

NEW

HEAT PUMPS AND LIQUID COOLERS WITH WATER COOLED CONDENSER



- Cooling and heating application
- High energy efficiency
- Compact design
- Low sound level
- Broad field of application

COOLING

30WI

Cooling capacity: 220 - 720 kW
Heating capacity: 250 - 820 kW

The new generation of AquaSnap 30WI water cooled heat pumps and water chillers offers an optimal solution for all heating process or cooling applications.

These units are designed to be installed in machine rooms that are protected against freezing temperatures and inclement weather.

The new range has been optimised to use non-ozone depleting HFC R410A refrigerant. The use of this refrigerant guarantees compliance with the most demanding requirements for environmental protection and increased seasonal energy efficiency.

AQUASNAP®



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RANGE

AQUASNAP 30WI

Cooling-only or heating-only models with water-cooled condenser.

Acoustic configuration:

- a - STANDARD version
- b - LOW NOISE version. Compressor casing
- c - VERY LOW NOISE version. Casing with compressor sound insulation

DESCRIPTION

AQUASNAP series 30WI units are packaged machines supplied as standard with the following components:

- SCROLL hermetic compressors,
- Chilled water evaporator with brazed plates,
- Hot water condenser with brazed plates,
- Electrical power and remote control cabinet:
 - 400V-3ph-50Hz general electrical power supply (+10%/-10%) + earth,
 - Transformer fitted as standard on the machine for supplying the remote control circuit with 230V-1ph-50Hz,
- 30WI Control electronic control module.

The AQUASNAP 30WI range complies with the following European standards and directives:

- Machinery directive 2006/42/EC.
- Electromagnetic compatibility directive 2004/108/EC.
- EMC immunity and emissions EN 61800-3 'C3'
- Low voltage directive 2006/95/EC.
- RoHS 2011/65/EU
- Pressure equipment directive (PED) 97/23/EC
- Machinery directive EN 60-204 -1

DESIGNATION

30WI	>	cooling only or heating only version
1200	>	unit size
V	>	R410A refrigerant

DESCRIPTION OF THE MAIN COMPONENTS

■ Compressors

- Hermetic SCROLL type.
- Built-in electric motor cooled by intake gases.
- Motor protected by internal winding thermostat.
- Placed on anti-vibration mounts.

■ Evaporator

- Brazed plate exchanger.
- Stainless steel plates (AISI 316).
- Plate patterns optimised for high efficiency.
- Armaflex thermal insulation.

■ Condenser

- Brazed plate exchanger.
- Stainless steel plates (AISI 316).
- Plate patterns optimised for high efficiency.

■ Refrigerating accessories

- Dehumidifier filters with rechargeable cartridges.
- Hygroscopic sight glasses.
- Solenoid valves on refrigerant lines (700 V to 1200 V models).
- Electronic expansion valves.

■ Control and safety instruments

- High and low pressure sensors.
- High pressure safety valves.
- Water temperature control sensors.
- Evaporator frost protection sensor.
- Factory-assembled evaporator water flow controller.

■ Electrical box

- IP 21.
- 400V-3Ph-50 Hz power supply + Earth (+10%/-10%).
- Main safety switch with handle on front.
- Control circuit transformer.
- Circuit breaker for compressor motor.
- Compressor motor switches.
- 30WI Control microprocessor-controlled electronic control module.
- Wire numbering.
- Marking of the main electrical components.
- RAL 7035.

■ 30WI Control electronic control module.

The electronic control module performs the following main functions:

- Regulation of the chilled or hot water temperature
- Regulation of the water temperature based on the outdoor temperature (water law).
- Regulation for low temperature energy storage.
- Second set-point management.
- Complete management of compressors with start-up sequence, metering and runtime balancing.
- Self-adjusting and proactive functions with adjustment of parameters on drift control.
- In-series staged capacity-reduction system on compressors based on cooling and heating demands.
- Management of compressor short cycle protection.
- Management of the machine operation limit according to outdoor temperature.
- Operating and fault status diagnostics.
- Management of a fault memory allowing a log of the last 20 incidents to be accessed, with operating readings taken when the fault occurs.

- Master/slave management of the two machines in parallel with runtime balancing and automatic changeover if a fault occurs on one machine.
- Machine time schedule.
- Display and access to the operating parameters via a multilingual LCD screen with 4 lines of 24 characters.

■ Remote management

30WI Control is equipped as standard with an RS485 serial port offering a range of remote management, monitoring and diagnostic options via the communication bus.

Several contacts are available as standard, enabling the AQUASNAP 30WI to be controlled remotely by wired link:

- Automatic operation control: when this contact is open, the machine stops.
- Set-point 1/set-point 2 selector: when this contact is closed, a second cooling set-point is activated (energy storage mode, for example).
- Heating/cooling mode selector: this input switches from one operating mode to another. Contact closed = heating mode.

Contact open = cooling mode.

- Set-point adjustable via 4-20 mA signal: this input is used to adjust the set-point in heating or cooling mode.
- Compressor load shedding: closing the contact(s) concerned allows the power or refrigerating consumption of the machine to be limited by stopping one or more compressors.
- Water pump 1 and 2 control: these outputs control the switches for one or two water pumps.
- Fault reporting: this contact indicates the presence of a major fault which has caused one or both refrigerating circuits to stop.

■ Capacity control

In-series staged power control system on the compressors:

- 4 stages for 700 V to 1600 V models.
- 6 stages for 1800 V and 2400 V models.
- 8 stages for 2100 V models.

■ Casing

Casing made from RAL 7035 painted panels.

OPTIONS

Options	No.	Description	Advantages	Use
Soft starter	25	Electronic starter for the compressor	Reduced compressor start-up in-rush current	30WI 700-2400
LP/HP pressure gauges	26	Pressure gauges installed on each refrigerating circuit	Direct pressure reading without HMI	30WI 700-2400
Master/Slave	58	Unit equipped with an additional water outlet temperature sensor, to be installed on site, enabling Master/Slave operation of 2 coolers connected in parallel	Optimised operation of two chillers connected in parallel with operating time equalisation	30WI 700-2400
Compressor suction valve	92	Shut-off valve on the compressor suction piping	Easy maintenance	30WI 700-2400
Bacnet gateway	148C	Two-directional communication board using Bacnet protocol	Connects the unit by communication bus to a building management system	30WI 700-2400
Lon gateway	148D	Two-directional communication board using Lon Talk protocol	Connects the unit by communication bus to a building management system	30WI 700-2400
Bacnet/IP	149	Two-directional high-speed communication using Bacnet protocol over Ethernet network (IP)	Easy and high-speed connection by Ethernet line to a building management system. Allows access to multiple unit parameters	30WI 700-2400
Low noise level	257	Compressor casing	Noise level reduction by 3 to 6 dB(A) compared to the standard version	30WI 700-2400
Extremely low noise level	258	Compressor casing + noise insulation	Noise level reduction by 8 to 10 dB(A) compared to the standard version	30WI 700-2400
Remote control unit	275	Remote HMI	Easy remote control of the machine	30WI 700-2400
Electrical energy meter	294	Display of the instantaneous consumption (voltage, current, electrical power) and cumulative consumption (kWh). Reduction of the unit's power consumption based on a maximum electrical power configured in the controller.	Enables acquisition, surveillance and optimisation of the machine's power consumption	30WI 700-2400
Refrigerant leak detection		Refrigerant detector installed inside the compressor casing (option 257 or 258 compulsory)	Enables automatic detection of a refrigerant leak on the machine	30WI 700-2400
Phase monitor		Phase control relay mounted in the electrical cabinet	Reinforced compressor protection with monitoring of rotation direction, absence and asymmetry of phases	30WI 700-2400
Relay board with potential-free (dry) contacts		Remote information reporting board with modulating potential-free (dry) contacts for the main operating statuses and faults	Easy remote diagnostics on the machine	30WI 700-2400

TECHNICAL SPECIFICATIONS

30WI		700 V	800 V	900 V	1000 V	1100 V	1200 V	1400 V	1600 V	1800 V	2100 V	2400 V	
Version Standard Low Noise Very Low Noise	Cooling capacity ⁽¹⁾	kW	217	251	288	327	356	385	443	499	582	657	713
	Input power ⁽¹⁾	kW	48,2	55,2	64,2	73	79,2	85,6	97,4	110,4	125	146	168
	EER ⁽¹⁾	kW/kW	4,5	4,55	4,48	4,48	4,49	4,50	4,55	4,52	4,66	4,51	4,24
	SEPR -2/-8° Process medium temp.*	kWh/kWh	3,99	4,10	4,04	4,08	4,01	4,01	4,26	4,29	4,56	4,69	4,67
	ESEER	kW/kW	5,53	5,59	5,48	5,38	5,44	5,47	5,44	5,34	5,64	5,48	5,34
	Net Seasonal Coefficient of Performance (SCOP) ⁽²⁾	kW/kW	5,59	5,63	5,7	5,54	5,49	5,49	5,55	5,55	4,72	4,99	4,54
	ηs heat	%	216	217	220	213	212	212	214	214	181	192	174
	Prated	kW	257,76	296,29	332,64	375,45	411,63	451,4	520,6	580,25	687,35	754,11	868,65
	Lw / Lp - standard ⁽³⁾	dB(A)	89 / 57	90 / 58	90 / 58	89 / 57	90 / 58	91 / 59	95 / 63	96 / 64	93 / 61	95 / 63	97 / 65
	Lw / Lp Low Noise ⁽³⁾	dB(A)	84 / 52	85 / 53	85 / 53	86 / 54	87 / 55	88 / 56	90 / 58	91 / 59	89 / 57	90 / 58	91 / 59
Lw / Lp Very Low Noise ⁽³⁾	dB(A)	79 / 47	80 / 48	80 / 48	80 / 48	81 / 49	82 / 50	85 / 53	86 / 54	85 / 53	86 / 54	87 / 55	
Refrigerating circuit	Refrigerant (GWP)		R410 (GWP=2088)										
	Number		2										
	Refrigerant circuit 1	kg	13,5	15,5	16,4	17	19,7	21,3	21,5	23	31	33	34
	Refrigerant circuit 2	kg	14	15	16,4	17,2	19,7	21,3	21	22	31	34	34
Tonne of CO ₂ equivalent	TCO ₂ Eq	57,42	63,68	68,49	71,41	82,27	88,95	88,74	93,96	129,46	139,9	141,98	
Compressor	Type		Hermetic scroll (- 2900 rpm)										
	Number		4	4	4	4	4	4	4	4	6	6	6
	Start-up mode		Direct in line in series										
	Number of stages		6	4	6	4	6	4	6	4	6	8	6
	Capacity control %		100-78-71-50-28-21-0	100-75-50-25-0	100-78-71-50-28-21-0	100-75-50-25-0	100-78-71-50-28-21-0	100-75-50-25-0	100-78-71-50-28-21-0	100-75-50-25-0	100-83-66-50-33-16-0	100-84-66-48-36-30-18-15-0	100-83-66-50-33-16-0
	Type of oil for R410A		Polyolester POE										
Oil load per circuit	l	6.7+6.7	6.7+6.7	6.7+6.7	6.7+6.7	6.7+7.2	7.2+7.2	6.3+6.3	6.3+6.3	3x6.3	3x6.3	3x6.3	
Evaporator	Type		Brazed-plate heat exchanger										
	Number		1										
	Water capacity	l	20	23	26	29	32	37	50	57	64	77	77
	Victaulic connection	Ø	DN100	DN100	DN100	DN125	DN125	DN125	DN125	DN125	DN150	DN150	DN150
	Max. pressure, water end	bar	10 bar										
Min/max water flow	m ³ /h	22/70	26/81	29/92	33/105	35/113	38/124	44/137	51/151	61/150	68/150	74/150	
Water-cooled condenser	Type		Brazed-plate heat exchanger										
	Number		1										
	Water capacity	l	23	26	29	32	37	40	55	61	73	77	77
	Victaulic connection	Ø	DN100	DN100	DN100	DN125	DN125	DN125	DN125	DN125	DN150	DN150	DN150
	Max. pressure, water end	bar	10 bar										
Min/max water flow	m ³ /h	19/64	22/74	25/84	28/95	31/103	33/112	38/129	43/143	52/150	59/150	66/163	
Dimensions	Length	mm	2099	2099	2099	2099	2099	2099	2499	2499	3350	3350	3350
	Width	mm	996										
	Height	mm	1869	1869	1869	1869	1869	1869	1887	1887	1970	1970	1970
Weight	Weight (empty)	kg	1044	1156	1189	1312	1363	1425	1613	1708	2284	2376	2418
	Weight in operation	kg	1088	1205	1246	1378	1436	1510	1713	1818	2472	2588	2637
Max. storage temperature	°C	+50°C											

* SEPR -2/-8° applicable Ecodesign Regulation (EU) No. 2015/1095

(1) Chilled water 12°C / 7°C and hot water 30°C / 35°C according to standard EN 1411-3:2013

(2) Hot water 30°C/35°C - Average climate conditions according to standard EN 14825-2013

(3) Lw: overall sound power level as per ISO3744

Lp: overall pressure level at 10 metres in a free field calculated using the formula Lp=Lw-10logS

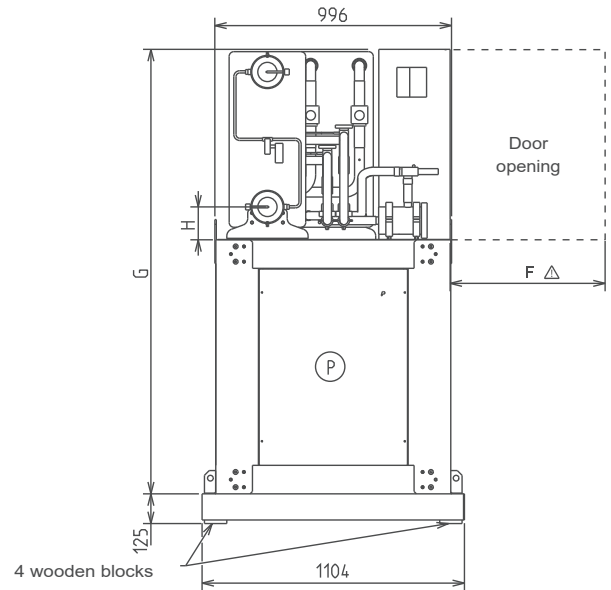
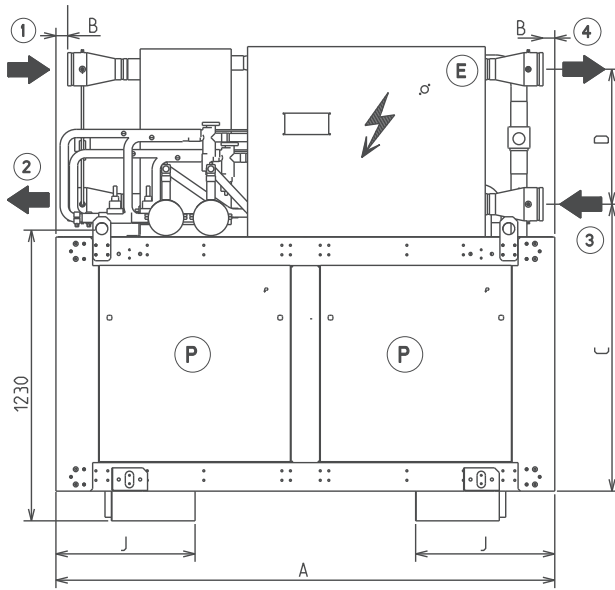
ELECTRICAL SPECIFICATIONS

30WI	700 V	800 V	900 V	1000 V	1100 V	1200 V	1400 V	1600 V	1800 V	2100 V	2400 V	
	COMPRESSOR											
Voltage	V	400V - 3Ph - 50Hz (+10/- 10%)										
Maximum nominal current	A	140	160	182	205	218	232	266	295	356	399	443
Starting current⁽¹⁾	A	316	334	391	414	480	494	586	615	607	720	763
Starting current with Soft Start option⁽¹⁾	A	230	248	287	310	352	366	429	458	483	562	605
	REMOTE CONTROL AUXILIARY CIRCUIT											
Voltage	V	230V - 1Ph - 50Hz (+10/- 10%)										
Maximum nominal current	A	0,8	0,8	0,8	0,8	0,8	0,8	1,3	1,3	1,3	1,3	1,3
Transformer capacity	VA	160	160	160	160	160	160	250	250	250	250	250
Machine protection rating		IP 21										

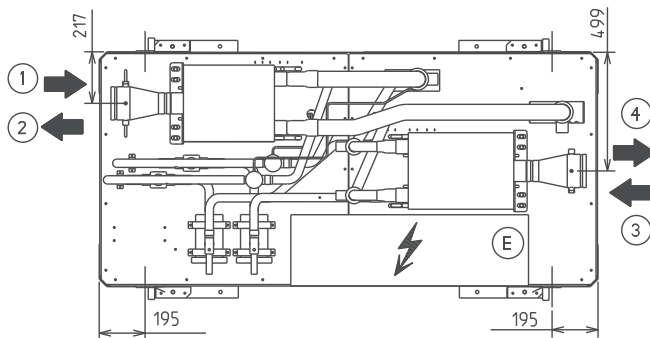
(1) Starting current of largest compressor + maximum current of other compressors under full load
Cable selection nominal current = sum of maximum nominal currents in above tables

DIMENSIONS

■ 700 V to 1600 V models



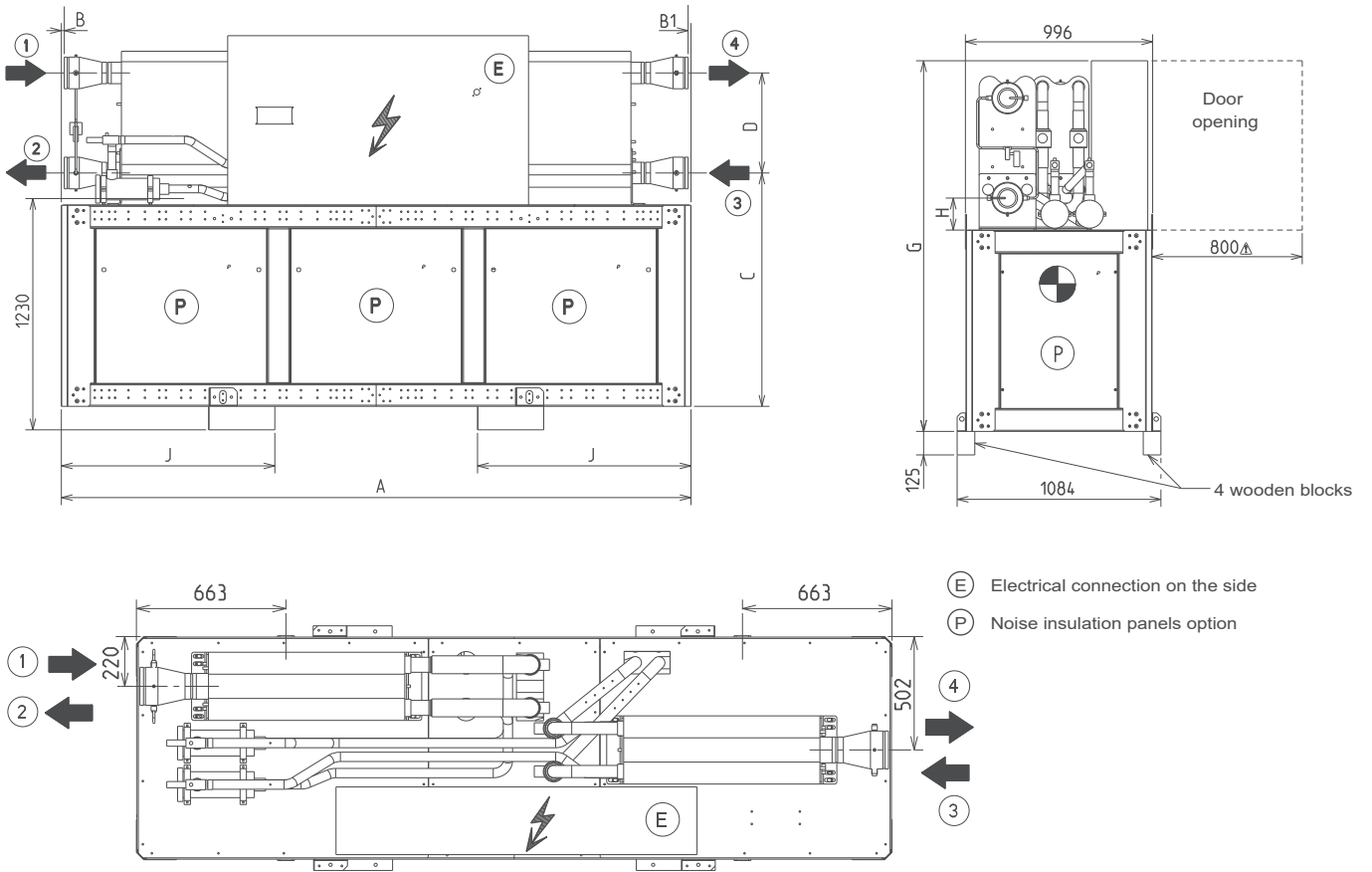
- ⓔ Electrical connection on the side
- Ⓟ Noise insulation panels option



Models	Dimensions (mm)								Chilled water		Hot water		Weight (kg)	
	A	B	C	D	F	G	H	J	Inlet 1	Outlet 2	Inlet 3	Outlet 4	empty	in operation
700 V	2099	49	1207	568	1000	1869	137	585	VICTAULIC DN 100				1044	1088
800 V	2099	49	1207	568	1000	1869	137	585					1156	1205
900 V	2099	49	1207	568	1000	1869	137	585	VICTAULIC DN 125				1189	1246
1000 V	2099	49	1207	568	1000	1869	137	585					1312	1378
1100 V	2099	49	1207	568	1000	1869	137	585	VICTAULIC DN 125				1363	1436
1200 V	2099	49	1207	568	1000	1869	137	585					1425	1510
1400 V	2499	60	1240	532	600	1887	170	715	VICTAULIC DN 125				1613	1713
1600 V	2499	60	1240	532	600	1887	170	715					1708	1818

DIMENSIONS

■ 1800 V to 2400 V models



Models	Dimensions (mm)								Chilled water		Hot water		Weight (kg)	
	A	B	B1	C	D	G	H	J	Inlet 1	Outlet 2	Inlet 1	Outlet 2	empty	in operation
1800 V	3350	63	63	1240	532	1970	170	1135	VICTAULIC DN 150				2284	2472
2100 V	3350	15	15	1240	532	1970	170	1135					2376	2588
2400 V	3350	15	15	1240	532	1970	170	1135					2418	2637