Specifications

Outdoor unit model			MHC-V4W /D2N8-B2	MHC-V6W /D2N8-B2	MHC-V8W /D2N8-B2	MHC-V10W /D2N8-B2	MHC-V12W /D2N8-B2	MHC-V14W /D2N8-B2	MHC-V16W /D2N8-B2	MHC-V12W /D2RN8-B2	MHC-14W/ D2RN8-B2	MHC-V16W /D2RN8-B2
Power supply		V/Ph/Hz	220-240/1/50							380-415/3/50		
Heating[1]	Capacity	kW	4.20	6.35	8.40	10.0	12.1	14.5	15.9	12.1	14.5	15.9
	Rated input	kW	0.82	1.28	1.63	2.02	2.44	3.15	3.53	2.44	3.15	3.53
	COP	/	5.10	4.95	5.15	4.95	4.95	4.60	4.50	4.95	4.60	4.50
Heating[2]	Capacity	kW	4.30	6.30	8.10	10.0	12.3	14.1	16.0	12.3	14.1	16.0
	Rated input	kW	1.13	1.70	2.10	2.67	3.32	3.92	4.57	3.32	3.92	4.57
	COP	/	3.80	3.70	3.85	3.75	3.70	3.60	3.50	3.70	3.60	3.50
Heating[3]	Capacity	kW	4.40	6.00	7.50	9.50	11.9	13.8	16.0	11.9	13.8	16.0
	Rated input	kW	1.49	2.03	2.36	3.06	3.90	4.68	5.61	3.90	4.68	5.61
	COP	/	2.95	2.95	3.18	3.10	3.05	2.95	2.85	3.05	2.95	2.85
Cooling[4]	Capacity	kW	4.50	6.50	8.30	9.90	12.00	13.50	14.2	12.00	13.50	14.2
	Rated input	kW	0.82	1.35	1.64	2.18	3.04	3.74	3.94	3.04	3.74	3.94
	EER	/	5.50	4.80	5.05	4.55	3.95	3.61	3.61	3.95	3.61	3.61
Cooling[5]	Capacity	kW	4.70	7.00	7.45	8.20	11.5	12.4	14.0	11.5	12.4	14.0
	Rated input	kW	1.36	2.33	2.22	2.52	4.18	4.96	5.60	4.18	4.96	5.60
	EER	/	3.45	3.00	3.35	3.25	2.75	2.50	2.50	2.75	2.50	2.50
Seasonal space heating energy efficiency class[6]	Water outlet at 35°C	class	A+++									
	Water outlet at 55°C	class	A++									
Refrigerant	Type(GWP)	/	R32(675)									
	Charged weight	kg	1.40		1.40		1.75					
Sound power Level[7]		dB	55	58	59	60	65	65	68	65	65	68
Net dimension (W×H×D)		mm	1299 x7177 x 426		1385 x 865 x 523							
Packing dimension (W×H×D)		mm	1375 x 885 x475		1465 x 1035 x 560							
Net/Gross weight		kg	85/103		101/126		124/145			141/162		
Water pump	Max.pump head	m	9									
Water piping connection		mm	G1" BSP		G5/4" BSP							
Ambient temperature range	Cooling	°C	-5-43									
	Heating	°C	-25-35									
	DHW	°C	-25-43									
LWT setting range	Cooling	°C	5-25									
	Heating	°C	25-65									
	DHW	°C	20-60									

Notes:

1. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 30°C, Water outlet 35°C.
2. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 40°C, Water outlet 45°C.
3. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 47°C, Water outlet 55°C.
4. Outdoor air temperature 35°C DB; Water inlet 23°C, Water outlet 18°C.
5. Outdoor air temperature 35°C DB; Water inlet 12°C, Water outlet 7°C.
6. Seasonal space heating energy efficiency class testes in average climate general conditions.
7. Testing standard: EN12102-1.
8. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; OJ 2014/C 207/02:2014.

Midea Building Technologies Division
Midea Group

Ver.202308

Add.: Midea Headquarters Building, 6 Midea Avenue, Shunde, Foshan, Guangdong, China

Postal code: 528311

mbt.midea.com / global.midea.com

Quality Assurance ISO 9001

Environmental Management ISO 14001

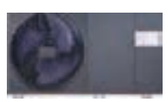
Occupational Health and Safety Management ISO 45001

M thermal Arctic Pro
Mono

mbt.midea.com

MAKE A BEAUTIFUL TOMORROW 2023

Product Lineup

Capacity (kW)		4	6	8	10	12	14	16
Power supply	220~240V-1N-50Hz	o	o	o	o	o	o	o
	380~415V-3N-50Hz					o	o	o
Appearance								
Electrical heater (optional)		3kW		3/9kW				

Overview

- Centralized layout of cable holes and pipe holes, easy installation and maintenance
- Minimum operation ambient temperature down to -25°C
- Maximum water outlet temperature reach 65°C
- R32 refrigerant GWP as low as 675, lower carbon emissions, environmentally friendly
- High energy efficiency level A+++ for energy saving (water outlet temperature at 35°C)
- Smart Grid function, according to electrical signals to adjust the operation, save costs
- All DC Inverter technology enables the machine to start quickly and run quietly
- Two level silent mode ensures quiet life

Easy Installation and Maintenance

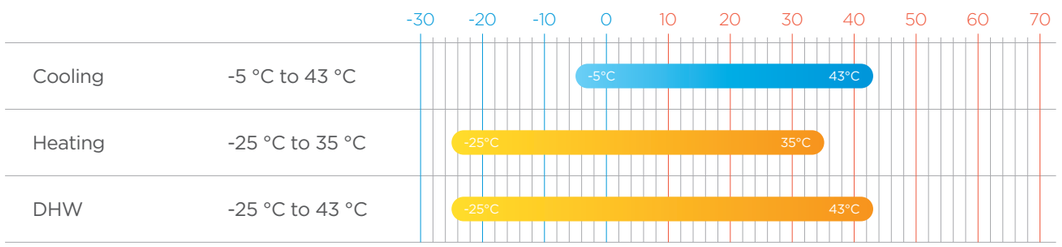
Through the design of machine Cable holes and pipe holes should be centralized layout, plate integration, quick joint connected to the heat pump internal safety valve and so on, so that the appearance of the machine is more concise and beautiful, convenient installation and maintenance.

USB function

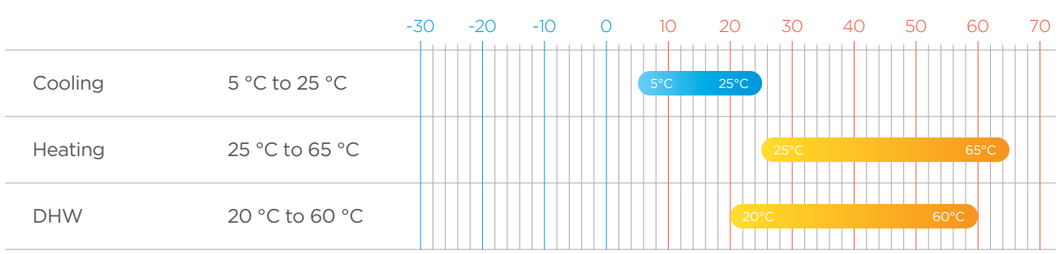
- **Convenient program upgrade**
  No need to carry any other heavy equipments but only USB can realize program upgrade.
- **Parameter transmission**
  Installer can quickly copy the setting from one ontroller to another via USB, which save the time of on-site installation.

Wide Application Range

Ambient temperature



Outlet water temperature setting range



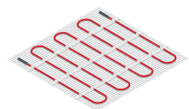
Terminals and scenarios

It can be matched with different kinds of terminals to meet the requirements of a variety of scenarios


Fan coil unit


Radiator


Water tank


Floor heating loop


Spacing cooling


Spacing heating


Hot water

Energy Conservation and Environment Protection

Environmentally Friendly

Higher heat transfer coefficient and better performance Less charged volume is needed in the system Lower GWP and carbon emission R32 refrigerant with low GWP of 675

R32

High energy efficiency design

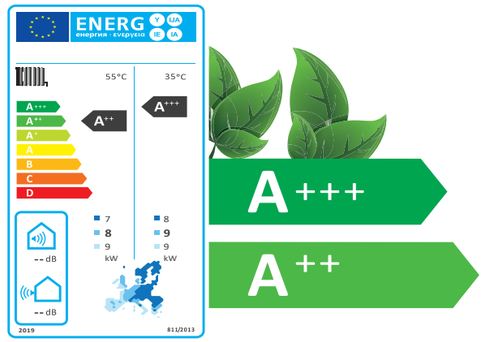
ERP Directive*

ns. Seasonal space heating energy efficiency

ns average up to A+++ at 35°C

ns average up to A++ at 55°C

*It indicates the highest possible grade for M thermal product lineup. For specific grade of different models, please refer to the specification.



Smart Grid function

Heat pump adjusts the operation according to different electrical signals. Power consumption of the system can be automatically adjusted according to the peak and valley power to reduce the power consumption to the greatest extent.

Comfortable and Reliable

Silent mode

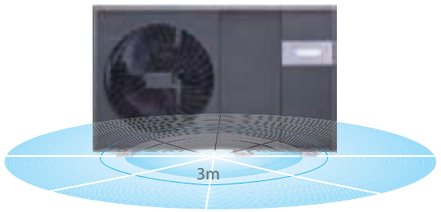
Mono 4kW model produces 35dB(A) sound pressure level at 3 meters thanks to multiple optimization design.

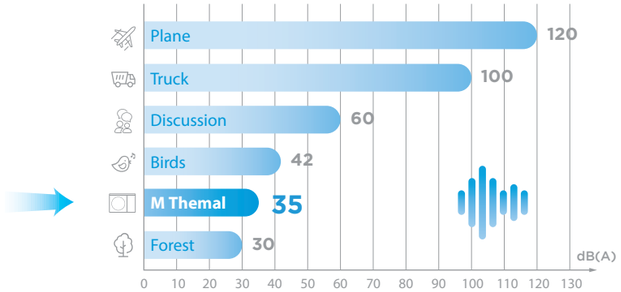
Test condition:

1. Outdoor air temperature 7°C DB, 6°C WB; Water inlet 30°C , Water outlet 35°C.

2.Outdoor air temperature 35°C DB; Water inlet 23°C , Water outlet 18°C.

Single fan structure

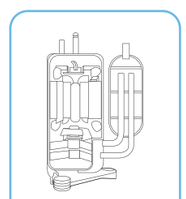




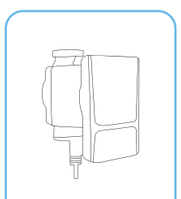
- Single fan compact structure design for big capacity outdoor unit with lower noise.
- Two level of silent mode provides more comfort.

All DC Inverter technology

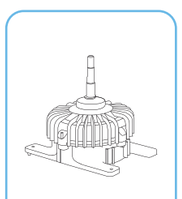
All the units are equipped with DC compressor, DC fan motor, DC pump, which allows precise control of motor speed, ensuring that only the power necessary to perfectly match the real load is used and energy saving.



DC Inverter Compressor



DC Inverter water pump



DC Inverter fan

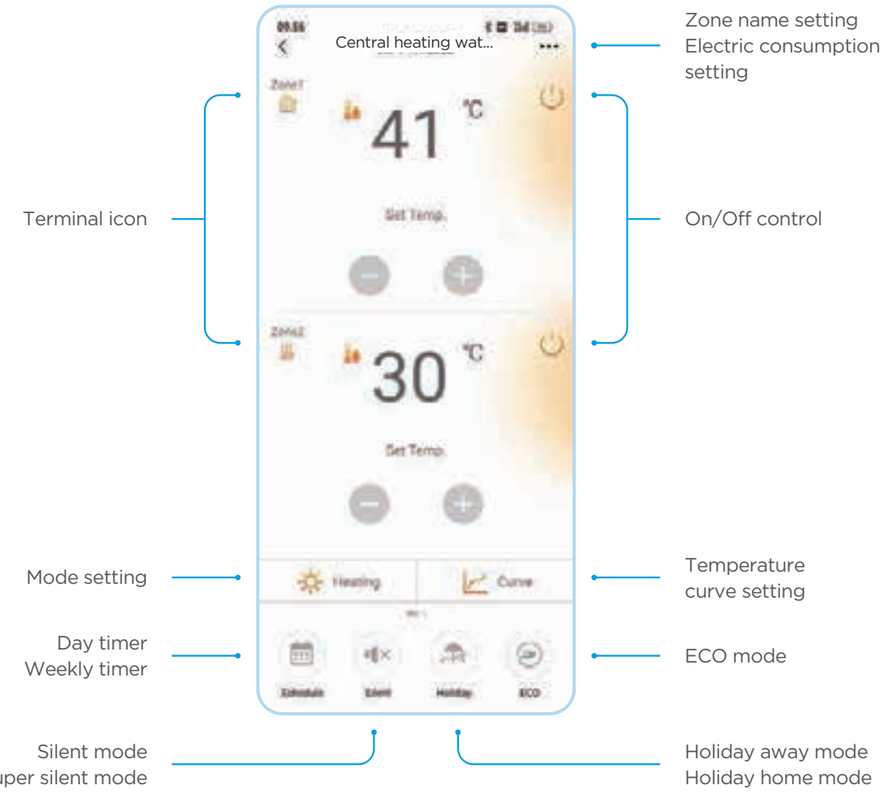
Multiple Functions
Are Convenient to Use

Wifi controller

- Touch-key design
- Liquid Crystal Display
- Error code display
- Operation parameter checking
- Point check function
- Multiple languages
- Child lock function
- Buzzer alarm
- Built-in temperature senor and wifi module
- Modbus protocol and network flexibility

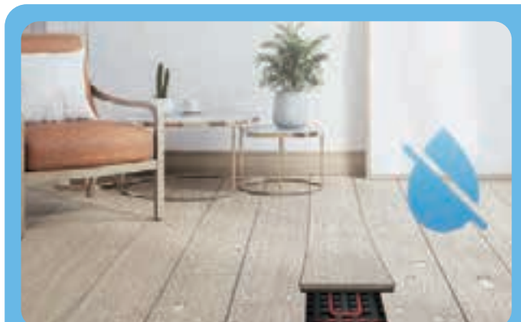
SmartHome
APP

- Easy setting
- Double zones control
- Monitor system status
- Power consumption
- Remote control
- Energy saving suggestion
- Schedule function



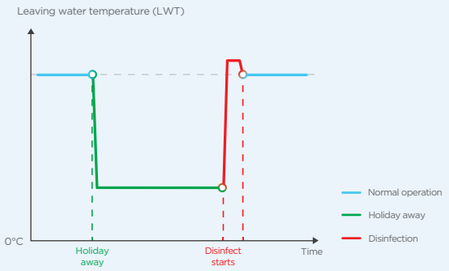
Note:
APP interface changes from time to time as APP is updated and may change slightly vary from those in this document.

Multiple Functions Are Convenient to Use



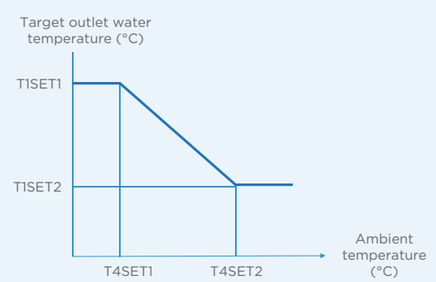
• Preheating and drying up

Drying up mode is used to dry the floor after installation. Preheating mode is designed for the first heating during seasonal heating. The water temperature of floor heating loops would be increased gradually in order to protect the floor from warped or even rupture.



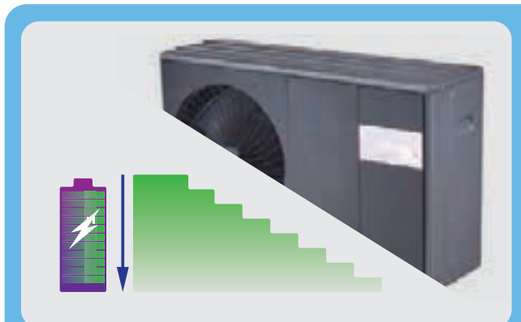
• Holiday away

If user leaves, heat pump runs in heating mode and/or DHW mode with lower water temperature to prevent water system from freezing. Disinfection is available before user returns home to ensure the water security.



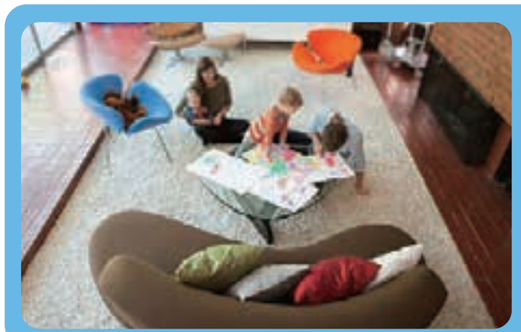
• Climate curve

Water temperature automatically changes as ambient temperature changes. It is convenient and energy-saving for end users. 32 fixed climate curves and 1 customized curve are available, which meets the diversified requirement.



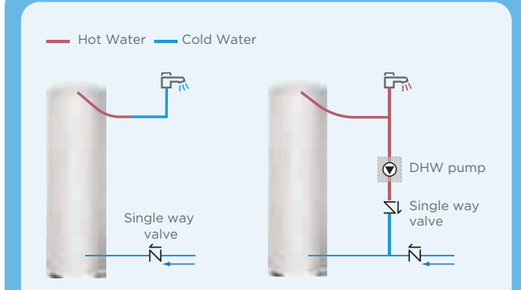
• Power limitation function

Power limitation function allows heat pump to suitable a variety of current supplies. 8 configurations can be defined according to the maximum allowable access current. Only simple setting on the wired controller is needed, heat pump can easily fit into more electric applications.



• Holiday home

Flexible setting allow user to set a new schedule during the time at home but without changing the multiple daily or weekly setting.



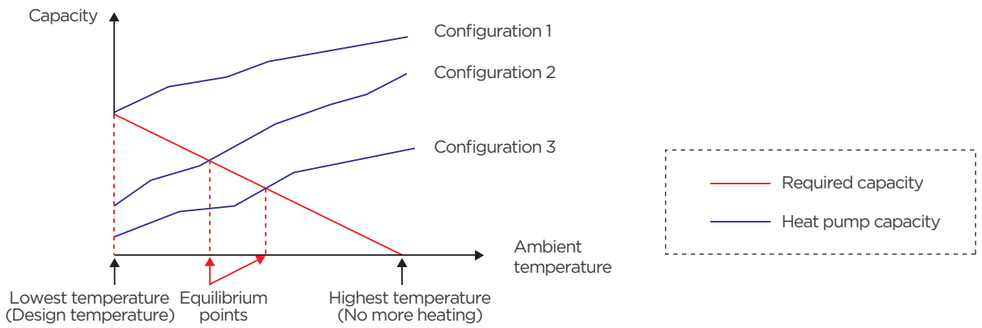
• DHW pump function

The DHW pump function is used to return water in the water pipe net to the tank. Total 12 timers for one day can be set, which allows users to set the DHW pump operation schedule according to using habit to guarantee using hot water without waiting for a long time.

Typical Applications

System configurations

M thermal system can be configured to run with the electric heater either enabled or disabled and can also be used in conjunction with an auxiliary heat source such as a boiler.
The chosen configuration affects the size of heat pump that is required. Three typical configurations are described below.



Configuration 1: Heat pump only

- The heat pump covers the required capacity and no extra heating capacity is necessary.
- Requires selection of larger capacity heat pump and implies higher initial investment.
- Ideal for new construction in projects where energy efficiency is paramount.

Configuration 2: Heat pump and backup electric heater

- Heat pump covers the required capacity until the ambient temperature drops below the point at which the heat pump is able to provide sufficient capacity. When the ambient temperature is below this equilibrium point, the backup electric heater supplies the required additional heating capacity.
- Best balance between initial investment and running costs, results in lowest lifecycle cost.
- Ideal for new construction.

Configuration 3: Heat pump with auxiliary heat source

- Heat pump covers the required capacity until the ambient temperature drops below the point at which the heat pump is able to provide sufficient capacity. When the ambient temperature is below this equilibrium point, depending on the system settings, either the auxiliary heat source supplies the required additional heating capacity or the heat pump does not run and the auxiliary heat source covers the required capacity.
- Enables selection of lower capacity heat pump.
- Ideal for refurbishments and upgrades.

Selection Procedure

STEP 1 Total heat load calculation

Calculate conditioned surface area and select the heat emitters (type, quantity, water temperature and heat load)

STEP 2 System configuration

Decide whether to include AHS and set AHS' s switching temperature.
Decide whether backup electric heater is enabled or disabled.

STEP 3 Selection

Determine required total heat load on outdoor units
Set capacity safety factor
Select M thermal type (Mono/Split)
Select power supply

↓

Provisionally select M thermal unit capacity based on nominal capacity

↓

Correct capacity of the outdoor units for the following items:
Outdoor air temperature / Outdoor humidity / Water outlet temperature/ Altitude

↓

Is corrected M thermal unit capacity ⩾ Required total heat load on outdoor units

↓

YES M thermal system selection is complete

NO Select a larger model or enable backup electric heater operation

Leaving Water Temperature (LWT)

The recommended design LWT ranges for different types of heat emitter are:

For floor heating: 30°C to 35°C
For fan coil units: 40°C to 45°C
For low temperature radiators: 40°C to 55°C