INDUSTRIAL SERVICES

KSW P

MULTIPURPOSE WATER COOLED HEAT PUMPS FOR HIGH TEMPERATURES, USER SIDE AND SOURCE SIDE

11–281 kW

MULTI-PROTOCOL COMMUNICATION INTERFACE

SCROLL COMPRESSORS

CORROSION RESISTANT MATERIAL

PLATE HEAT EXCHANGER

KSW P units are multipurpose water/water heat pumps used for the production of domestic hot water at high temperature and are designed for both tertiary and industrial applications. KSW P units ensure **production of hot water up to 80°C**, **without using an electric** (element) **or gas booster**. The main feature of this P range is being able to manage, on the heat source side, **very different thermal levels**: these heat pumps can use groundwater, usually available at 10-15°C, or water from thermal waste up to 45°C. The versions available for 2-pipe or 4-pipe systems and the number of refrigeration configurations provided, ranging from **single-circuit solutions** with single or tandem compressors up to **two-circuit solutions** with tandem compressors, allow the **best redundancy and maximum efficiency to be achieved, even simultaneously, at partial loads**.

- Refrigerant R134a
- Electronically controlled expansion valve supplied as standard
- Vic-Taulic hydraulic couplings
- Optional energy meter integrated via Modbus, for metering the energy absorbed by the machine
- External pump control according to constant T or constant ΔT logic

More space in the heating unit

A KSW P unit can be used **to produce domestic hot water, heating and cooling water from a single machine.** This optimises the use of space in the heat station, avoiding the need to install cascade-connected units and additional hydronic modules that would reduce the space available for the installation of other equipment.

Operation safety

Being able to produce water up to 80°C **avoids having to run anti-Legionella cycles** or, in the event that the water is stored at a lower temperature, to be able to run them more efficiently than via a boiler or an electrical heater.

Multi-purpose: Total Recovery

All sizes of the KSW P series can be coupled to both 2 and 4-pipe systems. In the former case system-side production of **hot or cold water and the simultaneous total recoveryside production of hot water is ensured**; in the latter case the **simultaneous production of hot and cold water for heating and cooling is ensured**.

Total recovery | Heating | Cooling

Efficiency and reliability in line with system requirements

The available refrigerating circuit configurations have been designed to ensure, also simultaneously, redundancy and efficiency at partial loads. In particular, depending on the size of the machine and any special plant requirements, the units may include:

- **single circuit solutions with single compressor;**
- **single circuit solutions with compressors in a tandem arrangement,** for high system efficiency;
- **dual circuit solutions with one compressor per circuit,** for high system redundancy;
- **dual circuit solutions with four compressors (in a dual tandem arrangement) on two circuits,** for a system that is both redundant and efficient at partial loads.

Maximum efficiency at partial loads

The KSW P range uses Scroll compressors, electronically controlled expansion valves for each circuit and plate heat exchangers: all these features ensure **high efficiencies at partial loads and accurate tracking of cooling load trends in all conditions of use.**

Attention to detail and low noise operation

Scroll compressors, which are the main noise source in the unit, are fitted on rubber feet; these dampen vibration and therefore **attenuate the noise transmitted to the various system parts.** On request, the compressor compartment can be lined with special sound absorbing material and the compressors encased in special insulating hoods **to reduce airborne noise emissions.**

KSW P		040P	050P	060P	081P	082P	091P	092P	101P	102P	121P	122P	151P	152P	171P	172P	174P	201P
Utility water temperature 12/7°C, Recovery water temperature 60/70°C																		
Cooling capacity	kW	11.2	14.6	17.9	22.6	22.6	25.3	25.3	29.3	29.4	36.2	36.2	45.3	45.4	52.7	52.8	50.3	59.9
Thermal power	kW	17.1	22.3	27.5	34.2	34.2	38.3	38.3	44.6	44.7	55.3	55.3	68.8	68.9	79.9	79.9	76.4	90.8
Total absorbed power	kW	6.2	8.1	10.2	12.2	12.2	13.7	13.7	16.1	16.1	20.1	20.1	24.7	24.7	28.6	28.6	27.5	32.6
TER		4.56	4.56	4.45	4.66	4.66	4.64	4.64	4.59	4.60	4.55	4.55	4.62	4.63	4.64	4.64	4.61	4.62
User water values 12/7°C, 30/35°C source water side																		
Cooling capacity	kW	17.4	22.6	27.9	35.6	35.8	39.4	39.6	45.4	45.6	56.7	56.8	66.7	67	77.6	77.9	77.9	87.5
Total absorbed power	kW	3.4	4.4	5.5	6.6	6.6	7.4	7.4	8.7	8.7	10.9	10.9	14.6	15	16.1	16	14.9	17.6
EER		5.12	5.14	5.07	5.39	5.42	5.32	5.35	5.22	5.24	5.2	5.21	4.57	4.58	4.82	4.87	5.23	4.97
User water values 60/70°C, 15/10°C source water side																		
Thermal power	kW	17.3	22.6	27.9	34.7	34.7	38.8	38.8	45.2	45.3	56	56	69.8	70	81	81	77.5	92.1
Total absorbed power	kW	6.2	8.1	10.2	12.2	12.2	13.7	13.7	16.1	16.1	20.1	20.1	24.7	25	28.6	28.6	27.5	32.6
COP		2.79	2.79	2.74	2.84	2.84	2.83	2.83	2.81	2.81	2.79	2.79	2.83	2.83	2.83	2.83	2.82	2.83
Sound power [Standard]	dB(A)	74	74	78	77	77	77	77	77	77	81	81	84	84	85	85	80	86
Sound power [Low noise]	dB(A)	70	70	74	73	73	73	73	73	73	77	77	80	80	79	79	74	80
Dimensions [LxHxD]	mm	804x1462x607			1174x1594x772										1644x1594x772		2374 x1854 x877	1664 x1594 x772

KSW P		202P	204P	221P	222P	241P	242P	244P	301P	302P	304P	344P	404P	444P	484P	554P	604P
Utility water temperature 12/7°C, Recovery water temperature 60/70°C																	
Cooling capacity	kW	59.9	58.3	65.9	66.1	74.5	74.5	71.8	91.2	91.9	89.7	103.9	116.8	132.9	145.3	165.3	181.1
Thermal power	kW	90.8	89.1	101.2	101.3	113.2	113.2	110.2	139.1	139.7	136.9	158.4	179.1	202.8	223.6	251.7	276.7
Total absorbed power	kW	32.6	32.4	37.1	37	40.8	40.8	40.5	50.3	50.3	49.6	57.5	65.6	73.5	82.4	90.9	100.6
TER		4.62	4.55	4.50	4.52	4.60	4.60	4.49	4.58	4.60	4.57	4.56	4.51	4.57	4.48	4.59	4.55
User water values 12/7°C, 30/35°C source water side																	
Cooling capacity	kW	87.6	89.6	96.3	96.7	110.3	110.5	111.3	133.1	133.5	130	150.9	170.1	193.4	211.3	241	263.7
Total absorbed power	kW	17.5	17.6	20	20	21.9	21.9	22	27.1	27.1	29.1	32.1	35.2	39.5	44.3	48.8	54.1
EER		5.01	5.09	4.82	4.84	5.04	5.05	5.06	4.91	4.93	4.47	4.7	4.83	4.9	4.77	4.94	4.87
User water values 60/70°C, 15/10°C source water side																	
Thermal power	kW	92.1	90.3	102.6	102.7	114.8	114.8	111.8	141	141.6	138.8	160.6	181.6	205.6	226.7	255.1	280.5
Total absorbed power	kW	32.6	32.4	37.1	37	40.8	40.8	40.5	50.3	50.3	49.6	57.5	65.6	73.5	82.4	90.9	100.6
COP		2.83	2.79	2.77	2.78	2.81	2.81	2.76	2.80	2.82	2.80	2.79	2.77	2.8	2.75	2.81	2.79
Sound power [Standard]	dB(A)	86	80	87	87	88	88	84	90	90	87	88	89	90	91	92	93
Sound power [Low noise]	dB(A)	80	74	81	81	82	82	78	82	82	79	80	81	82	83	84	85
Dimensions [LxHxD]	mm	1664 x1594 x772	2374 x1854 x877	1664x1594x772				2374 x1854 x877	1664x1594x772		2374x1854x877						

Also available with 60 Hz power supply

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