

HEAT PUMPS R407C – R22

AIR COOLED HEAT PUMPS

WITH SCROLL COMPRESSORS AND CENTRIFUGAL FANS



PAE 131 C

PAE...C Series

1 refrigerant circuit - cooling capacities from 11 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 internal installation

Centrifugal 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...C K version with R407C ecological gas

PAE...C with centrifugal fans at vertical air flow

PAE...C PS K with water kit and R407C ecological gas

PAE...C 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.

Centrifugal fans with directly coupled electrical motor, provided with thermal protection (short circuit and overload) and external 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
IH	RS 485 serial interface
IM	Seawood packing
MF	Phase monitor
MT	High and low pressure gauges
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...C Technical data

MODEL	PAE...C	131	151	161	181
Cooling capacity with R407C	kW	10,7	12,6	16,3	17,2
Absorbed power with R407C	kW	3,4	4,4	5,3	5,9
Heating capacity with R407C	kW	13,20	16,00	20,30	21,70
Absorbed power in heating with R407C	kW	3,20	4,30	5,20	5,80
Cooling capacity with R22	kW	11,1	13,2	17,4	18,2
Absorbed power with R22	kW	3,3	4,2	5,1	5,7
Heating capacity with R22	kW	13,4	16,3	21,0	22,4
Absorbed power in heating with R22	kW	3,10	4,10	4,90	5,60
Centrifugal fans					
Quantity	n	2	2	2	2
Rotation speed	rpm	1250	1250	1250	1250
Motors power	kW	1	1	2	2
Total air flow	l/s	2083	2083	1861	1861
Total air flow	m ³ /h	7500	7500	6700	6700
Available pressure	Pa	40	40	165	165
Nominal absorbed current	A	13,6	13,6	13,6	13,6
Sound pressure level 2)	dB(A)	63	63	63	63
Brazed plate evaporator					
Quantity	n	1	1	1	1
Water flow rate with R407C	l/s	0,50	0,61	0,78	0,83
Water flow rate with R407C	m ³ /h	1,80	2,20	2,80	3,00
Pressure drop with R407C	kPa	31,8	43,2	33,8	37,6
Water flow rate with R22	l/s	0,53	0,64	0,83	0,86
Water flow rate with R22	m ³ /h	1,90	2,30	3,00	3,10
Pressure drop with R22	kPa	33	44	36	40
Scroll compressors					
Quantity	n	1	1	1	1
Circuits	n	1	1	1	1
Standard steps capacity	%	1	1	1	1
Nominal absorbed current	A	5,4	6,3	9,0	10,4
Maximum absorbed current	A	12	14	16	18
Inrush current	A	56	68	77	81
Total absorbed power with R407C	kW	3,4	4,4	5,3	5,9
Total absorbed power with R22	kW	3,3	4,2	5,1	5,9
Dimensions					
Length	mm	1100	1100	1100	1100
Width	mm	750	750	750	750
Height	mm	1100	1100	1100	1100
Weight	kg	217	221	238	240
Refrigerant charge	kg	4	4	7	7
[PAE C...PS]					
Water pump motor power	kW	0,18	0,18	0,18	0,18
Available pressure	kPa	65	48	52	47
Buffer tank water volume	l	30	30	30	30
Dimensions [PAE C...PS]					
Length with water kit included	mm	1100	1100	1100	1100
Width with water kit included	mm	750	750	750	750
Height with water kit included	mm	1100	1100	1100	1100
Weight with empty water kit included	kg	238	241	259	260
Refrigerant charge	kg	4	4	7	7
Power supply 400V/50Hz/3 Ph+T+N					

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) with air suction and air discharge in ducts

Notes: Option BT allows summer operation of units (therefore with chilled water production) with external temperature lower than 15 °C