

MCE Kc

AIR COOLED CONDENSING UNITS WITH SCROLL COMPRESSORS AND AXIAL FANS

COOLING CAPACITY FROM 5,4 TO 40,1 kW - 1 COOLING CIRCUIT

MCE 181 Kc



Above picture is only indicative and is not binding.



The air cooled condensing units of **MCE Kc series**, to be matched to remote evaporating units, are designed for outdoor 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 nitrogen and oil charge.

The following versions are available:

- **MCE Kc** standard version
Horizontal air flow for models from 41 to 101
Vertical air flow for models from 131 to 421
- **MCE U Kc** ultrasilenced version (from size 201)

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. For size from 41 to 101, the compressor section is still insulated with close-cell polyurethane foam material.

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. Sizer 41 is provided with hermetic piston compressor.

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.

Low rpm axial fans, of directly coupled type, with 6-8 pole electrical motor complete with in-built overload protection, electronic balance, low sound level blades with wing profile and safety protection grid. On request, it is available the modulating fans speed regulation.

CONDENSING UNITS

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.

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

ACCESSORIES

- AE Electrical power supply different from standard:** Mainly, 230V three-phase, 460V three-phase. Frequency 50/60 Hz.
- BT Low temperature operation** (down to -8°C): Electronic device for the continuous modulating voltage control of the condensing pressure through the variation of the fan rotation speed (Alternative to BF).
- BF Low ambient temperature operation** (down to -20°C): Electronic device, frequency converter type, for the continuous modulating control of the condensing pressure through the variation of the fan rotation speed (Alternative to BT).
- 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** (from model 131): 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** (from size 131) 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.
- 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.**
- SC Insulated compressors housing** with sound proofing material (available form size 201 and included on ultrasilenced version).

CONDENSING UNITS

Technical data sheet - MCE 41-181 Kc

MCE		41 Kc	71 Kc	101 Kc	131 Kc	151 Kc	161 Kc	181 Kc
Cooling capacity								
Cooling capacity		5,4	7,1	8,4	11,3	12,7	16,9	17,8
Absorbed power	kW	2,2	2,6	3,1	3,5	4,3	5,4	6,9
EER	kW/kW	2,45	2,73	2,71	3,23	2,95	3,13	2,58
Scroll compressors								
Quantity	n	1	1	1	1	1	1	1
Circuits	n	1	1	1	1	1	1	1
Standard steps capacity	n	1	1	1	1	1	1	1
Nominal absorbed current	A	3,0	6,3	5,6	5,5	6,4	9,0	10,3
Maximum absorbed current	A	6	7	10	12	14	16	18
Inrush current	A	18	26	46	56	68	77	81
Axial fans								
Quantity	n	1	1	1	2	2	2	2
Rotation speed	rpm	900	900	900	900	900	900	900
Motors power	kW	0,15	0,15	0,15	0,29	0,29	0,29	0,29
Total air flow	m ³ /h	3.600	3.850	3.850	7.500	7.500	6.984	6.984
Total air flow	l/s	1.000	1.069	1.069	2.083	2.083	1.940	1.940
Nominal absorbed current	A	0,7	0,7	0,7	1,4	1,4	1,4	1,4
Electrical data								
Total absorbed power	kW	2,4	2,8	3,3	3,8	4,6	5,7	7,2
Sound pressure level								
Sound pressure level 2)	dB(A)	50	50	50	54	55	55	56
Dimensions								
Length	mm	980	980	980	1.100	1.100	1.100	1.100
Width	mm	325	325	325	750	750	750	750
Height	mm	715	715	715	1.100	1.100	1.100	1.100
Weight	kg	122	125	128	205	209	226	228
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).								

Technical data sheet - MCE 201-421 Kc

MCE		201 Kc	241 Kc	281 Kc	361 Kc	421 Kc
Cooling capacity						
Cooling capacity	kW	18,8	22,5	26,5	33,6	40,1
Absorbed power	kW	6,5	7,7	8,7	10,3	12,7
EER	kW/kW	2,89	2,92	3,05	3,26	3,16
Scroll compressors						
Quantity	n	1	1	1	1	1
Circuits	n	1	1	1	1	1
Standard steps capacity	n	1	1	1	1	1
Nominal absorbed current	A	12,0	14,1	15,9	17,6	22,3
Maximum absorbed current	A	17	20	22	27	32
Inrush current	A	99	123	127	167	198
Axial fans						
Quantity	n	2	2	2	2	2
Rotation speed	rpm	900	900	900	860	860
Motors power	kW	0,74	0,74	0,74	1,26	1,26
Total air flow	m ³ /h	11.200	11.200	10.200	16.000	16.000
Total air flow	l/s	3.111	3.111	2.833	4.444	4.444
Nominal absorbed current	A	3,4	3,4	3,4	6	6
Electrical data						
Total absorbed power	kW	7,2	8,4	9,4	11,6	14,0
Sound pressure level						
Sound pressure level 2)	dB(A)	62	62	62	67	67
Dimensions						
Length	mm	1.600	1.600	1.600	2.000	2.000
Width	mm	750	750	750	850	850
Height	mm	1.260	1.260	1.260	1.650	1.650
Weight	kg	250	255	295	400	415
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).						

CONDENSING UNITS

Technical data sheet - MCE 201-421 U Kc

MCE U		201 Kc	241 Kc	281 Kc	361 Kc	421 Kc
Cooling capacity						
Cooling capacity		18,6	22,5	27,1	33,0	39,6
Absorbed power	kW	6,5	7,7	8,4	10,6	13,1
EER	kW/kW	2,86	2,92	3,23	3,11	3,02
Scroll compressors						
Quantity	n	1	1	1	1	1
Circuits	n	1	1	1	1	1
Standard steps capacity	n	1	1	1	1	1
Nominal absorbed current	A	12,3	14,9	15,2	18,3	22,9
Maximum absorbed current	A	17	20	22	27	32
Inrush current	A	99	123	127	167	198
Axial fans						
Quantity	n	2	2	2	2	3
Rotation speed	rpm	680	680	650	650	650
Motors power	m ³ /h	8.000	7.000	11.200	11.200	17.400
Motors power	l/s	2.222	1.944	3.111	3.111	4.833
Total air flow	kW	0,44	0,44	0,62	0,62	0,93
Nominal absorbed current	A	2,2	2,2	3,1	3,1	4,7
Electrical data						
Total absorbed power	kW	6,9	8,1	9,0	11,2	14,0
Sound pressure level						
Sound pressure level 2)	dB(A)	55	55	59	59	61
Dimensions						
Length	mm	1.600	1.600	2.000	2.000	2.130
Width	mm	750	750	850	850	1.100
Height	mm	1.260	1.260	1.650	1.650	1.760
Weight	kg	256	261	370	400	570
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).						