

Air Cooled Heat Pump

AQWH 1404-2406



359-602 kW



Air cooled



Scroll



420-702 kW



Plate



HFC 410A

Technical feature

- 5 sizes
- Cooling capacity from 358,8 to 601,9 kW
- Heating capacity 420,0 to 702,0 kW
- 4 versions:
 - STD (Standard)
 - HSE (High Seasonal Efficiency)
 - HT (High Temperature)
 - HPF (High Pressure Fans)
- 3 acoustic versions:
 - BLN (Basic Low Noise)
 - LN (Low Noise)
 - ELN (Extra Low Noise)
- Two refrigerant circuits
- Scroll compressors
- Electronic expansion valve
- Inverter fans (Standard HSE and HT)
- "Polar" version for extreme conditions (on request)

Accessories and options

- Automatic circuit breaker
- BMS interface
- Coils treatments
- Compressors acoustic box (standard)
- Compressors jackets (standard ELN)
- Desuperheater
- Fan speed control (-18°C)
- Hydrokit with 1 or 2 pumps with or without buffer tank (750 or 1,000 liters size 2106-2406)
- Mechanical gauges
- Overload protection for compressors
- Power factor corrector capacitors
- Sequence phases control (standard)
- Sofstart
- Unit protection grilles
- Water differential pressure switch (standard)
- Water filter
- Water flow switch



Operating limit (to be confirmed following selection software issue)

AQWH 1404-2406		1404		1604		1806		2106		2406		
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
Leaving water temperature	Acqua	°C from +6 to +15										
	Water + glicol	°C from -8 to +15										
	Δ T	K from 3 to 8										
Leaving water temperature (heating)		°C from 30 to 50										
Air temperature	BLN	°C	from -5 to +44	from 0 to +44	from 0 to +44	from 0 to +44	from 0 to +44	from 0 to +44	from 0 to +44	from 0 to +44	from 0 to +44	
	LN	°C	from -5 to +42	from 0 to +42	from 0 to +42	from 0 to +42	from 0 to +42	from 0 to +42	from 0 to +42	from 0 to +42	from 0 to +42	
	ELN	°C	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	
	HT	°C	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	
	Heating	°C	from -10 (-4 LN/ELN) to +20									
	Heating (Polar Version)	°C	from -15 to +20									
External static pressure	Standard fans	Pa	0									
	Inverter fans SIF	Pa	< 120									

Technical feature

AQWH STD/HSE/HPF 1404-2406 BLN		1404	1604	1806	2106	2406
Cooling capacity ¹	kW	358,8	400,6	470,4	534,8	601,9
Power input ¹	kW	134,9	150,0	175,5	199,6	224,6
EER ¹		2,66	2,67	2,68	2,68	2,68
Energy Efficiency class		D	D	D	D	D
ESEER		3,47	3,54	3,55	3,59	3,59
EER HSE ¹		2,69	2,70	2,71	2,71	2,71
Energy Efficiency class		D	C	C	C	C
ESEER HSE ¹		3,57	3,69	3,73	3,79	3,73
Heating capacity ²	kW	420,0	470,1	548,3	627,2	702,0
Power input ²	kW	132,5	146,5	172,4	194,2	220,8
Energy Efficiency class		B	A	B	A	B
COP ²		3,17	3,21	3,18	3,23	3,18
Energy Efficiency class		A	A	A	A	A
COP HSE ²		3,21	3,24	3,22	3,26	3,22
Part load steps	%	21-50-71-100	25-50-75-100	17-33-50-67-83-100	15-29-43-62-81-100	17-33-50-67-83-100
Refrigerant						
Type		HFC 410A				
Number of refrigerant circuits		2				
Compressor						
Qty		4	4	6	6	6
Type		Scroll				
Evaporator						
Qty		1				
Type		Plate exchanger AISI 316				
Water flow	l/h	61.950	69.092	81.210	92.371	103.532
Connection type		Victaulic				
Inlet/outlet diameter	inch	4"	4"	4"	4"	4"
Condenser						
Qty		4	4	4	4	4
Total coil face area per coil	mm ²	4,4	4,4	5,6	6,7	6,7
Fan						
Qty		8	8	10	10	12
Speed	rpm/min	880	880	880	880	880
Air flow	m ³ /h	181.000	181.000	200.000	214.500	242.000
Power input	kW	14,4	14,4	18,0	18,0	21,6
Power input HSE	kW	13,0	13,0	16,3	16,3	19,6
Static head pressure	Pa	from 0 to 120**				
Weight						
Shipping	kg	2.896	3.018	3.967	4.083	4.465
Operating	kg	2.931	3.056	4.007	4.123	4.507
Dimensions						
Length	mm	4.000	4.000	5.000	6.000	6.000
Width	mm	2.200	2.200	2.200	2.200	2.200
Height	mm	2.550	2.550	2.550	2.550	2.550
Acoustical data						
Sound power level ³	dB(A)	97	97	98	98	99
Sound pressure level ⁴	dB(A)	65	65	66	66	67

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

² Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.

³ Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

⁴ Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.

** HPF Units with high static pressure fans.

Technical feature

AQWH STD/HSE 1404-2406 LN		1404	1604	1806	2106	2406
Cooling capacity ¹	kW	346,8	386,7	455,5	518,0	582,0
Power input ¹	kW	134,9	149,9	176,6	200,0	223,0
EER ¹		2,57	2,58	2,58	2,59	2,61
Energy Efficiency class		D	D	D	D	D
ESEER		3,57	3,63	3,68	3,70	3,73
EER HSE ¹		2,63	2,63	2,64	2,64	2,56
Energy Efficiency class		D	D	D	D	D
ESEER HSE ¹		3,74	3,85	3,94	3,95	3,84
Heating capacity ²	kW	397,7	445,8	519,0	593,8	665,4
Power input ²	kW	126,3	141,5	165,8	187,9	212,6
COP ²		3,15	3,15	3,13	3,16	3,13
Energy Efficiency class		B	B	B	B	B
COP HSE ²		3,22	3,22	3,20	3,23	3,22
Energy Efficiency class		A	A	A	A	A
Part load steps	%	21-50-71-100	25-50-75-100	17-33-50-67-83-100	15-29-43-62-81-100	17-33-50-67-83-100
Refrigerant						
Type		HFC 410A				
Number of refrigerant circuits		2				
Compressor						
Qty		4	4	6	6	6
Type		Scroll				
Evaporator						
Qty		1				
Type		Plate exchanger AISI 316				
Water flow	l/h	59.821	66.787	78.655	89.474	100.104
Connection type		Victaulic				
Inlet/outlet diameter	inch	4"	4"	4"	4"	4"
Condenser						
Qty		4				
Total coil face area per coil	mm ²	4,4	4,4	5,6	6,7	6,7
Fan						
Qty		8	8	10	10	12
Speed	rpm/min	700	700	700	700	700
Air flow	m ³ /h	142.000	142.000	153.000	165.000	183.000
Power input	kW	9,6	9,6	12,0	12,0	14,4
Power input HSE	kW	6,6	6,6	8,2	8,2	9,8
Static head pressure	Pa	0				
Weight						
Shipping	kg	2.896	3.018	3.967	4.083	4.465
Operating	kg	2.931	3.056	4.007	4.123	4.507
Dimensions						
Length	mm	4.000	4.000	5.000	6.000	6.000
Width	mm	2.200	2.200	2.200	2.200	2.200
Height	mm	2.550	2.550	2.550	2.550	2.550
Acoustical data						
Sound power level ⁴	dB(A)	91	91	92	92	93
Sound pressure level ⁵	dB(A)	59	59	60	60	61

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

² Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.

³ Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

⁴ Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.

Technical feature

AQWH STD/HSE 1404-2406 ELN		1404	1604	1806	2106	2406
Cooling capacity ¹	kW	328,9	366,9	432,7	490,2	551,1
Power input ¹	kW	143,0	158,8	187,3	211,3	237,5
EER ¹		2,30	2,31	2,31	2,32	2,32
Energy Efficiency class		E	E	E	E	E
ESEER		3,28	3,38	3,48	3,49	3,49
EER HSE ¹		2,42	2,42	2,42	2,42	2,42
Energy Efficiency class		E	E	E	E	E
ESEER HSE ¹		3,51	3,61	3,69	3,67	3,67
Heating capacity ²	kW	381,6	427,6	498,4	570,5	639,0
Power input ²	kW	126,36	140,2	165,58	187,66	200,3
COP ²		3,02	3,05	3,01	3,04	3,19
Energy Efficiency class		B	B	B	B	B
COP HSE ²		3,20	3,21	3,17	3,19	3,03
Energy Efficiency class		A	A	B	B	B
Part load steps	%	21-50-71-100	25-50-75-100	17-33-50-67-83-100	15-29-43-62-81-100	17-33-50-67-83-100
Refrigerant						
Type		HFC 410A				
Number of refrigerant circuits		2				
Compressor						
Qty		4	4	6	6	6
Type		Scroll				
Evaporator						
Qty		1				
Type		Plate exchanger AISI 316				
Water flow	l/h	56.794	63.244	74.579	84.675	94.789
Connection type		Victaulic				
Inlet/outlet diameter	inch	4"	4"	4"	4"	4"
Condenser						
Qty		4				
Total coil face area per coil	mm ²	4,4	4,4	5,6	6,7	6,7
Fan						
Qty		8	8	10	10	12
Speed	rpm/min	550	550	550	550	550
Air flow	m ³ /h	112.000	112.000	120.000	130.000	144.000
Power input	kW	9,6	9,6	12,0	12,0	14,4
Power input HSE	kW	2,6	2,6	3,2	3,2	3,8
Static head pressure	Pa	0				
Weight						
Shipping	kg	2.896	3.018	3.967	4.083	4.465
Operating	kg	2.931	3.056	4.007	4.123	4.507
Dimensions						
Length	mm	4.000	4.000	5.000	6.000	6.000
Width	mm	2.200	2.200	2.200	2.200	2.200
Height	mm	2.550	2.550	2.550	2.550	2.550
Acoustical data						
Sound power level ³	dB(A)	88	88	89	89	90
Sound pressure level ⁴	dB(A)	56	56	57	57	58

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

² Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.

³ Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

⁴ Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.

Technical feature

AQWH 1404-2406 HT		1404	1604	1806	2106	2406
Cooling capacity ¹	kW	363,8	405,7	477,0	542,3	608,0
Power input ²	kW	117,8	132,7	154,4	176,7	199,0
EER		2,73	2,64	2,72	2,64	2,64
Heating capacity ²	kW	422,0	473,0	551,0	630,0	709,0
Power input ²	kW	114,8	128,7	150,3	171,7	193,0
COP		3,11	3,16	3,13	3,19	3,16
Part load steps	%	21-50-71-100	25-50-75-100	17-33-50-67-83-100	15-29-43-62-81-100	17-33-50-67-83-100
Refrigerant						
Type		HFC 410A				
Number of refrigerant circuits		2				
Compressor						
Qty		4	4	6	6	6
Type		Scroll				
Evaporator						
Qty		1				
Type		Plate exchanger AISI 316				
Water flow	l/h	62.573	69.780	82.044	93.275	104.576
Connection type		Victaulic				
Inlet/outlet diameter	inch	4"	4"	4"	4"	4"
Condenser						
Qty		4				
Total coil face area per coil	mm ²	4,4	4,4	5,6	6,7	6,7
Fan						
Qty		8	8	10	10	12
Speed	rpm/min	1.100	1.100	1.100	1.100	1.100
Air flow	m ³ /h	220.000	220.000	244.000	278.000	295.000
Power input	kW	20,8	20,8	26,0	26,0	31,2
Static head pressure HSE	Pa	0				
Weight						
Shipping	kg	2.896	3.018	3.967	4.083	4.465
Operating	kg	2.931	3.056	4.007	4.123	4.507
Dimensions						
Length	mm	4.000	4.000	5.000	6.000	6.000
Width	mm	2.200	2.200	2.200	2.200	2.200
Height	mm	2.550	2.550	2.550	2.550	2.550
Acoustical data						
Sound power level ⁴	dB(A)	103	103	104	104	105
Sound pressure level ⁵	dB(A)	71	71	72	72	73

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature.

² Input power (only compressors).

³ Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard..

⁴ Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

⁵ Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.