

FullPOWER ECO VFD

FullPOWER ECOA1

VFD

TCAIT-TCAIQ 1325÷31405

Cooling capacity 312,6÷1401,2 kW



Features

HFO R1234ze ecological gas

R515B ecological gas with low GWP and A1 category

Screw compressors with variable Vi, suitable for all applications

Continuous power adjustment down to 8%

SEER up to 5,49 with FIEC accessory (EC fans)

Wide range of accessories

Integrated MASTER/SLAVE control



Tax incentives*

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

Construction features

- Compressor: high energy efficiency semi-hermetic screw compressor with variable Vi intrinsic compression ratio, star-delta limited start-up, inverter rotation adjustment (down to 8% at part load), complete with integral protection, casing heater, oil level sensor 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;
 - oil level sensor;
 - clock board;
 - Master/Slave control up to 4 units in parallel;
 - control of Variable Primary Flow (VPF_R).

Versions

- T - High efficiency version with oversized condensing section (TCAITE-TCAITO).
- Q - Super-silenced version complete with compressor technical compartment soundproofing, reduced speed fans and oversized condensing section (TCAIQE-TCAIQO).

Models

- TCAITE: high efficiency unit designed for cooling only with R1234ze gas.
- TCAIQE: super silenced unit designed for cooling only with R1234ze gas.
- TCAITO: high efficiency unit designed for cooling only with R515B gas.
- TCAIQO: 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 (T version only).
- Power factor correction capacitors ($\cos\phi > 0.94$).
- Electro-mechanical flow switch.
- EMC anti-disturbance filters.
- Forced limit of power consumption.
- Forced noise limit.
- Energy parameter measuring device.
- 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

TCAITE-TCAITO-TCAIQE-TCAIQO MODEL		1325	1395	2445	2505	2565	2645	2705	2835
❶ Nominal cooling capacity	kW	322,6	391,6	443,6	507,5	567,6	641,5	707,5	832,5
❶ Nominal cooling capacity	kW	312,6	379,6	430,6	492,5	550,6	622,5	686,5	807,5
❶ E.E.R.		3,25	3,18	3,12	3,22	3,15	3,25	3,16	3,22
❶ E.E.R.		3,03	2,96	2,91	3,01	2,94	3,01	2,95	3,01
❶ Absorbed power	kW	99,3	123,1	142,2	157,6	180,2	197,4	223,9	258,5
❶ Absorbed power	kW	103,2	128,2	148	163,6	187,3	206,8	232,7	268,3
TCAITE-TCAITO-TCAIQE-TCAIQO MODEL		1325	1395	2445	2505	2565	2645	2705	2835
❷ Sound pressure	dB(A)	69	70	70,5	70,5	70,5	71,5	71,5	72
❷ Sound pressure	dB(A)	60	61	61,5	61,5	62,5	62,5	63,5	64
❸ Sound power	dB(A)	101	102	103	103	103	104	104	105
❸ Sound power	dB(A)	92	93	94	94	95	95	96	97
Screw compressors	n.	1	1	2	2	2	2	2	2
Circuits	n.	1	1	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		1325	1395	2445	2505	2565	2645	2705	2835
L – Width	mm	3890	4990	4990	6090	6090	7250	8350	9450
H – Height	mm	2480	2480	2480	2480	2480	2480	2480	2480
P – Depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
❹ TCAITE-TCAITO weight	kg	2742	3529	4015	4455	4491	5041	5426	6101
❹ TCAITE-TCAITO weight	kg	2922	3709	4340	4780	4816	5471	5856	6531
SEASONAL ENERGY PERFORMANCE		1325	1395	2445	2505	2565	2645	2705	2835
TCAITE-TCAITO MODEL SEASONAL PERFORMANCE IN COOLING MODE									
❶ Pdesignc (EN 14825)	kW	322,6	391,6	443,6	507,5	567,6	641,5	707,5	832,5
❶ SEER (EN 14825)		5,09	5,12	5,25	5,31	5,21	5,32	5,3	5,33
❷ ηs,c	%	201	202	207	210	206	210	209	210
TCAIQE-TCAIQO MODEL SEASONAL PERFORMANCE IN COOLING MODE									
❶ Pdesignc (EN 14825)	kW	312,6	379,6	430,6	492,5	550,6	622,5	686,5	807,5
❶ SEER (EN 14825)		5,03	5,05	5,17	5,24	5,33	5,25	5,23	5,26
❷ ηs,c	%	198	199	204	206	210	207	206	208
TCAITE-TCAITO-TCAIQE-TCAIQO MODEL			2905	21015	21105	21205	31295	31405	
❶ Nominal cooling capacity	kW		900,4	1013,5	1105,3	1202,2	1294,3	1401,2	
❶ Nominal cooling capacity	kW		873,5	983,5	1072,3	1166,3	1255,3	1359,2	
❶ E.E.R.			3,17	3,15	3,14	3,16	3,11	3,09	
❶ E.E.R.			2,96	2,94	2,93	2,95	2,9	2,89	
❶ Absorbed power	kW		284	321,7	352	380,4	416,2	453,5	
❶ Absorbed power	kW		295,1	334,5	366	395,4	432,9	470,3	
TCAITE-TCAITO-TCAIQE-TCAIQO MODEL			2905	21015	21105	21205	31295	31405	
❷ Sound pressure	dB(A)		73	73	73	73	74	74	
❷ Sound pressure	dB(A)		64	64	65	65	66	66	
❸ Sound power	dB(A)		106	106	106	106	107	107	
❸ Sound power	dB(A)		97	97	98	98	99	99	
Screw compressors	n.		2	2	2	2	3	3	
Circuits	n.		2	2	2	2	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	
DIMENSIONS AND WEIGHTS			2905	21015	21105	21205	31295	31405	
L – Width	mm		9450	9450	10550	11650	12730	12730	
H – Height	mm		2480	2480	2480	2480	2480	2480	
P – Depth	mm		2260	2260	2260	2260	2260	2260	
❹ TCAITE-TCAITO weight	kg		6241	6879	7177	7447	9035	9445	
❹ TCAITE-TCAITO weight	kg		6671	7309	7607	7877	9580	9990	
SEASONAL ENERGY PERFORMANCE			2905	21015	21105	21205	31295	31405	
TCAITE-TCAITO MODEL SEASONAL PERFORMANCE IN COOLING MODE									
❶ Pdesignc (EN 14825)	kW		900,4	1013,5	1105,3	1202,2	1294,3	1401,2	
❶ SEER (EN 14825)			5,26	5,21	5,32	5,31	5,33	5,27	
❷ ηs,c	%		207	206	210	209	210	208	

TCAIQE-TCAIQO MODEL SEASONAL PERFORMANCE IN COOLING MODE							
① Pdesignc (EN 14825)	kW	873,5	983,5	1072,3	1166,3	1255,3	1359,2
① SEER (EN 14825)		5,18	5,14	5,25	5,24	5,27	5,2
② $\eta_{s,c}$	%	204	203	207	207	208	205

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.
 - TCAIQE-TCAIQO 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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