i-HPV5H | Datasheet

MAXA HEATING & COOLING

i-HPV5H 0140-0270
Air/Water Inverter Heat Pump with Axial Fan

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DC inverter technology and low GWP R32 refrigerant
New Air/Water heat pump with DC inverter technology and low GWP R32 refrigerant for outdoor installation. The range consists of 4 models with DC inverter compressors of hermetic scroll type specifically designed for operation with R32. The fan is of axial type with airfoil blades, specially shaped to increase the efficiency and reduce noise with electric motor driven in modulation with directly coupled brushless EC motor. New configurations with hydronic kit consisting of single pump or double pump on/off and Inverter, and inertial tank on board the machine. New acoustic configurations silenced, super silenced and ducted version. New machine version with a desuperheater that allows to recover about 20% of the condensation heat, the kit includes a brazed plate exchanger and an electronic circulator managed by the on-board control. New low temperature machine version for "process" applications, that allows the unit's operating range to be extended by cooling water to the user up to -8°C using a mixture of water and glycol.

Structure
Structure suitable for outdoor installation consisting of high-thickness profiles made of hop-dip galvanised steel sheets coated with polyester powder, coated with RAL 7035 bush-hammered finish resistant to weathering (classification of corrosivity similar to C3 according to EN ISO 12944-2: 2017). Removable panels allows maintenance inside the refrigeration circuit and the hydraulic circuit.

User-Side Heat Exchanger
Grade AISI 304 stainless steel brazed plate heat exchanger coated with black closed-cell flexible elastomeric foam; 9 mm thickness, thermal conductivity (λ)≤0.036 W/mK (with air +20°C). A flow switch fitted on the water side guarantees the water flow and prevents ice from building up inside. The exchangers can be equipped with antifreeze electrical resistance (optional accessory KA).

Source-Side Heat Exchanger
The fan is axial type with airfoil blades It's statically and dynamically balanced and supplied complete with protection grille and air inlet and outlet with double flared profile, specially shaped to increase efficiency and reduce noise. The electric motor used is driven in modulation with brushless EC motor, directly coupled, and equipped with integrated thermal protection. The motor has an IP 54 protection rating according to CEI EN 60529.

Fan Section
The fan is axial type with wing profile blades. It is statically and dynamically balanced and supplied complete with protection grille and air inlet and outlet mouthpiece with double flared profile, specifically shaped to increase efficiency and reduce noise.

The electric motor used and controlled in modulation with brushless EC motor, directly coupled and equipped with integrated thermal protection. The motor has a degree of protection IP 54 according to CEI EN 60529.

Refrigerant Circuit
The refrigerant circuit is made up of copper brazed pipes assembled in the factory according to EN 13134.
It includes the following components:

- Dehydrator filter with 100% molecular sieve cartridge;
- Shut-off valve on the liquid line;
- Liquid flow and humidity indicator;
- Electronic expansion valve;
- Service couplers;
- High- and low-pressure safety pressure switches;
- High- and low-pressure transducers;
- 4-way valve
- Receiver and liquid separator
- Non-return valves

Intake piping thermally insulated withelastomeric foam flexible closed-cell insulating material made of EPDM rubber. Each unit is tested under pressure to verify any losses and is supplied complete with the refrigerant charge optimised for operation.

Electric Panel and Control
Entirely made and wired in conformity to the IEC 60335-2-40

The power section includes:

- Isolation transformer for powering the control devices;
- Thermal protection fuses for compressor drivers, EC fan and pump Driver;
- Automatic switch for protecting the compressors (optional);
- Drivers for modulating compressor control;
- Phase sequence control relay;
- Phase sequence control relay with minimum/maximum voltage invertion calibration (optional);
- Thermostatic ventilation inside electrical cabinet;
- Plant management module (optional or for the versions that require it)

The control section includes:

- Interface terminal with alphanumerical display;
- Visualisation function for the set values, analogue inputs, fault codes, alarm log and parameter index;
- On/off and alarm reset buttons;
- Button combinations for forcing defrosting and for forcing pump to maximum power;
- Unit switch-on management from local or remote source;
- Configuration for ModBus connectivity (optional);
- BMS connectivity by converter (Configuration for BMS connectivity (Modbus/BACnet/Knx/Lonworks); (optional)

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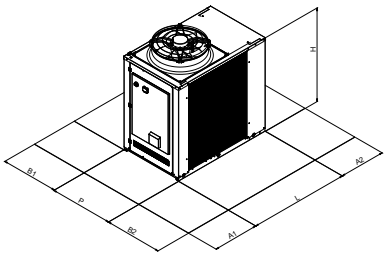

Dimensions		0140	0250	0260	0270
L	mm	1850	1850	1850	1850
L (con serbatoio)	mm	2460	2460	2460	2460
P	mm	1110	1110	1110	1110
H	mm	1920	1920	1920	1920
H (SSL)	mm	1980	1980	1980	1980

Clearance		0140	0250	0260	0270
A1	mm	1200	1200	1200	1200
A2	mm	1000	1000	1000	1000
B1	mm	1000	1500	1500	1500
B2	mm	1500	1500	1500	1500

MCS Certification Number **0140:** ICIM-PDC-000133

i-HPV5H -PS/PSI/PD		0140	0250	0260	0270
Cooling					
Cooling capacity (1)	kW	29,6	36,3	48	53,2
Power input (1)	kW	9,54	11,7	15,5	17,7
E.E.R. (1)	W/W	3,1	3,1	3,1	3,01
Cooling capacity (2)	kW	37,3	55,3	65,3	66
Power input (2)	kW	8,91	13	15,5	16,6
E.E.R. (2)	W/W	4,19	4,25	4,21	3,98
SEER (5)	W/W	4,8	4,72	4,86	4,85
Water flow (1)	L/s	1,42	1,74	2,3	2,55
Available head (1)	kPa	146	138	155	151
Heating					
Heating capacity (3)	kW	40	50,2	61,4	66,8
Power input (3)	kW	9,84	12,2	15	16,3
C.O.P. (3)	W/W	4,07	4,11	4,09	4,1
Heating capacity (4)	kW	40,6	49,7	59,5	66,6
Power input (4)	kW	12,5	15,4	18,3	20,4
C.O.P. (4)	W/W	3,25	3,23	3,25	3,26
SCOP (6)	W/W	4,25	4,16	3,92	3,94
Energy Efficiency - water 35°C / 55°C	Classe	A++ / A++	A++ / A+	A++ / A+	A++ / A+
Water flow (1)	L/s	1,94	2,38	2,85	3,19
Available head (4)	kPa	125	109	130	122
Compressor					
Type		Scroll DC Inverter	Scroll DC Inverter	Scroll DC Inverter	Scroll DC Inverter
Compressors	n°	1	2	2	2
Refrigerant circuits	n°	1	1	1	1
Refrigerant		R32	R32	R32	R32
Fan					
Nominal air flow	L/s	4368	5431	6417	5547
Hydraulic circuit					
Water flow (1)	L/s	1,42	1,74	2,30	2,55
Water connections	inch	1" 1/2 (DN 40)	1" 1/2 (DN 40)	1" 1/2 (DN 40)	1" 1/2 (DN 40)
Max pressure hydronic side	bar	6	6	6	6
Noise level					
Sound power Lw (9)	dB(A)	77	83	84	84
Sound power Lw configur. SL (9)	dB(A)	76	82	83	83
Sound power Lw configur. SSL (9)	dB(A)	75	81	82	82
Electrical data					
Power supply		400V/3P+N+T/50Hz	400V/3P+N+T/50Hz	400V/3P+N+T/50Hz	400V/3P+N+T/50Hz
Max. power input	kW	24	33	39	43
Max. current input	A	38	52	62	68
Weight					
Net weight (*)	kg	440	540	560	600
Hydronic kit (Optional)					
Tank volume	l	400	400	400	400
Expansion vessel volume	l	24	24	24	24

Data referred to the following condition:
(1) Cooling: outdoor air temperature 35°C; in/out water temperature 12/7°C.
(2) Cooling: outdoor air temperature 35°C; in/out water temperature. 23/18°C.
(3) Heating: outdoor air temperature 7°C b.s. 6°C b.u.; in/out water temperature 30/35°C.
(4) Heating: outdoor air temperature 7°C b.s. 6°C b.u.; in/out water temperature 40/45°C.
(5) Cooling: in/out water temperature 7/12°C.
(6) Heating: Average climatic conditions; Tbiv=-7°C; low temperature.

(9) Sound power: condition (3); value determined on the basis of measurements made in accordance with UNI EN ISO 9614-2, in compilance with the requirements of Eurovent certification.
N.B. Performance data are indicative and are subject to change. Furthermore the performance declared in points (1), (2), (3), and (4) is intended to refer to instantaneous power according to UNI EN 14511. The value declared in point (5) and (6) is determined according to UNI EN 14825.
(*) The data are reffered with pump kit installed in the unit