

PAH T Ka

AIR COOLED HEAT PUMPS WITH SCREW COMPRESSORS AND AXIAL FANS

COOLING CAPACITY FROM 197 TO 778 kW 2 COOLING CIRCUITS

PAH 2502 T Ka



Above picture is only indicative and is not binding.



The air cooled heat pumps of **PAH T Ka series** are designed for outdoor installation and are particularly suitable for industrial applications. They can also be used for medium and big air conditioning systems and to be matched to fancoils or terminal units. These units are standard provided by a technical housing, always protected by panels. They are all available with 2 independent refrigerant circuits and, when required, provided with buffer tanks of remarkable capacity, with no change in the overall dimensions. Thanks to the several options available, these units are particularly flexible and can be easily adapted to all installation sites. They are completely assembled and tested in the factory and supplied with refrigerant and non-freezing oil charge. Therefore, once on site, the units only need to be positioned and electrically and hydraulically connected.

The available versions with R134a (Ka) refrigerant are the following:

- **Ka** - standard version
- **S. Ka** - silenced version: oversized coil, reduced air flow, fans with a lower rotation speed, technical partition insulated by means of soundproofing material.
- **U. Ka** - ultra-silenced version: oversized coil, reduced air flow, fans with a very low rotation speed, technical partition insulated by means of soundproofing material with bituminous rubber coating, vibration dampers on compressors suction and discharge pipes, mufflers on discharge pipes, compressors fixed on spring-type vibration dampers.

Operation limits (standard units):

SUMMER OPERATION: Air from 15 to 45°C - water (out from evaporator) from 5 to 15°C.

WINTER OPERATION: Air from 20 to -4°C - water (out from evaporator) max 55°C.

MAIN COMPONENTS

Strong and compact frame made of pressed and bended galvanized steel profiles, panels and base-frame of high thickness galvanized and painted steel and coated by rust-proof paint, suitable to resist to external agents. The technical housing, completely closed and suitably isolated from the air flow, is containing the compressors and the main components. The external panels, easily to be dismantled, allow the complete access in case of service, without compromising the operation of the unit itself. When required, the hydraulic kit (buffer tank and pump group) are installed inside the unit, with no change in overall dimensions.

Semi-hermetic screw compressors equipped with capacity steps, motor thermal protection, oil crankcase heater and phase monitor. The compressors lubrication is of forced type, with no pump and in order to prevent many oil

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migrations to the cooling circuit, the compressors are provided with an oil separator, in-built to the discharge side. The electrical motor is foreseen for lower inrush current and, in this case, the unit is equipped with an automatic partial load inrush device and mechanical interlock of the inrush control switches, to prevent accidental short circuits (options DS and PW).

Heat-exchange external coil with copper tube and turbo aluminium fins for a better efficiency. It is suitably sized with a wide exchange surface, so to allow the unit operation also at very high external air temperatures. On request, in case of installation in aggressive environments, several coil protection treatments are available.

Low rpm axial fans, of directly coupled type, with 6-8 pole electrical motor complete with in-built overload protection, electronic balance, low sound level blades with wing profile and safety protection grid. On request, it is available the modulating fans speed regulation (option BT).

Dry expansion shell and tube user exchanger, with two refrigerant circuits and one water circuit, with very low pressure drops. Shell and tubes plate made in carbon steel and copper tubes, insulated by close-cell polyurethane foam material. Some plastic and corrosion-proof baffles are suitably placed inside the shell, allowing a correct water distribution and making the tube bundle particularly strong and vibration-free, also in case of very high water flows.

Cooling circuit composed of: 4-way valve for refrigerant cycle inversion, thermostatic expansion valve, dehydrating filter, sight glass, high pressure safety device, antifreeze thermostat, high and low pressure switches, high and low pressure gauges, non-return valve on discharge side, shut-off valve on liquid line, shut-off valve on compressor discharge side.

Electric board in compliance with CE norms, contained in a suitable partition protected by the internal safety panel, provided with a lock-door main switch. Inside, it is complete with all control and protection switches, the terminal board and auxiliaries. The electrical board also includes the control device for power supply phases, to prevent the compressor to turn in the wrong sense. The microprocessor, complete with display, is also placed inside the electrical board.

Unit management microprocessor installed on the internal safety panel of the electrical board, controlling the chilled water temperature regulation, the working parameters, auto-detection failure system, remote management and supervision, automatic defrosting system based on a time/ temperature logics, complete with compressors hour counter.

ACCESSORIES

A Amperometer: Electrical device for measuring the intensity of electrical current absorbed by the unit.

BT Low temperature operation (down to -8°C): Electronic device for the continuous modulating voltage control of the condensing pressure through the variation of the fan rotation speed (Alternative to BF).

BF Low ambient temperature operation (down to -20°C): Electronic device, frequency converter type, for the continuous modulating control of the condensing pressure through the variation of the fan rotation speed (Alternative to BT).

CE UV protection on water insulation: Particular coat of the evaporator and of water insulations with UV ray proof material.

- CS Compressors inrush counter:** Electromechanical device positioned inside the electrical board, recording the total inrush starts of compressors.
- DS Star/delta:** Electric device of close transition type to reduce the inrush current, complete with short circuit safety by mechanical interlock.
- FA Condensing coil protection filters:** Washable metal filters with very low pressure drop, protecting the condensing coils from dirt, with aluminium mesh against dust and leaves.
- GP Condensing coil protection grid:** Metal protection grid against accidental impacts, made of 50x50 4-mesh wire.
- I1 Victaulic insulation on pump side:** Insulation of the joints by close-cell polyurethane material, to prevent condense, pump side.
- I2 Victaulic insulation on buffer tank side:** Insulation of the joints by close-cell polyurethane material, to prevent condense, buffer tank side.
- IG Watch card:** Electronic card to program the switch-over and rotation between to units, after a pre-set time.
- IH RS 485 serial interface:** Electronic card to be connected to microprocessor, to allow communication between the units and a Carel supervision system. It is possible to fully control the unit remotely. For connection to other supervision systems, the protocol of the controlled parameters is available on request.
- IM Seawood packing:** Fumigated seawood case and protection bag with hygroscopic salts, suitable for long sea transports.
- LI Liquid injection:** Mechanical device allowing a better cooling of compressors at very high compression level
- M12 Modulating capacity control for 2-circuit units:** By means of some valves installed on compressors, the capacity is modulated from 12 to 100%.
- MV Buffer tank** of suitable capacity complete with expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves.
- OS Oil flow safety switch:** In-built in the compressor oil separator, it indicates the eventual decrease of the oil level.
- P1 Single pump group:** Chilled water pump group composed of single pump, expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves, electrical control of the pump. The pump is of 2 pole centrifugal packaged type.
- P1H Higher available pressure pump group:** Chilled water higher available pressure pump group composed of single pump, expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves, electrical control of the pump. The pump is of 2 pole centrifugal packaged type.
- PA Rubber-type vibration dampers:** Bell-shaped vibration dampers supports for insulating the unit (supplied in kit), made of base and bell in galvanized steel and natural rubber mixture (not available when option MV is required).
- PF Safety water flow switch:** Installed on water exchanger, it switches off the unit in case of lack of water flow rate through the exchanger.
- PM Spring-type vibration dampers:** Spring-type vibration dampers support, for insulating the unit (supplied in kit), mainly indicated for installation in difficult and aggressive environments. Made of two steel plates containing a suitable quantity of harmonic steel springs.
- PQ Remote display:** Remote terminal, allowing to display the temperature and humidity values detected by probes, the alarm digital inputs, the outputs and the remote ON/OFF of the unit, to change and program of the parameters, the sound signal and the display of the present alarms.
- PT Twin pump group:** Chilled water pump group composed of twin pump, expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves, electrical control of the pump,

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automatic switch in case of failure of the working pump. The pump is of 2 pole centrifugal packaged type.

- PW Part-winding:** Equipment for step compressors starting, reducing of about 35% the inrush current of each compressor.
- RA Anti-freeze heater on evaporator:** Electrical heater installed on the evaporator, in order to prevent freezing and provided with thermostat.
- RF Power factor correction system $\cos\phi > 0,9$:** Electrical device made of suitable condensers for compressors rephasing, ensuring a $\cos\phi$ value $\geq 0,9$, so to reduce the power absorption from the electrical network.
- RH Shut-off valve on suction side:** They are use to isolate compressors during service operations.
- RL Compressors overload relays:** Electromechanical protection devices against compressor's overload with displayed alarm.
- RM Condensing coil with pre-painted fins:** Epoxy coating of the condensing coils surface.
- RP Partial heat recovery** (about 20%) of the condensing heat, by means of a refrigerant/water plate exchanger (desuperheater), always in series to the compressors. It is requested when you need to produce sanitary water, by recovering condensing heat capacity.
- RR Copper/copper condensing coils:** Special execution of the condensing coils with copper pipe and fins.
- RV Personalized frame painting in RAL color.**
- SC Insulated compressors housing with sound proofing material** (included on silenced version).
- SU Insulated compressors housing with bituminous rubber** sound proofing material, muffler on discharge pipe and vibration dampers for compressors (included on ultra-silenced version).
- TE Electronic thermostatic valve:** It is requested to make a very accurate regulation of the refrigerant flow and to limit variations of cooling capacity and evaporator leaving temperature water during operation in transitions and for a better performance with fixed superheating.
- V Voltmeter:** Electrical device measuring the electrical tension in the power supply of the unit.
- VB Brine version:** Unit suitable for working with evaporator outlet water temperatures lower than 0°C. A 20 mm evaporator insulation will be provided.
- VS Solenoid valve:** Electromagnetic solenoid valve on each cooling circuit to prevent refrigerant migrations and consequent flooding of compressors.

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Technical data sheet - PAH 2502-8002 T Ka

PAH		2502 Ka	2802Ka	3202 Ka	3602 Ka	4602 Ka	5202 Ka	6002 Ka	6802 Ka	8002 Ka
Cooling capacity										
Cooling capacity 1)	kW	259,0	286,0	319,0	364,0	478,0	508,0	610,0	696,0	778,0
Absorbed power	kW	76,0	90,0	107,0	121,0	150,0	169,0	183,0	211,0	267,0
EER		3,41	3,18	2,98	3,01	3,19	3,01	3,33	3,30	2,91
Heating capacity										
Heating capacity 3)	kW	317,0	356,0	405,0	461,0	596,0	643,0	752,0	860,0	994,0
Absorbed power in heating	kW	73,0	86,0	103,0	117,0	144,0	163,0	176,0	203,0	257,0
COP		4,34	4,14	3,93	3,94	4,14	3,94	4,27	4,24	3,87
Screw compressors										
Quantity	n	2	2	2	2	2	2	2	2	2
Standard steps capacity	n	6	6	6	6	6	6	6	6	6
Continuous control capacity (option)	%					0 - 12 ÷ 100				
Circuits	n	2	2	2	2	2	2	2	2	2
Nominal absorbed current 1)	A	133,2	150,3	179,2	196,7	251,5	281,8	309,3	369,2	419,8
Nominal absorbed current 3)	A	130,8	141,8	164,2	180,6	233,7	255,3	286,4	314,0	375,9
Maximum absorbed current	A	196,0	248,0	288,0	324,0	364,0	430,0	462,0	560,0	620,0
Inrush current	A	547,0	609,0	729,0	848,0	983,0	1158,0	1254,0	1644,0	1752,0
Inrush current with opt. PW/DS	A	365,0	414,0	494,0	585,0	702,0	827,0	895,0	1235,0	1319,0
Axial fans										
Quantity	n	6	6	6	6	8	8	10	12	12
Rotation speed	rpm	880	880	880	880	880	880	880	880	880
Motors power	kW	12,0	12,0	12,0	12,0	16,0	16,0	20,0	24,0	24,0
Total air flow	m ³ /h	126.000	126.000	126.000	117.000	156.000	156.000	195.000	234.000	234.000
Total air flow	l/s	35.000	35.000	35.000	32.500	43.333	43.333	54.167	65.000	65.000
Nominal absorbed current	A	24,0	24,0	24,0	24,0	32,0	32,0	40,0	48,0	48,0
Shell and tube evaporator										
Quantity	n	1	1	1	1	1	1	1	1	1
Water flow rate 1)	m ³ /h	44,5	49,2	54,9	62,6	82,2	87,4	104,9	119,7	133,8
Water flow rate 1)	l/s	12,4	13,7	15,2	17,4	22,8	24,3	29,1	33,3	37,2
Pressure drop 1)	kPa	54	65	41	49	34	38	46	68	39
Water flow rate 3)	m ³ /h	54,5	61,2	69,7	79,3	102,5	110,6	129,3	147,9	171,0
Water flow rate 3)	l/s	15,1	17,0	19,4	22,0	28,5	30,7	35,9	41,1	47,5
Pressure drop 3)	kPa	82	89	58	69	46	54	62	93	84
Water volume	l	63	80	90	130	162	162	184	222	435
Pump Group P1										
Available pressure	kPa	121	117	137	125	128	120	97	168	172
Motor power	kW	5,5	5,5	5,5	5,5	5,5	5,5	5,5	15,0	15,0
Absorbed current	A	11,1	11,1	11,1	11,1	11,1	11,1	11,1	26,5	26,5
Inrush current	A	70,0	70,0	70,0	70,0	70,0	70,0	70,0	194,0	194,0
Weight	kg	91,0	91,0	91,0	91,0	91,0	91,0	91,0	160,0	160,0
Pump group P1H										
Available pressure	kPa	172	167	187	176	179	171	149	276	279
Motor power	kW	7,5	7,5	7,5	7,5	7,5	7,5	7,5	22,0	22,0
Absorbed current	A	14,7	14,7	14,7	14,7	14,7	14,7	14,7	39,0	39,0
Inrush current	A	105,0	105,0	105,0	105,0	105,0	105,0	105,0	273,0	273,0
Weight	kg	99	99	99	99	99	99	99	192	192
Pump group PT										
Available pressure	kPa	168	162	181	168	165	156	127	267	268
Motor power	kW	7,5	7,5	7,5	7,5	7,5	7,5	7,5	22,0	22,0
Absorbed current	A	14,7	14,7	14,7	14,7	14,7	14,7	14,7	39,0	39,0
Inrush current	A	105,0	105,0	105,0	105,0	105,0	105,0	105,0	273,0	273,0
Weight	Kg	196	196	196	196	196	196	196	379	379
Hydraulic kit										
Expansion vessel	l	25	25	25	25	25	25	25	25	25
Quantity	n.	2	2	2	2	2	2	2	2	2
Buffer tanks 900 l		•	•	•	•	•	•	•	•	•
Buffer tanks 1500 l		---	---	---	---	•	•	•	•	•
Buffer tanks 1800 l		---	---	---	---	---	---	•	•	•
Buffer tanks 2400 l		---	---	---	---	---	---	---	•	•
Electrical data										
Total absorbed power	kW	88,0	102,0	119,0	133,0	166,0	185,0	203,0	235,0	291,0
Total nominal absorbed current 1)	A	157,2	174,3	203,2	220,7	283,5	313,8	349,3	417,2	467,8
Total nominal absorbed current 3)	A	154,8	165,8	188,2	204,6	265,7	287,3	326,4	362,0	423,9
Maximum absorbed current	A	220,0	272,0	312,0	348,0	396,0	462,0	502,0	608,0	668,0
Total inrush current	A	571,0	633,0	753,0	872,0	1.015,0	1.190,0	1.294,0	1.692,0	1.800,0
Total inrush current with opt. PW/DS	A	389,0	438,0	518,0	609,0	734,0	859,0	935,0	1.283,0	1.367,0
Sound pressure level										
Sound pressure level 2)	dB(A)	78	78	78	78	80	80	81	82	82
Dimensions										
Length	mm	5.082	5.082	5.082	5.082	6.120	6.120	7.158	9.035	9.035
Width	mm	2.244	2.244	2.244	2.244	2.244	2.244	2.244	2.244	2.244
Height	mm	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370
Transport weight 4)	kg	3.815	3.835	3.920	4.045	5.420	5.442	5.993	7.429	7.534
Weight in operation	kg	3.878	3.915	4.010	4.174	5.581	5.603	6.178	7.651	7.969
Refrigerant charge for each circuit	kg	69	71	72	85	106	106	123	140	135
Power supply										
Power supply	V / ph / Hz	400 V / 50 Hz / 3 Ph + T								
NOTES										
1) Summer work mode: air 35 °C - chilled water 7/12 °C. 2) Measured at 1 m in open field (ISO 3746). 3) Winter work mode: air 10 °C - warmed water 40/45 °C.										
4) Oil and refrigerant charge included.										

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Technical data sheet - PAH 2202-6802 T S Ka

PAH S		2202 Ka	2502 Ka	2802 Ka	3202 Ka	3602 Ka	4602 Ka	5202 Ka	6002 Ka	6802 Ka
Cooling capacity										
Cooling capacity 1)	kW	219,0	249,0	274,0	321,0	364,0	469,0	524,0	616,0	664,0
Absorbed power	kW	66,0	79,0	94,0	106,0	122,0	153,0	163,0	181,0	223,0
EER		3,32	3,15	2,91	3,03	2,98	3,07	3,21	3,40	2,98
Heating capacity										
Heating capacity 3)	kW	270,0	312,0	350,0	406,0	461,0	591,0	652,0	755,0	842,0
Absorbed power in heating	kW	63,0	76,0	91,0	102,0	117,0	147,0	157,0	174,0	214,0
COP		4,29	4,11	3,85	3,98	3,94	4,02	4,15	4,34	3,93
Screw compressors										
Quantity	n	2	2	2	2	2	2	2	2	2
Standard steps capacity	n	6	6	6	6	6	6	6	6	6
Continuous control capacity (option)	%					0 - 12 ÷ 100				
Circuits	n	2	2	2	2	2	2	2	2	2
Nominal absorbed current 1)	A	115,7	136,7	149,1	178,0	197,4	254,8	276,8	307,8	363,5
Nominal absorbed current 3)	A	114,4	130,3	143,3	163,8	181,1	233,4	254,7	287,2	326,7
Maximum absorbed current	A	158,0	196,0	248,0	288,0	324,0	364,0	430,0	462,0	560,0
Inrush current	A	434,0	547,0	609,0	729,0	848,0	983,0	1158,0	1254,0	1644,0
Inrush current with opt. PW/DS	A	285,0	365,0	414,0	494,0	585,0	702,0	827,0	895,0	1235,0
Axial fans										
Quantity	n	6	6	6	6	8	10	10	12	12
Rotation speed	rpm	660	660	660	660	660	660	660	660	660
Motors power	kW	7,5	7,5	7,5	7,5	10,0	12,5	12,5	15,0	15,0
Total air flow	m ³ /h	96.000	96.000	96.000	90.000	128.000	160.000	150.000	180.000	180.000
Total air flow	l/s	26.667	26.667	26.667	25.000	35.556	44.444	41.667	50.000	50.000
Shell and tube evaporator										
Quantity	n	1	1	1	1	1	1	1	1	1
Water flow rate 1)	m ³ /h	37,7	42,8	47,1	55,2	62,6	80,7	90,1	106,0	114,2
Water flow rate 1)	l/s	10,5	11,9	13,1	15,3	17,4	22,4	25,0	29,4	31,7
Pressure drop 1)	kPa	45	56	60	42	50	33	40	47	63
Water flow rate 3)	m ³ /h	46,4	53,7	60,2	69,8	79,3	101,7	112,1	129,9	144,8
Water flow rate 3)	l/s	12,9	14,9	16,7	19,4	22,0	28,2	31,2	36,1	40,2
Pressure drop 3)	kPa	60	80	86	59	69	45	55	62	55
Water volume	l	63	63	80	90	130	162	162	184	222
Pump Group P1										
Available pressure	kPa	141	126	123	136	125	130	115	95	176
Motor power	kW	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	15,0
Absorbed current	A	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1	26,5
Inrush current	A	70,0	70,0	70,0	70,0	70,0	70,0	70,0	70,0	194,0
Weight	kg	91	91	91	91	91	91	91	91	160
Pump group P1H										
Available pressure	kPa	191	177	173	187	176	182	167	148	284
Motor power	kW	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	22,0
Absorbed current	A	14,7	14,7	14,7	14,7	14,7	14,7	14,7	14,7	39,0
Inrush current	A	105,0	105,0	105,0	105,0	105,0	105,0	105,0	105,0	273,0
Weight	kg	99	99	99	99	99	99	99	99	192
Pump group PT										
Available pressure	kPa	188	173	169	181	168	168	150	125	276
Motor power	kW	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	22,0
Absorbed current	A	14,7	14,7	14,7	14,7	14,7	14,7	14,7	15,0	39,0
Inrush current	A	105,0	105,0	105,0	105,0	105,0	105,0	105,0	105,0	273,0
Weight	kg	196	196	196	196	196	196	196	196	379
Hydraulic kit										
Expansion vessel	l	25	25	25	25	25	25	25	25	25
Quantity	n.	2	2	2	2	2	2	2	2	2
Buffer tanks 900 l	•	•	•	•	•	•	•	•	•	•
Buffer tanks 1500 l	---	---	---	---	---	•	•	•	•	•
Buffer tanks 1800 l	---	---	---	---	---	---	•	•	•	•
Buffer tanks 2400 l	---	---	---	---	---	---	---	•	•	•
Electrical data										
Total absorbed power	kW	73,5	86,5	101,5	113,5	132,0	165,5	175,5	196,0	238,0
Total nominal absorbed current 1)	A	129,7	150,7	163,1	192,0	215,4	277,8	299,8	335,8	391,5
Total nominal absorbed current 3)	A	128,4	144,3	157,3	177,8	199,1	256,4	277,7	315,2	354,7
Maximum absorbed current	A	172,0	210,0	262,0	302,0	342,0	387,0	453,0	490,0	588,0
Total inrush current	A	448,0	561,0	623,0	743,0	866,0	1006,0	1181,0	1282,0	1672,0
Total inrush current with opt. PW/DS	A	299,0	379,0	428,0	508,0	603,0	725,0	850,0	923,0	1263,0
Sound pressure level										
Sound pressure level 2)	dB(A)	73	73	73	73	76	78	78	79	79
Dimensions										
Length	mm	5.082	5.082	5.082	5.082	6.120	7.158	7.158	8.196	9.035
Width	mm	2.244	2.244	2.244	2.244	2.244	2.244	2.244	2.244	2.244
Height	mm	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370
Transport weight 4)	kg	3.793	3.815	3.835	4.014	4.362	5.702	5.878	6.431	7.429
Weight in operation	kg	3.856	3.878	3.915	4.103	4.491	5.864	6.039	6.615	7.651
Refrigerant charge for each circuit	kg	69	69	71	83	85	103	120	136	140
Power supply										
Power supply	V / ph / Hz	400 V / 50 Hz / 3 Ph + T								
NOTES										
1) Summer work mode: air 35 °C - chilled water 7/12 °C. 2) Measured at 1 m in open field (ISO 3746). 3) Winter work mode: air 10 °C - warmed water 40/45 °C.										
4) Oil and refrigerant charge included.										

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Technical data sheet - PAH 1802-5202 T U Ka

PAH U		1802 Ka	2202 Ka	2502 Ka	2802 Ka	3202 Ka	3602 Ka	4602 Ka	5202 Ka
Cooling capacity									
Cooling capacity 1)	kW	197,0	212,0	238,0	271,0	321,0	361,0	464,0	524,0
Absorbed power	kW	55,0	69,0	84,0	95,0	106,0	123,0	155,0	163,0
EER		3,58	3,07	2,83	2,85	3,03	2,93	2,99	3,21
Heating capacity									
Heating capacity 3)	kW	238,0	266,0	306,0	349,0	406,0	460,0	589,0	652,0
Absorbed power in heating	kW	53,0	66,0	80,0	91,0	102,0	118,0	149,0	157,0
COP		4,49	4,03	3,83	3,84	3,98	3,90	3,95	4,15
Screw compressors									
Quantity	n	2	2	2	2	2	2	2	2
Standard steps capacity	n	6	6	6	6	6	6	6	6
Continuous control capacity (option)	%	0 - 12 ÷ 100							
Circuits	n	2	2	2	2	2	2	2	2
Nominal absorbed current 1)	A	79,7	118,2	141,0	161,8	183,3	199,4	257,5	281,8
Nominal absorbed current 3)	A	81,8	114,0	129,9	142,0	163,9	182,2	232,6	244,1
Maximum absorbed current	A	112,0	158,0	196,0	248,0	288,0	324,0	364,0	430,0
Inrush current	A	361,0	434,0	547,0	609,0	729,0	848,0	983,0	1158,0
Inrush current with opt. PW/DS	A	209,0	285,0	365,0	414,0	494,0	585,0	702,0	827,0
Axial fans									
Quantity	n	6	6	6	6	8	8	10	12
Rotation speed	rpm	530	530	530	530	530	530	530	530
Motors power	kW	4,6	4,6	4,6	4,6	6,2	6,2	7,5	9,2
Total air flow	m ³ /h	75.000	75.000	75.000	69.000	100.000	92.000	115.000	138.000
Total air flow	l/s	20.833	20.833	20.833	19.167	27.778	25.556	31.944	38.333
Nominal absorbed current	A	9,0	9,0	9,0	9,0	12,0	12,0	15,0	18,0
Shell and tube evaporator									
Quantity	n	1	1	1	1	1	1	1	1
Water flow rate 1)	m ³ /h	33,9	36,5	40,9	46,6	55,2	62,1	79,8	90,1
Water flow rate 1)	l/s	9,4	10,1	11,4	12,9	15,3	17,2	22,2	25,0
Pressure drop 1)	kPa	37	42	52	59	42	49	33	41
Water flow rate 3)	m ³ /h	40,9	45,8	52,6	60,0	69,8	79,1	101,3	112,1
Water flow rate 3)	l/s	11,4	12,7	14,6	16,7	19,4	22,0	28,1	31,2
Pressure drop 3)	kPa	47	58	77	85	59	69	45	55
Water volume	l	63	63	63	80	90	130	162	162
Pump Group P1									
Available pressure	kPa	150	144	132	124	136	126	131	115
Motor power	kW	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
Absorbed current	A	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1
Inrush current	A	70,0	70,0	70,0	70,0	70,0	70,0	70,0	70,0
Weight	kg	91	91	91	91	91	91	91	91
Pump group P1H									
Available pressure	kPa	200	194	182	174	187	177	183	167
Motor power	kW	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
Absorbed current	A	14,7	14,7	14,7	14,7	14,7	14,7	14,7	14,7
Inrush current	A	105,0	105,0	105,0	105,0	105,0	105,0	105,0	105,0
Weight	kg	99	99	99	99	99	99	99	99
Pump group PT									
Available pressure	kPa	198	192	179	170	181	169	170	150
Motor power	kW	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
Absorbed current	A	14,7	14,7	14,7	14,7	14,7	14,7	14,7	14,7
Inrush current	A	105,0	105,0	105,0	105,0	105,0	105,0	105,0	105,0
Weight	kg	196	196	196	196	196	196	196	196
Hydraulic kit									
Expansion vessel	l	25	25	25	25	25	25	25	25
Quantity	n.	2	2	2	2	2	2	2	2
Buffer tanks 900 l		•	•	•	•	•	•	•	•
Buffer tanks 1500 l		---	---	---	---	•	•	•	•
Buffer tanks 1800 l		---	---	---	---	---	---	•	•
Buffer tanks 2400 l		---	---	---	---	---	---	---	•
Electrical data									
Total absorbed power	kW	59,6	73,6	88,6	99,6	112,2	129,2	162,5	172,2
Total nominal absorbed current 1)	A	88,7	127,2	150,0	170,8	195,3	211,4	272,5	299,8
Total nominal absorbed current 3)	A	90,8	123,0	138,9	151,0	175,9	194,2	247,6	262,1
Maximum absorbed current	A	121,0	167,0	205,0	257,0	300,0	336,0	379,0	448,0
Total inrush current	A	370,0	443,0	556,0	618,0	741,0	860,0	998,0	1176,0
Total inrush current with opt. PW/DS	A	218,0	294,0	374,0	423,0	506,0	597,0	717,0	845,0
Sound pressure level									
Sound pressure level 2)	dB(A)	70	70	70	70	73	73	74	75
Dimensions									
Length	mm	5.082	5.082	5.082	5.082	6.120	6.120	7.158	8.196
Width	mm	2.244	2.244	2.244	2.244	2.244	2.244	2.244	2.244
Height	mm	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370
Transport weight 4)	kg	3.353	3.767	3.789	3.902	4.295	4.451	5.812	6.262
Weight in operation	kg	3.416	3.830	3.852	3.983	4.385	4.581	5.973	6.424
Refrigerant charge for each circuit	kg	69	69	69	82	83	99	120	134
Power supply									
Power supply	V / ph / Hz	400 V / 50 Hz / 3 Ph + T							
NOTES									
1) Summer work mode: air 35 °C - chilled water 7/12 °C. 2) Measured at 1 m in open field (ISO 3746). 3) Winter work mode: air 10 °C - warmed water 40/45 °C.									
4) Oil and refrigerant charge included.									