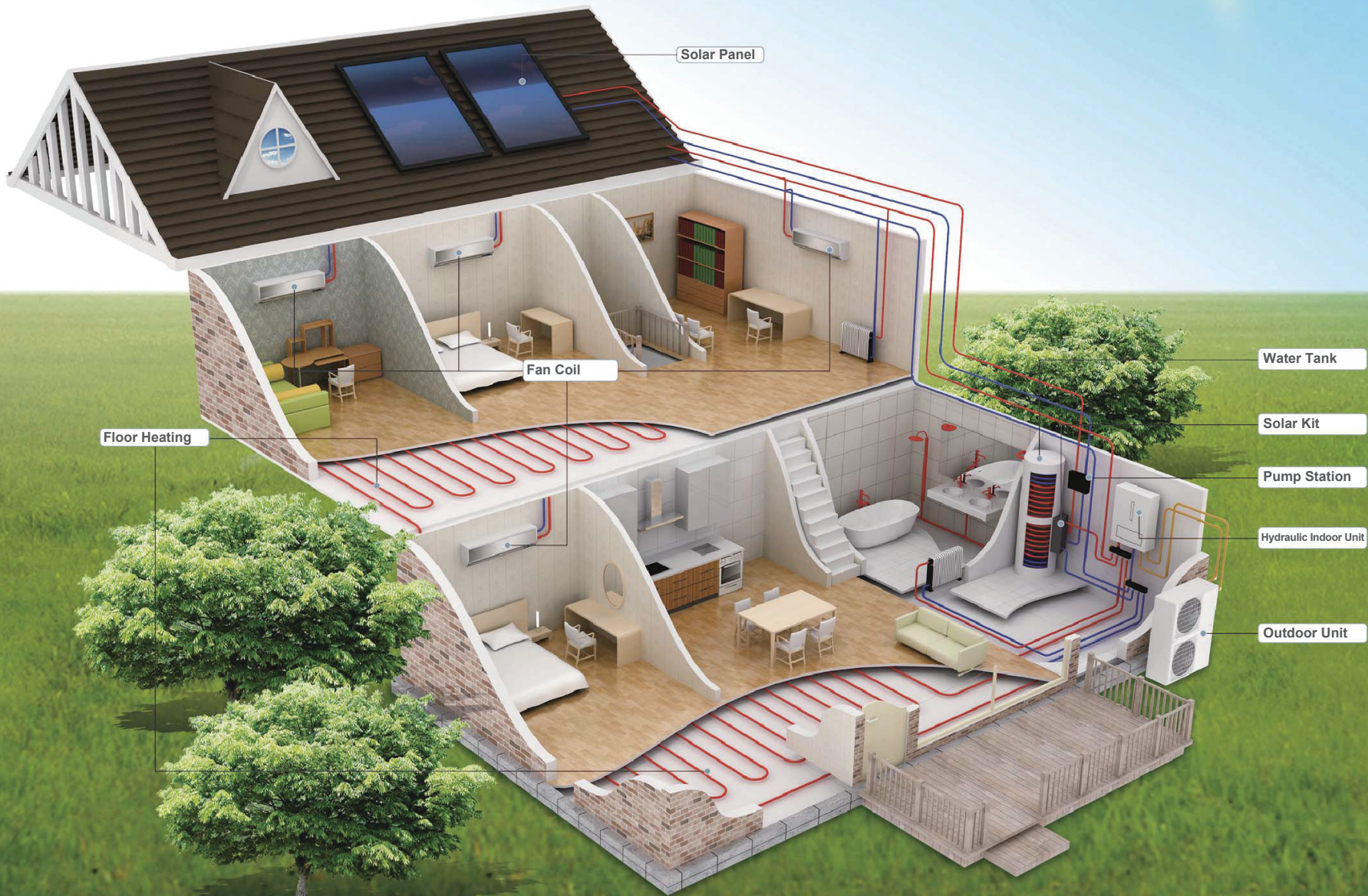


M-Thermal

GREEN SOLUTION FOR SPACE HEATING AND SANITARY HOT WATER



M-Thermal



M-Thermal Nomenclature

DC Inverter Outdoor Unit

L RSJ F - V 120 / S N1 - 610

- Design Code
- Refrigerant Type
N1: R410A
- Power Supply Code
S: 380-415V~,3Ph,50Hz
Omit: 220-240V~,1Ph,50Hz
- Heating Capacity (Unit: ×100W)
- Inverter Type
- Split Type
- Midea Heat Pump Water Heater
- Unit with Cooling Function

Hydraulic indoor unit

SMK -120/ C S D 80 G N1

- Refrigerant Type
N1: R410A
- Floor heating
- E-Heater Capacity (Unit: ×100W)
- Unit with E-Heater
- Power Supply Code
S: 380-415V~,3Ph,50Hz
Omit: 220-240V~,1Ph,50Hz
- Water-Cycle-Heating Type
- Heating Capacity (Unit: ×100W)
- Hydraulic Indoor Unit

Water tank

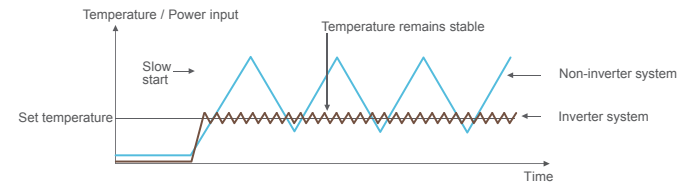
LSX - 300 (50) XP / S D 15 B11

- Design Code
- E-Heater Capacity (Unit: ×100W)
- Unit with E-Heater
- Power Supply Code
380-415V~,3Ph,50Hz
Omit: 220-240V~,1Ph,50Hz
- Spraying Appearance with
Stainless Steel Inner Tank
- Heating Capacity of Main Unit (Unit: ×100W)
- Water Tank Volume (Unit: L)
- Midea Vertical Water Tank

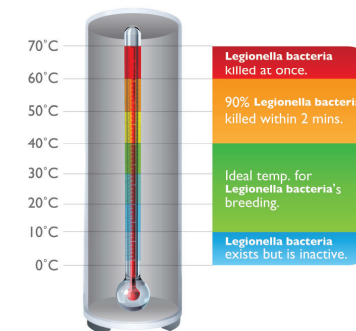
Features

- R410A gas, environmentally 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 with Solar Thermal and Boilers

Total Heating Solution

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

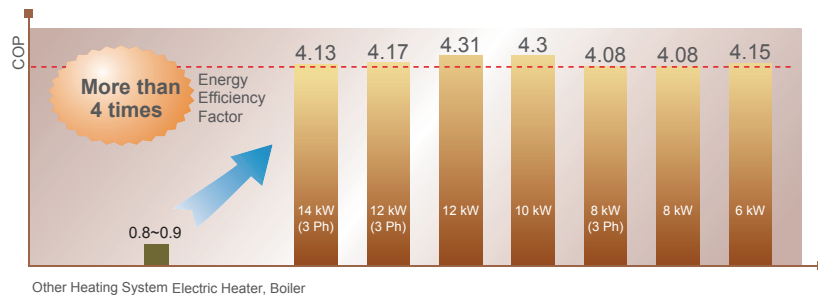
Low Running Costs

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

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

Comfort System

- 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.
- The System is a four-season solution that can provide a heating solution in general and at the same time it also provides a cooling solution in summer.
- M-thermal does not require oil or gas, making the household surrounding neat and safe, enabling the use of more space, and avoiding refueling.

Specifications

Hydraulic Indoor Unit			SMK-120/CD30GN1	SMK-100/CD30GN1	SMK-80/CD30GN1	SMK-60/CD30GN1
Power supply	V-Ph-Hz		220-240~ -1-50	220-240~ -1-50	220-240~ -1-50	220-240~ -1-50
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	A	13.5	13.5	13.5	13.5
Noise level	dB(A)		32	32	32	32
Dimension (W×H×D)	mm		500×900×375	500×900×375	500×900×375	500×900×375
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
E-heater	Size	kW	1.5+1.5	1.5+1.5	1.5+1.5	1.5+1.5
	Quantity	Pcs	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	Pcs	66/138/184	66/138/184	66/138/184	66/138/184
DC Inverter Outdoor Unit			LRSJF-V120/N1-610	LRSJF-V100/N1-610	LRSJF-V80/N1-310	LRSJF-V60/N1-310
Power supply	V-Ph-Hz		220-240~ -1-50	220-240~ -1-50	220-240~ -1-50	220-240~ -1-50
Max. current	A		23	22	15	14
Heating	Capacity	kW	12	10	8	6
	COP	kW/kW	4.31	4.3	4.08	4.15
	Ambient temperature	°C	-15~43	-15~43	-15~43	-15~43
Cooling	Capacity	kW	9.0	8.5	6.3	5.5
	EER	kW/kW	2.45	2.45	2.23	2.45
	Ambient temperature	°C	15~43	15~43	15~43	15~43
Dimension (W×H×D)	mm		900×1,327×348	900×1,327×348	895×862×313	895×862×313
Packing (W×H×D)	mm		1,030×1,456×435	1,030×1,456×435	1,025×910×410	1,025×910×410
Net/gross weight	kg		89/101	86/70	66/70	66/70
Noise level	dB(A)		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		Twin-Rotary	Twin-Rotary	Twin-Rotary	Twin-Rotary
	Brand		Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi
	Capacity	kW	9.880	9.880	7.130	7.130
Fan motor	Input	W	107*2	107*2	168/146	168/146
	Speed	r/min	800	800	877/749	877/749
Loading Quantity	20'40'/40H	Pcs	28/58/58	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		220-240~ -1-50	220-240~ -1-50	220-240~ -1-50	220-240~ -1-50
Storage size	Ltr		300 (Optional 150/200)	200 (Optional 150/300)	150 (Optional 300/200)	150 (Optional 300/200)
Max. water output temperature	°C		60	60	60	60
Dimension (D×H)	mm		φ580×1,800	φ580×1,320	φ580×1,050	φ580×1,050
Packing (W×H×D)	mm		1,885×670×670	1,400×670×670	1,135×670×670	1,135×670×670
Net/Gross weight	kg		75/94	60/68	49/58	49/58
E-heater	kW		3.0	3.0	3.0	3.0
Tank material			SUS304	SUS304	SUS304	SUS304
Water pipeline	Water inlet pipe	mm	DN20	DN20	DN20	DN20
	Water outlet pipe	mm	DN20	DN20	DN20	DN20
	PTR valve joint	mm	DN20	DN20	DN20	DN20
Loading Quantity	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	V-Ph-Hz		220-240~ -1-50	220-240~ -1-50	220-240~ -1-50	220-240~ -1-50
Dimension (W×H×D)	mm		810×310×295	810×310×295	810×310×295	810×310×295
Packing (W×H×D)	mm		830×340×315	830×340×315	830×340×315	830×340×315
Net weight		kg	8/10	8/10	8/10	8/10
	OD×T	mm×mm	φ22×0.8	φ22×0.8	φ22×0.8	φ22×0.8
Solar coils	Length	m	11	11	11	11
	Material		SUS316L	SUS316L	SUS316L	SUS316L
	Inlet pipe	mm	DN20	DN20	DN20	DN20
	Outlet pipe	mm	DN20	DN20	DN20	DN20
Loading Quantity	20'40'/40H	Pcs	300/624/728	300/624/728	300/624/728	300/624/728

The testing Condition:

- Heating: Outdoor temperature 7/6°C(DB/WB), inlet water temperature 30°C, outlet water temperature 35°C.
- Cooling: Outdoor temperature 35/24°C(DB/WB), inlet water temperature 12°C, outlet water temperature 7°C.
- The specifications may be changed for product improvement, please refer to the nameplate.

Specifications

Hydraulic Indoor Unit			SMK-140/CSD80GN1	SMK-120/CSD80GN1	SMK-80/CSD80GN1
Power supply	V-Ph-Hz		380-415~ -3-50	380-415~ -3-50	380-415~ -3-50
Function	Types		Heating&Cooling	Heating&Cooling	Heating&Cooling
	Space Heating	°C	15-55	15-55	15-55
	Space Cooling	°C	7-22	7-22	7-22
	Sanitary Hot Water	°C	35-60	35-60	35-60
	Max. current	A	20	20	16
Noise level	dB(A)		32	32	32
Dimension (W×H×D)	mm		500×900×375	500×900×375	500×900×375
Packing (W×H×D)	mm		1,110×610×510	1,110×610×510	1,110×610×510
Net/gross weight	kg		63/75	63/75	64/77
E-heater	Size	kW	4.0+4.0	4.0+4.0	4+3.5
	Quantity	Pcs	2	2	2
Water pipeline	Water inlet pipe	mm	DN32	DN32	DN32
	Water outlet pipe	mm	DN32	DN32	DN32
Loading Quantity	20'40'/40H	Pcs	66/138/184	66/138/184	66/138/184
DC Inverter Outdoor Unit			LRSJF-V140/SN1-610	LRSJF-V120/SN1-610	LRSJF-V60/N1-310-B
Power supply	V-Ph-Hz		380-415~ -3-50	380-415~ -3-50	220-240~ -1-50
Max. current	A		9.0	9.0	16
Heating	Capacity	kW	14	12	8
	COP	kW/kW	4.13	4.17	4.08
	Ambient temperature	°C	-20-43	-20-43	-20-43
Cooling	Capacity	kW	8.8	8.8	6.3
	EER	kW/kW	2.28	2.22	2.33
	Ambient temperature	°C	15-43	15-43	15-43
Dimension (W×H×D)	mm		900×1,327×348	900×1,327×348	895×862×313
Packing (W×H×D)	mm		1,030×1,456×435	1,030×1,456×435	1,025×910×410
Net/gross weight	kg		89/101	89/101	63/67
Noise level	dB(A)		58	58	58
Refrigerant	Type/quantity	kg	R410A/2.7kg	R410A/2.7kg	R410A/2.4kg
	System pressure	MPa	4.4/2.6	4.4/2.6	4.4/2.6
Compressor	Type		Twin-Rotary	Twin-Rotary	Twin-Rotary
	Brand		Mitsubishi	Mitsubishi	Mitsubishi
	Capacity	kW	9.880	9.880	7.130
Fan motor	Input	W	107×2	107×2	168/146
	Speed	r/min	800	800	877/749
Loading Quantity	20'40'/40H	Pcs	28/58/58	28/58/58	60/126/126
Sanitary Hot Water Tank			LSX-300XP/D15B11	LSX-300XP/D15B11	LSX-300XP/SD15B11
Power supply	V-Ph-Hz		220-240~ -1-50	220-240~ -1-50	380-415~ -3-50
Storage size	Ltr		300	300	300
Max. water output temperature	°C		60	60	60
Dimension (D×H)	mm		Φ580×1,800	Φ580×1,800	Φ580×1,800
Packing (W×H×D)	mm		1,885×670×670	1,885×670×670	1,885×670×670
Net/Gross weight	kg		80/91	80/91	80/91
E-heater	kW		1.5	1.5	1.5
Tank material			SUS304	SUS304	SUS304
Water pipeline	Water inlet pipe	mm	DN20	DN20	DN20
	Water outlet pipe	mm	DN20	DN20	DN20
	PTR valve joint	mm	DN20	DN20	DN20
Loading Quantity	20'40'/40H	Pcs	27/57/76	27/57/76	27/57/76
Solar Kit			TMK-01	TMK-01	TMK-01
Power supply	V-Ph-Hz		220-240~ -1-50	220-240~ -1-50	220-240~ -1-50
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	Φ22×0.8	Φ22×0.8	Φ22×0.8
	Length	m	11	11	11
	Material		SUS316L	SUS316L	SUS316L
	Inlet pipe	mm	DN20	DN20	DN20
	Outlet pipe	mm	DN20	DN20	DN20
Loading Quantity	20'40'/40H	Pcs	300/624/728	300/624/728	300/624/728

The testing Condition:
 1. Heating: Outdoor temperature 7/6°C(DB/WB), inlet water temperature 30°C, outlet water temperature 35°C.
 2. Cooling: Outdoor temperature 35/24°C(DB/WB), inlet water temperature 12°C, outlet water temperature 7°C.
 3. The specifications may be changed for product improvement, please refer to the nameplate.

Operation Temperature Range

- Set the system at the following temperatures for maximum efficiency. The maximum operating temperature of the heat pump. (Cooling/Heating)

Model	Outdoor temperature	Water temperature
Cooling operating	15°C~43°C	7°C ~ 22°C
Heating operating (Single phase)	-15°C~43°C	15°C~55°C
Heating operating (Three phase)	-20°C~43°C	15°C~55°C

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	Quantity
Owner's & Installation Manual		1
Mounting bracket		1
Two-way valve		3
M4 screw	—	2
Water tank temperature sensor	—	1
Y-style filter		1
Floor heating inlet		1
Temperature sensor, T1B	—	1
Drain pan kit		1
M8 expansion screw	—	5

Solar Kit

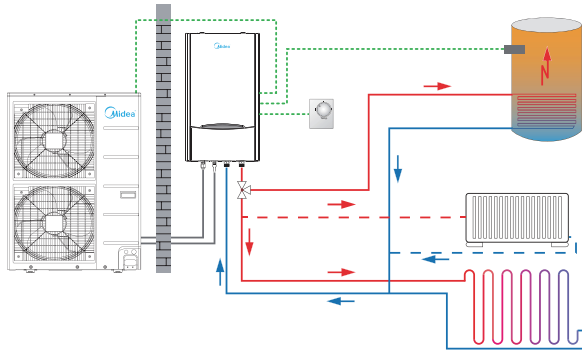
Accessory name	Shape	Quantity	Purpose
Installation & Owner's Manual		1	
adapter		2	Connection the solar kit and the sanitary hot water tank.
Sealing		6	Pipe connection seal.
Screw		2	Fixed left and right epp casing.
Washer		2	Fixed left and right epp casing.

Installation Diagram

M-thermal+ Underfloor Heating(Radiator) + Sanitary Tank

The system can be combined with:

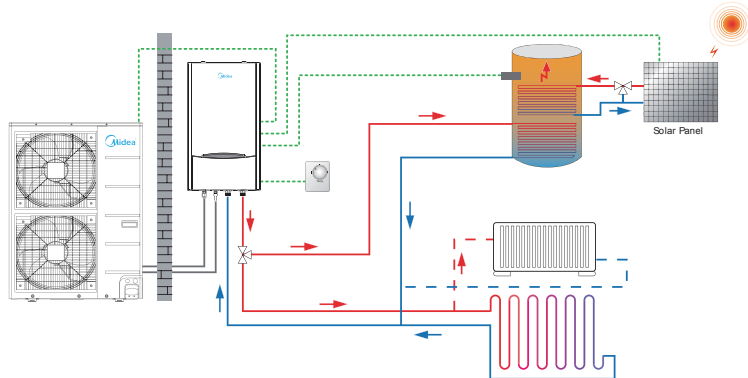
1. Underfloor Heating or Radiator
2. Low temperature radiators to provide the maximize comfort for users.
3. A sanitary hot water tank to supply hot water needs.



M-thermal + Underfloor Heating(Radiator) + Sanitary Tank + Solar Panel

The system can be combined with:

1. Underfloor Heating or Radiator
2. Low temperature radiators to provide the maximize comfort for users.
3. A sanitary hot water tank to supply hot water needs.
4. Solar collectors with optional solar kit, to compliment the production of hot water.



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

Features

- Turning the unit ON/OFF.
- Operation mode change-over:
 - Space heating
 - Space cooling
 - Sanitary water heating
 - Space heating & Sanitary water heating
 - Space cooling & Sanitary water heating
- Selection of features:
 - Silent mode
 - Run test function
 - Air purge function
- Temperature set point adjustment.
- The clock functions are:
 - 24 hours real time clock
 - Day of the week indicator
- Schedule timer function.

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 lock button.
Not Available	This icon is displayed whenever non-installed option is addressed or a function is not available.

Error Code List

Error code	Meaning
E0	Flow switch error(continuous for 3 times, and should be reset without power supply)
E1	T2 error
E2	UI communication error
E3	Outdoor unit communication error
E4	T2B error
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
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