

MCE C Kc

AIR COOLED CONDENSING UNITS WITH SCROLL COMPRESSORS AND CENTRIFUGAL FANS

COOLING CAPACITY FROM 11,3 TO 42,6 kW - 1 COOLING CIRCUIT

MCE 201 C O Kc



Above picture is only indicative and is not binding.



The air cooled condensing units with centrifugal fans of **MCE C Kc series**, to be matched to remote evaporating units, are designed for indoor installation and are particularly suitable for small and medium sized air conditioning systems, in residential and commercial applications. Therefore during their design, it has been given a particular care for dimensions and sound level, so to have compact and silent units at the same time. They are all available with 1 refrigerant circuit. Thanks to their compact dimensions and to the several options available, these units are particularly easy to install in small spaces. They are completely assembled and tested in the factory and supplied with refrigerant and oil charge.

The following versions are available:

Vertical air flow

- **MCE C Kc** standard version
- **MCE C U Kc** ultrasilenced version (from size 201)

Horizontal air flow (from size 201)

- **MCE C.O Kc** standard version
- **MCE C.O U Kc** ultrasilenced version

Operation limits: (standard units): external air temperature from 15 to 45°C.

MAIN COMPONENTS

Frame made of galvanized steel plate, suitably treated to resist to external agents and then painted in RAL 7035 colour. The compressor section is completely closed and suitably isolated from the air flow; inside of it, the compressor and the main components are placed so to facilitate also the service operations. The external panels, easy to be dismantled, allow the full access in case of service.

High-efficiency scroll compressor (EER 3.37 under ARI conditions), with low sound level, internal heat protection, installed on rubber vibration dampers, supplied with crankcase heater when necessary.

Heat-exchange external coil with copper tube and specially corrugated aluminium fins for a better efficiency. It is suitably sized with a wide exchange surface, so to allow the unit operation also at very high external air temperatures. On request, in case of installation in aggressive environments, several coil protection treatments are available.

Centrifugal fans of double suction type with electrical motor directly joined and balanced blades, suitably isolated with rubber vibration dampers and sealing on discharge. They are provided with short circuit and overload protections and external safety protection grid. The motor is of 4-pole

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triphas type, with belt transmission and variable pulleys, placed on slide so to speed up the pulley tension. As a standard, the unit has a vertical airflow or, on request, you can ask for an horizontal airflow, coil side (from size 201).

Cooling circuit composed of dehydrating filter, sight glass, safety device, high and low pressure switches, shut-off valve on discharge side, liquid receiver.

Electric board in compliance with CE norms, contained in a suitable partition protected by the internal safety panel, provided with a main switch and an external panel to be opened. It is complete with remote switches, overload protections, transformer for auxiliaries and terminal board.

Unit management microprocessor installed on the internal safety panel of the electrical board, complete with compressors hour counter.

ACCESSORIES

1M-2M Higher available pressure for fan: Bigger electrical motor, so to have a higher available pressure to fans to be ducted (from size 201).

AE Electrical power supply different from standard: Mainly, 230V three-phase, 460V three-phase. Frequency 50/60 Hz.

BF Low temperature operation (-20°C) with inverter fan speed regulation: Electronic device controlling the condensing pressure through an inverter, modulating the frequency of the fans electrical supply.

BFa-BFb Low temperature operation (-20°C) with inverter fan speed regulation (with option 1M and 2M): Electronic device controlling the condensing pressure through an inverter, modulating the frequency of the fans electrical supply (From size 201).

CF Soundproofed compressors cabinet: Insulation of compressors by a cabinet coated with soundproofing material and vibration dampers under compressors (From size 201).

CI Soundproofing jacket on compressors: Made of soundproofing material, wrapped all around compressors so to further reduce the overall sound level of the unit (From size 201 and already included on ultrasilenced version).

CS Compressors inrush counter: Electromechanical device positioned inside the electrical board, recording the total inrush starts of compressors (From size 201).

GP Condensing coil protection grid: Metal protection grid against accidental impacts.

HG Hot gas by-pass: Mechanical device for modulating cooling capacity.

IH RS 485 serial interface: Electronic card to be connected to microprocessor, to allow communication between the units and a Carel supervision system. It is possible to fully control the unit from remote. For connection to other supervision systems, the protocol of the controlled parameters is available on request.

IM Seawood packing: Fumigated seawood case and protection bag with hygroscopic salts, suitable for long sea transports.

MF Phase monitor: Electronic device controlling the correct sequence and/or the eventual lack of one of the 3 phases, switching off the unit if necessary.

MT High and low pressure gauges for measuring circuit pressure.

PA Rubber-type vibration dampers: Bell-shaped vibration dampers supports for insulating the unit (supplied in kit), made of base and

bell in galvanized steel and natural rubber mixture.

PQ Remote microprocessor: Remote terminal, allowing to display the temperature and humidity values detected by probes, the alarm digital inputs, the outputs and the remote ON/OFF of the unit, to change and program of the parameters, the sound signal and the display of the present alarms.

RL Compressors overload relays: Electromechanical protection devices against compressor's overload with displayed alarm.

RM Condensing coil with pre-painted fins: Superficial treatment of the condensing coils with epoxy coating.

RR Copper/copper condensing coils: Special execution of the condensing coils with copper pipe and fins.

RV Personalized frame painting in RAL color.

VS Solenoid valve: Electromagnetic solenoid valve on each cooling circuit to prevent refrigerant migrations and consequent flooding of compressors.

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Technical data sheet - MCE 131-181 C Kc

MCE C		131 Kc	151 Kc	161 Kc	181 Kc
Cooling capacity					
Cooling capacity		11,3	12,7	16,9	17,8
Absorbed power	kW	5,5	6,3	7,4	9,2
EER		2,05	2,02	2,28	1,93
Scroll compressors					
Quantity	n	1	1	1	1
Standard steps capacity	n	1	1	1	1
Circuits	n	1	1	1	1
Nominal absorbed current	A	5,4	6,4	9,1	10,4
Maximum absorbed current	A	12	14	16	18
Inrush current	A	56	68	77	81
Centrifugal fans					
Quantity	n	2	2	2	2
Rotation speed	rpm	1250	1250	1250	1250
Motors power	kW	1,0	1,0	2,2	2,2
Total air flow	m ³ /h	7.500	7.500	6.700	6.700
Total air flow	l/s	2.083	2.083	1.861	1.861
Available pressure	Pa	40	40	165	165
Nominal absorbed current	A	13,6	13,6	13,6	13,6
Electrical data					
Total absorbed power	kW	6,5	7,3	9,6	11,4
Sound pressure level					
Sound pressure level 2)	dB(A)	60	60	60	60
Dimensions					
Length	mm	1.100	1.100	1.100	1.100
Width	mm	750	750	750	750
Height	mm	1.100	1.100	1.100	1.100
Weight	kg	217	221	238	240
Power supply					
Power supply	V / ph / Hz	400 V/50 Hz / 3Ph + N + T			
NOTES					
Nominal condition referred to: Evaporating temperature 2 °C - External air temperature 35 °C.					
2) Measured at 1 m in open field (ISO 3746) with air suction and air discharge in ducts.					

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Technical data sheet - MCE 201-421 C Kc

MCE C		201 Kc	241 Kc	281 Kc	361 Kc	421 Kc
Cooling capacity						
Cooling capacity		20,0	24,2	28,4	34,4	42,6
Absorbed power	kW	6,3	7,6	8,7	10,7	12,9
EER		3,17	3,18	3,26	3,21	3,30
Scroll compressors						
Quantity	n	1	1	1	1	1
Standard steps capacity	n	1	1	1	1	1
Circuits	n	1	1	1	1	1
Nominal absorbed current	A	11,9	13,6	15,6	18,2	22,2
Maximum absorbed current	A	17	20	22	27	32
Inrush current	A	99	123	127	167	198
Centrifugal fans						
Quantity	n	1	1	1	2*	2*
Total air flow	m ³ /h	8.800	8.650	9.000	11.200	13.000
Total air flow	l/s	2.444	2.403	2.500	3.111	3.611
STD Version						
Available pressure	Pa	80	80	80	80	80
Rotation speed	rpm	896	915	975	746	858
Motors power	kW	2,2	2,2	3,0	2,2	3,0
Nominal absorbed current	A	5,3	5,3	6,7	5,3	6,7
Sound pressure level 2)	dB(A)	66	66	67	64	65
1M Version						
Available pressure	Pa	120	120	120	120	120
Rotation speed	rpm	935	955	1.014	811	914
Motors power	kW	3,0	3,0	3,0	2,2	3,0
Nominal absorbed current	A	6,7	6,7	6,7	5,3	6,7
Sound pressure level 2)	dB(A)	67	67	68	65	66
2M Version						
Available pressure	Pa	200	200	200	200	200
Rotation speed	rpm	1.014	1.036	1.091	938	1.025
Motors power	kW	3,0	3,0	3,0	3,0	4,0
Nominal absorbed current	A	6,7	6,7	6,7	6,7	9,4
Sound pressure level 2)	dB(A)	68	68	69	66	67
Electrical data						
Total absorbed power	kW	8,5	9,8	11,7	12,9	15,9
Dimensions						
Length	mm	1.320	1.320	1.320	1.665	1.665
Width	mm	750	750	750	750	750
Height	mm	1.250	1.250	1.250	1.460	1.460
Weight	kg	395	406	417	499	522
Power supply						
Power supply	V / ph / Hz	400 V/50 Hz / 3Ph + N + T				

NOTES

Nominal condition referred to: Evaporating temperature 2 °C - External air temperature 35 °C.

2) Measured at 1 m in open field (ISO 3746) with air suction and air discharge in ducts.

In case an even higher available pressure is required, different from what stated above but anyway not higher than 2M, the option 1M &/or 2M must be ordered, stating clearly on the order the pressure value effectively requested on site. The factory will adjust the motor's pulley according.

2* = 1 tandem fans driven with 1 motor.

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Technical data sheet - MCE 201-421 CU Kc

MCE CU		201 Kc	241 Kc	281 Kc	361 Kc	421 Kc
Cooling capacity						
Cooling capacity		20,0	24,4	28,1	34,4	42,6
Absorbed power	kW	6,3	7,5	8,8	10,7	12,7
EER		3,17	3,25	3,19	3,21	3,35
Scroll compressors						
Quantity	n	1	1	1	1	1
Standard steps capacity	n	1	1	1	1	1
Circuits	n	1	1	1	1	1
Nominal absorbed current	A	11,9	13,5	15,6	18,1	22,0
Maximum absorbed current	A	17	20	22	27	32
Inrush current	A	99	123	127	167	198
Centrifugal fans						
Quantity	n	1	1	2*	2*	2
Total air flow	m ³ /h	6.300	7.200	6.950	9.600	13.900
Total air flow	l/s	1.750	2.000	1.931	2.667	3.861
STD Version						
Available pressure	Pa	80	80	50	80	80
Rotation speed	rpm	720	818	637	711	696
Motors power	kW	1,5	1,5	1,5	1,5	3,0
Nominal absorbed current	A	3,7	3,7	3,7	3,7	7,4
Sound pressure level 2)	dB(A)	62	64	61	63	63
1M Version						
Available pressure	Pa	120	120	120	120	120
Rotation speed	rpm	776	866	728	785	752
Motors power	kW	1,5	2,2	1,5	1,5	3,0
Nominal absorbed current	A	3,7	5,3	3,7	3,7	7,4
Sound pressure level 2)	dB(A)	62	64	61	64	64
2M Version						
Available pressure	Pa	200	200	200	200	200
Rotation speed	rpm	886	963	891	925	858
Motors power	kW	1,5	2,2	1,5	2,2	4,4
Nominal absorbed current	A	3,7	5,3	3,7	5,3	10,6
Sound pressure level 2)	dB(A)	63	65	62	64	64
Electrical data						
Total absorbed power	kW	7,8	9,0	10,3	12,2	15,7
Dimensions						
Length	mm	1.320	1.320	1.665	1.665	2.120
Width	mm	750	750	750	750	778
Height	mm	1.250	1.250	1.460	1.460	1.570
Weight	kg	396	407	501	511	642
Power supply						
Power supply	V / ph / Hz	400 V/50 Hz / 3Ph + N + T				

NOTES

Nominal condition referred to: Evaporating temperature 2 °C - External air temperature 35 °C.

2) Measured at 1 m in open field (ISO 3746) with air suction and air discharge in ducts.

In case an even higher available pressure is required, different from what stated above but anyway not higher than 2M, the option 1M &/or 2M must be ordered, stating clearly on the order the pressure value effectively requested on site. The factory will adjust the motor's pulley according.

2* = 1 tandem fans driven with 1 motor.