΔP Heating (E)	kPa	10,5	15,4	21,2	25,4	34,7	37,9	11,7	19,3	22,5	28,9	32,1	38,5
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.

Working conditions and Air throw

WORKING CONDITIONS

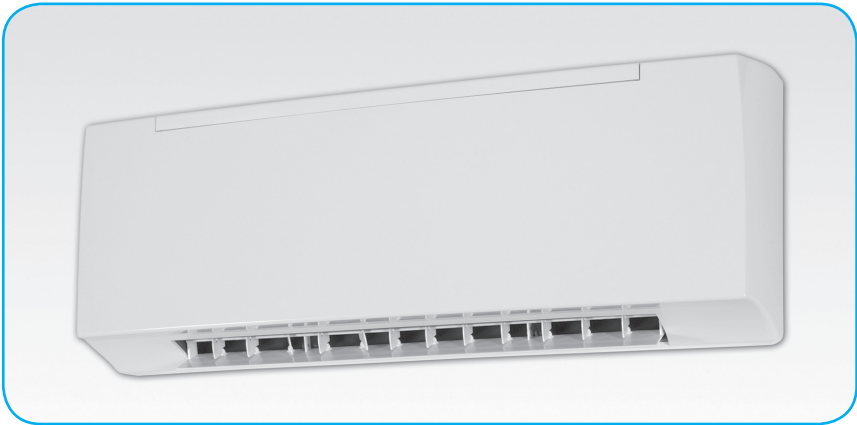
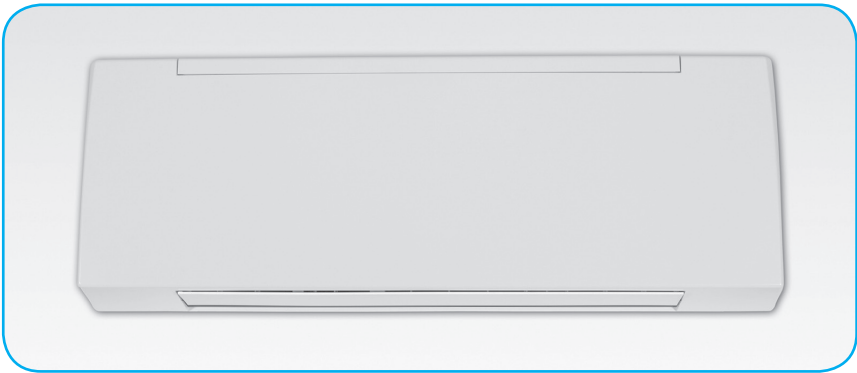
Max. entering water temperature..... + 70 °C
Min. entering water temperature..... + 6 °C
for entering water temperatures below + 5°C, contact HIDRIA" technical department
Max. rated pressure 1000 kPa (10 bars)

Installation height (m)

MODEL	1 ÷ 4
Minimum	2
Maximum	3

Motor electrical data (max. absorption)

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



Emissions

Cooling emission

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

		WT: 7/12 °C					WT: 8/13 °C				WT: 10/15 °C				WT: 12/17 °C			
Model	Speed	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
FHW 1	VI	500	2,40	1,76	413	15,8	2,15	1,68	370	12,9	1,69	1,59	291	8,3	1,31	1,31	224	5,2
	V	470	2,32	1,69	399	14,8	2,08	1,61	357	12,1	1,63	1,51	281	7,8	1,25	1,25	216	4,8
	IV MAX	375	2,02	1,44	347	11,6	1,81	1,36	311	9,5	1,41	1,27	243	6,0	1,08	1,08	185	3,6
	III	340	1,89	1,34	326	10,3	1,70	1,27	292	8,4	1,32	1,17	228	5,3	1,00	1,00	173	3,2
	II MED	270	1,62	1,13	279	7,8	1,46	1,06	250	6,4	1,13	0,97	194	4,0	0,85	0,85	146	2,4
	I MIN	205	1,33	0,91	229	5,5	1,20	0,86	207	4,5	0,93	0,78	160	2,8	0,70	0,70	120	1,7
FHW 2	VI	545	2,53	1,86	434	17,3	2,26	1,79	390	14,2	1,78	1,70	307	9,1	1,38	1,38	237	5,7
	V MAX	480	2,35	1,71	404	15,2	2,10	1,63	361	12,4	1,65	1,54	284	7,9	1,27	1,27	219	4,9
	IV	400	2,10	1,51	362	12,5	1,88	1,43	324	10,2	1,47	1,33	253	6,5	1,13	1,13	194	3,9
	III MED	365	1,98	1,41	341	11,2	1,78	1,34	306	9,1	1,39	1,24	239	5,8	1,06	1,06	182	3,5
	II	305	1,76	1,24	303	9,0	1,58	1,17	272	7,4	1,23	1,07	211	4,7	0,93	0,93	160	2,8
	I MIN	250	1,54	1,06	264	7,1	1,38	1,00	238	5,8	1,07	0,91	184	3,6	0,80	0,80	138	2,2
FHW 3	VI	780	4,06	2,91	698	44,5	3,66	2,75	629	36,6	2,88	2,58	495	23,6	2,21	2,21	381	14,6
	V	730	3,90	2,78	671	41,4	3,51	2,63	604	34,1	2,76	2,45	475	21,9	2,12	2,12	365	13,5
	IV MAX	545	3,24	2,25	558	29,7	2,93	2,13	504	24,6	2,29	1,95	393	15,6	1,74	1,74	299	9,4
	III	480	2,97	2,05	512	25,4	2,69	1,93	463	21,1	2,10	1,76	360	13,3	1,59	1,59	273	8,0
	II MED	375	2,48	1,68	427	18,3	2,24	1,58	386	15,2	1,75	1,42	300	9,6	1,31	1,29	225	5,7
	I MIN	280	2,02	1,35	347	12,6	1,83	1,27	315	10,6	1,43	1,13	245	6,7	1,06	1,02	183	3,9
FHW 4	VI MAX	790	4,09	2,93	704	45,1	3,68	2,78	633	37,2	2,90	2,60	499	23,9	2,23	2,23	384	14,8
	V	675	3,72	2,63	640	38,0	3,35	2,48	576	31,4	2,63	2,31	452	20,1	2,01	2,01	346	12,3
	IV MED	610	3,50	2,45	601	34,0	3,15	2,31	542	28,1	2,47	2,13	424	17,9	1,88	1,88	324	10,9
	III	500	3,06	2,12	527	26,8	2,77	1,99	476	22,2	2,16	1,82	371	14,1	1,63	1,63	281	8,4
	II MIN	440	2,80	1,92	482	22,8	2,53	1,81	436	18,9	1,98	1,64	340	12,0	1,49	1,49	256	7,1
	I	300	2,12	1,43	365	13,9	1,93	1,34	332	11,6	1,50	1,20	258	7,3	1,12	1,08	193	4,3

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

		WT: 7/12 °C					WT: 8/13 °C				WT: 10/15 °C				WT: 12/17 °C			
Model	Speed	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
FHW 1	VI	500	2,14	1,68	368	12,9	1,91	1,63	329	10,4	1,49	1,49	256	6,6	1,14	1,14	196	4,1
	V	470	2,06	1,61	355	12,0	1,84	1,56	316	9,7	1,43	1,43	246	6,1	1,09	1,09	188	3,8
	IV MAX	375	1,80	1,37	310	9,4	1,60	1,31	275	7,6	1,24	1,22	213	4,7	0,94	0,94	161	2,8
	III	340	1,69	1,27	291	8,4	1,50	1,22	258	6,7	1,16	1,13	199	4,2	0,87	0,87	150	2,5
	II MED	270	1,45	1,07	249	6,4	1,28	1,02	221	5,1	0,98	0,93	169	3,1	0,74	0,74	127	1,8
	I MIN	205	1,19	0,86	205	4,5	1,06	0,82	182	3,6	0,81	0,74	139	2,2	0,60	0,60	103	1,3
FHW 2	VI	545	2,25	1,79	387	14,1	2,01	1,74	345	11,4	1,57	1,57	270	7,3	1,21	1,21	208	4,5
	V MAX	480	2,09	1,63	360	12,3	1,86	1,58	320	10,0	1,45	1,45	250	6,3	1,11	1,11	191	3,9
	IV	400	1,88	1,43	323	10,1	1,67	1,38	287	8,2	1,29	1,29	222	5,1	0,98	0,98	169	3,1
	III MED	365	1,77	1,34	304	9,1	1,57	1,29	270	7,3	1,21	1,19	209	4,6	0,92	0,92	158	2,7
	II	305	1,57	1,17	270	7,4	1,39	1,12	240	5,9	1,07	1,03	184	3,6	0,81	0,81	139	2,2
	I MIN	250	1,37	1,00	236	5,8	1,22	0,96	209	4,6	0,93	0,87	160	2,8	0,70	0,70	120	1,7
FHW 3	VI	780	3,64	2,76	625	36,5	3,24	2,66	558	29,6	2,53	2,49	435	18,8	1,94	1,94	333	11,5
	V	730	3,50	2,63	601	34,0	3,12	2,53	536	27,5	2,43	2,36	417	17,4	1,85	1,85	318	10,6
	IV MAX	545	2,91	2,13	501	24,5	2,59	2,03	446	19,7	2,00	1,87	344	12,3	1,51	1,51	259	7,3
	III	480	2,67	1,94	460	21,0	2,38	1,84	409	16,9	1,83	1,68	315	10,4	1,37	1,37	236	6,2
	II MED	375	2,23	1,59	384	15,1	1,98	1,50	341	12,2	1,52	1,35	261	7,5	1,13	1,13	194	4,4
	I MIN	280	1,82	1,27	313	10,5	1,62	1,20	279	8,5	1,24	1,07	213	5,2	0,91	0,91	157	3,0
FHW 4	VI MAX	790	3,67	2,78	630	37,0	3,27	2,69	562	30,0	2,55	2,52	439	19,1	1,95	1,95	336	11,6
	V	675	3,34	2,49	574	31,3	2,97	2,39	511	25,2	2,31	2,22	397	15,8	1,75	1,75	302	9,6
	IV MED	610	3,14	2,32	539	27,9	2,79	2,22	480	22,6	2,16	2,05	372	14,1	1,64	1,64	282	8,5
	III	500	2,75	2,00	473	22,1	2,44	1,90	420	17,8	1,88	1,74	324	11,0	1,41	1,41	243	6,5
	II MIN	440	2,52	1,81	433	18,8	2,24	1,72	385	15,2	1,72	1,56	296	9,3	1,29	1,29	221	5,5
	I	300	1,91	1,35	329	11,5	1,71	1,27	293	9,3	1,30	1,13	224	5,7	0,96	0,96	166	3,3

Correction factors for different R.H.

U.R.	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

Emissions

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
FHW 1	VI	500	1,90	1,63	328	10,4	1,69	1,58	290	8,3	1,31	1,31	225	6,9	1,09	1,09	188	3,7
	V	470	1,83	1,55	315	9,7	1,62	1,50	279	7,8	1,26	1,26	216	6,4	1,03	1,03	177	3,4
	IV MAX	375	1,59	1,31	274	7,6	1,41	1,26	242	6,0	1,08	1,08	186	4,9	0,83	0,83	143	2,3
	III	340	1,49	1,22	257	6,7	1,32	1,17	227	5,3	1,01	1,01	173	4,3	0,76	0,76	130	1,9
	II MED	270	1,28	1,02	220	5,1	1,12	0,97	193	4,0	0,86	0,86	147	3,2	0,64	0,64	109	1,4
	I MIN	205	1,05	0,82	181	3,6	0,92	0,77	159	2,8	0,70	0,70	120	2,2	0,51	0,51	89	1,0
FHW 2	VI	545	2,00	1,73	345	11,4	1,78	1,68	306	9,2	1,39	1,39	238	7,7	1,17	1,17	201	4,2
	V MAX	480	1,86	1,58	319	9,9	1,64	1,53	283	8,0	1,27	1,27	219	6,6	1,05	1,05	181	3,5
	IV	400	1,66	1,38	286	8,1	1,47	1,33	253	6,5	1,13	1,13	194	5,3	0,88	0,88	152	2,5
	III MED	365	1,56	1,29	269	7,3	1,38	1,24	238	5,8	1,06	1,06	182	4,7	0,81	0,81	139	2,2
	II	305	1,39	1,12	239	5,9	1,22	1,07	210	4,7	0,93	0,93	160	3,8	0,70	0,70	120	1,7
	I MIN	250	1,21	0,96	208	4,6	1,06	0,91	183	3,6	0,81	0,81	139	2,9	0,60	0,60	103	1,3
FHW 3	VI	780	3,23	2,66	556	29,5	2,87	2,57	493	23,7	2,22	2,22	382	17,8	1,69	1,69	290	9,0
	V	730	3,10	2,53	534	27,4	2,75	2,44	474	22,0	2,13	2,13	366	16,5	1,61	1,61	277	8,2
	IV MAX	545	2,58	2,04	444	19,7	2,28	1,95	392	15,7	1,74	1,74	300	11,5	1,31	1,31	225	5,6
	III	480	2,37	1,84	407	16,9	2,09	1,76	359	13,4	1,59	1,59	274	9,8	1,19	1,19	204	4,8
	II MED	375	1,98	1,50	340	12,2	1,74	1,43	299	9,6	1,32	1,29	226	6,9	0,97	0,97	167	3,3
	I MIN	280	1,61	1,20	277	8,4	1,42	1,13	244	6,7	1,07	1,01	183	4,8	0,78	0,78	135	2,2
FHW 4	VI MAX	790	3,26	2,68	560	29,9	2,89	2,59	497	24,0	2,24	2,24	385	18,1	1,70	1,70	293	9,1
	V	675	2,96	2,39	509	25,1	2,62	2,30	450	20,1	2,02	2,02	347	15,0	1,52	1,52	262	7,5
	IV MED	610	2,78	2,22	478	22,5	2,46	2,13	423	18,0	1,89	1,89	325	13,3	1,42	1,42	244	6,6
	III	500	2,44	1,90	419	17,7	2,15	1,82	370	14,1	1,64	1,64	282	10,3	1,22	1,22	211	5,0
	II MIN	440	2,23	1,72	384	15,2	1,97	1,64	338	12,0	1,49	1,49	257	8,7	1,11	1,11	191	4,2
	I	300	1,70	1,27	292	9,3	1,49	1,20	257	7,3	1,12	1,07	193	5,2	0,83	0,83	142	2,5

Heating emission

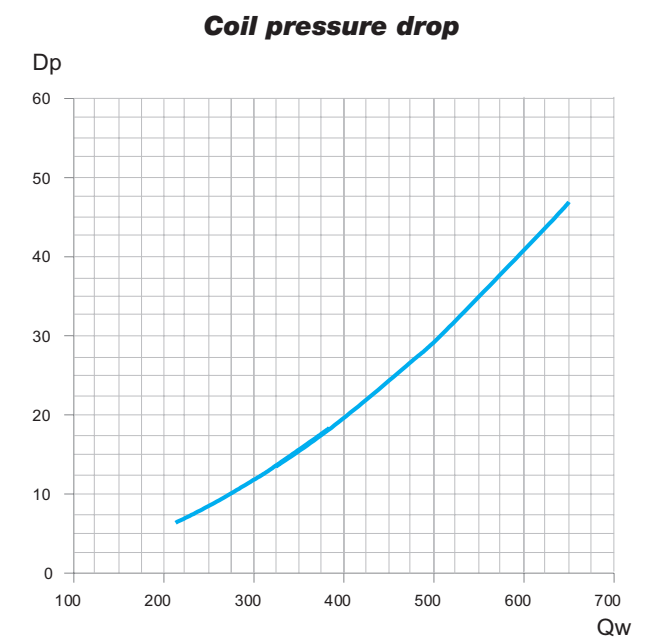
Entering air temperature: +20°C

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
FHW 1	VI	500	5,46	470	15,0	4,22	363	9,7	2,96	254	5,3	3,32	286	22,6	2,71	233	15,9
	V	470	5,22	449	13,8	4,03	346	9,0	2,83	244	4,9	3,17	273	20,8	2,58	222	14,7
	IV MAX	375	4,40	378	10,1	3,40	293	6,6	2,40	206	3,6	2,67	230	15,3	2,18	187	10,8
	III	340	4,07	350	8,8	3,16	271	5,8	2,23	191	3,2	2,48	213	13,3	2,02	174	9,4
	II MED	270	3,39	292	6,4	2,63	226	4,2	1,86	160	2,3	2,06	177	9,6	1,68	145	6,8
	I MIN	205	2,71	233	4,2	2,11	181	2,8	1,50	129	1,6	1,64	141	6,4	1,34	116	4,5
FHW 2	VI	545	5,82	514	16,8	4,49	397	10,9	3,15	278	6,0	3,54	313	25,4	2,88	255	17,8
	V MAX	480	5,30	468	14,2	4,09	361	9,2	2,87	254	5,0	3,22	284	21,4	2,62	232	15,1
	IV	400	4,62	408	11,1	3,57	315	7,2	2,52	222	4,0	2,81	248	16,7	2,29	202	11,8
	III MED	365	4,31	380	9,8	3,33	294	6,4	2,35	207	3,5	2,62	231	14,7	2,13	188	10,4
	II	305	3,74	329	7,6	2,90	255	4,9	2,05	180	2,7	2,27	200	11,4	1,85	163	8,1
	I MIN	250	3,19	280	5,7	2,47	218	3,7	1,75	155	2,1	1,93	170	8,5	1,58	139	6,1
FHW 3	VI	780	8,54	754	36,7	6,61	585	24,0	4,68	414	13,4	5,19	458	55,5	4,24	374	39,2
	V	730	8,13	717	33,6	6,31	556	22,0	4,46	394	12,3	4,94	436	50,8	4,04	356	35,9
	IV MAX	545	6,51	573	22,5	5,06	446	14,8	3,59	317	8,3	3,95	348	34,0	3,23	285	24,1
	III	480	5,89	518	18,8	4,58	403	12,4	3,26	288	7,0	3,57	315	28,4	2,93	257	20,1
	II MED	375	4,78	420	12,9	3,72	327	8,5	2,66	234	4,8	2,90	254	19,4	2,37	209	13,8
	I MIN	280	3,79	332	8,5	2,96	260	5,7	2,13	187	3,2	2,30	201	12,8	1,89	165	9,1
FHW 4	VI MAX	790	8,62	761	37,4	6,68	590	24,4	4,72	418	13,6	5,24	463	56,5	4,28	378	39,9
	V	675	7,66	676	30,2	5,95	525	19,8	4,21	373	11,0	4,66	411	45,7	3,80	336	32,3
	IV MED	610	7,11	627	26,4	5,52	487	17,3	3,92	346	9,7	4,32	380	39,8	3,53	311	28,2
	III	500	6,08	535	19,9	4,73	417	13,1	3,37	297	7,4	3,69	325	30,0	3,02	266	21,3
	II MIN	440	5,49	483	16,6	4,28	376	10,9	3,05	269	6,2	3,34	293	25,0	2,73	240	17,8
	I	300	4,02	352	9,5	3,14	275	6,3	2,25	198	3,6	2,43	213	14,2	2,00	175	10,1

Legend

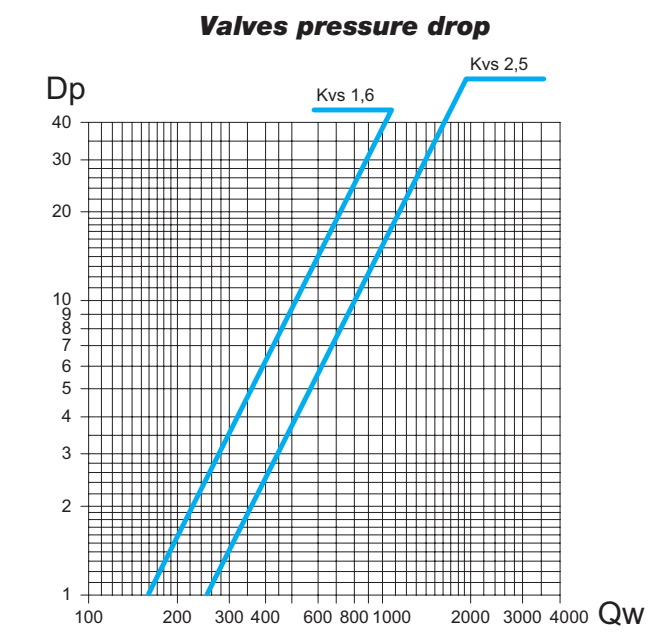
WT = Water temperature	Speed = Fan speed
Ph = Emission	MAX = High speed
Pc = Cooling Total emission	MED = Medium speed
Ps = Cooling Sensible emission	MIN = Low speed
Qw = Water flow	Qv = Air flow
Dp(c) = Water side pressure drop	

Water side pressure drop



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

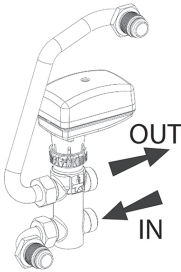


Legend
Qw = water flow (l/h)
Dp = pressure drop (kPa)

Accessories

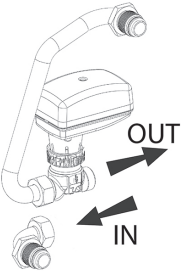
FV3S 3 way valve

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



FV2S 2 way valve

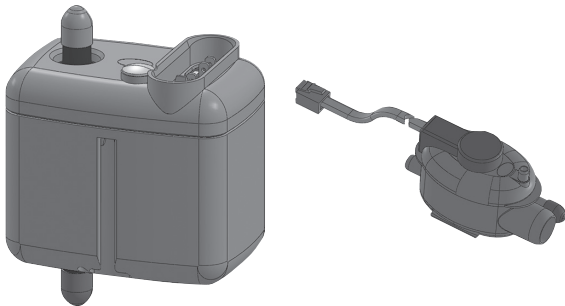
mod.	Valve			Code
	DN	(Ø)	Kvs	Not Fitted
1 - 2	15	1/2"	1,6	9025311H
3 - 4	20	3/4"	2,5	9025313H



PCF condensate drain pump

Not fitted	
ID	PCF
Code	9025309

Height for vertical flow (m)	Water flow (l/h) depending on the length of horizontal flow	
	5m	10 m
1	7,6	7,2
2	5,6	5,2
3	4,0	3,7
4	3,2	2,9



Control operations

Electrical diagrams are shown on the installation, use and maintenance manual

T2T	●	●		●		●	●	●				9060174
TMO-503-SV2	●	●	●	●			●	●		●		9060172
TMO-T-AU	●	●	●	●	●	●	●	●	●	●		9060520
TMO-T	●	●		●	●	●	●		●	●		9060517
CR-T	●	●		●		●	●		●		●	9066330E
MO-3V	●	●									●	9060516

	
ON-OFF switch	
Manual 3 speed switch	
Manual/Automatic 3 speed selection	
Summer/Winter switch	
Remote centralized Summer/Winter switch or by an automatic change-over fitted on the water pipe	
Room thermostat for fan control (ON-OFF)	
Room thermostat for 1 valve control	
Simultaneous thermostatic control of the valves and fan	
Room thermostat for chilled water valve (SUMMER) and electric heater (WINTER) control (in winter only the heater is working)	
Installation of electronic low temperature CUT-OUT thermostat (TME)	
Installation of bimetallic low temperature CUT-OUT thermostat (TMM)	
	

Wall electronic controls

FHW version

ID	Code
MO-3V	9060516



Dimensions: 133x93x37 mm

- ON-OFF switch and speed switch, without thermostatic control.
- It allows to control the low temperature cut-out thermostat (TMM).

ID	Code
CR-T	9066330E



Dimensions: 133x93x37 mm

- Manual speed switch.
- Manual Summer/Winter switch.
- Electronic thermostat for fan control (ON-OFF).
- Electronic thermostat for valve control (ON-OFF).
- It allows to control the low temperature cut-out thermostat (TMM).

ID	Code
TMO-T	90601517



Dimensions: 133x93x37 mm

- Manual speed switch.
- Manual Summer/Winter switch.
- Electronic thermostat for fan control (ON-OFF).
- Electronic thermostat for valve control (ON-OFF).
- It allows to control the low temperature cut-out thermostat (TME).
- It allows to install the Summer/Winter switch centralized and remote, or to control it with an automatic change-over fitted on the water pipe. The latter case needs the adjustment of the jumper on the control board.

ID	Code
TMO-T-AU	9060520



Dimensions: 133x93x37 mm

- Manual or automatic speed switch.
- Manual Summer/Winter switch.
- Electronic thermostat for fan control (ON-OFF).
- Electronic thermostat for valve control (ON-OFF).
- Simultaneous thermostatic control on the valves and fan (ON-OFF).
- It allows to control the low temperature cut-out thermostat (TME).
- It allows to install the Summer/Winter switch centralized and remote, or to control it with an automatic change-over fitted on the water pipe. The latter case needs the adjustment of the jumper on the control board.

Wall electronic controls

FHW version

ID	Code
TMO-503-SV2	9060172



Dimensions: 118x87x8 mm

The TMO-503-SV2 control for fan coils with valves, is designed to be installed in a DIN 503 wall box. The control is supplied integral with the external frame, but it is possible to use frames of the most known brand on the market (BTicino, Vimar, AVE, Gewiss).

- Manual or automatic speed switch.
- Manual Summer/Winter switch.
- Electronic thermostat for valve(s) control (ON-OFF).
- Simultaneous thermostatic control on the valves and fan (ON-OFF)..
- It allows to control the low temperature cut-out thermostat (included with the control).

ID	Code
T2T	9060174



Dimensions: 128x75x25 mm

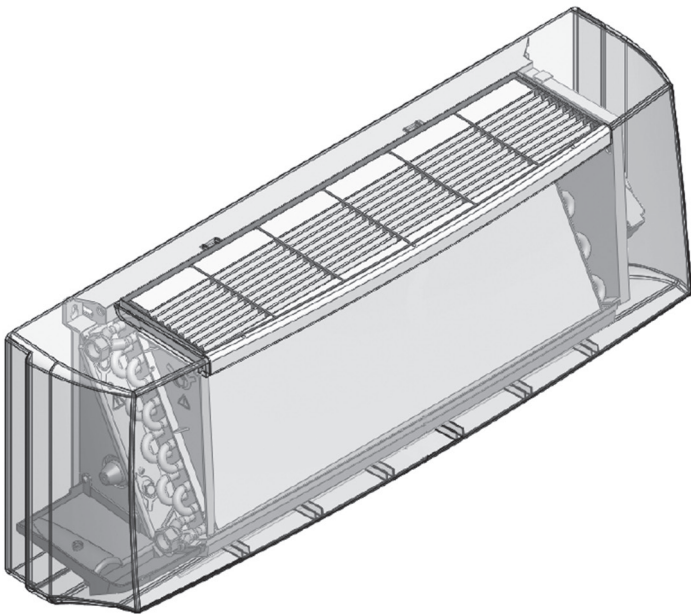
- ON-OFF switch.
 - 3 speed switch.
 - Manual Summer/Winter switch.
 - Electronic thermostat for fan control.
 - Thermostatic control on the valve and continuous fan operation.
 - Simultaneous thermostatic control on the valves and fan.
 - Cannot be used with SEL-CVP speed switch (master-slave).
-

Speed switches

FHW version

ID	Code
SEL-CVP	9025302

- Speed switch (slave).
- It allows to control up to 8 units with only one centralized thermostat using one speed switch for each unit.
- For controls: CR-T, TMO-T, TMO-T-AU and TMO-503-SV2.



Electronic control accessories

FHW version

TME low temperature cut-out thermostat

ID	Code
TME	3021091

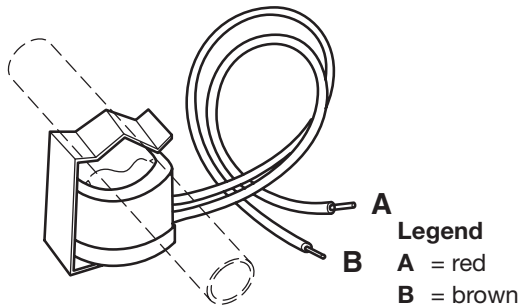


To be fitted between the coil fins.
When connecting the control, the TME probe cable must be separated from the power supply wires.
To be used with the following controls: TMO-T, TMO-T-AU.
It stops the fan when the water temperature is lower than 38°C and it starts the fan when is higher than 42°C.

TMM low temperature cut-out thermostat

ID	Code
TMM	9053048

To be installed in contact with the hot water circuit.
To be used with the following controls only: MO-3V, CR-T.
For units working on heating only.
It stops the fan when the water temperature is lower than 30°C and it starts the fan when is higher than 38°C.

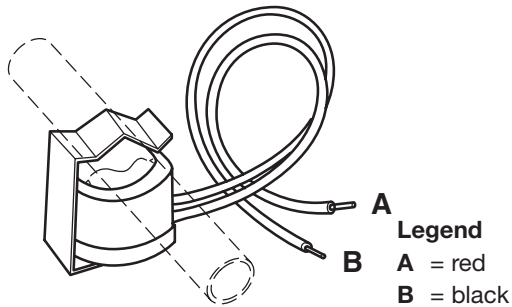


Legend
A = red
B = brown

Change-Over CH 15-25

ID	Code
CH 15 -25	9053049

Automatic summer/winter switch to be installed in contact with the water circuit.
Not to be used with 2 way valve.
To be used with the following controls only: TMO-T, TMO-T-AU.



Legend
A = red
B = black

FHW-ECM

Versions and Main components

Climmy FHW-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:

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

Air Filter

Washable-regenerable synthetic filter, readily accessible.

Fan Assembly

Made of plastic tangential fan.

Electronic motor

Electronic motor with three phase permanent magnet brushless electronic motor that is controlled with reconstructed current 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 230-240V and frequency of 50-60Hz.

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.

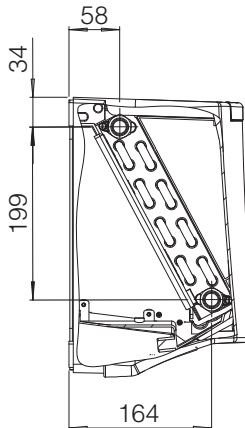
Installation template

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

Dimensions, Weight, Water content



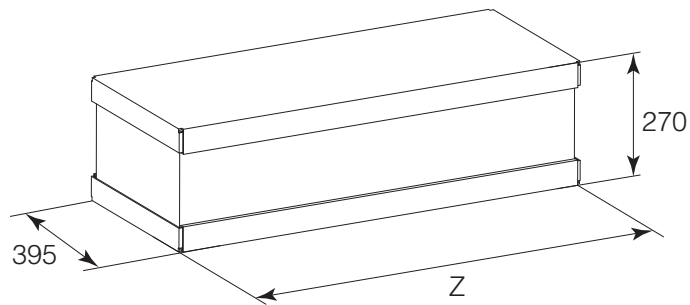
MOUNTING DIMENSIONS



IN

Ø10

Dimensions, Weight, Water content



DIMENSIONS (mm)

<i>MODEL</i>	FHW-ECM 1	FHW-ECM 2	FHW-ECM 3	FHW-ECM 4
A	880	880	1185	1185
B	678	678	983	983
C	691	691	996	996
Z	950	950	1255	1255

WEIGHT (kg)

<i>MODEL</i>	<i>Weight packed unit</i>				<i>Weight unpacked unit</i>			
	FHW-ECM 1	FHW-ECM 2	FHW-ECM 3	FHW-ECM 4	FHW-ECM 1	FHW-ECM 2	FHW-ECM 3	FHW-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)

<i>MODEL</i>	FHW-ECM 1	FHW-ECM 2	FHW-ECM 3	FHW-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: + 50°C E.W.T.

Water flow rate as for the cooling conditions

MODEL		FHW-ECM 1					FHW-ECM 2				
Inverter power		1 (E)	3	5 (E)	7,5	10 (E)	1 (E)	3	5 (E)	7,5	10 (E)
		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	1,17	1,39	1,58	1,81	2,00	1,47	1,67	1,87	2,07	2,26
Cooling sensible emission (E)	kW	0,86	1,04	1,20	1,40	1,57	1,10	1,28	1,46	1,64	1,83
Heating (E)	kW	1,50	1,82	2,12	2,48	2,78	1,94	2,25	2,58	2,90	3,23
ΔP Cooling (E)	kPa	5,0	6,3	7,7	9,5	11,2	6,9	8,4	10,1	11,8	13,7
ΔP Heating (E)	kPa	4,2	5,4	6,5	8,2	9,3	5,6	6,9	8,5	9,7	11,6
Fan (E)	W	6	7	9	11	15	7	9	12	16	21
Sound power (E)	Lw	35	41	46	48	52	39	43	47	49	53
Sound pressure (*)	Lp	26	32	37	39	43	30	34	38	40	44

MODEL		FHW-ECM 3					FHW-ECM 4				
Inverter power		1 (E)	3	5 (E)	7,5	10 (E)	1 (E)	3	5 (E)	7,5	10 (E)
		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	1,83	2,20	2,53	2,93	3,29	2,34	2,72	3,05	3,43	3,75
Cooling sensible emission (E)	kW	1,31	1,60	1,86	2,19	2,50	1,70	2,01	2,29	2,63	2,92
Heating (E)	kW	2,20	2,69	3,15	3,72	4,25	2,87	3,41	3,88	4,48	4,99
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	8,5	11,7	15,1	19,9	24,2	12,6	17,2	21,2	26,6	31,4
Fan (E)	W	6	8	11	15	20	9	12	16	22	30
Sound power (E)	Lw	35	40	45	48	55	36	43	46	51	54
Sound pressure (*)	Lp	26	31	36	39	46	27	34	37	42	45

(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.

FHW-ECM

Working conditions and Air throw

WORKING CONDITIONS

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

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

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

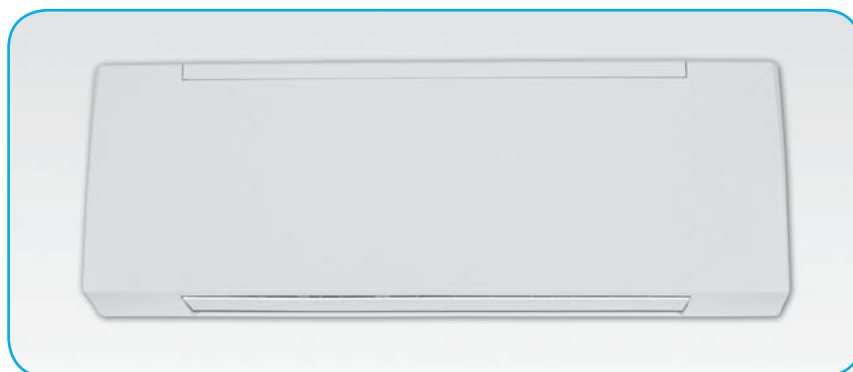
Max. rated pressure 1000 kPa (10 bars)

Installation height (m)

MODEL	FHW-ECM 1 ÷ 4
Minimum	2
Maximum	3

Motor electrical data (max. absorption)

MODEL		FHW-ECM 1	FHW-ECM 2	FHW-ECM 3	FHW-ECM 4
230/1 50Hz	W	15	22	20	30
	A	0,14	0,20	0,18	0,26



Emissions

Cooling emission

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

			WT: 7/12 °C					WT: 8/13 °C				WT: 10/15 °C				WT: 12/17 °C			
Model	Vdc		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
FHW-ECM 1	10	MAX	415	2,15	1,55	370	12,9	1,93	1,47	331	10,5	1,51	1,37	259	6,7	1,15	1,15	198	4,1
	7,5		355	1,95	1,38	335	10,8	1,75	1,31	300	8,8	1,36	1,21	234	5,6	1,04	1,04	178	3,4
	5	MED	290	1,70	1,19	293	8,5	1,53	1,12	263	7,0	1,19	1,03	204	4,4	0,90	0,90	154	2,6
	3		240	1,49	1,03	257	6,7	1,34	0,97	231	5,5	1,04	0,88	179	3,4	0,78	0,78	134	2,0
	1	MIN	190	1,26	0,86	217	4,9	1,14	0,81	196	4,1	0,88	0,73	151	2,5	0,66	0,66	113	1,5
FHW-ECM 2	10	MAX	510	2,43	1,78	418	16,1	2,18	1,71	375	13,2	1,71	1,61	295	8,5	1,32	1,32	227	5,3
	7,5		440	2,23	1,61	383	13,8	2,00	1,53	343	11,2	1,57	1,44	269	7,2	1,20	1,20	206	4,4
	5	MED	375	2,02	1,44	347	11,5	1,81	1,36	311	9,4	1,41	1,27	243	6,0	1,08	1,08	185	3,6
	3		315	1,80	1,27	309	9,4	1,61	1,20	278	7,7	1,26	1,10	216	4,8	0,95	0,95	164	2,9
	1	MIN	260	1,58	1,10	271	7,4	1,42	1,03	244	6,1	1,10	0,94	189	3,8	0,83	0,83	142	2,3
FHW-ECM 3	10	MAX	620	3,53	2,48	607	34,6	3,18	2,34	547	28,6	2,49	2,16	428	18,2	1,90	1,90	327	11,1
	7,5		520	3,14	2,18	541	28,1	2,84	2,05	489	23,3	2,22	1,88	381	14,8	1,68	1,68	289	8,9
	5	MED	420	2,71	1,85	467	21,5	2,45	1,75	422	17,9	1,91	1,58	329	11,3	1,44	1,44	247	6,7
	3		345	2,36	1,59	405	16,7	2,14	1,50	367	13,9	1,66	1,34	286	8,8	1,24	1,22	214	5,2
	1	MIN	270	1,96	1,31	338	12,0	1,78	1,23	307	10,1	1,39	1,10	239	6,4	1,03	0,98	178	3,7
FHW-ECM 4	10	MAX	770	4,03	2,88	693	44,0	3,63	2,73	624	36,2	2,86	2,56	491	23,3	2,20	2,20	378	14,4
	7,5		665	3,69	2,60	634	37,5	3,32	2,46	571	30,9	2,61	2,28	448	19,8	1,99	1,99	343	12,1
	5	MED	550	3,26	2,27	562	30,1	2,95	2,14	507	24,9	2,30	1,96	396	15,8	1,75	1,75	301	9,6
	3		465	2,91	2,00	501	24,5	2,63	1,89	453	20,3	2,05	1,72	353	12,8	1,55	1,55	267	7,7
	1	MIN	375	2,50	1,70	431	18,7	2,27	1,60	390	15,5	1,76	1,44	303	9,8	1,32	1,31	228	5,8

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

			WT: 7/12 °C					WT: 8/13 °C				WT: 10/15 °C				WT: 12/17 °C			
Model	Vdc		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
FHW-ECM 1	10	MAX	415	1,92	1,47	330	10,5	1,70	1,42	293	8,5	1,32	1,32	227	5,3	1,01	1,01	173	3,2
	7,5		355	1,74	1,31	299	8,8	1,54	1,26	265	7,1	1,19	1,17	205	4,4	0,90	0,90	155	2,6
	5	MED	290	1,52	1,13	261	6,9	1,35	1,08	232	5,5	1,03	0,99	178	3,4	0,78	0,78	134	2,0
	3		240	1,33	0,97	230	5,5	1,18	0,93	203	4,4	0,90	0,84	155	2,7	0,67	0,67	116	1,6
	1	MIN	190	1,13	0,81	194	4,1	1,00	0,77	172	3,2	0,76	0,69	131	2,0	0,56	0,56	97	1,1
FHW-ECM 2	10	MAX	510	2,17	1,71	373	13,1	1,93	1,66	333	10,6	1,51	1,51	260	6,7	1,16	1,16	199	4,1
	7,5		440	1,99	1,53	342	11,2	1,77	1,48	304	9,0	1,37	1,37	236	5,7	1,05	1,05	180	3,5
	5	MED	375	1,80	1,37	310	9,4	1,60	1,31	275	7,5	1,24	1,22	213	4,7	0,94	0,94	161	2,8
	3		315	1,61	1,20	276	7,6	1,42	1,15	245	6,1	1,10	1,06	188	3,8	0,83	0,83	142	2,3
	1	MIN	260	1,41	1,04	243	6,1	1,25	0,99	215	4,8	0,96	0,90	165	3,0	0,72	0,72	123	1,7
FHW-ECM 3	10	MAX	620	3,17	2,34	545	28,5	3,29	2,50	565	30,4	2,18	2,07	375	14,4	1,85	1,85	318	26,6
	7,5		520	2,82	2,06	486	23,2	2,93	2,19	504	24,8	1,93	1,80	333	11,6	1,64	1,64	282	21,4
	5	MED	420	2,44	1,75	420	17,8	2,53	1,86	436	19,0	1,66	1,50	286	8,8	1,41	1,41	242	16,2
	3		345	2,12	1,50	365	13,8	2,20	1,60	379	14,8	1,44	1,28	248	6,8	1,22	1,20	209	12,5
	1	MIN	270	1,77	1,24	304	10,0	1,83	1,31	316	10,7	1,20	1,04	207	4,9	1,01	0,97	174	9,0
FHW-ECM 4	10	MAX	770	3,61	2,73	621	36,0	3,22	2,64	554	29,2	2,51	2,46	432	18,5	1,92	1,92	330	11,3
	7,5		665	3,30	2,46	568	30,7	2,94	2,37	506	24,8	2,28	2,19	393	15,6	1,73	1,73	298	9,4
	5	MED	550	2,93	2,15	504	24,8	2,61	2,05	449	20,0	2,01	1,88	346	12,4	1,52	1,52	261	7,4
	3		465	2,62	1,89	450	20,2	2,33	1,80	400	16,3	1,79	1,64	308	10,0	1,34	1,34	231	5,9
	1	MIN	375	2,25	1,61	387	15,4	2,00	1,52	345	12,4	1,53	1,37	264	7,6	1,14	1,14	196	4,4

Correction factors for different R.H.

U.R.	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

Emissions

Cooling emission

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

			WT: 7/12 °C					WT: 8/13 °C					WT: 10/15 °C					WT: 12/17 °C				
Model	Vdc		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			
FHW-ECM 1	10	MAX	415	1,70	1,42	292	8,5	1,50	1,37	258	6,7	1,16	1,16	199	4,2	0,91	0,91	157	2,7			
	7,5		355	1,54	1,26	264	7,1	1,36	1,21	233	5,6	1,04	1,04	179	3,4	0,79	0,79	135	2,1			
	5	MED	290	1,34	1,08	231	5,5	1,18	1,03	203	4,4	0,90	0,90	155	2,7	0,67	0,67	116	1,6			
	3		240	1,18	0,93	202	4,4	1,03	0,88	178	3,4	0,78	0,78	135	2,1	0,58	0,58	100	1,2			
	1	MIN	190	1,00	0,77	171	3,2	0,87	0,73	150	2,5	0,66	0,66	113	1,5	0,49	0,49	83	0,9			
FHW-ECM 2	10	MAX	510	1,93	1,65	331	10,6	1,71	1,60	294	8,5	1,33	1,33	228	5,3	1,11	1,11	191	3,9			
	7,5		440	1,76	1,48	303	9,0	1,56	1,43	268	7,2	1,20	1,20	207	4,5	0,97	0,97	166	3,0			
	5	MED	375	1,59	1,31	274	7,5	1,41	1,26	242	6,0	1,08	1,08	186	3,7	0,83	0,83	143	2,3			
	3		315	1,42	1,15	244	6,1	1,25	1,10	215	4,9	0,95	0,95	164	3,0	0,72	0,72	123	1,7			
	1	MIN	260	1,24	0,99	214	4,8	1,10	0,94	188	3,8	0,83	0,83	143	2,3	0,62	0,62	106	1,3			
FHW-ECM 3	10	MAX	620	2,81	2,25	483	22,9	2,48	2,15	427	18,3	1,91	1,91	328	11,3	1,44	1,44	247	6,7			
	7,5		520	2,50	1,96	430	18,6	2,21	1,88	380	14,8	1,69	1,69	290	9,0	1,26	1,26	217	5,3			
	5	MED	420	2,16	1,66	371	14,3	1,90	1,58	328	11,3	1,44	1,43	248	6,8	1,07	1,07	185	4,0			
	3		345	1,88	1,42	323	11,1	1,65	1,35	284	8,8	1,25	1,21	215	5,3	0,92	0,92	159	3,0			
	1	MIN	270	1,57	1,17	270	8,1	1,38	1,10	237	6,4	1,04	0,98	178	3,8	0,76	0,76	131	2,1			
FHW-ECM 4	10	MAX	770	3,21	2,63	551	29,1	2,85	2,54	490	23,4	2,20	2,20	379	14,6	1,67	1,67	288	8,8			
	7,5		665	2,93	2,37	504	24,8	2,59	2,27	446	19,8	2,00	2,00	344	12,3	1,51	1,51	259	7,3			
	5	MED	550	2,60	2,05	447	19,9	2,29	1,96	395	15,9	1,76	1,76	302	9,7	1,32	1,32	226	5,7			
	3		465	2,32	1,80	399	16,2	2,04	1,71	351	12,9	1,56	1,56	268	7,8	1,16	1,16	199	4,6			
	1	MIN	375	2,00	1,52	343	12,4	1,76	1,44	302	9,8	1,33	1,30	229	5,9	0,98	0,98	169	3,4			

Heating emission

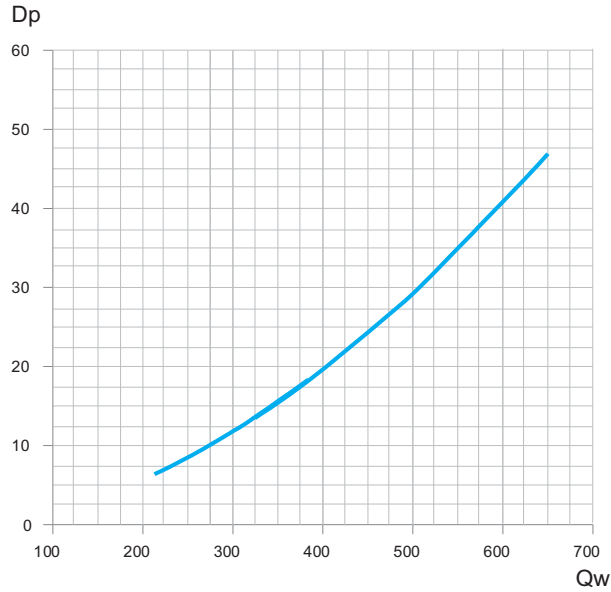
Entering air temperature: +20°C

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)	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	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa
FHW-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									
FHW-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									
FHW-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									
FHW-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 MIN	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	Vdc = Inverter power
Ph = Emission	MAX = High speed
Pc = Cooling Total emission	MED = Medium speed
Ps = Cooling Sensible emission	MIN = Low speed
Qw = Water flow	Qv = Air flow
Dp(c) = Water side pressure drop	

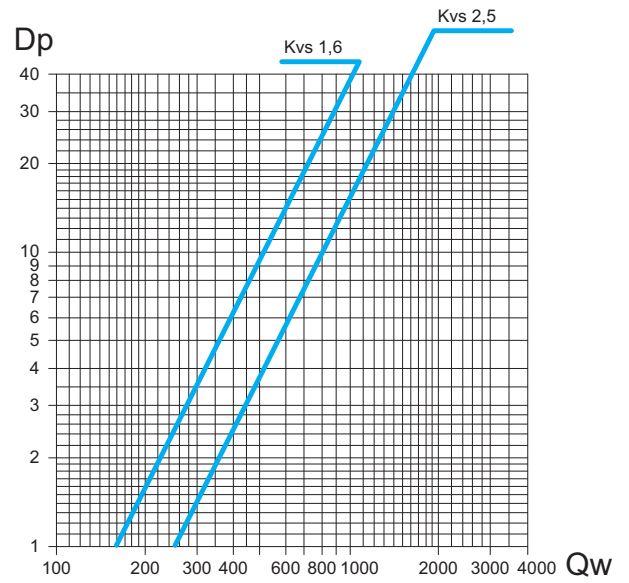
Coil pressure drop



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

Valves pressure drop



Legend

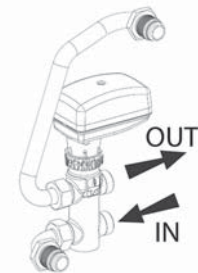
Qw = water flow (l/h)

Dp = pressure drop (kPa)

Accessories

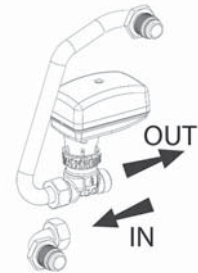
FV3S 3 way valve

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



FV2S 2 way valve

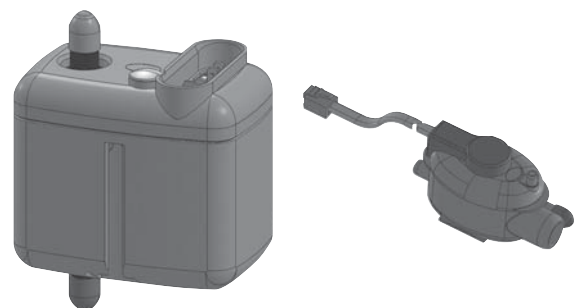
mod.	Valve			Code
	DN	(Ø)	Kvs	Not Fitted
1 - 2	15	1/2"	1,6	9025311H
3 - 4	20	3/4"	2,5	9025313H



PCF condensate drain pump

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

Height for vertical flow (m)	Water flow (l/h) depending on the length of horizontal flow	
	5m	10 m
1	7,6	7,2
2	5,6	5,2
3	4,0	3,7
4	3,2	2,9

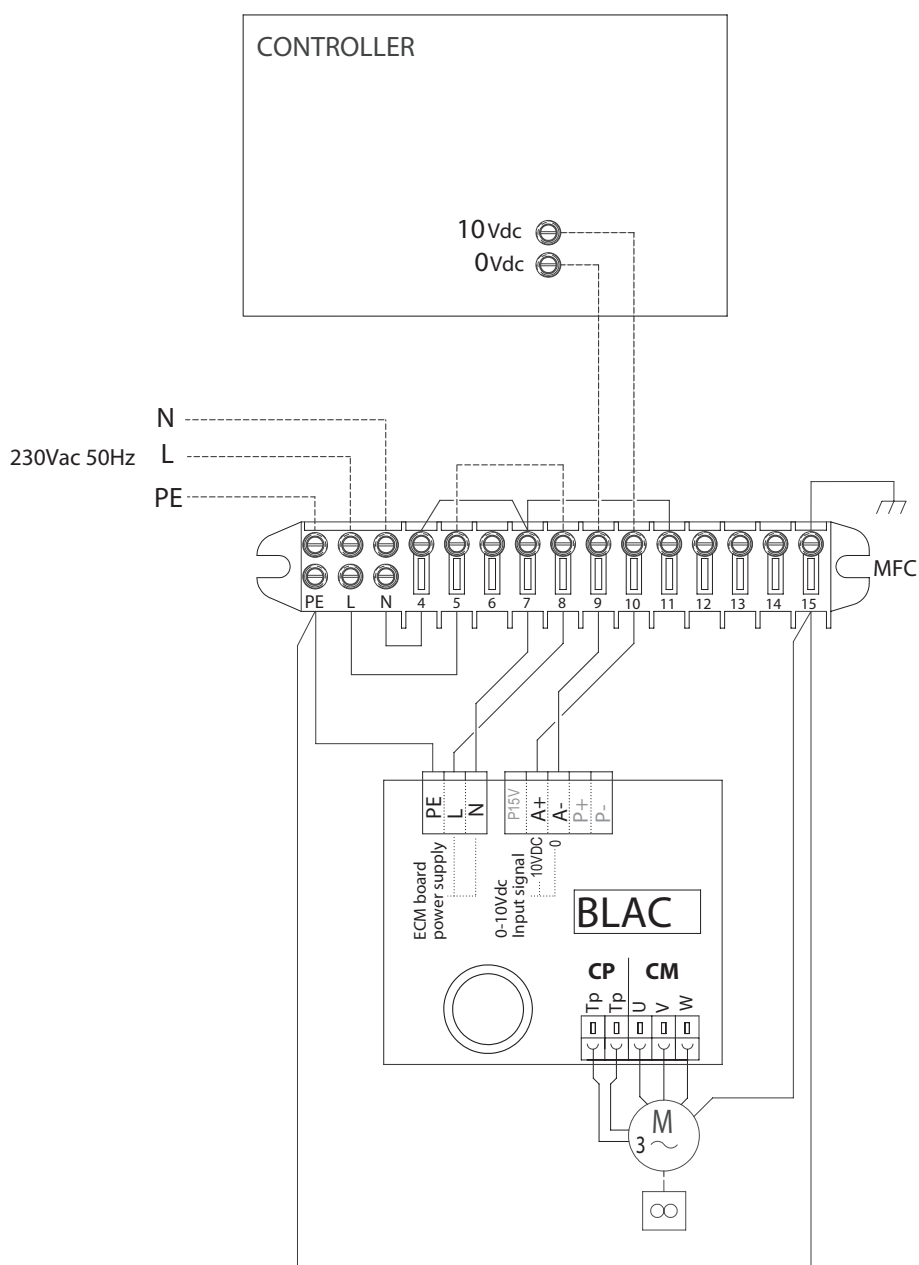


ECM configuration

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:

- Impedance < 100 Ohm;
- Maximum speed 10 Vdc;
- Fan OFF with $V < 1$ Vdc;
- Signal 1 - 10 Vdc.

Climmy FHW-ECM electric wiring diagram



Legend

CONTROLLER

BLAC

M

CM

CP

= Controller

= Inverter circuit board

= Brushless electronic motor

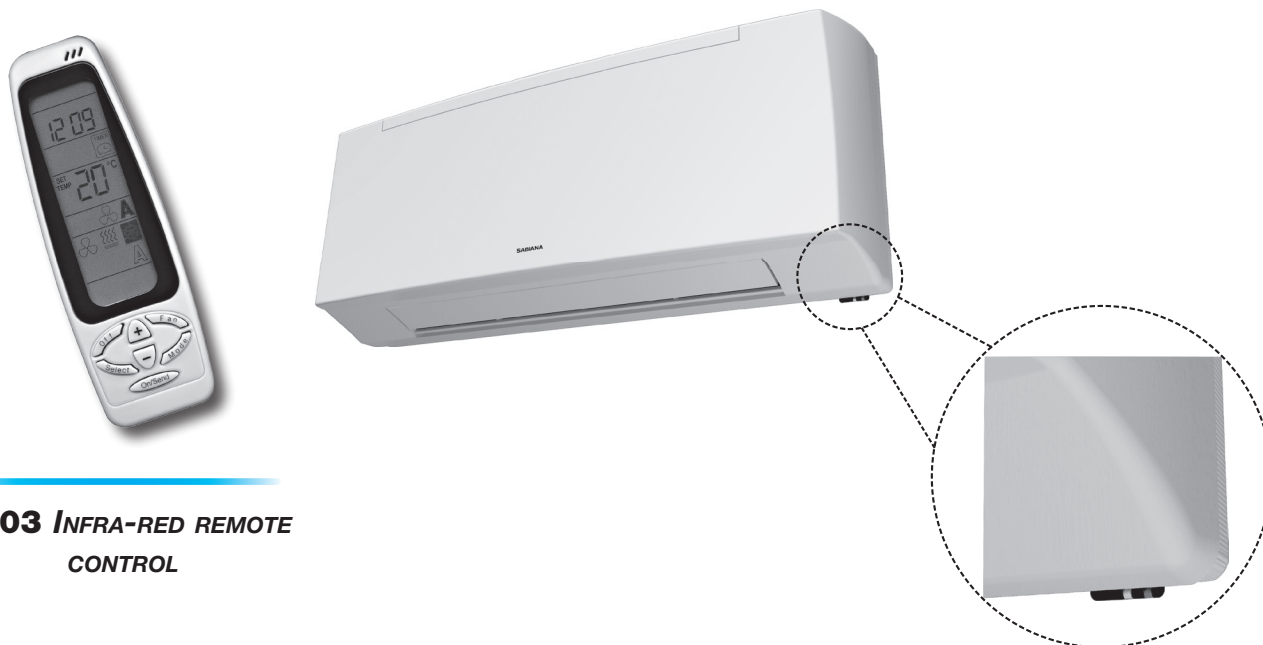
= Motor fan connection

= Motor fan thermal protection connection

FHW / FHW-ECM

Controls and units FHW-T version

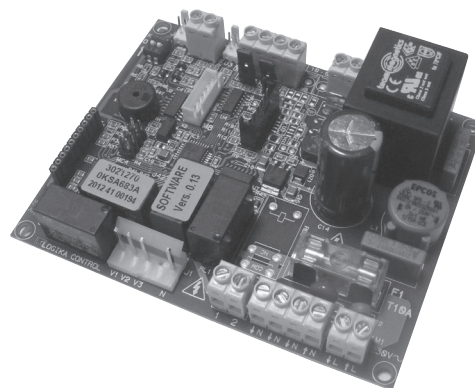
Stand alone units: the infra-red remote control can control one unit only



RT03 *INFRA-RED REMOTE CONTROL*

The electronic board, mounted as per standard on the **FHW-T**, is set to carry out different functions and adjustment modes, in order to meet the installation requirements. These modes are selected by setting the configuration dip switches on the board.

- Fan ON/OFF thermostatic control.
- Valve ON/OFF thermostatic control and continuous ventilation.
- Valve and simultaneous ventilation ON/OFF thermostatic control.
- Fan operation control depending on the coil temperature (cut-out T3 probe fitted), which can be activated only in heating mode or heating and cooling mode.
- Automatic switch of the operating mode by means of T2 water probe (optional).
- Seasonal switch by means of remote contact.
- ON/OFF of the fan coil by means of the remote contact (window or clock contact).
- Electric heater control



By activating the cut-out T3 probe function, the fan is stopped in winter when the coil temperature is lower than 32°C and started when the temperature reaches 36°C. In summer mode, the fan stops when the temperature inside the coil exceeds 22°C and starts when it drops below 18°C.

The infra-red remote control allows setting by a remote position the fan coil operation parameters.

The **RT03** infra-red remote control features the following functions:

- Switch the appliance ON and OFF.
 - Temperature set.
 - Set the fan speed (low, medium, high or autofan).
 - Set the operation mode (fan only, cooling, heating).
 - Time setting.
 - 24 hours ON/OFF program.
-

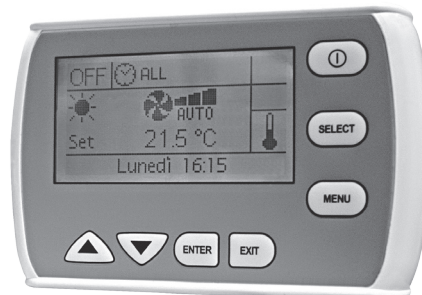
FHW / FHW-ECM

Controls and units FHW-MB version

These units can be controlled with RT03 infrared control and with T-MB or PSM-DI wall controls and they can be managed by a supervising control system



T-MB WALL CONTROL

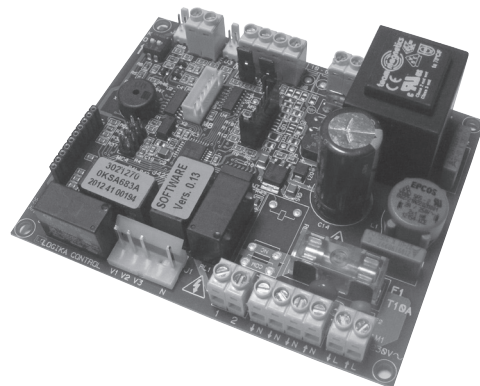


PSM-DI MULTIFUNCTION CONTROL

RT03 INFRA-RED REMOTE CONTROL

The **MB** electronic board, mounted as per standard on the **FHW-MB**, is set to carry out different functions and adjustment modes, in order to meet the installation requirements. These modes are selected by setting the configuration dip switches on the board.

- Fan ON/OFF thermostatic control.
- Valve ON/OFF thermostatic control and continuous ventilation.
- Valve and simultaneous ventilation ON/OFF thermostatic control.
- Fan operation control depending on the coil temperature (cut-out T3 probe fitted), which can be activated only in heating mode or heating and cooling mode.
- Automatic switch of the operating mode by means of T2 water probe (optional).
- Seasonal switch by means of remote contact.
- ON/OFF of the fan coil by means of the remote contact (window or clock contact).
- Electric heater control



By activating the cut-out T3 probe function, the fan is stopped in winter when the coil temperature is lower than 32°C and started when the temperature reaches 36°C. In summer mode, the fan stops when the temperature inside the coil exceeds 22°C and starts when it drops below 18°C.

The following connections are located on the power board:

- Receiver for infra-red remote control.
- **T-MB** wall control.
- RS 485 serial connection to manage several fan coils in Master/Slave configuration or to create a supervision network.

FHW / FHW-ECM

Controls and units FHW-MB version

T-MB wall control

Description	ID	Code
Wall control (to be used with MB board only)	T-MB	9066331E

Wall control with display that allows controlling one or more units in Master/Slave mode. The control is equipped with internal sensor to detect the room temperature, which can be defined as a priority compared to the return air sensor on the fan coil.



The **T-MB** control features the following functions:

- Switch the appliance ON and OFF.
- Temperature set.
- Set the fan speed (low, medium, high or autofan).
- Set the operation mode (fan only, cooling, heating).
- Time setting.
- Weekly ON/OFF program.
- Display and change of the fan coil operation parameters.

FHW / FHW-ECM

Controls and units FHW-MB version

RT03 infra-red remote control

Description	ID	Code
RT03 infra-red remote control with receiver supplied with separate packaging (to be used with MB board only)	RS-RT03-F	9025301
RT03 infra-red remote control supplied with separate packaging (to be used with MB board only)	RT03	3021203
Receiver for RT03 infra-red remote control supplied with separate packaging (to be used with MB board only)	RS-F	9025300

The infra-red remote control allows setting by a remote position the fan coil operation parameters.

The **RT03** infra-red remote control features the following functions:

- Switch the appliance ON and OFF.
- Temperature set.
- Set the fan speed (low, medium, high or autofan).
- Set the operation mode (fan only, cooling, heating).
- Time setting.
- 24 hours ON/OFF program.



ID	Code
RT03	3021203

INSTALLATION

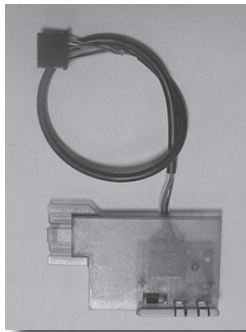
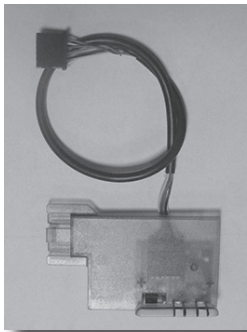
EXAMPLE WITH

INFRA-RED REMOTE

CONTROL



ID	Code
RS-RT03-F	9025301



ID	Code
RS-F	9025300

FHW / FHW-ECM

Controls and units FHW-MB version

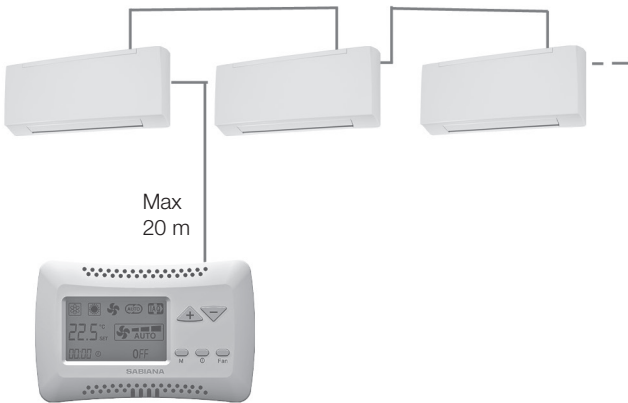
A group of **Climmy FHW** units with **MB** electronic board can be connected via a serial link and can consequently be managed at the same time by just one **T-MB** wall control or **RT03** infra-red remote control. Using the special jumper present on the MB board, one unit must be configured as the master, and all the others as slaves. The remote control must be pointed at the receiver on the master unit. To avoid problems, it is recommended to install and connect the receiver only on the master unit.

With T-MB wall control

One control for each unit
(MAXIMUM LENGTH OF THE CONNECTION CABLE = 20 m)



One control for more units
(20 units max.)
(MAXIMUM TOTAL LENGTH OF THE CONNECTION CABLE = 800 m)

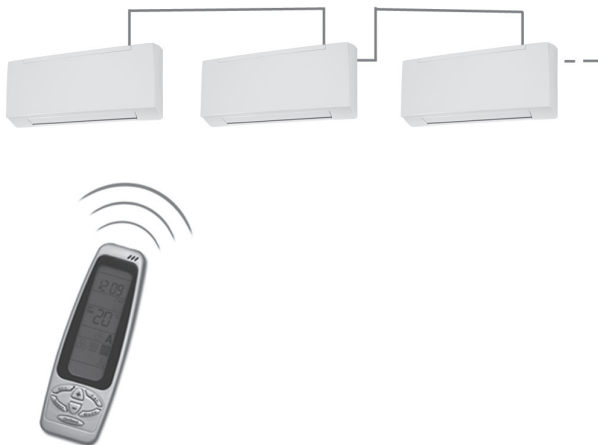


With RT03 infra-red remote control

One control for each unit



One control for more units
(20 units max.)
(MAXIMUM TOTAL LENGTH OF THE CONNECTION CABLE = 800 m)



T2 accessory for units with infra-red remote control and/or MB electronic board

ID	Code
T2	9025310



T2 sensor to be placed on the water supply pipe upstream 3 way valves (not to be used with 2 way valve). The **T2** sensor must be used as described below:

- Change-Over for the automatic switch of the operating mode. If water temperature is lower than 20°C, cooling mode is set; on the other hand, if water temperature exceeds 30°C, heating mode is set.
- It can be used on units with electric heater and hot water supply. The **T2** priority probe activates the electric heater or water valve, depending on the water temperature detected. If water temperature exceeds 34°C, the water valve ON-OFF control is activated; on the other hand, if water temperature is lower than 30°C, the electric heater is activated.

FHW / FHW-ECM

Controls and units FHW-MB version

PSM-DI Multifunction control

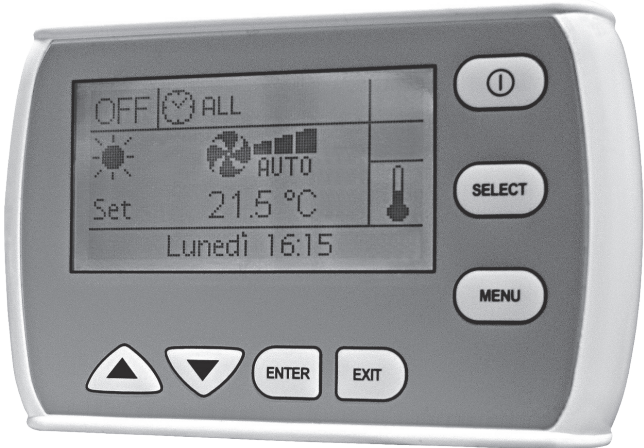
Description	ID	Code
Multifunction control (to be used with MB board only)	PSM-DI	3021293

Another option available for the serial communication between the units is the possibility to connect up to 60 **Climmy FHW** units in series and manage them with just one wall mounted **PSM-DI** controller.

The wall mounted controller can be used to set the operating mode for each individual unit connected, display the operating conditions of each individual unit, and set the ON/OFF time sets for each day of the week (the program can be set for all the units and for a maximum of two groups of units).

If more than 60 units need to be connected, two or more controllers must be used. Each wall mounted controller only manages the units it is connected to.

The **PSM-DI** control is used to manage a series of fan coils, up to a maximum of 60 units (the maximum length of the RS 485 connection cable must not exceed 800 m), from one single control point.



The **PSM-DI** control communicates via a serial line with all the units connected, with the possibility of controlling them all together or individually. In fact, the unique address of each individual fan coil means that all the units can be called at the same time, or the individual unit called, to perform the following functions:

- display the current operating mode, the fan speed, the set point;
- display the room temperature measured on the individual unit;
- turn all the units ON and OFF at the same time or alternatively each unit individually;
- change the operating mode (fan only, heating, cooling, automatic changeover);
- change the set point;
- modify the values and operation parameters of the fan speed.

Each function can then be sent to all the units connected, or alternatively to each individual unit.

Different set points or operating modes can be set for each individual unit.

The **PSM-DI** panel can also be used for the time management of the units over the week. Four ON times and four OFF times can be set on the units for each day of the week. A different Temperature set that will be considered as Operation set for all connected appliances, can be set for each event. If the Temperature set is not entered for the individual event, it must be set during programming for each individual unit or for the entire network.

Units without receiver or with receiver can be connected within the network: the former can receive instructions only from the **PSM-DI** wall mounted panel; while the latter can receive information from both the wall mounted panel (**PSM-DI**) and infra-red remote control. Use the infra-red remote control to force ON mode of the individual unit, if ON/OFF daily time programming has been set. The unit will regain the settings from the **PSM-DI** panel during execution of successive start-up program.

Note: set the configuration Dip Switches of each fan coil as illustrated in the remote control use manual, based on the required solutions.

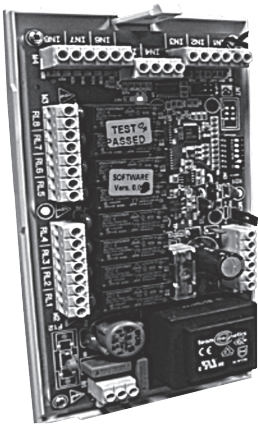
Note: the RS 485 network's overall length must not exceed 700/800 metres.

FHW / FHW-ECM

PSM-DI Accessories

ID	Code
SIOS	3021092

SIOS is a board equipped with 8 relays with potential free contact to control the activation or deactivation of remote electric utilities. Moreover, the board has 8 digital inlets to display the actuators or external consents, such as motor or other. The SIOS boards can be connected to a PSM-DI panel (one SIOS for each PSM-DI panel).



- Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
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Вологда (8172)26-41-59
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Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
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Сочи (862)225-72-31
Ставрополь (8652)20-65-13

Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93
- Киргизия (996)312-96-26-47

Казахстан (772)734-952-31

Таджикистан (992)427-82-92-69