MCE 1482 K

Series MCE ... K

Cooling capacity from 73 to 288 kW - 2 circuits

The air cooled condensing units of **MCE K 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.
They are all available with 2 refrigerant circuits.
Thanks to their compact dimensions and to the several options available, these units are particularly easy to install in small spaces and easily accessible on all sides for ordinary and extraordinary service operations.
They are completely assembled and tested in the factory and supplied with refrigerant and oil charge.

The following versions are available:
MCE...K standard version
MCE... S.K silenced version with soundproofing insulation of compressors section
MCE... U.K ultrasilenced version with soundproofing insulation of compressors section by means of a bituminous rubber coating

Operation limits: 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, isolated from the air flow, is completely open; for silenced and ultra-silenced versions, the compressors are protected by a suitable soundproofing cabinet.

High-efficiency scroll compressor (EER 3,7 at ARI conditions), with low sound level, internal heat protection, installed on rubber vibration dampers, supplied with crankcase heater. Being 2 circuit units, in case of problem on one of the circuit, the 50% operation of the unit is anyway granted.

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 the 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 (option BT).

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

A **Amperometer**: Electrical device for measuring the intensity of electrical current absorbed by the unit.

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

BT **Low temperature operation (-20°C)**: electronic device for the continuous modulating voltage control of the condensing pressure through the variation of the fan rotation speed.

CF **Soundproofed compressors cabinet with standard material**: Insulation of compressors by a cabinet coated with soundproofing material and vibration dampers under compressors (already included in S version).

CFU **Soundproofed compressors cabinet with bituminous rubber coated material**: Insulation of compressors by a suitably coated cabinet, vibration dampers under compressors, mufflers on compressors discharge pipes (already included in U version).

CI **Soundproofing jacket on compressors** made of soundproofing material, wrapped all around compressors so to further reduce the overall sound level of the unit (not available for S and U versions).

CS **Compressors inrush counter**: Electromechanical device positioned inside the electrical board, recording the total inrush starts of compressors.

GP **Condensing coil protection grid**: metal protection grid against accidental impacts.

GP1 **Protection grid for compressors section**: metal protection grid against accidental impacts (not available for 2-fan sizes with CF/CFU option).

IG **Watch card:** Electronic card to program the switch-over and rotation between to units, after a pre-set time.

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.

MP **Oversized microprocessor**: compared to the standard microprocessor, it allows a multi-language display reading, a more detailed description of parameters, the possibility to manage up to 8 units, to manage non standard communication protocols, a better access to the program.

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.

PM **Spring-type vibration dampers**: spring-type vibration dampers support, for insulating the unit (supplied in kit), mainly indicated for installation in difficult and aggressive environments. Made of two steel plates containing a suitable quantity of harmonic steel springs.

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.

RF **Power factor correction system cosfi >0,9**: Electrical device made of suitable condensers for compressors rephasing, ensuring a cosfi value ≥0,9 , so to reduce the power absorption from the electrical network.

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 colour**

V **Voltmeter**: Electrical device measuring the electrical tension in the power supply of the unit.

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

Technical data - Standard version

MCE		752 K	892 K	982 K	1062 K	1332 K	1352 K	1482 K	1622 K	1922 K	1972 K	2292 K	2542 K	2702 K	2962 K
Cooling capacity															
Cooling capacity	kW	72,8	85,0	94,1	101,7	128,0	129,0	142,0	156,0	185,0	189,0	220,0	245,0	268,0	288,0
Nominal input power	kW	27,0	29,2	36,2	35,7	44,0	42,0	54,0	54,7	66,6	72,8	81,2	89,4	100,0	116,0
EER		2,69	2,91	2,60	2,85	2,91	3,07	2,59	2,85	2,78	2,60	2,71	2,74	2,68	2,48
Axial fans															
Quantity	n.	2				3				4			5		
Rotation speed	rpm	880													
Air flow	m^3/h	42˙840	38˙880		36˙000	59˙040			54˙000	79˙920		74˙160	99˙360	92˙520	
Air flow	l/s	11˙900	10˙800		10˙000	16˙400			15˙000	22˙200		20˙600	27˙600	25˙700	
Motor input power	kW	4				6				8			10		
Input current	A	8				12				16			20		
Scroll compressors															
Quantity	n.	2	4		2	4	2	4	2	6	4				
Circuits	n.	2													
Standard capacity steps	n.	2	4		2	4	2	4	2	4					
Nominal input current	A	48,0	54,0	66,0	61,0	77,0	72,0	96,0	93,0	113,0	123,0	137,0	151,0	171,0	198,0
Maximum input current	A	64,0	80,0	88,0	82,0	108,0	104,0	128,0	125,0	162,0	164,0	208,0		250,0	
Inrush current	A	230,0	183,0	193,0	266,0	248,0	324,0	294,0	373,0	302,0	348,0	428,0		498,0	
Electrical data															
Total input power	kW	31,0	33,2	40,2	39,7	50,2	48,0	60,7		74,6	80,8	89,2	99,4	110,0	126,0
Total nominal input current	A	56,0	62,0	74,0	69,0	89,0	84,0	108,0	105,0	129,0	139,0	153,0	171,0	191,0	218,0
Maximum total input current	A	72,0	88,0	96,0	90,0	120,0	116,0	140,0	137,0	178,0	180,0	224,0	228,0	270,0	
Total inrush current	A	238,0	191,0	201,0	274,4	260,0	336,0	306,0	385,0	318,0	364,0	444,0	448,0	518,0	
Sound pressure level															
Sound pressure at 1 m	dB(A)	69	70		72	74			75	76		77			
Dimensions															
Length	mm	2˙715				3˙740				4˙765			5˙790		
Width	mm	1˙370													
Height	mm	2˙140													
Transport weight	kg	1˙144	1˙327	1˙328	1˙356	1˙707	1˙621	1˙753	1˙766	2˙497	2˙410	2˙476	2˙708	3˙037	3˙161
Refrigerant charge per circuit	kg	16,0	20,0		23,0	25,0			30,0	39,0		46,0	45,0	53,0	
Electrical power supply															
Electrical power supply	V / ph / Hz	400 / 3 / 50 + T + N													

REMARKS:
- Operating conditions: External air temperature 35°C; evaporating temperature 2°C (dew)
- Sound pressure level at 1 m in open field (ISO 3744).

Technical data - Silenced version

MCE		752 S K	892 S K	982 S K	1062 S K	1332 S K	1352 S K	1482 S K	1622 S K	1922 S K	1972 S K	2292 S K	2542 S K
Cooling capacity													
Cooling capacity	kW	69,4	81,0	93,2	97,1	121,9	123,7	140,4	149,1	176,8	186,6	213,6	245,1
Nominal input power	kW	28,7	31,3	36,8	38,1	44,7	47,2	55,4	58,2	71,9	74,4	84,7	89,4
EER		2,42	2,59	2,53	2,55	2,73	2,62	2,53	2,56	2,46	2,51	2,52	2,74
Axial fans													
Quantity	n.	2				3				4		5	
Rotation speed	rpm	660											
Air flow	m^3/h	32˙760	29˙520	27˙360		44˙280	44˙200	40˙680		59˙040	54˙720	74˙160	68˙400
Air flow	l/s	9˙100	8˙200	7˙600		12˙300		11˙300		16˙400	15˙200	20˙600	19˙000
Motor input power	kW	2,5				3,7				5,0		6,2	
Input current	A	4,6				6,9				9,2		11,5	
Scroll compressors													
Quantity	n.	2	4		2	4	2	4		6	4		
Circuits	n.	2											
Standard capacity steps	n.	2	4		2	4	2	4	2	4			
Nominal input current	A	50,0	57,0	67,0	64,0	81,0	75,0	97,0		119,0	125,0	141,0	151,0
Maximum input current	A	64,0	80,0	88,0	82,0	108,0	104,0	128,0	125,0	162,0	164,0	208,0	
Inrush current	A	230,0	183,0	193,0	266,0	248,0	324,0	294,0	373,0	302,0	348,0	428,0	
Electrical data													
Total input power	kW	31,2	33,8	39,3	40,6	48,5	51,0	59,2	62,0	76,9	79,4	91,0	95,7
Total nominal input current	A	55,0	61,0	71,0	68,0	88,0	82,0	104,0		128,0	134,0	153,0	162,0
Maximum total input current	A	69,0	85,0	93,0	87,0	115,0	111,0	135,0	132,0	171,0	173,0	224,0	220,0
Total inrush current	A	235,0	188,0	198,0	271,0	255,0	331,0	301,0	380,0	311,0	357,0	444,0	440,0
Sound pressure level													
Sound pressure at 1 m	dB(A)	66			69	70			71		73		77
Dimensions													
Length	mm	2˙715				3˙740				4˙765		5˙790	
Width	mm	1˙370											
Height	mm	2˙140											
Transport weight	kg	1˙144	1˙355	1˙430	1˙440	1˙847	1˙733	1˙971	1˙962	3˙017	3˙060	3˙358	3˙504
Refrigerant charge per circuit	kg	16,0	20,0	23,0		25,0		30,0		39,0	46,0	45,0	53,0
Electrical power supply													
Electrical power supply	V / ph / Hz	400 / 3 / 50 + T + N											

REMARKS:
- Operating conditions: External air temperature 35°C; evaporating temperature 2°C (dew)
- Sound pressure level at 1 m in open field (ISO 3744).

Technical data - Ultrasilenced version

MCE		752 U K	892 U K	982 U K	1062 U K	1332 U K	1352 U K	1482 U K	1622 U K	1922 U K	1972 U K	2292 U K
Cooling capacity												
Cooling capacity	kW	71,8	79,8	91,2	102,5	120,3	124,7	142,8	154,2	181,1	191,3	213,6
Nominal input power	kW	27,5	31,9	37,8	36,9	48,0	49,0	54,2	60,7	68,9	79,5	91,4
EER		2,61	2,50	2,41	2,78	2,51	2,54	2,63	2,54	2,63	2,41	2,34
Axial fans												
Quantity	n.	2			3			4		5		
Rotation speed	rpm	530										
Air flow	m^3/h	24˙000	22˙000	38˙880	36˙000	33˙000		47˙880		60˙120		55˙080
Air flow	l/s	6˙670	6˙110	10˙800	10˙000	9˙170		13˙300		16˙700		15˙300
Motor input power	kW	1,5			2,3			3,1		3,9		
Input current	A	3,0			4,5			6,0		7,5		
Scroll compressors												
Quantity	n.	2	4		2	4	2	4	2	6	4	
Circuits	n.	2										
Standard capacity steps	n.	2	4		2	4	2	4	2	4		
Nominal input current	A	48,0	58,0	68,0	66,0	82,0	86,0	96,0	107,0	116,0	139,0	159,0
Maximum input current	A	64,0	80,0	88,0	82,0	108,0	104,0	128,0	125,0	162,0	164,0	208,0
Inrush current	A	230,0	183,0	193,0	266,0	248,0	324,0	294,0	373,0	302,0	348,0	428,0
Electrical data												
Total input power	kW	29,0	33,4	40,1	39,2	50,3	51,3	57,3	63,8	72,8	83,4	95,3
Total nominal input current	A	51,0	61,0	73,0	70,0	87,0	91,0	102,0	113,0	124,0	146,0	167,0
Maximum total input current	A	67,0	83,0	93,0	87,0	113,0	109,0	134,0	131,0	170,0	172,0	216,0
Total inrush current	A	233,0	186,0	198,0	271,0	253,0	329,0	300,0	379,0	310,0	356,0	436,0
Sound pressure level												
Sound pressure at 1 m	dB(A)	63			65			66	67		69	
Dimensions												
Length	mm	2˙715			3˙740			4˙765		5˙790		
Width	mm	1˙370										
Height	mm	2˙140										
Transport weight	kg	1˙167	1˙392	1˙623	1˙689	1˙884	1˙770	2˙502	2˙529	3˙290	3˙269	3˙416
Refrigerant charge per circuit	kg	20,0	23,0	20,0	25,0	30,0		39,0		45,0		53,0
Electrical power supply												
Electrical power supply	V / ph / Hz	400 / 3 / 50 + T + N										

REMARKS:
- Operating conditions: External air temperature 35°C; evaporating temperature 2°C (dew)
- Sound pressure level at 1 m in open field (ISO 3744).