PRODUCT SELECTION DATA

REVERSIBLE AIR-TO-WATER HEAT PUMP

30AWH-M 004 ÷ 016

AQUASNAP®

Reversible air-water heat pump with axial fans,
4 kW ÷ 16 kW, using R32 ecological refrigerant

Original document

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PRODUCT DESCRIPTION

30AWH-M is a high-efficiency residential hydronic heat pump for heating and cooling, with the possibility of domestic hot water (DHW) production for domestic use.
The unit works with R32 ecological refrigerant, guaranteeing not only low global warming potential (GWP) and low CO2 emissions, but also optimum energy efficiency over the whole operating range.
30AWH-M is also fitted with new exchange coils with the special hydrophilic and anti-corrosion Blue-Fin treatment that improves the drainage of condensate on the fins, thereby reducing the risk of the coils freezing (maximum efficiency even in humid climates).
30AWH-M comes in 10 different models with a heating capacity from 4,2 to 15,9 kW.

- Twin rotary compressor with DC inverter technology, that modulates the output to adapt perfectly to the real load needed.
- High COP and EER values (all the 30AWH-M heat pumps comply with the highest standards requested in terms of energy efficiency).
- Performance ratings certified by the third party HP Keymark.
- They can be connected to low-temperature radiators, floor heating and fan coil type units.
- Water heating temperature up to +65°C.
- Easy, quick installation.
- Low noise level.
- Wired control panel included, for the complete management of a heating/cooling/DHW system.
- The control panel can manage up to 6 units (even of different output levels) in cascade system - 1 master and 5 slaves.
- Anti-freeze protection as standard, to protect the entire system - in particular the hydraulic parts - from the potential damage caused by freezing.

TECHNICAL DATA

30AWH-M 004H ÷ 010H

Model			30AWH-M			
			004H	006H	008H	010H
PERFORMANCE DATA IN HEATING						
Performance in heating (A7°C; W35°C)						
Nominal capacity		kW	4,20	6,35	8,40	10,00
Power consumption		kW	0,82	1,28	1,63	2,02
COP			5,10	4,95	5,15	4,95
SCOP (temperate zone)			4,85	4,95	5,22	5,20
Seasonal energy efficiency		%	191	195	206	205
Energy class			A+++	A+++	A+++	A+++
Performance in heating (A7°C; W45°C)						
Nominal capacity		kW	4,30	6,30	8,10	10,00
Power consumption		kW	1,13	1,70	2,10	2,67
COP			3,80	3,70	3,85	3,75
Performance in heating (A7°C; W55°C)						
Nominal capacity		kW	4,40	6,00	7,50	9,50
Power consumption		kW	1,49	2,03	2,36	3,06
COP			2,95	2,95	3,18	3,10
SCOP (Temperate zone)			3,31	3,52	3,37	3,47
Seasonal energy efficiency		%	130	139	133	137
Energy class			A++	A++	A++	A++
PERFORMANCE DATA IN COOLING						
Performance in cooling (A35°C; W7°C)						
Nominal capacity		kW	4,70	7,00	7,45	8,20
Power consumption		kW	1,36	2,33	2,22	2,52
EER			3,45	3,00	3,35	3,25
SEER			4,99	5,34	5,83	5,99
Seasonal energy efficiency		%	196	210	230	236
Performance in cooling (A35°C; W18°C)						
Nominal capacity		kW	4,50	6,50	8,30	9,90
Power consumption		kW	0,82	1,35	1,64	2,18
EER			5,50	4,80	5,05	4,55
ELECTRICAL CHARACTERISTICS						
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50
Total maximum input power	**(1)**	kW	2,30	2,70	3,40	3,70
Total maximum input current	**(2)**	A	12,00	14,00	16,00	17,00
COMPRESSOR						
Compressor		Type	DC twin rotary / Mitsubishi			
Adjustment		Type	Inverter modulating			
Minimum capacity control		%	55	43	40	38
Refrigerant		Type	R32	R32	R32	R32
GWP		CO_2 equiv. In t/kg	675	675	675	675
Refrigerant load		kg	1,40	1,40	1,40	1,40
Control box load		CO_2 equiv. In t	0,95	0,95	0,95	0,95
Number of circuits		n.	1	1	1	1
Hermetically sealed control box		yes/no	yes	yes	yes	yes
FAN						
Fan		Type	DC axial			
Quantity		n.	1	1	1	1
Maximum air flow rate		m^3/h	2770	2770	4030	4030
HEAT EXCHANGER (SOURCE SIDE)						
Heat exchanger source side		Type	Pipes in copper. Fins in hydrophilic aluminium with anti-corrosion treatment			
CIRCULATION PUMP						
Circulation pump		Type/set	Variable speed centrifuge			
Nominal delivery		m^3/h	0,72	1,09	1,44	1,72
Maximum input power		W	43	43	43	43
Maximum input current		A	0,44	0,44	0,44	0,44
Expansion tank volume		l	8	8	8	8

Model			30AWH-M			
			004H	006H	008H	010H
HEAT EXCHANGER (SYSTEM SIDE)						
Heat exchanger system side		Type	Plate. in stainless steel			
Water capacity		l	2,16	2,16	2,44	2,44
SOUND DATA						
Sound output A7/W55	**(3)**	dB(A)	55	58	59	60
Sound pressure aT 5m / 1m conditions A7/W55	**(4)**	dB(A)	45	47,5	48,5	50,5
WEIGHT						
Net weight		kg	86	86	105	105

The performance values comply with Standards UNI EN 14511:2018 and UNI EN 14825:2016. Performance data certified by HP Keymark.
(1) Input power from compressors and from fans and circulator in the maximum operating conditions, with the nominal power supply voltage.
(2) Maximum unit operating current with the nominal power supply voltage.
(3) Sound emission values declared, in accordance with standard EN 12102-1.
(4) Measured in a semi-anechoic chamber, at a distance of 1m from the front of the unit and a height from the floor equal to (1+H)/2, where H is the height of the unit expressed in metres (in accordance with standard EN 12102-1).

TECHNICAL DATA

30AWH-M 012H ÷ 016H-9

Model			30AWH-M					
			012H	014H	016H	012H-9	014H-9	016H-9
PERFORMANCE DATA IN HEATING								
Performance in heating (A7°C; W35°C)								
Nominal capacity		kW	12,10	14,50	15,90	12,10	14,50	15,90
Power consumption		kW	2,44	3,15	3,53	2,44	3,15	3,53
COP			4,95	4,60	4,50	4,95	4,60	4,50
SCOP (temperate zone)			4,81	4,72	4,62	4,81	4,72	4,62
Seasonal energy efficiency		%	189	186	182	189	186	182
Energy class			A+++	A+++	A+++	A+++	A+++	A+++
Performance in heating (A7°C; W45°C)								
Nominal capacity		kW	12,30	14,10	16,00	12,30	14,10	16,00
Power consumption		kW	3,32	3,92	4,57	3,32	3,92	4,57
COP			3,70	3,60	3,50	3,70	3,60	3,50
Performance in heating (A7°C; W55°C)								
Nominal capacity		kW	11,90	13,80	16,00	11,90	13,80	16,00
Power consumption		kW	3,90	4,68	5,61	3,90	4,68	5,61
COP			3,05	2,95	2,85	3,05	2,95	2,85
SCOP (Temperate zone)			3,45	3,47	3,41	3,45	3,47	3,41
Seasonal energy efficiency		%	136	137	134	136	137	134
Energy class			A++	A++	A++	A++	A++	A++
PERFORMANCE DATA IN COOLING								
Performance in cooling (A35°C; W7°C)								
Nominal capacity		kW	11,50	12,40	14,00	11,50	12,40	14,00
Power consumption		kW	4,18	4,96	5,60	4,18	4,96	5,60
EER			2,75	2,50	2,50	2,75	2,50	2,50
SEER			4,89	4,86	4,69	4,86	4,83	4,67
Seasonal energy efficiency		%	193	191	185	191	190	184
Performance in cooling (A35°C; W18°C)								
Nominal capacity		kW	12,00	13,50	14,20	12,00	13,50	14,20
Power consumption		kW	3,04	3,75	4,38	3,04	3,75	4,38
EER			3,95	3,61	3,61	3,95	3,61	3,61
ELECTRICAL CHARACTERISTICS								
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50
Total maximum input power	**(1)**	kW	5,50	5,80	6,20	5,50	5,80	6,20
Total maximum input current	**(2)**	A	25,00	26,00	27,00	10,00	11,00	12,00
COMPRESSOR								
Compressor		Type	DC twin rotary / Mitsubishi					
Adjustment		Type	Inverter modulating					
Minimum capacity control		%	46	41	40	46	41	40
Refrigerant		Type	R32	R32	R32	R32	R32	R32
GWP		CO_2 equiv. In t/kg	675	675	675	675	675	675
Refrigerant load		kg	1,75	1,75	1,75	1,75	1,75	1,75
Control box load		CO_2 equiv. In t	1,18	1,18	1,18	1,18	1,18	1,18
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	DC axial					
Quantity		n.	1	1	1	1	1	1
Maximum air flow rate		m^3/h	4060	4060	4650	4060	4060	4650
HEAT EXCHANGER (SOURCE SIDE)								
Heat exchanger source side		Type	Pipes in copper. Fins in hydrophilic aluminium with anti-corrosion treatment					
CIRCULATION PUMP								
Circulation pump		Type/set	Variable speed centrifuge					
Nominal delivery		m^3/h	2,08	2,49	2,73	2,08	2,49	2,73
Maximum input power		W	43	43	43	43	43	43
Maximum input current		A	0,44	0,44	0,44	0,44	0,44	0,44
Expansion tank volume		l	8	8	8	8	8	8

Model			30AWH-M					
			012H	014H	016H	012H-9	014H-9	016H-9
HEAT EXCHANGER (SYSTEM SIDE)								
Heat exchanger system side		Type	Plate. in stainless steel					
Water capacity		l	2,78					
SOUND DATA								
Sound output A7/W55	(3)	dB(A)	65	65	68	65	65	68
Sound pressure aT 5m / 1m conditions A7/W55	(4)	dB(A)	53	53,5	57,5	53,5	54	58
WEIGHT								
Net weight		kg	129	129	129	144	144	144

The performance values comply with Standards UNI EN 14511:2018 and UNI EN 14825:2016. Performance data certified by HP Keymark.
(1) Input power from compressors and from fans and circulator in the maximum operating conditions, with the nominal power supply voltage.
(2) Maximum unit operating current with the nominal power supply voltage.
(3) Sound emission values declared, in accordance with standard EN 12102-1.
(4) Measured in a semi-anechoic chamber, at a distance of 1m from the front of the unit and a height from the floor equal to (1+H)/2, where H is the height of the unit expressed in metres (in accordance with standard EN 12102-1).

TECHNICAL DATA ERP

30AWH-M 004H ÷ 010H

Model		30AWH-M			
		004H	006H	008H	010H
Temperate zone - Low temperature (30/35°C) EU reg. 811_2013					
Seasonal energy efficiency	%	191	195	206	205
SCOP		4,85	4,95	5,22	5,20
Pdesignh at -7°C	kW	4,88	6,03	7,18	8,10
Energy class		A+++	A+++	A+++	A+++
Sound output	dB(A)	55	58	59	60
Temperate zone - Medium temperature (47/55°C) EU reg. 811_2013					
Seasonal energy efficiency	%	130	139	133	137
SCOP		3,31	3,52	3,37	3,47
Pdesignh at -7°C	kW	3,89	5,04	5,84	6,78
Energy class		A++	A++	A++	A++

The performance values comply with Standards UNI EN 14511:2018 and UNI EN 14825:2016.

30AWH-M 012H ÷ 016H-9

Model		30AWH-M					
		012H	014H	016H	012H-9	014H-9	016H-9
Temperate zone - Low temperature (30/35°C) EU reg. 811_2013							
Seasonal energy efficiency	%	189	186	182	189	186	182
SCOP		4,81	4,72	4,62	4,81	4,72	4,62
Pdesignh at -7°C	kW	10,61	12,14	13,45	10,61	12,14	13,45
Energy class		A+++	A+++	A+++	A+++	A+++	A+++
Sound output	dB(A)	65	65	68	65	65	68
Temperate zone - Medium temperature (47/55°C) EU reg. 811_2013							
Seasonal energy efficiency	%	136	137	134	136	137	134
SCOP		3,45	3,47	3,41	3,45	3,47	3,41
Pdesignh at -7°C	kW	10,24	10,68	11,52	10,24	10,68	11,52
Energy class		A++	A++	A++	A++	A++	A++

The performance values comply with Standards UNI EN 14511:2018 and UNI EN 14825:2016.

PERFORMANCE VALUES IN ACCORDANCE WITH STANDARDS EN 14511 AND EN 14825

004H - HEATING						
Performance with full load						
Delivery temperature	35°C		45°C		55°C	
Outdoor temperature	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP
-7	4,70	3,10	4,30	2,35	4,00	1,95
2	4,40	4,00	5,10	3,00	5,10	2,45
7	4,20	5,10	4,30	3,80	4,40	2,95
12	5,26	5,61	5,59	4,22	4,98	3,38
15	5,14	4,84	5,67	4,37	4,96	3,53
20	5,09	5,46	5,63	4,88	4,89	3,84
35	5,54	7,89	5,70	6,47	5,14	4,92
Performance with partial load						
Tbival (-7°C)	A	B	C	D	-	-
Outdoor temperature (°C)	-7	2	7	12	-	-
PLR - Climate load factor	0,88	0,54	0,35	0,15	-	-
DC - Output with full load	4,70	4,40	4,20	5,26	-	-
COP with full load	3,10	4,00	5,10	5,61	-	-
COP with partial load	3,10	4,78	6,13	8,05	-	-
CR - Load factor	1,00	0,66	0,45	0,15	-	-
f COP - Corrective factor	1,00	1,20	1,20	1,43	-	-

NOTE: the performance values with a partial load refer to an output water temperature of 35°C.

004H - COOLING				
Delivery temperature				
	Load factor	Outdoor temperature (°C)	EER	Cooling Capacity (kW)
EER1	100%	35	3,45	4,70
EER2	75%	30	4,76	3,53
EER3	50%	25	5,72	2,35
EER4	25%	20	5,72	1,18

006H - HEATING						
Performance with full load						
Delivery temperature	35°C		45°C		55°C	
Outdoor temperature	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP
-7	6,00	3,00	5,40	2,40	5,15	2,00
2	5,50	3,90	5,80	3,00	5,65	2,45
7	6,35	4,95	6,30	3,70	6,00	2,95
12	6,51	5,38	6,83	4,09	6,12	3,27
15	6,48	5,57	6,98	4,32	6,15	3,42
20	6,27	6,28	6,82	4,62	6,03	3,76
35	6,46	8,87	6,55	5,79	6,02	4,75
Performance with partial load						
Tbival (-7°C)	A	B	C	D	-	-
Outdoor temperature (°C)	-7	2	7	12	-	-
PLR - Climate load factor	0,88	0,54	0,35	0,15	-	-
DC - Output with full load	6,00	5,50	6,35	6,51	-	-
COP with full load	3,00	3,90	4,95	5,38	-	-
COP with partial load	3,00	4,85	6,63	7,93	-	-
CR - Load factor	1,00	0,67	0,38	0,16	-	-
f COP - Corrective factor	1,00	1,24	1,34	1,47	-	-

NOTE: the performance values with a partial load refer to an output water temperature of 35°C.

006H - COOLING				
Delivery temperature				
	Load factor	Outdoor temperature (°C)	EER	Cooling Capacity (kW)
EER1	100%	35	3,00	7,00
EER2	75%	30	4,00	5,25
EER3	50%	25	6,45	3,50
EER4	25%	20	7,73	1,75

008H- HEATING						
Performance with full load						
Delivery temperature	35°C		45°C		55°C	
Outdoor temperature	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP
-7	7,00	3,20	6,60	2,55	6,15	2,05
2	7,10	4,10	7,40	3,25	7,10	2,60
7	8,40	5,15	8,10	3,85	7,50	3,18
12	8,03	5,99	8,06	4,26	7,26	3,54
15	8,11	6,37	8,15	4,55	7,33	3,68
20	8,37	7,53	8,36	5,25	7,47	4,14
35	7,89	8,74	8,83	6,77	7,48	5,03
Performance with partial load						
Tbival (-7°C)	A	B	C	D	-	-
Outdoor temperature (°C)	-7	2	7	12	-	-
PLR - Climate load factor	0,88	0,54	0,35	0,15	-	-
DC - Output with full load	7,00	7,10	8,40	8,03	-	-
COP with full load	3,20	4,10	5,15	5,99	-	-
COP with partial load	3,20	5,09	6,82	8,35	-	-
CR - Load factor	1,00	0,60	0,33	0,15	-	-
f COP - Corrective factor	1,00	1,24	1,32	1,39	-	-

NOTE: the performance values with a partial load refer to an output water temperature of 35°C.

008H - COOLING				
Delivery temperature				
	Load factor	Outdoor temperature (°C)	EER	Cooling Capacity (kW)
EER1	100%	35	3,35	7,45
EER2	75%	30	4,71	5,59
EER3	50%	25	6,65	3,73
EER4	25%	20	8,55	1,86

010H - HEATING						
Performance with full load						
Delivery temperature	35°C		45°C		55°C	
Outdoor temperature	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP
-7	8,00	3,05	7,35	2,55	6,85	2,00
2	8,20	4,00	7,85	3,20	8,10	2,56
7	10,00	4,95	10,00	3,75	9,50	3,10
12	9,03	5,77	9,11	4,06	8,50	3,41
15	9,13	6,22	9,22	4,38	8,60	3,67
20	9,58	7,14	9,46	5,08	8,73	4,05
35	8,59	9,01	9,81	6,84	8,63	5,29
Performance with partial load						
Tbival (-7°C)	A	B	C	D	-	-
Outdoor temperature (°C)	-7	2	7	12	-	-
PLR - Climate load factor	0,88	0,54	0,35	0,15	-	-
DC - Output with full load	8,00	8,20	10,00	9,03	-	-
COP with full load	3,05	4,00	4,95	5,77	-	-
COP with partial load	3,05	5,01	7,08	8,58	-	-
CR - Load factor	1,00	0,60	0,32	0,15	-	-
f COP - Corrective factor	1,00	1,25	1,43	1,49	-	-

NOTE: the performance values with a partial load refer to an output water temperature of 35°C.

010H- COOLING				
Delivery temperature				
	Load factor	Outdoor temperature (°C)	EER	Cooling Capacity (kW)
EER1	100%	35	3,25	8,20
EER2	75%	30	4,47	6,15
EER3	50%	25	7,02	4,10
EER4	25%	20	9,54	2,05

012H - HEATING						
Performance with full load						
Delivery temperature	35°C		45°C		55°C	
Outdoor temperature	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP
-7	10,00	3,00	10,20	2,40	9,80	2,05
2	9,20	3,90	10,60	3,00	11,30	2,50
7	12,10	4,95	12,30	3,70	11,90	3,05
12	10,98	5,75	11,10	4,26	9,53	3,17
15	11,00	5,97	11,20	4,52	9,12	3,20
20	10,80	7,18	11,20	5,16	9,00	3,61
35	11,50	8,78	11,50	6,17	10,00	4,86
Performance with partial load						
Tbival (-7°C)	A	B	C	D	-	-
Outdoor temperature (°C)	-7	2	7	12	-	-
PLR - Climate load factor	0,88	0,54	0,35	0,15	-	-
DC - Output with full load	10,00	9,20	12,10	10,98	-	-
COP with full load	3,00	3,90	4,95	5,75	-	-
COP with partial load	3,00	4,65	6,62	8,47	-	-
CR - Load factor	1,00	0,67	0,33	0,16	-	-
f COP - Corrective factor	1,00	1,19	1,34	1,47	-	-

NOTE: the performance values with a partial load refer to an output water temperature of 35°C.

012H - COOLING				
Delivery temperature				
	Load factor	Outdoor temperature (°C)	EER	Cooling Capacity (kW)
EER1	100%	35	2,75	11,50
EER2	75%	30	3,93	8,63
EER3	50%	25	5,73	5,75
EER4	25%	20	6,75	2,88

014H- HEATING						
Performance with full load						
Delivery temperature	35°C		45°C		55°C	
Outdoor temperature	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP
-7	12.00	2.85	11.80	2.35	11.00	2.05
2	11.00	3.60	11.50	2.85	12.40	2.45
7	14.50	4.60	14.10	3.60	13.80	2.95
12	11.51	5.46	11.69	4.12	10.28	3.32
15	11.60	5.67	11.90	4.25	9.84	3.41
20	11.10	6.27	11.50	4.87	9.53	3.74
35	11.80	8.63	12.00	6.10	10.10	4.93
Performance with partial load						
Tbival (-7°C)	A	B	C	D	-	-
Outdoor temperature (°C)	-7	2	7	12	-	-
PLR - Climate load factor	0,88	0,54	0,35	0,15	-	-
DC - Output with full load	12,00	11,00	14,50	11,51	-	-
COP with full load	2,85	3,60	4,60	5,46	-	-
COP with partial load	2,85	4,52	6,68	8,52	-	-
CR - Load factor	1,00	0,67	0,33	0,18	-	-
f COP - Corrective factor	1,00	1,26	1,45	1,56	-	-

NOTE: the performance values with a partial load refer to an output water temperature of 35°C.

014H- COOLING				
Delivery temperature				
	Load factor	Outdoor temperature (°C)	EER	Cooling Capacity (kW)
EER1	100%	35	2,50	12,40
EER2	75%	30	3,85	9,30
EER3	50%	25	5,80	6,20
EER4	25%	20	6,74	3,10

016H - HEATING						
Performance with full load						
Delivery temperature	35°C		45°C		55°C	
Outdoor temperature	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP
-7	13,10	2,70	12,80	2,25	12,50	2,00
2	13,00	3,45	12,70	2,85	13,30	2,40
7	15,90	4,50	16,00	3,50	16,00	2,85
12	14,03	5,58	13,76	4,22	12,69	3,44
15	14,50	5,97	14,20	4,46	13,20	3,61
20	12,70	6,88	12,20	4,71	11,20	3,68
35	12,80	9,06	12,50	6,02	10,40	4,57
Performance with partial load						
Tbival (-7°C)	A	B	C	D	-	-
Outdoor temperature (°C)	-7	2	7	12	-	-
PLR - Climate load factor	0,88	0,54	0,35	0,15	-	-
DC - Output with full load	13,10	13,00	15,90	14,03	-	-
COP with full load	2,70	3,45	4,50	5,58	-	-
COP with partial load	2,70	4,41	6,56	8,51	-	-
CR - Load factor	1,00	0,62	0,33	0,16	-	-
f COP - Corrective factor	1,00	1,28	1,46	1,53	-	-

NOTE: the performance values with a partial load refer to an output water temperature of 35°C.

016H- COOLING				
Delivery temperature				
	Load factor	Outdoor temperature (°C)	EER	Cooling Capacity (kW)
EER1	100%	35	2,50	14,00
EER2	75%	30	3,63	10,50
EER3	50%	25	5,27	7,00
EER4	25%	20	7,29	3,50

012H-9 - HEATING						
Performance with full load						
Delivery temperature	35°C		45°C		55°C	
Outdoor temperature	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP
-7	10,00	3,00	10,20	2,40	9,80	2,05
2	9,20	3,90	10,60	3,00	11,30	2,50
7	12,10	4,95	12,30	3,70	11,90	3,05
12	10,98	5,75	11,10	4,26	9,53	3,17
15	11,00	5,97	11,20	4,52	9,12	3,20
20	10,80	7,18	11,20	5,16	9,00	3,61
35	11,50	8,78	11,50	6,17	10,00	4,86
Performance with partial load						
Tbival (-7°C)	A	B	C	D	-	-
Outdoor temperature (°C)	-7	2	7	12	-	-
PLR - Climate load factor	0,88	0,54	0,35	0,15	-	-
DC - Output with full load	10,00	9,20	12,10	10,98	-	-
COP with full load	3,00	3,90	4,95	5,75	-	-
COP with partial load	3,00	4,65	6,62	8,47	-	-
CR - Load factor	1,00	0,67	0,33	0,16	-	-
f COP - Corrective factor	1,00	1,19	1,34	1,47	-	-

NOTE: the performance values with a partial load refer to an output water temperature of 35°C.

012H-9 - COOLING				
Delivery temperature				
	Load factor	Outdoor temperature (°C)	EER	Cooling Capacity (kW)
EER1	100%	35	2,75	11,50
EER2	75%	30	3,93	8,63
EER3	50%	25	5,73	5,75
EER4	25%	20	6,75	2,88

014H-9- HEATING						
Performance with full load						
Delivery temperature	35°C		45°C		55°C	
Outdoor temperature	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP
-7	12,00	2,85	11,80	2,35	11,00	2,05
2	11,00	3,60	11,50	2,85	12,40	2,45
7	14,50	4,60	14,10	3,60	13,80	2,95
12	11,51	5,46	11,69	4,12	10,28	3,32
15	11,60	5,67	11,90	4,25	9,84	3,41
20	11,10	6,27	11,50	4,87	9,53	3,74
35	11,80	8,63	12,00	6,10	10,10	4,93
Performance with partial load						
Tbival (-7°C)	A	B	C	D	-	-
Outdoor temperature (°C)	-7	2	7	12	-	-
PLR - Climate load factor	0,88	0,54	0,35	0,15	-	-
DC - Output with full load	12,00	11,00	14,50	11,51	-	-
COP with full load	2,85	3,60	4,60	5,46	-	-
COP with partial load	2,85	4,52	6,68	8,52	-	-
CR - Load factor	1,00	0,67	0,33	0,18	-	-
f COP - Corrective factor	1,00	1,26	1,45	1,56	-	-

NOTE: the performance values with a partial load refer to an output water temperature of 35°C.

014H-9 - COOLING				
Delivery temperature				
	Load factor	Outdoor temperature (°C)	EER	Cooling Capacity (kW)
EER1	100%	35	2,50	12,40
EER2	75%	30	3,85	9,30
EER3	50%	25	5,80	6,20
EER4	25%	20	6,74	3,10

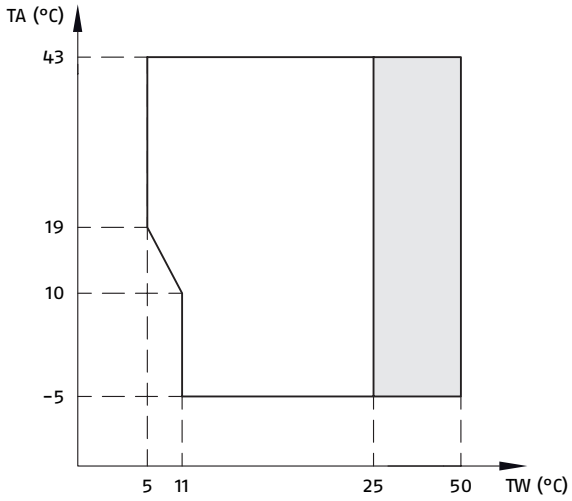
016H-9- HEATING						
Performance with full load						
Delivery temperature	35°C		45°C		55°C	
Outdoor temperature	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP	Nominal capacity (kW)	COP
-7	13,10	2,70	12,80	2,25	12,50	2,00
2	13,00	3,45	12,70	2,85	13,30	2,40
7	15,90	4,50	16,00	3,50	16,00	2,85
12	14,03	5,58	13,76	4,22	12,69	3,44
15	14,50	5,97	14,20	4,46	13,20	3,61
20	12,70	6,88	12,20	4,71	11,20	3,68
35	12,80	9,06	12,50	6,02	10,40	4,57
Performance with partial load						
Tbival (-7°C)	A	B	C	D	-	-
Outdoor temperature (°C)	-7	2	7	12	-	-
PLR - Climate load factor	0,88	0,54	0,35	0,15	-	-
DC - Output with full load	13,10	13,00	15,90	14,03	-	-
COP with full load	2,70	3,45	4,50	5,58	-	-
COP with partial load	2,70	4,41	6,56	8,51	-	-
CR - Load factor	1,00	0,62	0,33	0,16	-	-
f COP - Corrective factor	1,00	1,28	1,46	1,53	-	-

NOTE: the performance values with a partial load refer to an output water temperature of 35°C.

016H-9- COOLING				
Delivery temperature				
	Load factor	Outdoor temperature (°C)	EER	Cooling Capacity (kW)
EER1	100%	35	2,50	14,00
EER2	75%	30	3,63	10,50
EER3	50%	25	5,27	7,00
EER4	25%	20	7,29	3,50

OPERATING LIMITS

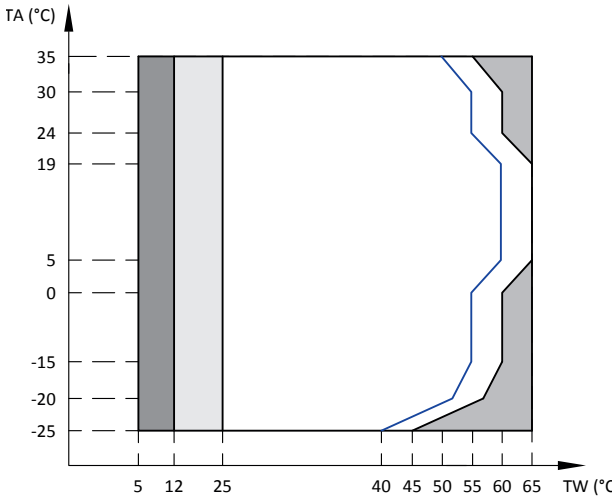
COOLING MODE



TA Outside air temperature.
TW Leaving water temperature.

Operating range with heat pump, with possible limits and protection.

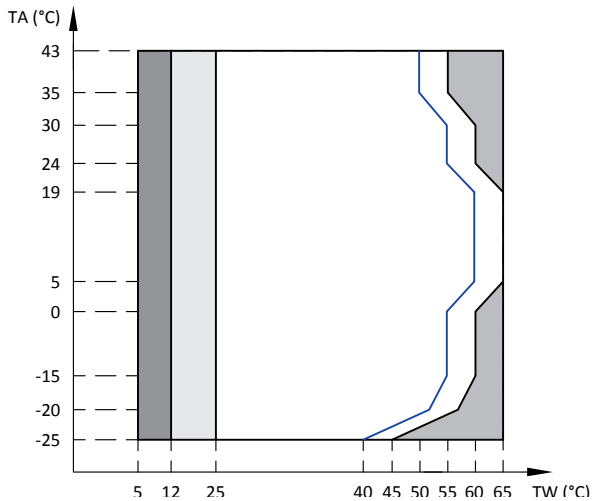
HEATING MODE



TA Outside air temperature.
TW Leaving water temperature.

Operating range with heat pump, with possible limits and protection.
The heat pump switches off and only the external heat source is active.
If the external heat source setting is enabled, that is the only heat source active.
If the external heat source setting is disabled, only the heat pump is active. Cases of limits and protection may arise while the heat pump is operating.
Maximum temperature line for the inlet water with heat pump operation.

DHW MODE



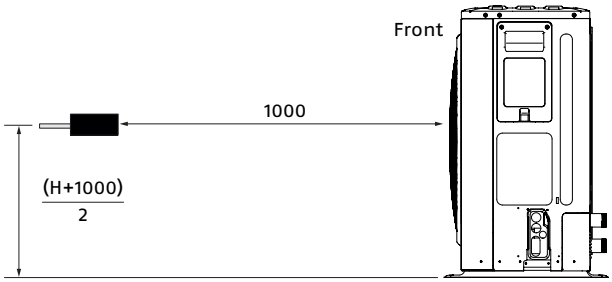
TA Outside air temperature.
TW Water delivery temperature.

Operating range with heat pump, with possible limits and protection.
The heat pump switches off and only the external heat source is active.
If the external heat source setting is enabled, that is the only heat source active.
If the external heat source setting is disabled, only the heat pump is active. Cases of limits and protection may arise while the heat pump is operating.
Maximum temperature line for the inlet water with heat pump operation.

SOUND PRESSURE LEVEL

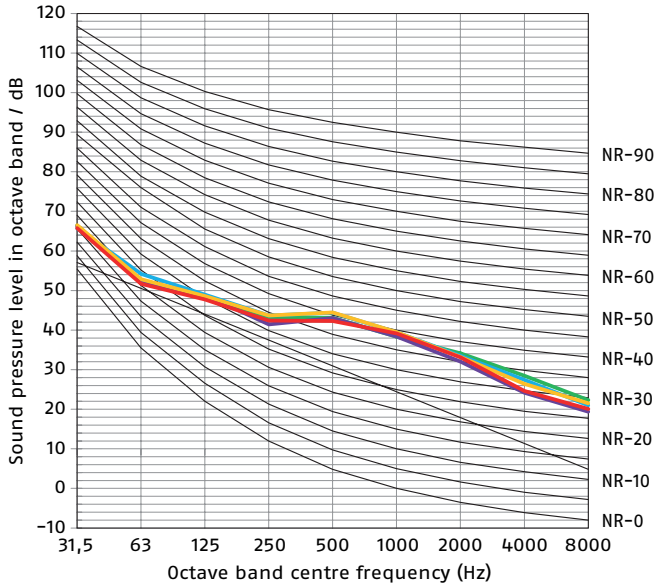
Model		30AWH-M									
		004H	006H	008H	010H	012H	014H	016H	012H-9	014H-9	016H-9
Sound pressure (1)	dB(2)	45	47,5	48,5	50,5	53	53,5	57,5	53,5	54	58

(1) The sound pressure level is measured at a position 1 m in front of the unit and (1+H)/2 m (where H is the height of the unit) above the floor in a semi-anechoic chamber.
During on-site operation, sound pressure levels may be higher due to ambient noise.
(2) dB is the maximum value tested under the following conditions:
Outdoor air temperature 7°C DB, 85% R.H.; EWT 30°C, LWT 35°C. Variable compressor frequency.
Outdoor air temperature 7°C DB, 85% R.H.; EWT 47°C, LWT 55°C. Variable compressor frequency.



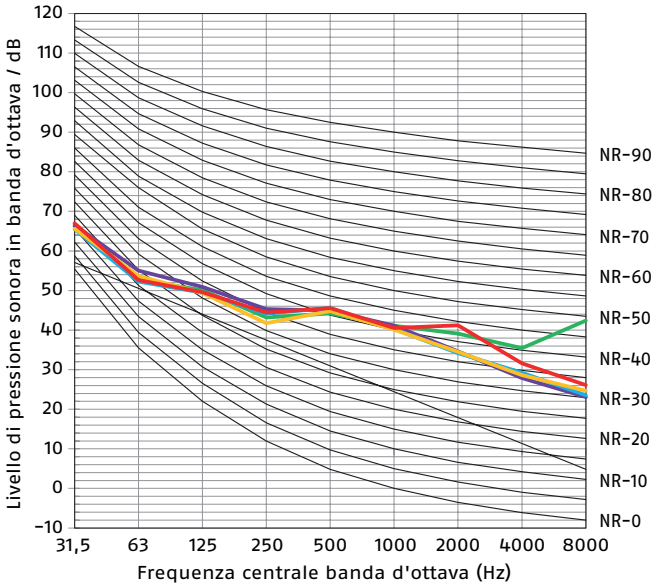
Unit of measurement: mm.

30AWH-M 004H



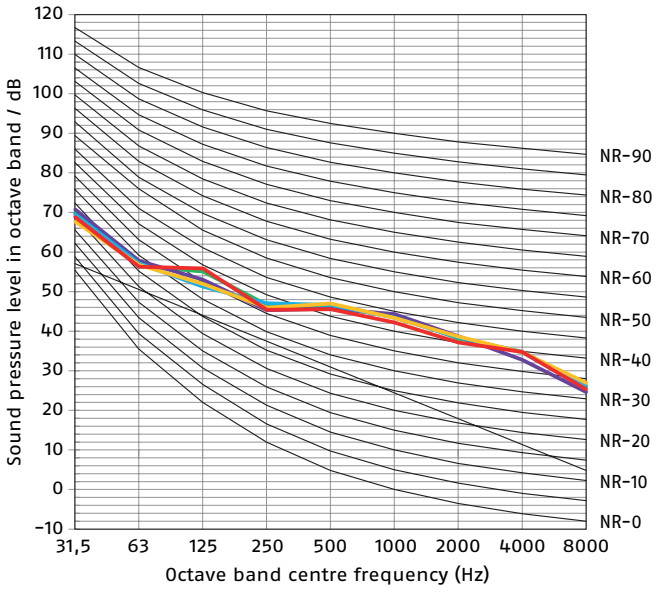
- Cooling at rated frequency
  Outdoor air temperature 35°C dry bulb – Water inlet temperature 12°C – Water outlet temperature 7°C.
- Cooling at rated frequency
  Outdoor air temperature 35°C dry bulb – Water inlet temperature 23°C – Water outlet temperature 18°C.
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 30°C – Water outlet temperature 35°C.

30AWH-M 006H



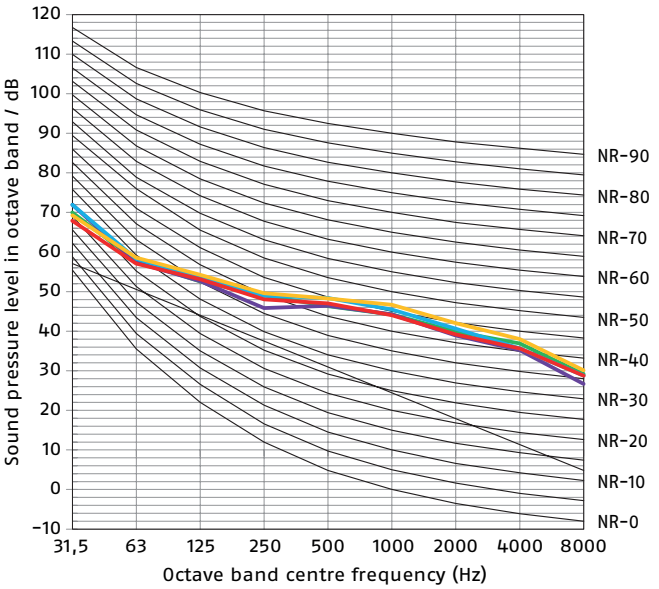
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 40°C – Water outlet temperature 45°C.
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 47°C – Water outlet temperature 55°C.

30AWH-M 008H



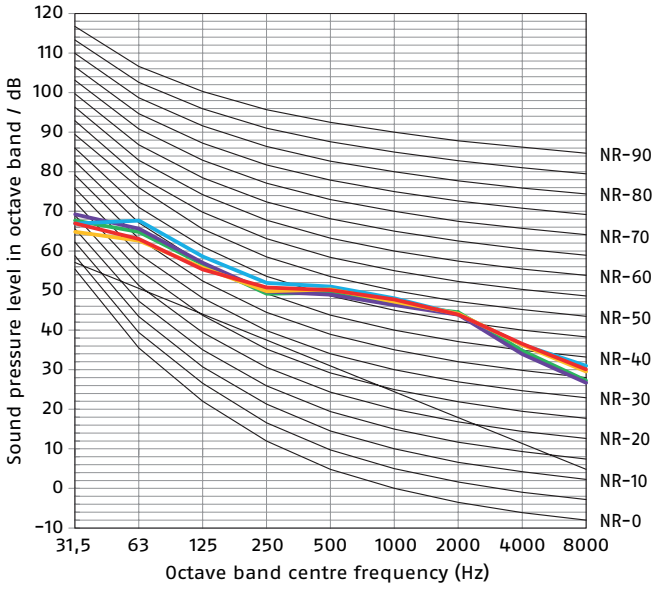
- Cooling at rated frequency
  Outdoor air temperature 35°C dry bulb – Water inlet temperature 12°C – Water outlet temperature 7°C.
- Cooling at rated frequency
  Outdoor air temperature 35°C dry bulb – Water inlet temperature 23°C – Water outlet temperature 18°C.
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 30°C – Water outlet temperature 35°C.

30AWH-M 010H



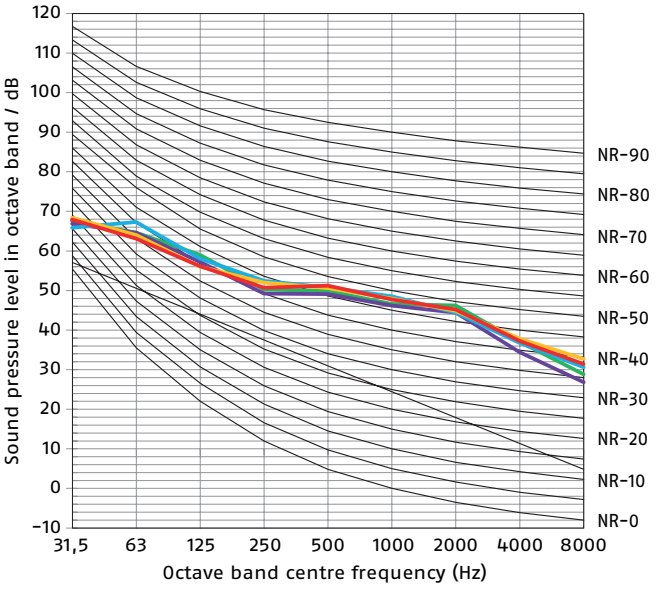
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 40°C – Water outlet temperature 45°C.
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 47°C – Water outlet temperature 55°C.

30AWH-M 012H



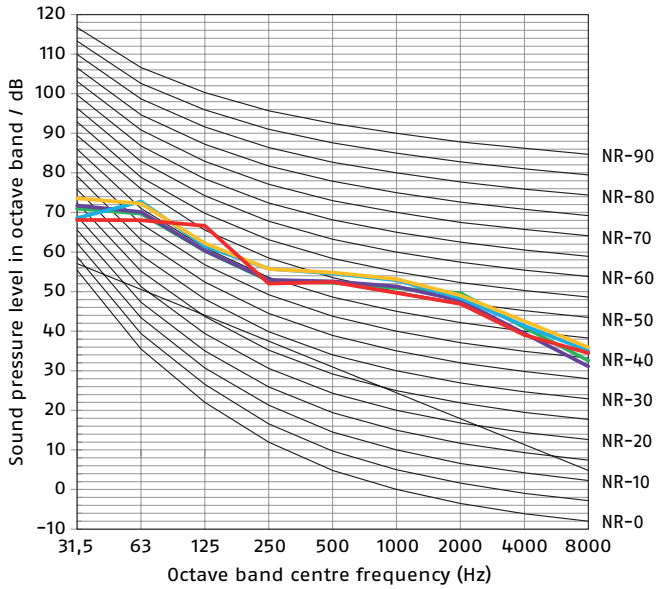
- Cooling at rated frequency
  Outdoor air temperature 35°C dry bulb – Water inlet temperature 12°C – Water outlet temperature 7°C.
- Cooling at rated frequency
  Outdoor air temperature 35°C dry bulb – Water inlet temperature 23°C – Water outlet temperature 18°C.
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 30°C – Water outlet temperature 35°C.

30AWH-M 014H



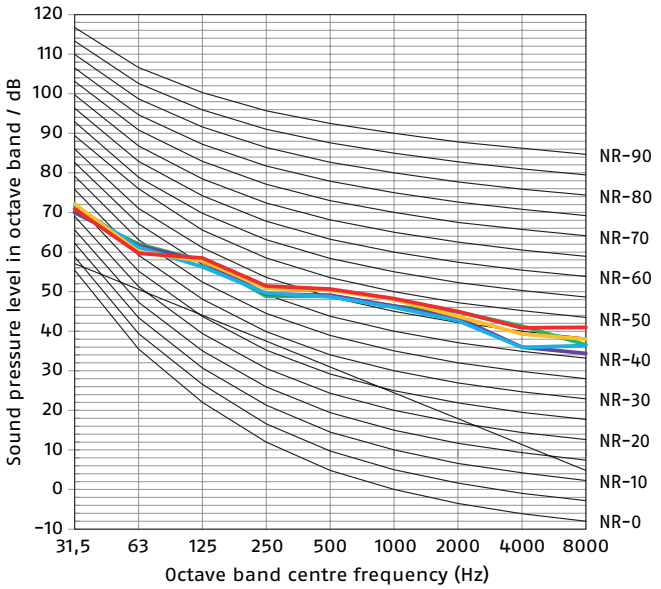
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 40°C – Water outlet temperature 45°C.
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 47°C – Water outlet temperature 55°C.

30AWH-M 016H



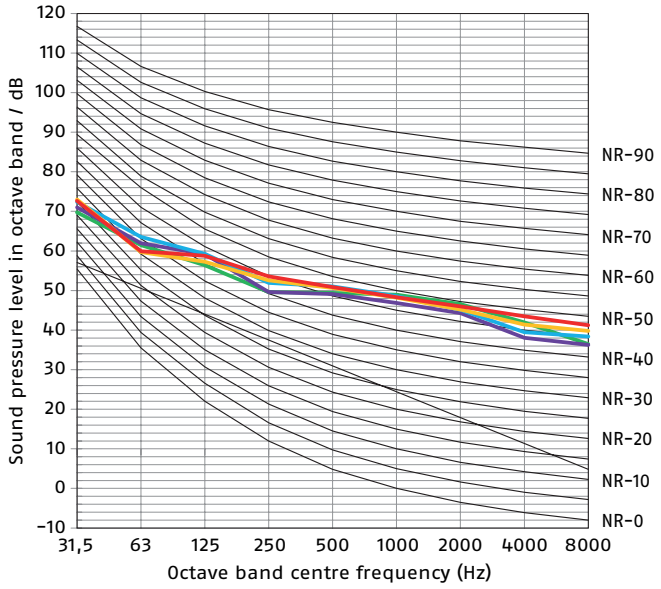
- Cooling at rated frequency
  Outdoor air temperature 35°C dry bulb – Water inlet temperature 12°C – Water outlet temperature 7°C.
- Cooling at rated frequency
  Outdoor air temperature 35°C dry bulb – Water inlet temperature 23°C – Water outlet temperature 18°C.
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 30°C – Water outlet temperature 35°C.

30AWH-M 012H-9



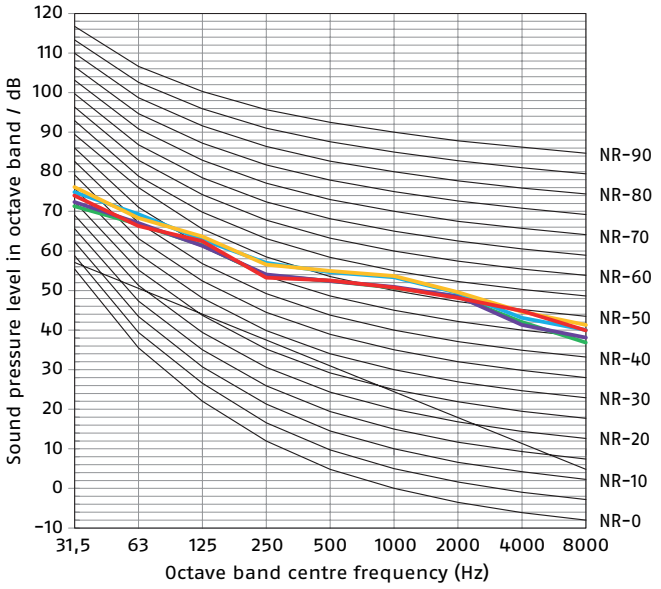
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 40°C – Water outlet temperature 45°C.
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 47°C – Water outlet temperature 55°C.

30AWH-M 014H-9



- Cooling at rated frequency
  Outdoor air temperature 35°C dry bulb – Water inlet temperature 12°C – Water outlet temperature 7°C.
- Cooling at rated frequency
  Outdoor air temperature 35°C dry bulb – Water inlet temperature 23°C – Water outlet temperature 18°C.
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 30°C – Water outlet temperature 35°C.

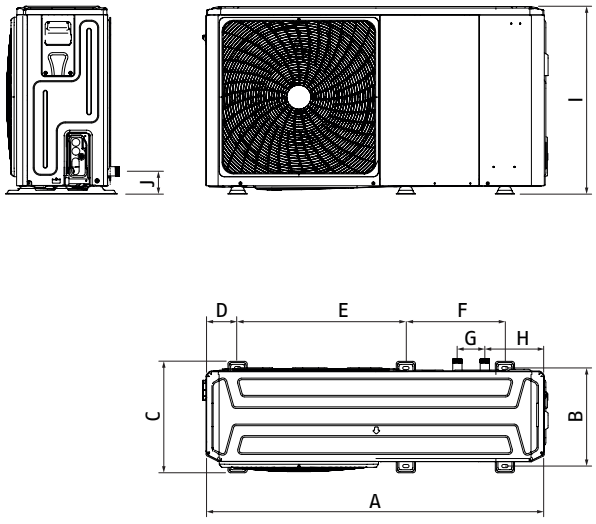
30AWH-M 016H-9



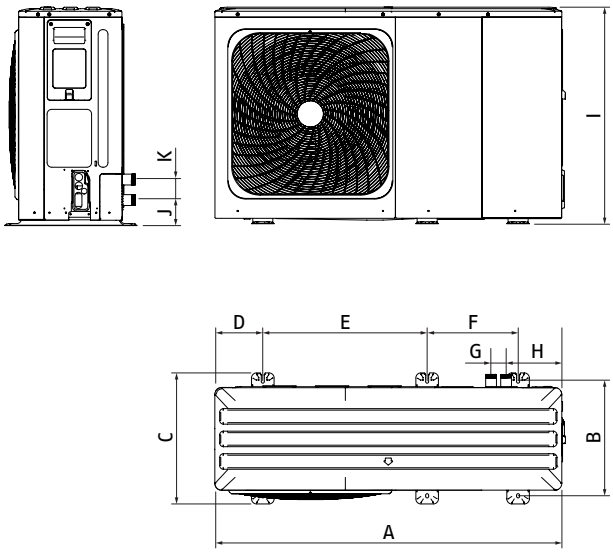
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 40°C – Water outlet temperature 45°C.
- Heating at rated frequency
  Outdoor air temperature 7°C dry bulb – Relative humidity 85% – Water inlet temperature 47°C – Water outlet temperature 55°C.

OVERALL DIMENSIONS

30AWH-M 004H - 006H



30AWH-M 008H ÷ 016H-9



Model	A	B	C	D	E	F	G	H	I	J	K
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
30AWH-M 004H - 006H	1295	375	426	120	644	379	105	225	718	87	/
30AWH-M 008H - 016H-9	1385	458	523	192	656	363	60	221	865	101	81

PLACE OF INSTALLATION

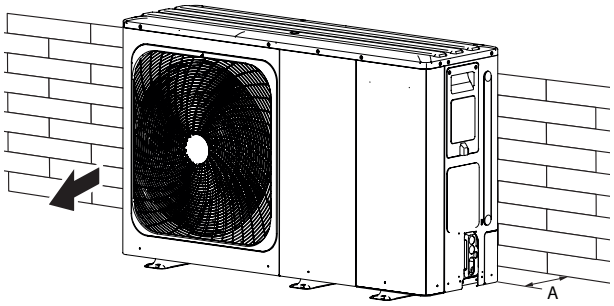
The unit is equipped with flammable refrigerant and must be installed outdoors in a well-ventilated place. Make sure that appropriate measures are taken to prevent the unit from being used as a shelter by small animals.

Choose an installation site that meets the following conditions:
- Well-ventilated.
- In an area which will not disturb any neighbours.
- On a level surface able to support the weight of the unit as well as any vibrations.
- In an area allowing maintenance to be carried out.

When installing the unit in a location exposed to strong wind, pay special attention to the following.
Strong winds of 5 m/sec or more blowing against the air outlet of the unit may cause a short circuit (exhaust air intake), which could have the following consequences:
- Deterioration of operational capacity.
- Frequent frost acceleration when operating in heating mode.
- Interruption of operation due to increased high pressure.

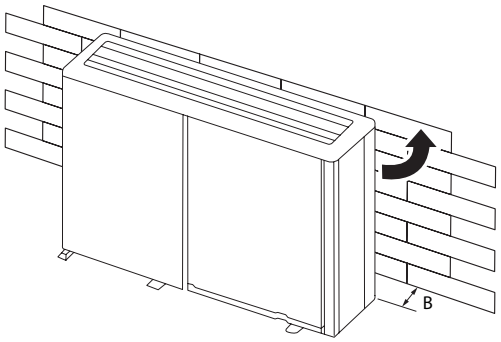
When a strong wind blows continuously on the front of the unit, the fan can start to rotate quickly causing it to break.
When using the unit in cold climates, observe the instructions provided below:
- Never install the unit in a place where the intake side can be directly exposed to the wind.
- In areas with heavy snowfall, it is extremely important to choose an installation site where snow will not affect the device.
- If it is possible for snow to fall from the side, make sure that the heat exchanger coil is not affected by snow (if necessary, build a canopy).
- Install the unit high enough to prevent it from being buried in snow.

In normal conditions



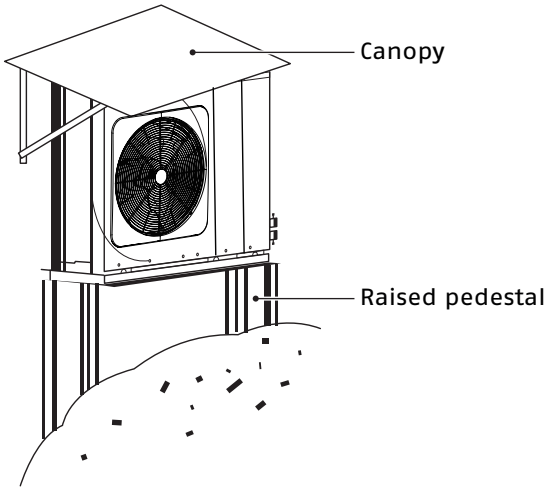
Model	A
	mm
30AWH-M 004H - 006H	≥300
30AWH-M 008H ÷ 016H-9	≥300

In conditions of high wind

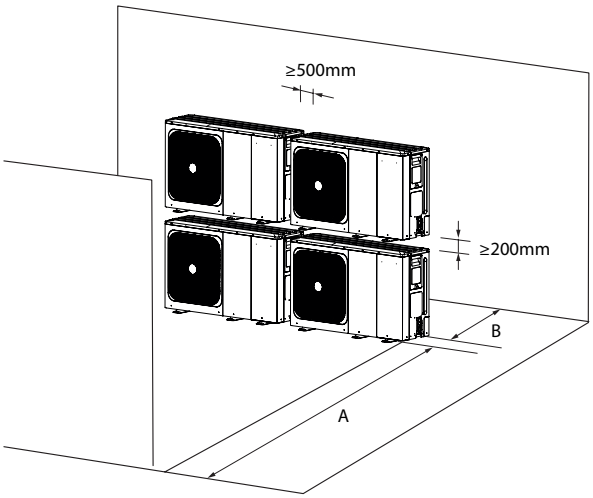


Model	B
	mm
30AWH-M 004H - 006H	≥1000
30AWH-M 008H ÷ 016H-9	≥1500

In cold climate



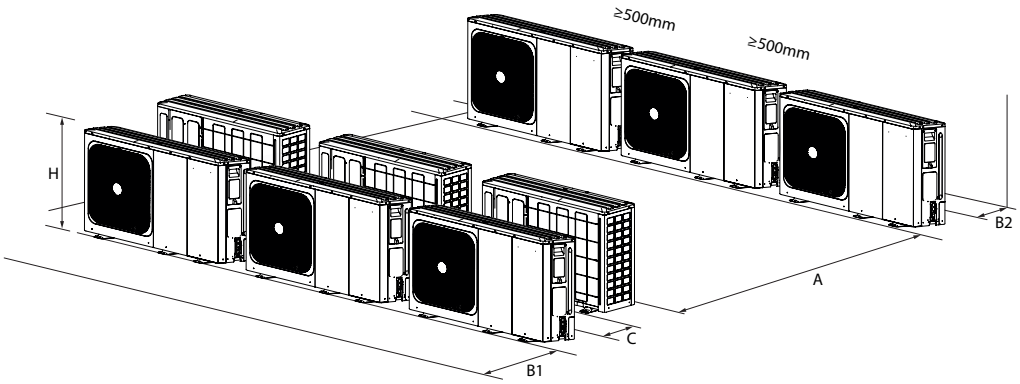
In case of stacked installation



Model	A	B
	mm	mm
30AWH-M 004H - 006H	≥1000	≥300
30AWH-M 008H ÷ 016H-9	≥1500	≥300

A: If there is an obstacle to the front. - B: If there is an obstacle to the rear.

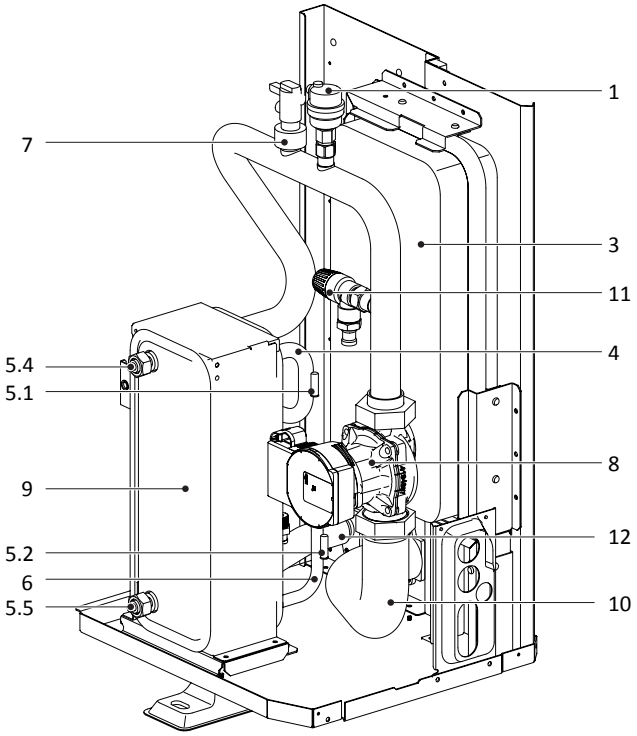
In the case of installation in several rows



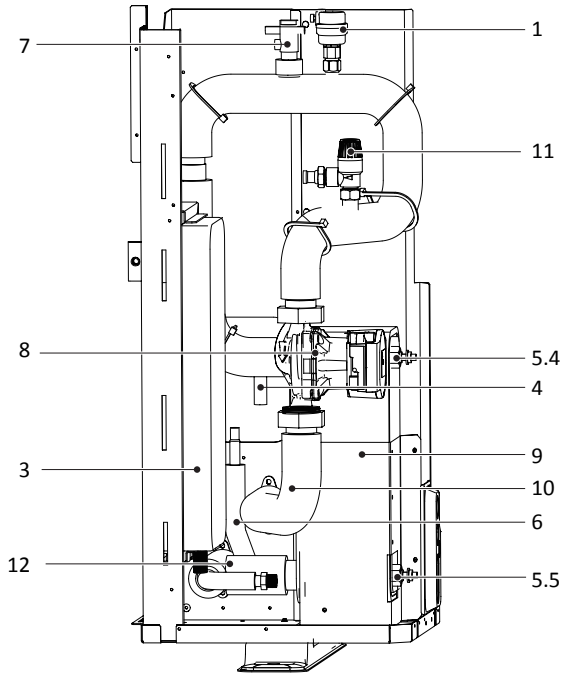
Model	A	B1	B2	C
	mm	mm	mm	mm
30AWH-M 004H - 006H	≥2500	≥1000	≥300	≥600
30AWH-M 008H ÷ 016H-9	≥3000	≥1500	≥300	≥600

HYDRAULIC MODULE

30AWH-M 004H - 006H



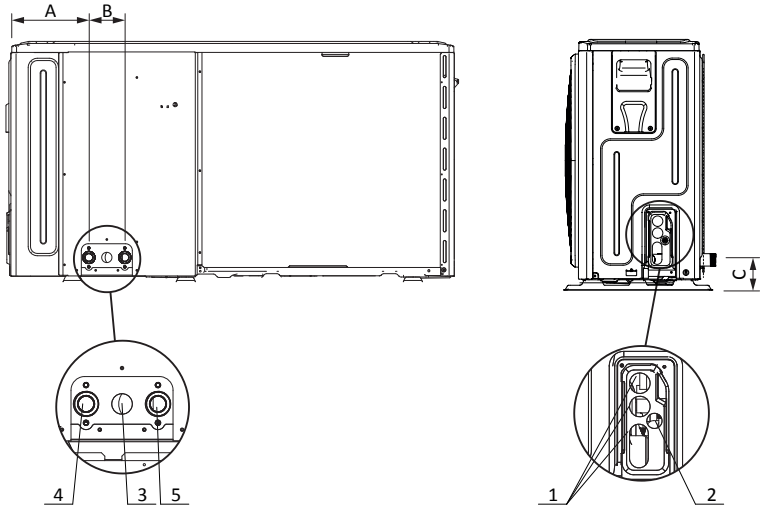
30AWH-M 008H ÷ 016H-9

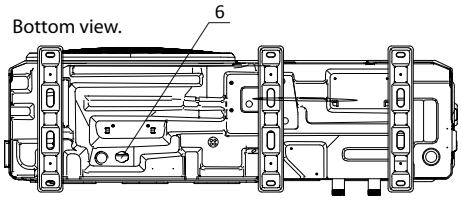


	Assembly unit	Explanation
1	Automatic air purge valve	Remaining air in the water circuit will be automatically removed from the water circuit.
3	Expansion vessel	Balances water system pressure.
4	Refrigerant gas pipe	/
5	Temperature sensor	Four temperature sensors determine the water and refrigerant temperature at various points in the water circuit. 5.1-T2B; 5.2-T2; 5.3-T1(optional); 5.4-TW_out; 5.5-TW_in
6	Refrigerant liquid pipe	/
7	Flow switch	Detects water flow rate to protect compressor and water pump in the event of insufficient water flow.
8	Pump	Circulates water in the water circuit.
9	Plate heat exchanger	Transfer heat from the refrigerant to the water.
10	Water outlet pipe	/
11	Pressure relief valve	Prevents excessive water pressure by opening at 3 bar and discharging water from the water circuit.
12	Water inlet pipe	/

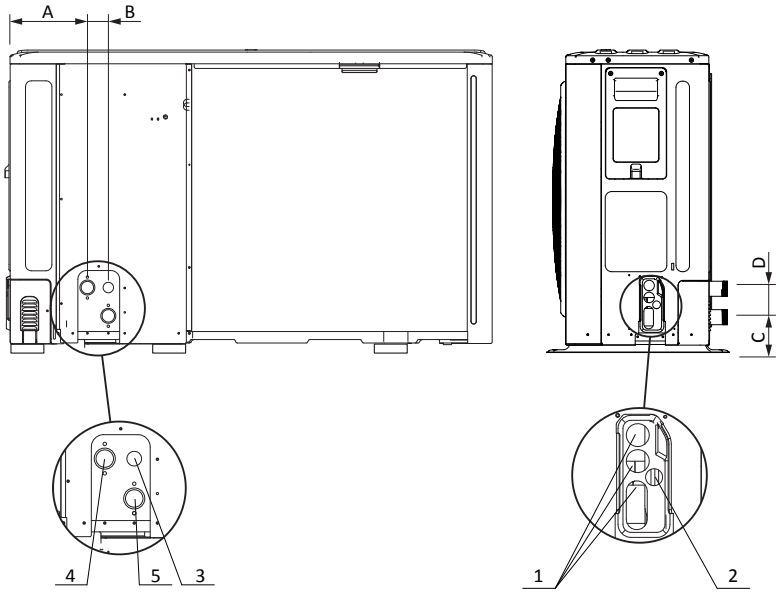
PLUMBING CONNECTIONS

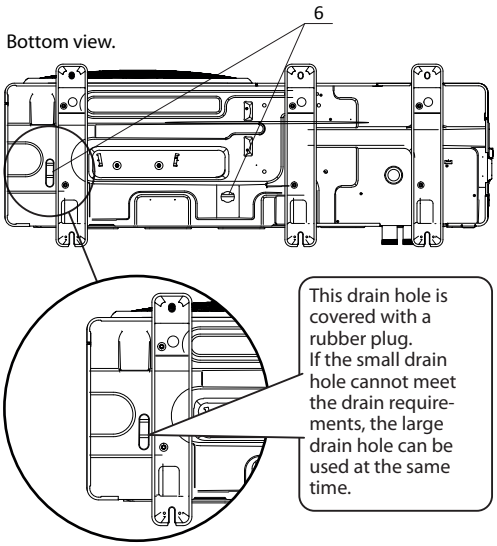
30AWH-M 004H - 006H





30AWH-M 008H ÷ 016H-9





	Model		30AWH-M 004H - 006H	30AWH-M 008H ÷ 016H-9
1	Hole for the HV wire	Ø mm	25	25
2	Hole for the LV wire	Ø mm	15	15
3	Hole for safety valve drain pipe	Ø mm	10	10
4	Water outlet	Ø	1"	1 1/4"
5	Water inlet	Ø	1"	1 1/4"
6	Condensate outlet hose fitting (included)	Ø mm	28	28
A		mm	225	221
B		mm	105	60
C		mm	87	101
D		mm	-	81

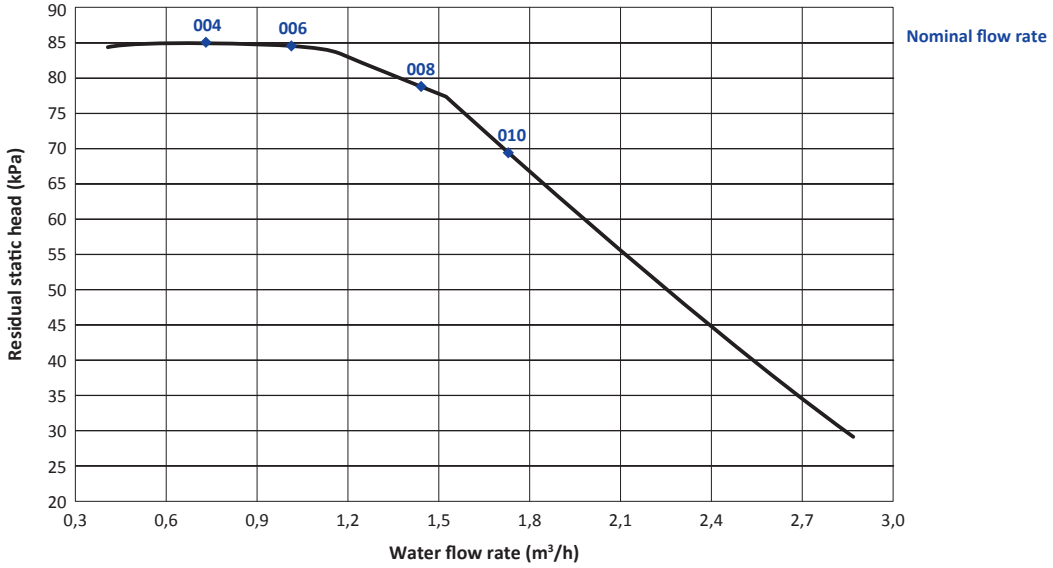
DIAGRAM OF FLOW RATE - HEAD - LOAD LOSS

30AWH-M is fitted with a variable speed circulation pump.
When sizing the system, bear in mind the residual discharge head shown in the following charts.

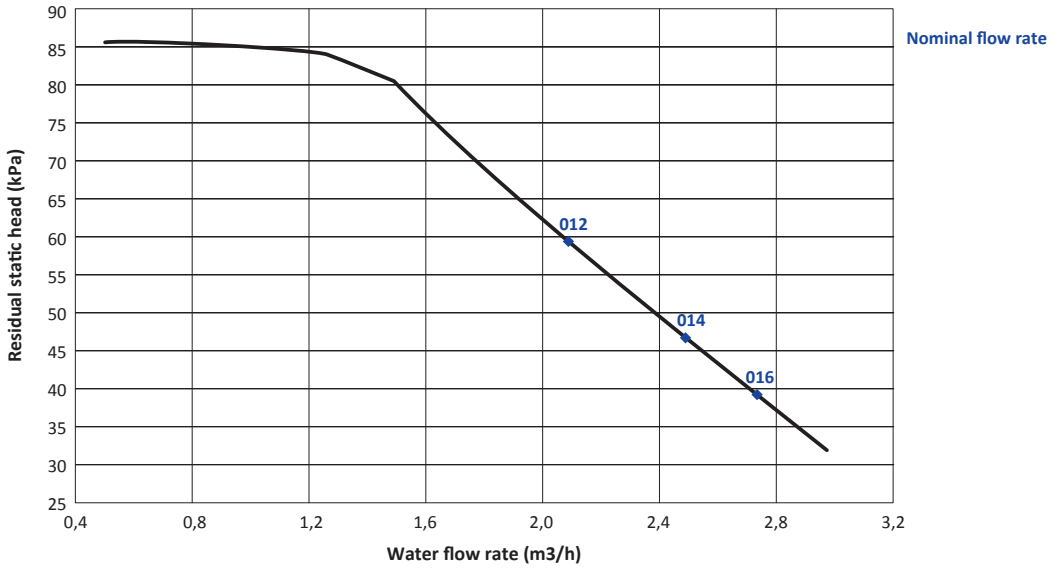
Model		30AWH-M									
		004H	006H	008H	010H	012H	014H	016H	012H-9	014H-9	016H-9
Available pump head (A7; W35) (1)	kPa	85	84	78	69	59	47	39	59	47	39

(1) Outdoor air temperature 7°C BS, 6°C BU; water inlet/outlet 30/35°C.

30AWH-M 004H ÷ 010H



30AWH-M 012H ÷ 016H-9



WATER IN THE HEATING SYSTEMS

CHEMICAL-PHYSICAL CHARACTERISTICS

The chemical-physical characteristics of the water must comply with European standard EN 14868 and the tables below:

System water reference values		
pH	-	7 - 8
Electrical conductivity	µS/cm	10 - 600
Chlorine ions	mg/l	< 10
Sulphuric acid ions	mg/l	< 30
Total iron	mg/l	< 5
Alkalinity M	mg/l	< 100
Total hardness	mmol/l	1 - 2,5
Sulphur ions	-	none
Ammonia ions	-	none
Silicon ions	mg/l	< 1

Well or groundwater not coming from the aqueduct should always be carefully analysed and if necessary conditioned with appropriate treatment systems.
If the initial water hardness exceeds the value indicated in the table, a water softening system must be used.
Excessive water softening (total hardness < 1.5 mmol/l) could lead to corrosion on contact with metal elements (pipes or boiler parts). The conductivity value must also be kept within 600 µS/cm.
Check the chloride concentration at the outlet after regeneration of the resins.
It is strictly prohibited to introduce acids into the washing circuit.
It is strictly prohibited to constantly or frequently top up the system, as this can damage the heat exchanger of the appliance.

SYSTEM WATER CONTENT AND FLOW RATE

Heat pumps require systems that guarantee a constant fluid flow rate to the device, within minimum and maximum values and with sufficient volumes to avoid any imbalance in the cooling circuits and ensure the correct degree of comfort.

SYSTEM WATER CONTENT

A minimum volume of water in the system's primary circuit must be guaranteed for the appliance to operate correctly.
The minimum volume is necessary to prevent the risk of ice formation during defrosting operations or continuous modulation of the compressor frequency.
It also provides the following advantages:
- less appliance wear;
- increase in system efficiency;
- improved stability and temperature precision.

The water flow rate must be kept constant during operations, and must respect the limits shown in the table:

Model		30AWH-M									
		004H	006H	008H	010H	012H	014H	016H	012H-9	014H-9	016H-9
Minimum system water content (1) (2)	l	25	25	25	25	40	40	40	40	40	40
Minimum water flow rate	m^3/h	0,40	0,40	0,40	0,40	0,70	0,70	0,70	0,70	0,70	0,70
Maximum water flow rate	m^3/h	0,90	1,25	1,65	2,10	2,50	2,75	3,00	2,50	2,75	3,00

(1) Excluding the volume of water inside the unit.
(2) In the case of cascade installation, the minimum volume should be ≥ of 40 l*n where n is the number of connected units.

ELECTRICAL WIRING

SAFETY DEVICE REQUIREMENT:

- Select the cable diameters (minimum value) individually for each unit on the basis of tables 1 and 2, where the nominal current in table 1 means MCA in table 2. If the MCA is higher than 63A, the wire diameters must be selected in accordance with the national wiring regulations.
- The maximum permitted variation between the phases in the voltage field is 2%.
- Select the circuit breaker that separates the contacts by at least 3mm on all the poles and allows for complete disconnection, where the MFA is used to select the current circuit breakers and the residual current circuit breakers.

SIZING THE CABLES

For the sizing of the electricity supply cable and the safety appliances, refer to the tables below:

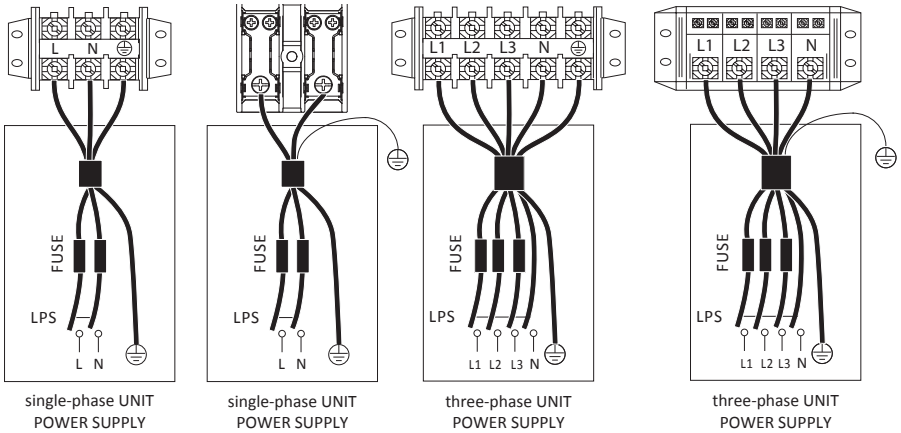
Table 1		
Nominal current of the appliance: (A)	**Nominal cross section area (mm²)**	
	Flexible cables	**Fixed wiring cable**
3	0,5 and 0,75	1 and 2,5
>3 and 6	0,75 and 1	1 and 2,5
>6 and 10	1 and 1,5	1 and 2,5
>10 and 16	1,5 and 2,5	1,5 and 4
>16 and 25	2,5 and 4	2,5 and 6
>25 and 32	4 and 6	4 and 10
>32 and 50	6 and 10	6 and 16
>50 and 63	10 and 16	10 and 25

Table 2	Standard 4-16 kW single-phase and standard 12-16 kW three-phase										
	Outdoor unit				Supply current			Compressor		OFM	
System	**Voltage (V)**	**Hz**	**Min. (V)**	**Max. (V)**	**MCA(A)**	**TOCA (A)**	**MFA (A)**	**MSC (A)**	**RLA (A)**	**kW**	**FLA (A)**
4 kW	220-240	50	198	264	12	18	25	-	11.50	0.10	0.50
6 kW	220-240	50	198	264	14	18	25	-	13.50	0.10	0.50
8 kW	220-240	50	198	264	16	19	25	-	14.50	0.17	1.50
10 kW	220-240	50	198	264	17	19	25	-	15.50	0.17	1.50
12 kW	220-240	50	198	264	25	30	35	-	23.50	0.17	1.50
14 kW	220-240	50	198	264	26	30	35	-	24.50	0.17	1.50
16 kW	220-240	50	198	264	27	30	35	-	25.50	0.17	1.50
12 kW three-phase	380-415	50	342	456	10	14	16	-	9.15	0.17	1.50
14 kW three-phase	380-415	50	342	456	11	14	16	-	10.15	0.17	1.50
16 kW three-phase	380-415	50	342	456	12	14	16	-	11.15	0.17	1.50

MCA: Maximum circuit ampacity (A)
TOCA: Total overcurrent amps (A)
MFA: Maximum fuse amps (A)
MSC: Maximum starting current (A)
RLA: In test conditions with nominal cooling or heating, the compressor input amps where MAX. Hz can work with the nominal load amps (A)
kW: Nominal motor output
FLA: Amperage with full load (A)

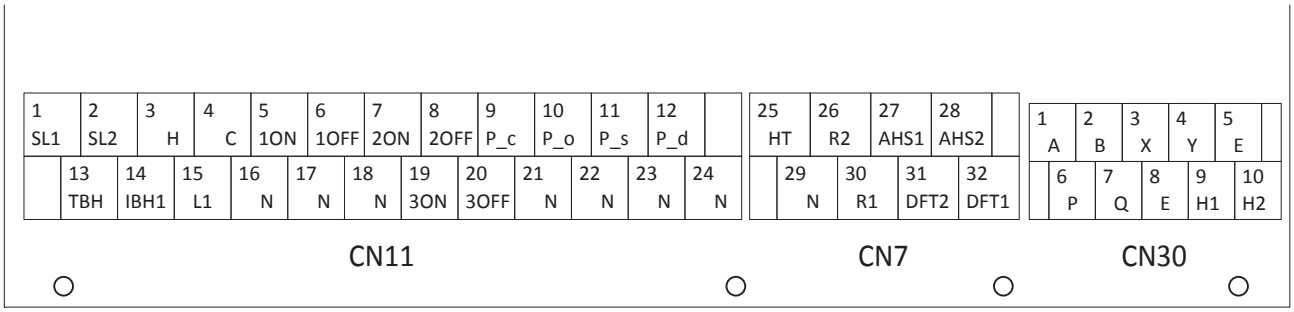
REMOVING THE ELECTRICAL PANEL COVER

System	Standard 4-16 kW single-phase and standard 12-16 kW three-phase									
	004H	**006H**	**008H**	**010H**	**012H**	**014H**	**016H**	**012H-9**	**014H-9**	**016H-9**
Maximum overcurrent protection (MOP) (A)	18	18	19	19	30	30	30	14	14	14
Cable dimensions (mm²)	4,0	4,0	4,0	4,0	6,0	6,0	6,0	2,5	2,5	2,5



CONNECTIONS FOR OTHER COMPONENTS

For the electrical wiring details, refer to the product INSTALLER manual.



Code		Print		Connection to
CN11	1	1	SL1	Solar energy input signal
		2	SL2	
	2	3	H	Room thermostat input (high voltage)
		4	C	
		15	L1	
	3	5	1ON	SV1 (3-way valve)
		6	1OFF	
		16	N	
	4	7	2ON	SV2 (3-way valve)
		8	2OFF	
		17	N	
	5	9	P_c	Pump c (zone 2 pump)
		21	N	
	6	10	P_o	External circulation pump (zone pump)
		22	N	
	7	11	PN_s	Solar energy pump
		23	N	
	8	12	PN_d	DHW tube pump
		24	N	
	9	13	TBH	Tank booster heater
		16	N	
	10	14	IBH1	Backup heater
		17	N	
	11	18	N	SV3 (3-way valve)
		19	3ON	
		20	3OFF	

Code		Print		Connection to
CN7	1	26	R2	Compressor operation
		30	R1	
		31	DFT2	Defrosting operation
		32	DFT1	
	2	25	HT	Anti-freeze heating element (external)
		29	N	
	3	27	AHS1	Additional heating source
		28	AHS2	

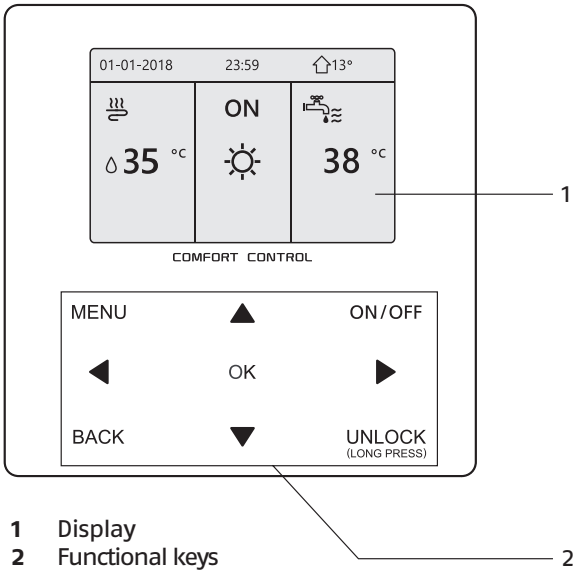
Code		Print		Connection to
CN30	1	1	A	Wired control panel
		2	B	
		3	X	
		4	Y	
		5	E	
	2	6	P	Outdoor unit
		7	Q	
	3	8	E	Internal parallel machine
		9	H1	
		10	H2	

The port supplies the load with the control signal.
Two types of control signal port:
Type 1: Input of the dry contact type.
Type 2: The port supplies the signal with a 220V voltage. If the load current is <0.2 A, the load can be connected directly to the port. If the load current is >=0.2A, the AC contactor must be connected for the load.

CONTROL PANEL

The control panel is the interface for the installer and the user to carry out all operations to set the operating parameters and display the status of the components in the device.
Depending on the temperatures detected by the probes in the appliance and any probes installed in the domestic hot water tank, in the room and externally, the electronics modulate appliance operation, and the operating condition can be shown in the display.
Use the panel to set the required temperature for the system and for domestic hot water.
30AWH-M can be controlled via:
- Control panel
- External consents

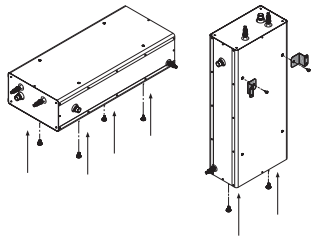
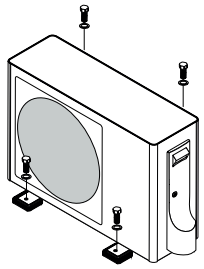
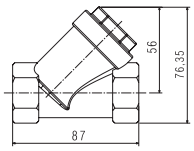
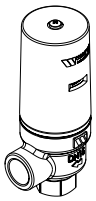
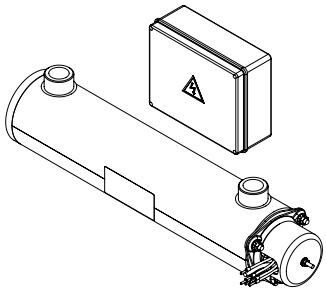
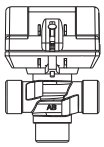
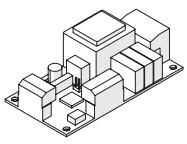
Control panel



1 Display
2 Functional keys

Key	Descprition
MENU	Go to the menu structure (on the home page)
◀▶▼▲	Move the cursor on the display Move within the menu structure Adjust the settings
ON/OFF	Activate/ deactivate room heating /cooling operation or DHW mode Activate or deactivate functions in the menu structure
BACK	Go back to the next higher level
UNLOCK	Press and hold to unlock/lock the controller Unlock/lock certain functions such as 'DHW temperature control'.
OK	Go to the next step when setting a programming in the menu structure; confirm a selection to access a submenu in the menu structure

ACCESSORIES

Description		004	006	008	010	012	014	016
30AWH-M HEAT PUMP ACCESSORIES								
	50-litre inertial storage tank: insulated inertial storage tank with painted casing, for outdoor/ indoor installation. Its particular shape allows it to be positioned both horizontally and vertically (using wall brackets). Measurements: 1080 x 470 x 250 mm (not including vents, brackets and support feet). Water fittings: G 1" M.	●	●	●	●	●	●	●
	Heat pump vibration damper kit.	●	●	●	●	●	●	●
	1" Y water filter.	●	●	●	●	●	●	●
	Adjustable bypass valve: adjustable overpressure valve to allow the recirculation/bypass of a certain (adjustable) flow rate of heat transfer fluid to prevent the differential heat pump flow switches and pressure switches from being triggered. Valve characteristics: - a brass body and an ABS cap - PN10 - 1/2" FF connections - differential opening pressure 0.05 - 0.07 bar - suitable for bypass flow rates up to 1760 l/h.	●	●	●				
	1PH 3PH supplementary electric heater from 2kW to 6kW: the kit is positioned on the heat pump outlet, and can provide thermal support (2.4 or 6 kW for the single-phase connection, or 6kW only for the three-phase connection) in full-electric systems. The kit contains: - electric heater - electric box complete with electronic control board - connectors and wiring.	●	●	●	●	●	●	●
	1" DHW diverting valve with storage cylinder probe. The DN25 1" diverting valve is used to manage the heating of the DHW storage cylinder in combi systems. We recommend that this accessory be positioned as close as possible to the internal heat pump module. The kit includes a storage cylinder probe. To be used in combination with the 30AWH-M control panel (supplied as standard with the unit).	●	●	●	●	●	●	●
HYBRID DISTRIBUTION MODULE ACCESSORIES								
	Board for photovoltaic system input: this kit allows the system to receive a signal (clean contact) from the photovoltaic panel, using it to define the operating priorities of the heat sources. The board is supplied complete with wiring (electrical supply and BUS connection), and must be installed in an electric box (not supplied).	●	●	●	●	●	●	●

PRODUCT DESCRIPTION FOR SPECIFICATION

Outdoor monobloc air-water heat pump, single-phase and three-phase, with DC-inverter control and MITSUBISHI twin rotary compressor for all sizes to guarantee optimum dynamic balancing and reduce vibration, with continuous modulation from approx. 40% to 120%, designed to work with R32 refrigerant gas.
Given the wide operating range, it's ideal for every type of system, whether hybrid or monovalent. In heating mode in fact, it can supply water at 60°C with an outdoor temperature as low as -15°C, and in cooling mode water at 7°C with an outdoor temperature up to 43°C, and can also produce domestic hot water thanks to storage tanks and fixed coils or heat exchangers for instantaneous DHW production, as it can supply delivery water at 55°C with a temperature of 43°C outside.
Top level performance. Up to A+++ for low temperatures and A++ for medium temperatures in temperate zones, according to EN 14825_2016.
All the performance values are certified by HP Keymark, MCS.
Built in accordance with the European eco-design regulations, that define the requisites for the ERP (Energy Related Products) standard in order to improve energy efficiency.

CHARACTERISTICS

- 30AWH-M provides an extremely high level of energy efficiency in both heating and cooling mode, thereby guaranteeing significant energy savings. The large, high-efficiency coils, together with the optimised circuits, ensure results that meet the European tax relief requirements.
- Efficiency levels in partial load conditions (seasonal energy efficiency) are one of the highest in this industrial sector.
- Comfort throughout the year: the ground-breaking technology employed for 30AWH-M means boosted comfort levels for users in terms of both water temperature control and quiet operation. The required temperature is reached quickly and kept constant, without any fluctuations.
- 30AWH-M offers optimised, personalised comfort levels both in winter and in summer.
- 30AWH-M can work in cooling mode even with wide outdoor temperatures (from -5°C, and up to 43°C). To ensure the maximum comfort for the user, the units work in heating mode with outdoor temperatures down to -25°C, whereas in summer they can produce hot water up to 50°C for DHW applications, with the outdoor temperature as high as 43°C.
- In the ambient comfort modes (both heating and cooling), weekly programming is a standard feature.
- In the DHW modes, weekly programming and an anti-legionella function - with thermal disinfection - are available as standard.
- Multiple plant layouts possible.
- The possibility to link up to 6 units in a cascade. In cascade configurations, the master unit can be dedicated to DHW production.
- USB port available for updating the technical board software.
- A clean input is available, dedicated to smart grid functions.
- Operation guaranteed with at least 40lt of water in the system.

UNIT COMPONENTS

- STRUCTURE:
  Cabinet made of sheet steel painted with neutral-coloured powders (RAL 7035) to enhance resistance to corrosion caused by atmospheric agents. All the panels are removable.
- COMPRESSOR:
  The compressor has a double protective sound insulation shield to further reduce the noise levels.
  Advanced technology ensuring optimum energy efficiency and characterised by high output levels in peak conditions and optimised efficiency at low and medium compressor speeds.
  The 30AWH-M heat pump uses DC inverter technology that combines two electronic adjustment logics, pulse amplitude modulation (PAM) and pulse width modulation (PWM), to guarantee optimised compressor operation in all working conditions, minimise temperature fluctuation and ensure perfect comfort adjustment whilst at the same time considerably reducing energy consumption.
  - PAM: the modulation of the direct current pulse amplitude commands the compressor to work in maximum load conditions (start-up and peak load) so as to increase the voltage in the case of a fixed frequency. The compressor works at high speed to quickly reach the required temperature.
  - PWM: the modulation of the direct current pulse width commands the compressor to work in partial load conditions, adapting the frequency in the case of a fixed voltage. The compressor speed is precisely adjusted and the system offers a high comfort level (no temperature fluctuations) in working conditions of outstanding efficiency.

  The compressor frequency increases constantly until it reaches the maximum level. This ensures that there are no intensity peaks during the start-up phase, and also means a secure connection to the single-phase current supply even for high-output systems. This compressor start logic makes "soft start" starter devices unnecessary, at the same time guaranteeing that the maximum output is available immediately.
- EXTERNAL COIL:
  The external coil is made of copper pipes and hydrophilic aluminium fins. This solution makes it easier for the water to move towards the bottom of the heat exchanger, by means of gravity.
  In particular, this innovation means:
  - frost takes longer to form, so it doesn't build up so much on the coil;
  - the defrosting phase is more efficient thanks to improved water runoff on the fins (and this boosts operation in heating mode).

  Blue Coating treatment is applied as standard to improve the resistance of the coils to corrosive agents, and is recommended in all applications where there is a moderate risk of corrosion.
- EXTERNAL FAN:
  Single DC brushless fan motor with variable speed for optimum air distribution and extremely low noise levels. The possibility to set two different maximum noise levels.

- ELECTRONIC EXPANSIONS VALVE:
  The electronic expansion valve is a dual flow electronic expansion device whose job is to optimise the volume of the refrigerant fluid in the circuit and therefore the overheating issue, preventing the fluid from returning to the compressor. This device further boosts the high efficiency and reliability of the system as it enables it to work even with very low condensation pressure values across the whole operating range.
- SOLENOID VALVE:
  Given the wide operating range of the unit, the solenoid valve (fully managed by the unit itself) allows the compressor to work at optimum temperature levels at all times.
- PLATE HEAT EXCHANGER:
  Vertical plate heat exchanger in AISI 316 stainless steel.
- BUILT-IN HYDRONIC UNIT:
  The hydronic module is always installed. It's supplied with a variable speed circulation pump, a flow switch, a 3 bar safety valve, an expansion ank and water temperature probes (inlet and outlet). A backup electric heater is available as an accessory. In domestic applications, there is the possibility to connect the inertial storage tank directly underneath the unit to minimise the space taken up.
  All the internal hydronic parts are insulated to reduce heat loss. The anti-freeze program contains special functions that use the heat pump and backup heater (if installed) to protect the entire system from the risk of freezing. When the water flow temperature in the system falls to a certain value, the unit heats the water using both the heat pump and the electric heating tap (and also the backup heater, if installed).
  The anti-freeze protection function is only deactivated when the temperature rises to a certain value.

The quality management system of this product's assembly site has been certified in accordance with the requirements of the ISO 9001 standard (latest current version) after an assessment conducted by an authorized independent third party.
The environmental management system of this product's assembly site has been certified in accordance with the requirements of the ISO 14001 standard (latest current version) after an assessment conducted by an authorized independent third party.
The occupational health and safety management system of this product's assembly site has been certified in accordance with the requirements of the ISO 45001 standard (latest current version) after an assessment conducted by an authorized independent third party.
Please contact your sales representative for more information.

Order No.: 0802, 09.2023. Supersedes order No.: New. Carrier SCS, Montluel, France.