Air Cooled Heat Pumps
AQH 40–75

36–71 kW | 40-77 kW | HFC 410A | Scroll

Technical feature

- 6 sizes.
- Cooling capacity from 36 to 71 kW.
- Heating capacity from 40 to 77 kW.
- 2 versions:
  STD (Standard version) e SIF (Special Inverter Fans).
- 2 Low Noise versions:
  Standard version (STD) e Extra Low Noise version (ELN).
- One refrigerant circuit.
- Scroll compressors tandem.
- ILTC control.
- Low operating water content in the plant.

Accessories and options

- Hydrokit with 1 or 2 pumps with ot without buffer tank.
- Water filter (standard).
- Water pressure switch (standard).
- Flow switch (standard).
- Fan speed control (standard).
- Sequence phases control (standard).
- Automatic circuit breaker.
- Compressors acoustic box (standard on ELN).
- Hydrometer (standard).
- Mechanical gauges.
- Softstart.
- Power factor corrector capacitors.
- Coils treatments.
- Coil grilles (standard).
- Desuperheater.
- Electric heater inside buffer tank for additional heating.
- Compressors jackets (standard ELN).

Operating limit

Cooling mode

AQH		40		45		50		60		65		75	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Leaving water temperature*	°C	-8	18	-8	18	-8	18	-8	18	-8	18	-8	18
Δ T water	K	3	8	3	8	3	8	3	8	3	8	3	8
Air temperature**	°C	-20	50	-20	50	-20	50	-20	50	-20	50	-20	50

Heating mode

AQH		40		45		50		60		65		75	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Leaving water temperature	°C	20	55	20	55	20	55	20	55	20	55	20	55
Δ T water	K	3	8	3	8	3	8	3	8	3	8	3	8
Air temperature**	°C	-10	20	-10	20	-10	20	-10	20	-10	20	-10	20

* Below 5°C, glycol is required.
** -10°C is given for unit with fan speed controller (optional). Without fan speed controller, the limit is 10°C.

Technical feature AQH 40–75 BLN

Model AQH		40	45	50	60	65	75
Cooling capacity (1)	kW	36,1	41,0	47,5	55,9	63,3	70,7
Power input (2)	kW	12,3	14,3	16,7	17,5	20,4	24,6
GROSS EER		2,72	2,68	2,69	2,87	2,83	2,66
Energy class		C	D	D	C	C	D
GROSS ESEER		3,96	3,89	3,92	4,04	4,11	3,77
Heating capacity (3)	kW	39,9	44,4	52,6	59,0	70,0	77,2
Power input (2)	kW	12,0	13,1	14,9	18,9	20,5	24,3
GROSS COP		3,07	3,15	3,31	2,82	3,11	2,94
Energy class		B	B	A	C	B	C
COP		2,92	3,00	3,15	2,70	2,97	2,80
Number of refrigerant circuits		1	1	1	1	1	1
Part load steps	%	0-50-100	0-50-100	0-50-100	0-44-56-100	0-50-100	0-50-100
Power supply	V/ph/Hz	400/3+N/50					
Startup type		Direct					
Refrigerant							
Type		HFC 410A					
Charge	kW	9,5	10,8	11,6	12,9	14,0	15,0
Compressor							
Qty		2	2	2	2	2	2
Type		Scroll					
Crankcase heater	W	90	90	90	90	90	90
Evaporator							
Qty		1	1	1	1	1	1
Type		Plate exchanger AISI 316					
Water flow	l/h	6.209,2	7.052,0	8.170,0	9.614,8	10.887,6	12.160,4
Antifreeze heater	W	35	35	35	35	35	35
Connection type		Male gas threaded					
Inlet/outlet diameter	inch	2″	2″	2″	2″	2″	2″
Water drain connection	inch	⅜″	⅜″	⅜″	⅜″	⅜″	⅜″
Condenser							
Qty		1	1	1	1	1	1
Frontal surface	mm	2.160x1.200	2.160x1.200	2.160x1.200	2.650x1.200	2.650x1.200	2.650x1.200
Number of rows		2	2	3	3	3	3
Fan							
Qty		1	1	1	1	1	1
Air flow	m^3/h	14.800	14.800	14.800	22.250	22.250	22.250
Speed	rpm/min	680	680	680	900	900	900
Power Input	kW	0,98	0,98	0,98	2,00	2,00	2,00
Weight							
Shipping	kg	422	430	457	504	511	517
Operating	kg	431	440	467	517	524	530
Dimensions							
Length	mm	1.750	1.750	1.750	2.200	2.200	2.200
Width	mm	1.100	1.100	1.100	1.100	1.100	1.100
Height	mm	1.580	1.580	1.580	1.580	1.580	1.580
Acoustical data							
Sound power level (4)	dB(A)	80,5	81,0	81,0	85,5	85,6	85,8
Sound pressure level (5)	dB(A)	48,9	49,4	49,4	53,8	53,9	54,1

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature.
(2) Compressors only.
(3) Data based on 45°C leaving hot water temperature and 7°C ambient air temperature.
(4) Sound power values in accordance with ISO 3744.
(5) The sound pressure is calculated from a distance of 10 m.
GROSS EER-COP: efficiency in cooling-heating mode without considering the available head of the pump or the pressure drop of the heat exchanger.
EER-COP: efficiency in cooling-heating unit according to EN14511-20101.

Technical feature AQH 40–75 ELN

Modello AQH ELN		40	45	50	60	65	75
Cooling capacity (1)	kW	36,1	39,5	45,4	54,1	58,8	67,9
Power input (2)	kW	13,0	15,2	17,9	18,4	21,2	26,2
GROSS EER		2,66	2,50	2,46	2,75	2,62	2,47
Energy class		D	D	E	C	D	E
GROSS ESEER		3,87	3,63	3,59	3,87	3,78	3,53
EER		2,64	2,48	2,44	2,72	2,58	2,43
ESEER		3,82	3,45	3,41	3,80	3,63	3,36
Heating capacity (3)	kW	40,5	43,5	51,0	57,7	68,2	75,0
Power input (2)	kW	11,9	12,7	15,0	18,8	20,5	24,2
GROSS COP		3,25	3,28	3,28	2,87	3,13	2,94
Energy class		A	A	A	C	B	C
COP		3,08	3,11	3,11	2,75	2,99	2,81
Number of refrigerant circuits		1	1	1	1	1	1
Part load steps	%	0-50-100	0-50-100	0-50-100	0-44-56-100	0-50-100	0-50-100
Power supply	V/ph/Hz	400/3+N/50					
Startup type		Direct					
Refrigerant							
Type		HFC 410A					
Charge	kW	9,5	10,8	11,6	12,9	14,0	15,0
Compressor							
Qty		2	2	2	2	2	2
Type		Scroll					
Crankcase heater	W	90	90	90	90	90	90
Evaporator							
Qty		1	1	1	1	1	1
Type		Plate exchanger AISI 316					
Water flow	l/h	6.209,2	6.794,0	7.808,8	9.305,2	10.113,6	11.678,8
Antifreeze heater	W	35	35	35	35	35	35
Connection type		Male gas threaded					
Inlet/outlet Diameter	inch	2″	2″	2″	2″	2″	2″
Water drain connection	inch	⅜″	⅜″	⅜″	⅜″	⅜″	⅜″
Condenser							
Qty		1	1	1	1	1	1
Frontal surface	mm	2.160x1.200	2.160x1.200	2.160x1.200	2.650x1.200	2.650x1.200	2.650x1.200
Number of rows		2	2	3	3	3	3
Fan							
Qty		1	1	1	1	1	1
Air flow	m^3/h	11.500	11.500	10.800	17.000	17.000	17.000
Speed	rpm/min	530	530	530	720	720	720
Power Input	kW	0,57	0,57	0,57	1,27	1,27	1,27
Weight							
Shipping	kg	422	430	457	504	511	517
Operating	kg	431	440	467	517	524	530
Dimensions							
Length	mm	1.750	1.750	1.750	2.200	2.200	2.200
Width	mm	1.100	1.100	1.100	1.100	1.100	1.100
Height	mm	1.580	1.580	1.580	1.580	1.580	1.580
Acoustical data							
Sound power level (4)	dB(A)	74,0	75,3	75,3	78,0	78,5	79,0
Sound pressure level (5)	dB(A)	42,4	43,7	43,7	46,3	46,8	47,3

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature.
(2) Compressors only.
(3) Data based on 45°C leaving hot water temperature and 7°C ambient air temperature.
(4) Sound power values in accordance with ISO 3744.
(5) The sound pressure is calculated from a distance of 10 m.
GROSS EER-COP: efficiency in cooling-heating mode without considering the available head of the pump or the pressure drop of the heat exchanger.
EER-COP: efficiency in cooling-heating unit according to EN14511-2011.

Technical feature AQH 40–75 SIF

Model AQH SIF		40	45	50	60	65	75
Cooling capacity (1)	kW	42,1	46,6	54,3	60,8	66,4	77,0
Power input (2)	kW	11,7	13,5	15,5	17,7	20,3	24,7
GROSS EER		2,93	2,89	2,99	2,98	2,89	2,81
Energy class		B	C	B	B	C	C
GROSS ESEER		4,33	4,24	4,39	4,27	4,13	3,99
Heating capacity (3)	kW	46,3	50,4	58,7	65,5	77,8	85,9
Power input (2)	kW	13,9	14,8	17,4	19,5	21,3	25,1
GROSS COP		2,80	2,89	2,92	2,96	3,25	3,09
Energy class		C	C	C	C	A	B
Number of refrigerant circuits		1	1	1	1	1	1
Part load steps	%	0-50-100	0-50-100	0-50-100	0-44-56-100	0-50-100	0-50-100
Power supply	V/ph/Hz	400/3+N/50					
Startup type		Direct					
Refrigerant							
Type		HFC 410A					
Charge	kW	9,5	10,8	11,6	12,9	14,0	15,0
Compressor							
Qty		2	2	2	2	2	2
Type		Scroll					
Crankcase heater	W	90	90	90	90	90	90
Evaporator							
Qty		1	1	1	1	1	1
Type		Plate exchanger AISI 316					
Water flow	l/h	7.243,7	8.012,5	9.346,0	10.451,7	11.426,8	13.242,6
Antifreeze heater	W	35	35	35	35	35	35
Connection type		Male gas threaded					
Inlet/outlet diameter	inch	2″	2″	2″	2″	2″	2″
Water drain connection	inch	⅜″	⅜″	⅜″	⅜″	⅜″	⅜″
Condenser							
Qty		1	1	1	1	1	1
Frontal surface	mm	2.160x1.200	2.160x1.200	2.160x1.200	2.650x1.200	2.650x1.200	2.650x1.200
Number of rows		2	2	2	2	2	2
Fan							
Qty		1	1	1	1	1	1
Air flow	m^3/h	25.284	25.284	24.300	25.284	25.284	25.284
Speed	rpm/min	1.110	1.110	1.110	1.110	1.110	1.110
Power Input	kW	2,67	2,67	2,67	2,67	2,67	2,67
Weight							
Shipping	kg	422	430	457	504	511	517
Operating	kg	431	440	467	517	524	530
Dimensions							
Length	mm	1.750	1.750	1.750	2.200	2.200	2.200
Width	mm	1.100	1.100	1.100	1.100	1.100	1.100
Height	mm	1.685	1.685	1.685	1.685	1.685	1.685
Acoustical data							
Sound power level (4)	dB(A)	95,2	95,2	95,2	95,3	95,3	95,3
Sound pressure level (5)	dB(A)	63,6	63,6	63,6	63,6	63,6	63,6

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature.
(2) Only compressors.
(3) Data based on 45°C leaving chilled water temperature and 7°C ambient air temperature.
(4) Sound power values in accordance with ISO 3744.
(5) The sound pressure is calculated from a distance of 10 m.
GROSS EER-COP: efficiency in cooling-heating mode without considering the available head of the pump or the pressure drop of the heat exchange.