

HCYGNUS TECH



The images of the products in the document are for illustrative purposes only and therefore do not have any contractual value.

DESCRIPTION OF THE UNIT

General: The reversible heat pumps of the range HCygnus Tech are air cooled units with single refrigeration circuit, designed for external use (IPx4). The units are designed, manufactured and tested in accordance with ISO9001 standards.

Structure and casing: All the frame is made by galvanized carbon steel sheet subjected to phosphor degreasing treatment and painted with a polyester powder coating baked-on at 180 °C to provide a durable weather-proof finish. The hydraulic connections are of the threaded type and always fitted flush with the unit frame to facilitate the connection of hydraulic circuit pipes to the plant.

Compressors: The units are equipped with hermetic type compressors: rotary, with built-in intake separator for model 020 and scroll for all the other models. The compressors are equipped with crankcase heaters and are installed on rubber anti-vibration mounts inside an acoustically isolated enclosure with removable lateral panels to allow unimpeded access.

Refrigerant fluid: R410A

Evaporator: The evaporator is stainless steel plate type brazed with copper, with a single refrigerant circuit, and a single water circuit. All evaporators feature a manual air bleed valve located on the top and a drain valve at the bottom. The evaporator is equipped with external thermal insulation and anti-condensation cladding with a differential water pressure switch. All the used evaporators comply with

the PED pressure vessels Directive and are “CE” marked.

Condenser: These are finned core coils only on one unit side from models 020 to 071 and on both the unit sides from models 081 to 301, they consist of copper tubes and headers, corrugated aluminium fins and galvanized sheet metal shoulders. In the heat pump version, the condensing coils are equipped with a distributor device to ensure correct supply of the refrigerant circuits.

Fan: All the versions of the HCygnus Tech series are equipped with low speed axial fans (less than 900 rpm). The fans are provided with safety grilles and continuous phase cut-off electronic speed control, both for condensing pressure control and reduction of noise emission levels in the most frequent operating conditions. The electric motors have built-in overload protection device and, in order to ensure outdoor operation in all climatic conditions, the protection rating is IP54, with insulation class F.

Cooling circuit: The refrigerant circuit in the standard configuration of the HCY compact versions is composed as follows:

- liquid receiver;
- dryer filter;
- flow indicator;
- thermostatic expansion valve;
- 2nd thermostatic valve for optimization of performance in all operating conditions (models 131 to 301);
- 4-way refrigerant cycle reversing valve;
- fixed calibration low pressure switch;
- fixed calibration high pressure switch;
- high pressure transducer;
- anti-freeze oil and refrigerant charge.

Hydraulic circuit (optional): The HCY compact units are equipped with a pumping and storage module composed of:

- storage tank;
- circulator or centrifugal pump;
- automatic air bleed valve on tank;
- manual air vent valve on evaporator;
- 3 barg relief valve installed on tank;
- drainage/filler valve;
- expansion vessel;
- pressure gauge positioned on the pump delivery.

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Electrical panel: The unit and electrical cabinet are assembled in compliance with standard CEI EN60335-1 and standard CEI EN60335-2-40 and are protected against atmospheric agents to allow outdoor installation of the chillers (IP X4 protection rating). The electrical cabinet is provided with a main disconnect switch with door-lock device, and it contains the protections of the power devices. The electrical panel is equipped with a phase monitor (for all three-phase Models) to protect against phase loss and phase reversal.

Electronic control: Control and management of the unit are entrusted to the "IC121" electronic controller with exclusive display of the parameters on the dual

Configurations: to be filled by sales department.

Options: to be filled by sales department.

Kit: to be filled by sales department.

display and icon-based identification of the functions. In addition to the normal operations of system on/off, summer-winter mode selection (heat pumps) and modification of the operating setpoint, the ease of use allows even inexperienced users to modify the main system operating parameters. There are also available a voltage-free contact provided for a remote distance of a general alarm signal, and a digital input for the feature on/off remotely.

Testing: Each unit is tested in a test chamber in order to check correct operation both in the most representative operating conditions and in the most demanding conditions.

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PERFORMANCES

	Cooling	Heating
Range	HCygnus Tech	
Model	HCY 211	
Version	-	
Refrigerant	R410A	
Frequency	50 Hz	
Fans	Axial	
Heat exchanger	Plate	
Compressors	Scroll	
Hydraulic Kit	Acc. + P1	
Inlet Water Temperature	12 C	40 C
Outlet Water Temperature	7 C	45 C
Glycol Type	EthyleneGlycol	
Glycol Percentage Weight	40%	
Fouling Factor	0 m ² K/W	
Ambient Temperature	35 C	7 C
Relative Humidity	-	87 %
Cooling Capacity	43,1 kW	-
Heating Capacity	-	53,2 kW
Total Absorbed Power	16,6 kW	17,4 kW
EER	2,59 kW/kW	-
COP	-	3,06 kW/kW
Evaporator water flow Rate	8,24 m ³ /h	10,1 m ³ /h
Available Head Pressure	1,81 bar	1,46 bar
Min Ambient Temperature	-10 C *	-8 C
Max Ambient Temperature	46 C	20 C
SEPR HT	5,11	
SCOP	3,68	
Energy efficiency class	A+	

Data declared according to UNI EN 14511:2013.

SEPR HT: Data declared in compliance with the European Regulation (EU) 2016/2281 with regard to ecodesign requirements for cooling products and high temperature process chillers.

SCOP: Data declared in compliance with the European Regulation (EU) 813/2013 with regard to ecodesign requirements for low temperature (BT) space heating products.

* Referred to standard unit. Please look the technical catalogue for lower temperatures.

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GENERAL DATA

Cooling Circuits	nr. 1
Compressors	nr. 1+1
Capacity Control	0-50-100
Power	400/3+N-PE/50 V/ph/Hz
Auxiliary	24/1/50 V/ph/Hz
Condensers	nr. 2
Rows	nr. 2
Total Frontal Surface	3,84 m ²
Fans	nr. 2
Total Air Flow	23400 m ³ /h
Power (each)	0,7 kW
Available static pressure	0 Pa
Min evaporator flow rate	2,9 m ³ /h
Max evaporator flow rate	14,2 m ³ /h
Evaporator Water Volume	10 l
Tank Volume	150 l
Lenght	1112 mm
Width	2470 mm
Height	1595 mm
Weight	733 kg

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ELECTRICAL DATA

Model	FLI	FLA	ICF
HCY 211	24,1 kW	41 A	149 A

FLI = max power absorbed in the operating limit conditions

FLA = max current absorbed in the operating limit conditions

ICF = start-up current at the start of the last compressor in the operating limits condition

SOUND LEVEL

Model	Octave Bands (Hz)	63	125	250	500	1000	2000	4000	8000
HCY 211	Sound Power Level	59	64	66,1	73,3	80,1	77,6	67,2	62,1

Model	Sound Power Level	Sound Pressure Level	Sound Pressure Level	Sound Pressure Level	Sound Pressure Level
HCY 211	82,9 dB(A)	54,9 dB(A) 10 m	60,9 dB(A) 5 m	64,9 dB(A) 3 m	69,9 dB(A) 1 m

Sound power: determined on the basis of measurements taken in accordance with the standard ISO 3744. Sound pressure at 10 m: Average value obtained in free field on a reflective surface at a distance of 10 m from the external side of the electrical panel of machine and at a height of 1.6 m from the unit support base. Values with tolerance +/- 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

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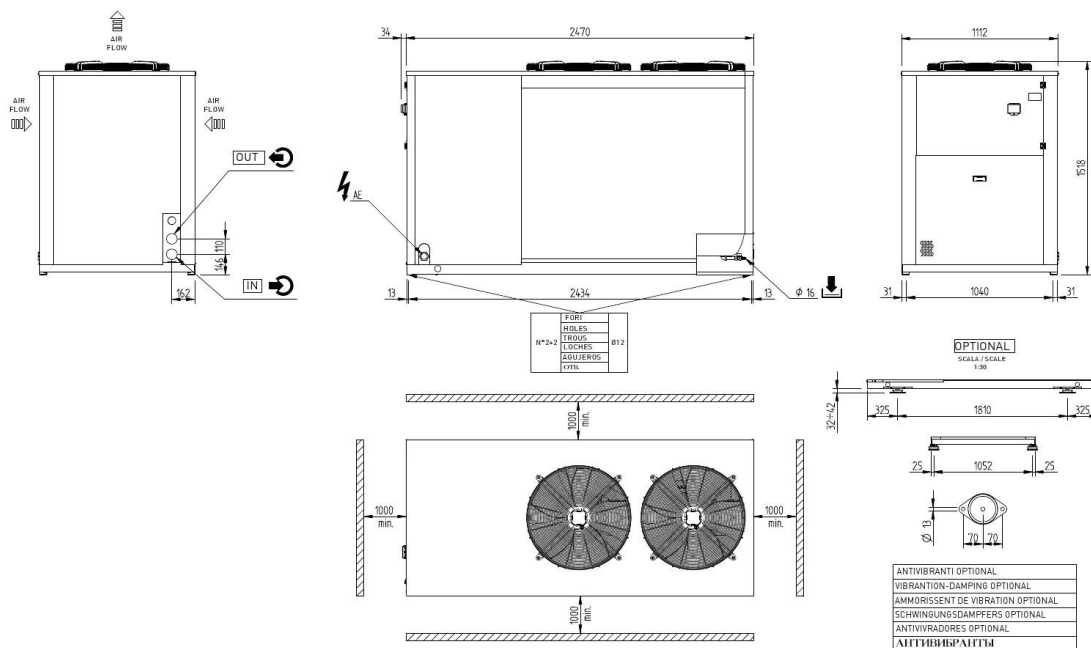
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CYT / HCY 211 - 251 - 301



<p>Rp2"</p> <p>IN</p> <p>INGRESSO ACQUA WATER INLET ENTREE D'EAU WASSERANTRITT INGRESO DE AGUA ВХОД ВОДЫ</p>	<p>Rp2"</p> <p>OUT</p> <p>USCITA ACQUA WATER OUTLET SORTIE D'EAU WASSERAUSTRITT SALIDA DE AGUA ВЫХОД ВОДЫ</p>	<p>SCARICO ACQUA WATER DISCHARGE PURGE D'EAU ENTWASSERUNG EVACUACION DEL AGUA СЪБИВЪ ДЪВНА</p>	<p>ALIMENTAZIONE ELETTRICA POWER SUPPLY ALIMENTATION ELECTRIQUE ELEKTROANSCHLUSS ALIMENTACION ELECTRICA НАПРЯЖЕНИЕ ПИТАНИЯ</p>
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QUOTATION

Product	Quantity	Unit net Price	Total net Price
HCY 211	1	0 €	0 €

TERMS AND CONDITIONS

Delivery & transport

FCA Free Carrier MTA SPA premises in Padova (Italy) according to Incoterms 2010

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Packing	Standard included *
Lead time	-
Payment	-
Warranty	Standard (See attached file "General Terms and Conditions")
Commissioning & start-up	Not included
Validity	Sixty (60) days

For any term or condition not mentioned, please refer to the attached document "General Terms and Conditions"; terms and conditions reported here override those attached in the enclosed document "General Terms and Conditions", whether in contrast.

*** Standard included: wooden pallet and cardboard box for models 031-101. Wooden pallet and plastic protective film for models 131-301.**

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QUALITY AND CERTIFICATION



MTA is ISO9001 certified, a sign of its commitment to complete customer satisfaction.



MTA products comply with European safety directives, as recognised by the CE symbol.



MTA participates in the E.C.C. programme for LCP-HP.

Eurovent certification applied to the units:

- air/water with cooling capacity up to 600 kW;
- water/water with cooling capacity up to 1500 kW.

Check outgoing validity of certificate:

- www.eurovent-certification.com.
- www.certiflash.com

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Occupation
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WebSite