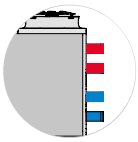
30FQ

HIGH-EFFICIENCY AIR-TO-WATER MULTIPURPOSE 4-PIPE HEAT PUMPS

AQUASNAP greenspeed

Heating capacity :
45 kW to 430 kW
Cooling capacity :
38 kW to 390 kW

EQUIPPED WITH SCROLL COMPRESSOR
AND AXIAL FANS WITH LOW GWP R-454B REFRIGERANT



4 PIPE SYSTEMS

R-454B

ECO DESIGN READY

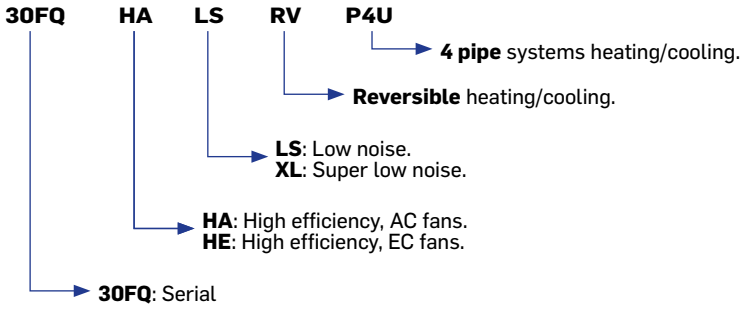
AquaSnap® 30FQ is a high-efficiency air-to-water multipurpose 4-pipe heat pump that efficiently provides both heating and cooling. It recovers heat from the cooling circuit, offering high energy efficiency and adaptability for various buildings like offices, hotels, and hospitals. These units are ideal for environments requiring maximum heating and cooling efficiency and low noise levels ; they can operate at outside temperatures down to -20°C and produce water up to a temperature of 60°C.

The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

Original document

RANGE OVERVIEW

Keys



RV Version

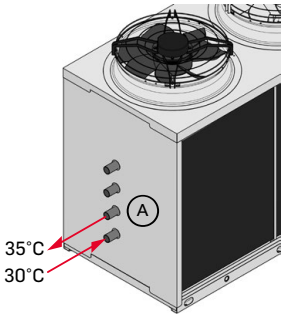
Reversible heating/cooling unit, with cycle reversal on the cooling circuit.

P4U Version

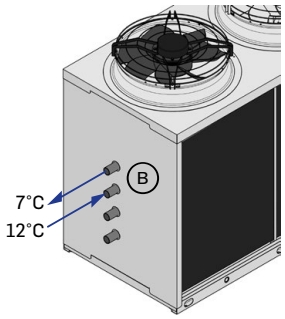
The AquaSnap® 30FQ P4U units use 4 hydraulic connections and are used in modern 4-pipe systems. In these systems, cold and hot water is always available (in every period of the year) and present in the specific hydraulic circuit. These systems allow the simultaneous production of cold water and hot water using 4 hydraulic connections, 2 connections are related to the hot water circuit, 2 connections are related to the cold water circuit. The plant thus conceived is able to heat and, at the same time, if required, to cool with very high energy efficiencies. In this configuration, however, the units are also able to produce hot or cold water separately at any time of the year.

The units are supplied with 2 heat exchangers, one dedicated to the production of cold water and one dedicated to the production of hot water. The operating modes are:

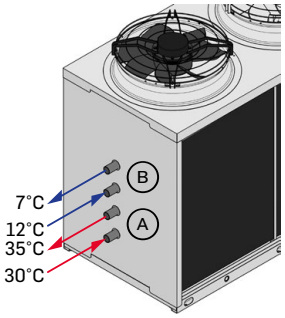
1. **User water heating:** The unit behaves like a normal air/water heat pump in heating mode, using the finned heat exchanger as the source and the A plate heat exchanger as user.



2. **User water cooling:** The unit behaves like a normal air / water chiller in cooling mode, using the finned exchanger as the source and the B plate heat exchanger as user.



3. **Simultaneous user Cooling + heating:** The unit behaves like a water / water heat pump, using the plate heat exchanger B as the cold user and the plate heat exchanger A as hot user. This version is not able to produce domestic hot water.



RANGE OVERVIEW

HA Version

High efficiency version, according to current standard. Unit equipped with AC fans.

HE Version

High efficiency version, according to current standard. Unit equipped with EC fans.

High-efficiency E.C. axial fans, supplied with Brushless DC electric motors electronically commutated (E.C. motors).

Low Noise LS Version

This version includes the complete acoustic insulation of the unit with compressor jackets and insulating material made with high density media and the interposition of heavy bitumen layer.

Super Low Noise XL Version

All XL super silenced units are supplied equipped with a special vibration-damping system consisting of a floating basement placed upon the unit's frame, through the interposition of highdamping steel springs.

The compressors are housed on this floating base and are in turn fixed by means of rubber anti-vibration supports.

The enclosure is manufactured from galvanized steel sandwich panels that have a micro-perforated inner skin and a core of 30 mm thick, high density (25 kg/m3) soundproofing mat. The entire arrangement provides a double damping system and acoustic attenuation. The compressor refrigerant pipes are connected to the refrigerant circuit through "anaconda" flexible connections.

Flexible connections are also used on the water pipework within the unit. The combination of these systems results in an overall noise reduction in the region of 6-8 dB(A) compared to units in standard configuration.

TECHNICAL INSIGHTS

FRAME

All units are made from hot-galvanised sheet steel, painted with polyurethane powder enamel and stoved at 180°C to provide maximum protection against corrosion. The frame is self-supporting with removable panels. All screws and rivets used are made from stainless steel. The standard colour of the units is RAL9018. Lifting eyebolts (delivered as kit) as standard to facilitate manutention of the unit.

REFRIGERANT CIRCUIT

The refrigerant circuit is assembled using internationally recognised brand name components with all brazing and welding being performed in accordance with ISO 97/23. The refrigerant utilised is R454B. The refrigerant circuit includes: sight glass, filter drier,electronic expansion valves, 4 way reversing valve, check valves, liquid receiver, liquid separator, schrader valves for maintenance and control, pressure safety device (for compliance with PED regulations).

ELECTRONIC EXPANSION VALVE

The electronic expansion valve enables the maximum possible efficiency to be achieved by maximizing the evaporator heat exchange, minimizing the reaction time to load variations, and optimizing the superheat.

COMPRESSORS

The compressors are scroll type, with crankcase resistance and thermal protection, installed in a separate compartment from the airflow in order to reduce noise. When the unit is on standby mode, the crankcase heater is always powered. Through the unit's front panel, it is possible to inspect and repair the compressors even when the unit is running.

The compressors used are tandem type. This solution allows a significantly higher efficiency with partial loads compared to the option with independent refrigerant circuits. The control system constantly monitors the discharge temperature of the single compressors.

EXTERNAL AIR SOURCE HEAT EXCHANGER

The source heat exchanger is made from 3/8" copper pipes and 0,1mm at least thick aluminium fins with the tubes being mechanically expanded into the aluminium fins in order to maximise heat transfer. Furthermore, the design guarantees a low air side pressure drop thus enabling the use of low rotation speed (and hence low noise) fans. All heat exchangers are supplied standard with fins hydrophilic coating "Blue Fins".

Coils are equiped with condensate drain pan in order to facilitate the evacuation of the condensates.

USER WATER CIRCUIT HEAT EXCHANGERS

The user heat exchanger is a braze welded, plate type heat exchanger, manufactured from AISI 316 stainless steel. The use of this type of exchanger results in a massive reduction of the refrigerant charge of the unit compared to a traditional shell-intube type. A further advantage is a reduction in the overall dimensions of the unit. The exchangers are factory insulated with flexible close cell material and can be fitted with an antifreeze heater (accessory). Each exchanger is fitted with a temperature sensor on the discharge water side for antifreeze protection.

FANS

The fans are direct drive axial type with aerofoil blades, are statically and dynamically balanced and are supplied complete with a safety fan guard complying with the requirements of EN 60335. They are fixed to the unit frame via rubber anti-vibration mountings. The electric motors, in HA versions are 6 poles type and a phase-cut regulator controls their speed of rotation to increase energy efficiency and allow them to be used over a wider operating range. In the HE versions, the fans are electronic type, with permanent magnet motors with an integrated driver that modulates the speed of rotation. The motors are fitted with integrated thermal overload protection and have a moisture protection rating of IP 54.

HEAD PRESSURE CONTROL

This device, using a pressure probe installed on the source heat exchanger, controls the fan speed with respect to the ambient conditions. Evaporation/condensing pressure is kept among correct parameters, avoiding technical problems in the refrigerant circuit (e.g. Liquid return to the compressor). The device can also be used to reduce unit sound level emission when ambient conditions are low.

TECHNICAL INSIGHTS

ELECTRICAL CABINET

The electrical cabinet is manufactured in order to comply with the requirements of the electromagnetic compatibility standard 2014/30/UE. Access to the enclosure is achieved by removing the front panel of the unit. The following components are supplied as standard on all units: main switch, a sequence relay that disables the power supply in the event that the phase sequence is incorrect (scroll compressors can be damaged if they rotate in the wrong direction), thermal overloads (protection of pumps and fans), compressor fuses, control circuit automatic breakers, compressor contactors, fan contactors and pump contactors. The terminal board has volt free contacts for remote ON-OFF, Summer/ winter change over and general alarm.

MICROPROCESSORS

All units are supplied as standard with microprocessor controls.

The microprocessor controls the following functions: control of the water temperature, antifreeze protection, compressor timing, compressor automatic starting sequence (For multiple compressors), alarm reset.

The control panel is supplied with display showing all operational icons. The microprocessor is set for automatic defrost (when operating in severe ambient conditions) and for summer/ winter change over. The control also manages the integration with other heating sources (electric heaters, boilers, solar panels etc) and the heating circuit pump. If required, the microprocessor can be configured in order for it to connect to a site BMS system thus enabling remote control and management (Modbus protocol as standard feature, Bacnet protocol optional) Web application in local wifi network for managing the unit control via smartphone.

CONTROL AND PROTECTION DEVICES

All units are standardly equipped with several control and safety devices: water return temperature sensor, installed on the water return pipe of the system, and anti-freeze probe, installed on the water supply pipe to the system high-pressure switch with automatic reset. There are also included a low-pressure automatic reset, pressure transducer (used to optimize the defrosting cycle and modulate the rotation speed of the fans according to external conditions), refrigerant side safety device, compressor thermal protection, fan thermal protection, flow switch, and external air compensation probe.

A phase monitor ensure control of phase sequence and low voltage supply.

DISPLAY

Interface board with graphic display for displaying and managing the operating parameters of the unit.

REMOTE MANAGEMENT

A range of communication protocols are available enabling most CMS/BMS to be integrated.

- MODBUS/JBUS RS485(Standard feature)
- BACNET RS485 (Optional)

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

- Remote On/off
- Heating/cooling operating mode selection
- Fault reporting: This contact indicates the presence of a major fault which has caused one or both refrigerant circuits to stop
- On/off output available for control of an external flow pump (unit without hydronic module)

OPTIONS & ACCESSORIES

Option	Code	Descriptions	Advantages	Use 30FQ
Hydraulic kit, recovery circuit	**A1LPR**	The hydraulic **heating** circuit includes a **single low-pressure centrifugal pump** equipped with **Low noise motor** (4 poles) The circuit also contains the safety valve and the manual shut-off valves.	Easy and fast installation (plug & play)	XL version 045-445
Hydraulic kit with one low-pressure pump	**A1LPU**	The hydraulic **cooling** circuit includes a **single low-pressure centrifugal pump**,equipped with **Low noise motor** (4 poles)	Easy and fast installation (plug & play)	XL version 045-445
Hydraulic kit with storage tank and one low-pressure pump	**A1LLU**	The hydrauli **cooling** circuit includes a **storage tank** and a **single low-pressure centrifugal pump**, equipped with **Low noise motor** (4 poles), The hydraulic circuit also contains the expansion vessel, the safety valve, and the necessary manual shut-off valves.	Easy and fast installation (plug & play)	XL version 045-445
4-connection tank and low-pressure pump	**BUF4A**	The hydraulic circuit includes a **4-connection storage tank**,and a low-pressur, low-noise(4 poles) pump on the primary side, an expansion vessel, and safety valves. On the secondary side circuit, there are two hydraulic connections available, to which a pumping kit (not supplied)	Easy and fast installation (plug & play)	XL version 045-445
Hydraulic kit with one pump without tank - recovery circuit	**A1NTR**	The hydraulic **heating** circuit includes a **single low-pressure centrifugal pump**. The circuit also contains the safety valve and the manual shut-off valves.	Easy and fast installation (plug & play)	LS version 045-445
Hydraulic kit, recovery circuit (2P)	**A1VSR**	The hydraulic **heating** circuit includes a **single variable speed, low-pressure centrifugal pump**. The circuit also contains the safety valve and the manual shut-off valves."	Easy and fast installation (plug & play) significant pumping energy cost savings.	LS version 231-445
Hydraulic kit, recovery circuit (4P)	**A1VLR**	The hydraulic **heating** circuit includes a **single variable speed, low-pressure centrifugal pump**, equipped with **Low noise motor**(4 poles), The circuit also contains the safety valve and the manual shut-off valves.	Easy and fast installation (plug & play) significant pumping energy cost savings.	XL version 231-445
Hydraulic kit with two pumps without tank - recovery circuit	**A2NTR**	The hydraulic **heating** circuit includes **2 pumps** (running+stand-b) **low-pressure centrifugal pump**. The circuit also contains the safety valve and the manual shut-off valves.	Easy and fast installation (plug & play)	LS version 045-445
Hydraulic kit with one pump without tank - user circuit	**A1NTU**	The hydraulic **cooling** circuit includes a **single low-pressure centrifugal pump**. The circuit also contains the safety valve and the manual shut-off valves.	Easy and fast installation (plug & play)	LS version 045-445
User circuit hydraulic kit, one inverter pump, no tank (2P)	**A1VSU**	The hydraulic **cooling** circuit includes a **single variable speed, low-pressure centrifugal pump**. The circuit also contains the safety valve and the manual shut-off valves.	Easy and fast installation (plug & play), significant pumping energy cost savings.	LS version 045-445
User circuit hydraulic kit, one inverter pump, no tank (4P)	**A1VLU**	The hydraulic **cooling** circuit includes a **single variable speed, low-pressure centrifugal pump**, equipped with **Low noise motor** (4 poles), The circuit also contains the safety valve and the manual shut-off valves.	Easy and fast installation (plug & play), significant pumping energy cost savings.	XL version 045-445

Refer to the selection tool to find out which options are not compatible.

OPTIONS & ACCESSORIES

Option	Code	Descriptions	Advantages	Use 30FQ
Hydraulic kit with two pumps without tank - user circuit	**A2NTU**	The hydraulic **cooling** circuit includes **2 pumps (running+stand-by) low-pressure centrifugal pump**. The circuit also contains the safety valve and the manual shut-off valves.	Easy and fast installation (plug & play)	LS version 045-445
Integrated hydraulic kit 1 pump + Water tank	**A1ZZU**	The hydraulic **cooling** circuit includes a **storage tank** and **single low-pressure centrifugal pump**. Also provided in the hydraulic circuit are an expansion vessel, pressure relief valve and system isolating valves with fittings.	Easy and fast installation (plug & play)	LS version 045-445
User circuit hydraulic kit + inverter centrifugal pump (2P)	**A1VVU**	The hydraulic **cooling** circuit includes a **storage tank** and **single variable speed low-pressure centrifugal pump**. Also provided in the hydraulic circuit are an expansion vessel, pressure relief valve and system isolating valves with fittings.	Easy and fast installation (plug & play), significant pumping energy cost savings.	LS version 045-445
User circuit hydraulic kit + inverter centrifugal pump (4P)	**A1PPU**	The hydraulic **cooling** circuit includes a **storage tank** and **single variable speed low-pressure centrifugal pump**, equipped with **Low noise** motor (4 poles), Also provided in the hydraulic circuit are an expansion vessel, pressure relief valve and system isolating valves with fittings.	Easy and fast installation (plug & play), significant pumping energy cost savings.	XL version 045-445
Integrated hydraulic kit 2 pumps + Water tank	**A2ZZU**	The hydraulic **cooling** circuit includes a **storage tank** and **2 pumps (running+stand-by) low-pressure centrifugal pump.** Also provided in the hydraulic circuit are an expansion vessel, pressure relief valve and system isolating valves with fittings.	Easy and fast installation (plug & play)	LS version 045-445
Low Temperature Operating	**BT00**	Allowing running operation on cooling mode for leaving water temperature from +4°C down to - 8°C	Covers specific applications such as industrial processes	045-445
Pressure gauges	**MAML**	These enable the standing charge and the operating pressures to be monitored.	Local unit control	045-445
Double safety valve	**DSV0**	Three-way valve upstream of dual relief valves	Easy service. Valve replacement and inspection facilitated without refrigerant loss.	045-445
COP external optimizer kit	**KCOP**	The kit includes a wattmeter that constantly supervises the unit's input power and a flowmeter and sensors on the hydraulic side for monitoring of the power supplied. It provides useful information to predict maintenance operations and reduce energy consumption through the improvement of the operating parameters.	Local unit control, Permits the monitoring of energy used.	045-445
Shut-off valve on compressor discharging side	**RDCO**	Shut-off valve on compressor discharging side	Simplified maintenance	045-445
Refrigerant leakage detector	**DFR0**	This device immediately detects possible refrigerant leakages in the unit signaling them to the user.	Quick notification to the customer of refrigerant losses to the atmosphere, allowing timely corrective actions. Enhanced environmental protection	045-445
Electronic soft starter	**DSSE**	The soft starter reduces the peak starting current down to a maximum of 40% of the nominal peak value.	Reduced starting current	045-445
Remote control panel	**PCRL**	Units are supplied with a microprocessor control panel with a high-definition display, mounted on board of the unit, and it is remotable up to 50 m distance.	Easy use Remote control of the unit and its operating parameters	045-445

Refer to the selection tool to find out which options are not compatible.

OPTIONS & ACCESSORIES

Option	Code	Descriptions	Advantages	Use 30FQ
BACNET RS485 protocol serial interface	**IBAC**	Gateway to allow the connection of the unit to external supervision system with BACnet Protocol in order to fully and remotely assistance	Easy connection to a building management system (BMS). Allows access to multiple unit parameters	045-445
Cascase control system (up to 6 units)	**SGRS**	The Cascade Control System is for applications where multiple units (Up to 6) are installed on a common hydraulic circuit. The system is equipped with an 8-key LCD backlit display and is built in a dedicated enclosure that is to be installed in the plant room. Connection between the controller and each of the unit is a simple two wire pair via RS485, making a stand-alone LAN.	Optimised cascade operation of up to 6 units connected in parrallel operation.	045-445
HIPRO.WEB Application	**HIPRO. WEB**	Web application in local wifi network for managing the ipro control via smartphone.	Remote unit control	045-445
Rubber vibration dampers	**KAVG**	Antivibratils mounts to be installed beneath the unit base and the ground to avoid the transmission of vibrations (and the noise) to the building	Limitation of vibrations and associate noise	045-445
Spring vibration dampers	**KAVM**	Spring type antivibratils mounts to installed between the unit base and the support structure to prevent the transmission of vibration and noise, to the building.	Limitation of vibrations and associate noise	045-445
User antifreeze kit	**KPU0**	This kit includes a heating cable wrapped around all water pipes and the user / Cooling circuit water pump. It is controlled by the microprocessor.	Cooling water exchanger and hydraulic module frost protection down to -20°C outside temperature	045-445
Recovery antifreeze kit	**KPR0**	This kit includes a heating cable wrapped around all water pipes and the recovery / Heating circuit water pump. It is controlled by the microprocessor.	Heating water exchanger and hydraulic module frost protection down to -20°C outside temperature	045-445
Tank antifreeze kit	**KPSU**	This kit includes a heating cable wrapped around all water pipes and the user circuit water pump. In the water tank is present an armoured electric heater. The kit is controlled by the microprocessor	Water buffer tank module frost protection down to -20°C outside temperature	045-445
Coil protection grid	**GBPE**	Coil protection grilles	Coil protection against possible impact	045-445
Condensing coil with pre-painted fins	**RM00**	Double-layer treatment of coils aluminium fins surface, to be used if there is an high concentration of corrosive agents in the Environment.	Improved corrosion resistance, recommended for use in moderately corrosive environments	045-445
Condensing coil with epoxy coating	**BEF0**	Epoxy coating treatment on the entire condensing coils for installation in corrosive environments.	Improved corrosion resistance, recommended for use in moderately corrosive environments	045-445
Copper/Copper Coil	**RR00**	Copper/Copper Coil	Improved corrosion resistance, recommended for use in corrosive environments	045-445
Seawood packing	**IM00**	Fumigated wood case and film casing added with slow release corrosion inhibitors and completely free of nitrates and heavy metals (VCI) suitable for long sea transports.	Packaging for sea transport	045-445

Refer to the selection tool to find out which options are not compatible.

PERFORMANCES DATA

30FQ HA: High efficiency, AC fans / LS: Low noise.

AquaSnap® 30FQ HALSRVP4U		045	051	068	075	091	110	115	135	150	161
HEATING											
Heating capacity (EN14511) (1)	kW	45,0	51,1	67,5	72,9	89,2	101	111	131	148	159
Total input power (EN14511) (1)	kW	14,1	15,9	19,7	22,1	26,1	29,7	32,6	38,5	44,2	46,9
COP (EN14511) (1)	kW/kW	3,19	3,21	3,43	3,3	3,42	3,4	3,4	3,4	3,35	3,39
Energy Class (2)		A+	A+	A++	A++	A+	A++	A++	A+	A+	A++
SCOP (2)	kWh/kWh	3,61	3,64	4,02	4,01	3,66	3,87	3,92	3,72	3,71	3,87
ηs,h (2)	%	142	143	158	157	144	152	154	146	146	152
COOLING											
Cooling capacity (EN14511) (3)	kW	38,3	44,1	57,8	62,1	76,8	86,4	96,1	112	125	135
Total input power (EN14511) (3)	kW	14	16,6	21,5	24,6	26,5	30,8	35	38,4	44,6	48,8
EER (EN14511) (3)	kW/kW	2,72	2,66	2,69	2,52	2,9	2,81	2,74	2,92	2,8	2,77
TER (EN14511) (4)	kW/kW	7,00	7,20	7,50	7,2	7,50	7,3	7,50	7,3	7,10	7,20
Sound power (5)	dB (A)	77	76	77	78	82	83	85	86	87	87
Sound pressure (6)	dB (A)	46	44	45	46	50	51	53	54	55	55

AquaSnap® 30FQ HALSRVP4U		179	201	230	231	265	295	321	351	395	445
HEATING											
Heating capacity (EN14511) (1)	kW	179	199	222	227	260	292	312	348	393	427
Total input power (EN14511) (1)	kW	52,2	57,7	65,6	64,2	78,1	89,6	95,7	109	121	134
COP (EN14511) (1)	kW/kW	3,43	3,45	3,38	3,54	3,33	3,26	3,26	3,19	3,25	3,19
Energy Class (2)		A++	A++	A++	A++	A+	A+	A+	A+	A+	A+
SCOP (2)	kWh/kWh	4,03	4,08	3,91	4,24	3,64	3,64	3,77	3,77	3,74	3,79
ηs,h (2)	%	158	160	154	167	143	143	148	148	147	149
COOLING											
Cooling capacity (EN14511) (3)	kW	160	175	197	195	230	255	272	305	353	388
Total input power (EN14511) (3)	kW	57,1	63,0	70,3	69,8	78	91,6	100,0	116	125	141
EER (EN14511) (3)	kW/kW	2,8	2,78	2,8	2,8	2,95	2,78	2,72	2,63	2,82	2,75
TER (EN14511) (4)	kW/kW	7,80	7,60	7,50	7,50	7,30	7,10	7,20	7,1	7,4	7,30
Sound power (5)	dB (A)	89	89	88	91	89	90	90	92	92	94
Sound pressure (6)	dB (A)	57	57	56	58	56	58	58	60	59	62

Performances are referred to the following conditions:
(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 40/45°C.
(2) Average conditions, low temperature, variable - Reg EU 811/2013
(3) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C.
(4) TER: Total Energy Ratio - cold circuit 12/7°C, hot circuit 40/45°C.
(5) Sound power level in accordance with ISO 3744.
(6) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

PERFORMANCES DATA

30FQ HE: High efficiency, EC fans / LS: Low noise.

AquaSnap® 30FQ HELSRVP4U		045	051	068	075	091	110	115	135	150	161
HEATING											
Heating capacity (EN14511) (1)	kW	45,1	51,1	67,5	72,9	89,2	101	111	131	148	159
Total input power (EN14511) (1)	kW	13,6	15,4	19,3	21,7	25	28,7	31,7	37	42,8	45,5
COP (EN14511) (1)	kW/kW	3,32	3,32	3,5	3,36	3,57	3,52	3,5	3,54	3,46	3,49
Energy Class (2)		A++	A++	A++	A++	A++	A++	A++	A++	A++	A++
SCOP (2)	kWh/kWh	3,89	3,92	4,26	4,22	4,03	4,17	4,22	4,03	4,02	4,14
ηs,h (2)	%	153	154	168	166	158	164	166	158	158	163
COOLING											
Cooling capacity (EN14511) (3)	kW	38,3	43,9	57,8	62,1	76,8	86,6	96,4	112	125	135
Total input power (EN14511) (3)	kW	13,9	16,4	21,4	24,4	25,9	30,3	34,7	37,6	44,1	48,2
EER (EN14511) (3)	kW/kW	2,76	2,68	2,70	2,55	2,97	2,86	2,78	2,98	2,83	2,8
TER (EN14511) (4)	kW/kW	7,00	7,20	7,50	7,2	7,50	7,3	7,50	7,3	7,10	7,20
Sound power (5)	dB (A)	77	76	77	78	82	83	85	86	87	87
Sound pressure (6)	dB (A)	46	44	45	46	50	51	53	54	55	55

AquaSnap® 30FQ HELSRVP4U		179	201	230	231	265	295	321	351	395	445
HEATING											
Heating capacity (EN14511) (1)	kW	179	199	222	227	259	292	312	349	393	427
Total input power (EN14511) (1)	kW	50,9	56,4	63,9	62,8	74,9	86,5	92,8	106	117	130
COP (EN14511) (1)	kW/kW	3,52	3,53	3,47	3,61	3,46	3,38	3,36	3,29	3,36	3,28
Energy Class (2)		A++	A++	A++	A+++	A++	A++	A++	A++	A++	A++
SCOP (2)	kWh/kWh	4,33	4,32	4,22	4,44	3,96	4	4,06	4,05	4,03	4,01
ηs,h (2)	%	170	170	166	175	156	157	160	159	158	157
COOLING											
Cooling capacity (EN14511) (3)	kW	160	175	197	195	229	254	271	306	354	388
Total input power (EN14511) (3)	kW	56,5	62,3	69,4	68,9	76,4	90,4	99,0	115	123	139
EER (EN14511) (3)	kW/kW	2,83	2,81	2,84	2,83	3,00	2,81	2,74	2,66	2,88	2,79
TER (EN14511) (4)	kW/kW	7,80	7,60	7,50	7,50	7,30	7,10	7,20	7,1	7,4	7,30
Sound power (5)	dB (A)	89	89	88	91	89	90	90	92	92	94
Sound pressure (6)	dB (A)	57	57	56	58	56	58	58	60	59	62

Performances are referred to the following conditions:
(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 40/45°C.
(2) Average conditions, low temperature, variable - Reg EU 811/2013
(3) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C.
(4) TER: Total Energy Ratio - cold circuit 12/7°C, hot circuit 40/45°C.
(5) Sound power level in accordance with ISO 3744.
(6) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

PERFORMANCES DATA

30FQ HA: High efficiency, AC fans / XL: Super low noise.

AquaSnap® 30FQ HAXLRVP4U		045	051	068	075	091	110	115	135	150	161
HEATING											
Heating capacity (EN14511) (1)	kW	44,4	50	65,4	70,8	88,1	99,0	109	130	146	155
Total input power (EN14511) (1)	kW	13,8	15,5	19,4	21,8	25,5	29,1	32	37,6	43,3	46
COP (EN14511) (1)	kW/kW	3,22	3,21	3,37	3,25	3,45	3,40	3,41	3,46	3,37	3,37
Energy Class (2)		A+	A+	A++	A++	A++	A++	A++	A++	A++	A++
SCOP (2)	kWh/kWh	3,76	3,78	4,13	4,1	3,86	4,03	4,08	3,91	3,89	4,01
ηs,h (2)	%	148	148	162	161	152	158	160	153	153	157
COOLING											
Cooling capacity (EN14511) (3)	kW	36,9	42,6	55,3	59,0	75	84,8	92,6	110	121	131
Total input power (EN14511) (3)	kW	14,6	17,1	22,5	25,9	26,8	31,5	36	38,8	45,7	50
EER (EN14511) (3)	kW/kW	2,53	2,49	2,46	2,28	2,8	2,69	2,57	2,84	2,65	2,63
TER (EN14511) (4)	kW/kW	7,00	7,20	7,50	7,2	7,50	7,3	7,50	7,3	7,10	7,20
Sound power (5)	dB (A)	73	73	73	74	76	77	79	81	82	82
Sound pressure (6)	dB (A)	41	41	41	42	44	45	47	49	50	50

AquaSnap® 30FQ HAXLRVP4U		179	201	230	231	265	295	321	351	395	445
HEATING											
Heating capacity (EN14511) (1)	kW	174	193	218	221	256	286	306	338	383	416
Total input power (EN14511) (1)	kW	51,3	56,8	64,4	63,2	76,2	87,6	93,7	107	118	131
COP (EN14511) (1)	kW/kW	3,39	3,40	3,39	3,5	3,36	3,26	3,27	3,16	3,25	3,18
Energy Class (2)		A++	A++	A++	A++	A++	A++	A++	A++	A++	A++
SCOP (2)	kWh/kWh	4,18	4,2	4,1	4,31	3,82	3,82	3,9	3,92	3,88	3,88
ηs,h (2)	%	164	165	161	169	150	150	153	154	152	152
COOLING											
Cooling capacity (EN14511) (3)	kW	154	168	190	185	222	247	263	293	342	375
Total input power (EN14511) (3)	kW	59,2	65,3	72,2	73,5	80	94	103	121	128	145
EER (EN14511) (3)	kW/kW	2,6	2,57	2,63	2,52	2,78	2,63	2,55	2,42	2,67	2,59
TER (EN14511) (4)	kW/kW	7,80	7,60	7,50	7,50	7,30	7,10	7,20	7,1	7,4	7,30
Sound power (5)	dB (A)	82	84	82	85	84	85	85	85	87	88
Sound pressure (6)	dB (A)	50	52	49	52	52	53	53	52	54	55

Performances are referred to the following conditions:
(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 40/45°C.
(2) Average conditions, low temperature, variable - Reg EU 811/2013
(3) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C.
(4) TER: Total Energy Ratio - cold circuit 12/7°C, hot circuit 40/45°C.
(5) Sound power level in accordance with ISO 3744.
(6) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

PERFORMANCES DATA

30FQ HE: High efficiency, EC fans / XL: Super low noise.

AquaSnap® 30FQ HEXLRVP4U		045	051	068	075	091	110	115	135	150	161
HEATING											
Heating capacity (EN14511) (1)	kW	45,0	50,7	66,5	72	89,1	101	111	131	148	159
Total input power (EN14511) (1)	kW	13	14,8	18,7	21,1	24,1	27,7	30,6	35,6	41,2	43,9
COP (EN14511) (1)	kW/kW	3,46	3,43	3,56	3,41	3,7	3,65	3,63	3,68	3,59	3,62
Energy Class (2)		A++	A++	A+++	A+++	A+++	A+++	A+++	A+++	A++	A+++
SCOP (2)	kWh/kWh	4,29	4,31	4,59	4,53	4,51	4,58	4,64	4,45	4,41	4,53
ηs,h (2)	%	169	169	181	178	177	180	183	175	173	178
COOLING											
Cooling capacity (EN14511) (3)	kW	37,3	42,9	55,9	59,5	75,5	84,3	93,6	111	123	132
Total input power (EN14511) (3)	kW	13,9	16,5	21,8	25,3	25,6	30,3	34,7	36,9	43,7	48,1
EER (EN14511) (3)	kW/kW	2,68	2,6	2,56	2,35	2,95	2,78	2,7	3,01	2,81	2,74
TER (EN14511) (4)	kW/kW	7,00	7,20	7,50	7,2	7,50	7,3	7,50	7,3	7,10	7,20
Sound power (5)	dB (A)	73	73	73	74	76	77	79	81	82	82
Sound pressure (6)	dB (A)	41	41	41	42	44	45	47	49	50	50

AquaSnap® 30FQ HEXLRVP4U		179	201	230	231	265	295	321	351	395	445
HEATING											
Heating capacity (EN14511) (1)	kW	177	197	221	226	259	291	311	345	391	422
Total input power (EN14511) (1)	kW	49,2	54,8	61,7	61,2	71,8	83,2	89,4	102	112	125
COP (EN14511) (1)	kW/kW	3,6	3,59	3,58	3,69	3,61	3,5	3,48	3,38	3,49	3,38
Energy Class (2)		A+++	A+++	A+++	A+++	A++	A++	A+++	A+++	A++	A++
SCOP (2)	kWh/kWh	4,74	4,7	4,64	4,7	4,4	4,38	4,45	4,45	4,43	4,38
ηs,h (2)	%	187	184	183	185	173	172	175	175	174	172
COOLING											
Cooling capacity (EN14511) (3)	kW	155	170	193	186	225	247	266	296	345	379
Total input power (EN14511) (3)	kW	57,1	63,2	69,1	71,8	75,6	90,9	98,1	117	123	140
EER (EN14511) (3)	kW/kW	2,71	2,69	2,79	2,6	2,98	2,72	2,71	2,53	2,80	2,71
TER (EN14511) (4)	kW/kW	7,80	7,60	7,50	7,50	7,30	7,10	7,20	7,1	7,4	7,30
Sound power (5)	dB (A)	82	84	82	85	84	85	85	85	87	88
Sound pressure (6)	dB (A)	50	52	49	52	52	53	53	52	54	55

Performances are referred to the following conditions:
(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 40/45°C.
(2) Average conditions, low temperature, variable - Reg EU 811/2013
(3) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C.
(4) TER: Total Energy Ratio - cold circuit 12/7°C, hot circuit 40/45°C.
(5) Sound power level in accordance with ISO 3744.
(6) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

PHYSICALS & ELECTRICAL DATA

AquaSnap® 30FQ HA-HE/LS-XL/RV/4PU			045	051	068	075	091	110	115	135	150	161	179
Power supply		V/Ph/Hz	400/3+N/50										
Control board		V/Ph/Hz	24V										
Auxiliary circuit		V/Ph/Hz	230/1/50										
HA	Maximum operating current draw (Un)	A	41,8	46,8	58,8	67,8	80,6	92,6	99,6	116,4	132,4	139,4	158,4
	Maximum start-up current(Un)	A	120,8	164,8	185,8	228,8	258,6	270,6	303,6	320,4	354,4	361,4	456,4
	Maximum start-up current with option soft starter (Un)	A	81,6	108	122,6	150	167,8	179,8	199,6	216,4	236,8	243,8	300,8
HE	Maximum operating current draw (Un)	A	41	46	58	67	79	91	98	114	130	137	156
	Maximum start-up current(Un)	A	120	164	185	228	257	269	302	318	352	359	454
	Maximum start-up current with option soft starter (Un)	A	80,8	107,2	121,8	149,2	166,2	178,2	198	214	234,4	241,4	298,4
Line section		mm^2	25	25	35	50	70	70	95	120	120	150	185
PE section		mm^2	16	16	25	35	50	50	70	95	95	120	150
Circuits		n°	1	1	1	1	1	1	1	1	1	1	1
Compressors		n°	2	2	2	2	2	2	2	2	2	2	2
Minimum stage capacity		%	43	43	43	44	34	43	38	45	40	44	38
Refrigerant			R-454B / A2L / GWP = 466 following AR6										
Refrigerant charge		kg	11	11	17	17	25	25	25	36	36	36	37
Equivalent CO_2 charge		$teqCO_2$	5,1	5,1	7,9	7,9	11,7	11,7	11,7	16,8	16,8	16,8	17,2
Expansion device			Electronic expansion valve										
System PED Category			3	3	3	3	3	3	3	3	3	3	3
Water heat exchanger			Direct-expansion welded plate heat exchanger										
Quantity			2	2	2	2	2	2	2	2	2	2	2
Max. water-side operating pressure		kPa	600	600	600	600	600	600	600	600	600	600	600
Water connections			Screwed										
Connections		pouces	1"1/2	1"1/2	2"	2"	2"	2"	2"	2" 1/2	2" 1/2	2" 1/2	2" 1/2
		mm	-	-	-	-	-	-	-	-	-	-	-
Air heat exchanger			Grooved copper tubes and aluminium fins										
Fans			Axial fan										
Quantity		n°	1	1	1	1	2	2	2	3	3	3	3
Water tank volume (optional)		l	140	140	300	300	300	300	300	500	500	500	500
Expansion vessel (Associate to water tank)		l	8	8	18	18	18	18	18	18	18	18	18
Casing paint			Colour code RAL 9018										

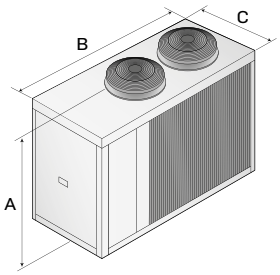
Values are guidelines only. Refer to the unit name plate.
Electrical data may change for updatin without notice.It is therefore necessary to refer always to the wiring diagram present on the units.
Note : Currents shown do not include pumps, please refer to data shown on selection software based on the hydronic kit selected
The table indicate the recommended cable cross-sections for supplying the units; it will be care and responsability of the electrical designer to make precise estimate considering the type of installation and the type of cable used.

PHYSICALS & ELECTRICAL DATA

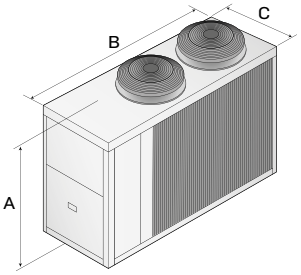
AquaSnap® 30FQ HA-HE/LS-XL/RV/4PU			201	230	231	265	295	321	351	395	445
Power supply		V/Ph/Hz	400/3+N/50								
Control board		V/Ph/Hz	24V								
Auxiliary circuit		V/Ph/Hz	230/1/50								
HA	Maximum operating current draw (Un)	A	174,4	193,4	199,2	232,8	264,8	278,8	316,8	356,4	394,4
	Maximum start-up current(Un)	A	472,4	491,4	403,2	436,8	486,8	500,8	614,8	654,4	692,4
	Maximum start-up current with option soft starter (Un)	A	316,8	335,8	299,2	332,8	369,2	383,2	459,2	498,8	536,8
HE	Maximum operating current draw (Un)	A	172	191	196	228	260	274	312	350	388
	Maximum start-up current(Un)	A	470	489	400	432	482	496	610	648	686
	Maximum start-up current with option soft starter (Un)	A	314,4	333,4	296	328	364,4	378,4	454,4	492,4	530,4
Line section		mm^2	185	185	185	240	240	240	2x150	2x240	2x240
PE section		mm^2	150	150	150	185	185	185	240	2x150	2x150
Circuits		n°	1	2	1	2	2	2	2	2	2
Compressors		n°	2	4	2	4	4	4	4	4	4
Minimum stage capacity		%	44	50	22	22	20	22	19	22	25
Refrigerant			R-454B / A2L / GWP = 466 following AR6								
Refrigerant charge		kg	47	50	59	64	63	63	62	73	82
Equivalent CO_2 charge		$teqCO_2$	21,9	23,3	27,5	29,8	29,4	29,4	28,9	34	38,2
Expansion device			Electronic expansion valve								
System PED Category			3	3	3	3	3	3	3	3	3
Water heat exchanger			Direct-expansion welded plate heat exchanger								
Quantity			2	2	2	2	2	2	2	2	2
Max. water-side operating pressure		kPa	600	600	600	600	600	600	600	600	600
Water connections			Victaulic*								
Connections		pouces	3"	3"	3"	3"	3"	4"	4"	5"	5"
		mm	88,9	88,9	88,9	88,9	88,9	114,3	114,3	139,7	139,7
Air heat exchanger			Grooved copper tubes and aluminium fins								
Fans			Axial fan								
Quantity		n°	3	4	3	6	6	6	6	8	8
Water tank volume (optional)		l	500	500	500	500	500	500	500	500	500
Expansion vessel (Associate to water tank)		l	18	18	18	18	18	18	18	18	18
Casing paint			Colour code RAL 9018								

Values are guidelines only. Refer to the unit name plate.
Electrical data may change for updatin without notice.It is therefore necessary to refer always to the wiring diagram present on the units.
Note : Currents shown do not include pumps, please refer to data shown on selection software based on the hydronic kit selected
The table indicate the recommended cable cross-sections for supplying the units; it will be care and responsability of the electrical designer to make precise estimate considering the type of installation and the type of cable used.

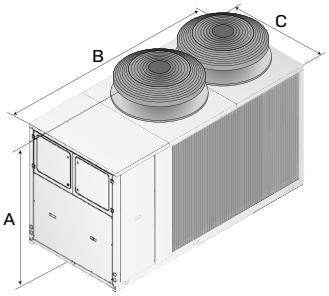
DIMENSIONS / WEIGHT



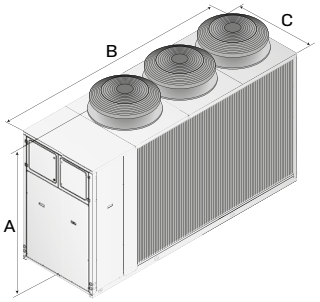
30FQ 045-051



30FQ 068-075

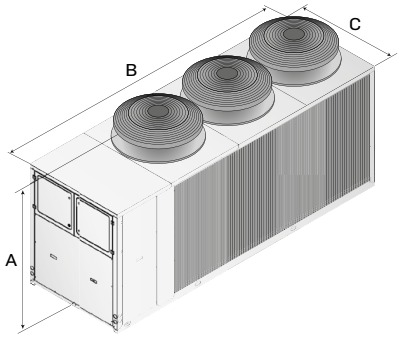


30FQ 091-115

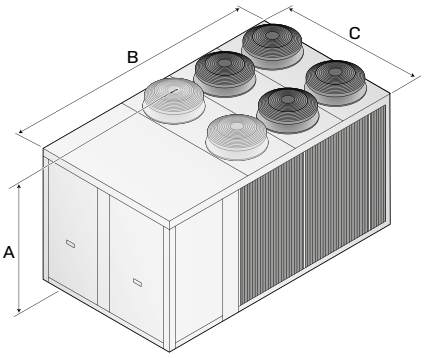


30FQ 135-179

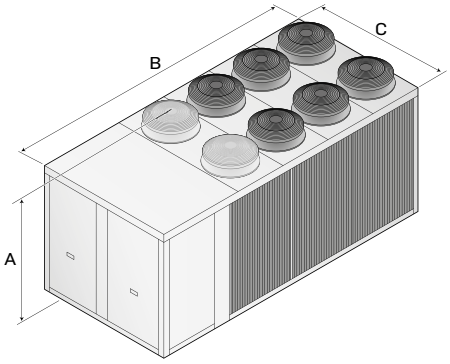
	045	051	068	075	091	110	115	135	150	161
A (mm)	1838	1838	1955	1955	1955	1955	1955	1955	1955	1955
B (mm)	2400	2400	3000	3000	3000	3000	3000	4295	4295	4295
C (mm)	1265	1265	1265	1265	1265	1265	1265	1265	1265	1265
Kg	680	689	938	944	1162	1170	1176	1785	1811	1825



30FQ 201 & 231



30FQ 230-351



30FQ 395-445

	179	201	230	231	265	295	321	351	395	445
A (mm)	1955	2355	2415	2355	2415	2415	2415	2415	2415	2415
B (mm)	4295	4296	4515	4296	4515	4515	4515	4515	5557	5557
C (mm)	1265	1265	2310	1265	2310	2310	2310	2310	2310	2310
Kg	1879	1924	3433	1940	3519	3609	3724	3752	4044	4072