



PROCESS COOLING SOLUTIONS



AIR CONDITIONING SYSTEMS

ARIES FREE-COOLING

Air-cooled water chillers with integrated free-cooling featuring hermetic scroll compressors. Cooling capacity 51 - 177 kW.



Free-cooling offers notable energy savings and rapid paybacks in industries requiring cold water all year round. ARIES Free-Cooling features separate refrigeration and free-cooling sections, for improved efficiency versus traditional solutions. The difference between the ambient air temperature and the temperature of the fluid in the process circuit is continuously monitored by the microprocessor which, as soon as conditions permit it, automatically activates the free-cooling mode, starting the dedicated fans and diverting the flow of fluid to the free-cooling coil by means of a three-way modulating valve (fitted as standard). The microprocessor independently controls the speed of both the free-cooling and the condensing fans, maximising energy savings and simultaneously optimising refrigerant cycle performance.



Cooling, conditioning, purifying.

BENEFITS

- Maximum exploitation of free cooling and maximum energy efficiency of the system with respect to conventional solutions, thanks to the independence of the coils in terms of air handling;
- Accurate control of water outlet temperature (including at low temperatures down to -15 °C), thanks to the use of a modulating three-way water valve;
- Generous sizing of coils for free-cooling;
- Operates at high ambient temperatures thanks to the compressor unloading;
- Version SSN featuring extremely quiet operation;
- Individually tested in a test chamber like all MTA components and products;
- User friendly control section with simple readout and graphic display;
- Simple to install and maintain, easily accessible components.

MAIN OPTIONS

- Compressor suction and discharge valves;
- Electronic fan speed control;
- Electronic thermostatic expansion valve (except 201-301);
- Hydronic group without pump; (only for 201-301);
- Hydronic group with storage tank and single or twin pumps (351-751 only);
- High, medium and low head pressure pumps;
- Air filter on condenser coils (standard on 201-301);
- Antivibration dampers;
- Simple remote control;
- Replicated remote user terminal;
- Supervisor systems.

STANDARD FEATURES

- Parallel scroll compressor coupling within single refrigerant circuit;
- Finned coil evaporator inside the storage tank (201 - 301) and shell and tube evaporator (351 - 751);
- Condensers and fans installed in a separate compartment with aeraulic isolation, for maximum Free-Cooling effect and maximum overall energy efficiency;
- Axial fans with crescent shaped blades featuring step regulation;
- 3-way modulating valve for free-cooling (controlled by microprocessor), water connections within chiller;
- Total free-cooling from approximately 10 °C below the water outlet temperature;
- Water differential pressure switch on evaporator (301-751);
- High and low pressure transducers;
- Single or twin high pressure switches for max condensing pressure control;
- Electronic expansion valve with external equalisation, refrigerant filter, sight glass, solenoid valve on liquid line (except 201-301);
- Safety valve (except 201 - 301);
- Microprocessor control with advanced software ensuring optimum control in all conditions;
- All the units are delivered with a phase monitor which provides protection against phase loss and phase reversal;
- The scroll compressors are equipped with crankcase heaters as standard;
- Main switch;
- IP54 electric protection rating;
- Environmentally friendly refrigerant R407C with zero ozone depletion potential.

VERSIONS

- N (standard);
- SN (low noise);
- SSN (very low noise);
- Low ambient temperature version (min. -15 °C).

Semi-graphic backlit PGD terminal.



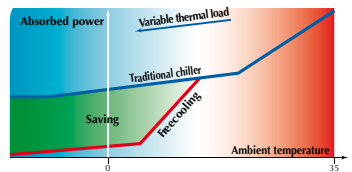
Aeraulically separate sections for the maximum exploitation of free-cooling.



Servo-controlled three-way modulating hydraulic valve supplied as standard.



Energy saving.



| Model AS FC | | 201 | 251 | 301 | 351 | 401 | 501 | 551 | 601 | 701 | 751 | |
|---|----------------------------------|-------------------------|------|------|------|------|------|------|------|------|------|------|
| free-cooling OFF | Cooling capacity [1] | kW | 50,9 | 54,6 | 69,3 | 80,1 | 97,6 | 115 | 133 | 146 | 161 | 177 |
| | Absorbed power [1] | kW | 16,2 | 19,3 | 20,0 | 30,1 | 34,3 | 40,1 | 44,4 | 50,7 | 52,7 | 60,1 |
| | Max external air temperature [1] | °C | 45 | 47 | 47 | 42 | 44 | 43 | 43 | 41 | 45 | 43 |
| TOTAL free-cooling | Cooling capacity [1] | kW | 50,9 | 54,6 | 69,3 | 80,1 | 97,6 | 115 | 133 | 146 | 161 | 177 |
| | Absorbed power [1] * | kW | 1,6 | 2,3 | 2,3 | 4,0 | 4,0 | 4,0 | 4,0 | 4,0 | 6,0 | 6,0 |
| | Total free-cooling [1] | °C | 1,0 | 1,4 | -0,3 | 1,6 | 0,5 | -0,7 | 0,4 | -0,7 | 1,4 | 0,4 |
| free-cooling OFF | Cooling capacity [2] | kW | 46,5 | 49,5 | 63,1 | 72,8 | 88,6 | 105 | 121 | 133 | 147 | 162 |
| | Absorbed power [2] | kW | 15,7 | 18,8 | 19,5 | 29,0 | 33,1 | 38,5 | 42,7 | 48,6 | 50,8 | 57,8 |
| | Max external air temperature [2] | °C | 46 | 48 | 48 | 44 | 45 | 44 | 44 | 43 | 46 | 45 |
| TOTAL free-cooling | Cooling capacity [2] | kW | 46,5 | 49,5 | 63,1 | 72,8 | 88,6 | 105 | 121 | 133 | 147 | 162 |
| | Absorbed power [2] * | kW | 1,6 | 2,3 | 2,3 | 4,0 | 4,0 | 4,0 | 4,0 | 4,0 | 6,0 | 6,0 |
| | Total free-cooling [2] | °C | -1,1 | -0,7 | -2,3 | -0,6 | -1,5 | -2,5 | -1,5 | -2,5 | -0,6 | -1,6 |
| ESEER | - | 4,19 | 3,82 | 4,07 | 3,56 | 3,73 | 3,79 | 3,97 | 3,94 | 3,91 | 3,75 | |
| Power supply | V/Ph/Hz | 400 ± 10% / 3 - PE / 50 | | | | | | | | | | |
| Circuits / Compressors | N° | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | |
| Sound pressure level free-cooling OFF (N) | dB(A) | 60,2 | 60,2 | 61,5 | 62,6 | 61,6 | 61,6 | 61,6 | 61,6 | 62,3 | 62,3 | |
| Sound pressure level free-cooling OFF (SN) | dB(A) | - | - | - | 56,2 | 55,0 | 55,0 | 55,0 | 55,0 | 55,2 | 55,2 | |
| Sound pressure level free-cooling OFF (SSN) | dB(A) | - | - | - | 48,9 | 48,9 | 47,7 | 48,7 | 48,7 | 49,1 | 49,1 | |
| Depth | mm | 2550 | 2550 | 2550 | 3495 | 3495 | 3495 | 4595 | 4595 | 4595 | 4595 | |
| Width | mm | 1400 | 1400 | 1400 | 2188 | 2188 | 2188 | 2188 | 2188 | 2188 | 2188 | |
| Height | mm | 2136 | 2136 | 2136 | 1989 | 1989 | 1989 | 1989 | 1989 | 1989 | 1989 | |
| Installed weight | Kg | 1494 | 1494 | 1509 | 1858 | 1980 | 2276 | 2536 | 2541 | 2752 | 2803 | |

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

(1) Evaporator water inlet/outlet temperature 15-10 °C, external air temperature 35 °C, glycol water at 30%.

(2) Evaporator water inlet/outlet temperature 12-7 °C, external air temperature 35 °C, glycol water at 30%.

* In total free-cooling mode the absorbed power is only the fans absorbed power.

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



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.



GOST Certification

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