

Outdoor packaged unit with EC compressor

MPI DC 10 - 29 kW



PLUS

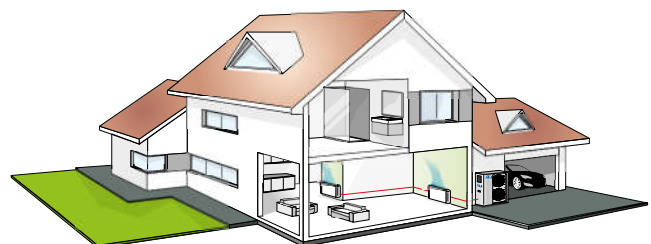
- » Twin-rotary or scroll electronically-controlled compressor driven by an electric EC motor
- » Electronically controlled electric expansion valve
- » Modulating hydraulic pump with stainless steel impeller
- » Incorporable inertial tank

Large operating range and energy efficiency under every condition

The MPIDC series consists of 5 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 MPIDC 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 EC 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.

MPIDC 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 sound-proofing material.

Compressor

Hermetic twin-rotary or scroll compressor driven by a permanent magnet EC 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 coil made of copper pipes mechanically fixed to steel fins, accurately designed to minimize defrosting phase and optimize the efficiency of thermal exchange in every operating mode.

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.

Electronic microprocessor control

The electronic controller enables the complete control of the MPI-DC unit. It can be easily accessed through a polycarbonate flap with IP65 protection rating. It implements the compressor regulation logic and allows the complete management of the unit's other parts, the reversal of the cooling cycle, and the alarms.



CONFIGURATOR

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

Version	Field	1	2	3	4	5	6	7	8	9	10	11	12	13
MPIDC014HOAC		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

Only cooling versions

MPIDC..CMAC

Water chiller 230V-1N-50Hz

MPIDC..COAC

Water chiller 400V-3-50Hz

Reversible heat pump versions

MPIDC..HMAC

Air/water heatpump 230V-1N-50Hz

MPIDC..HOAC

Air/water heatpump 400V-3-50Hz

CONFIGURATION OPTIONS

- | | |
|---|--|
| <p>1 Expansion valve</p> <p>A Electronic</p> <p>2 Water pump and accessories</p> <p>1 LP pump + expansion vessel</p> <p>2 EC pump + expansion vessel</p> <p>3 Water buffer tank</p> <p>0 Absent</p> <p>S Selected</p> <p>4 Partial heat recovery</p> <p>0 Absent</p> <p>5 Air flow modulation</p> <p>C Condensation control by phase-cut fans</p> <p>E Condensation control performed by EC fans</p> <p>6 Antifreezing kit</p> <p>0 Absent</p> <p>E Plate exchanger</p> <p>P Plate exchanger and water pump</p> <p>S Plate exchanger, water pump and inertial tank</p> <p>7 Acoustic insulation and attenuation</p> <p>0 Absent</p> <p>1 Compressor compartment acoustic insulation</p> <p>2 Compressor sound blanket</p> <p>3 Compressor compartment acoustic insulation and sound blanket</p> <p>8 Refrigerant pipework accessories</p> <p>0 Absent</p> | <p>M Refrigerant pressure gauges</p> <p>9 Remote control / Serial communication</p> <p>0 Absent</p> <p>2 RS485 serial board (Carel / Modbus protocol)</p> <p>B BACNET IP / PCOWEB serial board (advanced controller required)</p> <p>F BACNET MS/TP / PCONE1 serial board (advanced controller required)</p> <p>G BACNET IP / PCOWEB serial board + supervision software Gweb (advanced controller required)</p> <p>S Remote simplified user panel</p> <p>X Remote user panel for advanced controller</p> <p>10 Special coils / Protective treatments</p> <p>0 Standard</p> <p>B Pre-painted fins with polyester paint</p> <p>C Cataphoresis treatment on fins and coil carpentry</p> <p>I Hydrophilic</p> <p>R Copper-copper</p> <p>11 Outdoor finned coil heat exchanger protection</p> <p>0 Absent</p> <p>G Outdoor finned coil heat exchanger protection grille</p> <p>12 Compressors options</p> <p>0 Absent</p> <p>4 Outdoor coil trace heater</p> <p>13 Onboard controller</p> <p>2 Advanced</p> |
|---|--|

ACCESSORIES

1701546 Remote simplified user panel

RYKAMF Spring anti vibration shock mounts

RYPAM

Rubber anti vibration shock mounts

Air chillers and heat pumps MPI DC

WATER CHILLERS RATED TECHNICAL DATA

MPI DC			010M	014	018	023	029
Power supply		V-ph-Hz	230 - 1 - 50	400 - 3N - 50	400 - 3N - 50	400 - 3N - 50	400 - 3N - 50
Cooling capacity	(1)(E)	kW	10,5	14,3	18,1	22,8	29,0
Total power input	(1)(E)	kW	3,40	4,90	7,70	7,80	12,4
EER	(1)(E)		3,10	2,94	2,34	2,91	2,34
SEER	(2)(E)		4,12	4,12	4,10	4,11	4,11
Water flow	(1)	l/h	1816	2460	3115	3932	4992
Water pressure drop	(1)(E)	kPa	23	30	46	27	42
Available pressure head - LP pumps	(1)	kPa	146	166	133	136	85
Cooling capacity	(3)(E)	kW	14,5	19,5	24,4	31,1	39,1
Total power input	(3)(E)	kW	3,78	5,21	8,41	8,36	13,5
EER	(3)(E)		3,84	3,74	2,90	3,72	2,89
Water pressure drop	(3)	kPa	41	54	82	49	74
Maximum current absorption		A	16,0	20,0	20,0	35,0	35,0
Compressors / circuits			1 / 1				
Expansion vessel volume		dm ³	5	5	5	5	5
Buffer tank volume		dm ³	30	30	30	50	50
Sound power level	(4)(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

(1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2022)

(2) η efficiency values for heating and cooling are respectively calculated by the following formulas: $[\eta = SCOP / 2,5 - F(1) - F(2)]$ e $[\eta = SEER / 2,5 - F(1) - F(2)]$. For further information, please refer to the technical document "ErP 2009/125/EC DIRECTIVE" in the catalogue introducing pages, or to the EN14825:2022 regulation.

(3) Outdoor air temperature 35°C, water temperature 23°C / 18°C (EN14511:2022)

(4) Sound power level measured according to ISO 9614

(E) EUROVENT certified data

HEAT PUMPS RATED TECHNICAL DATA

MPIDC H			010M	014	018	023	029
Power supply		V-ph-Hz	230 - 1 - 50	400 - 3N - 50	400 - 3N - 50	400 - 3N - 50	400 - 3N - 50
Cooling capacity	(1)(E)	kW	10,3	13,9	17,7	22,4	28,4
Total power input	(1)(E)	kW	3,40	4,80	7,70	7,80	12,4
EER	(1)(E)		3,06	2,88	2,29	2,86	2,29
SEER	(2)(E)		4,01	3,93	3,81	3,82	3,74
Water flow	(1)	l/h	1778	2400	3060	3849	4884
Water pressure drop	(1)(E)	kPa	22	28	44	26	40
Available pressure head - LP pumps	(1)	kPa	146	166	134	137	86
Heating capacity	(3)(E)	kW	11,4	15,7	21,6	24,6	33,8
Total power input	(3)(E)	kW	3,60	5,00	7,60	7,90	11,9
COP	(3)(E)		3,18	3,12	2,84	3,10	2,84
SCOP	(2)(E)		3,81	3,81	3,74	3,63	3,49
Heating energy efficiency class	(4)				A+		
Water flow	(3)	l/h	1978	2720	3744	4261	5859
Water pressure drop	(3)(E)	kPa	23	31	55	29	51
Available pressure head - LP pumps	(3)	kPa	144	159	121	129	70
Cooling capacity	(5)(E)	kW	14,3	19,2	24,2	30,6	38,5
Total power input	(5)(E)	kW	3,70	5,10	8,40	8,20	13,4
EER	(5)(E)		3,86	3,75	2,89	3,72	2,86
Water pressure drop	(5)	kPa	39	51	78	46	70
Heating capacity	(6)(E)	kW	12,0	15,6	21,8	25,3	34,3
Total power input	(6)(E)	kW	3,10	4,10	6,20	6,70	10,1
COP	(6)(E)		3,86	3,78	3,49	3,78	3,40
Water pressure drop	(6)	kPa	25	30	56	30	52
Maximum current absorption		A	16,0	20,0	20,0	35,0	35,0
Compressors / circuits					1 / 1		
Expansion vessel volume		dm ³	5	5	5	5	5
Buffer tank volume		dm ³	30	30	30	50	50
Sound power level	(7)(E)	dB(A)	70	71	71	74	74
Transport weight unit with pump and tank		kg	188	243	243	290	290
Operating weight unit with pump and full tank		kg	205	260	260	327	327

(1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2022)

(2) η efficiency values for heating and cooling are respectively calculated by the following formulas: $[\eta = SCOP / 2,5 - F(1) - F(2)]$ e $[\eta = SEER / 2,5 - F(1) - F(2)]$. For further information, please refer to the technical document "ErP 2009/125/EC DIRECTIVE" in the catalogue introducing pages, or to the EN14825:2022 regulation.

(3) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2022)

(4) Seasonal energy efficiency class for LOW TEMPERATURE room heating under AVERAGE climatic conditions [EUROPEAN REGULATION No 811/2013]

(5) Outdoor air temperature 35°C, water temperature 23°C / 18°C (EN14511:2022)

(6) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 30°C / 35°C (EN14511:2022)

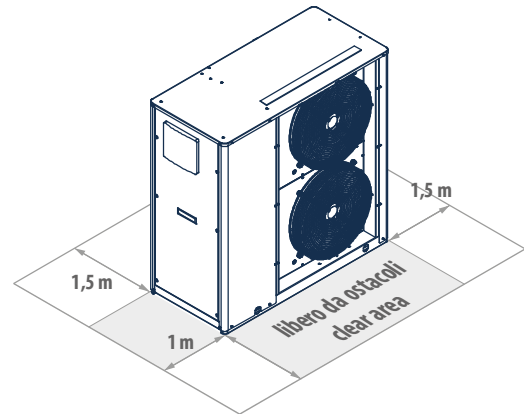
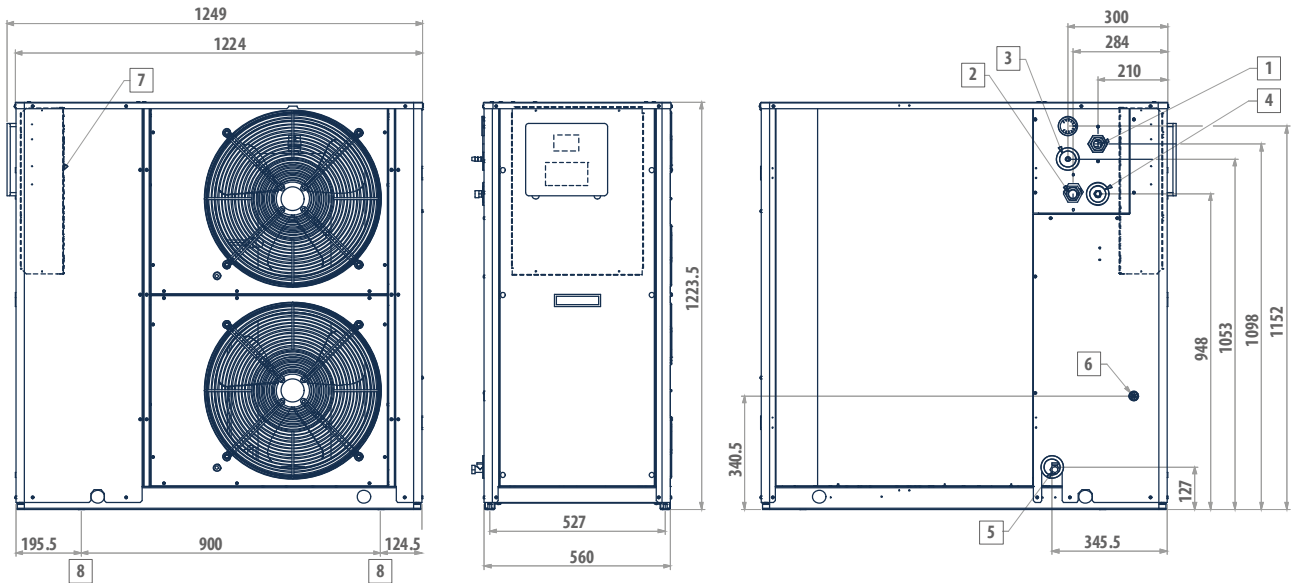
(7) Sound power level measured according to ISO 9614

(E) EUROVENT certified data

Air chillers and heat pumps MPI DC

DIMENSIONAL DRAWINGS

MPI DC 010 - 014 - 018

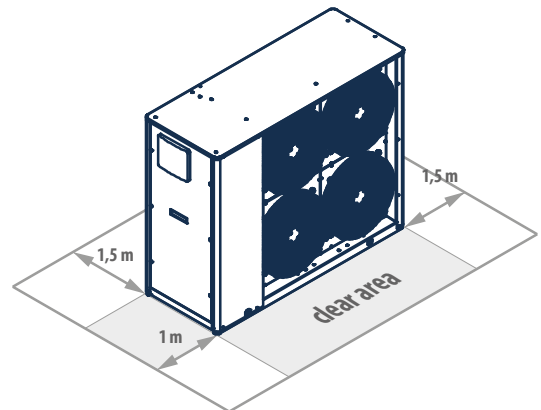
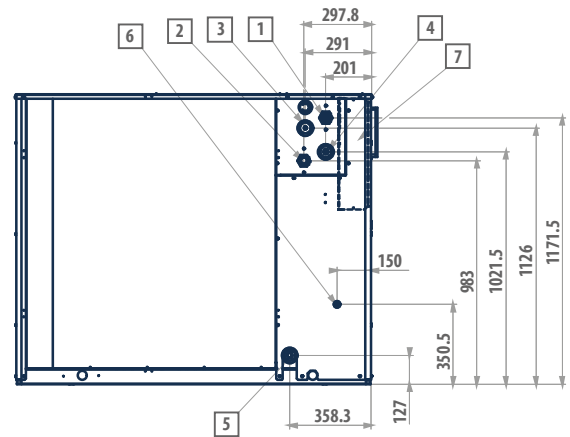
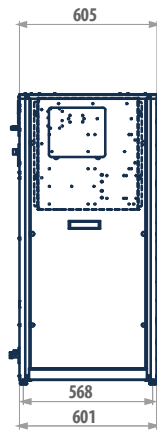
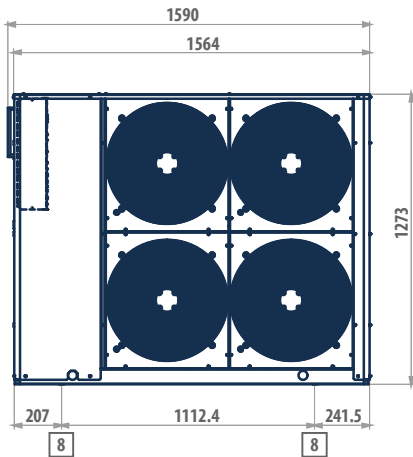


LEGEND

1	Water inlet 1" 1/4 female
2	Water outlet 1" 1/4 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 \varnothing 28 mm
7	Electric control board
8	Fastening points for vibration dampers (accessory)

DIMENSIONAL DRAWINGS

MPI DC 023 - 029



LEGEND

1	Water inlet 1" 1/4 female
2	Water outlet 1" 1/4 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 \varnothing 28 mm
7	Electric control board
8	Fastening points for vibration dampers (accessory)