HEAT PUMPS R407C – R22

AIR COOLED HEAT PUMPS

WITH SCROLL COMPRESSORS AND AXIAL FANS

PAE 41

PAE 181

PAE... Series

1 refrigerant circuit - cooling capacities from 5 to 18 kW

Heat pumps suitable for small and medium size air conditioning systems and for both water cooling and water heating plants
Designed for external installation
Axial fans
Coated with pre-painted zinc steel plates
1 cooling circuit
Summer operating conditions from +15 °C to +45 °C for standard models
Winter operation down to -4 °C
The following versions are available:
PAE...K with R407C ecological gas
PAE... standard version
Horizontal air flow for models from 41M to 101
Vertical air flow for models from 131 to 181
PAE...PS K with water kit and R407C ecological gas
PAE...PS with water kit

Made up of:

High-efficiency scroll compressor (COP 3.37 under ARI conditions), with low sound level (on average 6dB(A) less than the hermetic compressors), internal heat protection, installed on rubber vibration dampers, supplied with oil sump heater when necessary.
Unit model 41M is provided with hermetic piston compressor.
Heat-exchange external coil with high-efficiency aluminium fins and copper pipe designed for cooling fluids.
Low rpm axial fans directly coupled provided with heat protection, low sound level blades with wing profile and safety protection grid.
Weld-brazed plate heat exchanger with heat insulation.
Electric panel, in compliance with CE norms, supplied with a main switch with magneto-thermic protection.
The cooling circuit is composed of: 4 way valve for refrigerant circuit reverse, thermostatic expansion valve, dehydrating filter, sight glass, safety device, antifreeze thermostat, high and low pressure switches.
Unit management microprocessor for all models.
Defrost system completely controlled by microprocessor according to time/temperature logic.
For the PS version, water kit is installed in an housing under the unit and is composed of circulating pump, buffer tank, safety valve, pressure gauge, water charge and discharge valves, air discharge valve, expansion vessel, electric control device of the pump.
Compressors hour counter.

Accessories

AE	Electrical power supply different from standard
BT	Low temperature operation (-20 °C) with modulating fan speed regulation (for summer working operation only)
GP	Condensing coil protection grid
HG	Hot gas by-pass (from model 131)
IH	RS 485 serial interface
IM	Seawood packing
MF	Phase monitor
MT	High and low pressure gauges (from model 131)
PA	Rubber-type vibration dampers
PF	Safety water flow switch on evaporator
PQ	Remote microprocessor
RA	Anti-freeze heater on evaporator
RL	Compressors overload relays
RM	Epoxy coating of condensing coil for sea environment
RR	Condensing coil with copper/copper fins
RV	Personalized RAL paint
VB	Brine version (water temperature < 0 °C)
VS	Solenoid valve

PAE… Technical data

MODEL	PAE...	41 M	71 M	101 M	101	131	151	161	181
Cooling capacity with R407C	kW	4,70	7,10	8,00	8,10	10,70	12,60	16,30	17,20
Absorbed power with R407C	kW	1,50	2,50	3,10	3,20	3,40	4,40	5,30	5,90
Heating capacity with R407C	kW	5,60	8,90	10,40	10,60	13,10	15,90	20,20	21,70
Absorbed power in heating with R407C	kW	1,40	2,40	3,10	3,10	3,20	4,30	5,20	5,80
Cooling capacity with R22	kW	5,30	7,50	8,60	8,70	11,10	13,20	17,40	18,20
Absorbed power with R22	kW	1,80	2,50	3,00	3,10	3,30	4,20	5,10	5,70
Heating capacity with R22	kW	6,30	9,30	10,80	11,00	13,40	16,30	21,00	22,40
Absorbed power in heating with R22	kW	1,60	2,40	2,90	3,00	3,10	4,10	4,90	5,60
Axial fans									
Quantity	n	1	1	1	1	2	2	2	2
Rotation speed	rpm	900	900	900	900	900	900	900	900
Motors power	kW	0,15	0,15	0,15	0,15	0,29	0,29	0,29	0,29
Total air flow	l/s	1000	1069	1069	1069	2083	2083	1940	1940
Total air flow	m^3/h	3600	3850	3850	3850	7500	7500	6984	6984
Nominal absorbed current	A	0,64	0,64	0,64	0,64	1,3	1,3	1,3	1,3
Sound pressure level 2)	dBA)	53	53	53	53	57	58	58	59
Brazed plate evaporator									
Quantity	n	1	1	1	1	1	1	1	1
Water flow rate with R407C	l/s	0,22	0,33	0,39	0,39	0,50	0,61	0,78	0,83
Water flow rate with R407C	m^3/h	0,80	1,20	1,40	1,40	1,80	2,20	2,80	3,00
Pressure drop with R407C	kPa	19	36	18	18	31	41	33	36,00
Water flow rate with R22	l/s	0,25	0,36	0,42	0,42	0,53	0,64	0,83	0,86
Water flow rate with R22	m^3/h	0,90	1,30	1,50	1,50	1,90	2,30	3,00	3,10
Pressure drop with R22	kPa	24	39	20	21	33	44	36	40
Scroll compressors									
Quantity	n	1	1	1	1	1	1	1	1
Circuits	n	1	1	1	1	1	1	1	1
Standard steps capacity	%				0/100				
Nominal absorbed current	A	6,7	10,6	14,3	5,6	5,4	6,3	9,0	10,4
Maximum absorbed current	A	17	19	22	10	12	14	16	18
Inrush current	A	54	76	86	46	56	68	77	81
Total absorbed power with R407C	Kw	1,6	2,5	3,0	3,2	3,4	4,4	5,3	5,9
Total absorbed power with R22	Kw	1,8	2,5	3,0	3,1	3,3	4,2	5,1	5,9
Dimensions									
Length	mm	980	980	980	980	1100	1100	1100	1100
Width	mm	325	325	325	325	750	750	750	750
Height	mm	715	715	715	715	1100	1100	1100	1100
Weight	kg	122	125	128	128	205	209	226	228
Refrigerant charge	kg	2,1	2,6	2,7	2,7	4,3	4,3	6,2	6,2
[PAE...PS]									
Water pump motor power	kW	0,08	0,08	0,08	0,08	0,18	0,18	0,18	0,18
Available pressure	kPa	55	49	52	52	65	48	52	47
Buffer tank water volume	l	30	30	30	30	30	30	30	30
Dimensions [PAE...PS]									
Length with water kit included	mm	980	980	980	980	1100	1100	1100	1100
Width with water kit included	mm	325	325	325	325	750	750	750	750
Height with water kit included	mm	1000	1000	1000	1000	1100	1100	1100	1100
Weight with empty water kit included	kg	158	161	164	164	238	241	259	260
Refrigerant charge	kg	1,95	2,26	2,73	2,73	4,29	4,29	6,63	6,63
Power supply		**230V/50Hz/1Ph + N + T**			**400V/50Hz/3Ph + N + T**				

Nominal conditions referred to:
Summer work mode: air 35 °C - chilled water 7/12 °C
Winter work mode: air 10 °C - warmed water 40/45 °C
2) Measured at 1 m in open field (ISO 3746)
Notes : Option BT allows summer operation of units (therefore with chilled water production) with external temperature lower than 15 °C