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MULTI-PURPOSE HEAT PUMPS

WATER CONDENSED WITH SCROLL COMPRESSORS



MSW P		042	052	062	072	082	092	112	132	142	144	162
COOLING - Water conditions: user side 16/10°C; source side 30/35°C												
Cooling capacity (UNI 14511)	kW	50.7	58.6	67.8	75.6	88.5	98.3	118.0	133.3	149.4	153.3	163.6
Total absorbed power (UNI 14511)	kW	11.7	14.2	15.5	17.8	19.8	22.6	26.3	31.0	33.5	34.6	36.5
EER (UNI 14511)		4.32	4.14	4.38	4.26	4.48	4.34	4.49	4.30	4.45	4.42	4.48
ESEER		5.34	5.14	5.46	5.31	5.57	5.43	5.39	5.39	5.46	5.77	5.55
HEATING - Water conditions: user side 40/45°C; source side 15/10 °C												
Heating capacity (UNI 14511)	kW	59.8	69.7	79.8	89.3	103.5	115.7	137.8	157.3	174.9	180.0	191.1
Total absorbed power (UNI 14511)	kW	13.5	16.1	17.8	20.1	22.7	25.8	30.2	35.3	38.3	39.6	41.8
COP (UNI 14511)		4.42	4.33	4.49	4.44	4.56	4.49	4.57	4.46	4.57	4.55	4.58
SCOP		4.15	4.11	4.22	4.23	4.30	4.25	4.21	4.25	4.30	4.40	4.33
ERP efficiency		163	161	166	166	169	167	165	167	169	173	170
ERP Efficiency Class		A+++ / H.T. Heat Pump										
COOLING AND HEATING - Water conditions *												
Cooling capacity (UNI 14511)*	kW	46.9	54.3	62.8	70.3	82.0	91.2	109.2	123.6	138.5	142.4	151.2
Heating capacity (UNI 14511)*	kW	59.7	69.6	79.7	89.4	103.5	115.6	137.8	157.0	174.8	179.9	190.8
Total absorbed power (UNI 14511)*	kW	13.5	16.0	17.8	20.0	22.6	25.7	30.1	35.2	38.2	39.4	41.6
Total COP (UNI 14511)*		8.27	8.11	8.41	8.33	8.53	8.38	8.51	8.28	8.48	8.46	8.50
Sound power level Lw (standard unit)	db(A)	76	78	78	79	79	81	83	85	85	82	85
Sound power level Lw (low noise unit)	db(A)	72	74	74	75	75	77	79	81	81	78	81
Dimensions [L x D x H]	mm	1174x772x1594						1644x772x1594			2374x877x1854	1644x772x1594

MSW P		164	182	184	204	214	244	284	314	344	374	424
COOLING - Water conditions: user side 12/7°C; source side 40/45°C												
Cooling capacity (UNI 14511)	kW	174.4	207.9	201.6	217.0	236.1	278.5	303.5	328.5	371.2	413.9	472.7
Total absorbed power (UNI 14511)	kW	39.9	47.2	43.8	48.6	52.3	59.0	65.5	72.2	83.0	93.8	101.4
EER (UNI 14511)		4.37	4.41	4.60	4.47	4.51	4.72	4.63	4.55	4.47	4.41	4.66
ESEER		5.75	5.41	5.96	5.86	5.75	6.15	6.03	6.00	5.69	5.77	5.89
HEATING - Water conditions: user side 40/45°C; source side 15/10 °C												
Heating capacity (UNI 14511)	kW	205.2	223.3	234.4	253.8	275.6	322.9	353.2	383.6	415.5	447.5	551.1
Total absorbed power (UNI 14511)	kW	45.5	49.7	50.4	55.6	60.0	67.7	74.8	82.0	90.2	98.5	115.9
COP (UNI 14511)		4.50	4.49	4.65	4.56	4.59	4.77	4.72	4.68	4.61	4.54	4.76
SCOP		4.38	4.29	4.44	4.40	4.37	4.48	4.51	4.50	4.40	4.43	4.41
ERP efficiency		172	169	175	173	172	176	177	177	173	174	173
ERP Efficiency Class		A+++ / H.T. Heat Pump										
COOLING AND HEATING - Water conditions *												
Cooling capacity (UNI 14511)*	kW	161.8	192.5	186.0	200.8	218.5	258.2	282.0	305.1	346.0	386.2	441.0
Heating capacity (UNI 14511)*	kW	205.1	243.3	233.8	253.5	275.5	322.5	353.1	383.0	435.3	486.8	550.8
Total absorbed power (UNI 14511)*	kW	45.4	53.4	50.3	55.4	59.9	67.5	74.8	81.9	93.8	105.8	115.4
Total COP (UNI 14511)*		8.37	8.42	8.61	8.47	8.51	8.81	8.72	8.65	8.57	8.49	8.84
Sound power level Lw (standard unit)	db(A)	82	90	84	85	86	88	88	88	91	93	89
Sound power level Lw (low noise unit)	db(A)	78	86	80	81	82	84	84	84	87	89	85
Dimensions [L x D x H]	mm	2374x877x1854	1644x772x1594	2374x877x1854	3130x877x1854							

*Cold user In water temperature 16°C
 *Cold user Out water temperature 10°C
 *Hot user In water temperature 40°C
 *Hot user Out water temperature 35°C

MULTI-PURPOSE HEAT PUMPS

WATER CONDENSED WITH SCROLL COMPRESSORS

MSW



MSW

MULTI-PURPOSE HEAT PUMPS

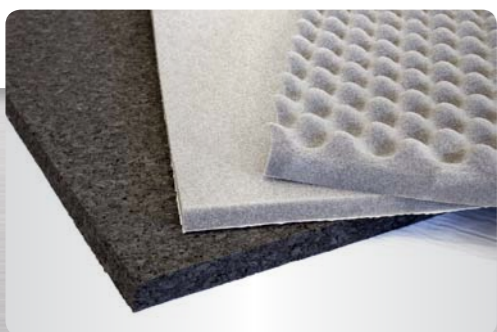
WATER CONDENSED WITH SCROLL COMPRESSORS

● MAXIMUM EFFICIENCY AT PARTIAL LOADS



Accurate selection of the components allows high efficiency to be obtained at partial loads; this is thanks above all to the use of scroll compressors and to the use of electronically controlled electric expansion valves (one for each 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.

● ATTENTION TO DETAIL AND LOW NOISE



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.

● 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.

● 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.

The multi-purpose **MSW** units are air conditioning and domestic hot water (DHW) production units designed for both residential and industrial applications. 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 able to efficiently meet any requirement.

OPERATION MODE:

2-pipe system

- Cooling mode
- Heating mode
- Domestic water mode
- Cooling + domestic water

4-pipe system

- Cooling mode
- Heating mode
- Cooling + heating



● MORE SPACE IN THE HEAT STATION



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 VicTaulic hydraulic couplings.
- » Versions: **Multi-purpose for 2-pipe system**
Multi-purpose for 4-pipe system

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