

# MEE Kc

## EVAPORATING UNITS WITH SCROLL COMPRESSORS

SERIES MEE Kc R410A REFRIGERANT.



Above picture is only indicative and is not binding.



The evaporating units of **MEE Kc series** to be mached to remote condenser, are designed for indoor installation and are particularly suitable for small and medium sized air conditioning systems with different applications like multiple dwellings and commercial application.

They are available with 1 or 2 cooling circuits.

The units have been designed to be extremely compact, with anyway an easy access for both ordinary and extraordinary maintenance.

Thanks to their compact dimensions and to the several available options, these units are particularly easy to install also in small spaces, with no building works. The units are completely factory assembled and before the units test the cooling circuits are subjected to a leak test under pressure and subsequently charged with dry air and non-freezing oil charge.

The following version is available:

**MEE...Kc** - standard version

**Water operation limits** (standard units):

EVAPORATOR (out): from 5°C to 15°C

### MAIN COMPONENTS:

**Strong and compact frame**, made of bended and RAL 7035 coloured steel profiles, supporting all the main components, installed at sight. On request, the compressors can be acoustically isolated by a soundproofing cabinet with standard material (option CF) or by high density fireproof material with increased thickness (option CFU) in order to further reduce unit sound level.

**High-efficiency orbiting spirals Scroll Compressor working with R410A**, with low sound level, internal heat protection and installed on rubber vibration dampers.

**Evaporator** of weld-brazed plate type, in AISI 316 stainless steel, with pipes and patented manifold so to reach a high heat exchange coefficient, 1 or 2 circuits. Its design allows a uniform water distribution, compatibly with pressure drops. The exchanger is provided with large thickness close-cell insulating material. Max working pressure is 10 bar for water side and 45 bar for refrigerant one.

**Cooling circuit** composed of mechanical thermostatic expansion valve, dehydrating filter, solenoid valve, high and low pressure switches, shut-off valves on liquid line and sight glass.

## EVAPORATING UNITS

**Electrical board** in compliance with 60204-1/IEC 204-1 standard, containing all the components for the managing system and the ones required for motors start, factory connected and tested. Made up of: structure suitable for containing power and managing devices, electronic card equipped with keyboard and 3 digit display integrated in the microprocessor for displaying all different functions, main switch, transformer for auxiliaries, automatic switches, contactors for compressors protection and managing, contacts for cumulative alarms and remote ON/OFF, spring type terminal board, interfacing pre-arrangement for BMS management.

**Electronic unit management Microprocessor** easily accessible, equipped with compressor hour counter and display installed on the external panel.

### OPTIONS:

- A Amperometer:** Electrical device for measuring the intensity of electrical current absorbed by the unit.
- AC Power supply of remote condenser:** Main power supply for remote condenser, provided inside the electrical board of the evaporating unit. In the case the remote condenser is supplied by the customer, please communicate to Emicon the relevant supply voltage and absorbed input so to allow the correct sizing of components of the electrical power supply.
- AE Electrical power supply different from standard:** Mainly, 230 V three-phase, 460 V three-phase. Frequency 50/60 Hz.
- CF Soundproofed compressors with standard material:** Insulation of compressors by a cabinet made of extruded anodized aluminium profiles, with panels in aluminium alloy, coated with soundproofing material rusticated ashlar type.
- CFU Soundproofed compressors cabinet with bituminous rubber coated material:** Insulation of compressors by a cabinet made of extruded anodized aluminium profiles, with panels in aluminium alloy, coated with double thickness soundproofing material with bituminous rubber material.
- CS Compressors inrush current:** Electromechanical device positioned inside the electrical board, recording the total inrush starts of compressors.
- EHC Crankcase heater:** For heating compressors oil.
- HRV Safety valve high pressure side**
- HRV2 Double safety valve high pressure side,** complete with shut-off valve for maintenance or replacement of the excluded valve, with system completely operating.
- IG Watch card:** Allows the historicizing of 25 alarms, recording start and stop of each event.
- IH RS 485 Serial interface:** Electronic card to be connected to the microprocessor, to allow the connection of the unit to a Modbus supervision system, so that the unit is fully remote controllable.
- IM Seawood packing:** Fumigated seawood case and film envelope together added with slowly vaporizing corrosion inhibitors completely nitrates and heavy metals (VCI) free suitable for long sea transports.
- IR Packing with fumigated wooden pallet:** Minimal packing made of wooden pallet and transparent film wrapped all-round the unit.
- LR Liquid receiver** suitably sized to contain the exceeding quantity of liquid refrigerant.
- 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 required.
- MP Oversized microprocessor:** Compared to the standard microprocessor, it allows a multi-language display reading, a more detailed parameters description, the management of non standard communication protocols (LON WORKS, TCP/IP, BACNET) and a better accessibility to control and set parameters.
- MT High and low pressure gauges:** Used for measuring compressors suction and discharge 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.
- PF Safety water flow switch:** Installed on evaporator, it switched off the unit in case of lack of water flow rate through the evaporator.
- 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:** Allows the displaying of the parameters detected by the installed probes, of the digital inputs, the outputs as well as the remote ON/OFF of the unit, parameters modification and setting, sound signal, displaying and reset of available alarms.
- RA Anti-freeze heater evaporator:** Electrical heater installed on the evaporator, in order to prevent freezing and provided with thermostat.
- RD Shut-off valve on discharge side:** They are used to isolate compressors during service operations.
- RF Power factor correction system  $\cos\phi \geq 0,9$ :** Electrical device made of suitable condensers for compressors rephasing, ensuring a  $\cos\phi$  value  $\geq 0,9$ , so to reduce the power absorption from the electrical network.
- RH Shut-off valve on suction side:** They are used to isolate compressors during service operations.
- RL Compressors overload relays:** Electromechanical protection devices against compressors overload.
- RP Partial heat recovery:** (about 20%) of condensing heat through a refrigerant/water plate exchanger (desuperheater) always in series to the compressors. It is used when you want to partially recover condensing heat capacity for production of sanitary water (Requires HRV or HRV2).
- SF Soft-Starter:** Electronic device for a soft starting which allows the reduction of compressors inrush current.
- TE Electronic Thermostatic valve:** Reduces the reaction time of the unit. Useful for frequent variations of cooling charge, or for increasing the efficiency of the unit.
- V Voltmeter:** Electrical device measuring the electrical voltage of the unit power supply.
- VB Brine Version:** Unit suitable for working with evaporator outlet water temperatures lower than 0°C. A 20 mm evaporator insulation will be provided.

## EVAPORATING UNITS

### Technical data - MEE 511 - 1222 KC

MEE		511	611	771	772	891	892	1022	1192	1222
<b>Cooling capacity</b>										
Cooling capacity 1)	kW	48,1	56,5	71,6	71,6	84,3	84,3	96,2	112,3	113
Absorbed power	kW	13,2	15,3	19,6	19,6	24,4	24,4	26,3	32,5	30,6
EER		3,65	3,69	3,66	3,66	3,45	3,45	3,66	3,46	3,69
<b>Compressors</b>										
Quantity	n	2	2	2	2	2	2	4	2	4
Standard steps capacity	n	2	2	2	2	2	2	4	2	4
Nominal absorbed current	A	24,4	27,5	34,4	34,3	39,8	39,7	48,8	53,1	55,1
Maximum absorbed current	A	42	45	56	56	66	66	83	88	90
Inrush current	A	124	132	158	158	174	174	149	237	161
<b>Evaporator</b>										
Quantity	n	1	1	1	1	1	1	1	1	1
Circuits	n	1	1	1	2	1	2	2	2	2
Water flow rate	m <sup>3</sup> /h	8,3	9,7	12,3	12,3	14,5	14,5	16,5	19,3	19,4
Water flow rate	l/s	2,3	2,7	3,4	3,4	4,0	4,0	4,6	5,4	5,4
Pressure drop	kPa	40	38	43	45	47	51	51	59	55
<b>Sound pressure level</b>										
Sound pressure level 2)	dB(A)	62,3	62,3	64	64	69,5	69,5	64,3	69,5	64,3
<b>Dimensions</b>										
Length	mm	1500	1500	1500	1500	1500	1500	2500	1500	2500
Width	mm	750	750	750	750	750	750	750	750	750
Height	mm	1600	1600	1800	1800	1800	1800	1800	1800	1800
Gewicht	kg	401	409	421	437	568	582	674	642	685
<b>Power supply</b>										
Power supply	V / ph / Hz	400 V / 50 Hz / 3 Ph + T + N								
<b>NOTES</b>										
1) Nominal condition referred to: Chilled water 7/12 °C - Condensing temperature 47°C.										
2) Measured at 1 m in open field (ISO 3746).										

### Technical data - MEE1452 - 4782 Kc

MEE		1452	1542	1782	2382	2892	3812	4182	4782
<b>Cooling capacity</b>									
Cooling capacity 1)	kW	139,8	143,2	168,7	224,5	275,2	352,9	387,2	439,8
Absorbed power	kW	39,2	39,1	48,8	65	78,5	99,4	110,9	121,9
EER		3,57	3,66	3,46	3,45	3,51	3,55	3,49	3,61
<b>Compressors</b>									
Quantity	n	2	4	4	4	4	4	4	4
Standard steps capacity	n	2	4	4	4	4	4	4	4
Nominal absorbed current	A	62,8	68,7	79,4	106,2	125,6	162	189,8	201,2
Maximum absorbed current	A	106	112	132	176	212	264	304	324
Inrush current	A	241	194	214	290	304	408	409	449
<b>Evaporator</b>									
Quantity	n	1	1	1	1	1	1	1	1
Circuits	n	2	2	2	2	2	2	2	2
Water flow rate	m <sup>3</sup> /h	24	24,6	29	38,5	47,2	60,6	66,5	75,5
Water flow rate	l/s	6,7	6,8	8,1	10,7	13,1	16,8	18,5	21,0
Pressure drop	kPa	59	63	66	74	69	77	73	73
<b>Sound pressure level</b>									
Sound pressure level 2)	dB(A)	70	66	72	72	71	73	73	75
<b>Dimensions</b>									
Length	mm	1500	2500	3000	3000	3000	3000	3000	3000
Width	mm	750	750	750	750	750	750	850	850
Height	mm	1800	1800	1800	1800	2030	2030	2030	2030
Gewicht	kg	658	724	1023	1092	1134	1175	1219	1291
<b>Power supply</b>									
Power supply	V / ph / Hz	400 V / 50 Hz / 3 Ph + T + N							
<b>NOTES</b>									
1) Nominal condition referred to: Chilled water 7/12 °C - Condensing temperature 47°C.									
2) Measured at 1 m in open field (ISO 3746).									