

# MCE Kc

## AIR COOLED CONDENSING UNITS WITH SCROLL COMPRESSORS AND AXIAL FANS

COOLING CAPACITY FROM 45,7 TO 79,1 kW - 2 COOLING CIRCUITS

MCE 482 Kc + MT



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. They are all available with 2 refrigerant circuits. All sizes are standard provided with an isolated compressors section and the external frame is completely closed. 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
- **MCE 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. For ultrasilenced version, it is insulated with soundproofing material. The external panels, easy to be dismantled, allow the full access in case of service.

**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, when necessary. 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 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.

### 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.
- GP Condensing coil protection grid:** Metal protection grid against accidental impacts.
- 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 colour.**
- SC Insulated compressors housing** with sound proofing material (included on ultra-silenced version).
- VS Solenoid valve:** Electromagnetic solenoid valve on each cooling circuit to prevent refrigerant migrations and consequent flooding of compressors.

## CONDENSING UNITS

### Technical data sheet - MCE 482-822 Kc

| MCE   |                   | 482 Kc                    | 562 Kc | 702 Kc | 822 Kc |
|---|-------------------|---------------------------|--------|--------|--------|
| <b>Cooling capacity</b>   |                   |                           |        |        |        |
| Cooling capacity  |                   |                           |        |        |        |
| Absorbed power  | kW                | 45,7                      | 51,9   | 66,0   | 79,1   |
| EER   |                   | 3,01                      | 2,90   | 3,13   | 3,01   |
| <b>Scroll compressors</b>   |                   |                           |        |        |        |
| Quantity  | n                 | 2                         | 2      | 2      | 2      |
| Circuits  | n                 | 2                         | 2      | 2      | 2      |
| Standard steps capacity   | n                 | 2                         | 2      | 2      | 2      |
| Nominal absorbed current  | A                 | 27,7                      | 32,7   | 36,7   | 46,8   |
| Maximum absorbed current  | A                 | 40,0                      | 44,0   | 54,0   | 64,0   |
| Inrush current  | A                 | 143,0                     | 149,0  | 194,0  | 230,0  |
| <b>Axial fans</b>   |                   |                           |        |        |        |
| Quantity  | n                 | 3                         | 3      | 3      | 3      |
| Rotation speed  | rpm               | 860                       | 860    | 860    | 860    |
| Motors power  | kW                | 1,9                       | 1,9    | 1,9    | 1,9    |
| Total air flow  | m <sup>3</sup> /h | 25.200                    | 25.200 | 21.300 | 21.300 |
| Total air flow  | l/s               | 7.000                     | 7.000  | 5.917  | 5.917  |
| Nominal absorbed current  | A                 | 9,0                       | 9,0    | 9,0    | 9,0    |
| <b>Electrical data</b>  |                   |                           |        |        |        |
| Total absorbed power  | kW                | 17,1                      | 19,8   | 23,0   | 28,2   |
| <b>Sound pressure level</b>   |                   |                           |        |        |        |
| Sound pressure level 2)   | dB(A)             | 69                        | 69     | 69     | 69     |
| <b>Dimensions</b>   |                   |                           |        |        |        |
| Length  | mm                | 2.130                     | 2.130  | 2.130  | 2.130  |
| Width   | mm                | 1.100                     | 1.100  | 1.100  | 1.100  |
| Height  | mm                | 1.760                     | 1.760  | 1.760  | 1.760  |
| Weight  | kg                | 607                       | 611    | 682    | 693    |
| <b>Power supply</b>   |                   |                           |        |        |        |
| Power supply  | V / ph / Hz       | 400 V/50 Hz / 3Ph + N + T |        |        |        |
| <b>NOTES</b>  |                   |                           |        |        |        |
| 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 482-702 U Kc

| MCE U   |                   | 482 Kc                    | 562 Kc | 702 Kc |
|---|-------------------|---------------------------|--------|--------|
| <b>Cooling capacity</b>   |                   |                           |        |        |
| Cooling capacity  | kW                | 44,6                      | 53,0   | 63,8   |
| Absorbed power  | kW                | 15,7                      | 17,3   | 22,2   |
| EER   |                   | 2,84                      | 3,06   | 2,87   |
| <b>Scroll compressors</b>   |                   |                           |        |        |
| Quantity  | n                 | 2                         | 2      | 2      |
| Circuits  | n                 | 2                         | 2      | 2      |
| Standard steps capacity   | n                 | 2                         | 2      | 2      |
| Nominal absorbed current  | A                 | 28,6                      | 31,8   | 38,8   |
| Maximum absorbed current  | A                 | 40,0                      | 44,0   | 54,0   |
| Inrush current  | A                 | 143,0                     | 149,0  | 194,0  |
| <b>Axial fans</b>   |                   |                           |        |        |
| Quantity  | n                 | 3                         | 3      | 3      |
| Rotation speed  | rpm               | 650                       | 650    | 650    |
| Motors power  | m <sup>3</sup> /h | 17.700                    | 14.200 | 14.200 |
| Total air flow  | l/s               | 4.917                     | 3.944  | 3.944  |
| Total air flow  | kW                | 0,93                      | 0,93   | 0,93   |
| Nominal absorbed current  | A                 | 4,7                       | 4,7    | 4,7    |
| <b>Electrical data</b>  |                   |                           |        |        |
| Total absorbed power  | kW                | 16,6                      | 18,2   | 23,1   |
| <b>Sound pressure level</b>   |                   |                           |        |        |
| Sound pressure level 2)   | dB(A)             | 61                        | 61     | 61     |
| <b>Dimensions</b>   |                   |                           |        |        |
| Length  | mm                | 2.130                     | 2.130  | 2.130  |
| Width   | mm                | 1.100                     | 1.100  | 1.100  |
| Height  | mm                | 1.760                     | 1.760  | 1.760  |
| Weight  | kg                | 614                       | 618    | 689    |
| <b>Power supply</b>   |                   |                           |        |        |
| Power supply  | V / ph / Hz       | 400 V/50 Hz / 3Ph + N + T |        |        |
| <b>NOTES</b>  |                   |                           |        |        |
| Nominal condition referred to: Evaporating temperature 2 °C - External air temperature 35 °C. |                   |                           |        |        |
| 2) Measured at 1 m in open field (ISO 3746).  |                   |                           |        |        |