MEH Ka

EVAPORATING UNITS WITH SCREW COMPRESSORS

SERIES MEH Ka R134a REFRIGERANT.

Above picture is only indicative and is not binding.

The evaporating units of **MEH Ka series** to be mached to remote condenser, are designed for indoor installation and are particularly suitable for industrial processes or air conditioning systems, where it is necessary to ensure excellent seasonal performance and low environmental impact.
The units are available with 1 or 2 cooling circuits and they have been designed to be extremely compact, with anyway an easy access for both ordinary and extraordinary maintenance.
Thanks to the several options available, these units are particularly flexible and can be easily adapted to all installation sites.
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:
MEH...Ka - standard version

Water operation limits (standard units):
EVAPORATOR (outlet water): from 5°C to 15°C

MAIN COMPONENTS:
Strong and compact frame, made of bended and coloured steel profiles (colour RAL 9004-black), supporting the shell & tube evaporator and on which all the main components are installed at sight. On request, the compressors can be isolated by a soundproofing cabinet with standard material (option CF) or with double thickness material and mufflers on compressors discharge (option CFU), so to further reduce the overall sound level of the unit itself.

Semi-hermetic screw compressors equipped with capacity steps, motor thermal protection,
control of the rotation sense, oil crankcase heater, shut-off valve on discharge side and anti-vibration mountings. The compressors lubrication is of forced type, with no pump and in order to prevent many oil migrations to the cooling circuit, the compressors are provided with an oil separator, in-built to the discharge side, an optical electronic pressure switch for checking the oil level. The electrical motor is provided with an automatic system for partial load start and for mechanical lock of the inrush remote control switches, so to avoid accidental short-circuits (standard provided for size 281 Ka – 321 Ka – 361 Ka – 452 Ka – 562 Ka – 642 Ka and 732 Ka. Option DS for other sizes). The cooling capacity could be regulated by steps (standard) or modulated (option M12÷25).

Dry expansion shell and tube evaporator with one or two refrigerant circuits and one water circuit. Realized with pure electrolytic copper tubes, tubes plate made in carbon steel, it is insulated by close-cell polyurethane foam material and external UV ray-proof scratch jacket.

Some plastic and corrosion-proof baffles are suitably placed inside the shell, allowing a correct water distribution and making the tube bundle particularly strong and vibration-free, also in case of very high water flows. The evaporator is also equipped with safety water flow switch switching off the unit in case of low water flow through the evaporator and with Victaulic joints.
Exchanger design pressure water side: 10 bar.

Cooling circuit, made of copper or carbon steel tube, it is composed of electronic thermostatic expansion valve, dehydrating filter with interchangeable cartridges, sight glass, low pressure safety device, high and low pressure switches, shut-off valve on liquid line, in-built non-return valve on discharge side. Each compressor works on an independent cooling circuit, assuring a remarkable liability to two-circuit units.

Electric board in compliance with CE standards, contained in a suitable partition protected by the internal safety panel, provided with a lock-door main switch. Inside, it is complete with all control and protection switches, the terminal board and auxiliaries. The electrical board also includes the control device for power supply phases, to prevent the compressor to turn in the wrong sense. The microprocessor, complete with display, is also placed inside the electrical board.

Unit management microprocessor installed inside the electrical board, controlling the chilled water temperature regulation, the working parameters, auto-detection failure system, alarm history, rotation between units, after a pre-set time, remote management and supervision, complete with compressors hour counter.

ACCESSORIES

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

AC **Electrical control for condenser:** Electrical control (regulation and power) 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.

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

CF **Soundproofed compressors cabinet with standard material:** Insulation of compressors by a cabinet made of extruded anodized aluminum profiles, with panels in aluminum alloy, coated with soundproofing material.

CFU **Soundproofed compressors cabinet with bituminous rubber coated material:** Insulation of compressors by a cabinet made of extruded anodized aluminum profiles, with panels in aluminum alloy, coated with double thickness soundproofing material and mufflers on compressors discharge pipes.

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

DS **Star/delta:** electric device of close transition type to reduce the inrush current, complete with short circuit safety by mechanical interlock.

FL **Mechanical paddle flow switch:** on water side, for monitoring the correct water flow through the evaporator.

HRV **Safety valve on high pressure side**

HRV2 **Double safety valve on high pressure side, c**omplete with shut-off valve for maintenance or replacement of the excluded valve, with system completely operating.

IE **Fumigated wooden crate packing:** available on request for critical transports, so to assure a suitable protection to the unit.

IH **RS 485 serial interface:** electronic card to be connected to microprocessor, to allow communication between the units and a supervision system. It is possible to fully control the unit from remote. (Alternative to IH LON or IWG).

IH LON **Protocol serial interface:** Electronic card to be connected to the microprocessor to allow connection of the units to supervision systems with LON protocol, for a remote control and monitoring of the unit. (Alternative to IH or IWG).

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.

IWG **SNMP or TCP/IP Protocol serial interface:** Electronic card to be connected to the microprocessor to allow connection of the units to supervision systems with SNMP or TCP/IP protocol, for a remote control and monitoring of the unit. (Alternative to IH or IH LON).

LR **Liquid receiver** suitably sized to contain the exceeding quantity of liquid refrigerant.

M12÷M25 **Modulating capacity control:** made by means of some valves installed on compressors, depending on their quantity.

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.

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: r**emote 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.

RA **Anti-freeze heater on evaporator:** electrical heater installed on the evaporator, in order to prevent freezing and provided with thermostat.

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.

RH **Shut-off valve on suction side:** they are used to isolate compressors during service operations.

RL **Compressors overload relays:** electromechanical protection devices against compressor's overload.

RP **Partial heat recovery** of the condensing heat, by means of a refrigerant/water plate exchanger (desuperheater), always in series to the compressors. It is requested when you need to produce sanitary water, by recovering condensing heat capacity.

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

VB **Brine version:** unit suitable for working with evaporator outlet water temperatures lower than 0°C. A 20 mm evaporator insulation will be provided.

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

Technical data - MEH 281 - 551 Ka

MEH		281	321	361	421	452	491	562	551
Cooling capacity									
Cooling capacity 1)	kW	251,2	290,7	341,4	408,3	391,2	447,8	494,3	502,4
Absorbed power	kW	68,5	78,9	91,4	108,8	113,5	119,6	136,8	136,5
EER		3,67	3,69	3,74	3,75	3,45	3,74	3,61	3,68
Compressors									
Quantity	n	1	1	1	1	2	1	2	1
Standard steps capacity	n	3	3	3	3	6	3	6	3
Nominal absorbed current	A	180	198	221	283	320	315	360	356
Maximum absorbed current	A	434	530	587	436	499	465	546	586
Inrush current	A	720	838	921	1364	743	1442	832	1853
Evaporator									
Quantity	n	1	1	1	1	1	1	1	1
Circuits	n	1	1	1	1	2	1	2	1
Water flow rate	m^3/h	43,1	49,9	58,6	70,1	67,2	76,9	84,8	86,2
Water flow rate	l/s	12,0	13,9	16,3	19,5	18,7	21,4	23,6	23,9
Pressure drop	kPa	35	39	37	45	30	41	31	31
Sound pressure level									
Sound pressure level 2)	dB(A)	75,5	75,7	75,6	75,7	75,4	75,4	78	75,7
Dimensions									
Length	mm	3600	3600	3600	3600	3600	3600	3600	3800
Width	mm	800	800	800	800	1300	900	1300	900
Height	mm	1600	1600	1600	1600	1800	1700	1800	1700
Gewicht	kg	1539	1553	1562	2213	1980	2318	2736	2351
Power supply									
Power supply	V / ph / Hz	400 V / 50 Hz / 3 Ph + T + N							
NOTES									
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 - MEH 601 - 1201 Ka

MEH		601	642	732	852	992	1102	1202
Cooling capacity								
Cooling capacity 1)	kW	573,4	566,3	682,7	816,5	895,6	1004,8	1146,8
Absorbed power	kW	149,4	157	182,8	217,5	239,3	273	298,8
EER		3,84	3,61	3,74	3,75	3,74	3,68	3,84
Compressors								
Quantity	n	1	2	2	2	2	2	2
Standard steps capacity	n	3	6	6	6	6	6	6
Nominal absorbed current	A	427	396	442	566	630	712	854
Maximum absorbed current	A	650	661	737	619	658	816	899
Inrush current	A	2029	969	1071	1547	1635	2083	2278
Evaporator								
Quantity	n	1	1	1	1	1	1	1
Circuits	n	1	2	2	2	2	2	2
Water flow rate	m^3/h	98,4	97,2	117,2	140,2	153,8	172,5	196,9
Water flow rate	l/s	27,3	27,0	32,6	38,9	42,7	47,9	54,7
Pressure drop	kPa	40	25	33	44	46	57	67
Sound pressure level								
Sound pressure level 2)	dB(A)	77,8	77,6	77,8	77,8	77,7	78,1	78,8
Dimensions								
Length	mm	3800	3800	4000	4350	4350	4350	4350
Width	mm	900	1500	1500	1600	1600	1600	1600
Height	mm	1900	2000	2000	2100	2100	2100	2300
Gewicht	kg	2379	2998	3096	4394	4484	4558	4609
Power supply								
Power supply	V / ph / Hz	400 V / 50 Hz / 3 Ph + T + N						
NOTES								
1)Nominal condition referred to: Chilled water 7/12 °C - Condensing temperature 47°C.								
2) Measured at 1 m in open field (ISO 3746).								