



**Mammoth®**

The Leader In Custom HVAC & Energy Saving

# DOMESTIC HEAT PUMP



Shanghai, China

[m.mammoth-hvac.com](http://m.mammoth-hvac.com)

## Domestic Heat Pump

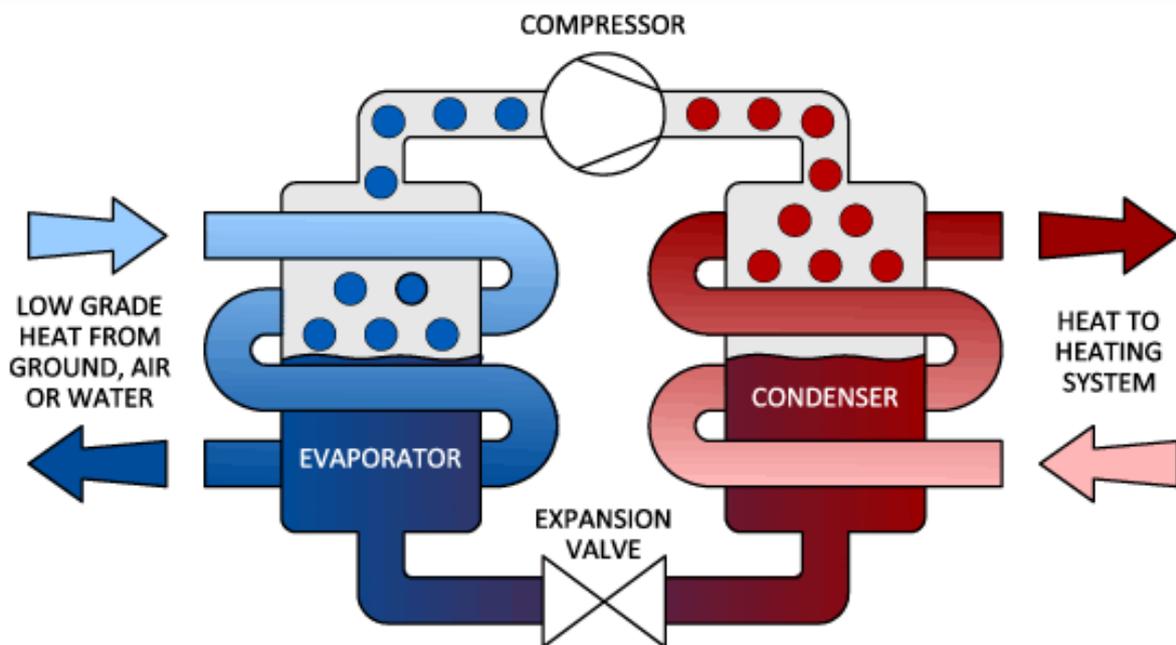
Mammoth impressive line of "Environmentally-Friendly" renewable energy products has expanded to include one of the most energy-efficient and innovative Domestic Heat Pump Water heater on the market. This efficiency is achieved by capturing heat typically discarded from the building.

Domestic heat pump water heaters are up to four times more efficient than standard electric water heaters and up to five times more efficient than conventional gas water heaters. Domestic heat pump water heaters maximize cost savings providing for the quickest payback. The time has never been better to go green.

## How Does Heat Pump Water Heater Work

The technology inside the heat pump is similar to any domestic refrigerator, which uses a vapour compression cycle. The main components in the heat pump are the compressor, the expansion valve and two heat exchangers (an evaporator and a condenser).

1. Refrigerant in the evaporator is colder than the heat source. This causes the heat to move from the heat source (in this case the outside air) to the refrigerant, which then evaporates.
2. This vapour moves to the compressor and reaches a higher temperature and pressure.
3. The hot vapour now enters the condenser and gives off heat as it condenses.
4. The refrigerant then moves to the expansion valve; drops in temperature and pressure; and then returns to the evaporator.



Mammoth range uses a thermodynamic cycle to heat the water inside the storage tank through the air sucked by the thermal group inverting the heat natural flow. A Environment Friendly refrigerant fluid (R410a), through status changes, compression and expansion cycles, withdraws the heat in the air at low temperature and gives it to domestic water at a higher temperature. This is the reverse mechanism to the one used in refrigerators. The product electric consumption is only the one necessary to let the fan (that captures the air) and the compressor (that allows the refrigerant fluid to circulate in the system) work.

## Why are Heat Pump Water Heater an Environment Friendly Choice?

- High efficiency with coefficient of performance (COP) above 4
- No fossil fuels are used or burned at the source
- Ozone layer-friendly refrigerant R410a
- Uses 4x less electricity than standard electric water heaters
- Taps into heat sources typically discarded by other units for peak efficiency

## Technical Specification (50Hz)

Model		KFRS-4E1	KFRS-5E1	KFRS-7E1	KFRS-12E1	
Power supply(V/Ph/Hz)		220-240/1/50				
Hot water model	Heating capacity	kW	3.5	5	7	12
	Rated power input	kW	0.85	1.22	1.7	2.8
	COP		4.12	4.1	4.1	4.3
	Rated hot water output	L/h	75	110	150	236
	Hot water temperature	°C	20~55			
Circulating water flow		m3/h	0.6	0.86	1.2	2.1
Compressor type			Rotary			
Refrigerant			R410A			
Noise		dB(A)	53	53	55	56
Net weight		kg	45	50	57	92
Unit dimensions (L×W×H)		mm	850×290×605			1000×390×860
Packing dimensions (L×W×H)		mm	930×360×656			1100×500×1020
Stacking layers		layer	2	2	2	1
Water pipe connector		mm	DN20(3/4")	DN20(3/4")	DN20(3/4")	DN25(1")
Ambient condition		°C	-10~43			
Tank Capacity		Ltrs	200	300	400	500
Water flow switch			None	None	None	Optional
Pump			Built-in	Built-in	Built-in	Built-in
Auxiliary heating control function			Yes	Yes	Yes	Yes
indoor signal control function			Yes	Yes	Yes	Yes

### 1) Floor heating

rated test conditions: Ambient temp. (DB/WB) : 7°C/6°C, Water temp. (In/Out) : 30°C/35°C.

### 2) Hot water heating

rated test conditions: Ambient temp. (DB/WB) : 20°C/15°C, Water temp.: from 15°C to 55°C.

## Technical Specification (60Hz)

Model		KFRS-4E3	KFRS-5E3	KFRS-7E3	KFRS-12E3	
Power supply(V/Ph/Hz)		220-240/1/60				
Hot water model	Heating capacity	kW	3.5	5	7	12
	Rated power input	kW	0.85	1.22	1.7	2.8
	COP		4.12	4.1	4.1	4.3
	Rated hot water output	L/h	75	110	150	236
	Hot water temperature	°C	20~55			
Circulating water flow		m3/h	0.6	0.86	1.2	2.1
Compressor type			Rotary			
Refrigerant			R410A			
Noise		dB(A)	53	53	55	56
Net weight		kg	45	50	57	92
Unit dimensions (L×W×H)		mm	850×290×605			1000×390×860
Packing dimensions (L×W×H)		mm	930×360×656			1100×500×1020
Stacking layers		layer	2	2	2	1
Water pipe connector		mm	DN20(3/4")	DN20(3/4")	DN20(3/4")	DN25(1")
Ambient condition		°C	-10~43			
Tank Capacity		Ltrs	200	300	400	500
Water flow switch			None	None	None	Optional
Pump			Built-in	Built-in	Built-in	Built-in
Auxiliary heating control function			Yes	Yes	Yes	Yes
indoor signal control function			Yes	Yes	Yes	Yes

### 1) Floor heating

rated test conditions: Ambient temp. (DB/WB) : 7°C/6°C, Water temp. (In/Out) : 30°C/35°C.

### 2) Hot water heating

rated test conditions: Ambient temp. (DB/WB) : 20°C/15°C, Water temp.: from 15°C to 55°C.

