Heating

AQUAFORCE Heating

30XWH

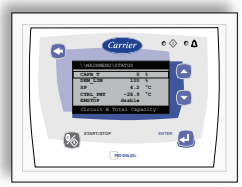
Options/accessories

- Medium and low temperature applications*
- Unit supplied in two assembled parts*
- No disconnect switch, but with short-circuit protection*
- Single power connection point*
- Evaporator/condenser pump electrical power/control circuit options*
- Service valve set*
- Evaporator/condenser arrangement with one pass*
- Condenser insulation*
- 21 bar evaporator and condenser*
- Reversed evaporator water connections*
- JBus, BacNet and LON gateways*
- Various condensing temperature options*
- Energy Management Module EMM*
- Code compliance for Switzerland and Australia*
- Master/slave operation*
- Touch Screen interface*
- Low noise level (-3 dB(A) compared to standard unit)*
- Thermal compressor insulation*
- Water connection kit for welded or flanged evaporator/condenser connections*
- Very low noise level (-20 dB(A) compared to standard unit)**

* Option ** Accessory

Features

- Twenty standard-efficiency sizes with nominal cooling capacities from 273 to 1732 kW and nominal heating capacities from 317 to 1969 kW and eleven high-efficiency sizes with nominal cooling capacities from 509 to 1756 kW and nominal heating capacities from 584 to 1989 kW.
- The premium solution for industrial and commercial applications that require optimal performances and maximum quality.
- Two versions: 30XW for air conditioning and refrigeration applications (see separate entry), and 30XWH for heating applications.
- Two efficiency classes: the standard-efficiency 30XWH offers an optimised balance of technical and economical aspects and superior energy efficiency, whilst the high-efficiency 30XWHP offers unequalled energy efficiency at minimised operating cost.
- Twin-rotor screw compressors with high-efficiency motor and a variable capacity valve for exact matching of the cooling capacity to the load.
- Use of R-134a refrigerant with zero ozone depletion potential.
- Pro-Dialog control system.
- Flooded mechanically cleanable heat exchangers.
- Exceptional full and part load energy efficiency.
- Economizer system with electronic expansion device for increased cooling capacity (30XWHP).
- Simplified electrical connections.
- Units are run-tested before shipment and include a quick-test function for fast commissioning.
- Leak-tight refrigerant circuit.
- Comprehensive endurance tests.
- Aquaforce offers multiple remote control, monitoring and diagnostic possibilities.



Pro-Dialog+ operator interface

Touch-screen Pro-Dialog operator interface

Physical data

Standard-efficiency units 30XWH		254	304	354	402	452	552	602	652	702	802	852	1002	1052	1154	1252	1352	1452	1552	1652	1702
Air conditioning application as per EN14511-3 : 2011																					
Nominal cooling capacity	kW	273	307	359	459	473	532	538	677	730	792	839	1017	1060	1141	1257	1342	1453	1547	1657	1732
EER	kW/kW	5.32	5.30	5.24	5.21	5.35	5.21	5.17	5.39	5.30	5.19	5.39	5.26	5.21	5.30	5.69	5.51	5.36	5.29	5.59	5.60
ESEER part-load performance	kW/kW	5.67	5.58	5.58	5.75	5.77	5.78	5.66	6.06	6.02	5.79	5.94	6.3	6.34	6.23	6.73	6.44	6.27	6.06	6.62	6.56
Air conditioning application (1)																					
Nominal cooling capacity	kW	273	308	360	461	474	534	539	679	733	795	843	1021	1066	1146	1262	1349	1461	1557	1664	1739
EER	kW/kW	5.54	5.52	5.48	5.42	5.57	5.46	5.43	5.65	5.58	5.50	5.66	5.56	5.53	5.64	5.97	5.82	5.71	5.67	5.96	6.00
Heating application as per EN14511-3 : 2011																					
Nominal heating capacity	kW	317	358	421	516	529	599	632	751	813	887	967	1138	1190	1320	1384	1481	1612	1717	1891	1969
COP	kW/kW	4.59	4.57	4.61	4.54	4.59	4.47	4.52	4.56	4.49	4.46	4.64	4.48	4.42	4.54	4.73	4.57	4.46	4.41	4.67	4.68
Heating application (1)																					
Nominal heating capacity	kW	316	357	419	514	527	597	629	748	810	883	964	1134	1186	1314	1380	1476	1606	1710	1884	1962
COP	kW/kW	4.80	4.78	4.84	4.74	4.79	4.70	4.78	4.78	4.73	4.73	4.93	4.76	4.74	4.89	5.02	4.88	4.81	4.80	5.10	5.15
Operating weight	kg	2017	2036	2072	2575	2575	2613	2644	3247	3266	3282	3492	5370	5408	5698	7066	7267	7305	7337	8681	8699
Dimensions																					
Depth	mm	928	928	928	936	936	936	936	1040	1040	1040	1042	1036	1036	1036	1156	1156	1156	1156	1902	1902
Length	mm	2724	2724	2724	2741	2741	2741	2741	3059	3059	3059	2780	4025	4025	4025	4730	4730	4730	4730	4790	4790
Height	mm	1567	1567	1567	1692	1692	1692	1692	1848	1848	1848	1898	1870	1870	1925	2051	2051	2051	2051	1515	1515

High-efficiency units 30XW-P		512	562	712	812	862	1012	1162	1314	1464	1612	1762
Air conditioning application as per EN14511-3 : 2011												
Nominal cooling capacity	kW	509	577	737	786	861	1039	1157	1323	1452	1626	1756
EER	kW/kW	5.71	5.64	5.83	5.62	5.65	5.73	5.78	5.80	5.58	5.87	5.79
ESEER part-load performance	kW/kW	6.07	6.12	6.41	6.24	6.17	6.71	6.79	6.65	6.36	6.8	6.59
Air conditioning application (1)												
Nominal cooling capacity	kW	510	578	739	788	863	1042	1161	1329	1459	1632	1764
COP	kW/kW	5.94	5.89	6.04	5.85	5.92	5.95	6.07	6.13	5.93	6.13	6.08
Heating application as per EN14511-3 : 2011												
Nominal heating capacity	kW	583	662	842	904	982	1191	1320	1509	1663	1846	1989
COP	kW/kW	4.91	4.84	4.97	4.80	4.85	4.90	4.86	4.89	4.71	4.89	4.87
Heating application (1)												
Nominal heating capacity	kW	581	660	840	901	978	1188	1316	1503	1657	1841	1983
COP	kW/kW	5.12	5.07	5.17	5.01	5.10	5.14	5.19	5.23	5.07	5.18	5.19
Operating weight	kg	2981	3020	3912	3947	3965	6872	6950	7542	7752	10910	10946
Dimensions, length x depth x height	mm	3059 x 936 x 1743		3290 x 1069 x 1950			4730 x 1039 x 1997		4730 x 1162 x 2051		4832 x 2129 x 1562	
Physical data for all units												
Compressors		Semi-hermetic 06T screw compressors, 50 r/s										
Refrigerant		R-134a										
Capacity control		Pro-Dialog, electronic expansion valves (EXV)										
Evaporator		Flooded multi-pipe type, maximum operating pressure 1000 kPa, 3/8" NPT drain and vent connections										
Condenser		Flooded multi-pipe type, maximum operating pressure 1000 kPa, 3/8" NPT drain and vent connections										

NOTE: For the conditions please refer to page 69.

Electrical data

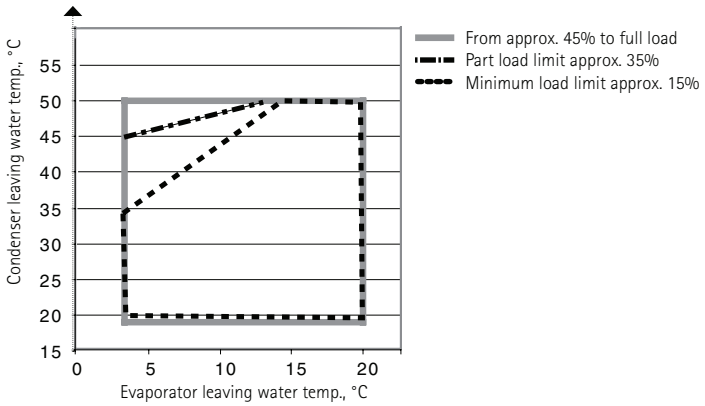
Standard-efficiency units 30XW--		252	302	352	402	452	552	602	652	702	802	852	1002	1052	1152	1252	1352	1452	1552	1652	1702
Nominal power supply, all units	V-ph-Hz	400-3-50 ± 10%																			
Control circuit, all units		24 V via the built-in transformer																			
Maximum start-up current*																					
Circuit A/circuit B	A	233/-	233/-	303/-	414/-	414/-	414/-	414/-	587/-	587/-	587/-	587/-	414/414	414/414	414/414	587/414	587/587	587/587	587/587	587/587	587/587
Maximum power input**																					
Circuit A/circuit B	kW	76/-	89/-	97/-	128/-	135/-	151/-	151/-	184/-	200/-	223/-	223/-	150/135	151/151	151/151	184/151	184/184	200/200	223/223	223/202	223/223
Maximum current drawn (Un)**																					
Circuit A/circuit B	A	123/-	145/-	160/-	206/-	217/-	242/-	242/-	295/-	317/-	351/-	351/-	242/217	242/242	242/242	295/242	295/295	317/317	351/351	351/317	351/351

High-efficiency units 30XW-P		512	562	712	812	862	1012	1162	1312	1462	1612	1762
Maximum start-up current*												
Circuit A/B	A	414/-	414/-	587/-	587/-	587/-	414/414	414/414	587/414	587/587	587/587	587/587
Maximum power input**												
Circuit A/B	kW	135/-	151/-	184/-	200/-	223/-	134/134	151/151	184/151	184/184	200/200	223/223
Maximum current drawn (Un)**												
Circuit A/B	A	217/-	242/-	295/-	317/-	351/-	217/217	242/242	295/242	295/295	317/317	351/351

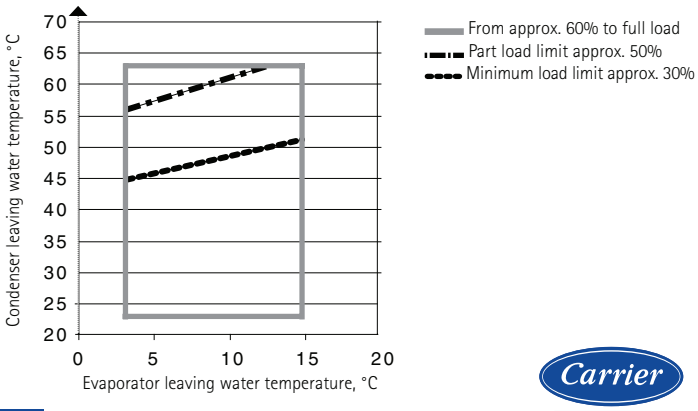
* Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at operation with maximum unit power input.

** Values obtained at operation with maximum unit power input. Values given on the unit name plate.

Operating range, standard units



Operating range, option 150



Heating

greenspeed AQUAFORCE

30XWHV

Options

- Condenser insulation
- Service valve set
- Evaporator/condenser pump electrical power/control circuit options
- Reversed evaporator and/or condenser water connections
- Evaporator and/or condenser with one pass
- 21 bar evaporator and/or condenser
- JBus, BacNet or LON gateways
- Additional module for communication with BacNet protocol via Ethernet (IP)
- Condensing temperature limitation
- Control for low condensing temperature systems
- Energy Management Module EMM
- Leak detection
- Code compliance for Switzerland in addition to PED code
- Code compliance for Australia
- Low noise level (-3 dB(A) compared to standard unit)
- Welded evaporator and/or condenser water connection kit
- Flanged evaporator and/or condenser water connection kit
- Thermal compressor insulation
- EMC classification according to IEC 61800-3 - class C2
- Master/slave operation
- Single power connection point (1150-1710)

Features

- Nine sizes for commercial and industrial applications with nominal heating capacities from 648 to 1932 kW.
- The units feature exclusive inverter-driven screw compressors - an evolution of the proven traditional Carrier twin-rotor screw compressor design.
- Units can provide up to 50°C on the condenser side.
- 30XWHV units are designed for high performance both at full load and at part load with COPs up to 4.6 and Eurovent energy class ratings A and B.
- New innovative Touch Pilot smart control for variable-drive screw-compressor units uses an intuitive, user-friendly interface with concise, clear information in a choice of languages.
- Compliance with IEC61800-3 - class C3.
- Inverter-driven twin-rotor screw compressors allow precise capacity matching of building load changes and significantly reduce unit power input, especially at part-load.
- Flooded mechanically cleanable heat exchangers.
- Compact design and simplified electrical and water connections for easy installation.
- R-134a refrigerant with zero ozone depletion potential.
- Leak-tight refrigerant circuit.
- Minimised operating sound level at part load.
- Improved electrical performance.

Touch Pilot operator interface

Physical data

30XWHV		580	630	810	880	1150	1280	1470	1570	1710
Heating application - as per EN14511-3 : 2011*										
Condition 1										
Heating capacity	kW	648	719	890	974	1261	1428	1594	1761	1932
COP	kW/kW	4.64	4.53	4.56	4.43	4.62	4.61	4.55	4.33	4.16
Eurovent class, heating		A	A	A	B	A	A	A	B	B
Condition 2										
Heating capacity	kW	687	767	956	1021	1335	1524	1712	1898	2067
COP	kW/kW	6.15	5.98	5.96	5.81	6.05	6.00	5.82	5.49	5.34
Eurovent class, heating		A	A	A	A	A	A	A	A	A
Heating application (1)										
Condition 1										
Heating capacity	kW	646	716	887	970	1257	1423	1587	1753	1922
COP	kW/kW	4.84	4.75	4.75	4.63	4.87	4.93	4.92	4.70	4.56
Condition 2										
Heating capacity	kW	684	763	953	1017	1331	1519	1705	1889	2055
COP	kW/kW	6.59	6.49	6.39	6.25	6.61	6.72	6.66	6.33	6.27
Operating weight**	kg	3152	3190	4157	4161	7322	7398	7574	7770	7808
Dimensions										
Length x depth x height	mm	3059 x 1087 x 1743		3290 x 1237 x 1950		4730 x 1164 x 1997		4730 x 1255 x 2051		
Compressor		Semi-hermetic 06T screw compressor, 60 r/s								
Quantity, circuit A/B		1/-	1/-	1/-	1/-	1/1	1/1	1/1	1/1	1/1
Capacity control		Touch Pilot, inverter-driven compressor. electronic expansion valve (EXV)								
Minimum capacity	%	20	20	20	20	10	10	10	10	10
Refrigerant		R-134a								
Evaporator		Flooded multi-tube type, maximum operating pressure 1000 kPa, 3/8" NPT drain and vent connections								
Condenser		Flooded multi-tube type, maximum operating pressure 1000 kPa, 3/8" NPT drain and vent connections								

NOTE: For the conditions please refer to page 31.

** Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

Electrical data

30XWHV		580	630	810	880	1150	1280	1470	1570	1710
Power circuit										
Nominal voltage	V-ph-Hz	400-3-50 ± 10%								
Control circuit supply		24 V, via internal transformer								
Start-up current*		Negligible (lower than maximum current drawn)								
Maximum power factor		0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93	0.91-0.93
Maximum power input, circuit A/B***	kW	155/-	193/-	222/-	246/-	155/155	193/193	222/193	222/222	246/246
Eurovent current draw, circuit A/B**	A	175/-	200/-	240/-	265/-	175/175	200/200	240/200	240/240	265/265
Maximum current draw (Un), circuit A/B***	A	270/-	330/-	380/-	421/-	270/270	330/330	380/330	380/380	421/421

* Instantaneous start-up current
** Eurovent unit operating conditions: evaporator entering/leaving water temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C.
*** Values obtained at operation with maximum unit power input. Values given on the unit name plate.

Operating range