

## Outdoor monobloc unit with BLDC compressor

### MPI DC 8 - 29 kW



#### Large operating range and energy efficiency under every condition

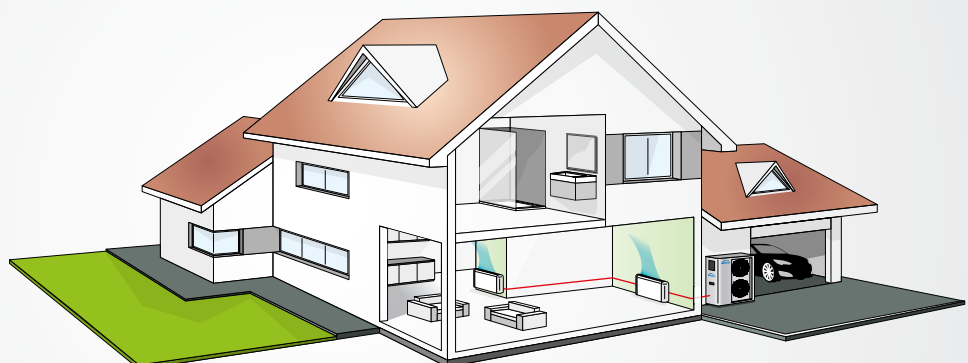
The MPI DC series consists of 6 heat pump models and 5 cold only models and is intended mainly for residential or light commercial applications. Due to the control managed by a software program developed by Galletti, the MPI DC series' adjustment logic makes it possible to adjust the water delivery temperature to the set value and to control the compressor so that the power generated by the machine is adjusted to the thermal load required by the system. This represents a strategic feature in the limiting of energy consumption, because the effective thermal load of an air conditioning system is less than 60% of the nominal load most of the time.

The BLDC technology upon which is based the compressor's electric motor guarantees the ability to change the rotation speed in a frequency range between 30 and 120 Hz, thereby reducing at the same time the power consumption and thus maintaining a high level of efficiency in the operation at partial load and improved isentropic efficiency. These units' large operating range, which is also achieved due to the variable flow water circulator they are equipped with as a standard feature, guarantees operation with air temperatures from -15 °C up to 52 °C, while in heating mode it is possible to produce hot water up to 58 °C. This allows their use as a single generator in addition to summer air conditioning, even in medium-temperature heating systems and for the production of DHW. Furthermore, the innovative Smart Defrost System guarantees that defrosting always occurs in the most efficient manner even under the most extreme environmental conditions.

#### PLUS

- ✓ Twin-rotary or scroll compressor driven by an electronic control BLDC motor
- ✓ Electronically controlled electric expansion valve
- ✓ Modulating hydraulic pump with stainless steel impeller
- ✓ Incorporable inertial tank
- ✓ Access to the tax incentives provided for energy retrofiting

MPI DC can be the only heat generator in low-power systems due to its large operating range that includes both low winter temperatures and high summer temperatures.





## MAIN COMPONENTS

### Structure

It is constructed of galvanized and painted sheet metal that is resistant to corrosive agents. Compressor compartment closed and accessible from three sides due to easily removable panels, available also with internal coating of soundproofing material.

### Compressor

Hermetic twin-rotary or scroll compressor driven by a permanent magnet BLDC motor and controlled by a trapezoidal wave inverter. It is attached to the base by means of rubber dampers to reduce the transmission of vibrations.

### Heat exchanger

Finned heat exchanger constructed with copper pipes mechanically attached to aluminum fins, carefully designed to minimize the defrosting phases and optimize heat exchange efficiency in every operating phase.

### Electronically controlled electric expansion valve

Key component for the proper functioning of the unit. The PID control algorithm allows it to quickly adapt to all operating conditions and to keep the cooling cycle stable.

### Hydraulic kit

Variable flow centrifugal circulator with stainless steel impeller. An expansion vessel and the automatic filling tap are also included. An inertial buffer tank built into the structure is available as an optional accessory.

### DHW kit

A system that makes it possible to transform the MPI DC heat pumps into multi-purpose units that are able not only to meet the requirements of the air conditioning system, but also to produce domestic hot water as a priority by means of the Galletti TP or TN series thermal storage tanks. It is comprised of a microprocessor control unit with LCD display and a 3-way motorized valve. Also, anti-Legionnaire's disease cycles can be activated by means of a heating element.



## CONFIGURATION

The models are completely configurable by selecting the version and the options. To the right is shown an example of configuration.

Version	Fields ▶	1	2	3	4	5	6	7	8	9	10	11	12	13
MPIDC014H0AC		A	2	0	0	E	P	3	0	2	0	G	0	2

To verify the compatibility of the options, use the selection software or the price list.

### AVAILABLE VERSIONS

#### Cooling only versions

<b>MPIDC...CMAC</b>	Water chiller 230V - 1 - 50 Hz
<b>MPIDC...C0AC</b>	Water chiller 400V - 3N - 50 Hz

#### Versions with reversible heat pump

<b>MPIDC...HMAC</b>	Air/water heat pump 230V - 1 - 50 Hz
<b>MPIDC...H0AC</b>	Air/water heat pump 400V - 3N - 50 Hz

### CONFIGURATION OPTIONS

#### 1 - EXPANSION VALVE

**A** Electronic 230V

#### 2 - PUMP USER SIDE AND ACCESSORIES

**1** 1 Modulating standard pump, system side  
**2** 1 EC pump, system side

#### 3 - BUFFER TANK

**0** Absent  
**S** Present, system side

#### 4 - DESUPERHEATER

**0** Absent

#### 5 - FANS

**C** Standard with condensation control  
**E** BLDC with electronic control

#### 6 - ANTIFREEZE KIT

**0** Absent  
**E** Base (plate exchangers only)  
**P** Additional protection for 1 pump  
**S** Additional protection for 1 pump and tank

#### 7 - SOUND INSULATION

**0** Absent  
**1** Compressor compartment soundproofing  
**2** Compressor silencing housings  
**3** Opt 1 + Opt 2

#### 8 - COOLING ACCESSORIES

**0** None  
**M** Refrigerant pressure gauges

#### 9 - REMOTE CONTROL / COMMUNICATION

**0** Absent  
**2** RS485 (Carel / Modbus)  
**S** Simplified remote control  
**X** Advanced remote control (PCOXS)

#### 10 - SPECIAL HEAT EXCHANGERS

**0** Standard  
**R** Copper / copper  
**C** Cataphoresis  
**B** Fins pre-coated with epoxy paint  
**I** Hydrophilic

#### 11 - CONDENSER PROTECTIVE GRILLE

**0** Absent  
**G** Present

#### 12 - COMPRESSOR OPTIONS

**0** Absent  
**4** Exchanger heating cable (Heat Pump only)

#### 13 - Microprocessor control

**2** pCOXS controller

## ACCESSORIES

- Base rubber vibration dampers
- Base spring vibration dampers
- Simplified remote control

- MYCHILLER BASE (RS485 is a mandatory accessory)
- MYCHILLER PLUS (RS485 is a mandatory accessory)

## Rated technical data of water chillers

MPI DC - C		010 M	014	018	023	029
Power supply	V-ph-Hz	230-1-50	400-3N-50			
Cooling capacity (1) (E)	kW	10,5	14,2	18,0	22,8	28,9
Power input (1) (E)	kW	3,42	4,89	7,82	7,91	12,5
EER (1) (E)		3,07	2,90	2,31	2,88	2,31
ESEER (E)		4,17	4,09	4,03	3,87	3,98
Eurovent efficiency class		B	B	E	C	E
Water flow (1)	l/h	1819	2455	3127	3935	4997
Water pressure drop (1) (E)	kPa	23	30	47	27	42
Available pressure head - standard pump (1)	kPa	142	162	132	130	84
Maximum current absorption	A	27	20	22	29	43
No. of compressors / circuits	n°	1/1	1/1	1/1	1/1	1/1
Expansion vessel	dm <sup>3</sup>	5	5	5	5	5
Buffer tank volume	dm <sup>3</sup>	30	30	30	50	50
Sound power level (3) (E)	dB(A)	70	71	71	74	74
Transport weight unit with pump and tank	kg	184	218	218	262	262
Operating weight unit with pump and full tank	kg	201	235	235	299	299

## Rated technical data of heat pumps

MPI DC - H		008 M	010 M	014	018	023	029
Power supply	V-ph-Hz	230-1-50	230-1-50	400-3N-50			
Cooling capacity (1) (E)	kW	7,94	10,3	13,9	17,7	22,3	28,3
Power input (1) (E)	kW	2,65	3,42	4,89	7,81	7,90	12,5
EER (1) (E)		3,00	3,02	2,85	2,26	2,83	2,27
ESEER (E)		3,81	4,09	4,06	3,96	3,78	3,91
Eurovent efficiency class		B	B	C	F	C	F
Water flow (1)	l/h	1367	1785	2407	3067	3861	4903
Water pressure drop (1) (E)	kPa	6	22	29	44	26	40
Available pressure head - standard pump (1)	kPa	68	142	163	133	131	84
Heating capacity (2) (E)	kW	8,95	11,5	15,8	21,8	24,7	34,0
Power input (2) (E)	kW	2,84	3,64	5,08	7,70	8,02	12,0
COP (2) (E)		3,15	3,16	3,11	2,83	3,09	2,83
Eurovent efficiency class		B	A	B	C	B	C
Water flow (2)	l/h	1550	1986	2727	3752	4273	5853
Water pressure drop (2) (E)	kPa	7	23	31	55	29	51
Available pressure head - standard pump (2)	kPa	65	137	155	109	116	45
Maximum current absorption	A	16	27	20	22	29	43
No. of compressors / circuits	n°	1/1	1/1	1/1	1/1	1/1	1/1
Expansion vessel	dm <sup>3</sup>	1	5	5	5	5	5
Buffer tank volume	dm <sup>3</sup>	20	30	30	30	50	50
Sound power level (3) (E)	dB(A)	68	70	71	71	74	74
Transport weight unit with pump and tank	kg	144	188	243	243	290	290
Operating weight unit with pump and full tank	kg	153	205	260	260	327	327

(1) Water temperature 12/7 °C, outdoor air temperature 35 °C (UNI EN 14511:2011)

(2) Water temperature 40/45 °C, outdoor air temperature 7 °C D.B. / 6 °C W.B. (UNI EN 14511:2011)

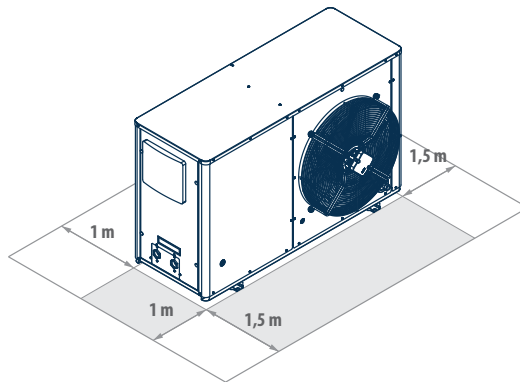
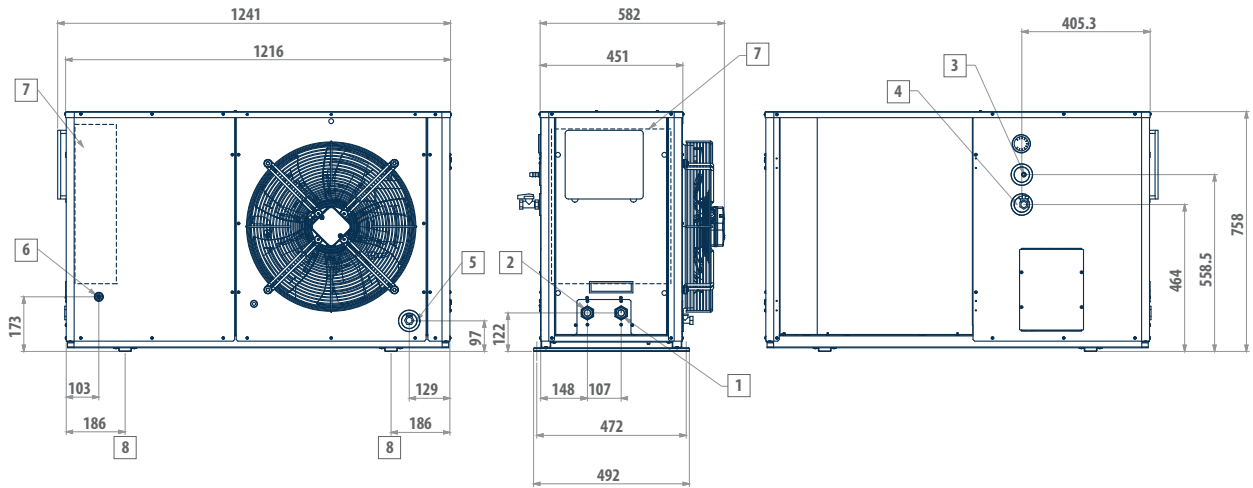
(3) Sound power level measured according to UNI EN ISO 9614

(E) EUROVENT certified data



**Dimensional drawings**

MPI DC 008

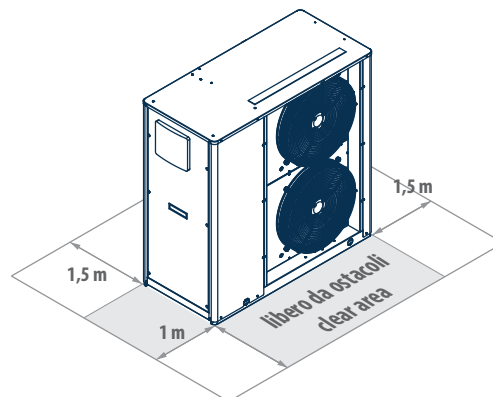
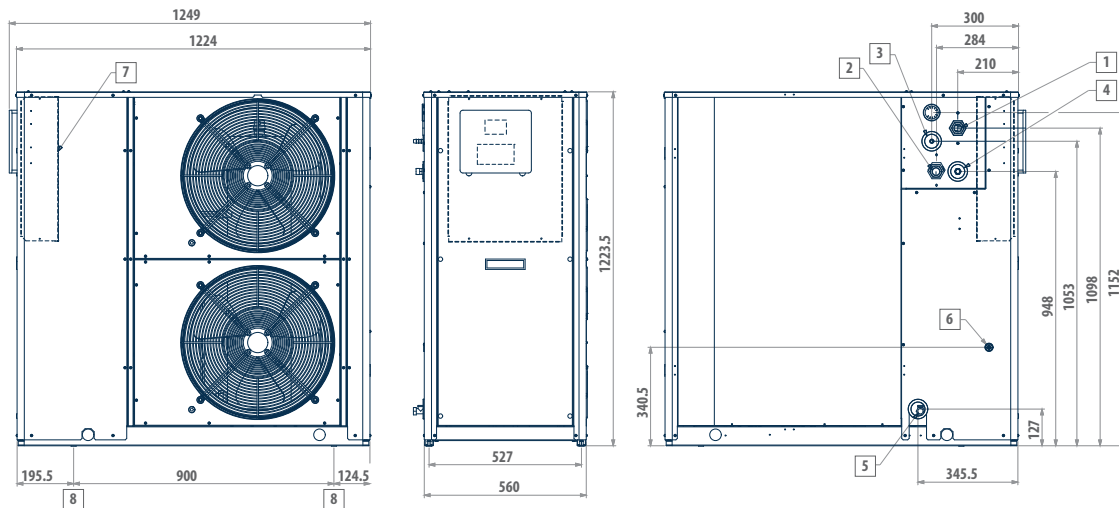


**LEGEND**

1	Water inlet 1" female
2	Water outlet 1" female
3	Safety valve discharge outlet provided with rubber ring holder
4	Water supply 1/2" male (optional tap)
5	Water drainage 1/2" female
6	Power supply Ø 28 mm
7	Electric control board
8	Fastening points for vibration dampers (accessory)

## Dimensional drawings

### MPI DC 010 - 014 - 018



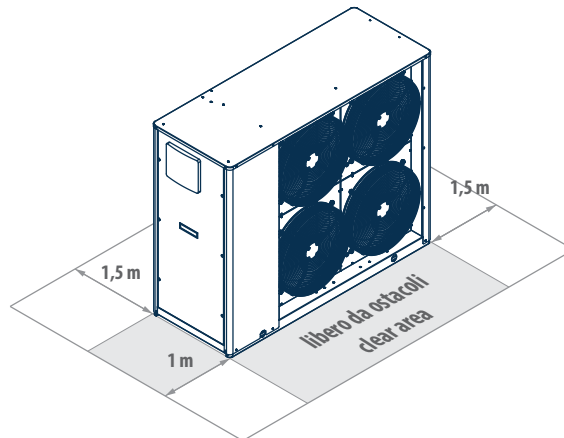
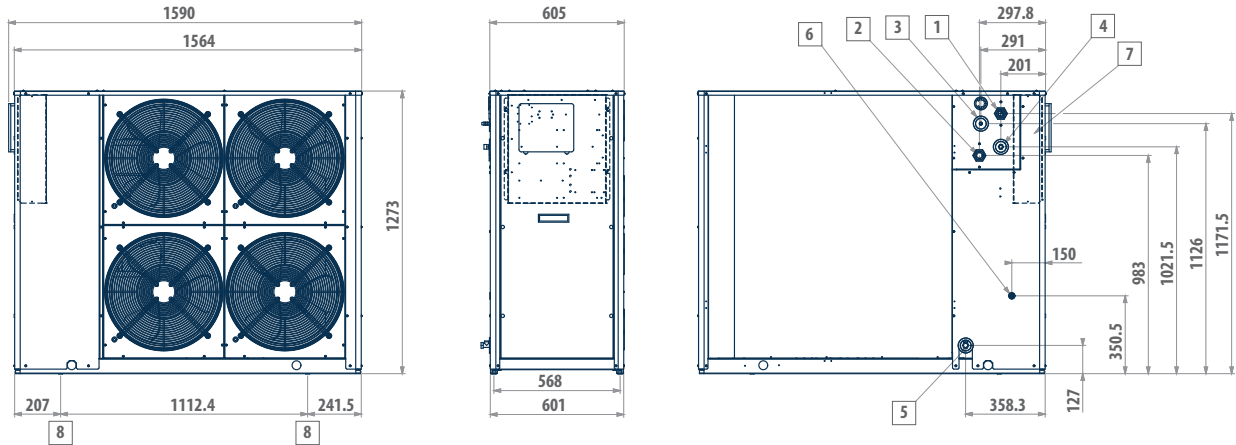
#### LEGEND

1	Water inlet 1" ¼ female
2	Water outlet 1" ¼ female
3	Safety valve discharge outlet provided with rubber ring holder
4	Water supply ½" male (optional tap)
5	Water drainage ½" female
6	Power supply Ø 28 mm
7	Electric control board
8	Fastening points for vibration dampers (accessory)



## Dimensional drawings

### MPI DC 023 - 029



#### LEGEND

1	Water inlet 1" ¼ female
2	Water outlet 1" ¼ female
3	Safety valve discharge outlet provided with rubber ring holder
4	Water supply ½" male (optional tap)
5	Water drainage ½" female
6	Power supply Ø 28 mm
7	Electric control board
8	Fastening points for vibration dampers (accessory)