

# CYGNUS *tech*

Air cooled water chillers, heat pumps, condensing units and reversible condensing units with R410A, with rotary or hermetic scroll compressors.

pure energy



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 *Cygnustech* 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.

## BENEFITS

- Extremely low noise levels;
- High EER/COP values and seasonal performance indices;
- Ideally suited to commercial and domestic chilled water air-conditioning applications;
- Extended operating limits;
- Optimisation of heat pump defrosting cycles thanks to the exclusive Frost Detecting System (FDS) (Minimum ambient temperature in heat pump mode = -10 °C);
- Self-adaptive temperature control (SAC) for efficient operation with installations having low water contents;
- Designed for installation in confined spaces;
- Easy to use thanks to a controller with icon-based dual display;
- Easy installation and simple access to all chiller components.

## MAIN OPTIONS

- Configuration without storage tank;
- Condenser filters;
- High/low head pressure pump;
- Double pump with one in stand-by (depending on model);
- Condensate collection tray with hose connection (models 013-071);
- Anti-freeze heaters on evaporator, pump and tank;
- Remote user interface; Thermostat (MCCY e MCHCY);
- RS485 ModBus interface for connection to supervisor systems;
- xWEB300D for local or remote (GPRS) monitoring plus data filing based on WEB server technology;
- Antivibration mountings;
- Compressors soft starter.

## STANDARD FEATURES

- Hermetic Rotary compressors (013-020) Scroll compressors (031-171) tandem Scroll compressors (211-301);
- Version with integral hydronic kit complete with pump, tank, expansion vessel, filling/drain valve, pressure gauge, and automatic bleed valve;
- Hydraulic threaded connections directly accessible from the exterior of the unit;
- Brazed stainless steel plate evaporator;
- Axial fans with sickle shaped blades and electronic speed control;
- Heat pumps with 2<sup>nd</sup> thermostatic valve for performance optimisation in all operating conditions (models 131 to 301);
- Factory charged with refrigerant and non-freezing oil (MC versions excluded);
- Protection grade IPX4;
- Inspections and tests performed in factory as per all MTA products and components;
- Environmentally friendly refrigerant R410A with zero ozone depletion potential;
- Phase monitor against phase reversal (for all three-phase models);
- Compressor crankage heater.

## VERSIONS

- Chiller (CY);
- Heat pump (HCY);
- Condensing unit (MCCY);
- Reversible condensing unit (MCHCY).

Microprocessor controller with dual icon-based display.



Higher energy efficiency and quieter operation thanks to the use of scroll compressors.



Built-in pumping module with or without storage tank.



Remote control.



Model CY - HCY - MCCY - MCHCY		013	015	020	031	051	071	081	101	131	171	211	251	301	
CY	Cooling capacity	kW	4,24	5,23	7,06	9,95	14,4	18,5	22,3	29,2	38,4	44,0	51,3	59,5	66,2
	Total absorbed power	kW	1,59	1,99	2,61	3,64	5,21	6,84	7,40	9,69	12,8	14,0	17,4	19,2	22,5
	ESEER	-	2,84	2,74	2,82	3,15	3,20	3,09	3,41	3,43	3,42	3,60	3,99	4,22	4,19
	Max external air temperature	°C	49	47	46	47	46	46	47	46	46	47	46	46	45
HCY	Cooling capacity	kW	4,16	5,11	6,94	9,64	13,9	17,5	21,7	28,6	36,8	42,6	50,1	57,6	63,8
	Heating capacity	kW	4,60	5,62	7,31	10,5	15,4	19,1	23,0	29,8	39,2	44,1	53,2	60,0	68,4
	Total absorbed power (in heating)	kW	1,55	1,85	2,38	3,50	4,96	6,21	6,88	8,82	11,8	13,0	15,9	18,1	20,6
	Min. external air temperature	°C	-8	-8	-7	-8	-8	-7	-9	-7	-8	-8	-8	-8	-7
MCCY	Cooling capacity	kW	4,47	5,46	7,37	10,5	15,1	19,4	23,2	30,5	39,8	45,5	53,6	61,8	68,8
	Total absorbed power	kW	1,55	1,95	2,55	3,56	5,11	6,73	7,26	9,55	12,6	13,8	17,2	19,0	22,4
	Max external air temperature	°C	48	47	45	47	45	46	46	45	45	46	45	46	44
MCHCY	Cooling capacity	kW	4,63	5,61	7,63	10,7	15,5	19,5	24,2	31,7	40,7	47,6	55,9	64,6	71,6
	Heating capacity	kW	4,76	5,86	7,47	10,8	16,1	19,4	23,7	31,0	40,7	46,1	54,8	62,1	70,6
	Total absorbed power (in heating)	kW	1,26	1,54	1,98	2,77	3,90	4,91	5,39	6,95	9,14	10,2	12,5	14,1	15,9
	Min. external air temperature	°C	-7	-6	-5	-5	-4	-5	-6	-5	-6	-6	-5	-6	-5

Power supply		V/Ph/Hz				230±10%/1/50				400 ± 10% / 3+N-PE / 50				
Circuits / Compressors	N°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/2	1/2	1/2
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	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;

**Condensing unit:** Evaporating temperature 5 °C, external air temperature 35 °C;

**Reversible condensing unit:** condensing temperature 40 °C, ambient air temperature 7 °C 6 °C wet bulb.

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

The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted.

Data declared according to UNI EN 14511:2011.



MTA participates in the E.C.C. programme for LCP-HP. Certified products are listed on [www.eurovent-certification.com](http://www.eurovent-certification.com). Eurovent Certification applied to the units:  
- Air/Water with cooling capacity up to 600 kW  
- Water/Water up to 1500 kW (N.A. on MC)

[www.mta-it.com](http://www.mta-it.com)

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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.



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