

FullPOWER ECO FullPOWER ECOA1

TCAVB 2310÷31550; TCAVT-
TCAVQ 2330÷31430

Cooling capacity 314,7÷1550,1 kW



Features

High energy efficiency chillers in R1234ze and R515B

Extended operating limits

Linear capacity control down to 12,5%

Wide range of accessories

Integrated MASTER/SLAVE control

Tax incentives*



Packaged air-cooled water chillers with axial fans. Series with semi-hermetic screw compressors and R1234ze or R515B refrigerant gas.

Construction features

- Compressor: high energy efficiency semi-hermetic screw compressor with linear capacity control down to 12,5% at part load. Star-delta limited start-up and complete with integral protection, casing heater and refrigerant gas outlet piping shut-off valve.
- Water side heat exchanger: dry expansion shell and tube exchanger with counterflow heat exchange, complete with closed cell polyurethane foam rubber insulation, water flow differential pressure switch and Victaulic fittings.
- Air side heat exchanger: with micro-channels.
- Fan: external rotor axial type electric fans equipped with internal thermal protection, accident protection grilles and proportional electronic device for continuous fan rotation speed adjustment.
- Control: microprocessor electronic control.
- Structure: made of galvanised and painted steel plate with polyester powder coating.

- The unit is also complete with:
 - display of cooling circuit high/low pressure;
 - electronic expansion valve;
 - clock board;
 - Master/Slave control up to 4 units in parallel;
 - control of Variable Primary Flow (VPF_R).

Versions

- B - Standard efficiency version (TCAVBE-TCAVBO).
- T - High efficiency version with oversized condensing section (TCAVTE-TCAVTO).
- Q - Super-silenced version complete with soundproof compressor technical compartment, reduced speed fans and oversized condensing section (TCAVQE-TCAVQO).

Models

- TCAVBE: standard efficiency unit designed for cooling only with R1234ze gas.
- TCAVTE: high efficiency unit designed for cooling only with R1234ze gas.
- TCAVQE: super silenced unit designed for cooling only with R1234ze gas.
- TCAVBO: standard efficiency unit designed for cooling only with R515B gas.
- TCAVTO: high efficiency unit designed for cooling only with R515B gas.
- TCAVQO: super silenced unit designed for cooling only with R515B gas.

Factory fitted accessories

- PUMP with single or double electric pump, one of which automatic in standby. The electric pumps are available in the low or high head versions.
- Inverter pump control for unit start-up.
- Desuperheater.
- 100% heat recovery unit.
- Freecooling module management.
- Condensing control with fans with EC motor
- Condensing control with over-pressure fans (B-T versions only)
- Power factor correction capacitors ($\cos\phi > 0.94$).
- Compressor circuit breaker switches.
- Electro-mechanical flow switch.
- Oil level sensor.
- Forced limit of power consumption.
- Forced noise limit.
- Energy parameter measuring device.
- Soft starter.
- Soundproofed compressor box.
- Cooling circuit intake valves.
- Refrigerant leak detector.
- Cooling circuit high and low pressure gauges.
- Double safety valves.
- Coil protection nets or buffer panels
- Microchannel coils with E-coating treatment, copper/aluminium, copper/copper, pre-painted copper/aluminium
- Control of min/max power supply voltage.
- Digital input for double set-point.
- 4-20 mA analogue signal for shifting set-point.
- Evaporator antifreeze heater, electrical panel, electric pumps and heat exchangers for heat recovery if applicable.
- Low temperature water production.
- Interfaces for serial communication with other devices.
- Colour touch user keypad (fitted on the machine or remotely) with 7" display
- Spring anti-vibration mounts
- Protective packaging

Separately supplied accessories

- Remote keypad with display.
- Thermostat with display.
- Rhoss supervisors for unit monitoring and remote management.
- Rhoss sequencer for integrated management of multiple chillers.

Technical data

TCAVBE-TCAVBO MODEL		2310	2350	2420	2500	2560	2650	2730	2800
① Nominal cooling capacity	kW	314,7	354,6	423,5	503,6	564,5	652,4	729,5	801,4
① E.E.R.		3,12	3,11	2,93	3,12	3	3,11	3,03	3,12
① Absorbed power	kW	100,9	114	144,5	161,4	188,2	209,8	240,8	256,9
TCAVBE-TCAVBO MODEL		2310	2350	2420	2500	2560	2650	2730	2800
② Sound pressure	dB(A)	65	65	66,5	66,5	67,5	67,5	67,5	68
③ Sound power	dB(A)	97	97	99	99	100	100	100	101
Screw compressors	n.	2	2	2	2	2	2	2	2
Circuits	n.	2	2	2	2	2	2	2	2
Electrical supply	V-ph-Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
DIMENSIONS AND WEIGHTS		2310	2350	2420	2500	2560	2650	2730	2800
L – Width	mm	3800	3800	3800	4900	4900	6000	6000	7160
H – Height	mm	2480	2480	2480	2480	2480	2480	2480	2480
P – Depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
④ TCAVBE-TCAVBO weight	kg	2892	2982	3707	4049	4199	4969	5451	5996
TCAVTE-TCAVTO-TCAVQE-TCAVQO MODEL		2330	2370	2440	2520	2580	2670	2760	2830
① Nominal cooling capacity	kW	335,6	372,6	441,6	520,5	584,6	675,5	759,5	829,4
① Nominal cooling capacity	kW	327,7	361,6	428,6	499,5	566,6	655,5	736,5	796,4
① E.E.R.		3,36	3,32	3,29	3,37	3,3	3,37	3,27	3,35
① E.E.R.		3,25	3,19	3,1	3,13	3,08	3,14	3,02	3,09
① Absorbed power	kW	99,9	112,2	134,2	154,5	177,2	200,4	232,3	247,6
① Absorbed power	kW	100,8	113,4	138,3	159,6	184	208,8	243,9	257,7
TCAVTE-TCAVTO-TCAVQE-TCAVQO MODEL		2330	2370	2440	2520	2580	2670	2760	2830
② Sound pressure	dB(A)	65,5	65,5	66,5	66,5	67,5	67,5	67,5	68
② Sound pressure	dB(A)	56,5	56,5	57,5	57,5	58,5	58,5	58,5	60
③ Sound power	dB(A)	98	98	99	99	100	100	100	101
③ Sound power	dB(A)	89	89	90	90	91	91	91	93
Screw compressors	n.	2	2	2	2	2	2	2	2
Circuits	n.	2	2	2	2	2	2	2	2
Electrical supply	V-ph-Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
DIMENSIONS AND WEIGHTS		2330	2370	2440	2520	2580	2670	2760	2830
L – Width	mm	4900	4900	4900	6000	6000	7160	7160	8260
H – Height	mm	2480	2480	2480	2480	2480	2480	2480	2480
P – Depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
④ TCAVTE-TCAVTO weight	kg	3267	3347	4039	4395	4511	5446	5896	6364
④ TCAVQE-TCAVQO weight	kg	3542	3622	4364	4720	4836	5876	6326	6794
SEASONAL ENERGY PERFORMANCE									
TCAVBE-TCAVBO MODEL SEASONAL PERFORMANCE IN COOLING MODE		2310	2350	2420	2500	2560	2650	2730	2800
① Pdesignc (EN 14825)	kW	314,7	354,6	423,5	503,6	564,5	652,4	729,5	801,4
① SEER (EN 14825)		4,68	4,61	4,58	4,68	4,57	4,67	4,6	4,64
② ηs,c	%	184	182	180	184	180	184	181	183
TCAVTE-TCAVTO MODEL SEASONAL PERFORMANCE IN COOLING MODE		2330	2370	2440	2520	2580	2670	2760	2830
① Pdesignc (EN 14825)	kW	335,6	372,6	441,6	520,5	584,6	675,5	759,5	829,4
① SEER (EN 14825)		4,83	4,81	4,73	4,83	4,79	4,83	4,79	4,82
② ηs,c	%	190	190	186	190	188	190	189	190
TCAVQE-TCAVQO MODEL SEASONAL PERFORMANCE IN COOLING MODE		2330	2370	2440	2520	2580	2670	2760	2830
① Pdesignc (EN 14825)	kW	327,7	361,6	428,6	499,5	566,6	655,5	736,5	796,4
① SEER (EN 14825)		4,79	4,78	4,68	4,77	4,73	4,77	4,72	4,74
② ηs,c	%	189	188	184	188	186	188	186	187
TCAVBE-TCAVBO MODEL		2860	2960	21030	21110	31180	31290	31410	31550
① Nominal cooling capacity	kW	861,3	961,4	1032,3	1113,4	1179,3	1293,3	1409,2	1550,1
① E.E.R.		3,02	3,11	3,11	3,05	3,03	3,11	3,08	3,01
① Absorbed power	kW	285,2	309,1	331,9	365	389,2	415,9	457,5	515
TCAVBE-TCAVBO MODEL		2860	2960	21030	21110	31180	31290	31410	31550
② Sound pressure	dB(A)	69	69	70	71	70	71	71	72
③ Sound power	dB(A)	102	102	103	104	103	104	104	105

Screw compressors	n.	2	2	2	2	3	3	3	3
Circuits	n.	2	2	2	2	3	3	3	3
Electrical supply	V-ph-Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
DIMENSIONS AND WEIGHTS		2860	2960	21030	21110	31180	31290	31410	31550
L – Width	mm	7160	8260	9360	9360	9360	10530	11630	12730
H – Height	mm	2480	2480	2480	2480	2480	2480	2480	2480
P – Depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
④ TCAVBE-TCAVBO weight	kg	6124	6561	7191	7399	8991	9497	10025	10705
TCAVTE-TCAVTO-TCAVQE-TCAVQO MODEL		2890	2980	21060	21150	31210	31330	31430	
① Nominal cooling capacity	kW	893,5	980,4	1064,4	1149,3	1211,4	1332,2	1429,2	
① Nominal cooling capacity	kW	857,5	941,4	1021,4	1103,3	1163,4	1279,3	1372,2	
① E.E.R.		3,31	3,35	3,33	3,28	3,27	3,27	3,22	
① E.E.R.		3,05	3,09	3,05	3,03	3	3	2,98	
① Absorbed power	kW	269,9	292,7	319,6	350,4	370,5	407,4	443,9	
① Absorbed power	kW	281,1	304,7	334,9	364,1	387,8	426,4	460,5	
TCAVTE-TCAVTO-TCAVQE-TCAVQO MODEL		2890	2980	21060	21150	31210	31330	31430	
② Sound pressure	dB(A)	69	69	70	71	70	71	71	
② Sound pressure	dB(A)	61	61	62	62	62	63	63	
③ Sound power	dB(A)	102	102	103	104	103	104	104	
③ Sound power	dB(A)	94	94	95	95	95	96	96	
Screw compressors	n.	2	2	2	2	3	3	3	
Circuits	n.	2	2	2	2	3	3	3	
Electrical supply	V-ph-Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	
DIMENSIONS AND WEIGHTS		2890	2980	21060	21150	31210	31330	31430	
L – Width	mm	8260	9360	10460	10460	10530	11630	12730	
H – Height	mm	2480	2480	2480	2480	2480	2480	2480	
P – Depth	mm	2260	2260	2260	2260	2260	2260	2260	
④ TCAVTE-TCAVTO weight	kg	6591	6961	7549	7677	9377	9795	10175	
④ TCAVQE-TCAVQO weight	kg	7021	7391	7979	8107	9922	10340	10720	
SEASONAL ENERGY PERFORMANCE									
TCAVBE-TCAVBO MODEL SEASONAL PERFORMANCE IN COOLING MODE		2860	2960	21030	21110	31180	31290	31410	31550
① Pdesignc (EN 14825)	kW	861,3	961,4	1032,3	1113,4	1179,3	1293,3	1409,2	1550,1
① SEER (EN 14825)		4,6	4,64	4,63	4,59	4,64	4,66	4,68	4,67
② ηs,c	%	181	183	182	181	183	184	184	184
TCAVTE-TCAVTO MODEL SEASONAL PERFORMANCE IN COOLING MODE		2890	2980	21060	21150	31210	31330	31430	
① Pdesignc (EN 14825)	kW	893,5	980,4	1064,4	1149,3	1211,4	1332,2	1429,2	
① SEER (EN 14825)		4,76	4,78	4,8	4,78	4,84	4,84	4,85	
② ηs,c	%	188	188	189	188	191	191	191	
TCAVQE-TCAVQO MODEL SEASONAL PERFORMANCE IN COOLING MODE		2890	2980	21060	21150	31210	31330	31430	
① Pdesignc (EN 14825)	kW	857,5	941,4	1021,4	1103,3	1163,4	1279,3	1372,2	
① SEER (EN 14825)		4,69	4,71	4,72	4,71	4,77	4,77	4,79	
② ηs,c	%	185	186	186	186	188	188	189	

Data at the following conditions:

- ① Air: 35°C – Water: 12/7°C.
- ② In open field (Q = 2) at 10 m from the unit.
- ③ Total sound power level in dB(A) based on measurements carried out in accordance with regulation UNI EN-ISO 9614.
- ④ Weight referred to the unit without load and not accessorised.
- TCAVQE-TCAVQO super-silenced versions.
Performance according to EN 14511.
- ① Low temperature application (7°C)
- ② Seasonal energy efficiency: low temperature cooling (EU Regulation 2016/2281)



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