UniPACK-PI

TCAIP-THAIP 175÷3150

Cooling capacity 66,9÷153,9 kW
Heating capacity 72,1÷159,2 kW

Features

Efficient and eco-friendly range in R290

Inverter technology

Full optional unit

Integrated MASTER/SLAVE control

Hot water production from -20°C to 40°C outdoor air

Temperature of the produced water up to 78°C

Tax incentives*

Water chillers and packaged reversible air-cooled heat pumps with axial fans. Range with hermetic scroll compressors, DC Inverter and R290 refrigerant.

Construction features

• Compressor: hermetic rotary, scroll type and with Inverter actuation (i, 1+i, 2+i) complete with thermal protection and casing heater.

• Continuous regulation 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 (TCAIP) or finned coil with copper pipes and aluminium fins (THAIP).

• Fan: external rotor axial type electric fans equipped with internal thermal protection, accident protection grilles and proportional electronic device for continuous fan rotation speed regulation.

• Control: microprocessor electronic control with Adaptive Function Plus logic.

• Structure: load-bearing structure made of galvanised and painted steel plate with polyester powder coating.

• Refrigerant leak detector.

• Coil protection nets.

• 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);

– automatic management of anti-legionella cycles.

Versions

• T - High efficiency version with oversized condensing section (TCAITP-THAITP).
• Q - Super-silenced version complete with compressor technical compartment soundproofing, reduced speed fans and oversized condensing section (THAITP-THAIQP).

Models

• TCAITP: high efficiency unit designed for cooling only.

• TCAIQP: super silenced unit designed for cooling only.

• THAITP: high efficiency heat pump unit.

• THAIQP: 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 250 – 380 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.

• 100% heat recovery unit (TCAIP)

• 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.

• Technical compressor compartment soundproofing.

• Compressor soundproof enclosures.

• Double safety valves.

• Buffer panels.

• Microchannel coils with E-coating treatment, copper/copper, copper/aluminium, pre-painted copper/aluminium or with hydrophilic treatment depending on 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.

• Contacts for Smart Grid integration and photovoltaic system.

• 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

TCAITP-TCAIQP MODEL		175	290	2100	3110	3120	3130	3140	3150
❶ Nominal cooling capacity	kW	74,9	89,9	99,9	109,9	119,9	129,9	140,9	153,9
❶ Nominal cooling capacity	kW	68,9	82,9	91,9	100,9	108,9	119,9	129,9	140,9
❶ E.E.R.		3,07	3,36	3,22	3,16	3,15	3,29	3,24	3,21
❶ E.E.R.		3,08	3,4	3,3	3,04	3,05	3,28	3,18	3,15
❶ Absorbed power	kW	24,4	26,8	31	34,8	38,1	39,5	43,5	47,9
❶ Absorbed power	kW	22,4	24,4	27,8	33,2	35,7	36,6	40,8	44,7
THAITP-THAIQP MODEL		**175**	**290**	**2100**	**3110**	**3120**	**3130**	**3140**	**3150**
❷ Nominal heating capacity	kW	79,1	90,1	101,1	110,1	122,1	132,1	144,1	159,2
❷ Nominal heating capacity	kW	72,1	83,1	92,1	105,1	115,1	121,1	133,1	145,1
❷ C.O.P.		3,25	3,26	3,21	3,23	3,21	3,29	3,25	3,24
❷ C.O.P.		3,29	3,36	3,31	3,36	3,35	3,34	3,3	3,28
❶ Nominal cooling capacity	kW	71,9	84,9	95,9	104,9	113,9	123,9	133,9	146,9
❶ Nominal cooling capacity	kW	66,9	78,9	87,9	96,9	103,9	114,9	123,9	134,9
❷ Absorbed power	kW	24,3	27,6	31,5	34,1	38	40,2	44,3	49,1
❷ Absorbed power	kW	21,9	24,7	27,8	31,3	34,4	36,3	40,3	44,2
TCAIP-THAIP MODEL		**175**	**290**	**2100**	**3110**	**3120**	**3130**	**3140**	**3150**
❸ TCAITP-THAITP sound pressure	dB(A)	55	54	55	55	55	55	56	57
❸ TCAIQP-THAIQP sound pressure	dB(A)	50	49	50	50	50	50	51	52
❹ TCAITP-THAITP sound power	dB(A)	87	86	87	87	87	87	88	89
❹ TCAIQP-THAIQP sound power	dB(A)	82	81	82	82	82	82	83	84
Scroll compressors/steps	n.	1 inverter	1 inverter + 1	1 inverter + 1	1 inverter + 2	1 inverter + 2	1 inverter + 2	1 inverter + 2	1 inverter + 2
Circuits	n.	1	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		**175**	**290**	**2100**	**3110**	**3120**	**3130**	**3140**	**3150**
L – Width	mm	3250	3250	3250	3250	3250	3930	3930	3930
H – Height	mm	2260	2260	2260	2260	2260	2260	2260	2260
P – Depth	mm	1270	1970	1970	1970	1970	1970	1970	1970
❺ TCAITP weight	kg	1025	1495	1510	1595	1620	1835	1860	1865
❺ THAITP weight	kg	1215	1695	1730	1815	1860	2105	2130	2135

SEASONAL ENERGY PERFORMANCE		175	290	2100	3110	3120	3130	3140	3150
TCAITP MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	74,9	89,9	99,9	109,9	119,9	129,9	140,9	153,9
① SEER (EN 14825)		5,14	4,81	4,75	4,53	4,62	4,67	4,63	4,76
② ηs,c	%	202	189	187	178	182	184	182	187
TCAIQP MODEL SEASONAL PERFORMANCE IN COOLING MODE									
① Pdesignc (EN 14825)	kW	68,9	82,9	91,9	100,9	108,9	119,9	129,9	140,9
① SEER (EN 14825)		5,17	4,83	4,79	4,6	4,67	4,72	4,68	4,81
② ηs,c	%	204	190	188	181	184	186	184	189
THAITP MODEL SEASONAL PERFORMANCE IN HEATING MODE – Low temperature application 35°C									
③ Pdesignh (EN 14825)	kW	65	74	83	90	100	108	118	130
③ SCOP (EN 14825)		4,31	3,9	3,91	4,11	4,13	4,07	4,11	4,14
④ ηs	%	170	153	154	162	162	160	161	163
④ Energy class		A++	-	-	-	-	-	-	-
THAIQP MODEL SEASONAL PERFORMANCE IN HEATING MODE – Low temperature application 35°C									
③ Pdesignh (EN 14825)	kW	59	68	75	86	94	99	109	119
③ SCOP (EN 14825)		4,37	3,91	3,94	4,15	4,17	4,13	4,15	4,2
④ ηs	%	172	153	155	163	164	162	163	165
④ Energy class		A++	A++	-	-	-	-	-	-
THAITP MODEL SEASONAL PERFORMANCE IN HEATING MODE – Medium temperature application 55°C									
③ Pdesignh (EN 14825)	kW	62	72	81	88	98	105	116	128
③ SCOP (EN 14825)		3,57	3,25	3,25	3,37	3,38	3,42	3,38	3,45
④ ηs	%	140	127	127	132	132	134	132	135
④ Energy class		A++	-	-	-	-	-	-	-
THAIQP MODEL SEASONAL PERFORMANCE IN HEATING MODE – Medium temperature application 55°C									

③ Pdesignh (EN 14825)	kW	56	66	74	84	93	97	107	117
③ SCOP (EN 14825)		3,56	3,22	3,23	3,4	3,39	3,36	3,39	3,38
④ ηs	%	139	126	126	133	133	131	133	132
④ Energy class		A++	A++	-	-	-	-	-	-

Data at the following conditions:

❶ Air: 35°C – Water: 12/7°C

❷ Air: 7°C, D.B. – 6°C W.B.- Water: 40/45°C.

❸ In open field (Q = 2) at 10 m from the unit.

❹ Total sound power level in dB(A) based on measurements carried out in accordance with regulation UNI EN-ISO 9614.

❺ Weight referred to the unit without load and not accessorised.

■ TCAIQP-THAIQP 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

④ Seasonal energy efficiency: low temperature heating in Average climate (EU Regulations No.811/2013 and No.813/2013 – class between D and A+++)

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