



ABOUT MAMMOTH

Since 1935, Mammoth has been producing and installing air conditioning units with the most innovative technologies. Our solutions are found in some of the world's most important buildings for its unparalleled flexibility and efficiency. When performance and energy efficiency are important factors to a project, our products are often chosen as the final solution.



Established in Minneapolis, USA - 1935



Since 1988, Mammoth has been providing energy saving products to projects in China. In 2002, Mammoth invested US\$10 million to establish its manufacturing facility in Anji, China's #1 Ecological County, and its national sales headquarter in Shanghai to provide custom engineered air conditioning systems for projects in China and abroad.

Energy Saving & Innovation



Mammoth produces air conditioning equipment that leverages energy saving and innovative technologies. Our products include, but not limited to, geothermal & water source heat pumps, air & water cooled commercial air conditioning units, fan coils, AHU, VAV box, screw chillers, and energy recovery units.

Customization & Energy Saving is Our Standard



Mammoth has been recognized as a leader in providing custom designed Total Energy Solution HVAC Systems. Our solutions can fit any design applications from WSHP systems to geothermal systems, from hybrid systems to various energy saving systems. Based on the needs of our customers, our recommendations help our customers assess the economic benefits of Mammoth solutions over alternative systems.

Outstanding Achievement



Mammoth has also brought its innovative design concepts to the industry. We have printed numerous technical design manuals and books to facilitate engineers in the design of Renewable Energy HVAC Systems. Together with industry associations and the commercial section of the US Embassy and Consulate General Offices, we have frequently conducted technical seminars in major cities in China and abroad. We have supplied our solutions to projects that amount to almost 10 million sq. m., and have been continuously recognized as the leader in Renewable Energy products in China.

HEAT PUMP WATER HEATER

PRODUCT FEATURES

- + The system offers a broad and adaptable range of uses, encompassing sanitary hot water, floor heating, and swimming pool heating.
- + **Compressor Designed Specifically for Heat Pump**
- + Eco-friendly refrigerant: **R410a**
- + Two speed fan motor which further improves unit operation under high ambient temp.
- + Electronic expansion valve regulates the flow of refrigerant precisely.
- + Heat-exchanger cycle technology to further improve operation under low ambient temperature.
- + The air exchange mechanism, facilitated by a fin-coil configuration, is further augmented by the integration of a hydrophilic coating.
- + The heat pump system features an innovative tube-in-tube heat exchanger with an internal spiral design. This design not only ensures exceptionally high thermal efficiency but also effectively combats scaling concerns. *Also available in shell in tube heat exchanger
- + The system features a housing made from galvanized plates, further enhanced by a layer of powder coating. This combination of materials and treatments offers several advantages, ensuring durability, protection, and an appealing aesthetic.
- + LCD display wire controller.
- + The system integrates a hot water return control mechanism aimed at maintaining optimal warmth within the supplying pipes.
- + Experience unmatched freedom with our system's ability to set operating times according to your preferences. Tailor your schedule to meet your specific needs, ensuring optimal functionality and convenience.
- + The system operates seamlessly with an automatic mode that is closely tied to the temperature of the tank water.
- + Automatic defrosting.
- + Automatic prevent freezing in the winter.
- + Water flow protection control.
- + The system includes a sophisticated feature that enables control over auxiliary heating devices, such as electric heating units. This intelligent functionality offers a comprehensive approach to maintaining desired temperatures and ensuring optimal comfort.



SPECIFICATION

Model			KFRS-18E2	KFRS-22E2
Power supply(V/Ph/Hz)			380/3/50	
Hot water model	Heating capacity	kW	18	22
	Rated power input	kW	4.2	4.9
	COP		4.3	4.5
	Rated hot water output	L/h	390	480
	Hot water temperature	°C	20 - 55	
Floor heating	Heating capacity	kW	14	17.5
	Rated power input	kW	3.6	4.6
	Rated Current	A	6.8	8.7
	Range of Water temp.	°C	20 - 55	
Max Power Input		KW	6.2	7.5
Max Current Input		A	11	14.5
Circulating water flow		m3/h	3.2	3.9
Water Drop		kPa	50	50
Compressor type			Scroll	
Refrigerant Type			R410a	
Refrigerant Filling capacity		kg	4.0	4.2
Noise		dB(A)	64	64
Net weight		kg	300	310
Unit dimensions (LxWxH)		mm	1000x390x1380	
Water pipe connector		mm	DN25(1")	DN25(1")
Ambient condition		°C	-10 ~ 43	
Water flow switch			Optional	Optional



Model			KFRS-36J2	KFRS-45J2	KFRS-72J2	KFRS-90J2	KFRS-150J2
Power supply(V/Ph/Hz)			380/3/50				
Hot water model	Heating capacity	kW	36	45	72	90	150
	Rated power input	kW	8.2	10.5	16.8	22	35.7
	COP		4.4	4.3	4.3	4.1	4.2
	Rated hot water output	L/h	770	960	1550	1930	3220
	Hot water temperature	°C	20 - 55				
Floor heating	Heating capacity	kW	28	35	58	70	120
	Rated power input	kW	7.4	9.3	16	18.5	33
	Rated Current	A	12.8	16	27.5	32.5	56
	Range of Water temp	°C	20 - 45				
Max. Power Input		kW	12.5	15	25.2	30	30
Max. Current		A	22	28.5	48.8	57	57
Circulating water flow		m3/h	6.4	7.8	12.5	15.2	25.8
Water Drop		kPa	50	50	70	70	70
Compressor type			Scroll				
Refrigerant Type			R410a				
Refrigerant Filling Capacity		kg	2 X 4.0	2 X 4.0	2 X 8.0	2 X 8.0	2 X 12.5
Noise		dB(A)	64	64	66	66	68
Net weight		kg	300	310	700	750	1000
Unit dimensions (LxWxH)		mm	1445x740x1650		2025x1030x1990		2370x1400x2400
Water pipe connector		mm	DN40(1-1/2")	DN40(1-1/2")	DN65(2-1/2")		DN65(2-1/2")
Ambient condition		°C	-10 ~ 43				
Water flow switch			Built-in	Built-in	Built-in	Built-in	Built-in

Rated Test Conditions:

- 1 Rated hot water test: Ambient dry bulb temp 20 °C, wet bulb temp 15 °C. Initial water temp 15 °C and terminal water temp 55 °C
- 2 Rated floor heating test : Ambient dry bulb temp 7°C wet bulb temp 6°C. Inlet water temp 35°C and outlet water temp 40°C
- 3 In case of some change please refer to the nameplate on product.

CONFIGURATION & FUNCTION

Model		KFRS-18E2 KFRS-22E2	KFRS-36E2 KFRS-45E2	KFRS-72E2 KFRS-90E2	KFRS-150E2
Configuration					
• Compressor					
– Type		Rotary	Scroll	Scroll	Scroll
– Quantity		1	2	2	2
• Evaporator		Hydrophilic aluminium fins + Internal thread copper pipe			
• Condenser		Tube in tube heat exchanger			
• Throttle Type		Electronic expansion valve			
• Fan Motor		Two speed to improve unit operation			ONE speed to improve unit operation
• Water Pump		Internally Installed Canned Pump, Anti Rust, Anti-Scale, No Noise	Not Included	Not Included	Not Included
• Pressure Gauge	pcs	(option)	4	8	8
Housing					
• Material		Galvanized steel coating powder			
• Color		White			
Control					
• Control Type		Wire Remote			
• Controller Display		LCD			
• Operation		Button			
• Max Modular Control Units	pcs	16	16	16	16
• Soft Start Design		✓	✓	✓	✓
• Keep Memory When Power Off		✓	✓	✓	✓
• Auto restart after power restore		✓	✓	✓	✓
• Water Return Control		Five kinds of control way, keep water warm inside of hot water loop. (Water return system is optional)			
• Running Parameters Inspect		✓	✓	✓	✓
• Running Parameters To Modify		✓	✓	✓	✓
• Clock On Controller		✓	✓	✓	✓
• Timer Function		Two Period Timer Setting			
• Auto Defrost		✓	✓	✓	✓
• Weekly Sterlization		✓			
• Signal control from indoor thermostat or terminal device		(passive signal)			
• Auto Control the Standby Electric Heater		✓	✓	✓	✓
• Auto Control the solar Heating pump Working		Option (When the solar temp. is 10°C higher than tank water, the solar pump will be running)			
• Fault Diagnosis and display		✓	✓	✓	✓
• Water Level Control and Display		Option			
Protection Function					
• High Pressure Protection		✓	✓	✓	✓
• Low Pressure Protection		✓	✓	✓	✓
• Discharge temp overheating protection		✓	✓	✓	✓
• Water outlet overheating protection		✓	✓	✓	✓
• Water inlet temp. protection		✓	✓	✓	✓
• Water flow protection		✓	✓	✓	✓
• High current protection		✓	✓	✓	✓
• Power phase sequence protection		✓	✓	✓	✓
• Automatic prevent freezing in winter		✓	✓	✓	✓
Accessory					
• Wire controller		✓	✓	✓	✓
• Connecting line of controller	m	5	5	5	5
• Screws for controller mounting		✓	✓	✓	✓
• Tank temp. sensor				10K	
• Connecting line of tank sensor	m	5	5	5	5
• Condensed water drain connector		✓	✓	✓	✓
• Water flow switch		✓		Internally Installed	
• Line for modular communication		✓	✓	✓	✓
• Water level sensor		Option	Option	Option	Option
Packing					
• Packing Type (normal)		Carton	Carton+Plywood Pallet	Carton+Plywood Pallet	Plastic Film+Plywood
• Quantity					
– 20ft Container	pcs	108	27	10	5
– 40ft Container	pcs	228	57	23	11

POOL HEAT PUMP WATER HEATER

PRODUCT FEATURES

- + Swimming pool water heating.
- + Efficient Scroll Rotor Compressor
- + Eco Friendly Refrigerant : R410a
- + Two speed fan motor, further improve unit operation under high ambient temperature.
- + Electronic expansion valve regulates the flow of refrigerant precisely.
- + Heat-exchanger cycle technology to further improve operation under low ambient temperature.
- + Air exchanger (Fins-coil) with hydrophilic coating.
- + Heat exchanger with titanium tubes enclosed within a high-strength plastic shell offers corrosion resistance and the convenience of easy disassembly for cleaning purposes.
- + The housing is constructed from galvanized plates and further protected with a powder coating for added durability and resistance to environmental factors.
- + Wire controller with an LCD display.
- + The modular control design allows for flexible unit installation, enabling units to be combined freely. With this setup, a single controller has the capability to manage up to 16 units simultaneously.
- + A variable energy design, the number of active compressors automatically adjusts in response to changes in water temperature. For example of 16pcs KFRS-40J2Y, the variable energy is 32/32,31/32,30/32……,1/32.
- + The soft start design initiates the compressors in a sequential manner, with priority given to the one that has been at rest for a longer duration. This approach minimizes sudden power surges and promotes smoother operation.
- + The flexibility to set the operating time according to your preferences or requirements.
- + Unit runs or stop automatically according to tank water temperature.
- + Automatic defrosting.
- + Automatic prevent freezing in the winter.
- + Water flow protection control.
- + With control of auxiliary heating device (e.g. electric heating).
- + More protection functions.
- + Fault diagnosis and display.



SPECIFICATION



Model		KFRS-20E2Y	KFRS-40E2Y	KFRS-50E2Y	KFRS-80E2Y	KFRS-100E2Y
HP		5	10	12	20	25
Rated Heating Capacity	kW	20	40	50	80	100
Power Input	kW	4.4	8.2	10.5	16.5	22
Circulating Water	m ³ /h	5.8	11.4	14.2	22.9	28.5
Pressure Drop	kPa	≤40				
Hot water temperature range	°C	25 ~ 43				
Power Supply		380-415V/3PH/50Hz				
Compressor Type		Scroll				
Compressor Qty		1	2	2	2	2
Refrigerant		R410a				
Noise	db	58	64	64	66	66
Net Weight	kg	126	300	350	700	760
Unit Dimensions (L×W×H)	mm	755×755×680	1390×740×1640		2025×1030×1990	
Packing Size (L×W×H)		855×855×720	1490×790×1800		2130×1075×2080	
Pipe Connection Size	mm	DN25(1") Female	DN40(1") Female		DN50(1-1/2") Female	
Ambient air range	°C	-5 ~ 43				
Water side Heat Exchanger		Co-axial (Ti)	Shell & tube (Ti)	Shell & tube (Ti)	Shell & tube (Ti)	Shell & tube (Ti)
Flow switch		built in				
Air Discharge		Top Discharge				

1. Rated condition: ambient air 24°C, wet bulb 19°C; Entering water 27°C.
2. Mammoth reserve the right to change above parameters without future notice.

CONFIGURATION & FUNCTION

Model		KFRS-20E2Y	KFRS-40E2Y KFRS-50E2Y	KFRS-80E2Y KFRS-100E2Y
Configuration				
• Compressor				
– Type		Scroll	Scroll	Scroll
– Quantity		1	2	2
• Evaporator				
Hydrophilic aluminium fins + Internal thread copper pipe				
• Condenser				
Titanium Tube in tube heat exchanger				
• Throttle Type				
Electronic expansion valve				
• Fan Motor				
Two speed to improve unit operation				
• Pressure Gauge				
	pcs	✓	✓	✓
Housing				
• Material				
Galvanized steel Powder Coating				
• Color				
White				
Control				
• Control Type				
Wire remote				
• Controller Display				
LCD				
• Operation				
Button				
• Max Modular Control Units				
	pcs	16	16	16
• Variable Energy Design				
		✓	✓	✓
• Soft Start Design				
		✓	✓	✓
• Keep Memory When Power Off				
		✓	✓	✓
• Auto restart after power restore				
		✓	✓	✓
• Running Parameters Inspect				
		✓	✓	✓
• Control Parameters to Modify				
		✓	✓	✓
• Clock On Controller				
		✓	✓	✓
• Timer Function				
Two Period Timer Setting				
• Auto Defrost				
		✓	✓	✓
• Auto Control the Standby Electric Heater				
		✓	✓	✓
• Fault Diagnosis and display				
		✓	✓	✓
Protection Function				
• High Pressure Protection				
		✓	✓	✓
• Low Pressure Protection				
		✓	✓	✓
• Discharge temp overheating protection				
		✓	✓	✓
• Water Outlet overheating protection				
		✓	✓	✓
• Water flow protection				
		✓	✓	✓
• High current protection				
		✓	✓	✓
• Power phase sequence protection				
		✓	✓	✓
• Automatic prevent freezing in winter				
		✓	✓	✓
Accessory				
• Wire controller				
		✓	✓	✓
• Connecting line of controller				
	m	5	5	5
• Screws for controller mounting				
		✓	✓	✓
• Water flow switch				
		✓	✓	✓
• Line for modular communication				
		✓	✓	✓
Packing				
• Packing Type (normal)				
		Carton+plywood pallet		Plastic+film+plywood
• Quantity				
– 20ft Container	pcs	27	10	5
– 40ft Container	pcs	57	23	11



Mammoth®

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