



HIGH-EFFICIENCY FULL INVERTER COMPACT OUTDOOR PACKAGED UNITS

MCI 5 - 13 kW



MCI: high efficiency full inverter heat pumps

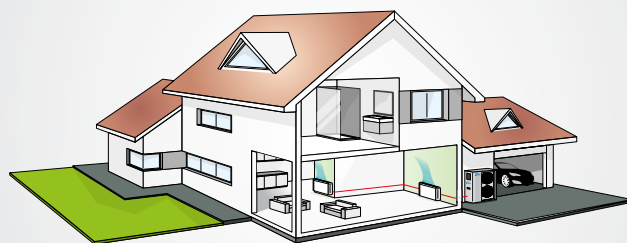
MCI is a range of heat pumps consisting of 4 unit sizes and 5 models, equipped with a state-of-the-art inverter compressor capable of efficiently meeting the cooling or thermal power requirements of residential or light commercial buildings.

All models, that access to tax deductions provided for by actual law, takes full advantage of some of the most innovative HVAC technologies: in fact, all the units are full-inverter and the extended use of electrical motors with permanent magnets driven by inverters with direct current, even for the accessory components – such as fans and water circulators – drastically reduces electrical power consumption and minimizes it under every operating condition, ensuring an energy efficiency level that puts them solidly in class A+ or A++. Thanks to the advanced management strategies that have been implemented, the control electronics integrate the functioning of the units' key components, thereby optimizing interaction between the main parts: compressor, fan, and water circulator.



PLUS

- ✓ Twin-rotary compressor driven by an electric BLDC motor
- ✓ EC Hydraulic pump
- ✓ EC Axial fan
- ✓ Access to tax deductions
- ✓ Advanced system management and adjustment strategies



MAIN COMPONENTS



Control unit

The user terminal of the MCI series heat pumps is not a simple remote control, but a sophisticated controller that is capable of extending the basic functions implemented in the unit's electronics. It allows you not only to manage with absolute ease the basic daily functions the machine is intended to provide (on and off, setting the operating mode, instant activation of predefined comfort settings), but also to access advanced programming levels. Customized time slots according to real usage needs and the ability to implement climatic curves on the basis of which to modulate the operation of the unit in order to maximize the overall efficiency of the heating and air-conditioning system, in addition to the ability to manage external equipment such as dehumidifiers, additional hydraulic circulators for primary/secondary loop systems, 3-way valves for the production of domestic hot water and boilers or external backup devices, are just some of the advantages offered to users by this powerful interface. The clear and ergonomic display of the main parameters and the ability to provide in-depth diagnoses of operation are a valuable aid for the maintenance and service operations.



Heat exchanger

Brazed-welded plate condenser in AISI 316 corrosion resistant austenitic stainless steel, specifically developed to maximise heat exchange coefficients between water and refrigerant.



Fans

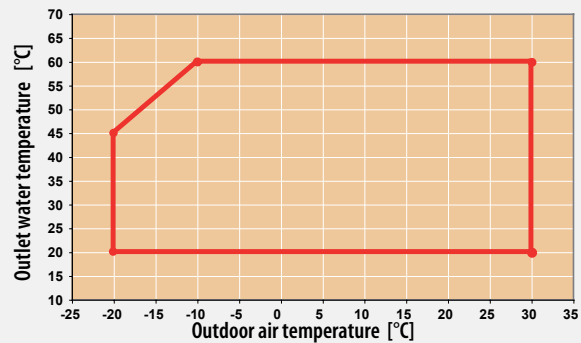
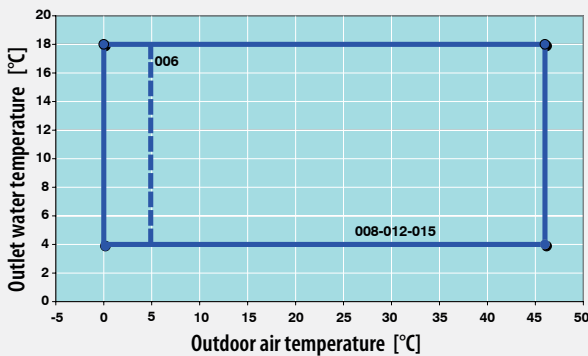
The sound levels are especially low thanks to the use of a specially designed fan with airfoil blades that is able to ensure a high air flow rate with limited noise emission.

Compressor

Hermetic twin-rotary compressor driven by a permanent magnet BLDC motor and equipped with a double acoustic insulation is fixed to the base by means of vibration-damping supports.

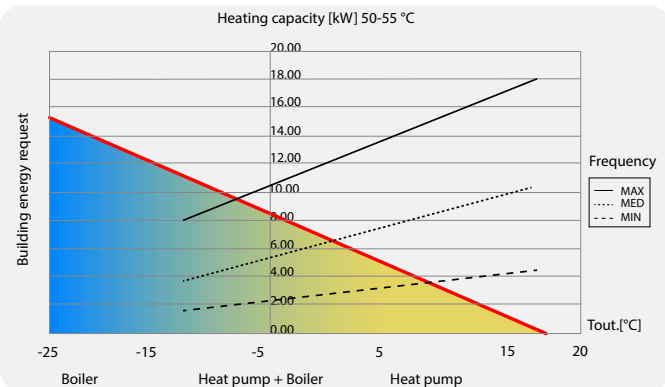
EXTENDED OPERATING RANGE FOR EACH APPLICATION

MCI series heat pumps were designed to ensure maximum flexibility in every application. Thanks to their extremely wide operating range ensuring the operation even in particularly cold climates and allowing them to produce water up to a maximum of 60 °C and to the advanced adjustment logics provided by the electronic control, they are able to ensure not only winter heating and summer air conditioning, but also the production of thermal energy to be used for domestic hot water production. The high efficiency values that characterize them make it possible, in many cases, to cover the share of renewable energy required by the most recent regulations on limiting energy consumption and to benefit from the tax credits offered by the legislation of many countries that are dedicated to promoting equipment that meets the highest standards.



LIGHT COMMERCIAL AND RESIDENTIAL USE: PERFORMANCE AND FUNCTIONALITY ALWAYS ON TOP

The control unit is able to activate an alternative heat generator (boiler or heating element) and employ its operation according to various user-configurable logics in unfavorable weather conditions and particularly high thermal loads, in order to integrate the missing heat capacity or to completely replace heat generation. This feature can also be used during the defrost phases, in order to balance the energy extracted from the heat transfer fluid to melt the ice present on the outside of the heat exchanger, or in the case of machine stoppage due to malfunction or maintenance.



All the models of the MCI range feature extremely compact size and low weight, which allow them to be installed even in environments with high population density and particularly small installation spaces. This is contributed to also by the multi-speed inverter circulator and the expansion tank integrated in the internal hydronic module, thus making superfluous the use of a dedicated technical compartment and in this manner simplifying and speeding up the installation operations. The units' structural metalwork was designed to facilitate maintenance operations and allow easy access to the main internal parts even in the case of limited clearance.

Air/water high efficiency heat pumps MCI

Rated technical data

MCI		006HM	008HM	012HM	015HM	015HO
Power supply	V-ph-Hz	230-1-50				400-3-50
Cooling mode - Chillers						
Cooling capacity (1) (E) (UNI EN 14511)	kW	4,73	5,84	10,2	13,0	13,0
Power input (1) (E) (UNI EN 14511)	kW	1,58	1,96	3,46	4,42	4,47
EER (1) (E) (UNI EN 14511)		3,00	2,98	2,96	2,95	2,91
ESEER (E)		4,51	4,15	4,22	4,31	4,31
Eurovent efficiency class (1)		B	B	B	B	B
Water flow rate (1)	l/h	810	992	1750	2237	2237
Standard pump available head OR (1)	kPa	65	66	76	66	66
Heating mode - Chillers						
Heating capacity (3) (E) (UNI EN 14511)	kW	5,76	7,36	12,9	14,0	14,5
Power input (3) (E) (UNI EN 14511)	kW	1,89	2,31	4,26	4,32	4,39
COP (3) (E) (UNI EN 14511)		3,05	3,19	3,03	3,23	3,30
Water flow rate (3)	l/h	996	1281	2238	2439	2439
Standard pump available head OR (3)	kPa	60	55	72	60	58
SCOP (E)		3,37	2,84	2,95	3,25	3,33
Heating mode - radiant floor						
Cooling capacity (4) (E) (UNI EN 14511)	kW	7,04	7,84	13,5	16,0	16,0
Power input (4) (E) (UNI EN 14511)	kW	1,90	1,96	3,70	4,17	4,20
EER (4) (E) (UNI EN 14511)		3,70	3,99	3,66	3,85	3,81
Eurovent efficiency class (4)		B	A	B	A	A
Heating mode - radiant floor						
Heating capacity (5) (E) (UNI EN 14511)	kW	5,76	7,16	11,9	14,5	15,0
Power input (5) (E) (UNI EN 14511)	kW	1,35	1,80	3,00	3,54	3,57
COP (5) (E) (UNI EN 14511)		4,28	3,97	3,95	4,09	4,20
General data						
Energy efficiency		132	111	115	127	130
Energy efficiency class		A++	A+	A+	A++	A++
Maximum absorbed current	A	11	15	21	23	11
No. of scroll compressors / circuits		1/1	1/1	1/1	1/1	1/1
Expansion tank	dm ³	2	2	3	3	3
Sound power level (2) (E)	dB(A)	64	65	68	69	69
Transport weight - unit with pump	kg	61	69	104	112	116
Operating weight - unit with pump	kg	61	69	104	112	116

(1) Water temperature 12/7°C, outdoor air temperature 35°C

(2) Sound power level measured according to UNI EN ISO 9614

(3) Water temperature 40/45°C, outdoor air temperature 7°C B.S. / 6°C B.U.

(4) Water temperature 23/18°C, outdoor air temperature 35°C

(5) Water temperature 30/35°C, outdoor air temperature 7°C B.S. / 6°C B.U.

(E) EUROVENT certified data

Dimensional drawings

