

# KSW P

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

10-150.7 kW



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**.

### 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 recovery side production of hot water is ensured**; in the latter case the **simultaneous production of hot and cold water for heating and cooling is ensured**.

- 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  $\Delta T$  logic



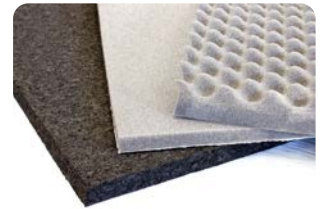
Total recovery



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	
<b>Utility water temperature 12/7°C, Recovery water temperature 60/70°C</b>																			
Cooling capacity	kW	10	13.1	16	10	20	11.2	22.4	13.1	26.2	16	32	20.5	40.9	20.5	47.9	22.4	27.5	
Thermal power	kW	16.5	21.6	26.7	16.5	33.1	18.5	37	21.6	43.2	26.7	53.4	33.5	67	33.5	78.1	37	44.6	
Total absorbed power	kW	6.9	8.9	11.3	6.8	13.7	7.7	15.3	8.9	17.9	11.3	22.5	13.7	27.5	13.7	31.8	15.3	18	
TER		3.87	3.88	3.79	3.88	3.87	3.88	3.88	3.89	3.88	3.8	3.79	3.93	3.93	3.93	3.96	3.88	4	
Sound power	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							
<b>User water values 12/7°C, 40/45°C source water side</b>																			
Cooling capacity	kW	15.9	20.7	25.5	16.5	32.8	18.5	36.4	21.6	41.8	26.4	52.4	31.3	61	31.3	70.5	36.9	41.2	
Total absorbed power	kW	4.2	5.5	6.9	4	8.2	4.5	9.2	5.3	10.8	6.6	13.5	8.3	17	8.3	19.3	9	10.5	
EER		3.83	3.79	3.73	4.09	4.01	4.1	3.96	4.1	3.87	3.98	3.89	3.75	3.59	3.75	3.65	4.09	3.91	
Sound power	dB(A)	74	74	78	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	77	77	80	80	79	79	74	80		
Dimensions [LxHxD]	mm	1174x1594x772			1644x1594x772	1174x1594x772	1644x1594x772	1174x1594x772	1644x1594x772	1174x1594x772	1644x1594x772	1174x1594x772	1644x1594x772	1174x1594x772	2374x1854x877	1644x1594x772	3130x1854x877	2374x1854x877	
<b>User water values 60/70°C, 15/10°C source water side</b>																			
Thermal power	kW	18.5	24.2	29.9	18.5	37	20.7	41.4	24.2	48.3	29.8	59.7	37	74	37	86	41.3	49	
Total absorbed power	kW	6.9	9	11.3	6.9	13.7	7.7	15.3	8.9	17.9	11.3	22.6	13.7	27.4	13.7	31.6	15.3	17.9	
COP		2.69	2.7	2.64	2.7	2.69	2.7	2.7	2.7	2.7	2.65	2.65	2.71	2.7	2.71	2.72	2.7	2.74	
SCOP		4.18	4.2	4.17	4.91	4.92	4.89	4.94	4.84	4.95	4.86	4.87	4.52	4.59	4.62	4.65	5.15	4.67	

KSW P		202P	204P	221P	222P	241P	242P	244P	301P	302P	304P	344P	404P	444P	484P	554P	604P
<b>Utility water temperature 12/7°C, Recovery water temperature 60/70°C</b>																	
Cooling capacity	kW	54.9	26.2	27.5	61.4	34	68	32	42.2	84.5	40.9	40.9	54.9	54.9	68	84.5	84.5
Thermal power	kW	89.1	43.2	44.6	100.1	55.5	111.1	53.4	68.6	137.2	67	67	89.1	89.1	111	137.2	137.2
Total absorbed power	kW	36.1	17.9	18	40.7	22.7	45.4	22.5	27.7	55.5	27.4	27.4	36	36	45.4	55.5	55.5
TER		3.99	3.89	4	3.97	3.95	3.95	3.8	4	3.99	3.93	3.93	4	4	3.95	4	4
Sound power	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	1644x1594x772	2374x1854x877	1644x1594x772				2374x1854x877	1644x1594x772				2374x1854x877				
<b>User water values 12/7°C, 40/45°C source water side</b>																	
Cooling capacity	kW	78.9	43.2	41.2	87	51	99.3	52.8	63.4	120.1	62.6	62.6	82.4	82.4	102	126.8	126.8
Total absorbed power	kW	21.7	10.5	10.5	24.8	13.2	27.1	13.3	16.2	33.7	16.7	16.7	21.1	21	26.5	32.4	32.4
EER		3.63	4.1	3.91	3.51	3.85	3.66	3.98	3.91	3.57	3.75	3.75	3.91	3.92	3.85	3.91	3.91
Sound power	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	1644x1594x772	3130x1854x877	2374x1854x877	1644x1594x772	2374x1854x877	1644x1594x772	3130x1854x877	2374x1854x877	1644x1594x772	3130x1854x877						
<b>User water values 60/70°C, 15/10°C source water side</b>																	
Thermal power	kW	97.9	48.3	49	109.2	61	122	59.7	75.3	149.9	74	74	97.9	97.9	122	150.7	150.7
Total absorbed power	kW	35.8	17.9	17.9	40.6	22.5	45	22.5	27.5	55.2	27.4	27.4	35.8	35.8	45	55	55
COP		2.74	2.7	2.74	2.69	2.71	2.71	2.65	2.74	2.72	2.71	2.71	2.74	2.74	2.71	2.74	2.74
SCOP		4.84	5.14	4.68	4.84	4.72	4.82	5.05	4.65	4.85	4.74	4.84	4.98	5	4.93	4.98	5.01

Also available with 60 Hz power supply | Hot user IN water temperature 40°C | Hot user OUT water temperature 45°C | Cold user IN water temperature 16°C | Cold user OUT water temperature 10°C