

CYGNUS *tech*

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Air cooled water chillers, heat pumps units featuring rotary or hermetic scroll compressors.



The comfort of minimal noise levels

Low noise operation of technical systems is essential for continuously occupied premises such as homes, offices and light-commercial buildings, where air conditioning units are usually placed in close proximity to the users. In order to satisfy the specific comfort requirements of these type of premises, without compromising performance in all operating conditions, MTA has developed the **Cygnus tech** series of minichillers and reversible heat pumps with environmentally friendly refrigerant R410A. The already very low noise levels have been further reduced by installing electronic fan speed controls, which run at lower speeds as cooling or heating demands decrease. Seasonal efficiency levels are even more evident in heat pump operation, with clear benefits in terms of climatic comfort, thanks to the integral storage tank and Frost Deteting System (FDS), designed to detect the quantity of ice accumulating on the external coil, so that defrost cycles are performed only when appropriate, thereby minimising the power consumption.



Cooling, conditioning, purifying.

STANDARD CHARACTERISTICS

- Hermetic compressors: rotary (013-020), scroll (031-171) and tandem scroll (211-301);
- Integral hydronic kit complete with pump, tank, expansion vessel, filling/drain valve, pressure gauge, and automatic bleed valve;
- Hydraulic couplings directly accessible from the unit exterior;
- Microprocessor controller;
- Brazed stainless steel plate evaporator;
- Axial fans with sickle-shaped blades and electronic speed control;
- Self-adaptive temperature control logic;
- Heat pumps with 2nd thermostatic valve for performance optimisation in all operating conditions (models 131 to 301);
- -10 °C minimum ambient air temperature in heat pump mode;
- Factory tested and supplied with refrigerant charge and antifreeze oil;
- R410A environmentally friendly refrigerant with zero ozone depletion potential.

VERSIONS

- Chiller;
- Heat pump.



Microprocessor controller with dual icon-based display.



High efficiency and low noise thanks to the use of scroll compressors with R410A.



Built-in pump module with or without tank.



VANTAGGI

- Very low sound pressure level;
- High EER/COP values and seasonal performance indices;
- Guaranteed efficiency in heat pump mode thanks to the innovative FDS defrost system;
- Self-adaptive temperature control (SAC) for efficient operation with installations having low water contents;
- Reduced dimensions;
- Easy installation and simple access to all chiller components.
- Easy to use thanks to an intuitive controller with dual icon-based display;
- Compatible with the very latest supervisor and interface systems (BMS).

MAIN OPTIONS

- Configuration without storage tank;
- High/medium pressure head pump;
- Double pump, with one in stand-by (models 081-301);
- Condensate collection tray with hose connection (models 013-071);
- Anti-freeze heaters on evaporator, pump and tank;
- Metal mesh protective filters kit for condensing coils;
- Replicated remote control interface;
- Phase monitor kit;
- Rubber anti-vibration dampers kit;
- RS485 ModBus interface for connection to supervisor systems;
- X-WEB300 kit for local or remote (GSM mobile phone) monitoring plus data filing based on WEB server technology.

TECHNICAL DATA

Model CY-HCY		013	015	020	031	051	071	081	101	131	171	211	251	301		
CY	Cooling capacity	kW	4.3	5.3	7.1	10.1	14.5	18.7	22.5	29.7	38.7	44.2	52.0	59.9	66.6	
	Absorbed power	kW	1.3	1.7	2.3	3.0	4.5	6.1	6.6	8.9	11.4	12.6	15.7	17.4	20.7	
	ESEER	-	2.98	2.86	2.94	3.31	3.34	3.22	3.55	3.58	3.55	3.72	4.03	4.24	4.23	
	IPLV	-	2.62	2.57	2.65	2.67	2.68	2.63	2.94	2.94	2.91	3.03	4.10	4.33	4.36	
HCY	Max external air temperature	°C	49	47	46	47	46	46	47	46	46	47	46	46	45	
	Heating capacity	kW	4.8	5.9	7.7	11.1	16.1	20.0	24.1	31.3	41.2	47.9	55.9	62.9	71.7	
	Absorbed power	kW	1.3	1.6	2.2	3.1	4.5	5.9	6.5	8.5	11.1	12.7	15.1	17.2	19.9	
	Min. external air temperature	°C	-8	-8	-7	-8	-8	-7	-9	-7	-8	-8	-8	-8	-7	
	Power supply	V/Ph/Hz	230±10%/1/50						400±10%/3N/50							
	Sound pressure level	dB(A)	35.6	37.7	38.9	40.7	41.9	42.9	41.5	44.5	46.8	48.2	48.6	49.4	49.0	
Depth	mm	380	380	380	550	550	550	810	810	1112	1112	1112	1112	1112		
Width	mm	978	978	978	1420	1420	1420	1960	1960	2060	2060	2470	2470	2470		
Height	mm	985	985	985	1288	1288	1288	1203	1203	1417	1417	1595	1595	1595		
Installed weight (CY)	Kg	98	101	111	151	182	184	344	361	470	505	613	638	654		

All data refers to standard units at the following nominal conditions:

- Chiller: evaporator water inlet-outlet 12-7 °C, external air temperature 35 °C;

- Heat pump: condenser water inlet-outlet 40-45 °C, external air temperature 7 °C dry bulb, 6 °C wet bulb.

ESEER: European Seasonal Energy Efficiency Ratio adopted by EECAC. - IPLV calculated in accordance with ARI Standard 550/590-2003.

Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tolerance ± 2 dB.

Sound levels refer to unit operating at full load and with circulation pump.

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