

- Rhoss
- Cooling: 349,7 - 910,5 kW
- Hermetic rotary, scroll type



Air cooled multi-purpose ecological system type WinPOWER ECO

WinPOWER ECO TCAEU 4370+8910 / THAEU 4370+6830 - Air cooled water chillers and reversible heat pumps with axial fans

Seasonal Energy Efficiency Ratio

- SEER up to 5.38 with FIEC accessory (EC fans)

Brand

- Rhoss

Capacity

- Cooling: **349,7 - 910,5 kW**
- Heating: **368,3 - 802,5 kW**

Refrigerant

- R454B (A2L)

Compressors

- Hermetic rotary, scroll type

Configuration

- B - Standard version (TCAEBU)
- 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)

Specifications

- Compressor: hermetic rotary, scroll type, 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)

Models

- TCAEBU: 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

Accessories

■ 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, 1000 or 1400 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)
- Freecooling module management
- Condensing control with fans with EC motor
- Condensing control with over-pressure fans (B-T version only)
- Power factor correction capacitors (cosφ > 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													
Standard unit designed for cooling only													
TCAEBU Model		4370	4410	4450	5490	5520	5560	6600	6630	6660	7750	7800	8910
¹ Nominal cooling capacity	kW	359,7	393,7	436,6	472,6	502,6	545,6	582,5	613,5	646,4	719,5	760,5	857,4
¹ E.E.R.		3,12	3,08	3,06	3,09	3,08	3,05	3,12	3,1	3,09	3,13	3,1	3,01
¹ Absorbed power	kW	115,3	127,8	142,7	152,9	163,2	178,9	186,7	197,9	209,2	229,9	245,3	284,9
³ TCAEBU sound pressure	dB(A)	61	61,5	61,5	62,5	62,5	62,5	63	63	64	65	65	66
⁴ TCAEBU sound power	dB(A)	93	94	94	95	95	95	96	96	97	98	98	99
Scroll compressors/steps	n.	4/4	4/4	4/4	5/5	5/5	5/5	6/6	6/6	6/6	7/6	7/6	8/6
Circuits	n.	2	2	2	2	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	400-3-50	100	100	100
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													

Technical data													
TCAESU silenced versions													
TCAESU Model		4370	4410	4450	5490	5520	5560	6600	6630	6660	7750	8910	
¹ Nominal cooling capacity	kW	349,7	380,7	420,7	458,6	486,6	527,6	566,5	596,5	626,5	698,5	733,5	824,5
¹ E.E.R.		2,97	2,89	2,84	2,94	2,92	2,86	2,98	2,95	3,09	3,13	3,1	3,01
Absorbed power	kW	117,7	131,7	148,1	156	166,6	184,5	190,1	202,2	214,6	232,8	250,3	295,5
³ TCAESU sound pressure	dB(A)	55	56	56	57	57	57	58	58	59	59	59	60
⁴ TCAESU sound power	dB(A)	87	88	88	89	89	89	90	90	91	92	92	93
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.													

Technical data													
High efficiency unit designed for cooling only													
TCAETU Model		4370	4410	4450	5490	5520	5560	6600	6630	6660	7750	7800	8910
¹ Nominal cooling capacity	kW	374,7	407,7	450,6	490,6	521,6	562,5	604,5	632,6	664,5	751,5	799,5	910,5
¹ E.E.R.		3,36	3,32	3,27	3,3	3,27	3,26	3,28	3,27	3,26	3,31	3,29	3,26
Absorbed power	kW	111,5	122,8	137,8	148,7	159,5	172,5	184,3	193,5	203,8	227	243	279,3
³ TCAETU sound pressure	dB(A)	62	62,5	62,5	63,5	63,5	63,5	64	64	65	66	66	67
⁴ TCAETU sound power	dB(A)	94	95	95	96	96	96	97	97	98	99	99	100
Scroll compressors/steps	n.	4/4	4/4	4/4	5/5	5/5	5/5	6/6	6/6	6/6	7/6	7/6	8/6
Circuits	n.	2	2	2	2	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	400-3-50	400-3-50	400-3-50	400-3-50
High efficiency heat pump unit													
THAETU Model		4370	4410	4450	5490	5520	5560	6600	6630	6660	6730	6780	6830
² Nominal heating capacity	kW	374,3	405,3	440,4	488,4	513,4	552,4	597,5	628,4	654,5	698,5	757,5	802,5
² C.O.P.		3,41	3,34	3,32	3,37	3,36	3,35	3,35	3,33	3,34	3,31	3,3	3,28
¹ Nominal cooling capacity	kW	367,7	400,7	440,6	484,6	505,6	553,5	597,5	623,6	654,5	727,5	778,5	832,4
¹ E.E.R.		3,34	3,24	3,21	3,22	3,21	3,2	3,27	3,25	3,24	3,21	3,22	3,19
Absorbed power	kW	109,8	121,3	132,7	152,8	164,9	178,4	188,7	188,7	196	211	229,5	244,7
³ THAETU sound pressure	dB(A)	62	62,5	62,5	63,5	63,5	63,5	64	64	65	66	66	67
⁴ THAETU sound power	dB(A)	94	95	95	96	96	96	97	97	98	99	99	100
Scroll compressors/steps	n.	4/4	4/4	4/4	5/5	5/5	5/5	6/6	6/6	6/6	6/6	6/6	6/6
Circuits	n.	2	2	2	2	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	400-3-50	400-3-50	400-3-50	400-3-50
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.													

Technical data													
TCAEQU super-silenced versions													
TCAETU-TCAEQU Model		4370	4410	4450	5490	5520	5560	6600	6630	6660	7750	7800	8910
¹ Nominal cooling capacity	kW	365,7	398,7	438,6	479,6	510,6	546,6	593,5	618,6	645,5	731,6	772,5	885,5
¹ E.E.R.		3,26	3,23	3,12	3,21	3,18	3,12	3,22	3,18	3,12	3,18	3,14	3,12
Absorbed power	kW	112,2	123,4	140,6	149,4	160,6	175,2	184,3	194,5	206,9	230,1	246	283,8
³ TCAEQU sound pressure	dB(A)	54	54,5	54,5	55,5	55,5	55,5	56	56	56	57	57	58
⁴ TCAEQU sound power	dB(A)	86	87	87	88	88	88	89	89	89	90	90	91
Super silenced version complete with compressor technical compartment soundproofing and reduced speed fans													
THAEQU Model		4370	4410	4450	5490	5520	5560	6600	6630	6660	7750	7800	8910
¹ Nominal cooling capacity	kW	368,3	400,3	434,4	480,4	505,4	544,4	588,5	618,4	645,5	688,5	746,5	790,5
¹ E.E.R.		3,47	3,41	3,37	3,42	3,41	3,41	3,4	3,38	3,38	3,35	3,35	3,32
Absorbed power	kW	359,7	390,7	429,7	472,6	493,6	538,6	583,5	607,6	637,5	709,5	759,5	811,5
³ TCAEQU sound pressure	dB(A)	3,25	3,14	3,08	3,12	3,1	3,06	3,16	3,13	3,1	3,1	3,11	3,08
⁴ TCAEQU sound power	dB(A)	106,1	117,4	128,9	140,5	148,2	159,6	173,1	183	191	205,5	222,8	238,1
² Nominal heating capacity	kW	54	54,5	54,5	55,5	55,5	55,5	56	56	56	57	57	58
² Nominal heating capacity	kW	86	87	87	88	88	88	89	89	89	90	90	91
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													

Seasonal efficiency													
TCAEUBU-TCAESU Model		4370	4410	4450	5490	5520	5560	6600	6630	6660	7750	7800	8910
TCAEUBU 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	646,4	719,5	760,5	857,4
1 SEER (EN 14825)		4,78	4,66	4,63	4,79	4,73	4,67	4,83	4,81	4,77	4,82	4,78	4,72
2 ns.c	%	188	183	182	189	186	184	190	189	188	190	188	186
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	626,5	698,5	733,5	824,5
1 SEER (EN 14825)		4,74	4,63	4,57	4,72	4,68	4,64	4,79	4,75	4,7	4,75	4,71	4,65
2 ns.c	%	186	182	180	186	184	183	188	187	185	187	185	183
TCAETU-TCAEQU Model													
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	664,5	751,5	799,5	910,5
1 SEER (EN 14825)		4,99	4,84	4,81	4,99	4,92	4,86	5,03	5	4,96	4,97	4,92	4,89
2 ns.c	%	196	190	189	197	194	191	198	197	195	196	194	193
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	645,5	731,6	772,5	885,5
1 SEER (EN 14825)		4,95	4,79	4,76	4,97	4,9	4,84	4,99	4,96	4,91	4,91	4,86	4,84
2 ns.c	%	195	189	187	196	193	191	196	196	193	193	191	190
Seasonal performance													
		4370	4410	4450	5490	5520	5560	6600	6630	6660	6730	6780	6830
THAETU Model seasonal performance in cooling mode													
1 Pdesignc (EN 14825)	kW	-	-	-	484,6	505,6	553,5	597,5	623,6	654,5	727,5	778,5	832,4
1 SEER (EN 14825)		-	-	-	4,95	4,86	4,82	4,97	4,96	4,9	4,89	4,91	4,85
2 ns.c	%	-	-	-	195	191	190	196	195	193	193	194	191
THAEQU Model seasonal performance in cooling mode													
1 Pdesignc (EN 14825)	kW	-	-	-	-	493,6	538,6	583,5	607,6	637,5	709,5	759,5	811,5
1 SEER (EN 14825)		-	-	-	-	4,84	4,79	4,94	4,93	4,87	4,83	4,88	4,82
2 ns.c	%	-	-	-	-	191	189	195	194	192	190	192	190
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 ns	%	152	150	150	-	-	-	-	-	-	-	-	-
THAETU Model seasonal performance in heating mode													
3 Pdesignh (EN 14825)	kW	303	330	358	397	-	-	-	-	-	-	-	-
3 SCOP (EN 14825)		3,94	3,9	3,85	3,88	-	-	-	-	-	-	-	-
4 ns	%	155	153	151	152	-	-	-	-	-	-	-	-

Data at the following conditions:

- 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)

Dimensions													
TCAEUBU-TCAESU Model		4370	4410	4450	5490	5520	5560	6600	6630	6660	7750	7800	8910
L - Width	mm	3740	3740	3740	4840	4840	4840	5940	5940	5940	7150	7150	7150
H - Height	mm	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480
P - Depth	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260
5 TCAEUBU weight	kg	2250	2350	2400	2870	2920	2980	3410	3460	3490	4160	4200	4440
5 TCAESU weight	kg	2480	2580	2630	3140	3190	3250	3720	3770	3800	4485	4525	4790
TCAETU-TCAEQU Model													
L - Width	mm	4370	4410	4450	5490	5520	5560	6600	6630	6660	7750	7800	8910
H - Height	mm	4840	4840	4840	5940	5940	5940	7100	7100	7100	8250	8250	9350
P - Depth	mm	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480
5 TCAETU weight	kg	2550	2640	2680	3180	3220	3250	3900	3940	3970	4470	4510	5050
5 TCAEQU weight	kg	2800	2890	2930	3475	3515	3545	4240	4280	4310	4830	4870	5440
THAETU-THAEQU Model													
L - Width	mm	4370	4410	4450	5490	5520	5560	6600	6630	6660	6730	6780	6830
H - Height	mm	4840	4840	4840	5940	5940	5940	7100	7100	7100	8200	8200	9300
P - Depth	mm	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480
5 THAETU weight	kg	3160	3270	3310	3960	4000	4030	4840	4890	4920	5520	6040	6170
5 THAEQU weight	kg	3565	3675	3715	4425	4465	4495	5360	5410	5440	6070	6630	6760

Data at the following conditions:

- 5 Weight referred to the unit without load and not accessorised