AQUASNAP®

30AWH-P

Reversible air-to-water heat pump

The 30AWH-P air-to-water heat pump is designed for heating and cooling applications in new and existing individual homes and small businesses.

When installed alone, the 30AWH-P is compatible with low to medium temperature emitters (underfloor heating, fan coil units, water cassettes, radiators, mixed installations, etc.).

The 30AWH-P is also compatible with medium to high temperature emitters for boiler back up operation.

The 30AWH-P heat pump is installed outside in an open area, ideally as close as possible to the boiler room.

Each device is tested in the factory and delivered ready for operation.

Carrier

Original document

Product description

30AWH-P is a high energy efficient residential hydronic heat pump for heating, cooling and possible production of domestic hot water for domestic use.

The unit is suitable for low to medium temperature applications, and up to high temperature applications.

The unit operates on natural refrigerant R290 ensuring not only low Global Warming Potential (GWP100 = 0,02) and CO_2 emission, but also powerful performance with high energy efficiency at all times.

30AWH-P is also equipped with new Blue-Fin exchange coils, a special hydrophilic and anti-corrosion treatment, which improves the flow of condensation on the fins thus reducing the risk of freezing on the coil.

30AWH-P is available in 8 different models with heating capacity from 4,0 to 13,8 kW.

- High water heating temperature up to +75°C, ensure more usable hot water and helps to avoid the need for direct electric immersion to sterilize the water protecting from legionella.
- HP Keymark certified performance.
- High COP and EER.
- Low noise operation.
- DC-Inverter technology with Twin-Rotary compressor which modulates the power necessary to perfectly match the real needed load.
- They can be connected to low-temperature radiators, underfloor radiant elements and fan coil type units.
- Easy and quick installation.
- Controller WUI is included which is able to manage completely heating/ cooling/ domestic hot water system.
- The controller WUI can manage up to 4 units in cascade system (1 primary & 3 secondaries).
- Anti-freeze program protects the entire system especially the hydraulic parts from damage in very cold ambient air temperature.
- Included gas separator kit to be installed externally in the leaving water pipe prevents any gas leaks inside the house.

Technical data

30AWH-P 004-014

Model		30AWH-P					
		004	006	008	010	012	014
Performance data in heating							
Performance in heating (A7°C; W35°C)							
Nominal capacity	kW	3,95	5,80	7,60	9,60	11,40	13,80
Power consumption	kW	0,81	1,18	1,58	2,21	2,51	3,21
COP		4,90	4,90	4,80	4,35	4,55	4,30
SCOP (temperate zone)		4,70	4,82	4,69	4,69	4,74	4,74
Seasonal energy efficiency	%	185	190	185	185	187	187
Energy class	range (D → A+++)	A+++	A+++	A+++	A+++	A+++	A+++
Performance in heating (A7°C; W45°C)							
Nominal capacity	kW	3,85	5,50	7,80	9,50	10,80	13,60
Power consumption	kW	1,05	1,51	2,08	2,68	2,96	4,00
COP		3,65	3,65	3,75	3,55	3,65	3,40
Performance in heating (A7°C; W55°C)							
Nominal capacity	kW	3,75	5,25	7,55	9,40	10,95	13,25
Power consumption	kW	1,27	1,78	2,40	3,19	3,53	4,57
COP		2,95	2,95	3,15	2,95	3,10	2,90
SCOP (Temperate zone)		3,34	3,34	3,34	3,34	3,35	3,35
Seasonal energy efficiency	%	131	131	131	131	131	131
Energy class	range (D → A+++)	A++	A++	A++	A++	A++	A++
Performance data in cooling							
Performance in cooling (A35°C; W7°C)							
Nominal capacity	kW	3,35	4,60	6,50	7,40	9,70	10,70
Power consumption	kW	1,06	1,46	2,13	2,55	3,18	3,63
EER		3,15	3,15	3,05	2,90	3,05	2,95
SEER		4,93	5,34	5,27	5,14	5,33	5,16
Seasonal energy efficiency	%	194	211	208	203	210	203
Performance in cooling (A35°C; W18°C)							
Nominal capacity	kW	4,00	6,15	8,00	8,90	12,00	14,50
Power consumption	kW	0,96	1,58	2,00	2,41	2,79	3,92
EER		4,15	3,90	4,00	3,70	4,30	3,70
Electrical characteristics							
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Total maximum input power①	kW	3,50	4,40	5,00	6,40	7,10	7,10
Total maximum input current②	A	15,10	19,20	21,60	27,90	30,80	30,80

① Power input, compressors, and fans, at unit operating limits and nominal voltage (data on unit nameplate)
② Maximum operating current of the unit at maximum power consumption of the unit at nominal voltage (values on unit nameplate)

Technical data

Model		30AWH-P					
		004	006	008	010	012	014
Compressor							
Compressor	Type	Rotary					
Adjustment	Type	Inverter modulating					
Minimum capacity control	%	40%	32%	34%	27%	25%	21%
Refrigerant	Type	R290	R290	R290	R290	R290	R290
GWP100		0,02	0,02	0,02	0,02	0,02	0,02
Refrigerant charge	kg	0,39	0,58	0,76	0,76	1,07	1,07
CO_2 equivalent	t	0,000008	0,000012	0,000015	0,000015	0,000021	0,000021
Number of circuits	n.	1	1	1	1	1	1
Hermetically sealed control box	yes/no	yes	yes	yes	yes	yes	yes
Fan							
Fan	Type	Axial					
Quantity	n.	1	1	1	1	2	2
Maximum air flow rate	m^3/h	2880	2880	2880	2880	6480	6480
Residual head	KPa	-	-	-	-	-	-
Heat exchanger source side							
Heat exchanger source side	Type	Pipes in copper. fins in hydrophilic aluminium					
Circulation pump							
Circulation pump	Type/set	Variable speed centrifuge					
Nominal delivery	m^3/h	0,68	1,00	1,31	1,66	1,97	2,38
Useful head at nominal flow rate	Kpa	83	82	70	57	100	82
Maximum input power	W	75	75	75	75	140	140
Minimum input power	W	2	2	2	2	3	3
Safety valve calibration pressure	bar	3	3	3	3	3	3
Expansion tank volume③	l	-	-	-	-	-	-
Heat exchanger (system side)							
Heat exchanger system side	Type	Piastra					
Water capacity	l	0,6	0,9	0,9	0,9	1,5	1,5
Sound data							
Sound output A7/W55④	dB(A)	49	50	51	51	54	54
Sound pressure aT 5m / 1m conditions A7/W55⑤	dB(A)	23,5/37,5	24,5/38,5	25,5/39,5	25,5/39,5	28/42	28/42
Weight							
Net weight	kg	78	84	91	93	126	126

Performance is in accordance with EN 14511 and EN 14825.
① Power input, compressors, and fans, at unit operating limits and nominal voltage (data on unit nameplate)
② Maximum operating current of the unit at maximum power consumption of the unit at nominal voltage (values on unit nameplate)
③ Component not supplied with the product
④ In dB ref=10-12 W, weighting (A). Sound emission values declared, in accordance with standard EN 12102-1 at ErP conditions (with an associated uncertainty of +/-2dB(A)) as required by Ecodesign regulation. Measurement according to ISO 9614-1.
⑤ In dB ref 20 µPa, weighting (A). Sound emission values declared, in accordance with standard EN 12102-1 at ErP conditions (with an associated uncertainty of +/-2dB(A)).
Values provided for information, calculated from the sound power level Lw(A)

Technical data

30AWH-P 012T-014T

Model		30AWH-P	
		012T	014T
Performance data in heating			
Performance in heating (A7°C; W35°C)			
Nominal capacity	kW	11,40	13,80
Power consumption	kW	2,45	3,14
COP		4,65	4,40
SCOP (temperate zone)		4,74	4,74
Seasonal energy efficiency	%	187	187
Energy class	range (D → A+++)	A+++	A+++
Performance in heating (A7°C; W45°C)			
Nominal capacity	kW	10,80	13,60
Power consumption	kW	2,88	3,89
COP		3,75	3,50
Performance in heating (A7°C; W55°C)			
Nominal capacity	kW	10,95	13,25
Power consumption	kW	3,48	4,49
COP		3,15	2,95
SCOP (Temperate zone)		3,35	3,35
Seasonal energy efficiency	%	131	131
Energy class	range (D → A+++)	A++	A++
Performance data in cooling			
Performance in cooling (A35°C; W7°C)			
Nominal capacity	kW	9,70	10,70
Power consumption	kW	3,13	3,57
EER		3,10	3,00
SEER		5,33	5,16
Seasonal energy efficiency	%	210	203
Performance in cooling (A35°C; W18°C)			
Nominal capacity	kW	12,00	14,50
Power consumption	kW	2,76	3,87
EER		4,35	3,75
Electrical characteristics			
Power supply	V/ph/Hz	400/3/50	400/3/50
Total maximum input power①	kW	10,50	10,50
Total maximum input current②	A	16,10	16,10

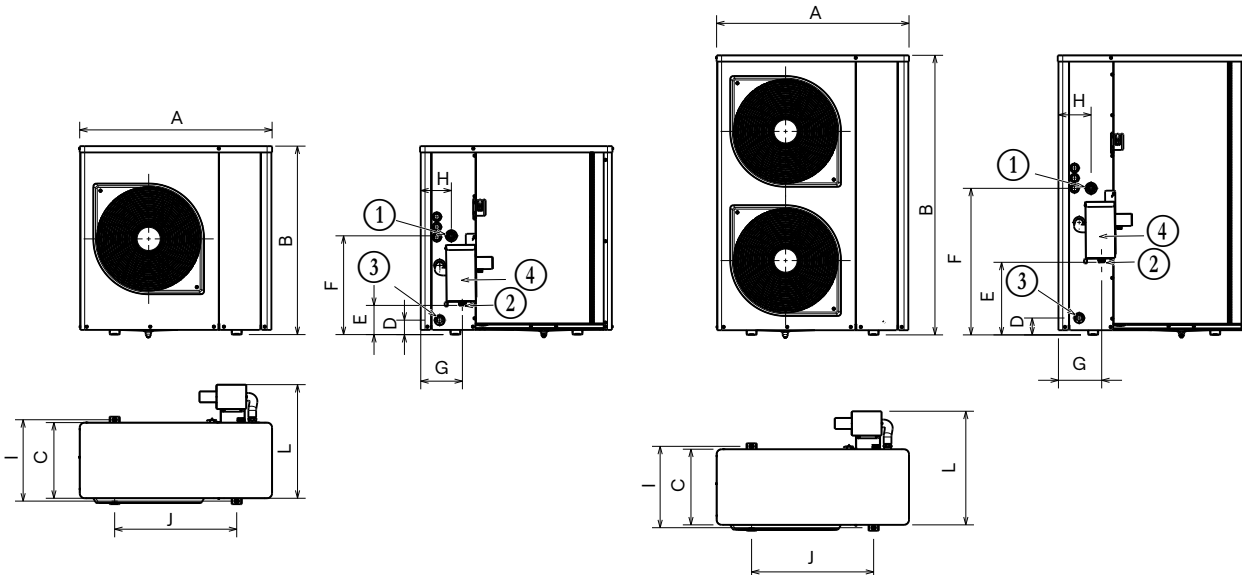
① Power input, compressors, and fans, at unit operating limits and nominal voltage (data on unit nameplate)
② Maximum operating current of the unit at maximum power consumption of the unit at nominal voltage (values on unit nameplate)

Technical data

Model		30AWH-P	
		012T	014T
Compressor			
Compressor	Type	Rotary	
Adjustment	Type	Inverter modulating	
Minimum capacity control	%	25%	21%
Refrigerant	Type	R290	R290
GWP100		0,02	0,02
Refrigerant charge	kg	1,07	1,07
CO_2 equivalent	t	0,000021	0,000021
Number of circuits	n.	1	1
Hermetically sealed control box	yes/no	sì	sì
Fan			
Fan	Type	Axial	
Quantity	n.	2	2
Maximum air flow rate	m^3/h	6480	6480
Residual head	KPa	-	-
Heat exchanger source side			
Heat exchanger source side	Type	Pipes in copper. fins in hydrophilic aluminium	
Circulation pump			
Circulation pump	Type/set	Variable speed centrifuge	
Nominal delivery	m^3/h	1,97	2,38
Useful head at nominal flow rate	Kpa	100	82
Maximum input power	W	140	140
Minimum input power	W	3	3
Safety valve calibration pressure	bar	3	3
Expansion tank volume③	l	-	-
Heat exchanger (system side)			
Heat exchanger system side	Type	Piastra	
Water capacity	l	1,5	1,5
Sound data			
Sound output A7/W55④	dB(A)	54	54
Sound pressure aT 5m / 1m conditions A7/W55⑤	dB(A)	28/42	28/42
Weight			
Net weight	kg	128	128

Performance is in accordance with EN 14511 and EN 14825.
① Power input, compressors, and fans, at unit operating limits and nominal voltage (data on unit nameplate)
② Maximum operating current of the unit at maximum power consumption of the unit at nominal voltage (values on unit nameplate)
③ Component not supplied with the product
④ In dB ref=10-12 W, weighting (A). Sound emission values declared, in accordance with standard EN 12102-1 at ErP conditions (with an associated uncertainty of +/-2dB(A)) as required by Ecodesign regulation. Measurement according to ISO 9614-1.
⑤ In dB ref 20 µPa, weighting (A). Sound emission values declared, in accordance with standard EN 12102-1 at ErP conditions (with an associated uncertainty of +/-2dB(A)).
Values provided for information, calculated from the sound power level Lw(A)

Dimensions and location of hydraulic connections



① Water Inlet
② Water Outlet
③ Draining water pipe
④ Gas separator - mandatory for safety purposes

30AWH-P		A	B	C	D	E	F	G	H	I	J	L
004	mm	946	927	372	71	143	485	201	150	400	600	560
006	mm	946	927	372	71	143	485	201	150	400	600	560
008	mm	946	927	372	71	143	485	201	150	400	600	560
010	mm	946	927	372	71	143	485	201	150	400	600	560
012 / 012T	mm	946	1375	372	83	357	720	210	160	400	600	560
014 / 014T	mm	946	1375	372	83	357	720	210	160	400	600	560

Place of installation

This unit uses R290 refrigerant gas.

Do not attempt to replace this refrigerant with household propane.

The unit should be stored outdoors or in a controlled environment (R290 sensors and free from ignition sources area). Units should not be stacked.

The unit should be installed so that refrigerant does not accumulate or stagnate in case of leakage (R290 refrigerant gas is heavier than air).

The unit should also be kept one meter away from any openings (doors, windows, etc.)

Refrigerant accumulation in an enclosed space can displace oxygen and cause asphyxiation or explosion.

In the event of a leak, the mixture of refrigerant and air can generate a flammable atmosphere. Any source of ignition, such as open flames, hot surfaces (higher than 370 °C), or any potentially arcing devices (sockets, electrical switches, static discharges, etc.) must be kept at least one meter away from the unit.

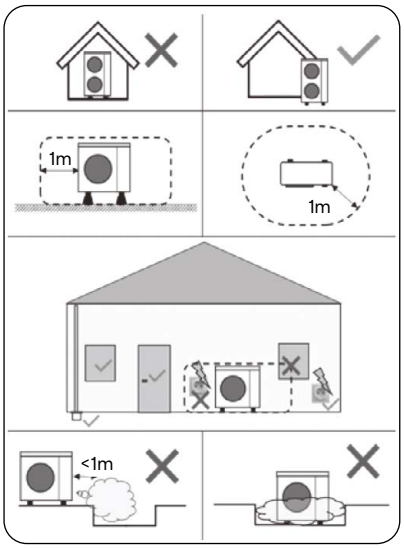
Before positioning the unit (accessing the various components/opening the panel/replacement of components...) it is necessary to schedule the various maintenance tasks to be performed.

Service spaces to ensure proper airflow

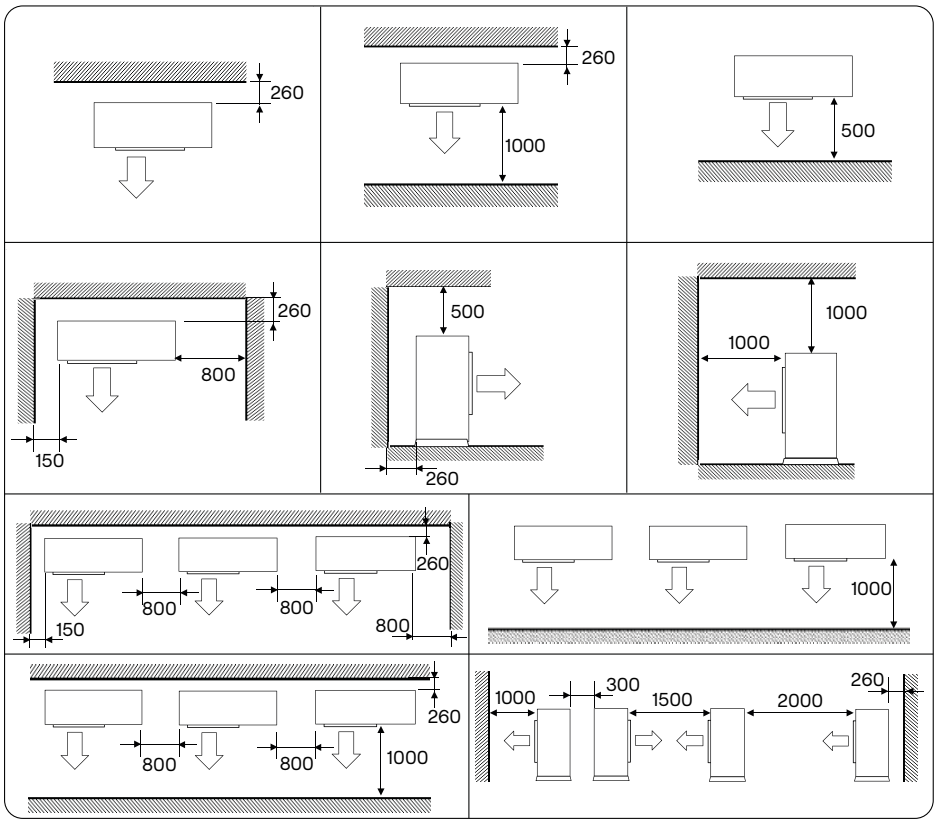
The unit shall be installed outdoor and shall be kept one meter away from any building opening (doors, windows...) and from any ignition sources (electrical sockets, switches, lights...).

Refer to the installation guide for more details.

The unit shall not be installed so that, in the event of a leak, the refrigerant may accumulate or stagnate (propane is heavier than air).



The following picture presents the minimal distances of the wall to ensure the correct air flow on air heat exchanger①.



Notes:
Dimensions are given in mm
① Anticipate different maintenance actions before to place the unit (access of different parts / opening of panel/ part replacement...).