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XSA

 **HiRef**
Innovators above
the standards

SERVICES

DATA CENTER

INDUSTRY



Water condensed Chillers and heat pumps

XSA

with scroll compressors

Range: 54.3–534.6 kW

The XSA range consists of a wide range of units available in cooling only (D), heating only (W) and reversible heat pump (H) versions. The many refrigerating configuration options, together with specific construction choices, make XSA units suitable for a wide range of plant engineering requirements: redundancy, efficiency at partial loads, compactness to make the most of limited space in technical enclosures, low noise levels, auxiliary unit control and easy installation. The units of the XSA range feature high nominal efficiency, including at seasonal and partial loads, which makes them the best choice among small and medium-power water-condensed units. Available versions:

- **D:** cooling only unit, suitable for combined use with Dry-Cooler.
- **W:** heating only unit.
- **H:** reversible heat pump.

Main advantages

Maximised energy efficiency

The units of the XSA range all feature high energy efficiency ratings up to class A, both in cooling and in heating mode. This is thanks to a careful selection of internal components, which also includes the adoption of innovative high efficiency scroll compressors with direct start, permanent magnet motor technology. The high modulation range guaranteed by the multi-scroll technology allows cooling/heating requirements to be met at any time, minimising energy waste and increasing seasonal efficiency. The high degree of partial load operation (up to 11% of the rated power), combined with water flow rate modulation (up to 20% of the nominal flow) allows operating costs and system maintenance costs to be reduced.



Plate heat exchangers

The XSA range uses braze-welded plate exchangers with asymmetrical channels, suitable for the use of high and medium pressure refrigerant gases. The configuration with asymmetrical channels allows high exchange efficiencies to be reached while maintaining pressure drops low on the water side - reducing pumping costs at both full and partial load.

More space in the heating unit

The possibility of installing the pumping units directly on the machine avoids having to install external hydronic modules with the resulting coupling costs. This, together with the adoption of compact plate heat exchangers directly facing the right side panel of the unit, guarantees maximised unit compactness to make the most of the available space in the thermal power plant.



Integrated hydronic module

XSA units are available with integrated hydronic module (optional), which includes user side and/or source side circulation pumps.

Technological components



Multi-protocol communication interface

HiRef units can be integrated with the customer's external supervision Building Management System (BMS), using the most popular communication protocols, including Modbus RTU, Modbus/IP, BacNet, LonWorks, SNMP.



Scroll compressors

Scroll compressors include a mobile scroll, driven by the motor, which completes orbital revolutions and a fixed scroll that is coupled to it. The orbital motion creates a series of gas pockets that move from one scroll to the other. When moving closer to the centre of the scroll, where exhaust takes place, the gas is compressed to smaller and smaller volumes until the desired delivery pressure is reached. Scroll technology improves volumetric efficiency and flow continuity, reduces noise and leakage and eliminates harmful volumes and downtime.



Corrosion resistant material

The HiRef outdoor units are protected by a metal structure resistant to corrosion and weathering. They are also made of galvanised steel sheet, with epoxy-polyester powder coating, oven-polymerised at 180°C, to offer a C3 degree of protection. On request, it is possible to order specific paint finishing treatments or a metalwork structure built entirely in stainless steel, to obtain a higher degree of protection from high impact adverse weather events.



A2L Ready

Some ranges of liquid chillers, in addition to safety class A1 refrigerants R410A and R134a, can also be supplied with class A2L slightly flammable refrigerants with low environmental impact R454B and R1234ze. HiRef makes these product sub-ranges available also in the "A2L Ready" version, filled with a safety class A1 refrigerant, factory-ready and equipped with all the necessary safety sensors to allow, if the customer requests it, fast refrigerant switching at a later stage.



Low GWP refrigerant

The Global Warming Potential (GWP) index is a numerical indicator that identifies the environmental impact of a substance. It measures the extent to which a gas contributes to the greenhouse effect, in relation to carbon dioxide (CO₂) whose baseline value is equal to 1. This parameter is used to determine the amount in kilograms of CO₂ corresponding to the environmental impact of the release of a refrigerant gas into the atmosphere. The use of low GWP refrigerants, such as R513A, R454B, R1234ze, CO₂, allows the environmental impact of air conditioning systems to be significantly reduced.

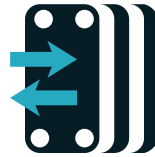


Plate heat exchanger

Brazed plate heat exchangers ensure efficient heat transfer with minimised footprint, eliminate the need for thick frame plates and seals, and ensure high thermal power density. They have a long life cycle, are maintenance-free and withstand both high temperatures and extremely high pressures. This type of exchanger is used in a wide range of applications including cooling, heating, evaporation and condensation.



Class A

Internal high-tech components suitably chosen and sized allow the units to operate with outstanding levels of efficiency.

Available versions



COOLING ONLY



REVERSIBLE HEAT
PUMP



HEATING ONLY

Types of system



WATER/WATER



Additional benefits

- Electronically controlled expansion valve supplied as standard
- Optional VicTaulic hydraulic couplings
- Available in Standard and Low Noise versions
- Programmable electronic control as part of standard equipment
- Smart management of several units in parallel
- Suitable for coupling to Polymorph module (PLM)
- Compliance with ERP regulations

Technical table

XSA		061H	062H	071H	072H	081H	082H	091H	092H	111H	112H	131H	132H	141H	142H	144H	161H
USER WATER VALUES 12/7°C, 40/45°C SOURCE WATER SIDE																	
COOLING CAPACITY	kW	54.3	54.4	60.9	61	68.7	68.8	80.5	80.6	93.1	93.3	104.9	105.1	119.3	119.3	92.5	132.6
TOTAL POWER INPUT	kW	15.4	15.4	17.2	17.2	19.2	19.2	23.3	23.2	26.9	26.8	31	30.9	35	35	25.3	39.6
EER	-	3.52	3.54	3.53	3.55	3.58	3.58	3.46	3.47	3.46	3.47	3.38	3.4	3.4	3.41	3.66	3.35
USER WATER VALUES 40/45°C, 12/7°C SOURCE WATER SIDE																	
THERMAL POWER	kW	69.3	69.4	77.7	77.7	87.5	87.5	103.1	103.2	119.3	119.4	135.1	135.2	153.4	153.4	117.1	171.1
TOTAL POWER INPUT	kW	15.4	15.4	17.2	17.2	19.2	19.2	23.3	23.2	26.9	26.8	31	30.9	35.1	35	25.3	39.6
COP	-	4.49	4.51	4.51	4.52	4.55	4.56	4.43	4.45	4.43	4.45	4.35	4.37	4.37	4.38	4.63	4.32
SCOP	-	4.9	5.04	4.91	5.07	4.95	5.07	4.85	5.01	4.78	4.86	4.74	4.89	4.75	4.88	5.24	4.75
SCOP	-	4.9	5.04	4.91	5.07	4.95	5.07	4.85	5.01	4.78	4.86	4.74	4.89	4.75	4.88	5.24	4.75
SOUND POWER LEVEL	dB	77		78		81				82		83		81	85		
SOUND POWER LEVEL LOW NOISE	dB	74		75		78				79		80		78	82		
DIMENSIONS [LxHxD]	mm	1174x1930x772						1644x1930x772						2374 x1990 x877	1644 x1930 x772		

XSA		162H	164H	181H	182H	184H	204H	214H	243H	244H	283H	284H	314H	344H	374H	424H	484H
USER WATER VALUES 12/7°C, 40/45°C SOURCE WATER SIDE																	
POTENZA FRIGORIFERA	kW	132.7	136.9	174.4	174.6	162	173.7	185.5	199.3	210.2	259.1	236.7	261.3	302.3	343.4	371.6	407.1
POTENZA ASS. TOTALE	kW	39.5	39	51.6	51.6	46.2	50.3	54.5	59.1	62.1	79.1	71.3	81.1	93.5	105.8	113.8	132
EER	-	3.36	3.51	3.38	3.39	3.51	3.45	3.4	3.37	3.38	3.28	3.32	3.22	3.23	3.24	3.26	3.08
USER WATER VALUES 40/45°C, 12/7°C SOURCE WATER SIDE																	
POTENZA TERMICA	kW	171.2	174.8	224.6	224.7	206.9	222.7	238.3	256.8	270.4	335.4	305.6	339.8	392.9	445.9	481.7	534.6
POTENZA ASS. TOTALE	kW	39.6	39	51.7	51.6	46.2	50.4	54.5	59.2	62.1	79.1	71.3	81.1	93.5	105.9	113.9	132
COP	-	4.33	4.48	4.35	4.36	4.48	4.42	4.37	4.34	4.35	4.24	4.29	4.19	4.2	4.21	4.23	4.05
SCOP	-	4.9	5.18	4.78	4.94	5.18	5.09	5	5.03	5.03	4.98	4.99	4.98	4.97	5.02	5.02	4.84
SCOP	-	4.9	5.18	4.78	4.94	5.18	5.09	5	5.03	5.03	4.98	4.99	4.98	4.97	5.02	5.02	4.84
POTENZA SONORA	dB	85	84	87		84		86		85	88	86	88	89	90	89	91
POT. SONORA LOW NOISE	dB	82	81	84		81		83		82	85	83	85	86	87	86	88
DIMENSIONI [LxHxD]	mm	1644 x1930 x772	2374 x1990 x877	1644 x1930 x772		2374x1990x877											

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