



ICYGNUS ***HP***

Air-cooled heat pumps with variable speed driven scroll compressors

Nominal cooling capacity 18 – 49 kW

Nominal heating capacity 23 – 59 kW



R454B



*Conditioning your ambient,
maximising your comfort.*



iCYGNUS G HP

High efficiency, low impact: heat pump performance redefined

iCYGNUS G HP air-cooled heat pumps are designed specifically for use in demanding applications. It is the result of MTA's commitment towards the green transition of energy systems, combining reliability, durability and flexibility with the application of eco-friendly refrigerant R454B.

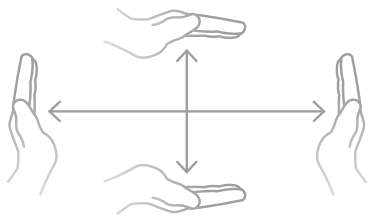
iCYGNUS G HP features variable speed technology on the compressors and fans, delivering high seasonal efficiency levels both in heating and cooling. Significant emissions and running costs reductions are guaranteed.

The heat pump is designed with an intense focus on acoustics, with cutting-edge low-noise technologies on the compressor and the EC axial fans featuring an aerodynamic blade design.

The packaged plug & play configuration features an internal storage tank and single pump.

Numerous options, coupled with wide operating limits, ensure iCYGNUS G HP perfectly fits a variety of comfort and process applications.

MAIN BENEFITS



Compact design

Reduced footprint and height for minimal installation impact.



Year-round hot water supply

Optimized for space heating and sanitary use even in summer, while also delivering chilled water for cooling at ambient temperatures up to 46 °C.



Efficiency and flexibility

Achieved through variable speed driven scroll compressor and EC fans.

MAX. WATER
+60°C | MIN. AMBIENT
-15°C

Strong operating map

Operates efficiently in ambient temperatures from -15 °C and produces hot water up to 60 °C.



Scalable system

Connects up to 4 units for increased capacity.



Smart grid ready certification

Responds to defined external control signals.



KEY FEATURES

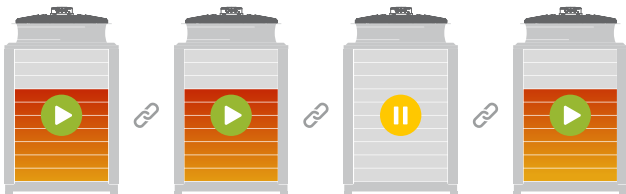
Reversible heat pump for year-around applications

The MTA iCYGNUS G HP heat pumps are engineered to deliver reliable performance in all seasons. They can provide hot water temperatures up to 45 °C at -15 °C outdoor conditions, and up to 60 °C at +5 °C outdoor air. With advanced EC fans and smart unit control, the system can produce hot water up to 55 °C during summer, with outdoor temperatures up to +46 °C. For domestic applications, specific accessories such as a diverting 3-way valves for hot sanitary water production are available. Additionally, for critical installations, the unit can be equipped with a high external static pressure fan to ensure optimal performance.



High efficiency with inverter-driven scroll compressor technology

MTA iCYGNUS G HP heat pumps are designed for seamless integration with radiant and fan coil systems, using network or renewable power sources. High SEER and SCOP values are achieved thanks to the inclusion of DC scroll compressors, EC fan and high efficiency heat exchangers. The DC inverter compressors enable power consumption savings of up to 25%, making them highly efficient even under heavy operating conditions. The unit controller can manage up to 4 units in cascade, allowing for future expansion and optimized plant performance.



Compliant with local regulations

The MTA iCYGNUS G HP heat pump boasts exceptional efficiency levels in both heating and cooling, making it eligible for regional subsidy programs. In the Italian market, the iCYGNUS G HP qualifies for Conto Termico and Detrazioni Fiscali thanks to its high COP and EER values. Additionally, the high seasonal efficiencies (SCOP) of iCYGNUS G HP units ensure compliance with local financial incentives in countries such as Germany and the Netherlands.



All-in-one solution

The MTA iCYGNUS G HP heat pump can be equipped with various hydraulic kits, featuring either inverter or simple on-off pumps, to meet specific needs. Within the unit's compact volume, a generous tank can be included, providing a convenient plug-and-play solution. Optional aesthetic grills are also available to protect the outer side of the coils from accidental damage or impact with hailstones.



Versions

Basic version

- **H** Heat Pump

Acoustic versions (1)

- **Standard noise** with compressors sound jackets
- **XLN** Super low noise with soundproof compressor box enclosure

Hydraulic versions (1)

- **Hydraulic kit** including 1 pump (ON-OFF or Inverter driven), with P1 or P2 available head pressure, with or without water tank (100 or 150 l)

(1) To be combined with basic version

Standard features

- Scroll Inverter compressor;
- Eco-Profile EC axial fans statically and dynamically balanced;
- Condensing pressure control with continuous fan speed modulation;
- Evaporator stainless steel AISI 316 brazed plate type, externally insulated, complete with differential pressure switch and antifreeze protection electric heater;
- Air side heat exchanger high efficiency finned coils with seamless copper tubes expanded into corrugated aluminium;
- Electronic expansion valve;
- Microprocessor;
- Housing and panels in galvanised and painted steel RAL7035
- Communication card RS485.
- Smart grid ready.

Options

- Hydraulic module with P1 or P2 pump, on off or VSD (inverter) type;
- Water tank: 100 liters for sizes 007, 009; 150 liters for sizes 011, 013, 017
- EC axial fans for HESP (up to 140 Pa available in heating mode, 80 Pa in cooling mode);
- Antifreeze kit for hydraulic version;
- Electric heater on the basement to protect from ice formation;
- Grids to protect outdoor coils from small/medium size objects;
- Corrosion resistant coating on outdoor coils;
- XLN extra low noise version with soundproof panels around compressor's box;
- Flow meter;
- Leak detector.

Kits

- Rubber and spring anti vibration mounts;
- Modularity kit to control up to 4 units in sequence;
- Remote control display;
- Controller expansion kit;
- Sea container kit;
- Bacnet TCP/IP kit;
- Victaulic connection kit;
- Residential EMC filters;
- 3-way valve kit for hot sanitary water production.

iCYGNUS G HP Model		007	009	011	013	017
Nominal cooling capacity (1)	kW	18,5	23,4	30,5	37,2	49,5
EER: Energy Efficiency Ratio (cooling) (1)		2,44	2,38	2,57	2,48	2,48
Nominal heating capacity (2)	kW	23,3	29,6	36,6	46,6	59,5
COP: Coefficient Of Performance (2)		3,19	3,36	3,2	3,27	3,22
Nominal heating capacity (3)	kW	24,3	31,4	38,7	48,1	61,2
COP: Coefficient Of Performance (heating) (3)		3,9	4,04	3,83	3,87	3,83
SCOP: Seasonal Coefficient Of Performance (4)		3,98	4,12	3,72	3,92	3,94
η _{sh} : Seasonal space heating energy efficiency (4)	%	156	161,9	145,8	153,6	154,7
A-weighted sound power level outside (5)	dB(A)	83	84	87	87	88
Refrigerant type		R454B	R454B	R454B	R454B	R454B
Main power supply	V / Phase	400/3	400/3	400/3	400/3	400/3
Length (6)	mm	1963	1963	2123	2123	2123
Width (6)	mm	830	830	1115	1115	1115
Height (6)	mm	1333	1333	1802	1802	1802
Operating Weight (6)	kg	315	330	464	493	512

(1) Cooling: outdoor air temperature 35°C and chilled water temperature 12°C/7°C. [EN 14511:2022]

(2) Outdoor air temperature 7°C - hot water temperature in/out 40/45°C. [EN 14511:2022]

(3) Outdoor air temperature 7°C - hot water temperature in/out 30/35°C. [EN 14511:2022]

(4) Ecodesign rating at low temperature conditions. Outdoor temperature: 7°C dry bulb/6°C wet bulb and hot water temperature in/out: 30°C/35°C. η_{sh} / SCOP as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Space heaters and combination heaters with Prated < 400 kW - COMMISSION REGULATION (EU) N° 813/2013 of 2 August 2013

(5) According ISO 9614:2009. Eurovent conditions, with 1pW reference sound power (without accessories)

(6) Basic unit without accessories



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. Certified products are listed on: www.eurovent-certification.com Certification applied to the units:
- Air/Water up to 600 kW
- Water/Water up to 1500 kW

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