INDUSTRIAL SERVICES

MSW

MULTIPURPOSE WATER-CONDENSED HEAT PUMPS WITH SCROLL COMPRESSORS

42.3–549.2 kW

MULTI-PROTOCOL COMMUNICATION INTERFACE

SCROLL COMPRESSORS

CORROSION RESISTANT MATERIAL

A2L READY

LOW GWP REFRIGERANT

PLATE HEAT EXCHANGER

MSW units are multi-purpose water-cooled heat pumps with Scroll compressors, designed for both tertiary and industrial uses. They guarantee **extensive configurability, in terms of both accessories and refrigeration circuit**. All sizes of the MSW series can be coupled to both 2 and 4-pipe systems. In the former case production is guaranteed on the hot or cold water primary system side with simultaneous production of hot water on the total recovery side; in the latter case the simultaneous production of hot and cold water is guaranteed for heating and cooling. The numerous cooling configurations available, which offer **single-circuit** and **two-circuit solutions with compressors in a tandem arrangement**, ensure **maximum efficiency even at partial loads and optimised redundancy**. The MSW range is thus designed to meet any requirement efficiently.

Operation modes with 2-pipe system: cooling mode, heating mode, domestic water mode and cooling + domestic water.

Operation modes with 4-pipe system: cooling mode, heating mode and cooling + heating.

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.

- Refrigerant R410A
- Electronically controlled expansion valve supplied as standard
- Optional Vic-Taulic hydraulic couplings
- Available versions: multi-purpose for 2-pipe system (M) and multi-purpose for 4-pipe system (P)

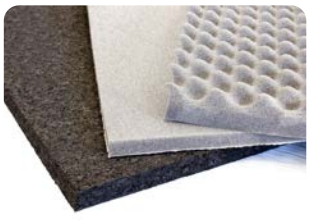
Maximum efficiency at partial loads

Meticulous selection of components allows **high efficiency to be obtained at partial loads** thanks to the use of Scroll compressors and the use of electronically controlled electric expansion valves (one per circuit), **optimised to track refrigerant load trends in all conditions of use.** The plate heat exchanger also ensures low water/refrigerant approaches during operation, **all to the advantage of heat exchange efficiency.**

Excellent configurability of the refrigeration section

One of the main strengths of the MSW range is the excellent configurability of the refrigeration circuit structure, which depending on the required size and special requirements can consist of:

- **a dual compressor (tandem) on a single circuit** for greater efficiency at partial loads;
- **four compressors (dual tandem) on dual circuit,** for a redundant system that is also efficient with low loads.



Attention to detail and low noise operation

The Scroll compressors, which are the main source of noise from the machine, can be mounted on a rubber support that **dampens vibrations,** wrapped in special insulating sheaths and placed in a dedicated compartment lined with sound-absorbing material. The machine noise emission and vibrations are thus **considerably reduced at all operating points.**

Integrated hydronic module

On request, and up to a cooling capacity of 180 kW, a version with integrated **hydronic module is available,** which includes circulation pumps on the user side and/or on the source side.

MSW		042P	052P	062P	072P	082P	092P	112P	132P	142P	144P	162P
Cooling: Utility water temperature 12/7°C, Recovery water temperature 40/45°C												
Cooling capacity	kW	42.3	49	56.7	63.5	73.9	82.4	98.7	111.6	125.2	128.2	137
Thermal power	kW	54.8	63.8	73.2	82	94.8	106.3	126.6	144.1	160.5	164.7	175.4
Total absorbed power	kW	13.2	15.7	17.6	19.7	22.3	25.5	29.8	34.8	37.8	39.1	41.2
TER		7.33	7.16	7.38	7.38	7.56	7.4	7.57	7.34	7.55	7.5	7.58
User water values 12/7°C, 40/45°C source water side												
Cooling capacity	kW	42.3	49	56.7	63.5	73.9	82.4	98.7	111.6	125.2	128.2	137
Total absorbed power	kW	13.2	15.7	17.5	19.7	22.3	25.5	29.7	34.8	37.8	39.1	41.2
EER		3.2	3.12	3.24	3.22	3.31	3.24	3.32	3.21	3.31	3.28	3.33
ESEER		5.34	5.14	5.46	5.31	5.57	5.43	5.39	5.39	5.46	5.77	5.55
User water values 12/7°C, 15/10°C source water side												
Thermal power	kW	59.6	69.4	79.5	89.1	103.2	115.3	137.4	156.8	174.3	179.4	190.5
Total absorbed power	kW	13.4	16	17.7	20.1	22.6	25.7	30.1	35.3	38.3	39.6	41.8
COP		4.46	4.34	4.5	4.44	4.57	4.48	4.56	4.44	4.56	4.54	4.56
SCOP		4.59	4.52	4.67	4.65	4.77	4.71	4.66	4.69	4.75	4.91	4.81
Sound power	dB(A)	76	78	78	79	79	81	83	85	85	82	85
Sound power [Low noise]	dB(A)	72	74	74	75	75	77	79	81	81	78	81
Dimensions [LxHxD]	mm	1174x1930x772						1644x1930x772			2374 x1990 x877	1644 x1930 x772

MSW		164P	182P	184P	204P	214P	244P	284P	314P	344P	374P	424P
Cooling: Utility water temperature 12/7°C, Recovery water temperature 40/45°C												
Cooling capacity	kW	146.1	174	167.9	181.2	197.8	234	255.5	277	313.4	350.3	399.2
Thermal power	kW	188.2	223.3	214.6	232.4	253	297	324.9	352.8	400.1	447.7	506.1
Total absorbed power	kW	45.1	52.8	50	55	59.3	67.1	74.1	81.3	93	104.5	114.9
TER		7.42	7.52	7.65	7.51	7.6	7.91	7.83	7.75	7.67	7.63	7.88
User water values 12/7°C, 40/45°C source water side												
Cooling capacity	kW	146.1	174	167.9	181.2	197.8	234	255.5	277	313.4	350.3	399.2
Total absorbed power	kW	45.1	52.8	50.1	55	59.3	67.1	74.1	81.2	93	104.5	114.8
EER		3.24	3.3	3.35	3.29	3.33	3.49	3.45	3.41	3.37	3.35	3.48
ESEER		5.75	5.41	5.96	5.86	5.75	6.15	6.03	6	5.69	5.77	5.89
User water values 12/7°C, 15/10°C source water side												
Thermal power	kW	204.4	242.4	233.7	252.8	274.7	322.2	352.2	382.4	433.7	485	549.2
Total absorbed power	kW	45.5	53.6	50.4	55.6	60	67.7	74.8	82	94	106	115.9
COP		4.49	4.52	4.64	4.55	4.58	4.76	4.71	4.66	4.61	4.58	4.74
SCOP		4.89	4.75	5.01	4.89	4.9	5.05	5.1	5.08	4.94	4.97	5.14
Sound power	dB(A)	82	90	84	85	86	88	88	88	91	93	89
Sound power [Low noise]	dB(A)	78	86	80	81	82	84	84	84	87	89	85
Dimensions [LxHxD]	mm	2374 x1990 x877	1644 x1930 x772	2374 x1990 x877	3130x1990x877							

Also available with 60 Hz power supply

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