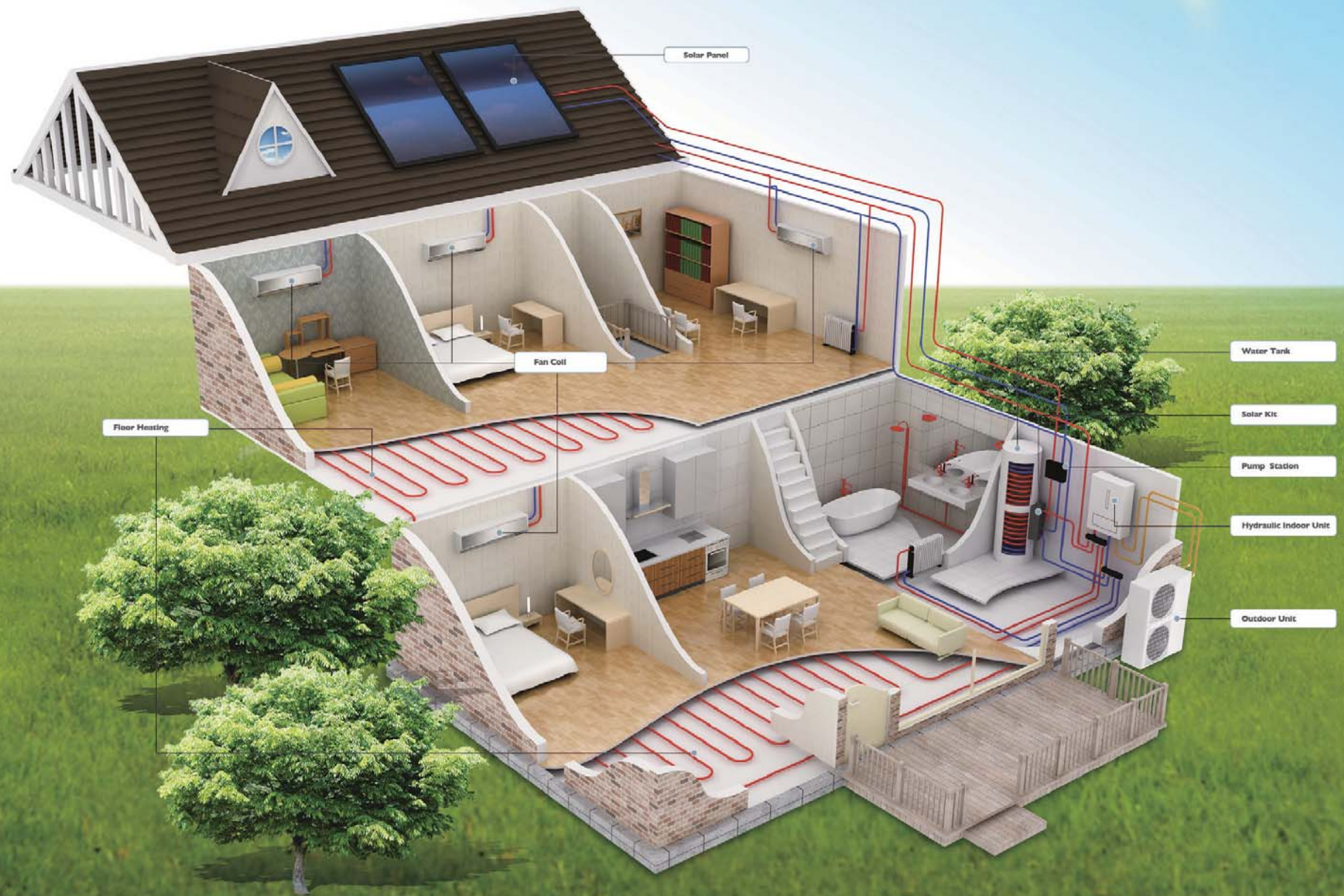


M-Thermal

GREEN SOLUTION FOR SPACE HEATING AND SANITARY HOT WATER



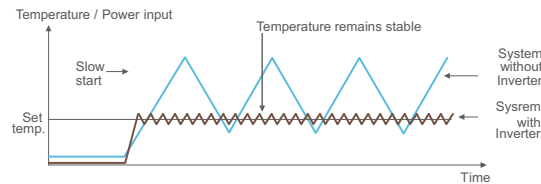
M-Thermal



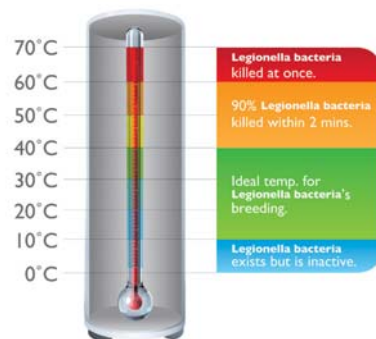
Features

- R410a gas, environmental friendly.
- DC Inverter Technology.

The advancement of the inverter technology creates more quiet, economical and powerful air conditioning systems.



- Automatic weekly anti-legionella function



- Compatible to solar thermal and boilers
- Total Heating Solution

When floor heating is conducted in a new house, warm air spreads gently across the house, making it comfortable and enabling the use of broad space without necessitating radiators or FCU.

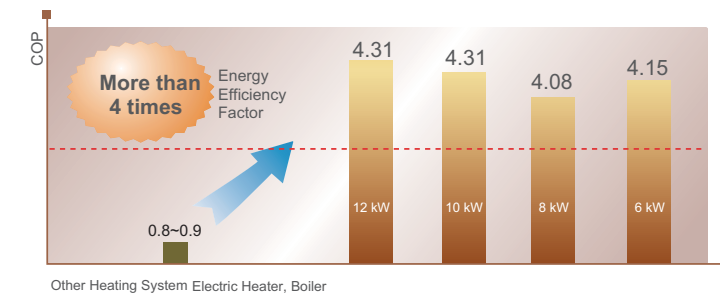
- Low Running Costs

When you use a gas or oil boiler, or an electric radiator, you can get exactly the same effect based on your input. The price of electricity is stable relative to those of oil or gas, thus cutting more costs as the time passes.

- Best Heating Efficiency

M-thermal, with the application of the same amount of energy, emits more than four energy items, which can be used. This is the strength of the Air to Water Heat pump to which inverter technology is applied.

Energy Efficiency Comparison



- Convenient and Reliable System

1. M-thermal uses the Easy Controller to check detailed operational information and a change in temperature of the whole system.
2. Easy to handle and install.
3. Reliable Performance at lower temperature.

- Comfort System

1. When floor heating is applied, warm air spreads gently across the house, making it comfortable. The system can help blood circulation and metabolism, further boosting our health.
2. The System can be four season used because it provides a heating solution in general and at the same time it also provides a cooling solution in summer.
3. The installation of M-Thermal will eliminate oil or gas tank, making the household surrounding neat and safe, enabling the use of more space, and avoiding refueling.

Operation temperature range

- Use the system in the following temperature for safe and effective operation. The max operation temperature for the heat pump. (Cooling/Heating)

Model	Outdoor temperature	Water temperature
Cooling operation	15°C~43°C	7°C ~ 22°C
Heating operating	-15°C~43°C	15°C~55°C

■ Total solution for space heating & sanitary

Hydraulic indoor unit			SMK-120/CD30GN1	CE-SMK-100/CD30GN1	SMK-80/CD30GN1	SMK-60/CD30GN1
Power supply			1-220-240-50	1-220-240-50	1-220-240-50	1-220-240-50
Function	Types		Heating&Cooling	Heating&Cooling	Heating&Cooling	Heating&Cooling
	Space Heating	°C	15-55	15-55	15-55	15-55
	Space Cooling	°C	7-22	7-22	7-22	7-22
	Sanitary Hot Water	°C	35-60	35-60	35-60	35-60
Max. current			27	27	27	27
Noise level			32	32	32	32
Unit	Dimension (W×H×D)	mm	900×500×375	900×500×375	900×500×375	900×500×375
	Packing (W×H×D)	mm	1,110×610×510	1,110×610×510	1,110×610×510	1,110×610×510
	Net/gross weight	kg	63/75	63/75	63/75	60/72
Element	Size	kW	1.5	1.5	1.5	1.5
	Quantity		2	2	2	2
Water pipeline	Water inlet pipe	mm	DN32	DN32	DN32	DN32
	Water outlet pipe	mm	DN32	DN32	DN32	DN32
Loading Quantity			20'/40'/40H	66/138/184	66/138/184	66/138/184
DC Inverter outdoor unit			LRSJF-V120/N1-610	CE-LRSJF-V100/N1-610	LRSJF-V80/N1-310	LRSJF-V60/N1-310
Power supply			Ph-V-Hz	1-220-240-50	1-220-240-50	1-220-240-50
Max. current			A	23	22	15
Heating	Capacity	kW	12	10	8	6
	COP	kW/kW	4.31	4.30	4.08	4.15
	Ambient Temp.	°C	-15-43	-15-43	-15-43	-15-43
Cooling	Capacity	kW	9.3	8.5	6.3	6.3
	COP	kW/kW	2.45	2.45	2.23	2.45
	Ambient Temp.	°C	15-43	15-43	15-43	15-43
Unit	Dimension (W×H×D)	mm	900×1,327×320	900×1,327×320	895×862×313	895×862×313
	Packing (W×H×D)	mm	1,016×1456×435	1,016×1456×435	1,025×910×410	1,025×910×410
	Net/gross weight	kg	89/101	89/101	66/70	66/70
Noise level			58	58	58	58
Refrigerant	type/quantity	kg	R410a/2.7kg	R410a/2.7kg	R410a/2.4kg	R410a/2.4kg
	system pressure	MPa	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6
Compressor	Type		Rotary	Rotary	Rotary	Rotary
	Brand		mitsubishi	mitsubishi	mitsubishi	mitsubishi
	Capacity	kW	9.8	9.8	7.1	7.1
Fan motor	Input	w	100×2	100×2	168	168
	Speed		800	800	877/749	877/749
Loading Quantity			20'/40'/40H	28/58/58	60/126/126	60/126/126
Sanitary hot water tank			LSX-300XP/D30B11	LSX-200XP/D30B11	LSX-150XP/D30B7	LSX-150XP/D30B7
Power supply			Ph-V-Hz	1-220-240-50	1-220-240-50	1-220-240-50
Storage size			Ltr	300 (Optional 150/200)	200 (Optional 150/300)	150 (Optional 300/200)
Max. water output temp.			°C	60	60	60
Dimension (D×H)			mm	Φ580×1800	Φ580×1320	Φ580×1050
Packing (W×H×D)			mm	670×1,885×670	670×1,400×670	670×1,135×670
Net/Gross weight			kg	75/84	60/68	49/55
Element			kW	3.0	3.0	3.0
Tank material				SUS304	SUS304	SUS304
Water pipeline	Water inlet pipe	mm	DN20	DN20	DN20	DN20
	Water outlet pipe	mm	DN20	DN20	DN20	DN20
Loading Quantity	PT valve joint	MPa	DN20	DN20	DN20	DN20
	20'/40'/40H	Pcs	27/57/76	27/57/76	27/57/76	27/57/76
Solar kit			TMK-01	TMK-01	TMK-01	TMK-01
Power supply			Ph-V-Hz	1-220-240-50	1-220-240-50	1-220-240-50
Dimension (W×H×D)			mm	810×310×295	810×310×295	810×310×295
Packing (W×H×D)			mm	830×340×315	830×340×315	830×340×315
Net weight			kg	8/10	8/10	8/10
solar coils	OD+T	mm×mm	∅22×0.8	∅22×0.8	∅22×0.8	∅22×0.8
	length	m	11	11	11	11
	material		SUS316L	SUS316L	SUS316L	SUS316L
	inlet pipe	mm	DN20	DN20	DN20	DN20
Loading Quantity			20'/40'/40H	300/624/728	300/624/728	300/624/728

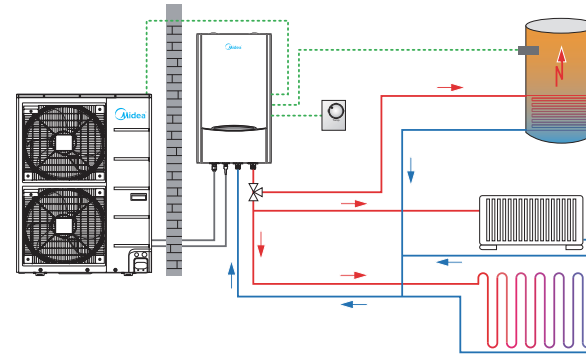
The testing Condition:

1. Heating: Outdoor temp. 7/6°C(DB/WB), inlet water temp. 30°C, outlet water temp. 35°C.
2. Cooling: Outdoor temp. 35/24°C(DB/WB), inlet water temp. 12°C, outlet water temp. 7°C.

Installation Diagram

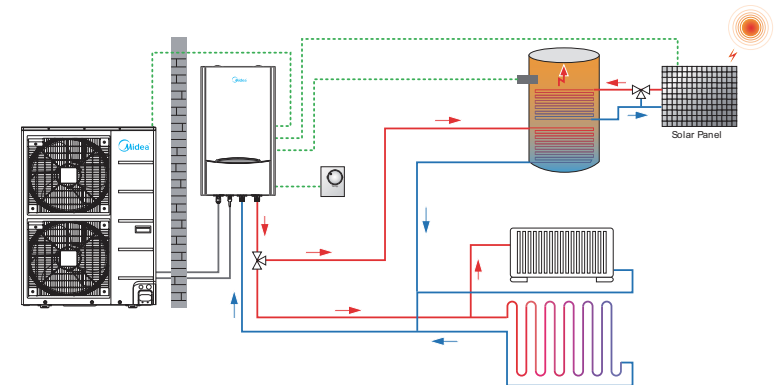
■ M-thermal+ Radiator + Underfloor Heating + Sanitary Tank The system can be combined with:

1. Under floor heating.
2. Fan coil units.
3. Low temperature radiators, to provide your customers the comfort they require.
4. A sanitary hot water tank to supply hot water needs.

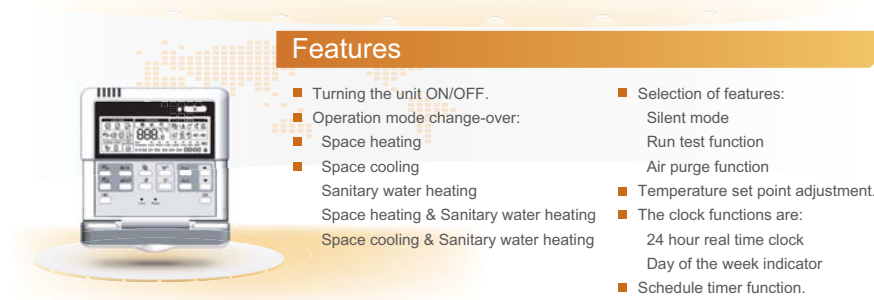


■ M-thermal + Radiator + Underfloor Heating + Sanitary Tank + Solar Panel The system can be combined with:

1. Under floor heating.
2. Fan coil units.
3. Low temperature radiators, to provide your customers the comfort they require.
4. A sanitary hot water tank to supply hot water needs.
5. Solar collectors, with optional solar kit, to compliment the production of hot water.



Wire controller (KJRH-120A/BT-E)



NAME AND FUNCTION OF BUTTONS



Button	Name	Function
	Cooling/Heating ON/OFF button.	Starts or stops the heating or cooling function of the unit.
	Weekly schedule timer button.	Enable /disable the schedule time and use to program the controller.
	Silent mode button.	Enable or disable silent mode.
	Clock setting button.	Enable or disable clock setting.
	Sanitary water heating button.	Enable or disable heating of the sanitary water.
	Sanitary hot water temperature setting button.	enable or disable sanitary water temperature setting.
	Space cooling/Space heating button.	This button allows manual switching between cooling or heating mode.
	Space cooling/Space heating temperature setting button.	Enable or disable space cooling/space heating temperature setting.
	Menu button.	Enable and disable menu setting function of the controller.
	Check button.	Enables and disable the checking function of the controller.
	Page up button.	This button is used for page up function.
	Page down button.	This button is used for page down function.
	Increasing button.	This button is used for increasing the current value.
	Decreasing button.	This button is used for decreasing the current value.
	Confirm button.	Press this button to confirm the change.
	Lock button.	Press this button for locking all other buttons.
	Reset button.	Reset the wire controller and return to factory default settings.

Name And Function Of Icons

Icon	Function
	This icon indicates the current operation mode is space cooling.
	This icon indicates the current operation mode is space heating.
	This icon indicates the current operation mode is sanitary water heating.
	This icon indicates that the circulation pump is running.
	This icon indicates that the compressor in the outdoor unit is active.
	This icon indicates the current operation mode is silent mode.
	This icon indicates that the disinfection mode is active.
	This icon indicates that the defrost mode is active.
	This icon indicates that the anti-freezing mode is active.
	These icons indicate the operation and the date of the weekly schedule timer.
	This icon indicates that the electric heater of the sanitary water tank is active.
	This icon indicates that the first stage auxiliary heater of the indoor unit is operating when there is a high demand for heating capacity.
	This icon indicates that the second stage auxiliary heater of the indoor unit is operating when there is a high demand for heating capacity.
	The display shows the current set temperature of the installation.
	The display also used to shows the water outlet temperature of indoor unit when there is no button press operation.
	These icons indicate that external heat source(s) is (are) installed.
	This icon indicates that an external room thermostat with higher priority is controlling your installation.
	The clock display shows the current time.
	The first code and the second represent the first level and the second level menu from the field set list. The last two numbers indicate the value of the first and the second code.
	The operation lamp lights in each one mode.
	This icon indicates the checking parameter is the inlet temperature of floor heating.
	These two icons indicate the current operation mode are space cooling and sanitary water heating.
	These two icons indicate the current operation mode are space heating and sanitary water heating.
	This icon indicates all the operations of the schedule timer are inactive.
	This icon indicates all the buttons of the controller are locked except button.
	This icon is displayed whenever non-installed option is addressed or a function is not available.

Error Code

Error code	Meaning
E0	Flow switch error(continuous for 3 times, and should be reset by switch off the power supply)
E1	T2 error
E2	UI communication error
E3	Outdoor unit communication error
E4	T12 Berror
E5	T5 error
E6	T1 error
E7	T1B error
E8	Flow switch(one time)
E9	TW_in error
EA	TW_out error
Eb	T4 error
Ed	Phase protection
EE	Eeprom error
P0	T2 high temperature protection

Error code	Meaning
P1	T2B low temperature protection
P2	TW_out high temperature protection
P3	TW_out low temperature protection
P4	TW_in high temperature protection
P5	T1 high temperature protection
P6	T1B high temperature protection
P7	Outdoor unit protection
P8	Sanitary hot water tank electric heater protection
P9	Auxiliary heater protection
Pb	Anti-freezing protection
Pc	Temperature controller error(result from the conflict between cool mode and heat mode)
t0~t7	Run test
dF	Defrost
d0	Oil return function

ACCESSORIES

Outdoor unit

INSTALLATION FITTINGS	Name	Shape	Quantity
	Outdoor unit installation manual		1
	Outdoor unit owner's manual		1
	Outflow connecting tube		1
	Waterproof rubber cap		1

Hydraulic Indoor unit

Accessory name	Shape	Qty
Owner's & Installation Manual	This manual	1
Mounting bracket		1
Two-way valve		3
M4 screws M4 screws	—	2
Water tank temperature sensor	—	1
Y-style filter		1
Floor heating inlet temperature sensor, T1B	—	1
Drain pan kit		1
Owner's	—	1
M8 expansion screws	—	5

Solar kit

Accessory name	Shape	Qty.	Purpose
Installation & Owner's Manual		1	This manual
adapter		2	Connection the solar kit and the sanitary hot water tank
Sealing		6	Pipe connection seal
Screws		2	Fixed left and right epp casing
Washer		2	Fixed left and right epp casing

Pool dedicated series ➔

