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LG

ENGLISH

LG

THERMAV™

Air-to-Water Heat Pump

Owner's Manual

Dear Owner

***Thank you for installing LG Air-to-Water Heat Pump.
Your best choice guarantees you a great
performance and service to make your life
comfortable & pleasant.***

IMPORTANT

- Please read this owner's manual carefully and thoroughly before installing and operating your Air-to-Water Heat Pump.
- Please retain this owner's manual for future reference after reading it thoroughly.

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FOR YOUR RECORDS

Write the model and serial numbers here:

Model # _____

Serial # _____

You can find them on a label on the side of each unit.

Installer's Name _____

Purchased Date _____

■ Staple your receipt to this page in the event you need it to prove date of purchase or for warranty issues.



READ THIS MANUAL

Inside you will find many helpful hints on how to use and maintain your AWHP properly. Just a little preventive care on your part can save you a great deal of time and money over the life of your product.

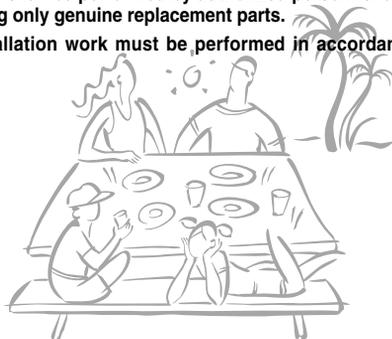
You'll find many answers to common problems in the chart of troubleshooting tips. If you review our chart of



Troubleshooting Tips first, you may not need to call for service at all.

PRECAUTION

- Contact the authorized service technician for repair or maintenance of this unit.
- Contact the installer for installation of this unit.
- AWHP is not intended for use by young children or invalids without supervision.
- Young children should be supervised to ensure that they do not play with AWHP.
- When the power cable is to be replaced, replacement work shall be performed by authorized personnel only using only genuine replacement parts.
- Installation work must be performed in accordance



Safety Precautions

To prevent injury to the user or other people and property damage, the following instructions must be followed.

- Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.

⚠ WARNING This symbol indicates the possibility of death or serious injury.

⚠ CAUTION This symbol indicates the possibility of injury or damage.

⚠ WARNING

Always ground the product.

- There is a risk of electric shock.

For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized Service Center. Do not disassemble or repair the product by yourself.

- There is risk of fire or electric shock.

Use the correctly rated breaker or fuse.

- There is risk of fire or electric shock.

Do not install the product on a defective installation stand. Be sure that the installation area does not deteriorate with age.

- It may cause product to fall.

Be sure to check the refrigerant to be used. Please read the label on the product.

- Incorrect refrigerant can prevent the normal operation of the unit.

Do not place a heater or other heating appliances near the power cable.

- There is risk of fire and electric shock.

Do not use a defective or underrated circuit breaker. Use the correctly rated breaker and fuse.

- There is risk of fire or electric shock .

Always ground the product as per the wiring diagram. Do not connect the ground wire to gas or water pipes lightning rod or telephone ground wire.

- There is risk of fire or electric shock.

Do not modify or extend the power cable. If the power cable or cord has scratches or skin peeled off or deteriorated then it must be replaced.

- There is risk of fire or electric shock.

Never install the outdoor unit on a moving base or a place from where it can fall down.

- The falling outdoor unit can cause damage or injury or even death of a person.

Don't use a power cord, a plug or a loose socket which is damaged.

- Otherwise it may cause a fire or electrical shock.

Do not allow water to run into electric parts. Install the unit away from water sources.

- There is risk of fire, failure of the product, or electric shock.

Do not use a multi outlet. Always use this appliance on a dedicated circuit and breaker.

- Otherwise it can cause electric shock or fire.

Install the panel and the cover of control box securely.

- There is risk of fire or electric shock due to dust , water etc.

For installation, removal or reinstall , always contact the dealer or an Authorized Service Center.

- There is risk of fire, electric shock, explosion, or injury.

When the product is soaked (flooded or submerged) in water , contact an Authorized Service Center for repair before using it again.

- There is risk of fire or electric shock.

Do not touch , operate, or repair the product with wet hands.

- There is risk of electric shock or fire.

Do not store or use or even allow flammable gas or combustibles near the product.

- There is risk of fire.

Safety Precaution

Indoor/outdoor wiring connections must be secured tightly and the cable should be routed properly so that there is no force pulling the cable from the connection terminals.

- Improper or loose connections can cause heat generation or fire.

Safely dispose off the packing materials. Like screws, nails, batteries, broken things etc after installation or service and then tear away and throw away the plastic packaging bags.

- Children may play with them and cause injury.

Make sure to check that the power device is not dirty, loose or broken and then Turn on the power.

- Dirty, loose or broken power device can cause electric shock or fire.

In outdoor unit the step-up capacitor supplies high voltage electricity to the electrical components. Be sure to discharge the capacitor completely before conducting the repair work.

- An charged capacitor can cause electrical shock.

When installing the unit, use the installation kit provided with the product.

- Otherwise the unit may fall and cause severe injury.

Be sure to use only those parts which are listed in the service parts list. Never attempt to modify the equipment.

- The use of inappropriate parts can cause an electrical shock, excessive heat generation or fire.

Do not use the product in a tightly closed space for a long time. Perform ventilation regularly.

- Oxygen deficiency could occur and hence harm your health.

Do not open the front cover or grille of the product during operation. (Do not touch the electrostatic filter, if the unit is so equipped.)

- There is risk of physical injury, electric shock, or product failure.

If strange sounds, smell or smoke comes from product, immediately turn the breaker off or disconnect the power supply cable.

- There is risk of electric shock or fire.

Ventilate the product room from time to time when operating it together with a stove, or heating element etc.

- Oxygen deficiency can occur and hence harm your health.

Turn the main power off when cleaning or repairing the product.

- There is risk of electric shock.

Take care to ensure that nobody especially kids could step on or fall onto the outdoor unit.

- This could result in personal injury and product damage.

Take care to ensure that power cable could not be pulled out or damaged during operation.

- There is risk of fire or electric shock.

Do not place ANYTHING on the power cable.

- There is risk of fire or electric shock.

When flammable gas leaks, turn off the gas and open a window for ventilation before turn the product on.

- Do not use the telephone or turn switches on or off. There is risk of explosion or fire.

⚠ CAUTION

Two or more people must lift and transport the product.

- Avoid personal injury.

Do not install the product where it will be exposed to sea wind (salt spray) directly.

- It may cause corrosion on the product.

Keep level even when installing the product.

- To avoid vibration or noise.

Do not install the product where the noise or hot air from the outdoor unit could damage or disturb the neighborhoods.

- It may cause a problem for your neighbors and hence dispute.

Always check for gas (refrigerant) leakage after installation or repair of product.

- Low refrigerant levels may cause failure of product.

Do not use the product for special purposes, such as preserving foods, works of art, etc. It is a consumer AHP, not a precision refrigeration system.

- There is risk of damage or loss of property.

Do not block the inlet or outlet of air flow.

- It may cause product failure.

Use a soft cloth to clean. Do not use harsh detergents, solvents or splashing water etc .

- There is risk of fire, electric shock, or damage to the plastic parts of the product.

Do not step on or put anything on the product. (outdoor units)

- There is risk of personal injury and failure of product.

Do not insert hands or other objects through the air inlet or outlet while the product is operating.

- There are sharp and moving parts that could cause personal injury.

Be cautious when unpacking and installing the product.

- Sharp edges could cause injury.

If the refrigerant gas leaks during the repair, do not touch the leaking refrigerant gas.

- The refrigerant gas can cause frostbite (cold burn)

Do not tilt the unit when removing or uninstalling it.

- The condensed water inside can spill .

Do not mix air or gas other than the specified refrigerant used in the system .

- If air enters the refrigerant system, an excessively high pressure results, causing equipment damage or injury.

If the refrigerant gas leaks during the installation, ventilate the area immediately.

- Otherwise it can be harmful for your health.

Dismantling the unit, treatment of the refrigerant oil and eventual parts should be done in accordance with local and national standards.

Do not expose your skin or kids or plants to the cool or hot air draft.

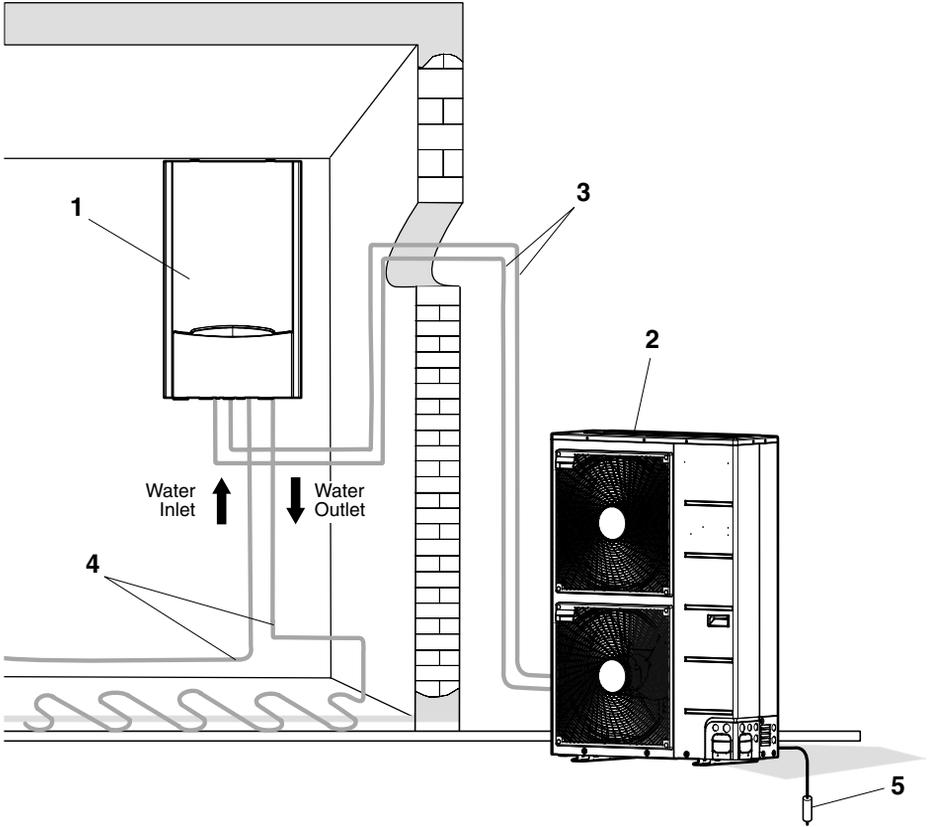
- This could harm to your health.

Use a firm stool or ladder when cleaning, maintaining or repairing the product at an height.

- Be careful and avoid personal injury.

Product Introduction

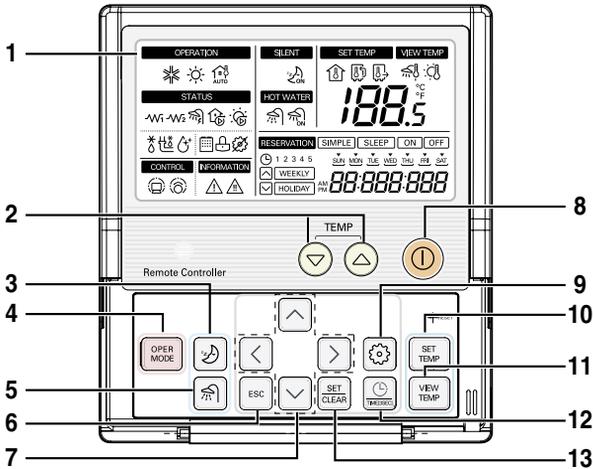
Typical Installation Scene



1. Indoor unit
2. Outdoor unit
3. Refrigerant pipe and connecting cable
4. Water pipe
5. Ground wire to ground outdoor unit to prevent electrical shocks.

*The shape of products can be changed according to the model capacity and type.

Control Panel



- | | |
|--|--------------------------------|
| 1. Display panel | 9. Function setting button |
| 2. Change temperature button | 10. Temperature setting button |
| 3. Silent mode On/Off button | 11. Temperature view button |
| 4. Operation mode selection button | 12. Programming button |
| 5. Water heating Enable/Disable button | 13. Set/Clear button |
| 6. ESC button | |
| 7. Direction button
(Up, Down, Left, Right) | |
| 8. Power button | |

* Some functions may not be operated and displayed depending on the model.

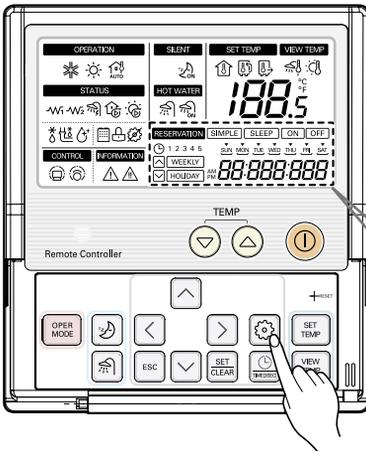
Installation instruction

Installer Setting -How to enter installer setting mode

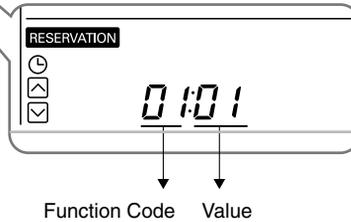
⚠ CAUTION

Installer setting mode is to set the detail function of the control panel.

If the installer setting mode is not set correctly, it could cause problems to the product, user injury or property damage. This must be set by a certificated installer, and any installation or change that is carried out by a non-certificated person should be responsible for the results. In this case, free service cannot be provided.



- 1 Press Function Setting button for 3 seconds to enter the installer setting mode.



(When you enter the installer setting mode initially, Function code is displayed on the bottom of the LCD screen.)

Repeat pressing button, and the function code will be changed from 01 to 2A. Please refer the code table on the next page.

Installer Setting -Installation Function Code Table

Example of Function Code Display

02:01:155

Function Code Value #1 Value #2

■ Installation Function Code Table

Code	Item	Detail	Remark	
1	Function	Test Run		
	Description	Instant cooling operation for charging additional refrigerant		
	Value #1	Note		-
		Default		-
		Range		-
	Value #2	Note		-
		Default		-
Range		-		
2	Function	Disable 3 Min. Delay		
	Description	Factory use only		
	Value #1	Note		-
		Default		-
		Range		-
	Value #2	Note		-
		Default		-
Range		-		
3	Function	Remote Air Sensor Connection		
	Description	Connection information about remote air sensor		
	Value #1	Note		01:Remote air sensor is NOT connected and NOT used 02:Remote air sensor is connected and used
		Default		1
		Range		01~02
	Value #2	Note		-
		Default		-
Range		-		
4	Function	Celsius/Fahrenheit Switching		
	Description	Display temperature in Celsius or Fahrenheit		
	Value #1	Note		01:Celsius 02:Fahrenheit
		Default		1
		Range		01~02
	Value #2	Note		-
		Default		-
Range		-		

Installation instruction

Code	Item	Detail	Remark	
5	Function	Setting Temperature Selection		
	Description	Selection for setting temperature as air temperature or leaving water temperature		
	Value #1	Note		01:Air temperature 02:Leaving water temperature Air temperature as setting temperature is ONLY available when remote air sensor Connection is enabled and Function Code 03 is set as 02.
		Default		2
		Range		01~02
	Value #2	Note		-
		Default		-
		Range		-
6	Function	Auto Dry Contact		
	Description	Setting dry contact auto start option		
	Value #1	Note		01:Auto Start OFF 02:Auto Start ON
		Default		2
		Range		01~02
	Value #2	Note		-
		Default		-
Range		-		
7	Function	Address Setting		
	Description	Assigning address when central controller is installed		
	Value #1	Note		-
		Default		-
		Range		-
	Value #2	Note		-
		Default		-
Range		-		
11	Function	Setting Air Temperature in Cooling Mode	'Setting Air Temperature' is used when user wants to set target temperature by room air temperature.	
	Description	Adjusting range of 'Setting Air Temperature' in cooling mode		
	Value #1	Note		Upper Limit of setting range
		Default		30°C
		Range		24~30°C
	Value #2	Note		Lower Limit of setting range
		Default		18°C
Range		18~22°C		
12	Function	Setting Leaving Water Temperature in Cooling Mode	'Setting Leaving Water Temperature' is used when user wants to set target temperature by leaving(from the indoor unit) water temperature.	
	Description	Adjusting range of 'Setting Leaving Water Temperature' in cooling mode		
	Value #1	Note		Upper Limit of setting range
		Default		24°C
		Range		20~25°C
	Value #2	Note		Lower Limit of setting range(FCU is equipped)
		Default		06°C
Range		06~18°C		

Code	Item		Detail		Remark
12	Value #2	Note	Lower Limit of setting range(FCU is NOT equipped)		'Setting Air Temperature' is used when user wants to set target temperature by room air temperature. 'Setting Leaving Water Temperature' is used when user wants to set target temperature by leaving(from the indoor unit) water temperature.
		Default	16°C		
		Range	16~18°C		
13	Function		Setting Air Temperature in Heating Mode		
	Description		Adjusting range of 'Setting Air Temperature' in heating mode		
	Value #1	Note	Upper Limit of setting range		
		Default	30°C		
		Range	24~30°C		
	Value #2	Note	Lower Limit of setting range		
		Default	16°C		
Range		16~22°C			
14	Function		Setting Leaving Water Temperature in Heating Mode		
	Description		Adjustin range of 'Setting Leaving Water Temperature' in heating mode		
	Value #1	Note	Upper Limit of setting range		
		Default	55°C		
		Range	40~55°C		
	Value #2	Note	Lower Limit of setting range		
		Default	15°C		
Range		15~37°C			
15	Function		Setting Sanitary Tank Leaving Water Temperature for Sanitary Water Heating		
	Description		Adjusting range of 'Setting Sanitary Tank Leaving Water Temperature' in sanitary water heating mode		
	Value #1	Note	Upper Limit of setting range		
		Default	50°C		
		Range	50~80°C		
	Value #2	Note	Lower Limit of setting range		
		Default	40°C		
Range		30~40°C			
21	Function		Setting Electric Heater On/Off temperature		
	DIP switch setting		No.6 = Off No.7 = On	No.6 = Off No.7 = Off	
	Description		Setting for Using Half capacity of electric heater	Setting for Using Full capacity of electric heater	
	Value #1	Note	Outdoor air temperature where half capacity of electric heater starts operation.	Base outdoor air temperature	
		Default	0°C		
		Range	-15~18°C		
	Value #2	Note	Not used	Temperature gap (it means 'how much colder than base outdoor air temperature?')	
		Default	-	0°C	
		Range	-	33°C	

Installation instruction

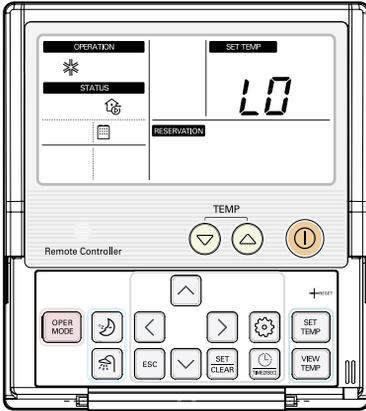
Code	Item	Detail	Remark	
22	Function	Setting Cut-off Temperature in Cooling Mode (FCU setting included)		
	Description	Determine leaving water temperature when the product is turned off. This function is used for preventing condensation on the floor in cooling mode.		
	Value #1	Note		Cut-off temperature. Value #1 is valid when Value #2 is '01 (that means, FCU is installed)'."
		Default		16°C
		Range		16~25°C
	Value #2	Note		Determines if FCU is installed or not. '01' means 'FCU is NOT installed', and '00' means 'FCU is installed.'
		Default		00
Range		00(Equipped)-01(NOT Equipped)		
23	Function	Setting outdoor temperature range for Weather-dependent operation		
	Description	Setting outdoor Max/Min temperature for weather-dependent operation		
	Value #1	Note		Upper Limit of setting range
		Default		-10°C
		Range		-20~05°C
	Value #2	Note		Lower Limit of setting range
		Default		15°C
Range		10~20°C		
24	Function	Setting indoor air temperature range for Weather-dependent operation		
	Description	Setting indoor Max/Min temperature for weather-dependent operation		
	Value #1	Note		Upper Limit of setting range
		Default		30°C
		Range		26~30°C
	Value #2	Note		Lower Limit of setting range
		Default		25°C
Range		16~25°C		
25	Function	Setting leaving water temperature range for Weather-dependent operation		
	Description	Setting leaving water Max/Min temperature for weather-dependent operation		
	Value #1	Note		Upper Limit of setting range
		Default		40°C
		Range		40~55°C
	Value #2	Note		Lower Limit of setting range
		Default		25°C
Range		15~37°C		
26	Function	Setting Disinfection Operation	Sanitary water heating should be enable • If sanitary water heating is disable,	
	Description	Setting start/maintain time for disinfection		
	Value #1	Note		Enable/Disable of Disinfection Operation(00:Disable , 01:Enable)
		Default		00
		Range		00~01

Code	Item		Detail	Remark
		Note	Starting Date(Sunday:1,Monday:2, ..., Saturday:7)	the disinfection mode will not be operated although Value #1 of Code 26 is set as '01'. • To use disinfection mode, sanitary water heating should be enable.
		Default	06	
		Range	01~07	
	Value #2	Note	Starting Time in 24 hours(00~23)	
		Default	23	
		Range	00~23	
27	Function		Setting Disinfection Operation	
	Description		Setting disinfection temperature	
	Value #1	Note	Maximum heating temperature	
		Default	70°C	
		Range	40~70°C	
	Value #2	Note	Maximum heating duration in minute	
Default		10°C		
Range		05~60°C		
28	Function		Setting control parameter for Sanitary water heating operation	Only available when Sanitary Water Tank is installed.
	Description		See below notes for each values	
	Value #1	Note	Temperature gap from Value #2 of Function Code 28	
		Default	05°C	
		Range	01~20°C	
	Value #2	Note	Maximum temperature generated by AWHP compressor cycle	
Default		48°C		
Range		40~48°C		
29	Function		Setting control parameter for Sanitary water heating operation	
	Description		See below notes for each values	
	Value #1	Note	Temperature gap from target sanitary water temperature. (This value is required to frequent On and Off of water tank heater)	
		Default	03°C	
		Range	02~04°C	
	Value #2	Note	Determining heating demand priority between sanitary water tank heating and under floor heating	
Default		00		
Range		00~01		
2A	Function		Miscellaneous setting	
	Description		Determine electric heater and water heater on and off	
	Value #1	Note	00 : Operate both Electric Heater and Sanitary Tank Heater 01 : Operate ONLY Sanitary Tank Heater	
		Default	00	
		Range	00~01	
	Value #2	Note	Not used	
Default		-		
Range		-		

* Some contents may not be displayed depending on DIP switch setting in the indoor unit PCB

Installer Setting -Test Run

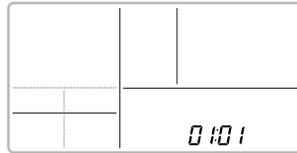
Test run should be performed when additional refrigerant charging is required. To charge the refrigerant, the product must run in Cooling mode. Test run instantly makes the product working in Cooling mode for 18 minutes.



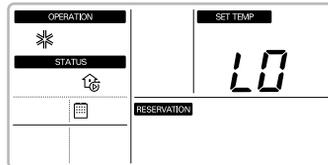
- 1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code is displayed in timer segment.



- 2 Press set / clear button to start test run mode.



- 3 Cooling mode will be operated during 18 minutes on this mode.

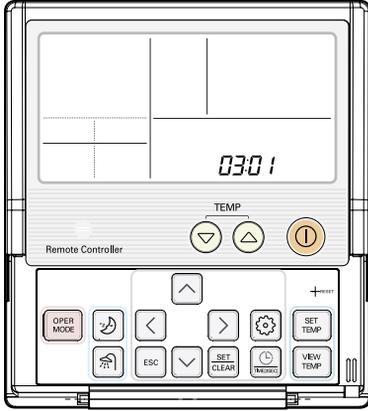


* Note

- If you press any kind of button during this mode, Test Run mode will be finished.
- After running 18 minutes under test run mode, system will automatically turn OFF.

Installer Setting -Remote Air Sensor Connection

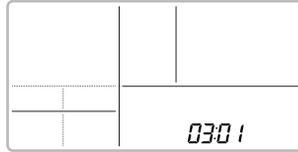
If user connects remote air sensor to control the product by room air temperature, the connection information should be notified to the product.



1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.



2 Repeat pressing button to select Function code 03.



3 Set the value by pressing up, down button.



Value	Note	Default
01	Remote air sensor is NOT connected and NOT used	01 : NOT connected and NOT used
02	Remote air sensor is connected and used	

4 If you finish the setting, press set / clear button to save the setting.



5 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

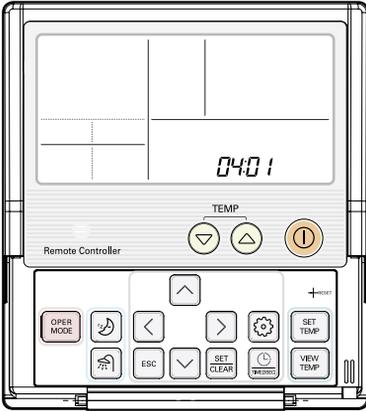


*** Note**

If remote air sensor is connected but this function code is not set correctly, the product can not be controlled by room air temperature.

Installer Setting -Celsius (°C) / Fahrenheit (°F) Switching

Temperature is displayed in Celsius or Fahrenheit.



1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.

2 Repeat pressing button to select Function code 04.

3 Set the value by pressing up, down button.

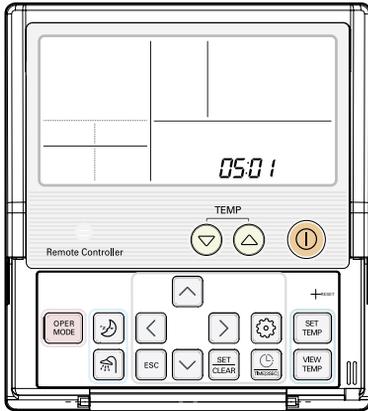
Value	Note	Default
01	Celcius	01 : Celcius
02	Fahrenheit	

4 If you finish the setting, press set / clear button to save the setting.

5 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

Installer Setting -Setting Temperature Selection

The product can be operated according to air temperature or leaving water temperature. The selection for setting temperature as air temperature or leaving water temperature is determined.



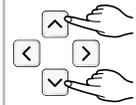
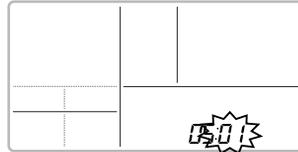
1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.



2 Repeat pressing button to select Function code 05.

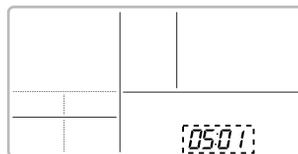


3 Set the value by pressing up, down button.



Value	Note	Default
01	Air temperature	02 : Leaving Water temperature
02	Leaving Water temperature	

4 If you finish the setting, press set / clear button to save the setting.



5 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

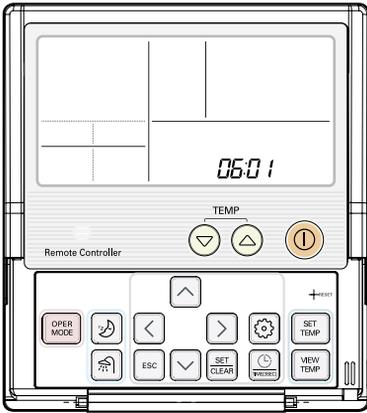


*** Note**

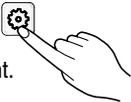
Air temperature as setting temperature is ONLY available when Remote Air Sensor(PQRSTA0) Connection is enabled and Function Code 03 is set as 02.

Installer Setting -Dry Contact Auto-Start Setting

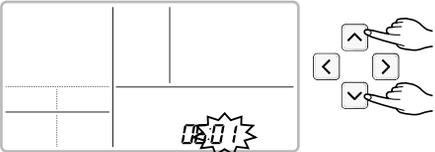
This function allows the Dry contact-indoor unit operate under Auto Run mode or Manual mode with remote control panel.



- 1** Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.


- 2** Repeat pressing button to select Function code 06.

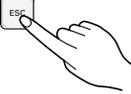

- 3** Set the value by pressing up, down button.



Value	Note	Default
01	Auto Start OFF	02 : Auto Start ON
02	Auto Start ON	

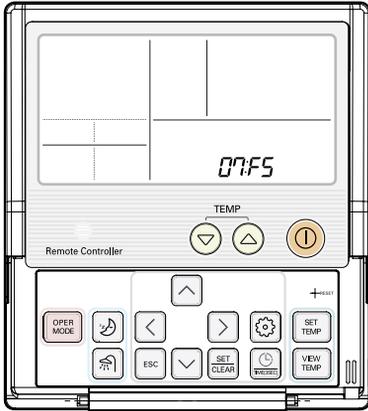
- 4** If you finish the setting, press set / clear button to save the setting.


- 5** Press  button to exit or system will automatically exit after 25 seconds without any input.



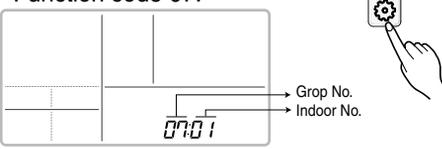
Installer Setting - Setting Address of Central Control

When Central Controller is installed, address assigning is set by this function.



- 1** Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.


- 2** Repeat pressing button to select Function code 07.


- 3** Set the Group No. by pressing up, down button.



For example, In case of setting address as 'F5'. First, Please change the Group number to 'F'.
- 4** Move to Indoor No. part by pressing right direction button.


- 5** Set the Indoor No. by pressing up, down button.

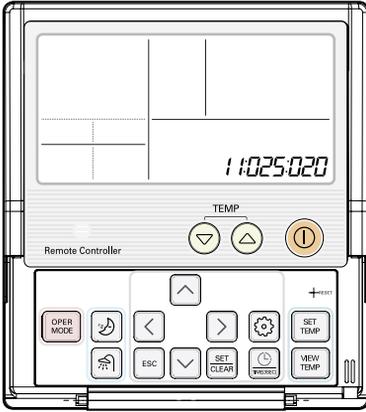

- 6** If you finish the setting, press set / clear button to save the setting.


- 7** Press  button to exit or system will automatically exit after 25 seconds without any input.



Installer Setting -Setting Air Temperature in Cooling Mode

Determine cooling setting temperature range when air temperature is selected as setting temperature. Following instruction shows how to change the range of setting temperature from 18 °C~30°C to 20 °C~25°C.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.

1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.

2 Repeat pressing button to select Function code 11.

Value	Note	Default	Range
Value #1	Upper Limit of setting range	30	24~30
Value #2	Lower Limit of setting range	18	18~22

3 Set the Value #1 by pressing up, down button.

Ex) setting Value as Value #1 = '25'
Value #2 = '20'

4 Move to Value #2 part by pressing right direction button.

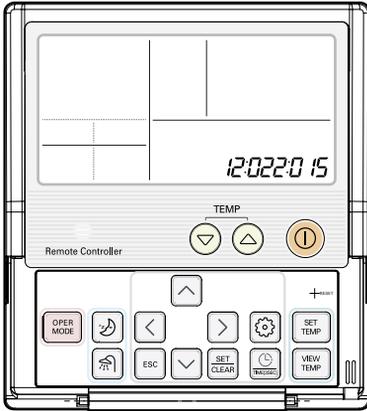
5 Set the Value #2 by pressing up, down button.

6 If you finish the setting, press set / clear button to save the setting.

7 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

Installer Setting -Setting Leaving Water Temperature in Cooling Mode

Determine cooling setting temperature range when leaving water temperature is selected as setting temperature. Following instruction shows how to change the range of setting temperature from 18 °C~24°C to 15 °C~22°C.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.

1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.

2 Repeat pressing button to select Function code 12.

Value	Note	Default	Range
Value #1	Upper Limit of setting range	24	20~25
Value #2	Lower Limit of setting range	FCU is equipped	05~18
		FCU isn't equipped	16~18

3 Set the Value #1 by pressing up, down button.

Ex) setting Value as Value #1 = '22'
Value #2 = '15'

4 Move to Value #2 part by pressing right direction button.

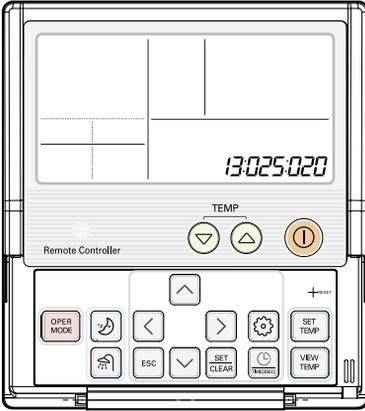
5 Set the Value #2 by pressing up, down button.

6 If you finish the setting, press set / clear button to save the setting.

7 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

Installer Setting -Setting Air Temperature in Heating Mode

Determine heating setting temperature range when air temperature is selected as setting temperature. Following instruction shows how to change the range of setting temperature from 18 °C~30°C to 20°C~25°C.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.

1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.

2 Repeat pressing button to select Function code 13.

Value	Note	Default	Range
Value #1	Upper Limit of setting range	30	24~30
Value #2	Lower Limit of setting range	16	16~22

3 Set the Value #1 by pressing up, down button.

Ex) setting Value as Value #1 = '25'
Value #2 = '20'

4 Move to Value #2 part by pressing right direction button.

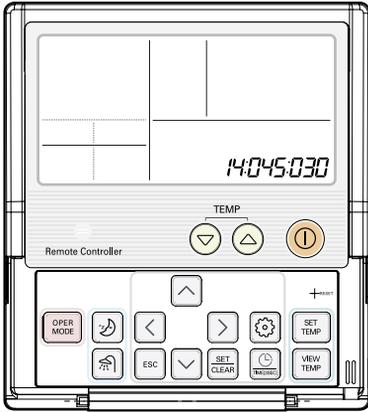
5 Set the Value #2 by pressing up, down button.

6 If you finish the setting, press set / clear button to save the setting.

7 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

Installer Setting -Setting Leaving Water Temperature in Heating Mode

Determine heating setting temperature range when leaving water temperature is selected as setting temperature. Following instruction shows how to change the range of setting temperature from 15°C~55°C to 30°C~45°C.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.

1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.

2 Repeat pressing button to select Function code 14.

Value	Note	Default	Range
Value #1	Upper Limit of setting range	55	40~55
Value #2	Lower Limit of setting range	15	15~37

3 Set the Value #1 by pressing up, down button.

Ex) setting Value as Value #1 = '45'
Value #2 = '30'

4 Move to Value #2 part by pressing right direction button.

5 Set the Value #2 by pressing up, down button.

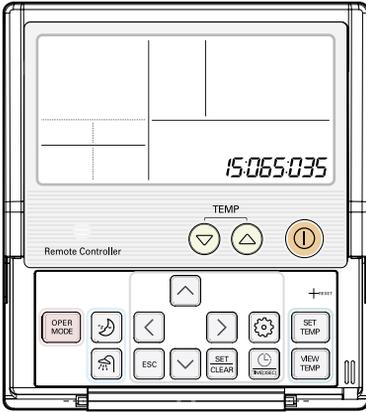
6 If you finish the setting, press set / clear button to save the setting.

7 Press button to exit or system will automatically exit after 25 seconds without any input.

Installer Setting-Setting Sanitary Tank Leaving Water Temperature for Sanitary Water Heating

Determine heating setting temperature range of water tank leaving water.

Following instruction shows how to change the range of setting temperature from 40 °C~50°C to 35°C~65°C.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.

1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.

2 Repeat pressing button to select Function code 15.

Value	Note	Default	Range
Value #1	Upper Limit of setting range	50	50~80
Value #2	Lower Limit of setting range	40	30~40

3 Set the Value #1 by pressing up, down button.

Ex) setting Value as Value #1 = '65'
Value #2 = '35'

4 Move to Value #2 part by pressing right direction button.

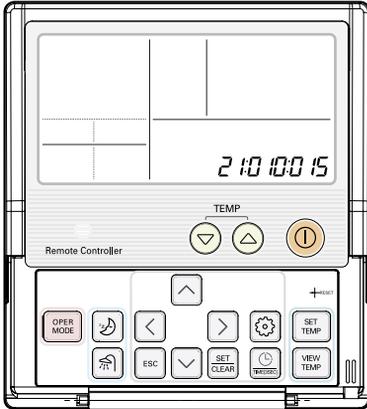
5 Set the Value #2 by pressing up, down button.

6 If you finish the setting, press set / clear button to save the setting.

7 Press **[ESC]** button to exit or system will automatically exit after 25 seconds without any input.

Installer Setting-Setting Electric Heater On/Off temperature

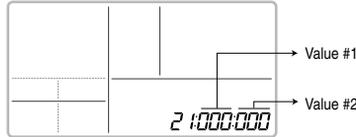
Determine turn-on temperature of internal electric heater. Internal electric heater has two stage turn-on/off condition. That means, one stage electric heater is turned on when outdoor temperature is cold and target temperature is not reached. If it is colder and actual temperature is far from target temperature, two stage electric heater is turned on.



1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.



2 Repeat pressing button to select Function code 21.



- **Example** : If Value #1 is set as '-1' and DIP Switch No 6. and 7 is set as 'OFF-ON', then half capacity of electric heater will start operation when outdoor air temperature is below -1°C and current leaving water temperature or room air temperature is much below than target leaving water temperature or target room air temperature.

- **Example** : If Value #1 is set as '-1' and Value #2 is set as '3' and DIP Switch No 6. and 7 is set as 'OFF-OFF', then full capacity of electric heater will start operation when outdoor air temperature is below -4°C ($-4 = \text{Value \#1} - \text{Value \#2}$) and current leaving water temperature or room air temperature is far much below than target leaving water temperature or target room air temperature.

DIP switch setting		No.6 = Off No.7 = On	No.6 = Off No.7 = Off
Description		Setting for Using Half capacity of electric heater	Setting for Using Full capacity of electric heater
Value #1	Note	Outdoor air temperature where half capacity of electric heater starts operation.	Base outdoor air temperature
	Default	00	
	Range	-15-18	
Value #2	Note	Not used	Temperature gap (it means 'how much colder than base outdoor air temperature?')
	Default	-	00
	Range	-	33

*** Note**

- All values are in $^{\circ}\text{C}$.
- Selection of $^{\circ}\text{C}$ or $^{\circ}\text{F}$ is based on the value of Function Code 04.

3 Set the Value #1 by pressing up, down button.



Ex) setting Value as Value #1 = '10'
Value #2 = '15'

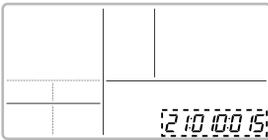
4 Move to Value #2 part by pressing right direction button.



5 Set the Value #2 by pressing up, down button.



6 If you finish the setting, press set / clear button to save the setting.

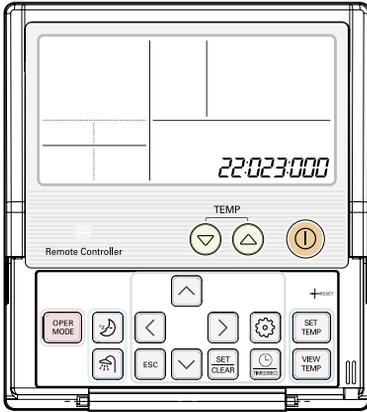


7 Press  button to exit or system will automatically exit after 25 seconds without any input.



Installer Setting-Setting Cut-off Temperature in Cooling Mode (FCU setting included)

Determine leaving water temperature when the product is turned off. This function is used for preventing condensation on the floor in cooling mode.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.

- **Example :** If Value #1 is set as '10' and Value #2 is '01' and actually FCU is NOT installed in the water loop, the product stop operation in cooling mode when the leaving water temperature is below 10 °C.

- **Example :** If Value #1 is set as '10' and Value #2 is '00' and actually FCU is installed in the water loop, the Value #1 is not used and the product do NOT stop operation in cooling mode when the leaving water temperature is below 10 °C.

1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.



2 Repeat pressing button to select Function code 22.



3 Set the Value #1 by pressing up, down button.



Ex) setting Value as Value #1 = '23'

Value	Note	Default	Range
Value #1	Cut-off temperature	16	16~25
Value #2	FCU is Equipped/ NOT Equipped	00	00:Equipped 01:Not Equipped

4 If you finish the setting, press set / clear button to save the setting.

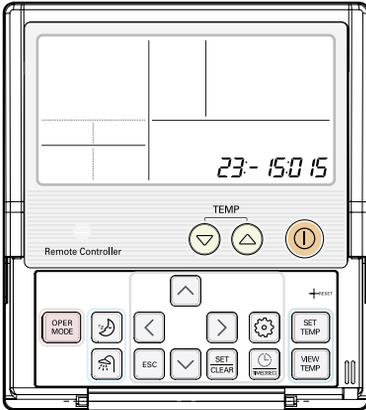


5 Press  button to exit or system will automatically exit after 25 seconds without any input.



Installer Setting-Setting Outdoor Temperature range for Weather-dependent operation

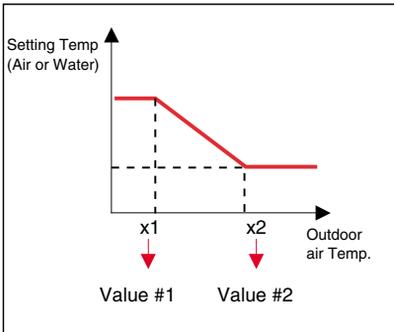
Determining Outdoor air Temp. concerned with autsetting of setting temperature according to Outdoor air Temp. Two points, x1 and x2 in the Temperature Profile, are chosen.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.

Temperature Profile



1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.



2 Repeat pressing button to select Function code 23.

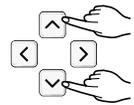


Value	Note	Default	Range
Value #1	Lower Limit of setting range	-10	-20-05
Value #2	Upper Limit of setting range	15	10-20

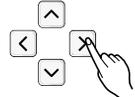
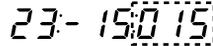
3 Set the Value #1 by pressing up, down button.



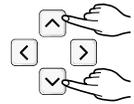
Ex) setting Value as Value #1 = '15'
Value #2 = '10'



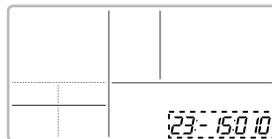
4 Move to Value #2 part by pressing right direction button.



5 Set the Value #2 by pressing up, down button.



6 If you finish the setting, press set / clear button to save the setting.

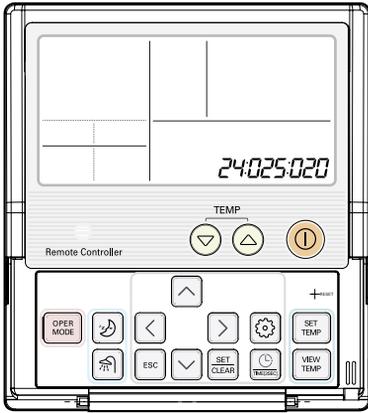


7 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.



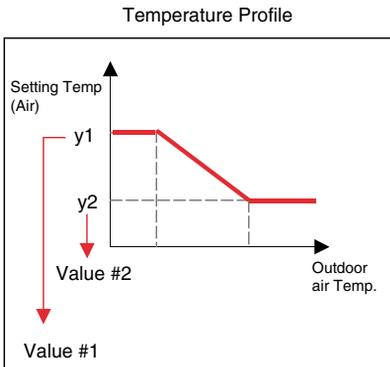
Installer Setting-Setting Indoor Air Temperature range for Weather-dependent operation

Determining setting temperature (by air) concerned with autsetting of setting temperature according to Outdoor air Temp. Two points, y1 and y2 in the Temperature Profile, are chosen.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.



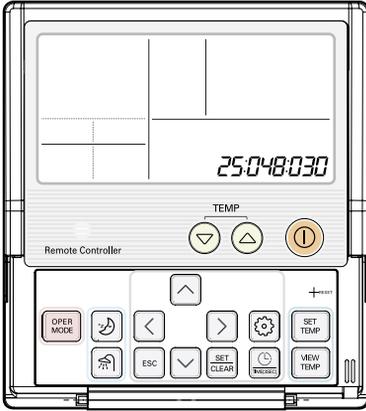
- Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.
- Repeat pressing button to select Function code 24.

Value	Note	Default	Range
Value #1	Upper Limit of setting range	30	26~30
Value #2	Lower Limit of setting range	25	16~25
- Set the Value #1 by pressing up, down button.

Ex) setting Value as Value #1 = '25'
Value #2 = '20'
- Move to Value #2 part by pressing right direction button.
- Set the Value #2 by pressing up, down button.
- If you finish the setting, press set / clear button to save the setting.
- Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

Installer Setting-Setting Leaving Water Temperature range for Weather-dependent operation

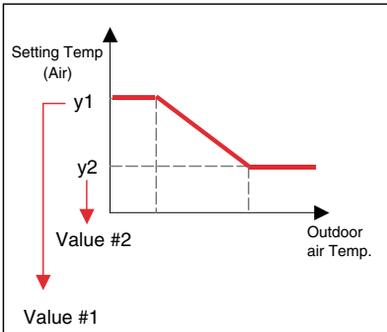
Determining setting temperature (by leaving water) concerned with autsetting of setting temperature according to Outdoor air Temp. Two points, y1 and y2 in the Temperature Profile, are chosen.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.

Temperature Profile



1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.

2 Repeat pressing button to select Function code 25.

Value	Note	Default	Range
Value #1	Upper Limit of setting range	40	40-55
Value #2	Lower Limit of setting range	25	15-37

3 Set the Value #1 by pressing up, down button.

Ex) setting Value as Value #1 = '48'
Value #2 = '30'

4 Move to Value #2 part by pressing right direction button.

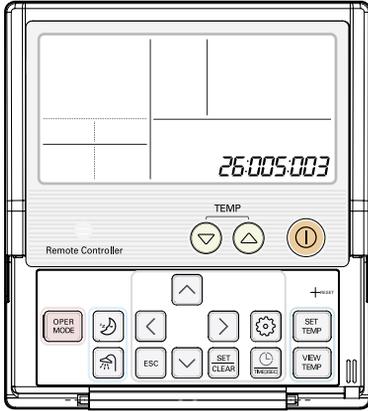
5 Set the Value #2 by pressing up, down button.

6 If you finish the setting, press set / clear button to save the setting.

7 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

Installer Setting-Setting Disinfection Operation

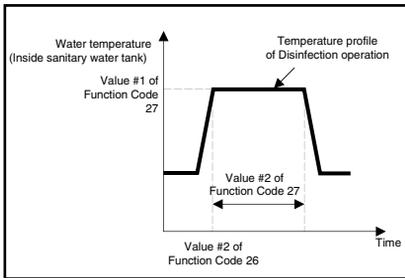
Setting values, such as enable/disable and starting time about Disinfection operation are decided.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.

Value	Note	Default	Range
Value #1	Enable/Disable of Disinfection Operation(00:Disable,01:Enable)	00	00-01
Value #2	Starting Date(Sunday:1, Monday:2,.....,Saturday:7)	06	01-07
Value #3	Starting Time in 24 hours (00-23)	23	00-23



- Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.
- Repeat pressing button to select Function code 26.

Value #1

Value #2

Value #3

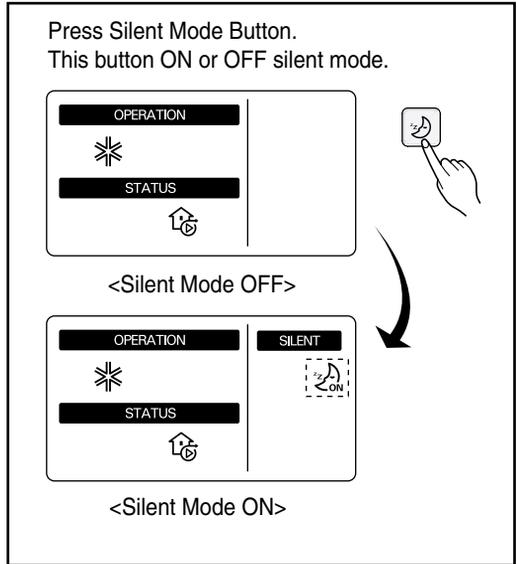
Value #2 and #3 are shown after selecting Value #1 as '1'
- Change the Value section by pressing right direction button.

Ex) setting Value as Value #1 = '01'
Value #2 = '05'
Value #3 = '03'
- Set the Value #2 by pressing up, down button.
- Move to Value #3 part by pressing right direction button.
- Change the Value #3 by pressing up, down button.
- If you finish the setting, press set / clear button to save the setting.
- Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

⚠ CAUTION

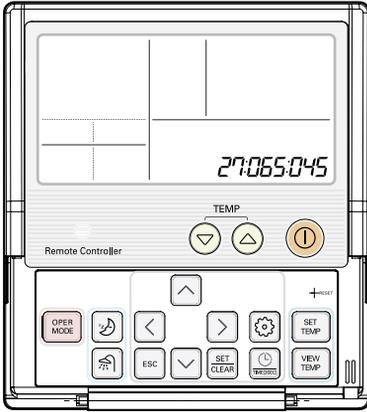
Sanitary water heating should be enable

- If sanitary water heating is disable, the disinfection mode will not be operated although Value #1 of Code 26 is set as '01'.
- To use disinfection mode, sanitary water heating should be enable.



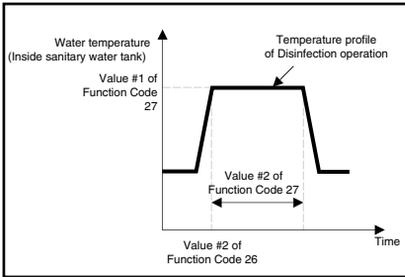
Installer Setting-Setting Disinfection Operation

Setting values, such as heating temperature and duration about Disinfection operation are decided.



*** Note**

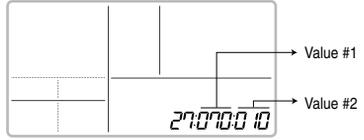
- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.



1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.

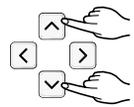


2 Repeat pressing button to select Function code 27.



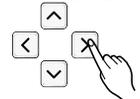
Value	Note	Default	Range
Value #1	Maximum heating temperature	70	40~70
Value #2	Maximum heating duratin in minute	10	05~60

3 Set the Value #1 by pressing up, down button.

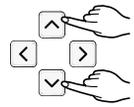


Ex) setting Value as Value #1 = '65'
Value #2 = '45'

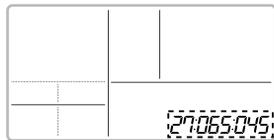
4 Move to Value #2 part by pressing right direction button.



5 Set the Value #2 by pressing up, down button.



6 If you finish the setting, press set / clear button to save the setting.



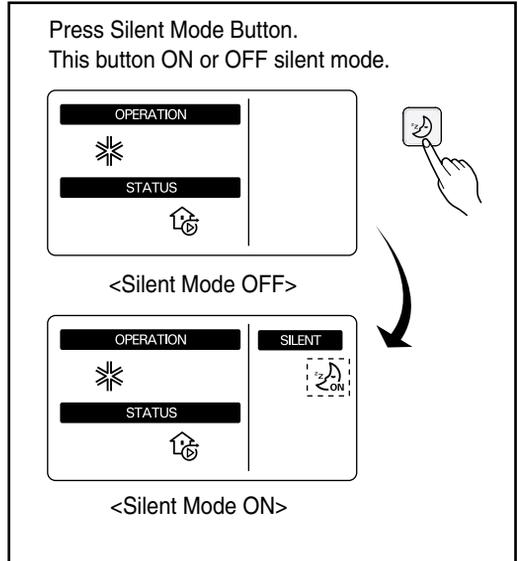
7 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.



⚠ CAUTION

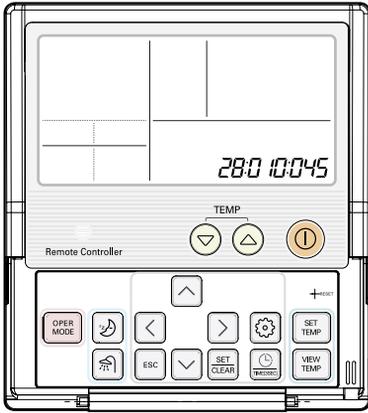
Sanitary water heating should be enable

- If sanitary water heating is disable, the disinfection mode will not be operated although Value #1 of Code 26 is set as '01'.
- To use disinfection mode, sanitary water heating should be enable.



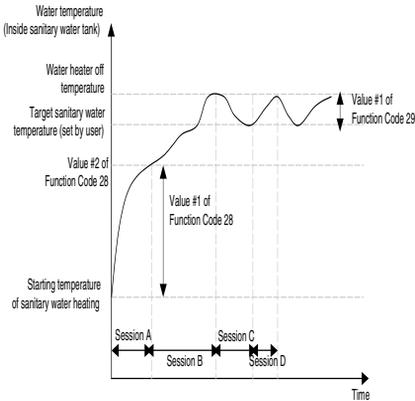
Installer Setting-Setting Control parameter for Sanitary Water Heating Operation

Temperature conditions for Water Tank Heating are determined.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.



- Session A : Heating by AHP compressor cycle and water heater
- Session B : Heating by water heater
- Session C : No heating (Water heater is Off)
- Session D : Heating by water heater

- Example : If Value #1 is set as '5' and Value #2 is set as '48', then Session A (see the graph) will be started when the water tank temperature is below 45°... If temperature is above 48 °C, then Session B will be started.

1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.

2 Repeat pressing button to select Function code 28.

Value	Note	Default	Range
Value #1	Temperature difference from Value #2 to determine Lower limit of heating temperature	05	01-20
Value #2	Maximum Water Tank Temperature heated by Heat Pump cycle	48	40-48

3 Set the Value #1 by pressing up, down button.

Ex) setting Value as Value #1 = '10'
Value #2 = '45'

4 Move to Value #2 part by pressing right direction button.

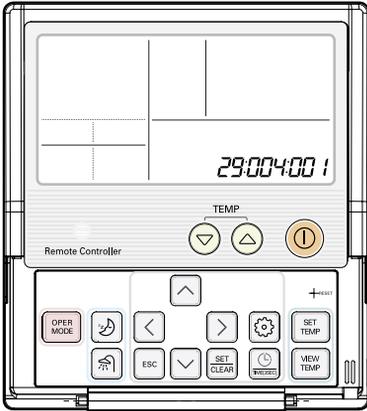
5 Set the Value #2 by pressing up, down button.

6 If you finish the setting, press set / clear button to save the setting.

7 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

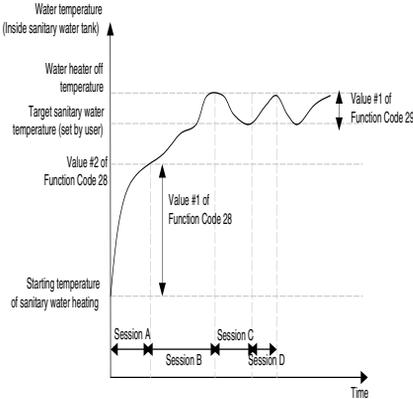
Installer Setting-Setting Control parameter for Sanitary Water Heating Operation

Temperature condition and Heating priority for Water Tank Heating are determined.



*** Note**

- All values are in °C.
- Selection of °C or °F is based on the value of Function Code 04.



- Session A : Heating by AHP compressor cycle and water heater
- Session B : Heating by water heater
- Session C : No heating (Water heater is Off)
- Session D : Heating by water heater

1 Keep pressing Function Setting button for 3 seconds to enter installer setting mode until code displayed in timer segment.

2 Repeat pressing button to select Function code 29.

Value	Note	Default	Range
Value #1	Temperature difference from target temperature to turn off electric heater in Water Tank	03	02-04
Value #2	Determining heating priority when under floor heating demand and water tank heating demand are required at the same time 00 : Priority to Water Tank Heating 01 : Priority to Under floor Heating	00	00-01

3 Set the Value #1 by pressing up, down button.

Ex) setting Value as Value #1 = '04'
Value #2 = '01'

4 Move to Value #2 part by pressing right direction button.

5 Set the Value #2 by pressing up, down button.

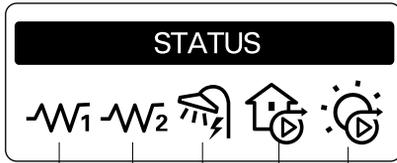
6 If you finish the setting, press set / clear button to save the setting.

7 Press **ESC** button to exit or system will automatically exit after 25 seconds without any input.

- **Example** : If user's target temperature is set as '70' and Value #1 is set as '3', then the water tank heater will be turned off when the water temperature is above 73 °C. The water tank heater will be turned on when the water temperature is below 70 °C.
- **Example** : If Value #2 is set as '0', that means heating priority is on sanitary water heating, sanitary water is heated by AWHP compressor cycle and water heater. In this case the under floor can not be heated while sanitary water heating. On the other hand, if the Value #2 is set as '1', that means heating priority is on under floor heating, sanitary tank is ONLY heated by water heater. In this case the under floor heating is not stopped while sanitary water is heated.

Owner's instruction

Monitoring Information



AUXILIARY SOLAR THERMAL PUMP

This icon indicates that auxiliary solar thermal pump is active.

NOTE : As installation of auxiliary solar thermal pump is not compulsory but recommendation according to field condition, this icon can be seen although no auxiliary solar thermal pump is installed.



Water Pump

This icon indicates that the water pump inside the indoor unit is active.



Sanitary Water Tank heater

This icon indicates that sanitary water tank electric heater which is located inside sanitary water tank is active.

The icon is not used when sanitary water tank is not installed.



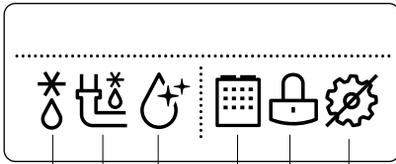
Electric Heater STEP ONE



Electric Heater STEP TWO

These icons indicate that the backup electric heater which is located inside the indoor unit is operating.

Monitoring Information



NO FUNCTION



Child Lock



Outdoor

This icon indicates that the outdoor unit is active.



Disinfection

This icon indicates disinfecting operation is ongoing in sanitary water tank.



Maintain lowest temperature

The purpose of this mode is maintaining the temperature to prevent damage by freezing of water pipe.

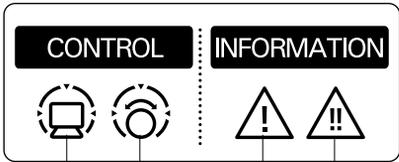


Defrosting

This icon indicates that the defrost mode is active.

In space heating operation or sanitary water tank heating operation, freezing of the outdoor heat exchanger may be occurred due to low outdoor temperature and humidity. If this risk occurs, the product goes into defrost operation. It reverses the cycle and takes heat from the indoor system to prevent freezing of the outdoor system. This mode is automatically operating.

Monitoring Information



Heavy trouble

This icon indicates that heavy trouble is occurred.



Slight trouble

This icon indicates that slight trouble is occurred.



Thermostat

This icon indicates connection with thermostat.

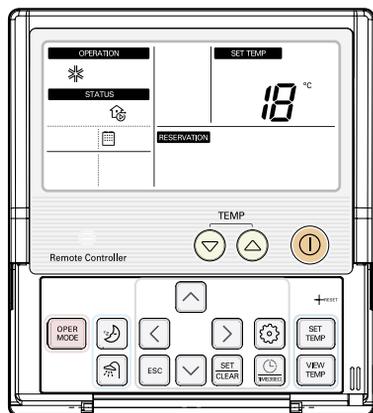


Central Controller

This icon indicates that the product is controlled by the central controller.

Mode Change

Turn on the product and select operation mode.



1 Press Power Button to turn on the product.



2 Press OPER MODE Button to select each operation mode.



OPERATION : Cooling operation



OPERATION : Heating operation



OPERATION : Weather dependent operation

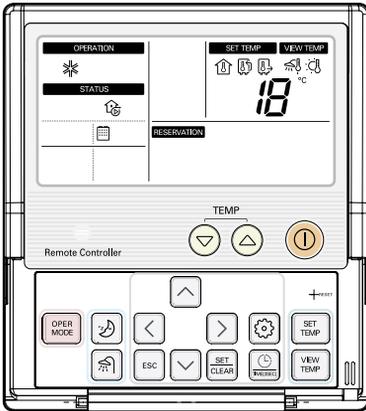


Operation Mode

- Cooling Operation - The product yields cool water to use in under floor cooling or FCU cooling.
- Heating Operation - The product yields hot water to use in under floor heating or FCU heating.
- Weather dependent Heating Operation - In this mode, heating setpoint is automatically determined by pre-defined temperature profile. For more detail, please refer description on Function Code 24 and 25.

Selecting Target Temperature

You can set the proper temperature each mode.



1 Press Power Button to turn on the product.



2 Press SET TEMP Button to select each operation mode.



SET TEMP : Room Temperature



SET TEMP : Leaving Water Temperature



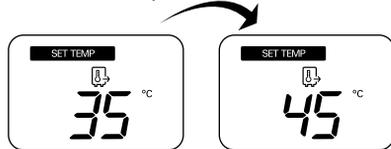
SET TEMP : Sanitary Water Tank Temperature



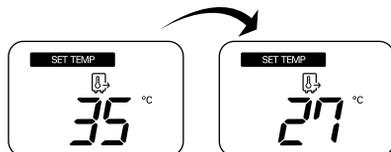
<Room Temperature and Sanitary Water Tank Temperature mode could be selected when Remote Air Sensor and Sanitary Water Tank Kit are installed.>

3 Adjust desired temperature by pressing Change Temperature buttons on each mode.

Ex1) Setting Temperature as 45°C on Leaving Water Temperature.



Ex2) Setting Temperature as 27°C on Leaving Water Temperature.



*** Note**

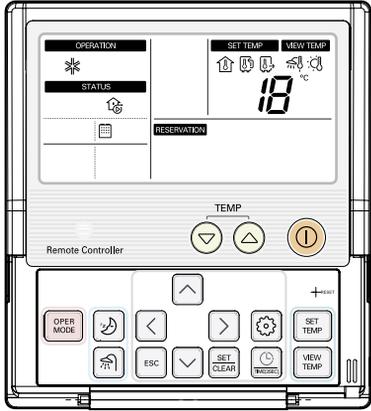
: Decrease 1°C or 2°F per one time pressing

: Increase 1°C or 2°F per one time pressing

- We can change the temperature range of each mode on installation setting mode. Please refer Function Code 11 to 15.
- Room Temperature setting is available when Remote Room Air Sensor (sold separately) is installed. Please refer Function Code 03.

Cooling Mode

In this mode, cooling operation is activated to achieve the temperature set point.



1 Press Power Button to turn on the product.



2 Press Mode Selection Button to select Cooling operation mode.

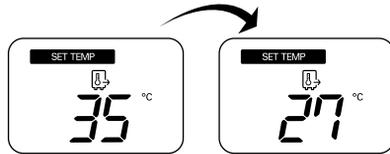


❄️ : Cooling operation icon

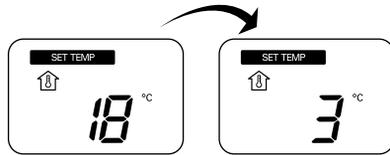
Please refer to the manual of product.

3 Adjust desired temperature by pressing Change Temperature buttons on each mode.

Ex1) Setting Temperature as 27°C on Leaving Water Temperature



Ex1) Setting Temperature as 3°C on Room Temperature.



*** Note**

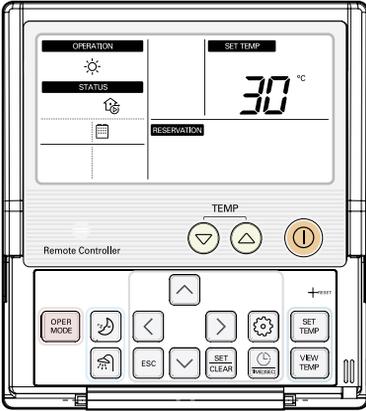
⏴ : Decrease 1°C or 2°F per one time pressing

⏵ : Increase 1°C or 2°F per one time pressing

We can change the temperature range of each mode on installation setting mode.
Please refer function code from 11 to 15.

Heating Mode

In this mode, heating operation is activated to achieve the temperature set point.



1 Press Power Button to turn on the product.



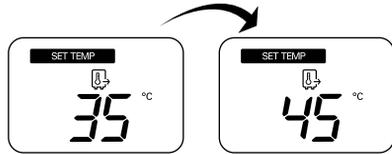
2 Press Mode Selection Button to select Heating operation mode.

 : Heating operation icon

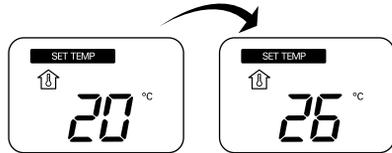


3 Adjust desired temperature by pressing Change Temperature buttons.

Ex) Setting Temperature as 45°C on Leaving Water Temperature.

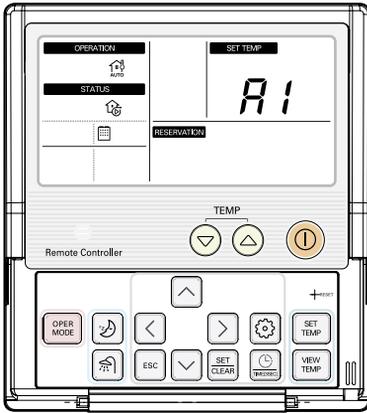


Ex) Setting Temperature as 26°C on Room Temperature.



Weather-dependent Operation

In this mode, setting temperature is adjusted automatically depend on outside temperature.
(ONLY applied to Heating mode.)



- 1** Press Power Button to turn on the product.



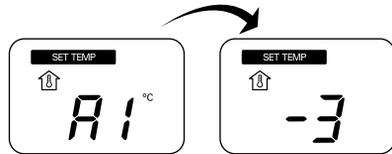
- 2** Press Mode Selection Button to select External Control operation mode.



: Weather Dependent operation icon

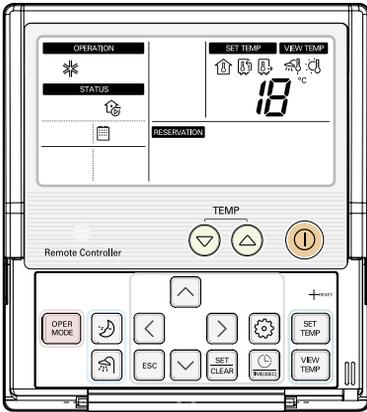


- 3** Adjust the desired temperature level by pressing Change Temperature buttons.



Ex) Decreasing temperature profile by 3°C
(based on room air temperature)
<Temperature adjust step (unit : °C)>
-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5

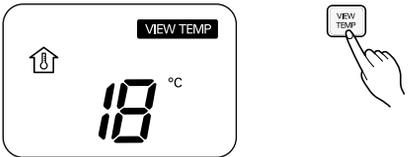
View Temperature



1 Press repeatedly View Temperature Button to select each Temperature.

-  **VIEW TEMP** : View Room Temperature
-  **VIEW TEMP** : View Inlet Temperature
-  **VIEW TEMP** : View Outlet Temperature
-  **VIEW TEMP** : View Sanitary Water Temperature
-  **VIEW TEMP** : View Solar Power Temperature

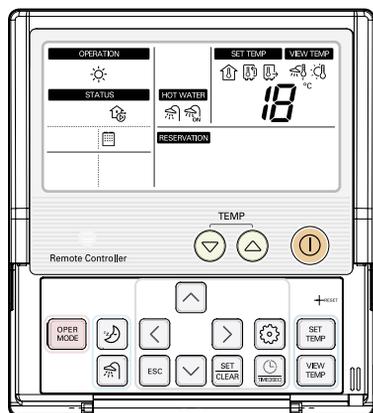
2 Whenever press View Temperature button, the room temperature will be displayed during 5seconds.



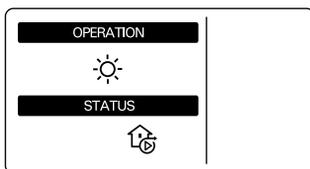
(unit:°C)

Temperature	Temperature Range	Displayed as
Air	below 11	Lo
	11 ~ 39	actual temperature
	above 39	Hi
Water	below 0	Lo
	0 ~ 92	actual temperature
	above 92	Hi

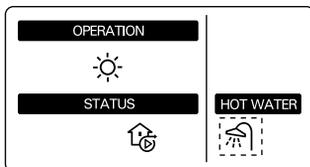
Sanitary Water Heating Operation



1 Press repeatedly View Temperature Button to select each Temperature.

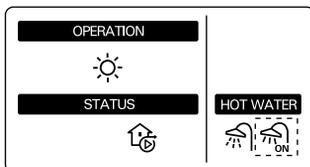


<Sanitary Water Heating Disable>



<Sanitary Water Heating enable>

2 Sanitary water heating operation is operating only on enable condition.
During operation, segment will be on.



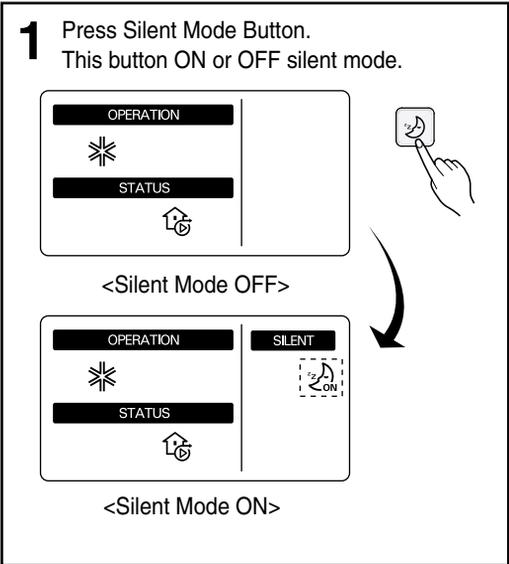
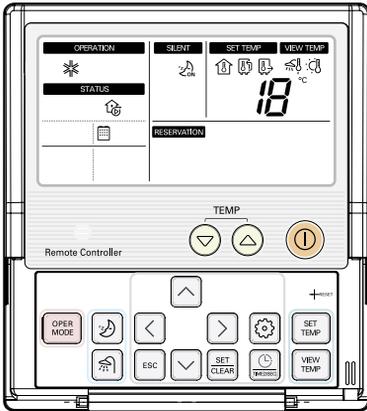
<Sanitary Water Heating ON>

<Note>

- This function is not used when the sanitary water tank is not installed.
- If you want to know more information, refer function code [15, 26~29] on installation information section

Silent Mode Operation

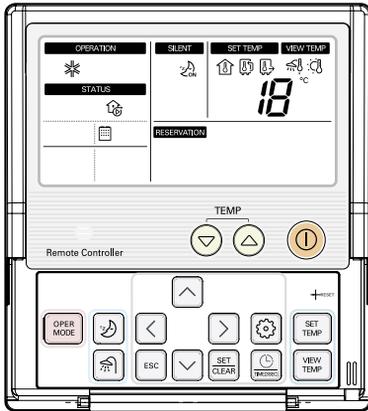
Silent mode operation is that the outdoor unit works at reduced capacity so that the noise produced by the outdoor unit drops.



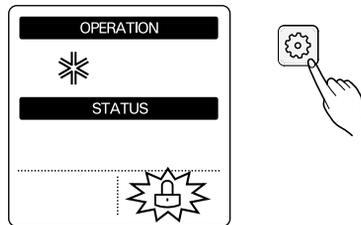
! This implies that the indoor heating and cooling capacity will also drop. Beware of this when a certain level of heating or cooling is required indoors.

Child Lock

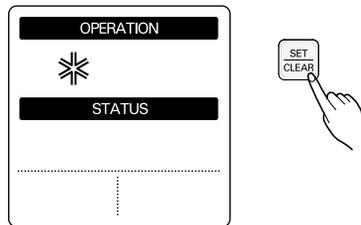
This function is to prevent children or other people from using controller.



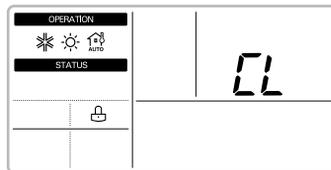
- 1 Press Function Setting Button to enter user setting mode.
(The segment will be flashed)



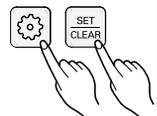
- 2 Press set / clear button to finish the selection.
The segment will be disappear.



- 3 During Child Lock,  icon and 'CL' will be displayed during 3 seconds whenever entering any kind of buttons except for view temperature button and setting/clear button .



- 4 To release this setting, pressing function Setting button until  icon flash and then enter setting/clear button.



Error code display

When the error is occurred on indoor unit, the error code will be displayed on control panel.

Slight trouble

A problem is found inside the indoor unit. In most case, this trouble is concerned with sensor problems. The outdoor unit is operating under emergency mode operation condition which is configured by DIP switch No. 4 of the indoor unit PCB.



<Display>

Heavy trouble

a problem is found inside the outdoor unit. As the outdoor unit has problem, the emergency mode operation is performed by electric heater located in the indoor unit.



<Display>

Critical error

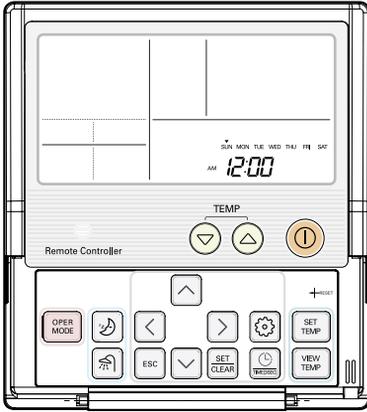
On critical error, the product will be unconditional stop.
At this time, 'CH' and error code No. keep display by turns.



<Display>

Setting Current Time

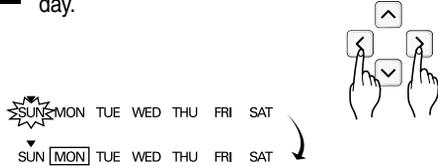
You can set current time.



- 1** Keep pressing programming button for 3 seconds to enter Setting current time mode.
Ex) Changing Current Time as 'Monday / PM 10:20'.



- 2** Press left, right button to adjust the current day.



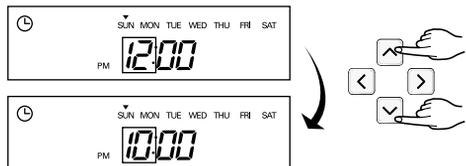
- 3** Press down button to move to AM/ PM part and adjust it. (The 'AM/ PM segment will be flashed)



- 4** Press right button to move to 'Hour' part. (the 'Hour' segment will be flashed)

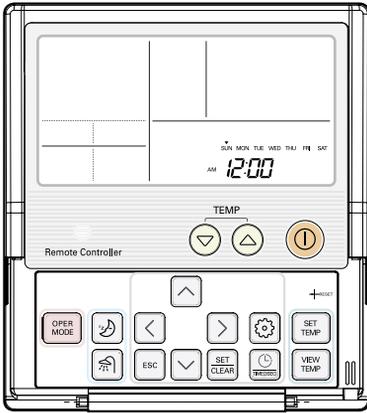


- 5** Press up, down button to adjust the Hour.

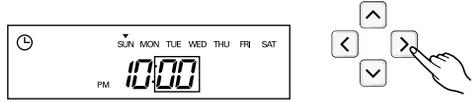


<Note>

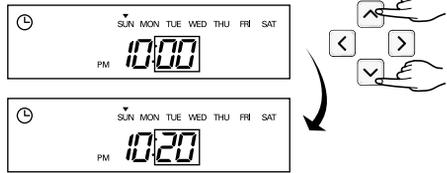
The current time have set as 12:00 initially.



6 Press right button to move to 'Minute' part.
(the 'Minute' segment will be flashed)



7 Press up, down button to adjust the Minutes.



8 If you finish the setting, press set / clear button .

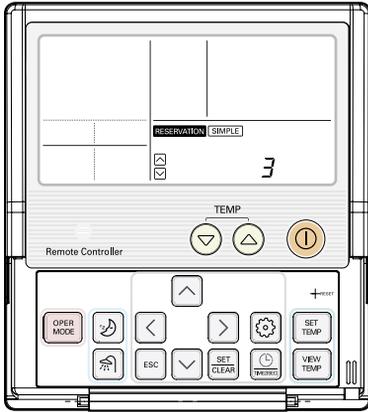


9 Press exit button to exit or system will automatically release without any input after 25 seconds.



Programming : Setting Simple Reservation

You can easily turn-on reservation.

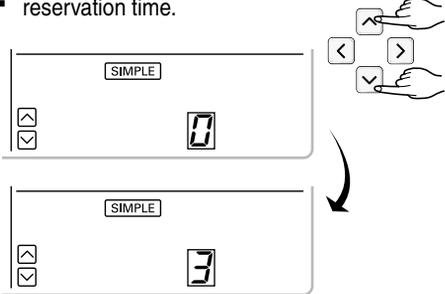


- 1 Press programming button to enter the Programming mode. (the segment flashing)



Ex) Setting Simple Reservation time as '3' hours.

- 2 Press up, down button to adjust the reservation time.



- 3 If you finish the setting, press setting/cancel button to complete programming.

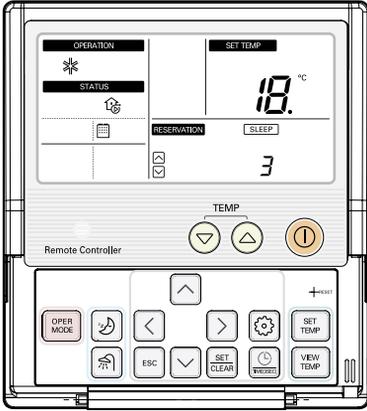


- 4 Press exit button to exit or system will automatically release without any input after 25 seconds.



Programming : Setting Sleep Reservation

You can easily turn-off(sleep) reservation.

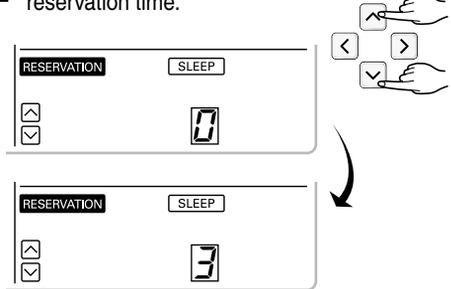


1 Press programming button to enter the Programming mode. Repeat pressing button to select [sleep reservation]. (the segment flashing)

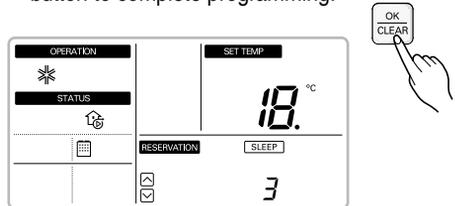


Ex) Setting Simple Reservation time as '3' hours.

2 Press up, down button to adjust the reservation time.



3 If you finish the setting, press setting/cancel button to complete programming.

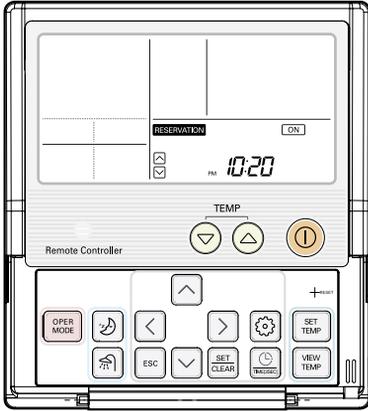


4 Press exit button to exit or system will automatically release without any input after 25 seconds.



Programming : Setting ON Reservation

This function is able to turn-on after a setting time.

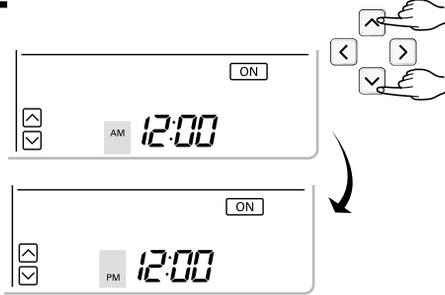


- 1 Press programming button to enter the Programming mode. Repeat pressing button to select [on reservation]. (the segment flashing)



Ex) Setting On Reservation time as PM 10:20.

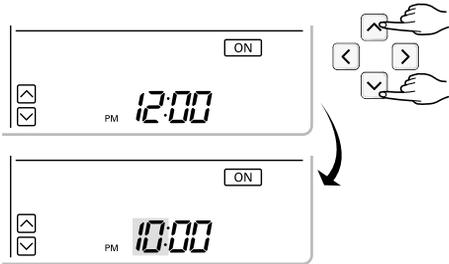
- 2 Press up, down button to adjust AM / PM.

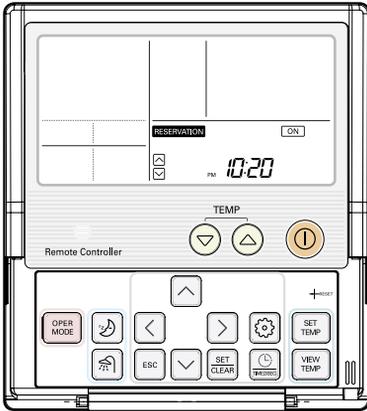


- 3 Press right button to move to 'Hour' part. (the 'Hour' segment will be flashed)



- 4 Press up, down button to adjust the Hour.



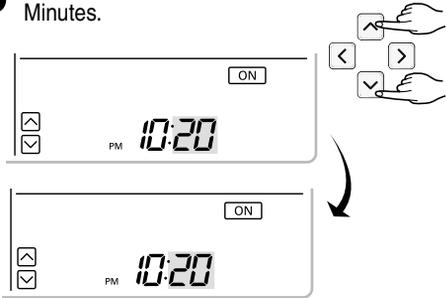


5 Press right button to move to 'Minute' part. (the 'Minute' segment will be flashed)



Ex) Setting On Reservation time as PM 10:20.

6 Press up, down button to adjust the Minutes.



7 If you finish the setting, press setting/cancel button to complete programming.

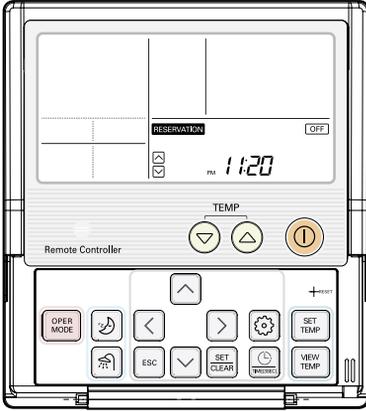


8 Press exit button to exit or system will automatically release without any input after 25 seconds.



Programming : Setting OFF Reservation

This function is able to turn-off after a setting time.

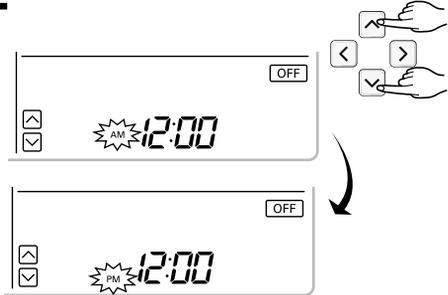


- 1 Press programming button to enter the Programming mode. Repeat pressing button to select [off reservation]. (the segment flashing)



Ex) Setting Off Reservation time as PM 11:20.

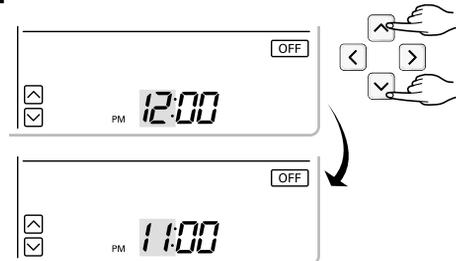
- 2 Press up, down button to adjust AM / PM.

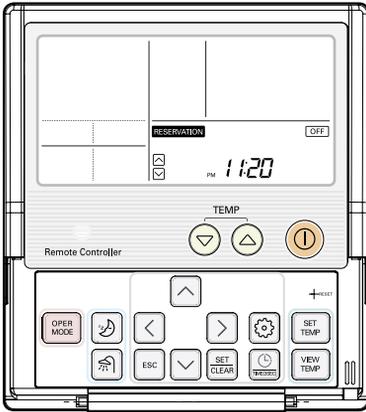


- 3 Press right button to move to 'Hour' part. (the 'Hour' segment will be flashed)



- 4 Press up, down button to adjust the Hour.

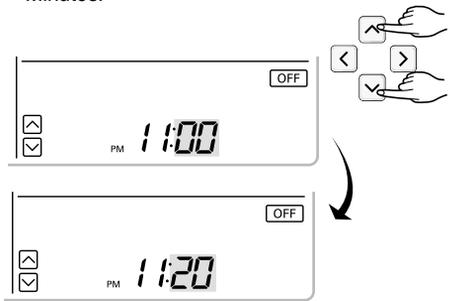




5 Press right button to move to 'Minute' part. (the 'Minute' segment will be flashed)



6 Press up, down button to adjust the Minutes.



7 If you finish the setting, press setting/cancel button to complete programming.

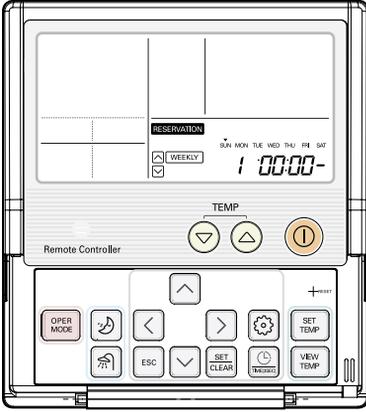


8 Press exit button to exit or system will automatically release without any input after 25 seconds.



Programming : Weekly Reservation

The weekly reservation is active after setting current time.



- 1 Press programming button to enter the Programming mode. Repeat pressing button to select [Weekly reservation]. (The segment will be flashed)



Ex) Setting one action as below.

- Day : TUE
- ON Time : 11:30 AM
- OFF Time : 12:30 PM

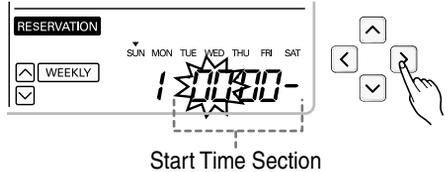
- 2 Press left, right button to adjust the current day.

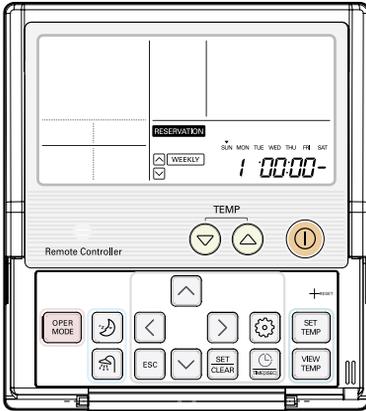


- 3 Press up, down button to adjust the action number.

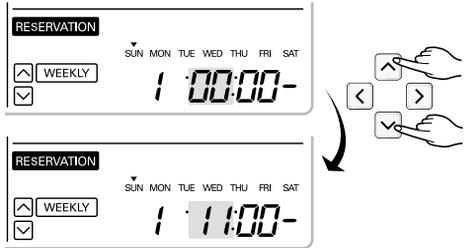


- 4 Press right button to move to 'Hour' Part on ON Time section. (The 'Hour' segment will be flashed)





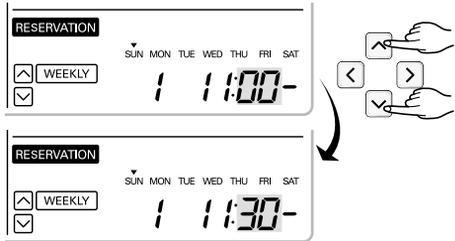
5 Press up, down button to adjust the Hour on Start Time section.



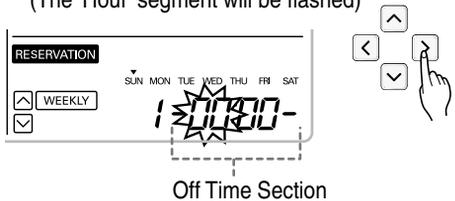
6 Press right button to move to 'Minute' Part on Start time section.
(The 'Minute' segment will be flashed)

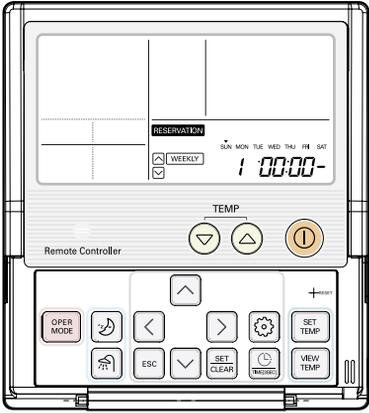


7 Press up, down button to adjust the Minute on Start Time section.

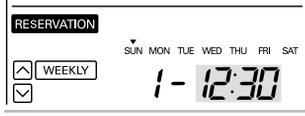


8 Press right button to move to 'Hour' Part on OFF Time section.
(The 'Hour' segment will be flashed)





9 Please refer the process from No.5 to No.7 for setting OFF Time. It is same method.



10 If you finish the setting, press setting/cancel button to complete programming.



The under bar segment will be created, when it finished.

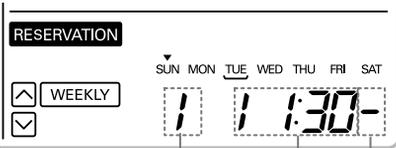
11 Press exit button to exit or system will automatically release without any input after 25 seconds.



<Note>

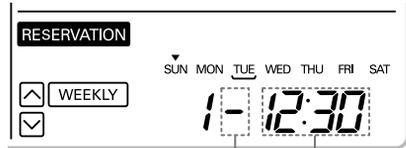
Description of weekly reservation

<Start Time Section>



Action ←
Start Time ←
From ←

<Off Time Section>

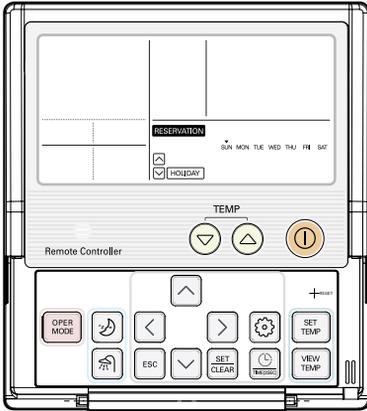


To ←
Off Time ←

* Two actions per weekday can be programmed, in total 14 actions

Programming : Holiday Reservation

This function is to automatically stop the machine working on some days.

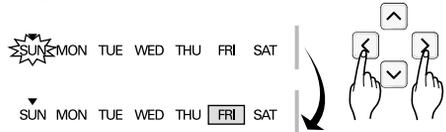


1 Press programming button to enter the Programming mode. Repeat pressing button to select [Holiday reservation]. (The segment will be flashed)

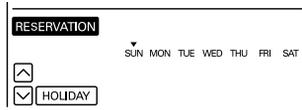


Ex) Setting holiday on Friday.

2 Press left, right button to adjust the current day.



3 When you press set / clear button after finishing the selection, the day selected will be disappear.



4 Press exit button to exit or system will automatically release without any input after 25 seconds.



Using Thermostat

Room thermostat can be used for easy and convenience control. To utilize thermostat more efficiently and correctly, this chapter presents information about using thermostat.

⚠ CAUTION

1. NEVER USE 230V AC Thermostat and 24V AC Thermostat at the same time. If used together, it causes short-circuit and yields power cut-off by circuit breaker.
2. Some electro-mechanical type thermostat has internal delay time to protect compressor. In that case, mode change can takes time more than user's expectation. Please read thermostat manual carefully if the product does not response quickly.
3. Setting temperature range by thermostat can be different with that of the product. The heating or cooling set temperature should be chosen within the setting temperature range of the product.

Supported Thermostat Specification

THERMAV supports following thermostats.

Type	Power	Operating Mode	Supported
Mechanical (1)	230 V AC	Heating Only (3)	Yes
		Heating / Cooling (4)	Yes
	24 V AC	Heating Only (3)	Yes
		Heating / Cooling (4)	Yes
Electrical (2)	230 V AC	Heating Only (3)	Yes
		Heating / Cooling (4)	Yes
	24 V AC	Heating Only (3)	Yes
		Heating / Cooling (4)	Yes

- (1) : There is no electric circuit inside the thermostat and electric power supply to the thermostat is not required.
- (2) : Electric circuit such as display, LED, buzzer, etc is included in the thermostat and electric power supply is required.
- (3) : Thermostat generates 'Heating ON or Heating OFF' signal according to user's heating target temperature.
- (4) : Thermostat generates both 'Heating ON or Heating OFF' and 'Cooling ON or Cooling OFF' signal according to user's heating and cooling target temperature.

Installing and Wiring Thermostat

Please refer 'Conditions if Accessories are Installed' of Chapter 4 and 'Thermostat' of Chapter 7 of **THERMAV** Installation Manual.

How to use Thermostat

To find how to turn on and off, how to set target temperature, how to change operating mode, etc, please refer thermostat operating manual provided by thermostat manufacturer.

Operating Thermostat with Control Panel

• **Following features are permitted when thermostat is installed :**

-  SET TEMP button
-  VIEW TEMP button
-   Temperature adjust button (*)
-  Sanitary water heating Enable / Disable
-  Silent operation On / Off

(*) : Adjusted temperature is only used to control electric heater on / off condition.

The product does not turn on / off according to the setting temperature at the control panel. It turns on / off according to the thermostat signal.

• **Following features are NOT permitted when thermostat is installed :**

-  Operating mode (cooling/ heating/ weather-dependent) selection
-  Time scheduling
-  Operation On / Off

How to use Thermostat

• Definition of terms

- Trouble : a problem which can stop system operation, and can be resumed temporarily under limited operation without certificated professional's assist.
- Error : problem which can stop system operation, and can be resumed ONLY after certificated professional's check.
- Emergency mode : temporary heating operation while system met Trouble.

• Objective of introducing 'Trouble'

- Not like airconditioning product, Air-to-Water heat pump is generally operation in whole winter season without any system stopping.
- If system found some problem, which is not critical to system operating for yielding heating energy, the system can temporarily continue in emergency mode operation with end user's decision.

• Classified Trouble

- Trouble is classified two levels according to the seriousness of the problem : Slight Trouble and Heavy trouble
- Slight Trouble : a problem is found inside the indoor unit. In most case, this trouble is concerned with sensor problems. The outdoor unit is operating under emergency mode operation condition which is configured by DIP switch No. 4 of the indoor unit PCB.
- Heavy trouble : a problem is found inside the outdoor unit. As the outdoor unit has problem, the emergency mode operation is performed by electric heater located in the indoor unit.
- Option Trouble : a problem is found for option operation such as water tank heating. In this trouble, the troubled option is assumed as if it is not installed at the system.

• Emergency operation level

- When system met trouble, it stops operation and wait for user's decision : Calling service center or starting emergency operation.
- To start emergency operation, user simply push ON / OFF button once more.
- Two different levels are prepared for emergency operation : High temperature cycle and low temperature cycle.
- In emergency operation mode, user can not adjust target temperature.

	DIP Switch	Target Leaving Water Temperature	Target Room Air Temperature	Target Sanitary Water Temperature
High temperature cycle	OFF	55°C	30 °C	70 °C
Low temperature cycle	ON	30 °C	25 °C	70 °C

• **Following features are permitted in emergency operation :**

-  Operation On/Off
-  VIEW TEMP button(*)
-   Temperature adjust button (*)
-  Sanitary water heating Enable / Disable

(*) : Temperature measured by failed sensor is displayed as ' - - '.

(*) : Adjusted temperature is only used to control electric heater on / off condition.

The product does not turn on / off according to the setting temperature at the control panel. It turns on / off according to the thermostat signal.

• **Following features are NOT permitted in emergency operation :**

-  Operating mode (cooling/ heating/ weather-dependent) selection
-  Time scheduling
-  SET TEMP button
-  Silent operation On / Off

• **Duplicated trouble : Option trouble with Slight or Heavy trouble**

- If option trouble is occurred with slight (or heavy) trouble at the same time, the system puts higher priority to slight (or heavy) trouble and operates as if slight (or heavy) trouble is occurred.
- Therefore, sometimes sanitary water heating can be impossible in emergency operation mode.
When sanitary water is not warming up while emergency operation, please check if sanitary water sensor and related wiring are all Ok.

• **Emergency operation is not automatically restarted after main electricity power is reset.**

- In normal condition, the product operating information is restored and automatically restarted after main electricity power is reset.
- But in emergency operation, automatic re-start is prohibited to protect the product.
- Therefore, user must restart the product after power reset when emergency operation has been running.

Maintenance and Service

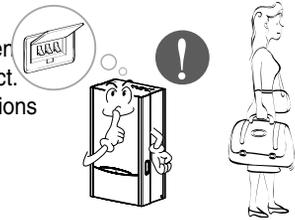
Maintenance activities

In order to ensure optimal availability of the unit, a number of checks and inspections on the unit and the field wiring have to be carried out at regular intervals, preferably yearly. This maintenance should be carried out by your local LG technician.

When the unit is not going....

⚠ CAUTION

- If the product is not used for long time, we strongly recommend **NOT TO SWITCH OFF THE POWER SUPPLY** to the product.
- If power is not supplied, some special product-protecting actions (such as water pump anti-locking) will not be performed.



Call the service immediately in the following situations

1. Anything abnormal such as burning smell, loud noise etc. happen. Stop the unit and turn the breaker off. Never try to repair by yourself or restart the system in such cases.
2. Main power cord is too hot or damaged.
3. Error code is generated by self diagnosis.
4. Water leaks from indoor unit.
5. Any switch, breaker (safety, earth) or fuse fails to work properly

**User must carry routine checkup & cleaning to avoid unit's poor performance.
In case of special situation, the job must be carried out by the only service person.**

Troubleshooting Tips! Save time and money!

Check the following points before requesting repairs or service.... If the malfunction persist, please contact

Case	Explanation	See page
AWHP does not operate.	<ul style="list-style-type: none"> • Have you made a mistake in timer operation? 	49
The room has a peculiar odor.	<ul style="list-style-type: none"> • Has the fuse blown or has the circuit breaker been tripped? • Check that this is not a damp smell exuded by the walls, carpet, furniture or cloth items in the room. 	-
AWHP does not operate for about 3 minutes when restart.	<ul style="list-style-type: none"> • This is the protector of the mechanism. 	-
Does not cool or heat effectively.	<ul style="list-style-type: none"> • Wait about three minutes and operation will begin. • The room may have been very hot when the AWHP was first turned on. Allow time for it to cool down. 	40, 41, 42
The unit operation is noisy.	<ul style="list-style-type: none"> • Has the setting temperature been set incorrectly? • Refrigerant flow sound <ul style="list-style-type: none"> - While the system is being started or stopping, sound from the refrigerant flow may be heard. • Sound for the indoor unit heat exchanger <ul style="list-style-type: none"> - During the cooling operation, a sound may be heard from the indoor unit heat exchanger due to water freezing or melting. • Water noise <ul style="list-style-type: none"> - During starting or stopping of the unit, noise can appear in water piping 	-
Steam is raised in outdoor unit.	<ul style="list-style-type: none"> • During defrost <ul style="list-style-type: none"> - Noise can appear in unit due to defrosting of water. 	-

Control panel display is faint, or no display at all.

Disposal Requirements

Dismantling of the unit, treatment of the refrigerant, of oil and of other parts must be done in accordance with relevant local and national legislation.



Your product is marked with this symbol. This means that electrical and electronic products shall not be mixed with unsorted household waste.

Do not try to dismantle the system yourself: the dismantling of the system, treatment of the refrigerant, of oil and other parts must be done by a qualified installer in accordance with relevant local and national legislation.

Units must be treated at a specialized treatment facility for re-use, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. Please contact the installer or local authority for more information.

