

WinPOWER ECO TCAEU-THAEU 4370÷6660



Cooling capacity: 349.7-664.5 kW - Heating capacity:
368.3-654.5 kW

- √ **Efficient and eco-friendly range in R454B**
- √ **SEER up to 5.38 with FIEC accessory (EC fans)**
- √ **B version compact chillers also for replacement markets.**
- √ **Extended operating limits**
- √ **Up to 6 capacity steps**
- √ **Integrated MASTER/SLAVE control**



Web code: (TCAETU, TCAEQU, THAETU, THAEQU): WPE05 (TCAEUBU, TCAESU): WPE15

Air cooled water chillers and reversible heat pumps with axial fans. Range with scroll hermetic compressors and R454B refrigerant.

Construction features

- Compressor: scroll type, rotary, hermetic complete with thermal protection and casing heater.
- Up to 6 capacity steps with high efficiency at partial loads.
- Water side heat exchanger: with stainless steel plates, complete with closed cell polyurethane foam rubber insulation, water flow differential pressure switch and Victaulic fittings.
- Air side heat exchanger: featuring micro-channels (TCAEU) or finned coil with copper pipes and aluminium fins (THAEU).
- 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:
 - fan and compressor circuit breaker switches;
 - display of cooling circuit high and 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 version (TCAEUBU)
- S - Silenced version complete with compressor technical compartment soundproofing and reduced speed fans (TCAESU).

- T - High efficiency version (TCAETU - THAETU).
- Q - Super silenced version complete with compressor technical compartment soundproofing and reduced speed fans (TCAEQU - THAEQU).

Models

- TCAEUBU: standard unit designed for cooling only.
- TCAESU: silenced unit designed for cooling only.
- TCAETU: high efficiency unit designed for cooling only.
- TCAEQU: super silenced unit designed for cooling only.
- THAETU: high efficiency heat pump unit.
- THAEQU: super silenced heat pump unit.

Factory fitted accessories

- Shell and tube evaporator.
- 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 700 or 1000 litre integrated buffer tank (depending on size) 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.
- 100% heat recovery unit (TCAEU).
- Condensing control with fans with EC motor.

- Condensing control with over-pressure fans (B-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 or Compressor box and soundproofed cooling circuit (THAEU).
- Compressor soundproof enclosures.
- Cooling circuit outlet and intake valves (TCAEU).
- Cooling circuit outlet valves (THAEU).
- 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/copper, pre-painted copper/aluminium or with hydrophilic treatment depending on versions.
- 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, coil tanks, buffer tank, 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

TCAEBU-TCAESU MODEL		4370	4410	4450	5490	5520	5560	6600	6630
① Nominal cooling capacity	kW	359,7	393,7	436,6	472,6	502,6	545,6	582,5	613,5
① Nominal cooling capacity	kW	349,7	380,7	420,7	458,6	486,6	527,6	566,5	596,5
① E.E.R.		3,12	3,08	3,06	3,09	3,08	3,05	3,12	3,1
① E.E.R.		2,97	2,89	2,84	2,94	2,92	2,86	2,98	2,95
① Absorbed power	kW	115,3	127,8	142,7	152,9	163,2	178,9	186,7	197,9
① Absorbed power	kW	117,7	131,7	148,1	156,0	166,6	184,5	190,1	202,2
TCAEBU-TCAESU MODEL		4370	4410	4450	5490	5520	5560	6600	6630
⑥ TCAEBU sound pressure	dB(A)	61	61,5	61,5	62,5	62,5	62,5	63	63
⑥ TCAESU sound pressure	dB(A)	55	56	56	57	57	57	58	58
④ TCAEBU sound power	dB(A)	93	94	94	95	95	95	96	96
④ TCAESU sound power	dB(A)	87	88	88	89	89	89	90	90
Scroll/step compressor	n.	4/4	4/4	4/4	5/5	5/5	5/5	6/6	6/6
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		4370	4410	4450	5490	5520	5560	6600	6630
L - Width	mm	3740	3740	3740	4840	4840	4840	5940	5940
H - Height	mm	2480	2480	2480	2480	2480	2480	2480	2480
P - Depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
⑤ TCAEBU weight	kg	2250	2350	2400	2870	2920	2980	3410	3460
⑤ TCAESU weight	kg	2480	2580	2630	3140	3190	3250	3720	3770
SEASONAL ENERGY PERFORMANCE		4370	4410	4450	5490	5520	5560	6600	6630
TCAEBU MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	359,7	393,7	436,6	472,6	502,6	545,6	582,5	613,5
① SEER (EN 14825)		4,78	4,66	4,63	4,79	4,73	4,67	4,83	4,81
② ηs,c	%	188	183	182	189	186	184	190	189
TCAESU MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	349,7	380,7	420,7	458,6	486,6	527,6	566,5	596,5
① SEER (EN 14825)		4,74	4,63	4,57	4,72	4,68	4,64	4,79	4,75
② ηs,c	%	186	182	180	186	184	183	188	187
TCAETU-TCAEQU MODEL		4370	4410	4450	5490	5520	5560	6600	6630
① Nominal cooling capacity	kW	374,7	407,7	450,6	490,6	521,6	562,5	604,5	632,6
① Nominal cooling capacity	kW	365,7	398,7	438,6	479,6	510,6	546,6	593,5	618,6
① E.E.R.		3,36	3,32	3,27	3,3	3,27	3,26	3,28	3,27
① E.E.R.		3,26	3,23	3,12	3,21	3,18	3,12	3,22	3,18
① Absorbed power	kW	111,5	122,8	137,8	148,7	159,5	172,5	184,3	193,5
① Absorbed power	kW	112,2	123,4	140,6	149,4	160,6	175,2	184,3	194,5
TCAETU-TCAEQU MODEL		4370	4410	4450	5490	5520	5560	6600	6630
⑥ TCAETU sound pressure	dB(A)	62	62,5	62,5	63,5	63,5	63,5	64	64
⑥ TCAEQU sound pressure	dB(A)	54	54,5	54,5	55,5	55,5	55,5	56	56
④ TCAETU sound power	dB(A)	94	95	95	96	96	96	97	97
④ TCAEQU sound power	dB(A)	86	87	87	88	88	88	89	89
Scroll/step compressor	n.	4/4	4/4	4/4	5/5	5/5	5/5	6/6	6/6
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		4370	4410	4450	5490	5520	5560	6600	6630
L - Width	mm	4840	4840	4840	5940	5940	5940	7100	7100
H - Height	mm	2480	2480	2480	2480	2480	2480	2480	2480
P - Depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
⑤ TCAETU weight	kg	2550	2640	2680	3180	3220	3250	3900	3940
⑤ TCAEQU weight	kg	2800	2890	2930	3475	3515	3545	4240	4280
THAETU-THAEQU MODEL		4370	4410	4450	5490	5520	5560	6600	6630
② Nominal heating capacity	kW	374,3	405,3	440,4	488,4	513,4	552,4	597,5	628,4
② Nominal heating capacity	kW	368,3	400,3	434,4	480,4	505,4	544,4	588,5	618,4
② C.O.P.		3,41	3,34	3,32	3,37	3,36	3,35	3,35	3,33
② C.O.P.		3,47	3,41	3,37	3,42	3,41	3,41	3,4	3,38
① Nominal cooling capacity	kW	367,7	400,7	440,6	484,6	505,6	553,5	597,5	623,6
① Nominal cooling capacity	kW	359,7	390,7	429,7	472,6	493,6	538,6	583,5	607,6
① E.E.R.		3,34	3,24	3,21	3,22	3,21	3,2	3,27	3,25
① E.E.R.		3,25	3,14	3,08	3,12	3,1	3,06	3,16	3,13
② Absorbed power	kW	109,8	121,3	132,7	152,8	164,9	178,4	188,7	188,7
② Absorbed power	kW	106,1	117,4	128,9	140,5	148,2	159,6	173,1	183,0
THAETU-THAEQU MODEL		4370	4410	4450	5490	5520	5560	6600	6630
⑥ THAETU sound pressure	dB(A)	62	62,5	62,5	63,5	63,5	63,5	64	64
⑥ THAEQU sound pressure	dB(A)	54	54,5	54,5	55,5	55,5	55,5	56	56
④ THAETU sound power	dB(A)	94	95	95	96	96	96	97	97
④ THAEQU sound power	dB(A)	86	87	87	88	88	88	89	89
Scroll/step compressor	n.	4/4	4/4	4/4	5/5	5/5	5/5	6/6	6/6
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		4370	4410	4450	5490	5520	5560	6600	6630
L - Width	mm	4840	4840	4840	5940	5940	5940	7100	7100
H - Height	mm	2480	2480	2480	2480	2480	2480	2480	2480
P - Depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
⑤ THAETU weight	kg	3160	3270	3310	3960	4000	4030	4840	4890
⑤ THAEQU weight	kg	3565	3675	3715	4425	4465	4495	5360	5410
SEASONAL ENERGY PERFORMANCE		4370	4410	4450	5490	5520	5560	6600	6630
TCAETU MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	374,7	407,7	450,6	490,6	521,6	562,5	604,5	632,6
① SEER (EN 14825)		4,99	4,84	4,81	4,99	4,92	4,86	5,03	5,00

② $\eta_{s,c}$	%	196	190	189	197	194	191	198	197
TCAEQU MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	365,7	398,7	438,6	479,6	510,6	546,6	593,5	618,6
① SEER (EN 14825)		4,95	4,79	4,76	4,97	4,9	4,84	4,99	4,96
② $\eta_{s,c}$	%	195	189	187	196	193	191	196	196
THAETU MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	-	-	-	484,6	505,6	553,5	597,5	623,6
① SEER (EN 14825)		-	-	-	4,95	4,86	4,82	4,97	4,96
② $\eta_{s,c}$	%	-	-	-	195	191	190	196	195
THAEQU MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	-	-	-	-	493,6	538,6	583,5	607,6
① SEER (EN 14825)		-	-	-	-	4,84	4,79	4,94	4,93
② $\eta_{s,c}$	%	-	-	-	-	191	189	195	194
THAETU MODEL SEASONAL PERFORMANCE IN HEATING MODE									
③ Pdesignh (EN 14825)	kW	307	335	363	-	-	-	-	-
③ SCOP (EN 14825)		3,87	3,83	3,81	-	-	-	-	-
④ η_s	%	152	150	149	-	-	-	-	-
THAEQU MODEL SEASONAL PERFORMANCE IN HEATING MODE									
③ Pdesignh (EN 14825)	kW	303	330	358	397	-	-	-	-
③ SCOP (EN 14825)		3,93	3,89	3,85	3,88	-	-	-	-
④ η_s	%	154	153	151	152	-	-	-	-

TCAEUBU-TCAESU MODEL										6660	
① Nominal cooling capacity										kW	646,4
① Nominal cooling capacity										kW	626,5
① E.E.R.											3,09
① E.E.R.											2,92
① Absorbed power										kW	209,2
① Absorbed power										kW	214,6
TCAEUBU-TCAESU MODEL										6660	
⑥ TCAEUBU sound pressure										dB(A)	64
⑥ TCAESU sound pressure										dB(A)	59
① TCAEUBU sound power										dB(A)	97
① TCAESU sound power										dB(A)	91
Scroll/step compressor										n.	6/6
Circuits										n.	2
Electrical supply										V-ph-Hz	400-3-50
DIMENSIONS AND WEIGHTS										6660	
L - Width										mm	5940
H - Height										mm	2480
P - Depth										mm	2260
⑥ TCAEUBU weight										kg	3490
⑥ TCAESU weight										kg	3800
SEASONAL ENERGY PERFORMANCE										6660	
TCAEUBU MODEL SEASONAL PERFORMANCE IN COOLING MODE											
① Pdesignc (EN 14825)										kW	646,4
① SEER (EN 14825)											4,77
② $\eta_{s,c}$										%	188
TCAESU MODEL SEASONAL PERFORMANCE IN COOLING MODE											
① Pdesignc (EN 14825)										kW	626,5
① SEER (EN 14825)											4,7
② $\eta_{s,c}$										%	185
TCAETU-TCAEQU MODEL										6660	
① Nominal cooling capacity										kW	664,5
① Nominal cooling capacity										kW	645,5
① E.E.R.											3,26
① E.E.R.											3,12
① Absorbed power										kW	203,8
① Absorbed power										kW	206,9
TCAETU-TCAEQU MODEL										6660	
⑥ TCAETU sound pressure										dB(A)	65
⑥ TCAEQU sound pressure										dB(A)	56
① TCAETU sound power										dB(A)	98
① TCAEQU sound power										dB(A)	89
Scroll/step compressor										n.	6/6
Circuits										n.	2
Electrical supply										V-ph-Hz	400-3-50
DIMENSIONS AND WEIGHTS										6660	
L - Width										mm	7100
H - Height										mm	2480
P - Depth										mm	2260
⑥ TCAETU weight										kg	3970
⑥ TCAEQU weight										kg	4310
THAETU-THAEQU MODEL										6660	
② Nominal heating capacity										kW	654,5
② Nominal heating capacity										kW	645,5
② C.O.P.											3,34
② C.O.P.											3,38
① Nominal cooling capacity										kW	654,5
① Nominal cooling capacity										kW	637,5
① E.E.R.											3,24



①	E.E.R.		3,1
②	Absorbed power	kW	196,0
②	Absorbed power	kW	191,0
THAETU-THAEQU MODEL			6660
③	THAETU sound pressure	dB(A)	65
③	THAEQU sound pressure	dB(A)	56
④	THAETU sound power	dB(A)	98
④	THAEQU sound power	dB(A)	89
	Scroll/step compressor	n.	6/6
	Circuits	n.	2
	Electrical supply	V-ph-Hz	400-3-50
DIMENSIONS AND WEIGHTS			6660
	L - Width	mm	7100
	H - Height	mm	2480
	P - Depth	mm	2260
⑤	THAETU weight	kg	4920
⑤	THAEQU weight	kg	5440
SEASONAL ENERGY PERFORMANCE			6660
TCAETU MODEL SEASONAL PERFORMANCE IN COOLING MODE			
①	Pdesignc (EN 14825)	kW	664,5
①	SEER (EN 14825)		4,96
②	ηs,c	%	195
TCAEQU MODEL SEASONAL PERFORMANCE IN COOLING MODE			
①	Pdesignc (EN 14825)	kW	645,5
①	SEER (EN 14825)		4,91
②	ηs,c	%	193
THAETU MODEL SEASONAL PERFORMANCE IN COOLING MODE			
①	Pdesignc (EN 14825)	kW	654,5
①	SEER (EN 14825)		4,90
②	ηs,c	%	193
THAEQU MODEL SEASONAL PERFORMANCE IN COOLING MODE			
①	Pdesignc (EN 14825)	kW	637,5
①	SEER (EN 14825)		4,87
②	ηs,c	%	192
THAETU MODEL SEASONAL PERFORMANCE IN HEATING MODE			
③	Pdesignh (EN 14825)	kW	-
③	SCOP (EN 14825)		-
④	ηs	%	-
THAEQU MODEL SEASONAL PERFORMANCE IN HEATING MODE			
③	Pdesignh (EN 14825)	kW	-
③	SCOP (EN 14825)		-
④	ηs	%	-

Data at the following conditions:

- ① Air: 35°C - Water: 12/7°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 Weight referred to the unit without load and not accessorised.
 - TCAESU silenced versions.
Performance according to EN 14511.
 - ① Low temperature application (7°C)
 - ② Seasonal energy efficiency: low temperature cooling (EU Regulation 2016/2281)
- 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 Weight referred to the unit without load and not accessorised.
 - TCAEQU 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)

RHOSS S.P.A. declines all responsibility for possible mistakes in this document and reserves the right to alter the features of their products without notice.

Rhoss S.p.A.
Via Oltre Ferrovia, 32
33033 Codroipo (UD) - Italy
tel. +39 0432 911611 - rhoss@rhoss.it
www.rhoss.it www.rhoss.com



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