PHOENIX PLUS

ErP

Air cooled water chillers featuring semi-hermetic twin screw compressors with R134a.
Nominal cooling capacity 451 – 1590 kW

Large capacity with perfect regulation.

The PHOENIX Plus range of chillers has been specifically designed to optimize the benefits of refrigerant R134a.
Their maximum advantage is achieved in process cooling application with both constant and variable thermal load thanks to technical features and the Smart Stepless regulation which guarantee the exact cooling capacity requested by the system, PHOENIX Plus achieves SEPR seasonal performance compliant with the ErP regulation, as well as very high nominal load EER ratios.

MTA®
Cooling, conditioning, purifying.

Benefits

- High energy efficiency both at full load and at partial load;
- High seasonal performance efficiency (SEPR);
- The controller provides maximum flexibility to adapt to any operating condition, thanks to the Smart Stepless algorithm specifically developed by MTA;
- High reliability and continuity of operation (up to 4 screw compressors and "**Smart Stepless**" algorithm);
- Wide operating range;
- Comprehensive safety equipment, including phase monitor, pressure switches, differential pressure switch, crankcase heaters, compressors operating envelope and oil level;
- Wide range of accessories and kits for custom solutions;
- Integration FC4ALL with free cooling modules.

Main options

- Condenser coils with anticorrosion treatment;
- Soft starter;
- Antivibration dampers;
- Antifreeze heater;
- Metal mesh filters for condenser coil protection;
- Compressor housings;
- Replicated remote user terminal;
- Simple remote control;
- Serial connection to supervision systems;
- MTA xCONNECT Supervision based on internal web pages;
- Modularity / web interconnection hub.

Standard features

- Environmentally friendly R134a refrigerant;
- High efficiency screw compressors with stepless regulation optimized for R134a refrigerant gas;
- Compressor crankcase heater;
- Air-cooled condensers (copper tubes/aluminium fins) with transverse "V" formation;
- High efficiency EC axial fans with inverter technology and integrated speed regulation;
- Check valve on compressor discharge and shut-off valves on discharge and suction lines;
- Electronic expansion valves;
- Single pass shell & tubes evaporator optimized for R134a refrigerant gas;
- The Electrical panel is made up of IP 54 cabinet with forced ventilation, inside which are installed contactors and circuit breakers; the protection from the phase loss and from the phase reversal is assured by the phase monitor device;
- xDRIVE controller programmed with software specifically developed by MTA;high computing capacity and user friendly graphic interface; connectivity and supervision via Ethernet, USB, RS485 Modbus.

Versions

- HE - High energy efficiency and basic acoustic configuration;
- SHE - High energy efficiency and low noise acoustic configuration;
- SSN - Standard energy efficiency and very low noise acoustic configuration;
- **Low ambient air temperature version,** down to -20 °C in cooling mode.

Models PNP		**160**			**170**			**180**			**190**			**200**			**220**			**250**			**265**			**280**			**310**		
Versions		**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**
Nominal cooling capacity (1)	kW	315	300	290	326	311	301	338	301	313	377	358	346	389	371	357	443	420	404	474	447	428	515	481	459	554	516	495	607	578	557
Total absorbed power (1)	kW	113	113	116	119	118	121	125	121	125	138	139	142	144	144	147	164	165	169	179	182	187	197	204	210	216	224	230	224	225	230
EER (2)		2,79	2,65	2,50	2,74	2,63	2,49	2,70	2,49	2,50	2,73	2,58	2,43	2,70	2,57	2,43	2,71	2,55	2,39	2,65	2,45	2,29	2,61	2,36	2,19	2,56	2,30	2,16	2,71	2,57	2,42
SEPR (3)		5,07	5,12	5,07	4,98	5,02	5,00	4,92	5,00	5,01	4,99	5,05	4,98	4,94	5,02	4,95	5,24	5,25	5,23	5,24	5,29	5,24	5,22	5,19	5,18	5,19	5,15	5,17	5,19	5,27	5,23
Max external air temp. (4)	°C	44	•	•	44	•	•	44	•	•	44	•	•	44	•	•	46	•	•	44	•	•	44	•	•	44	•	•	46	•	•
Nominal cooling capacity (5)	kW	451	429	414	467	445	429	484	429	447	540	512	493	556	530	510	634	600	577	677	637	610	736	685	653	791	734	704	871	828	797
Total absorbed power (5)	kW	111	113	117	117	118	122	123	122	126	137	140	144	143	145	149	162	166	172	178	184	192	197	208	217	217	230	239	221	225	233
EER (6)		4,05	3,80	3,55	4,98	3,77	3,52	3,92	3,52	3,54	3,94	3,67	3,41	3,89	3,66	3,42	3,92	3,62	3,35	3,81	3,46	3,18	3,73	3,30	3,01	3,63	3,19	2,95	3,94	3,69	3,42
Max external air temp. (7)	°C	38	•	•	38	•	•	38	•	•	38	•	•	38	•	•	41	•	•	38	•	•	38	•	•	38	•	•	41	•	•
Power supply	V/Ph/Hz	400 ± 10% / 3-PE / 50																													
Circuits / Compressors	N°	2/2																											3/3		
Sound power (8)	dB(A)	96,9	•	•	96,9	•	•	96,9	•	•	98,1	•	•	98,1	•	•	99	•	•	99	•	•	98,9	•	•	98,8	•	•	100,5	•	•
Sound pressure (9)	dB(A)	68,9	•	•	68,9	•	•	68,9	•	•	70,1	•	•	70,1	•	•	71	•	•	71	•	•	70,9	•	•	70,8	•	•	72,5	•	•
Depth	mm	4530			4530			4530			4530			4530			4530			4530			4530			4530			6510		
Width	mm	2190			2190			2190			2190			2190			2190			2190			2190			2190			2190		
Height	mm	2425			2425			2425			2425			2425			2425			2425			2425			2425			2425		
Installed weight	kg	3480			3610			3740			3710			3840			4080			4210			4340			4470			5970		

Models PNP		**330**			**360**			**390**			**405**			**420**			**440**			**470**			**500**			**530**			**560**		
Versions		**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**	**HE**	**SHE**	**SSN**
Nominal cooling capacity (1)	kW	655	622	598	685	648	622	736	690	661	783	729	696	838	774	737	892	845	813	914	864	830	936	883	847	1025	956	914	1111	1028	979
Total absorbed power (1)	kW	243	245	251	259	262	269	284	291	300	304	314	324	325	339	350	327	330	339	341	346	355	355	361	371	394	406	418	431	449	464
EER (2)		2,70	2,54	2,38	2,65	2,47	2,31	2,59	2,37	2,20	2,58	2,32	2,15	2,58	2,29	2,11	2,73	2,56	2,40	2,68	2,50	2,34	2,64	2,45	2,28	2,60	2,36	2,19	2,58	2,29	2,11
SEPR (3)		5,21	5,29	5,22	5,20	5,28	5,18	5,17	5,16	5,14	5,19	5,13	5,13	5,25	5,16	5,18	5,29	5,30	5,28	5,25	5,30	5,27	5,21	5,28	5,25	5,19	5,23	5,17	5,25	5,23	5,18
Max external air temp. (4)	°C	46	•	•	45	•	•	44	•	•	44	•	•	44	•	•	45	•	•	44	•	•	44	•	•	44	•	•	44	•	•
Nominal cooling capacity (5)	kW	940	891	856	982	926	888	1055	987	943	1121	1040	991	1197	1103	1049	1279	1210	1162	1310	1237	1185	1341	1263	1209	1467	1366	1302	1590	1466	1393
Total absorbed power (5)	kW	240	245	255	257	265	275	283	296	309	304	321	336	326	348	364	322	331	344	338	348	362	353	365	380	393	413	432	432	460	483
EER (6)		3,92	3,63	3,36	3,82	3,50	3,23	3,72	3,33	3,05	3,68	3,24	2,95	3,67	3,17	2,88	3,97	3,66	3,38	3,88	3,55	3,27	3,8	3,46	3,18	3,73	3,30	3,01	3,68	3,18	2,89
Max external air temp. (7)	°C	41	•	•	39	•	•	38	•	•	38	•	•	38	•	•	39	•	•	38	•	•	38	•	•	38	•	•	38	•	•
Power supply	V/Ph/Hz	400 ± 10% / 3-PE / 50																													
Circuits / Compressors	N°	3/3															4/4														
Sound power (8)	dB(A)	100,8	•	•	100,8	•	•	100,7	•	•	100,6	•	•	100,5	•	•	102	•	•	102	•	•	102	•	•	101,9	•	•	101,8	•	•
Sound pressure (9)	dB(A)	72,8	•	•	72,8	•	•	72,7	•	•	72,6	•	•	72,5	•	•	74	•	•	74	•	•	74	•	•	73,9	•	•	73,8	•	•
Depth	mm	6510			6510			6510			6510			6510			8490			8490			8490			8490			8490		
Width	mm	2190			2190			2190			2190			2190			2190			2190			2190			2190			2190		
Height	mm	2425			2425			2425			2425			2425			2425			2425			2425			2425			2425		
Installed weight	kg	6040			6170			6350			6490			6750			8240			8370			8470			8770			9200		

Data declared according to UNI EN 14511:2013.

(1) Data referred to nominal conditions, external ambient temperature 35 °C and evaporator water temperature IN/OUT 12/7 °C.
(2) Data referred to the full load functioning and nominal conditions , external ambient temperature 35 °C and evaporator water temperature IN/OUT 12/7 °C;
(3) Data declared in compliance with the European Regulation (EU) 2016/2281 with regard to ecodesign requirements for cooling products and high temperature process chillers.
(4) Data declared referred to cooling mode and outlet water temperature 7°C.
(5) Data referred to nominal conditions, external ambient temperature 25 °C and evaporator water temperature IN/OUT 20/15 °C.
(6) Data referred to the full load functioning and nominal conditions , external ambient temperature 25 °C and evaporator water temperature IN/OUT 20/15 °C;
(7) Data declared referred to cooling mode and outlet water temperature 15 °C.
(8) Determined on the basis of measurements taken in accordance with the standard ISO 3744.
(9) 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 andat 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.
(•) Missing data will be available shortly.
The listed noise levels, weights and dimensions refer to base units with no options fitted.

ISO 9001 BUREAU VERITAS 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.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

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

EAC Declaration

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5050FPNIY001BA ed. 12-17