EPAE N HE Kc

AIR COOLED CHILLERS FOR OUTDOOR INSTALLATION
WITH SCROLL COMPRESSORS AND AXIAL FANS

Cooling capacity from 108 to 648 kW

Units are single-block liquid air-cooled chillers, suitable for external installation. Such units are equipped with one or more independent cooling circuits, as well as hermetic scroll compressors with R410A.

They are suitable for cooling water for any application and fluids of any type, such as e.g. glycol water, to be used in industrial processes.

All units are equipped in a silenced version obtained with soundproof compressors casing, while the fans are star-connected, so as to reduce rotation speed.

Units CE certified in compliance with the European regulation 2016/2281 ERP 2021.

MAIN COMPONENTS

STRUCTURE
Made of a base and a chassis manufactured in high-thickness galvanised steel, assembled with stainless steel rivets. All galvanised steel surfaces are powder-coated with colour RAL 7035.

COMPRESSOR
With R410a refrigerant, operating on one single circuit or on two independent circuits in either tandem or trio version. The compressors are installed on rubber isolation dampers, provided with direct-start motors cooled by suction gas and fitted with both overload protection and crankcase heaters. They are charged with polyester oil and the terminal board is IP54. The on-board microprocessor automatically controls the individual compressors to regulate the cooling capacity.

EVAPORATOR
Of single or dual circuit type, with high thickness close cell insulation and UV ray-proof. The evaporator is also equipped with safety water flow switch switching off the unit in case of low water flow through the evaporator.

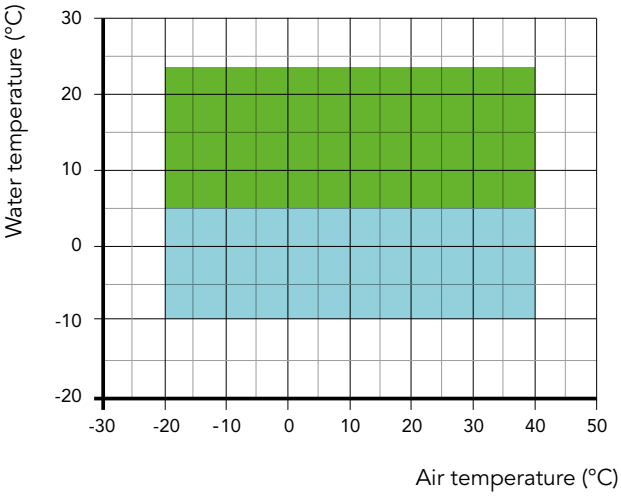
COILS
With micro-finned copper tubes, positioned in staggered rows and mechanically expanded into an aluminium finned pack. Fins are designed with such a shape providing the highest heat exchange efficiency (turbo-fin).The max operating pressure refrigerant side is 45 relative bar.

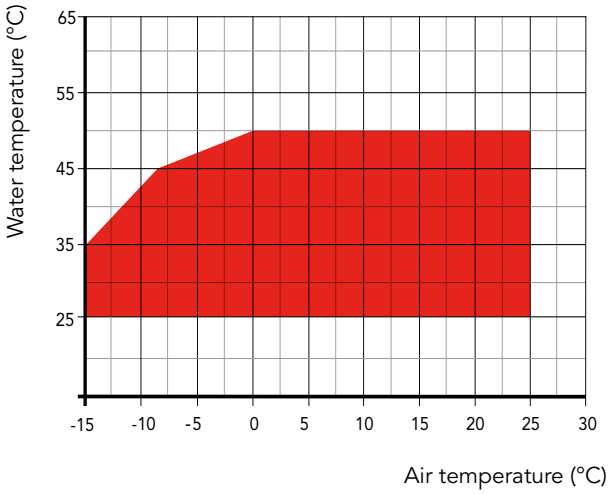
FANS
With external rotor directly coupled to a three-phase electronically commutated motor (EC) they have the possibility of a continuous regulation of the speed by means of a 0-10V signal completely managed by the microprocessor. Aluminum blades with wings profile are suitably designed to avoid any turbulence in the air detachment zone, granting in this way the max efficiency with the minimum noise level. The fan is equipped with galvanized steel protection grid painted after the construction. Thanks to a more accurate adjustment of air flow, they allow operation of the unit with external temperature down to -20 °C.

COOLING CIRCUITS
Each provided with a shut-off valve for refrigerant charge, antifreeze sensor, shut-off valves on liquid lines, certified liquid receiver, 4-way valve for cycle inversion, sight glass, dehydrating filter, high-pressure safety device on high pressure refrigerant side and electronic thermostatic expansion valve, as well as high and low pressure switches and gauges.

ELECTRICAL BOARD
Built in compliance with CE Norms, inside of which are placed the control system and the components for motors starting, wired and tested in the factory. It is made by a cabinet suitable for outdoor installation, containing power and control devices, microprocessor electronic board complete with keypad and display, for visualizing the several functions available, main switch of lock-door type, isolation transformer for auxiliary circuits, automatic switches, fuses and protection switches for compressors and fans, terminals for general alarm and remote ON/OFF, terminal board and possibility to interface to BMS systems.

OPERATING RANGE





Standard unit, cooling mode

Standard unit, cooling mode with glycol

Standard unit, heating mode

ACCESSORIES

EPAE N HE Kc		10010	12010	14010	16010	18020	20020	23020	25020
Amperometer	**A**	o	o	o	o	o	o	o	o
Electrical power supply different than standard	**AE**	o	o	o	o	o	o	o	o
Electrofin battery treatment	**BEF**	o	o	o	o	o	o	o	o
Soundproofed compressors cabinet with higher thickness material	**CFU**	o	o	o	o	o	o	o	o
Soundproofing jacket on compressors	**CI**	o	o	o	o	o	o	o	o
Compressors inrush counter	**CS**	o	o	o	o	o	o	o	o
Condensing coil protection grid	**GP**	o	o	o	o	o	o	o	o
Anti-intrusion grid	**GP2**	o	o	o	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	**GP3**	o	o	o	o	o	o	o	o
Victaulic insulation on pump side	**I1**	o	o	o	o	o	o	o	o
Victaulic insulation buffer tank side	**I2**	o	o	o	o	o	o	o	o
RS 485 Serial interface	**IH**	o	o	o	o	o	o	o	o
Seawood packing	**IM**	o	o	o	o	o	o	o	o
TCP/IP Protocol serial interface	**IWG**	o	o	o	o	o	o	o	o
Phase monitor	**MF**	o	o	o	o	o	o	o	o
Buffer tank module	**MV**	o	o	o	o	o	o	o	o
Pump group	**P1**	o	o	o	o	o	o	o	o
Pump group + tank	**P1+MV**	o	o	o	o	o	o	o	o
Higher available pressure pump group	**P1H**	o	o	o	o	o	o	o	o
Higher available pressure pump group + tank	**P1H+MV**	o	o	o	o	o	o	o	o
Double pump group	**P2**	o	o	o	o	o	o	o	o
Double pump group + tank	**P2+MV**	o	o	o	o	o	o	o	o
Higher available pressure double pump group	**P2H**	o	o	o	o	o	o	o	o
Higher available pressure double pump group + tank	**P2H+MV**	o	o	o	o	o	o	o	o
Group 1, 2-pole variable flow rate pump	**P12VS**	o	o	o	o	o	o	o	o
Group 1, 2-pole variable flow rate pump + tank	**P12VS+MV**	o	o	o	o	o	o	o	o
Group 1, High pressure 2-pole variable flow rate pump	**P12HVS**	o	o	o	o	o	o	o	o
Group 1, High pressure 2-pole variable flow rate pump + tank	**P12HVS+MV**	o	o	o	o	o	o	o	o
Group 2, 2-pole variable flow rate pump	**P22VS**	o	o	o	o	o	o	o	o
Group 2, 2-pole variable flow rate pump + tank	**P22VS+MV**	o	o	o	o	o	o	o	o
Group 2, High pressure 2-pole variable flow rate pump	**P22HVS**	o	o	o	o	o	o	o	o
Group 2, High pressure 2-pole variable flow rate pump + tamk	**P2HHVS+MV**	o	o	o	o	o	o	o	o
Rubber-type vibration dampers	**PA**	o	o	o	o	o	o	o	o
Spring-type vibration dampers	**PM**	o	o	o	o	o	o	o	o
Remote display	**PQ**	o	o	o	o	o	o	o	o
In-line twin pump group (only one working)	**PT**	o	o	o	o	o	o	o	o
In-line twin pump group (only one working) + tank	**PT+MV**	o	o	o	o	o	o	o	o
Group, Variable flow rate twin pump	**PTVS**	o	o	o	o	o	o	o	o
Group, Variable flow rate twin pump + tank	**PTVS+MV**	o	o	o	o	o	o	o	o
Anti-freeze heater on evaporator	**RA**	o	o	o	o	o	o	o	o
Shut-off valve on compressors discharge side	**RD**	o	o	o	o	o	o	o	o
Power factor correction system cosfi ≥0,9	**RF**	o	o	o	o	o	o	o	o
Shut-off valve on compressors suction side	**RH**	o	o	o	o	o	o	o	o
Compressor overload relays	**RL**	o	o	o	o	o	o	o	o
Condensing coil with pre-painted fins	**RM**	o	o	o	o	o	o	o	o
Partial heat recovery	**RP**	o	o	o	o	o	o	o	o
Copper/Copper coil	**RR**	o	o	o	o	o	o	o	o
Electronic thermostatic valve	**TE**	--	--	--	--	--	--	--	--
Voltmeter	**V**	o	o	o	o	o	o	o	o
Brine Version	**VB**	o	o	o	o	o	o	o	o
Solenoid valve	**VS**	o	o	o	o	o	o	o	o

• Standard, o Optional, -- Not available

EPAE N HE Kc		28020	32020	36020	42020	48020	52020	56020	60020
Amperometer	**A**	o	o	o	o	o	o	o	o
Electrical power supply different than standard	**AE**	o	o	o	o	o	o	o	o
Electrofin battery treatment	**BEF**	o	o	o	o	o	o	o	o
Soundproofed compressors cabinet with higher thickness material	**CFU**	o	o	o	o	o	o	o	o
Soundproofing jacket on compressors	**CI**	o	o	o	o	o	o	o	o
Compressors inrush counter	**CS**	o	o	o	o	o	o	o	o
Condensing coil protection grid	**GP**	o	o	o	o	o	o	o	o
Anti-intrusion grid	**GP2**	o	o	o	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	**GP3**	o	o	o	o	o	o	o	o
Victaulic insulation on pump side	**I1**	o	o	o	o	o	o	o	o
Victaulic insulation buffer tank side	**I2**	o	o	o	o	o	o	o	o
RS 485 Serial interface	**IH**	o	o	o	o	o	o	o	o
Seawood packing	**IM**	o	o	o	o	o	o	o	o
TCP/IP Protocol serial interface	**IWG**	o	o	o	o	o	o	o	o
Phase monitor	**MF**	o	o	o	o	o	o	o	o
Buffer tank module	**MV**	o	o	o	o	o	o	o	o
Pump group	**P1**	o	o	o	o	o	o	o	o
Pump group + tank	**P1+MV**	o	o	o	o	o	o	o	o
Higher available pressure pump group	**P1H**	o	o	o	o	o	o	o	o
Higher available pressure pump group + tank	**P1H+MV**	o	o	o	o	o	o	o	o
Double pump group	**P2**	o	o	o	o	o	o	o	o
Double pump group + tank	**P2+MV**	o	o	o	o	o	o	o	o
Higher available pressure double pump group	**P2H**	o	o	o	o	o	o	o	o
Higher available pressure double pump group + tank	**P2H+MV**	o	o	o	o	o	o	o	o
Group 1, 2-pole variable flow rate pump	**P12VS**	o	o	o	o	o	o	o	o
Group 1, 2-pole variable flow rate pump + tank	**P12VS+MV**	o	o	o	o	o	o	o	o
Group 1, High pressure 2-pole variable flow rate pump	**P12HVS**	o	o	o	o	o	o	o	o
Group 1, High pressure 2-pole variable flow rate pump + tank	**P12HVS+MV**	o	o	o	o	o	o	o	o
Group 2, 2-pole variable flow rate pump	**P22VS**	o	o	o	o	o	o	o	o
Group 2, 2-pole variable flow rate pump + tank	**P22VS+MV**	o	o	o	o	o	o	o	o
Group 2, High pressure 2-pole variable flow rate pump	**P22HVS**	o	o	o	o	o	o	o	o
Group 2, High pressure 2-pole variable flow rate pump + tamk	**P2HHVS+MV**	o	o	o	o	o	o	o	o
Rubber-type vibration dampers	**PA**	o	o	o	o	o	o	o	o
Spring-type vibration dampers	**PM**	o	o	o	o	o	o	o	o
Remote display	**PQ**	o	o	o	o	o	o	o	o
In-line twin pump group (only one working)	**PT**	o	o	o	o	o	o	o	o
In-line twin pump group (only one working) + tank	**PT+MV**	o	o	o	o	o	o	o	o
Group, Variable flow rate twin pump	**PTVS**	o	o	o	o	o	o	o	o
Group, Variable flow rate twin pump + tank	**PTVS+MV**	o	o	o	o	o	o	o	o
Anti-freeze heater on evaporator	**RA**	o	o	o	o	o	o	o	o
Shut-off valve on compressors discharge side	**RD**	o	o	o	o	o	o	o	o
Power factor correction system cosfi ≥0,9	**RF**	o	o	o	o	o	o	o	o
Shut-off valve on compressors suction side	**RH**	o	o	o	o	o	o	o	o
Compressor overload relays	**RL**	o	o	o	o	o	o	o	o
Condensing coil with pre-painted fins	**RM**	o	o	o	o	o	o	o	o
Partial heat recovery	**RP**	o	o	o	o	o	o	o	o
Copper/Copper coil	**RR**	o	o	o	o	o	o	o	o
Electronic thermostatic valve	**TE**	--	--	--	--	--	--	--	--
Voltmeter	**V**	o	o	o	o	o	o	o	o
Brine Version	**VB**	o	o	o	o	o	o	o	o
Solenoid valve	**VS**	o	o	o	o	o	o	o	o

• Standard, o Optional, -- Not available

TECHNICAL DATA

EPAE N HE Kc		10010	12010	14010	16010	18020	20020	23020	25020
Cooling capacity	kW	108	133	154	181	193	215	235	268
Total input power	kW	35,6	43,4	50,2	58,5	62,4	68,5	77,1	86,9
Nominal input current	A	63,8	74,7	40,9	98,2	112	119	64,8	151
EER	W/W	3,03	3,06	3,07	3,09	3,09	3,14	3,05	3,08
Circuits	n°	1	1	1	1	2	2	2	2
Compressors	n°	2	2	2	2	4	4	4	4
Refrigerant data R410A									
Refrigerant charge	kg	51	68	67	89	48	64	64	68
Global warming potential (GWP)	-	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	106,5	142,0	139,9	185,8	100,2	133,6	133,6	142,0
Axial fans (1)									
Quantity	n°	3	3	4	4	6	6	6	8
Total air flow	m^3/h	88749	84557	117155	112685	140988	136511	136204	189239
Total power input	kW	6,8	7,1	9,1	9,5	11,3	11,6	11,6	15,0
Total input current	A	10,4	10,7	13,9	14,3	18,0	18,3	18,3	23,8
Evaporator (2)									
Quantity	n°	1	1	1	1	1	1	1	1
Water flow	m^3/h	18,6	25,8	26,4	31,1	33,3	37,1	40,4	46,1
Pressure drop	kPa	8,4	14,8	11,6	14,6	23,7	28,4	26,2	31,7
Heat pump mode (3)									
Nominal heating capacity	kW	130	149	187	214	227	257	287	317
Total input power	kW	30,7	36,4	43,1	49,2	54,5	60,5	68,4	78,7
Total nominal current	A	57,0	66,8	77,3	88,4	101,0	108,0	120,0	138,0
SCOP	-	3,32	3,76	3,53	3,56	3,45	3,69	3,69	3,63
COP	-	4,23	4,09	4,34	4,35	4,17	4,25	4,20	4,03
Weight									
Transport weight	kg	1325	1452	1644	1787	2185	2431	2431	2852
Operating weight	kg	1334	1463	1655	1804	2202	2447	2447	2871
Dimensions									
Length	mm	3700	3700	4740	4740	3775	3775	3775	4750
Width	mm	1370	1370	1370	1370	2300	2300	2300	2300
Height	mm	2420	2420	2420	2420	2560	2560	2560	2560
Sound data									
Total LWA (4)	dB(A)	84	87	87	88	89	91	91	91
Total SPL 10m (5)	dB(A)	52	55	55	56	57	58	58	59
Power supply									
Voltage/phase/frequency	V/ph/Hz	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50
General electrical data									
Maximum input power	[kW]	52	61	74	83	93	101	111	128
Maximum input current	[A]	97	112	133	150	167	175	196	224
Inrush current	[A]	336	350	378	476	369	378	435	463

(1) Ambient air temperature 35°C
(2) Fluid: Water - In/out Temperature: 12/7°C
(3) Air temperature 7°C, Humidity 87%, water temperature 40/45°C.
(4) Sound power level in accordance with ISO 3744.
(5) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

EPAE N HE Kc		28020	32020	36020	42020	48020	52020	56020	60020
Cooling capacity	kW	306	345	385	435	515	563	608	648
Total input power	kW	100	114	130	144	171	188	203	219
Nominal input current	A	172,0	193,0	219,0	243,0	289,0	318,0	339,0	365,0
EER	W/W	3,06	3,03	2,96	3,02	3,01	2,99	3,00	2,96
Circuits	n°	2	2	2	2	2	2	2	2
Compressors	n°	4	4	4	4	6	6	6	6
Refrigerant data R410A									
Refrigerant charge	kg	66	88	82	108	130	116	156	156
Global warming potential (GWP)	-	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	137,8	183,7	171,2	225,5	271,4	242,2	325,7	325,7
Axial fans (1)									
Quantity	n°	8	8	10	10	12	14	14	144
Total air flow	m^3/h	188789	183108	235061	227604	273861	330209	319794	319299
Total power input	kW	14,9	15,4	18,7	19,2	23,1	26,1	27,0	26,9
Total input current	A	23,7	24,2	29,7	30,3	36,4	41,4	42,4	42,3
Evaporator (2)									
Quantity	n°	1	1	1	1	1	1	1	1
Water flow	m^3/h	52,7	59,4	66,2	74,8	88,6	96,9	104,6	111,5
Pressure drop	kPa	37,2	40,1	40,5	33,5	44,9	45,6	52,7	58,7
Heat pump mode (3)									
Nominal heating capacity	kW	357	401	460	516	626	648	695	735
Total input power	kW	89,1	100,0	114,0	126,0	127,0	165,0	177,0	191,0
Total nominal current	A	157,0	175,0	196,0	216,0	260,0	284,0	305,0	3290
SCOP	-	3,62	3,77	3,62	3,82	3,58	3,52	--	--
COP	-	4,01	4,01	4,04	4,10	4,93	3,93	3,93	3,85
Weight									
Transport weight	kg	3034	3482	3610	3955	4597	4697	5190	5220
Operating weight	kg	3056	3506	3645	3995	4646	4756	5248	5279
Dimensions									
Length	mm	4750	4750	5725	5725	6700	7675	7675	7675
Width	mm	2300	2300	2300	2300	2300	2300	2300	2300
Height	mm	2560	2560	2560	2560	2560	2560	2560	2560
Sound data									
Total LWA (4)	dB(A)	91	91	92	94	92	95	95	96
Total SPL 10m (5)	dB(A)	59	58	60	62	60	62	62	63
Power supply									
Voltage/phase/frequency	V/ph/Hz	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50
General electrical data									
Maximum input power	[kW]	148	168	192	210	253	276	294	312
Maximum input current	[A]	258	291	333	367	437	479	513	547
Inrush current	[A]	502	536	658	693	681	804	838	873

(1) Ambient air temperature 35°C
(2) Fluid: Water - In/out Temperature: 12/7°C
(3) Air temperature 7°C, Humidity 87%, water temperature 40/45°C.
(4) Sound power level in accordance with ISO 3744.
(5) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.