

Hydronic Cassette Ceiling Fan Coil Units

Cooling capacity: 2,45 kW- 10,7 kW
Heating capacity: 2,02 kW- 22,96 kW

FCS

Cooling/Heating Terminal Unit



Ceiling Exposed Installation



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1. General Description



Cassette type Fan Coil Units



Klimallco Hydronic Cassette Fan Coils are the ideal solution for cooling/heating applications. They are available in 7 models with nominal capacities ranging from 2,45kW to 10,7 kW in cooling and 2,02kW up to 22,96kW in heating.

This series is ideal in combination with Klimallco air cooled water chillers or heat pumps for air conditioning offices, shops or any other commercial application, where floor and wall space is needed for fittings and furniture, by being installed flush into every ceiling with various air flow pattern flexibility according to the room shape and layout.

- Stylish.
- Compact and lightweight.
- Ideal for standardized false ceilings.
- Low noise.
- Variable air flow distribution patterns.
- Infrared remote control. (standard) or wired controller availability.
- Master-Slave control capability.
- RS-485 Port, for BMS communication.
- Built-in condensate pump.
- Easy access to all the components for maintenance
- Standard filter for clean air.
- Fresh air and branch ducting capability.
- Self diagnosis.

2. Technical Description

UNIT DESCRIPTION

PANEL (ABS - PATENTED)

Beautiful, smart, modern styled panel well-proportioned smoothed outline to perfectly match with any interior decoration.

Made of ABS by injection, it is very resistant to corrosion, rust and environmental agents. White RAL 9010 color. A patented® device allow an easy and fast installation of the covering panel, eliminating all the typical inconveniences occurring in these systems.

No. 4 AIR SUPPLY FINS (ADJUSTABLE)

Central air intake grill. N° 4 sides air supply fins manually adjustable enabling an optimal diffusion of the air in the 4 directions.

BEARING STRUCTURE

(SUITABLE FOR FALSE CEILING 600 mm x 600 mm)

Bearing structure made of extremely thick galvanized steel-sheet + Internal thermo-acoustic insulation (class M1). External brackets on the 4 corners for an easy fixing to the roof. N° 01 hole 0 67 mm for optional external air intake by a circular duct and N° 02 holes 0 155 mm for optional ducts application for treated air delivery in near environment. Dimensions 575 mm x 575 mm, ideal for installation on false ceiling 600 mm x 600 mm. Height to 255 mm only.

(Note: mod. FCS1230 - FCS1430 - FCS1221 - FCS1421 with different dimensions; 600x1.200).

DRAIN PAN (POLYSTYRENE)

Drain pan made of Polystyrene, made in one piece by thermo-moulding (without dangerous junctions).

Provided with drainpipe \varnothing 31,5 mm.

CONDENSATE PUMP

(STATIC PRESSURE = 0,5m)

Condensate pump including floater and not-return valve avoiding frequent on/off.

Static pressure = 0,50m ; 230Vac-1 Ph-50Hz.

HEAT EXCHANGER

(WATER COIL)

Coil made of copper pipes and aluminium fins fixed by mechanical expansion.

Coil connections provided with manual air vent valve.

For 2-pipe units: 1 coil with 2 water connections (1 inlet + 1 outlet).

For 4-pipe units: 1 coil with 4 water connections (2 inlets + 2 outlets).

Coils tested at 30 Bar pressure, suitable to work with water at max 15 Bar pressure.

Coils designed to work with hot water (boiler), low temperature hot water (condense boiler, solar energy system, hot water pump, etc.), chilled water (chillers and/or industrial processes), water added with glycol. Working with water temperature limit 80°C.

FAN SECTION

(7-SPEED CENTRIFUGAL FAN)

Fan section including 1 centrifugal fan with single air inlet. Fan made of ABS, specially designed for this application, directly coupled to the electric motor. Mounted on elastic and anti vibration supports. Fan section statically and dynamically balanced, extra silent fan, designed to realize high air flow with low revolutions number.

Electric motor has 7 speeds, 3 speeds connected in the factory (= product flexibility), provided with heat protection (Klixon), running capacitor permanently switched on, IP42, Class B, electric cables protected by double insulation.

(Note: mod. FCS1230 - FCS1430 - FCS1221- FCS1421 with no. 02 motors/fans). Manufactured according to the international standards, 230Vac-1 Ph-50Hz.

AIR FILTER (HIGH EFFICIENCY)

Air filter easy to remove, made of a metal frame holding filtering section. Can be regenerated by water wash, blowing, suction. Made of high efficiency polypropylene NAN cellular fabric net.

Superlative against Powders and Pollens.

Class M1 ; Filtering level EU3 (EUROVENT 4/5).

ELECTRICAL EQUIPMENT (TERMINAL BOARD)

Terminal board for connection with remote control (The remote control is an accessory), mounted in an bearing structure corner.

AVAILABLE ACCESSORIES:

INFRARED REMOTE CONTROL

The standard unit is supplied with a terminal board to connect the unit to wired remote control. To control the unit through an infrared remote control, is available the accessory "Electronic card mounted on the unit + Receiver + Infrared Remote Control".

Nominal technical data (2-pipe units)



2. Technical Specifications

2-pipe

α Ñ		FCS 210	FCS 430	FCS 630	FCS 830	FCS1230	FCS1430
		Single				Twin	
Total (1)	W	2.450	4.260	5.350	5.910	8.160	10.700
Sensible (1)	W	2.020	3.190	3.190	4.430	6.080	7.940
Heating capacity (2)	W	5.830	9.180	10.680	11.970	17.480	22.960
Air flow (3)	m ³ /h	660	680	770	890	1.280	1.570
Water Flow - Cooling	l/h	421	733	920	1.017	1.404	1.840
Water Flow - Heating (4)	l/h	501	789	918	1.029	1.503	1.975
Water pressure drops- Cooling	kPa	7,9	20,1	31,7	38,5	18,4	31,7
Water pressure drops (5) - Heating	kPa	8,7	18,2	24,6	30,8	16,4	28,4
Sound levels (6)	Min-Med-Max dB(A)	28 - 31 - 34	25 - 26 - 35	25 - 26 - 38	25 - 29 - 40	28 - 29 - 41	28 - 32 - 43
Fans/Motrs Number	No	1 / 1	1 / 1	1 / 1	1 / 1	2 / 2	2 / 2
Speed Number (Available)*	No	7	7	7	7	7	7
Current input (7)	MAX W-A	75W - 0,36A	98W - 0,46A	112W - 0,52A	127W - 0,58A	225W - 1,04A	253W - 1,16A
Power supply		230Vac-1Ph-50Hz					
Unit dimensions	A x A mm	575 x 575	575 x 575	575 x 575	575 x 575	575 x 1.175	575 x 1.175
	H mm	255	255	255	255	255	255
Panel/grill dimensions	B x B mm	624 x 624	624 x 624	624 x 624	624 x 624	624 x 1.224	624 x 1.224
	S mm	26	26	26	26	26	26
Drain pipe fr	mm	DN 3/4" M 31,5	DN 3/4" M 31,5	DN 3/4" M 31,5	DN 3/4" M 31,5	DN 3/4" M 31,5	DN 3/4" M 31,5
Panel weight	kg	2	2	2	2	4.0	4.0
Net weight (only unit) kg	kg	22	22,5	22,7	23,2	44.0	46.0

*Available speed number upon request, by default only 3 speeds are connected.

(8) Type	Speed	FCS 210	FCS 430	FCS 630	FCS 830	FCS 1230	FCS 1430
Total cooling capacity	Med	0,95	0,87	0,81	0,8	0,81	0,8
	Min	0,89	0,82	0,77	0,72	0,77	0,71
Sensible cooling capacity	Med	0,93	0,83	0,77	0,75	0,77	0,75
	Min	0,86	0,77	0,71	0,65	0,71	0,65
Heating capacity	Med	0,93	0,84	0,78	0,77	0,78	0,76
	Min	0,87	0,79	0,73	0,67	0,73	0,67
Air flow	Med	0,89	0,75	0,66	0,64	0,66	0,64
	Min	0,8	0,67	0,59	0,51	0,59	0,51

Notes

fr (*) DN = Nominal diameter ; M = Male gas water coil connections

Technical data refers to the following conditions: Standard unit - Atmospheric pressure 1013 mbar - Power supply 230Vac/1Ph/50Hz.

(1)- (2) - (3) - (4) - (5): Nominal technical data refer to the maximum speed and unit with free air flow (External static pressure ESP = 0 Pa).

(1) Cooling: Environment air temperature: 27°Cd.b., 19°Cw.b.- Entering water temp. 7°C, leaving water temp. 12°C - Max speed (nominal).

For Med and/or Min fan speed and/or static pressure > 0 Pa see (8) + (9) (ret. entering water temp. 7°C and water flow as for the Max speed (4)).

(2) Heating: Environment air temperature: 20°C - Entering water temperature 70°C, leaving water temperature 60°C - Max speed (nominal).

For Med and/or Min fan speed and/or static pressure > 0 Pa see (8) + (9) (ret. entering water temp. 70°C and water flow as for the Max speed (4)).

(1) (2) (8) Cooling and Heating capacities: Data calculated based on measurements made in calorimetric room ret. UNI 7940 part 1°-2°, UNI-EN 1397/2001 standards.

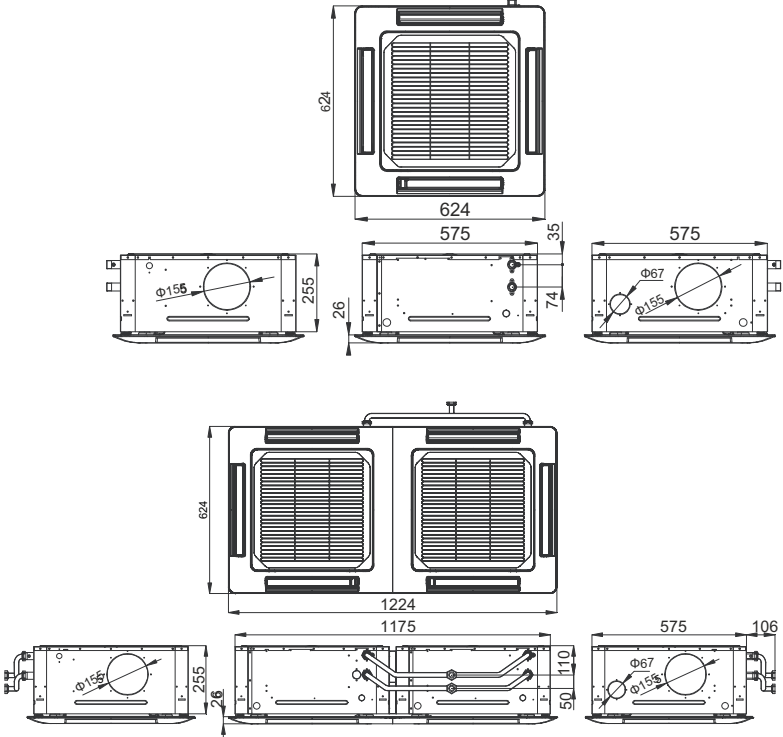
(3) (8) Airflow: Measurements made with casing ret. AMCA 210-74 fig.12 standards and plenum + diaphragm ret. CNR-UNI 10023 standards.

(6) Sound Levels: Free field sound pressure, 2 m distance. Data calculated based on sound power measured in reverberation room ret. ISO 3741 - ISO 3742 standards. (7) Electrical data: Measurements with wattmeter Jokogawa WT 110 (Max value, nominal, of motor label).

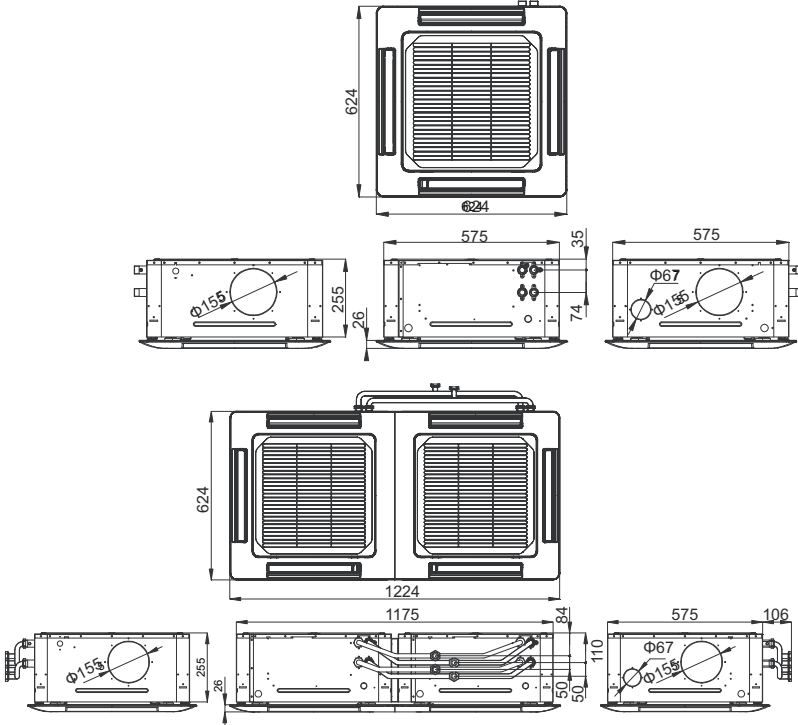
4. Dimensions



2-pipe



4-pipe



CE KLIMALLCO's units comply with the European regulations, that guarantee the safety of the product.

FCS

KLIMALLCO S.A.
Manufacturers Of Air Conditioning Equipment
Tripio Lithari, Mandra Attiki - Greece P.O. Box: 15, 19 600
Tel : +30 210 5550360 / FAX : +30 210 5551919
e-mail: info@klimallco.gr <http://www.klimallco.com>

Klimallco sa Air Treatment Experts



KLIMALLCO's quality management system is certified according to **ISO 9001:2015** and **ISO 14001:2015** for:
Design, manufacturing and trading of air conditioning equipment.

Technical Data
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