

MACON®

DC INVERTER WATER TO WATER HEAT PUMP



(Heating / Cooling / Domestic Hot Water)

► Characteristics



DC inverter technology



Domestic hot water



House heating



House cooling



Quality component



Save energy



Anti-freezing



Wide heating capacity



Modular control



Quiet running

► Core Technologies



► High Quality Components

HOUSING
High strength thickened powder coating galvanized metal, low sound level.

HEAT EXCHANGER
3 mm Φ plate heat exchanger in coil shell and tube heat exchanger for option.

PIPING SYSTEM
High strength red copper pipes with special design of eliminating stress and resonance.

DC INVERTER CONTROLLER
Self-designed DC inverter control drive core to realize accurate temperature and speed control.



DISPLAY CONTROLLER
Intelligent control for with multiple functions.

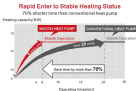
THROTTLE PART
Assured electronic expansion valve with fully automatic and intelligent control for the refrigerant flow.

SOUNDPROOF COTTON
Wave type anti-flaming cotton for effective noise reduction.

COMPRESSOR
High efficient twin rotary DC inverter compressor with variable speeds adjusted according to actual load demands.

01 Rapid Heating

All components are intelligently controlled to rapidly enter to high efficient working status.



02 Wide Operating Voltage Range

AC input voltage allowed range: 185V~270V

Three phase output voltage allowed range: 340V~420V

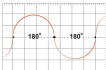


03 DC Inverter Technology

180° sine wave control, compressor soft start, automatic adjustment of variable frequency compressor speed, reasonable control of unit power input and heat output.



Twin Rotary
DC Inverter Compressor



Smooth sinusoidal wave form output from DC drive

04 Multifunction Design, Flexible Application

Multifunction design and flexible application. Users can install the products according to their own needs. The modes of cooling, heating or domestic hot water are optional for different places.

45°C

Heating

55°C

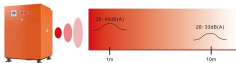
Hot Water

7°C

Cooling

05 Low Noise Running

A fully enclosed cabinet is specially designed for the compressor so that the running noise can be kept inside and the noise of the whole unit can maintain very low.



06 High Efficient & Energy-Saving

International advanced heat pump technology to realize low operation cost. Electricity consumption is only 75% of solar water heater and 25% of electric water heater. When it is cooling-hot water, the COP can be up to 10.



07 Module Combination Design

This design is suitable for commercial, industrial, agricultural places with large hot water demands. One central controller is able to control 16 modular units.



08 Timing In Sections Function

The heat pump units are with Timing ON/OFF function and two sections can be set at the same time. For example, first section to be 8:00 unit ON, 18:00 unit OFF, and second section to be 17:00 unit ON, 23:00 unit OFF, more energy saving.



09 Multiple Protections And Reliable

Water to water heat pump has various protection controls like water flow switch protection, anti freezing protection, high / low pressure protection, compressor overload protection and high discharge temperature protection, etc.



DC Inverter Water To Water Heat Pump (Heating, Cooling, Domestic Hot Water)



Model	6000W	9000W	12000W	15000W	18000W	22000W	
Power supply	V/Ph/Hz	220/1/50	380/3/50	380/3/50	380/3/50	380/3/50	
Heating	Heating capacity range	kW	3.8~10.0	4.4~20.0	5.0~24.0	6.0~28.0	7.0~30.0
		kW/h	9000~40000	14000~60000	17000~81000	20000~100000	24000~120000
	COP range	W/W	2.8~16.0	2.8~16.0	2.8~16.0	3.0~16.0	2.8~16.0
Heating (I) Indoor side 50°C Water side 55°C	Heating capacity	kW	90	90	18.8	30.0	36.0
		kW/h	10000	11000	61400	100000	130000
	COP	W/W	5.0	5.0	5.0	5.0	5.0
	Power input	kW	1.84	2.70	3.27	3.45	4.30
	Current input	A	7.4	5.0	6.0	10.4	13.4
Heating (II) Indoor side 50°C Water side 45°C	Heating capacity	kW	90	90	18.8	30.0	36.0
		kW/h	10000	11000	61400	100000	130000
	COP	W/W	4.0	4.0	4.0	4.0	4.0
	Power input	kW	2.14	3.37	4.29	7.14	6.37
	Current input	A	9.7	6.8	8.1	10.6	16.3
Heating (III) Indoor side 55°C Water side 45°C	Heating capacity	kW	90	90	18.8	30.0	36.0
		kW/h	10000	10000	39700	71700	141000
	COP	W/W	4.0	4.0	4.0	4.0	4.0
	Power input	kW	2.19	3.65	4.38	7.29	6.75
	Current input	A	9.9	6.8	8.3	10.8	16.6
Cooling	Cooling capacity	kW	13	13	13	13	13
		kW/h	18000	44400	53200	60700	100000
	EER	W/W	4.0	4.0	4.0	4.0	4.0
	Power input	kW	1.73	2.88	3.47	3.78	4.81
	Current input	A	7.9	7.0	8.6	11.0	13.0
Max. power input	kW	3.1	3.2	6.2	10.6	13.0	
Max. current input	A	14.2	9.8	10.8	18.6	23.7	
Sound level	dB(A)	40	40	40	40	40	
Water connection	inch	1"	1"	1"	1-1/2"	1-1/2"	
Water flow volume range (5~15°C / 15)	m³/h	1.7~2.0	2.0~3.1	3.0~3.3	3.0~3.4	3.4~3.5	
Refrigerant type		R32	R32	R32	R32	R32	
Unit dimensions (L/W/H)	mm	540/180/600	600/200/600	600/200/600	760/200/760	760/200/760	
Package dimensions (L/W/H)	mm	640/200/660	650/200/660	650/200/660	810/200/760	810/200/760	

Remarks:

Heating (I): water side inlet/outlet water temperature: 50°C/55°C, indoor side inlet/outlet water temperature: 18°C/20°C.

Heating (II): water side inlet/outlet water temperature: 50°C/45°C, indoor side inlet/outlet water temperature: 18°C/20°C.

Heating (III): water side inlet/outlet water temperature: 45°C/45°C, indoor side inlet/outlet water temperature: 15°C/18°C.

Cooling: water side inlet/outlet water temperature: 12°C/7°C, indoor side inlet/outlet water temperature: 18°C/18°C.

Water pump: power/current input is not included in the maximum power/current input.

Water flow volume range: water flow volume range is determined by the indoor side temperature and water side temperature. If the water temperature is low, large water

flow volume is suggested to avoid large heat exchange temperature difference that cause freezing of the heat exchanger.

The specific model parameters are subject to the sample.

DC Inverter Water To Water Heat Pump (Heating, Cooling, Domestic Hot Water)



Model		600/1000	600/1000	710/1000	800/1000	1000/1000	
Power supply		V/Ph/Hz	220/1/50	220/1/50	220/1/50	220/1/50	
Heating	Heating capacity range	0W	11.1~48.0	17.0~82.0	21.0~100.0	26.1~120.0	41.0~200.0
		kW/h	44700~264700	59700~271000	78000~341000	99000~409000	149100~604000
	COP range	W/W	2.8~10.0	2.8~10.0	2.8~10.0	2.8~10.0	2.8~10.0
Heating (I) Boiler side 50°C Water side 55°C	Heating capacity	0W	40.0	60.0	75.0	90.0	150.0
		kW/h	11000	264700	250000	307100	311000
	COP	W/W	5.5	5.5	5.5	5.5	5.5
	Power input	0W	5.50	10.91	13.64	16.36	27.27
	Current input	A	11.0	20.7	25.9	31.1	51.0
Heating (II) Boiler side 50°C Water side 45°C	Heating capacity	0W	40.0	60.0	75.0	90.0	150.0
		kW/h	11000	264700	250000	307100	311000
	COP	W/W	4.2	4.2	4.2	4.2	4.2
	Power input	0W	10.71	14.29	17.86	21.43	35.71
	Current input	A	20.1	27.1	33.9	40.7	67.6
Heating (III) Boiler side 55°C Water side 45°C	Heating capacity	0W	51.5	70.0	87.5	105.0	175.0
		kW/h	119100	288000	288000	350000	391100
	COP	W/W	4.0	4.0	4.0	4.0	4.0
	Power input	0W	12.84	17.50	21.88	26.25	43.75
	Current input	A	25.6	37.0	44.4	53.0	87.5
Cooling	Cooling capacity	0W	39.0	50.0	62.5	75.0	125.0
		kW/h	111000	170000	210000	210000	400000
	EER	W/W	4.0	4.0	4.0	4.0	4.0
	Power input	0W	8.07	11.71	13.89	16.67	27.78
	Current input	A	16.0	23.4	27.8	33.3	55.6
Max. power input		0W	11.0	20.0	25.0	30.0	30.0
Max. current input		A	20.0	30.0	37.0	47.0	60.0
Sound level		dB(A)	32	33	35	35	42
Water connection		inch	1/2~1/2	3"	3"	3"	4"
Water flow volume range (5~10°C / h)		m³/h	1.3~12.0	15.0~17.0	11.0~21.0	10.0~20.7	20.0~40.0
Refrigerant type			R32	R32	R32	R32	R32
Unit dimensions (L/W/H)		mm	700/500/700	1200/700/1100	1300/1000/1100	1600/1100/1100	2000/1100/1100
Package dimensions (L/W/H)		mm	800/600/760	1300/700/1160	1400/1000/1160	1700/1200/1160	2100/1200/1160

Remarks:

Heating (I): water side inlet/outlet water temperature: 50°C/45°C, boiler side inlet/outlet water temperature: 10°C/7°C.

Heating (II): water side inlet/outlet water temperature: 50°C/45°C, boiler side inlet/outlet water temperature: 10°C/7°C.

Heating (III): water side inlet/outlet water temperature: 45°C/40°C, boiler side inlet/outlet water temperature: 10°C/7°C.

Cooling: water side inlet/outlet water temperature: 12°C/7°C, boiler side inlet/outlet water temperature: 50°C/45°C.

Water pump: power/current input is not included in the maximum power/current input.

Water flow volume range: water flow volume range is determined by the boiler side temperature and water side temperature. If the water temperature is low, large water

flow volume is suggested to avoid large heat exchange temperature difference that cause freezing of the heat exchanger.

The specific model parameters are subject to the sample.

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