Klimallco®
climate experience

Fan Coil Units
High Static

Cooling capacity: 6,0 kW - 20,2 kW
Heating capacity: 13,1 kW - 40,8 kW

KCW

Cooling/Heating Terminal Unit
Slim Line

Klimallco sa Air Treatment Experts

Ducted Installation

2019

Contents

1. General Description

Fan Coil Units High Static

KCW

Klimallco Fan coil Units are the solution for cooling/heating applications. They are available in a wide range of models and sizes with nominal capacities ranging from 6.0 kW to 20.2 kW in cooling and 13.1 kW up to 40.8 kW in heating.

This extensive Fan Coil series is ideal in combination with Klimallco water chillers or heat pumps for airconditioning residences, offices, shops or any other commercial application were comfort conditions are required, blending in perfectly with the aisthetics of any space.

- Asynchronous motors + 6-speed Autotransformer (3-speed connected in the factory)
- Last generation fan made of plastic with low revolutions number, statically and dynamically balanced, superlative silent
- Highly efficient coil
- Left or Right hydraulic connections
- High efficiency air filter, cleanable, on turning slides for an easy extraction and maintenance
- Wide variety of models, versions, accessories, variants, solutions

2. Technical Description

1.1 Main Casing

Main casing (Bearing structure) made of extremely thick steel-sheet, resistant to rust, corrosion, chemical agents, solvents, aliphatics and alcohols.

Self-supporting and removable panels provided with holes (buttonholes) for ceiling/wall mounting directly through the main casing.

Pre-cuts slots and prearranged holes to configure the unit on request, to install the accessories, to output for the water connections on the left or right, to reverse the unit even on-site.

Assembled with self-threading screws for fast, total and easy check/maintenance. Reduced sizes, optimised volumes.

Available in a very large range of horizontal and vertical versions.

Available main casings:

Z : Single skin panel made of galvanized steel + internal thermal-acoustic insulation (class M1) of all parts in contact with the coil.

P : Single skin panel made of pre-painted steel white RAL9002 colour + internal thermo-acoustic insulation (class M1) of the parts in contact with the coil.

1.2 DRAIN PAN (WITH THERMAL INSULATION)

Double inclination drain pan for optimised condensate drainage, provided with drainpipe (standard on the same side of coil connections) + external heat insulation (class M1).

1.3 HEAT EXCHANGER (WATER COIL)

Highly efficient coil (Turbolenced Fins with a high number of Reynolds) made of copper pipes and aluminium fins fixed by mechanical expansion. Coil connections provided with anti-torsion system, manual air vent valves, manual water drain valves. Standard connections on the right side; on request connections on the right side, anyway can be easily reversed even on working site.

1 coil for a 2-pipe system; 2 coils for a 4-pipe system.

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.), high temperature water (industrial processes and/or high temperature boiler), chilled water (chillers and/or industrial processes), water added with glycol.

1.4 Fan Section (Centrifugal Fan Of Last Generation)

Fan section including 1, 2 or 3 centrifugal fans with double air inlet

Last Generation Plastic Blades (forward curved fins) directly coupled to the electric motor. Mounted on elastic and anti-vibration supports. Fan section statically and dynamically balanced.

Extensive diameter fans (= high air flow and high static pressure) with low revolutions (= low noise level).

Asynchronous electric motor provided with heat protection (Klixon), running capacitor permanently switched on, IP 42, Class B, electric cables protected by double insulation.

Manufactured according with international standards, 230Vac–1Ph–50Hz.

Fan section easy to remove (fixed by just 4 screws).

Standard unit (KT10/.../100) provided with single-speed motor + Autotransformer with 6 outputs in order to have 6 equal-distance speed (with performances changing from max=100% up to min = about 50%). Autotransformer is installed externally, on the unit side, to enable easy maintenance operations.

This technology warrantee a big flexibility, with possible connections according with the specific end-user needs, higher or lower speeds choices between the 6 available.

Factory standard pre-connected speed are no. 2-3-5 (with 1=max and 6=min). On request (no additional charge), any speed can be required.

Potentiate units (KT90P/.../120P) with motor with 5 or 6 speed obtained directly on the motor (compulsory technology to have potentiate motors, suitable for ductable units, with the correct price/performances rating). The speed obtained directly from the motor are closer to each other in comparison to technology with auto-transformer.

1.5 Accessories

- Standard unit supplied without air filter.
- Standard unit is made of a single bearing structure (single block) which includes the fan + the coil. It is also possible to make the unit in separate sections (fan section "SV" + coil section "SB") assembled at the client convenience (first the fan-section and then the coil section, or vice-versa).
- Very large range of accessories : valves, dampers, grills, etc.

Drain pan

Wall mounted thermostat

Electrical Resistance

3. Technical Specifications

2-pipe models

Ï ÒÑ			KCW 120	KCW 130	KCW 140	KCW 220	KCW 230	KCW 240	KCW 320	KCW 330	KCW 340
Cooling capacity	Total (1)	W	6.010	7.480	8.590	10.300	12.900	15.000	13.600	17.200	20.200
	Sensible (1)	W	4.570	5.560	6.160	8.100	9.950	11.100	10.800	13.300	14.900
Heating capacity (2)		W	13.100	15.800	16.600	23.400	28.800	30.400	31.300	38.800	40.800
Air flow (3)		**m^3/h**	**1.100**	**1.200**	**1.150**	**2.100**	**2.300**	**2.200**	**2.800**	**3.100**	**2.950**
Water flow (4)	Cooling	l/h	1.034	1.287	1.477	1.772	2.219	2.580	2.339	2.958	3.474
	Heating	l/h	1.127	1.359	1.428	2.012	2.477	2.614	2.692	3.337	3.509
Water pressure drops (5)	Cooling kPa		28,7	37,8	32,2	21	33	25	14	23	22
	Heating kPa		26,6	32,9	23,4	21,1	32,1	20	14,5	22,8	17,5
Sound levels		Min-Med-Max (6)dB(A)	37-44-49	38-45-50	38-45-50	45-50-52	46-51-53	46-51-53	41-48-51	42-49-52	42-49-52
Motors/Fans		No./No.	1/1			1/2			1/3		
Nominal current input MAX(7)		W	155 W			305 W			460 W		
		A	0,7 A			1,4 A			2,1 A		
Power supply			**230Vac – 1Ph – 50Hz**								
Heating/cooling coil		Rows No	3R	3R	4R	3R	3R	4R	3R	3R	4R
		Connections ϕ (mm)	DN 3/4" F	DN 3/4" F	DN 3/4" F	DN 3/4" F	DN 3/4" F	DN 3/4" F	DN 3/4" F	DN 3/4" F	DN 3/4" F
Drain pipe		ϕ(mm)	20			20			20		
Versions		Length L mm	800			1.200			1.600		
Z-P		A mm	760			1.160			1.560		
Air intake/supply outlets		B mm	210			210			210		
Versions		Length L1 mm	840			1.240			1.640		
K		A1 mm	800			1.200			1.600		
Air intake/supply outlets		B1 mm	250			250			250		

4-pipe models

Ï ÒÑ			KCW 121	KCW 131	KCW 221	KCW 231	KCW 321	KCW 331
Cooling capacity	Total (1)	W	5.830	7.220	9.960	12.400	13.200	16.600
	Sensible (1)	W	4.420	5.350	7.830	9.530	10.400	12.800
Heating capacity (2)		W	6.610	6.970	11.600	12.200	15.500	16.400
Air flow (3)		**m^3/h**	**1.050**	**1.140**	**2.000**	**2.170**	**2.670**	**2.930**
Water flow (4)	Cooling	l/h	1.003	1.242	1.713	2.133	2.270	2.855
	Heating	l/h	568	599	998	1.049	1.333	1.410
Water pressure drops (5)	Cooling kPa		27,0	35,2	19,6	30,5	13,2	21,4
	Heating kPa		37,8	41,4	34,5	37,5	32,0	35,0
Sound levels		Min-Med-Max (6)dB(A)	37-44-49	38-45-50	45-50-52	46-51-53	41-48-51	42-49-52
Motors/Fans		No./No.	1/1		1/2		1/3	
Nominal current input MAX(7)		W	155 W		305 W		460 W	
		A	0,7 A		1,4 A		2,1 A	
Power supply			**230Vac – 1Ph – 50Hz**					
Cooling coil		Rows No	3R		3R		3R	
		Connections ϕ (mm)	DN 3/4" F		DN 3/4" F		DN 3/4" F	
Heating coil		Rows No	1R		1R		1R	
		Connections ϕ (mm)	DN 1/2" F		DN 1/2" F		DN 1/2" F	
Drain pipe		ϕ(mm)	20		20		20	
Versions		Length L mm	800		1.200		1.600	
Z-P		A mm	760		1.160		1.560	
Air intake/supply outlets		B mm	210		210		210	
Versions		Length L1 mm	840		1.240		1.640	
K		A1 mm	800		1.200		1.600	
Air intake/supply outlets		B1 mm	250		250		250	

Lower working limit	**Lower limit ESP = 0Pa**	Max	1	1	1	1	1	1
		Med	0,85	0,86	0,94	0,94	0,92	0,93
		Min	0,67	0,68	0,80	0,81	0,72	0,74
AIR FLOW REDUCTION Coefficients defining the air flow / Static Pressure diagrams	**20 Pa**	Max	0,93	0,93	0,94	0,94	0,91	0,91
		Med	0,80	0,80	0,87	0,88	0,84	0,85
		Min	0,64	0,65	0,75	0,76	0,69	0,70
	40 Pa	Max	0,86	0,87	0,86	0,86	0,82	0,83
		Med	0,73	0,74	0,80	0,80	0,75	0,76
		Min	0,59	0,60	0,70	0,71	0,64	0,65
	60 Pa	Max	0,79	0,79	0,78	0,79	0,71	0,72
		Med	0,66	0,67	0,72	0,73	0,65	0,66
		Min	0,53	0,55	0,64	0,65	0,56	0,57
	80 Pa	Max	0,69	0,70	0,67	0,68	0,59	0,60
		Med	0,54	0,56	0,62	0,63	0,52	0,53
		Min	0,45	0,46	0,54	0,56	0,44	0,46
	100 Pa	Max	0,56	0,58	0,53	0,55	0,45	0,47
		Med	0,44	0,45	0,48	0,50	0,38	0,40
		Min	0,36	0,38	0,42	0,44	0,31	0,33
	120 Pa	Max	0,41	0,44	0,37	39,00	0,30	0,33
		Med	0,34	0,36	0,34	0,36	0,23	0,26
		Min	0,26	0,28	0,28	0,30	/	0,20
LFS Upper working limit	**ESP (Pa) Qa (x m^3/h)**	Max	148 Pa x 0,20	152 Pa x 0,20	138 Pa x 0,20	142 Pa x 0,20	134 Pa x 0,20	138 Pa x 0,20
	ESP (Pa) Qa (x m^3/h)	Med	142 Pa x 0,20	146 Pa x 0,20	136 Pa x 0,20	140 Pa x 0,20	126 Pa x 0,19	128 Pa x 0,19
	ESP (Pa) Qa (x m^3/h)	Min	134 Pa x 0,19	138 Pa x 0,19	132 Pa x 0,20	136 Pa x 0,20	118 Pa x 0,19	122 Pa x 0,19

Notes

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

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

(1) Cooling: Air temp.: 27°Cd.b., 19°Cw.b. – Entering/leaving water temp. 7/12°C – Max speed (ref. air flow (3)). For different air flows (ex. Med and/or Min speed and/or ESP > 0Pa) : ref. nominal air flows, entering water temp. 7°C and water flow as for Max speed (4).

(2) Heating: Air temp.: 20°C – Entering/leaving water temp. 70/60°C – Max speed (ref. air flow (3)). For different air flows (ex. Med and/or Min speed and/or ESP > 0Pa): ref. nominal air flows, entering water temp. 70°C and water flow as for Max speed (4).

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

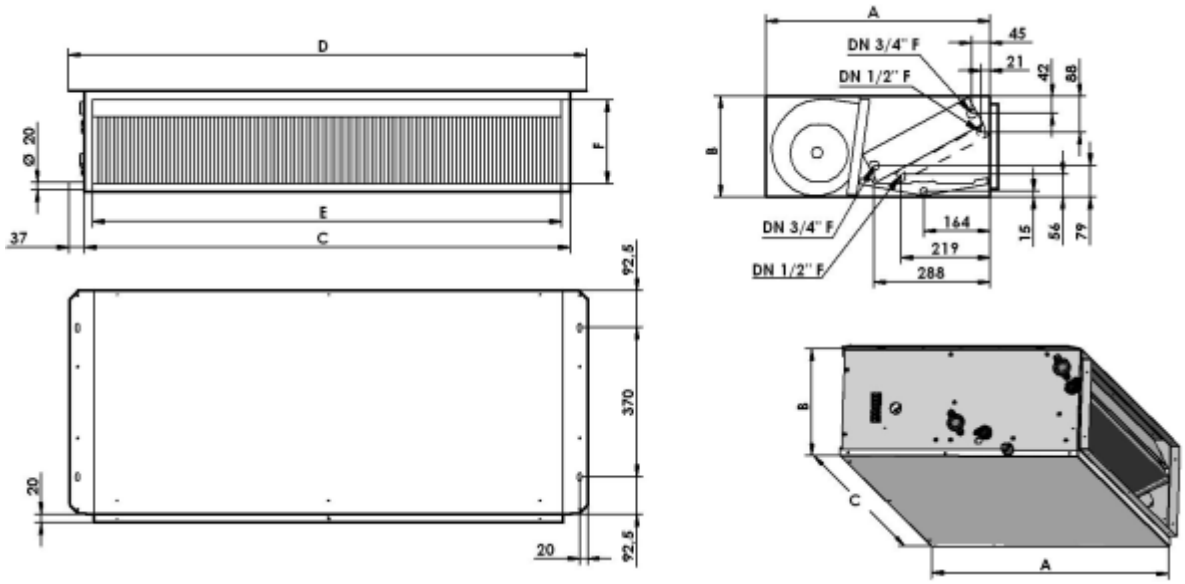
(3) Air flow and Static pressure: Nominal data measured with casing ref. AMCA210-74 fig.12 standards and plenum + diaphragm ref. CNR-UNI10023 standards.

(6) Sound Levels: Free field sound pressure, 2 m distance. Data calculated based on sound power measured in riverberation room ref. ISO 3741 - ISO 3742 standards.

(7) Electrical data: Data measured with Wattmeter Jokogawa WT110 (Max value, nominal, of motor label = reference value for the electrical system design).

* Capacities for different conditions can be calculated through selection software.
Please consult our technical department.

4. Dimensions



Type		2-Pipe 4-Pipe	KCW120 KCW121	KCW130 KCW131	KCW140 /	KCW220 KCW221	KCW230 KCW231	KCW240 KCW241	KCW320 KCW321	KCW330 KCW331	KCW340 KCW341
Main dimensions	A	mm	555	555	555	555	555	555	555	555	555
	B	mm	250	250	250	250	250	250	250	250	250
	C	mm	800	800	800	1.200	1.200	1.200	1.600	1.600	1.600
	D	mm	880	880	880	1.280	1.280	1.280	1.680	1.680	1.680
Air intake/suppiy outlets (1)	E	mm	760	760	760	1.160	1.160	1.160	1.560	1.560	1.560
	F	mm	210	210	210	210	210	210	210	210	210
Net weight	2-Pipe	Kg	34	35	37	48	50	53	63	65	68
	4-Pipe	Kg	36	37	/	51	53	/	67	69	/

Notes

Duct NESTING connections: Male air supply outlet; Female air intake suction.

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

KCW

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CERTIFIED LR ISO 9001 · ISO 14001

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
2019