

WinPACK ECO TCAEI-THAEI 2160-4350



Cooling capacity: 147.7÷356.6 kW - Heating capacity:
159.3÷347.4 kW

- √ **Efficient and eco-friendly range in R32**
- √ **Full optional unit**
- √ **Compact units**
- √ **Integrated MASTER/SLAVE control**
- √ **Partial heat recovery with pump and mixing valve**



Web code: WKE12

Water chillers and packaged reversible air-cooled heat pumps with axial fans. Series with scroll hermetic compressors and R32 refrigerant.

Construction features

- Compressor: scroll type, rotary, hermetic complete with thermal protection and casing heater.
- 3/4 capacity steps with high efficiency at partial loads.
- Water side heat exchanger: with stainless steel plates, complete with closed cell polyurethane foam rubber insulation and water flow differential pressure switch.
- Air side heat exchanger: featuring micro-channels (TCAEI) or finned coil with copper pipes and aluminium fins with hydrophilic treatment (THAEI).
- 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 with Adaptive Function Plus logic.
- Structure: load-bearing structure made of galvanised and painted steel plate with polyester powder coating.
- The unit is also complete with:
 - compressor and fan circuit breaker switches;
 - electronic expansion valve;
 - display of cooling circuit high and low pressure;
 - Master/Slave control up to 4 units in parallel;
 - clock board;
 - control of Variable Primary Flow (VPF_R).

Versions

- T - High efficiency version (TCAETI-THAETI).
- Q - Super silenced version complete with compressor technical

compartment soundproofing and reduced speed fans (TCAEQI-THAEQI).

Models

- TCAETI: high efficiency unit designed for cooling only.
- TCAEQI: super silenced unit designed for cooling only.
- THAETI: heat pump unit.
- THAEQI: super silenced heat pump unit.

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.
- TANK&PUMP with 360 - 700 litre integrated buffer tank (depending on the sizes) and single or double electric pump, complete with expansion tank, air vent valves, safety valve and water side pressure gauge.
- Inverter pump control for unit start-up.
- Desuperheater.
- Desuperheater with pump and mixing valve.
- 100% heat recovery unit (TCAEI).
- Condensing control with fans with EC motor.
- Condensing control with over-pressure fans (T version only).
- Power factor correction capacitors ($\cos\phi > 0.94$).
- Forced limit of power consumption.
- Forced noise limit.

- Energy parameter measuring device.
- Soft starter.
- Soundproofed compressor box.
- Compressor soundproof enclosures.
- Cooling circuit outlet and intake valves (TCAETI-TCAEQI).
- Cooling circuit outlet valves (THAETI-THAEQI).
- Refrigerant leak detector.
- Gas control and refrigerant leak detector (leak detector plus).
- Cooling circuit high and low pressure gauges.
- Double safety valves.
- Coil protection grilles, lower compartment and rear buffer panels.
- Microchannel coils with E-coating treatment, copper/copper, copper/aluminium, pre-painted copper/aluminium depending on the versions.
- Control of min/max power supply voltage and backup battery.
- Digital input for double set-point.
- 4-20 mA analogue signal for shifting set-point.
- Evaporator antifreeze heater, electrical panel, buffer tank, electric pumps and heat exchangers for heat recovery, if applicable, and base.
- Low temperature water production.
- Interfaces for serial communication with other devices.
- Colour touch user keypad (fitted on the machine or remotely) with 7" display.
- Anti-vibration mounts.

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

TCAETI-TCAEQI MODEL		2160	2180	4180	4200	4220	4240	4280	4330
① Nominal cooling capacity	kW	163,6	177,7	184,7	200,7	221,7	244,6	284,7	332,7
① Nominal cooling capacity	kW	166,7	166,7	176,7	191,7	207,6	228,7	275,7	317,7
① E.E.R.		3,13	3,11	3,2	3,13	3,12	3,1	3,17	3,14
① E.E.R.		2,95	2,87	3,06	2,95	2,86	2,81	3,03	2,94
① Absorbed power	kW	52,27	57,14	57,72	64,12	71,06	78,9	89,81	105,96
① Absorbed power	kW	53,12	58,08	57,75	64,98	72,59	81,39	90,99	108,06
THAETI-THAEQI MODEL		2160	2180	4180	4200	4220	4240	4280	4320
② Nominal heating capacity	kW	163,4	176,3	181,3	197,3	218,3	232,3	282,3	323,3
② Nominal heating capacity	kW	159,3	170,3	176,3	191,3	213,4	229,3	277,3	317,3
② C.O.P.		3,21	3,21	3,21	3,2	3,21	3,22	3,2	3,21
② C.O.P.		3,22	3,19	3,23	3,21	3,22	3,23	3,25	3,23
① Nominal cooling capacity	kW	153,7	163,6	173,8	188,7	208,6	229,7	268,7	309,7
① Nominal cooling capacity	kW	147,7	156,7	168,8	182,7	200,7	220,7	260,7	297,7
① E.E.R.		2,81	2,73	2,93	2,86	2,87	2,83	2,9	2,81
① E.E.R.		2,64	2,52	2,83	2,73	2,69	2,69	2,78	2,64
② Absorbed power	kW	50,9	54,92	56,48	61,66	68,01	72,14	88,22	100,72
② Absorbed power	kW	49,47	53,39	54,58	59,6	66,27	70,99	85,32	98,24
TCAEI-THAEI MODEL		2160	2180	4180	4200	4220	4240	4280	4330
⑥ TCAETI-THAETI sound pressure	dB(A)	59	59	58	58	58	60	61	62
⑥ TCAEQI-THAEQI sound pressure	dB(A)	52	52	51	51	51	53	54	55
④ TCAETI-THAETI sound power	dB(A)	91	91	90	90	90	92	93	94
④ TCAEQI-THAEQI sound power	dB(A)	84	84	83	83	83	85	86	87
Scroll/step compressor	n.	2/3	2/3	2/4	2/4	2/4	2/4	2/4	2/4
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		2160	2180	4180	4200	4220	4240	4280	4330
L - Width	mm	3670	3670	2920	2920	2920	2920	3670	3670
⑤ L - Width	mm	3670	3670	3670	3670	3670	3670	3670	3670
H - Height	mm	2480	2480	2480	2480	2480	2480	2480	2480
P - Depth	mm	1130	1130	2260	2260	2260	2260	2260	2260
⑥ TCAETI weight	kg	1240	1240	1580	1580	1580	1640	2050	2150
⑥ TCAEQI weight	kg	1405	1405	1790	1790	1790	1850	2270	2370
⑥ THAETI weight	kg	1455	1455	1875	1875	1925	2005	2450	2580
⑥ THAEQI weight	kg	1630	1630	2170	2170	2220	2300	2765	2895
SEASONAL ENERGY PERFORMANCE		2160	2180	4180	4200	4220	4240	4280	4330
TCAETI MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	163,6	177,7	184,7	200,7	221,7	244,6	284,7	332,7
① SEER (EN 14825)		4,51	4,34	4,63	4,56	4,45	4,4	4,75	4,64
② ηs,c	%	177	171	182	179	175	173	187	183
TCAEQI MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	156,7	166,7	176,7	191,7	207,6	228,7	275,7	317,7
① SEER (EN 14825)		4,33	4,16	4,41	4,29	4,2	4,17	4,5	4,35
② ηs,c	%	170	163	174	169	165	164	177	171
THAETI MODEL SEASONAL ENERGY PERFORMANCE IN HEATING MODE									
③ Pdesignh (EN 14825)	kW	133	143	146	159	175	187	228	262
③ SCOP (EN 14825)		3,96	3,96	3,81	3,76	3,79	3,79	3,93	3,9
④ ηs	%	155	155	149	147	149	149	154	153
THAEQI MODEL SEASONAL ENERGY PERFORMANCE IN HEATING MODE									
③ Pdesignh (EN 14825)	kW	130	139	142	156	172	185	224	258
③ SCOP (EN 14825)		4,01	4,02	3,87	3,83	3,86	3,79	3,95	3,92
④ ηs	%	157	158	152	150	151	149	155	154
TCAETI-TCAEQI MODEL									4350
① Nominal cooling capacity	kW								356,6
① Nominal cooling capacity	kW								336,7
① E.E.R.									3,11
① E.E.R.									2,87
① Absorbed power	kW								114,66
① Absorbed power	kW								117,32
THAETI-THAEQI MODEL									4350
② Nominal heating capacity	kW								347,4
② Nominal heating capacity	kW								337,3
② C.O.P.									3,2
② C.O.P.									3,2
① Nominal cooling capacity	kW								332,7
① Nominal cooling capacity	kW								315,7
① E.E.R.									2,75
① E.E.R.									2,54
② Absorbed power	kW								108,56
② Absorbed power	kW								105,41
TCAEI-THAEI MODEL									4350
⑥ TCAETI-THAETI sound pressure	dB(A)								62
⑥ TCAEQI-THAEQI sound pressure	dB(A)								55
④ TCAETI-THAETI sound power	dB(A)								94
④ TCAEQI-THAEQI sound power	dB(A)								87
Scroll/step compressor	n.								2/4
Circuits	n.								2
Electrical supply	V-ph-Hz								400-3-50

DIMENSIONS AND WEIGHTS			4350
L - Width	mm		3670
⑤ L - Width	mm		3670
H - Height	mm		2480
P - Depth	mm		2260
⑥ TCAETI weight	kg		2150
⑥ TCAEQI weight	kg		2370
⑥ THAETI weight	kg		2580
⑥ THAEQI weight	kg		2895
SEASONAL ENERGY PERFORMANCE			4350
TCAETI MODEL SEASONAL PERFORMANCE IN COOLING MODE			
① Pdesignc (EN 14825)	kW		356,6
① SEER (EN 14825)			4,56
② ηs,c	%		179
TCAEQI MODEL SEASONAL PERFORMANCE IN COOLING MODE			
① Pdesignc (EN 14825)	kW		336,7
① SEER (EN 14825)			4,24
② ηs,c	%		167
THAETI MODEL SEASONAL ENERGY PERFORMANCE IN HEATING MODE			
③ Pdesignh (EN 14825)	kW		282
③ SCOP (EN 14825)			3,85
④ ηs	%		151
THAEQI MODEL SEASONAL ENERGY PERFORMANCE IN HEATING MODE			
③ Pdesignh (EN 14825)	kW		274
③ SCOP (EN 14825)			3,89
④ ηs	%		153

Data at the following conditions:

- ① Air: 35°C - Water: 12/7°C
 - ② Air: 7°C, D.B. - 6°C W.B.- Water: 40/45°C.
 - ③ In open field (Q = 2) at 10 m from the unit.
 - ④ Total sound power level in dB(A) based on measurements carried out in accordance with regulation UNI EN-ISO 9614.
 - ⑤ Width with ASP-ASDP accessory
 - ⑥ Weight referred to the unit without load and not accessorised.
 - TCAEQI-THAEQI 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)
 - ③ In Average climatic conditions, low temperature application (35°C)
 - ④ Seasonal energy efficiency: low temperature heating in Average climate (EU Regulations No.811/2013 and No.813/2013)

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