UniPACK-P

THAEP 251÷4160

Cooling capacity 47,9÷158,8 kW
Heating capacity 50,1÷163,7 kW

Features

Efficient and eco-friendly range in R290

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 72°C

Tax incentives*

Packaged reversible air-cooled heat pumps with axial fans. Range with hermetic scroll compressors and R290 refrigerant.

Construction features

• Compressor: hermetic rotary, scroll type, complete with thermal protection and casing heater.

• 2-4 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 finned coil with copper pipes and aluminium fins (THAEP).

• 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 (THAETP).
• Q - Super-silenced version complete with compressor technical compartment soundproofing, reduced speed fans and oversized condensing section (THAEQP).

Models

• THAETP: high efficiency heat pump unit.

• THAEQP: 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 170 – 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.

• 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.

• Copper/copper, pre-painted copper/aluminium or with hydrophilic treatment coils.

• 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

THAETP-THAEQP MODEL		251	260	270	280	4100	4110	4120	4130
❷ Nominal heating capacity	kW	51,6	61,1	73,1	82,1	103,1	111,1	121,1	136,7
❷ Nominal heating capacity	kW	50,1	59,1	71,1	80,1	101,1	109,1	118,1	134,1
❷ C.O.P.		3,24	3,24	3,25	3,25	3,26	3,24	3,24	3,26
❷ C.O.P.		3,21	3,21	3,22	3,24	3,24	3,24	3,22	3,27
❶ Nominal cooling capacity	kW	48,9	58,9	68,9	79,9	96,9	105,9	117,9	127,9
❶ Nominal cooling capacity	kW	47,9	57,9	66,9	77,9	93,9	102,9	113,9	123,9
❶ E.E.R.		2,99	2,89	3,01	2,99	2,98	2,93	2,9	2,98
❶ E.E.R.		2,86	2,76	2,88	2,86	2,81	2,78	2,72	2,84
❷ Absorbed power	kW	15,9	18,9	22,5	25,3	31,6	34,3	37,4	41,9
❷ Absorbed power	kW	15,6	18,4	22,1	24,7	31,2	33,7	36,7	41,0
THAETP-THAEQP MODEL		**251**	**260**	**270**	**280**	**4100**	**4110**	**4120**	**4130**
❸ THAETP sound pressure	dB(A)	64	64	64	65	66	66	67	68
❸ THAEQP sound pressure	dB(A)	58	59	59	60	61	61	62	63
❹ THAETP sound power	dB(A)	82	82	83	84	85	85	86	87
❹ THAEQP sound power	dB(A)	76	77	78	79	80	80	81	82
Scroll compressors/steps	n.	2/2	2/3	2/3	2/2	4/4	4/4	4/4	4/4
Circuits	n.	1	1	1	1	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		**251**	**260**	**270**	**280**	**4100**	**4110**	**4120**	**4130**
L – Width	mm	2550	2550	3250	3250	3250	3250	3250	3930
H-Height	mm	2260	2260	2260	2260	2260	2260	2260	2260
P – Depth	mm	1270	1270	1270	1270	1970	1970	1970	1970
❺ THAETP weight	kg	1085	1100	1295	1305	1870	1875	1900	2155
❺ THAEQP weight	kg	1135	1150	1355	1365	1945	1950	1975	2235
SEASONAL ENERGY PERFORMANCE		**251**	**260**	**270**	**280**	**4100**	**4110**	**4120**	**4130**
THAETP MODEL SEASONAL ENERGY PERFORMANCE IN HEATING MODE – Low temperature application 35°C									
① Pdesignh (EN 14825)	kW	42	50	59	67	84	90	99	111
① SCOP (EN 14825)		3,83	3,82	3,82	3,82	3,84	3,82	3,82	3,86
① ηs	%	150	150	150	150	151	150	150	151
② Energy class		A++	A++	A++	A++	-	-	-	-
THAEQP MODEL SEASONAL ENERGY PERFORMANCE IN HEATING MODE – Low temperature application 35°C									
① Pdesignh (EN 14825)	kW	41	48	58	65	82	89	96	109
① SCOP (EN 14825)		3,77	3,78	3,78	3,78	3,8	3,8	3,79	3,82
① ηs	%	148	148	148	148	149	149	149	150
② Energy class		A+	A+	A+	A+	-	-	-	-
THAETP MODEL SEASONAL PERFORMANCE IN HEATING MODE – Medium temperature application 55°C									
① Pdesignh (EN 14825)	kW	41	49	57	64	83	89	97	108
① SCOP (EN 14825)		3,22	3,21	3,23	3,23	3,25	3,21	3,22	3,29
① ηs	%	126	125	126	126	127	125	126	129
② Energy class		A++	A++	A++	A++	-	-	-	-
THAEQP MODEL SEASONAL PERFORMANCE IN HEATING MODE – Medium temperature application 55°C									
① Pdesignh (EN 14825)	kW	40	47	56	63	81	88	94	106
① SCOP (EN 14825)		3,17	3,16	3,2	3,2	3,21	3,19	3,16	3,26
① ηs	%	124	124	125	125	125	125	124	128
② Energy class		A+	A+	A++	A++	-	-	-	-

THAETP-THAEQP MODEL		4140	4150	4160
❷ Nominal heating capacity	kW	145,2	155,1	163,7
❷ Nominal heating capacity	kW	142,2	151,1	159,2
❷ C.O.P.		3,27	3,27	3,25
❷ C.O.P.		3,27	3,25	3,24
❶ Nominal cooling capacity	kW	135,9	148,9	158,8
❶ Nominal cooling capacity	kW	132,9	143,9	153,9
❶ E.E.R.		2,94	2,93	2,93
❶ E.E.R.		2,83	2,78	2,77

❷ Absorbed power	kW	44,4	47,4	50,4
❷ Absorbed power	kW	43,5	46,5	49,1
THAETP-THAEQP MODEL		**4140**	**4150**	**4160**
❸ THAETP sound pressure	dB(A)	68	68	69
❸ THAEQP sound pressure	dB(A)	63	63	64
❹ THAETP sound power	dB(A)	87	87	88
❹ THAEQP sound power	dB(A)	82	82	83
Scroll compressors/steps	n.	4/4	4/4	4/4
Circuits	n.	2	2	2
Electrical supply	V-ph-Hz	400-3-50	400-3-50	400-3-50
DIMENSIONS AND WEIGHTS		**4140**	**4150**	**4160**
L – Width	mm	3930	3930	3930
H-Height	mm	2260	2260	2260
P – Depth	mm	1970	1970	1970
❺ THAETP weight	kg	2160	2180	2185
❺ THAEQP weight	kg	2240	2260	2265

SEASONAL ENERGY PERFORMANCE		**4140**	**4150**	**4160**
THAETP MODEL SEASONAL ENERGY PERFORMANCE IN HEATING MODE – Low temperature application 35°C				
① Pdesignh (EN 14825)	kW	118	126	133
① SCOP (EN 14825)		3,84	3,83	3,8
① ηs	%	150	150	149
② Energy class		-	-	-
THAEQP MODEL SEASONAL ENERGY PERFORMANCE IN HEATING MODE – Low temperature application 35°C				
① Pdesignh (EN 14825)	kW	116	123	129
① SCOP (EN 14825)		3,8	3,79	3,77
① ηs	%	149	148	148
② Energy class		-	-	-
THAETP MODEL SEASONAL PERFORMANCE IN HEATING MODE – Medium temperature application 55°C				
① Pdesignh (EN 14825)	kW	114	122	129
① SCOP (EN 14825)		3,26	3,25	3,24
① ηs	%	127	127	127
② Energy class		-	-	-
THAEQP MODEL SEASONAL PERFORMANCE IN HEATING MODE – Medium temperature application 55°C				
① Pdesignh (EN 14825)	kW	113	119	125
① SCOP (EN 14825)		3,21	3,2	3,2
① ηs	%	125	125	125
② Energy class		-	-	-

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.

■ THAEQP super-silenced versions.

Performance according to EN 14511.

① In Average climatic conditions

② Seasonal energy efficiency: heating in Average climate (EU Regulations No.811/2013 and No.813/2013)

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