

FullPOWER ECO VFD (1+i) FullPOWER ECOA1 VFD (1+i) TCAIT-TCAIQ 2390÷31380



Cooling capacity 377,7÷1380,2 kW

1+i solution (stepless & inverter compressors)

Continuous power adjustment downt to 8%

SEER up to 5,24 with FIEC accessory (EC fans)

R1234ze and R515B (A1 category) ecological gases

Wide range of accessories

Integrated MASTER/SLAVE control

Tax incentives*



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

Construction features

- Compressor: high energy efficiency semi-hermetic screw driven by fixed speed motor with linear capacity control and variable Vi regulated by inverter (down to 8% at part load), limited inrush start-up, complete with integral protection, casing heater, oil level sensor and shut-off valve on refrigerant gas outlet piping.
- 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 ($\cos\phi > 0.94$).
- Compressor circuit breaker switches.
- Electro-mechanical flow switch.
- EMC anti-disturbance filters.
- 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 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		2390	2430	2510	2600	2700	2810	2900	2990
❶ Nominal cooling capacity	kW	389,7	434,6	508,5	604,4	699,5	807,4	896,4	989,5
❶ Nominal cooling capacity	kW	377,7	421,6	493,5	580,4	678,5	783,4	869,5	959,5
❶ E.E.R.		3,25	3,14	3,26	3,28	3,26	3,15	3,2	3,2
❶ E.E.R.		3,03	2,94	3,05	3,04	3,01	2,94	2,96	2,96
❶ Absorbed power	kW	119,9	138,4	156	184,3	214,6	256,3	280,1	309,2
❶ Absorbed power	kW	124,7	143,4	161,8	190,9	225,4	266,5	293,8	324,2
TCAITE-TCAITO-TCAIQE-TCAIQO MODEL		2390	2430	2510	2600	2700	2810	2900	2990
❷ Sound pressure	dB(A)	69	70	70	70	70	71	72	72
❷ Sound pressure	dB(A)	60	61	61	61	62	63	63	63
❸ Sound power	dB(A)	101	102	102	103	103	104	105	105
❸ Sound power	dB(A)	92	93	93	94	95	96	96	96
Screw compressors	n.	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1	1 inverter + 1
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		2390	2430	2510	2600	2700	2810	2900	2990
L – Width	mm	4990	4990	6090	7250	7250	8350	9450	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	3739	4085	4485	5069	5596	6034	6811	7059
❹ TCAIQE-TCAIQO weight	kg	4064	4410	4810	5499	6026	6464	7241	7489
SEASONAL ENERGY PERFORMANCE		2390	2430	2510	2600	2700	2810	2900	2990
TCAITE-TCAITO MODEL SEASONAL PERFORMANCE IN COOLING MODE									
❶ Pdesignc (EN 14825)	kW	389,7	434,6	508,5	604,4	699,5	807,4	896,4	989,5
❶ SEER (EN 14825)		5	4,95	5,02	5,03	4,99	5,01	5,02	5
❷ ηs,c	%	197	195	198	198	197	198	198	197
TCAIQE-TCAIQO MODEL SEASONAL PERFORMANCE IN COOLING MODE									
❶ Pdesignc (EN 14825)	kW	377,7	421,6	493,5	580,4	678,5	783,4	869,5	959,5
❶ SEER (EN 14825)		4,93	4,89	4,96	4,96	4,92	4,95	4,94	4,93
❷ ηs,c	%	194	193	195	195	194	195	195	194
TCAITE-TCAITO-TCAIQE-TCAIQO MODEL					21100	21170	31260	31380	
❶ Nominal cooling capacity			kW		1101,4	1169,3	1259,3	1380,2	
❶ Nominal cooling capacity			kW		1068,4	1122,3	1221,3	1325,2	
❶ E.E.R.					3,15	3,24	3,17	3,21	
❶ E.E.R.					2,94	3	2,95	2,94	
❶ Absorbed power			kW		349,7	360,9	397,3	430	
❶ Absorbed power			kW		363,4	374,1	414	450,7	
TCAITE-TCAITO-TCAIQE-TCAIQO MODEL					21100	21170	31260	31380	
❷ Sound pressure			dB(A)		72	72	73	73	
❷ Sound pressure			dB(A)		64	64	65	65	
❸ Sound power			dB(A)		105	105	106	106	
❸ Sound power			dB(A)		97	97	98	98	
Screw compressors			n.		1 inverter + 1	1 inverter + 1	1 inverter + 2	1 inverter + 2	
Circuits			n.		2	2	3	3	
Electrical supply			V-ph-Hz		400-3-50	400-3-50	400-3-50	400-3-50	
DIMENSIONS AND WEIGHTS					21100	21170	31260	31380	
L – Width			mm		10550	11650	11630	12730	
H – Height			mm		2480	2480	2480	2480	
P – Depth			mm		2260	2260	2260	2260	
❹ TCAITE-TCAITO weight			kg		7409	7797	9375	10065	
❹ TCAIQE-TCAIQO weight			kg		7839	8227	9920	10610	
SEASONAL ENERGY PERFORMANCE					21100	21170	31260	31380	
TCAITE-TCAITO MODEL SEASONAL PERFORMANCE IN COOLING MODE									
❶ Pdesignc (EN 14825)			kW		1101,4	1169,3	1259,3	1380,2	
❶ SEER (EN 14825)					5,01	5,02	5,04	5,1	
❷ ηs,c			%		198	198	199	201	
TCAIQE-TCAIQO MODEL SEASONAL PERFORMANCE IN COOLING MODE									

① Pdesignc (EN 14825)	kW	1068,4	1122,3	1221,3	1325,2
① SEER (EN 14825)		4,95	4,95	4,97	5,02
② $\eta_{s,c}$	%	195	195	196	198

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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