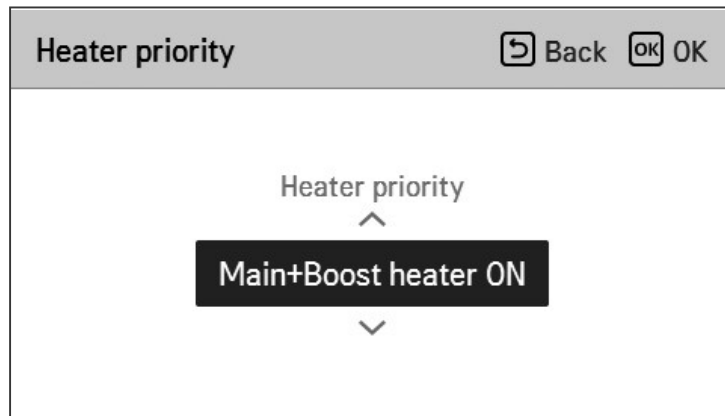
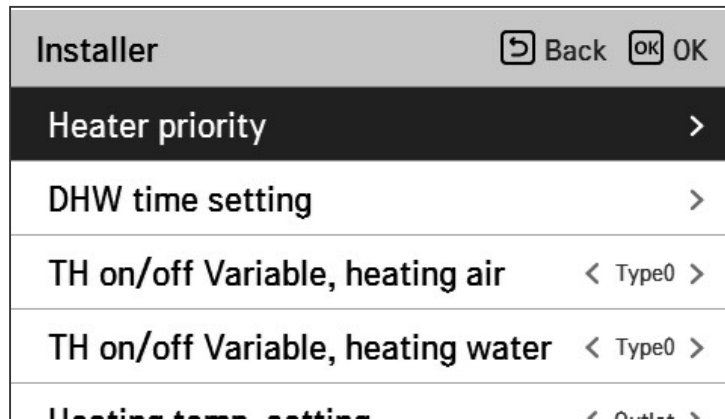


Heater priority

- Heater priority : determine electric heater and DHW tank heater on and off.
- Example : If Heater priority is set as 'Main+Boost heater ON', then electric heater and DHW tank heater are on and off according to control logic. If Heater priority is set as 'Boost heater only ON', then electric heater is never turned on and only DHW tank heater is on and off according to control logic.
- In the installer setting list, heater priority category, and press [OK] button to move to the detail screen.

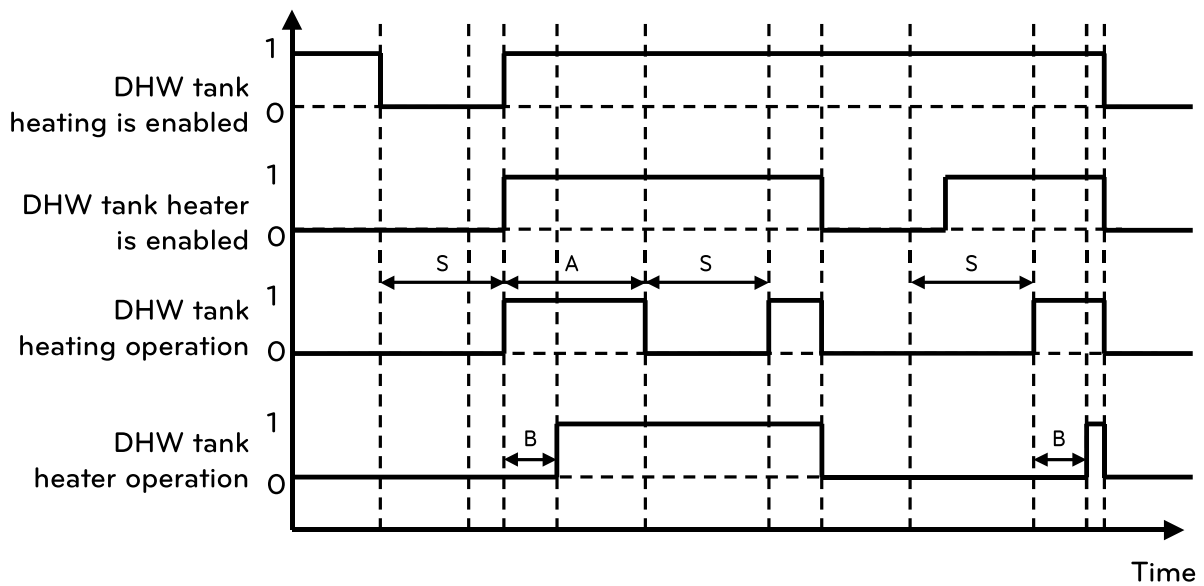


| Value | |
|----------------------|----------------------|
| Boost heater only ON | Main+Boost heater ON |

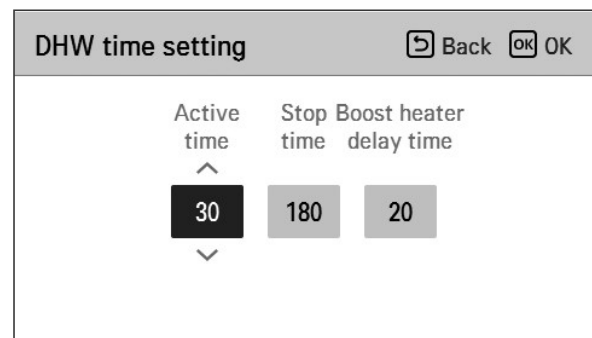
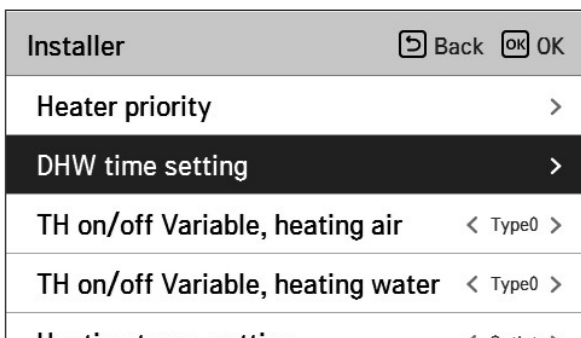
DHW time setting

Determine following time duration : operation time of DHW tank heating, stop time of DHW tank heating, and delay time of DHW tank heater operating.

- Active time : This time duration defines how long time DHW tank heating can be continued.
- Stop time : This time duration defines how long time DHW tank heating can be stopped. It is also regarded as time gap between DHW tank heating cycle.
- Boost heater delay time : This time duration defines how long time DHW tank heater will not be turned on in DHW heating operation.
- Example of timing chart :



- * 1=active / 0=not active
- * A = Active time
- * S = Stop time
- * B = Boost heater delay time



TH on/off Variable, heating air

It is a function to adjust the heating air temperature Thermal On / Off temperature according to the field environment in preparation for heating or heating claim.

- You can set the following setting values using [<,>(left/right)] button.

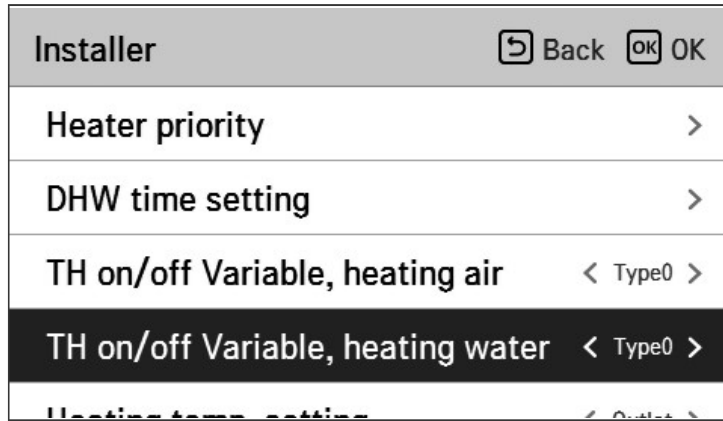
| | | |
|--|------|---------|
| Installer | Back | OK |
| Heater priority | | > |
| DHW time setting | | > |
| TH on/off Variable, heating air | < | Type0 > |
| TH on/off Variable, heating water | < | Type0 > |
| Heating temp. setting | < | 0.1 > |

| Value | Description | |
|-------|-------------|--------|
| | TH On | TH Off |
| Type0 | -0.5 °C | 1.5 °C |
| Type1 | -1 °C | 2 °C |
| Type2 | -2 °C | 3 °C |
| Type3 | -3 °C | 4 °C |

TH on/off Variable, heating water

It is a function to adjust the heating water temperature Thermal On / Off temperature according to the field environment in preparation for heating or heating claim.

- You can set the following setting values using [<,>(left/right)] button.

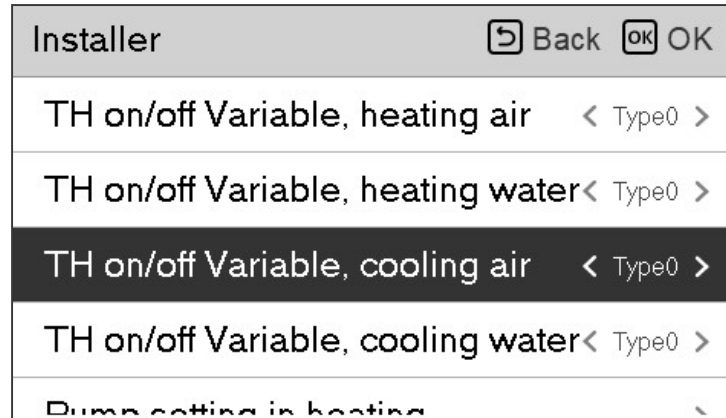


| Value | Description | |
|-------|-------------|--------|
| | TH On | TH Off |
| Type0 | -2 °C | 2 °C |
| Type1 | -3 °C | 3 °C |
| Type2 | -4 °C | 4 °C |
| Type3 | -1 °C | 1 °C |

TH on/off Variable, cooling air

It is a function to adjust the cooling air temperature Thermal On / Off temperature according to the field environment in preparation for cooling or cooling claim.

- You can set the following setting values using [\leftarrow , \rightarrow](left/right) button.

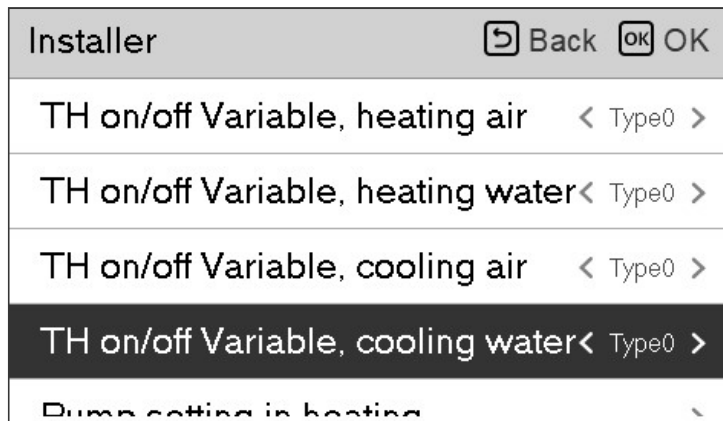


| Value | Description | |
|-------|-------------|---------|
| | TH On | TH Off |
| Type0 | 0.5 °C | -0.5 °C |
| Type1 | 1 °C | -1 °C |
| Type2 | 2 °C | -2 °C |
| Type3 | 3 °C | -3 °C |

TH on/off Variable, cooling water

It is a function to adjust the cooling water temperature Thermal On / Off temperature according to the field environment in preparation for cooling or cooling claim.

- You can set the following setting values using [<,>(left/right)] button.



| Value | Description | |
|-------|-------------|---------|
| | TH On | TH Off |
| Type0 | 0.5 °C | -0.5 °C |
| Type1 | 1 °C | -1 °C |
| Type2 | 2 °C | -2 °C |
| Type3 | 3 °C | -3 °C |

Heating temp. setting

- At the leaving water control in heating mode, the control reference water temperature position setting
- If the air / leaving water temperature selection setting is set to leaving water temperature
- Change setting values using [<,>(left/right)] button

| | | |
|-----------------------------------|----------|----|
| Installer | Back | OK |
| Heater priority | | / |
| DHW time setting | | > |
| TH on/off Variable, heating air | < Type0 | > |
| TH on/off Variable, heating water | < Type0 | > |
| Heating temp. setting | < Outlet | > |

| Value | |
|------------------|-------|
| Outlet (Default) | Inlet |

Cooling temp. setting

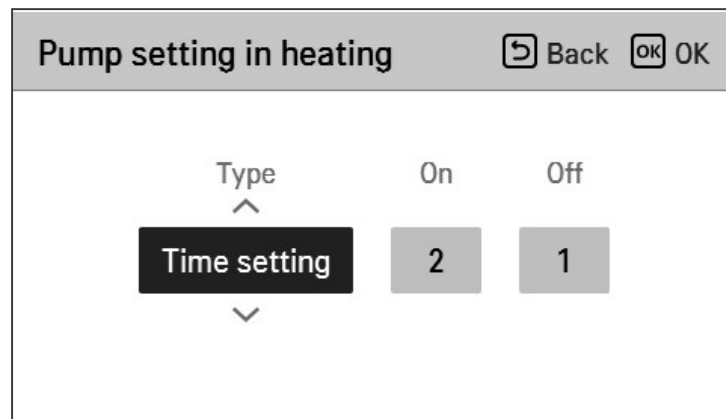
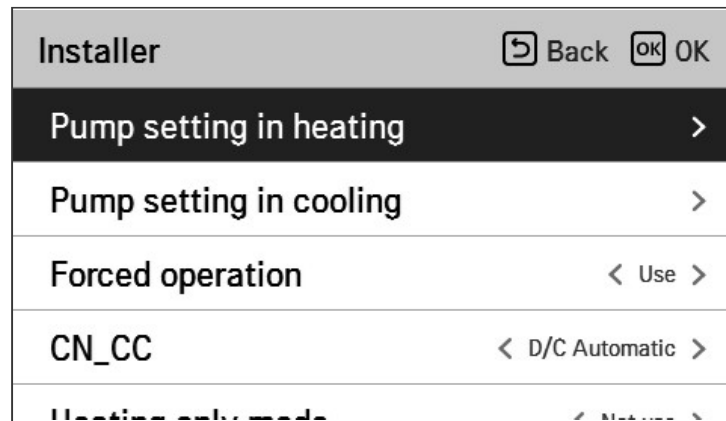
- At the leaving water control in cooling mode, the control reference water temperature position setting
- If the air / leaving water temperature selection setting is set to leaving water temperature
- Change setting values using [<,>(left/right)] button

| | | |
|-----------------------------------|------------|----|
| Installer | Back | OK |
| Driv time setting | | / |
| TH on/off Variable, heating air | < Type0 > | |
| TH on/off Variable, heating water | < Type0 > | |
| Heating temp. setting | < Outlet > | |
| Cooling temp. setting | < Outlet > | |

| Value | |
|------------------|-------|
| Outlet (Default) | Inlet |

Pump setting in heating

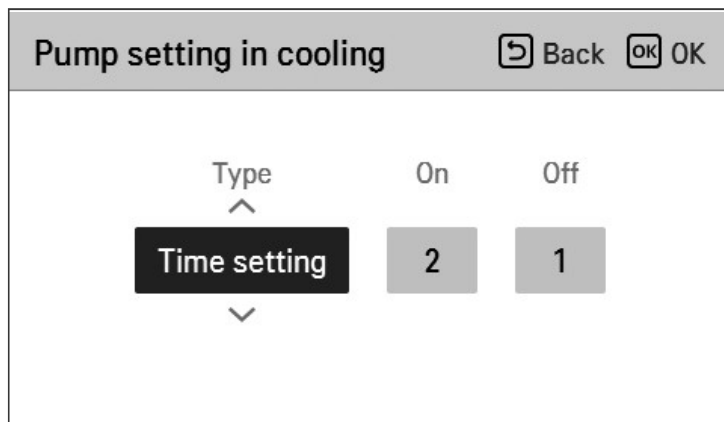
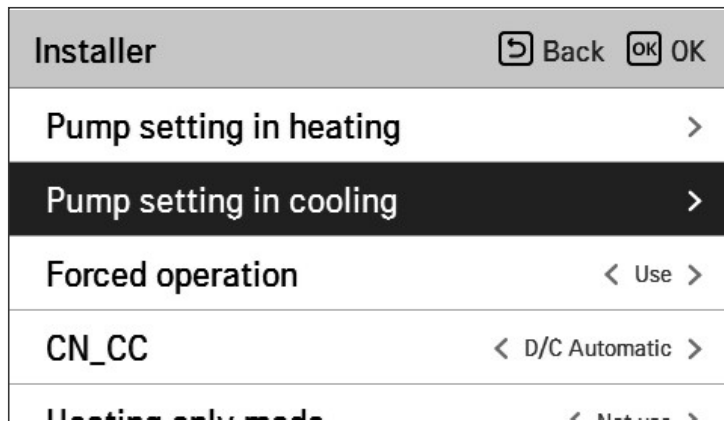
- It is a function to help the water pump's mechanical life by putting the water pump's rest time
- Installer setting function to set water pump operation / delay time option in heating mode
- In the installer setting list, select Pump setting in heating category, and press [OK] button to move to the detail screen.



| Type | Time setting | Operation continue |
|------|-----------------------|--------------------|
| On | 1 Minute ~ 60 minutes | - |
| Off | 1 Minute ~ 60 minutes | - |

Pump setting. in cooling

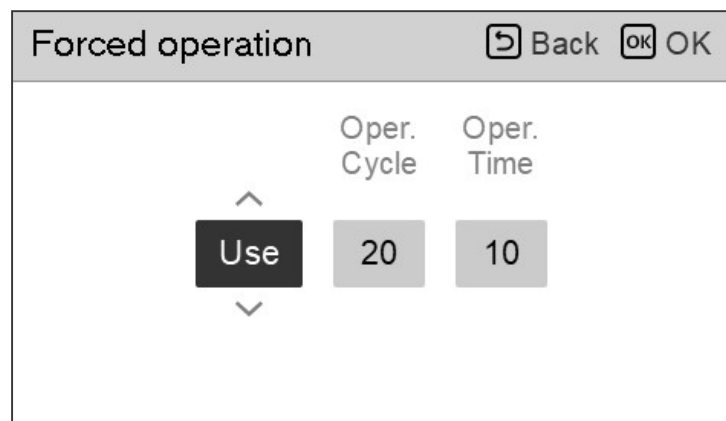
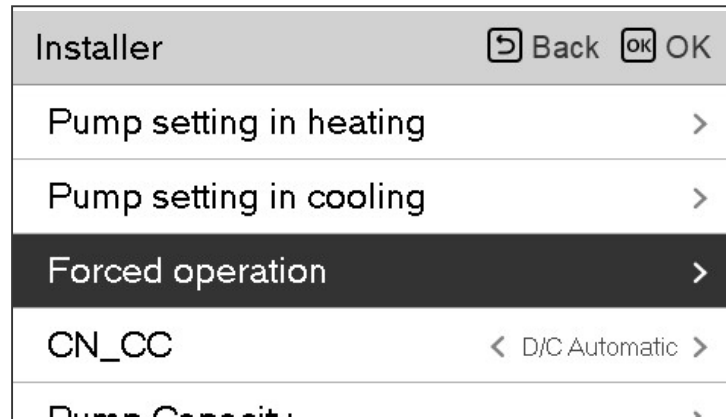
- It is a function to help the water pump's mechanical life by putting the water pump's rest time
- installer setting function to set water pump operation / delay time option in cooling mode
- In the installer setting list, select Pump setting in cooling category, and press [OK] button to move to the detail screen.



| Type | Time setting | Operation continue |
|------|-----------------------|--------------------|
| On | 1 Minute ~ 60 minutes | - |
| Off | 1 Minute ~ 60 minutes | - |

Forced operation

- If the product is not used for a long time, the product will be forced to operate to prevent pump failure and PHEX freezing
- Water pump off After 20 consecutive hours, disable / enable the logic that drives the water pump by itself
- In the installer setting list, select Forced operation category, and press [OK] button to move to the detail screen

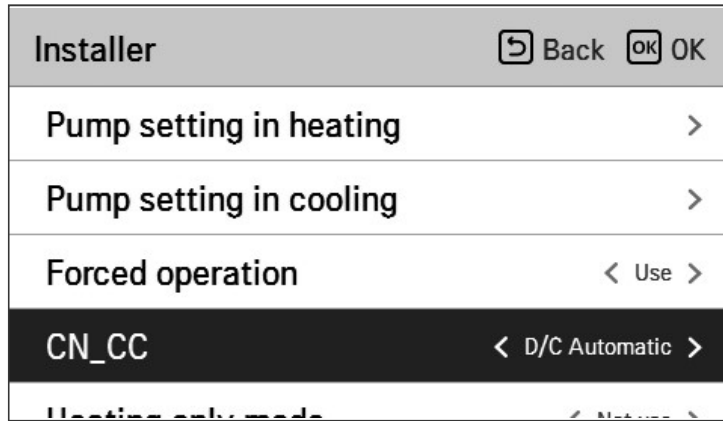


| Type | Use | Not use |
|-------------|-------------------------|---------|
| Oper. Cycle | 20 minutes ~ 60 minutes | - |
| Oper. Time | 1 Minute ~ 60 minutes | - |

CN_CC

It is the function to set the usage of the unit's CN_CC port.

- Change setting values using [<,>(left/right)] button



| Value | Description |
|-------------------|--|
| D/C Automatic | When power is applied to the product, the unit when the contact point is on in Dry Contact installed state recognizes Dry Contact installation |
| D/C Not Installed | Do not use (install) Dry Contact |
| D/C Installed | Use (install) Dry Contact |

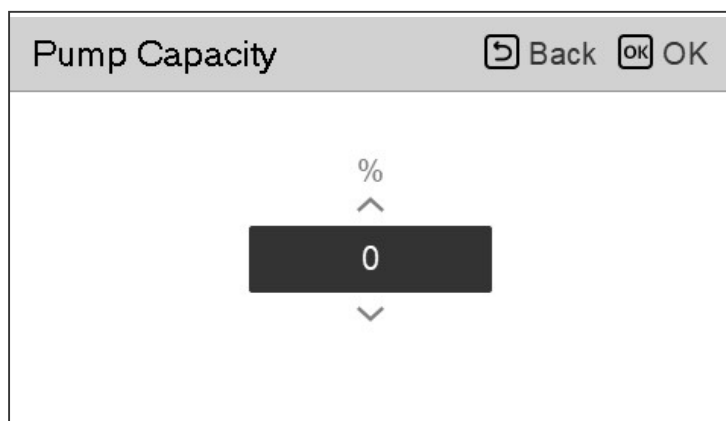
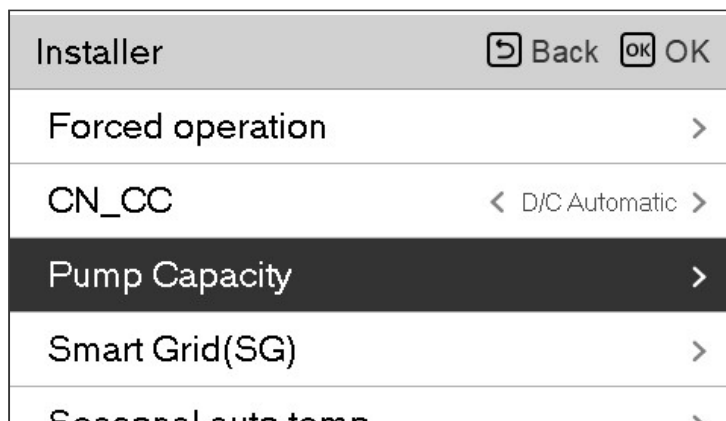
! NOTE

CN_CC is the device connected to the unit to recognize and control the external contact point.

Pump Capacity

It is a function to enable installer to control Pump capacity application model.

- In the installer setting list, select Pump Capacity category, and press [OK] button to move to the detail screen.

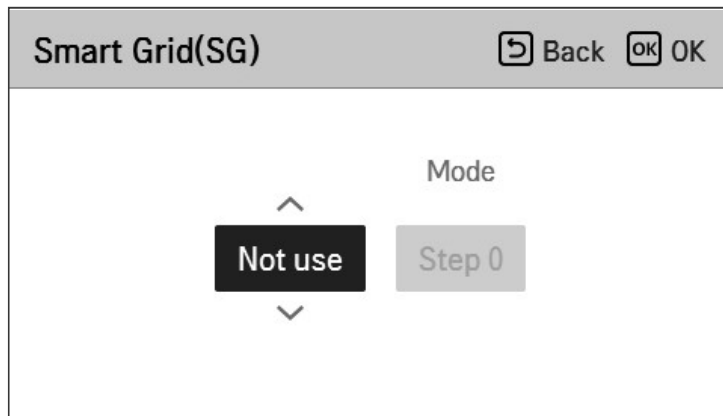
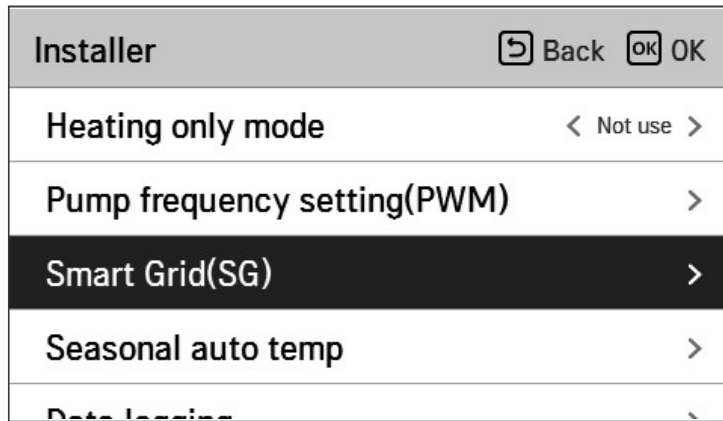


| Value | Description |
|---------------|------------------------------|
| 100 (Default) | 10~100 : % Change unit: 5 |

Smart Grid(SG)

It is the function to enable / disable the SG Ready function and to set the reference value at SG2 step.

- In the installer setting list, select Smart Grid(SG) category, and press [OK] button to move to the detail screen.

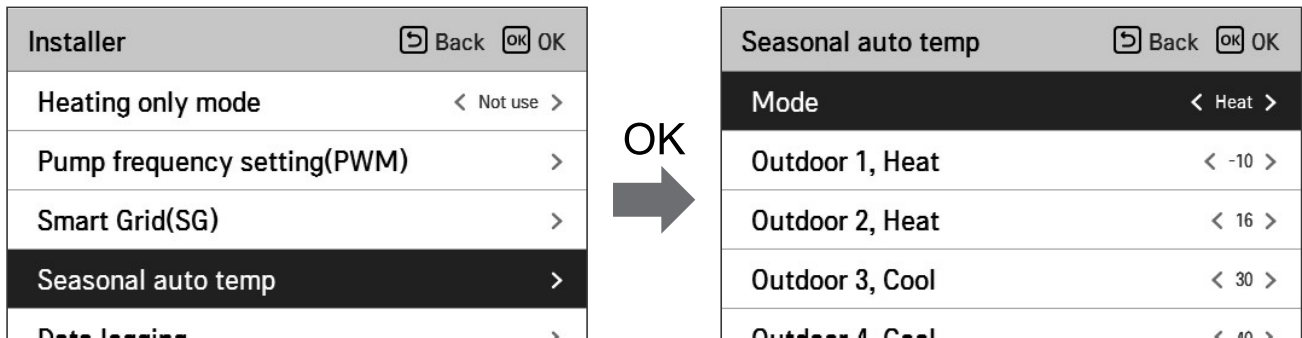


| Value | Mode |
|-------------------|--------|
| Not use (Default) | - |
| Use | Step 0 |
| | Step 1 |
| | Step 2 |

Seasonal auto temp

It is the function to set the operation reference value in Seasonal Auto mode.

- In the installer setting list, select Seasonal auto temp category, and press [OK] button to move to the detail screen.



| Function | Description | Range | Default | Boundary |
|----------------------|---|---|---------|----------------------------------|
| Outdoor1,Heat (Out1) | Heating lower ambient temp | -25~35 °C | -10 °C | Out1 ← Out2-1 |
| Outdoor2,Heat (Out2) | Heating higher ambient temp | | 16 °C | Out2 → Out1 +1 Out2 ← Out3 -5 |
| Outdoor3,Cool (Out3) | Cooling lower ambient temp | 10~46 °C | 30 °C | Out3 → Out2 +5 Out3 ← Out4 -1 |
| Tank setting 2 | Setting maintain temperature for operation | | 40 °C | Out4 → Out3 +1 |
| Water1,Heat (LW1) | Heating higher water temp | Use heater : LW STD : 15~65 °C EW STD : 15~55 °C Not use heater : LW STD : 20~65 °C EW STD : 20~55 °C | 35 °C | LW1 ← LW2 |
| DHW time setting | Determine follow time duration : operation time of domestic hot water tank heating, stop time of domestic hot water tank heating, and delay time of DHW tank heater operating | | 28 °C | LW1 ← LW2 |
| Water3,Cool (LW3) | Cooling higher water temp | Use FCU & 5 °C IDU : LW STD : 5~27 °C EW STD : 10~27 °C Use FCU & 6 °C IDU : LW STD : 6~27 °C EW STD : 11~27 °C Not use FCU : LW STD : 16~27 °C EW STD : 20~27 °C | 20 °C | LW3 ← LW4 |
| Water4,Cool (LW4) | Cooling lower water temp | | 16 °C | LW3 ← LW4 |

- Setting range: Celsius

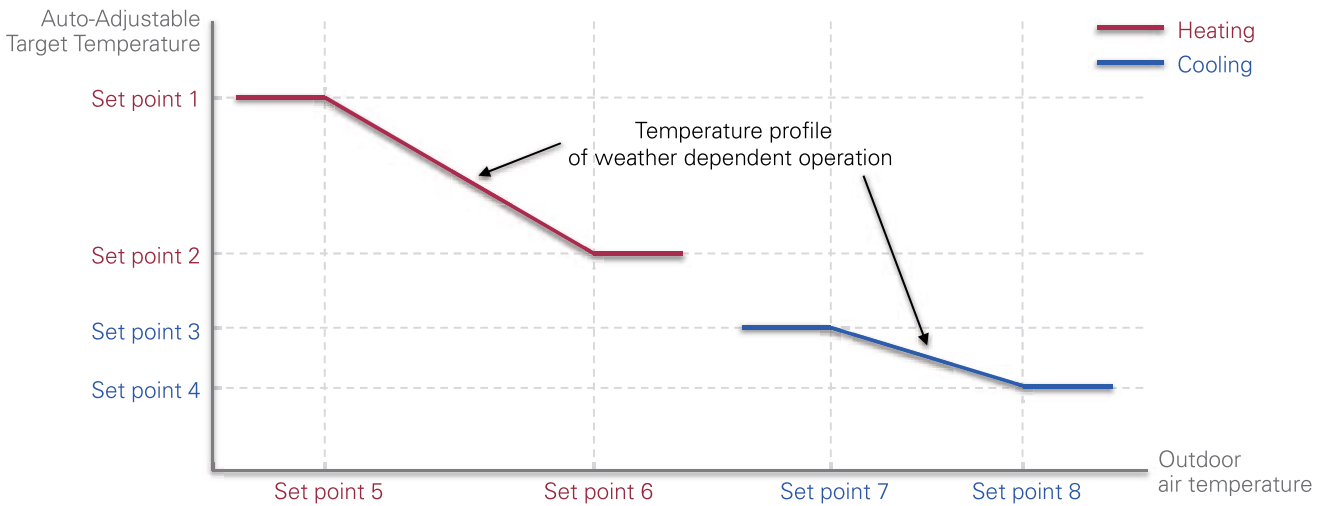
- Seasonal Auto Driving mode: Heating, Heating & Cooling, Air-conditioning

* If heating mode is selected, heating & cooling or cooling can not be selected.

- Depending on the air / outflow control selection value, the water / air related setting value is displayed on the screen.

In this mode, setting temperature will follow outdoor temperature automatically. This mode adds the cooling season function to the conventional weather dependent operation mode.

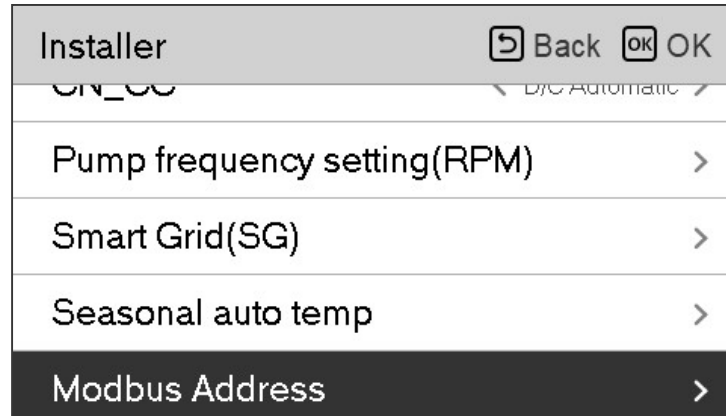
| | Auto-Adjustable Target Temp. | Room Air Temp.(°C) | Leaving Water Temp. | Outdoor Air Temp. | |
|---------|------------------------------|---------------------|---------------------|-------------------|-----------|
| Heating | Set point 1 | 30~20 | 57~39 | Set point 5 | -20 ~ -10 |
| | Set point 2 | 19~16 | 38~20 | Set point 6 | -5 ~ 5 |
| Cooling | Set point 3 | 30~24 | 25~17 | Set point 7 | 10 ~ 18 |
| | Set point 4 | 23~18 | 16~6 | Set point 8 | 22 ~ 30 |



Modbus Address

It is function to set the address of the Modbus device that is externally linked to the product. Modbus address setting function is available from indoor unit.

- In the installer setting list, select Modbus Address , and press [OK] button to move to the detail screen.



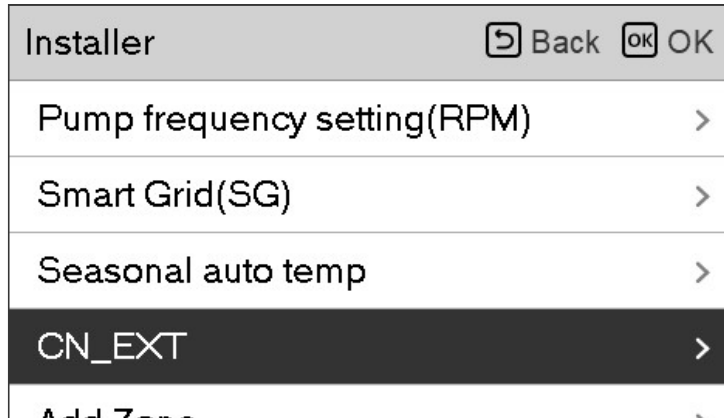
! NOTE

To use this function, switch No.1 of option switch 1 must be turned ON.

CN_EXT

It is a function to control external input and output according to DI type set by customer using CN-EXT Port.

- In the installer setting list, select CN-EXT Port category, and press [OK] button to move to the detail screen.

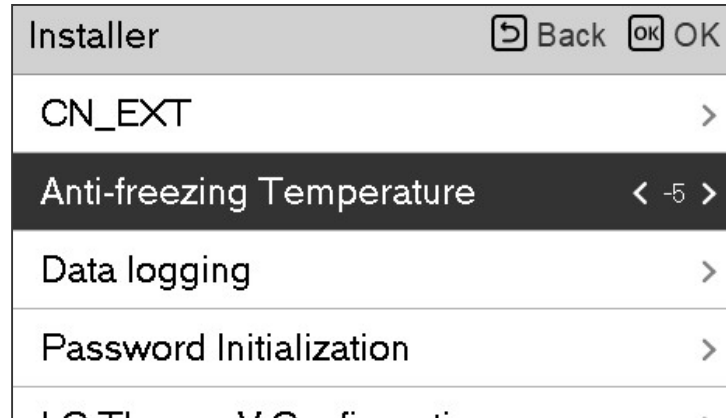


| Value | | | |
|---------|------------------|--------------------|-----------------------|
| Not use | Simple Operation | Simple Dry Contact | Single emergency stop |

Anti-freezing Temperature

Anti-freeze temperature setting is available in installer mode. It prevents frostbite from happening in the range of -25 to -5 degree celsius.

- Change setting values using [<, >(left/right)] button

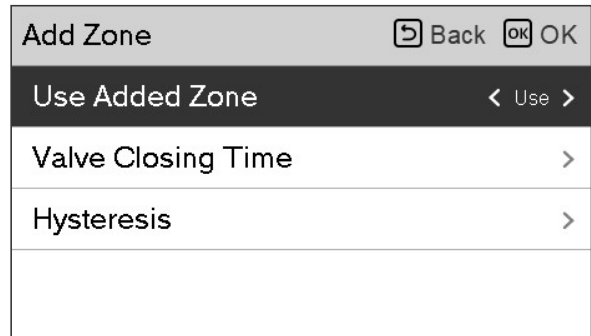
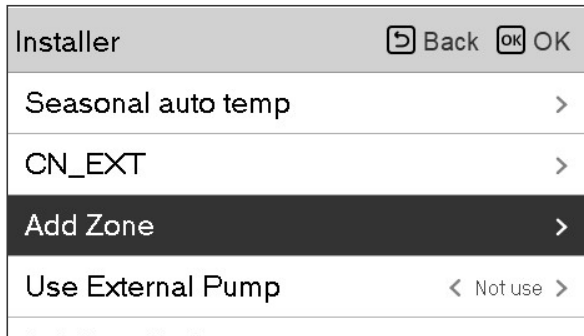


! NOTE

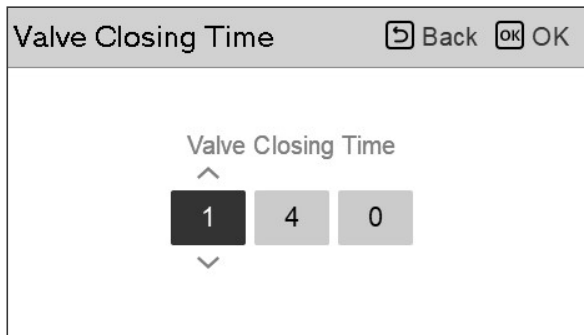
To use this function, the antifreeze short pin must be open and switch No.2 in Option SW 3 must be on.

Add Zone

Function to set whether or not to use a installed 2nd circuit function using mixing kit.



You can set valve closing time[seconds] and hysteresis temperature[°C] on screen by yourself.



Activating this function, It allows 2 zones(Room1, Room2) temperature to be controlled, separately.

- In case of heating, the temperature of Room1 can not be set higher than Room2 temperature.
- In case of cooling, the temperature of Room1 can not be set lower than Room2 temperature.

Setting range

- Add Zone (2nd Circuit function setting) : Use / Not Use
- Value Closing Time : 60 ~ 999 seconds (Default: 240)
- Hysteresis (Thermal On / Off) : 1 ~ 5 °C (Default: 2)

Use External Pump

This function can be set to control the external water pump.

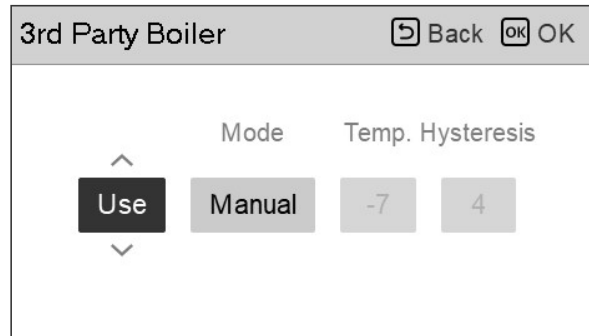
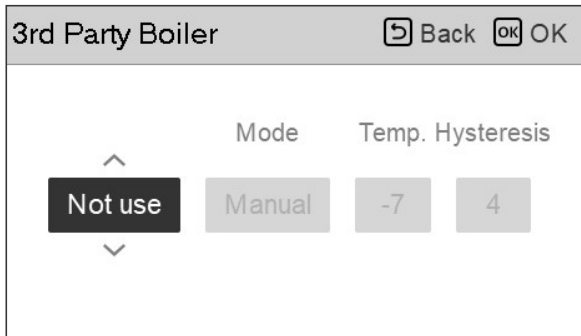
- In the installer setting list, select Use External Pump category, and press [OK] button to move to the detail screen.

| Installer | | Back | OK |
|---------------------|-----------|------|----|
| Add Zone | | > | |
| Use External Pump | < Not use | > | |
| 3rd Party Boiler | | > | |
| Meter Interface | | > | |
| Pump Driver/Overrun | | > | |

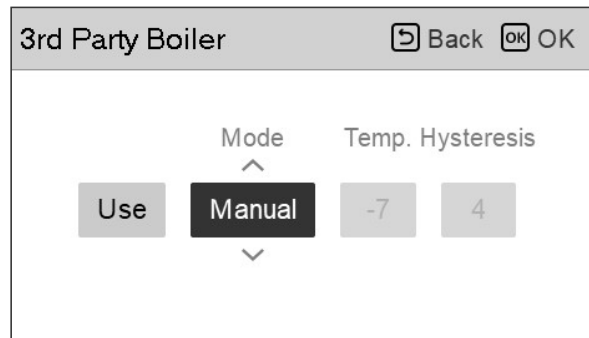
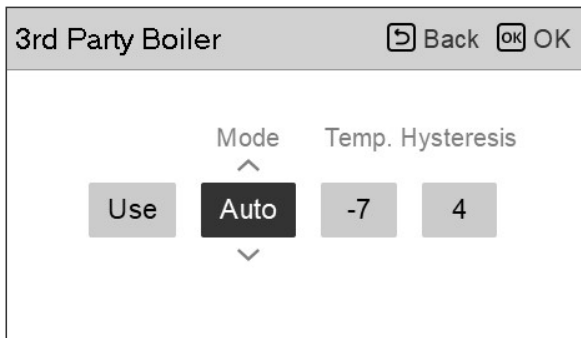
| Value | |
|---------|-----|
| Not use | Use |

3rd Party Boiler

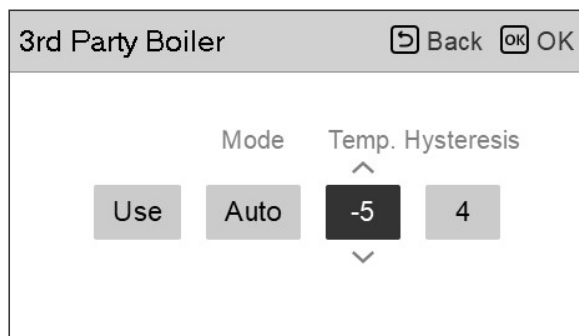
This function is to configure the 3rd party boiler to be controlled.



If the status of this function is "Use", you can choose control mode of boiler, Auto or Manual.



If the mode of this function is set to "Manual", you can set temperature of the boiler and hysteresis, respectively.



External boiler ON condition :

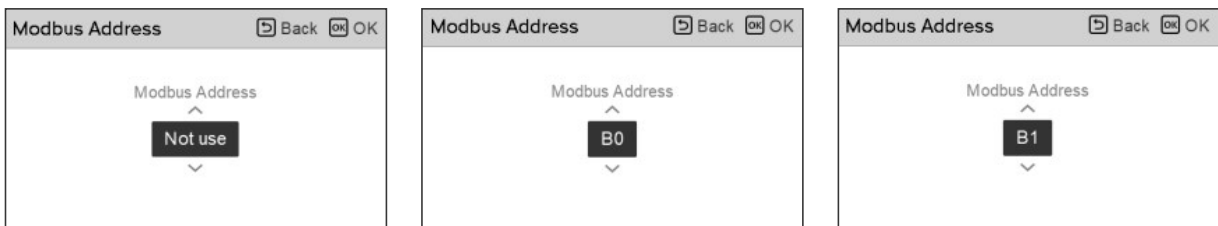
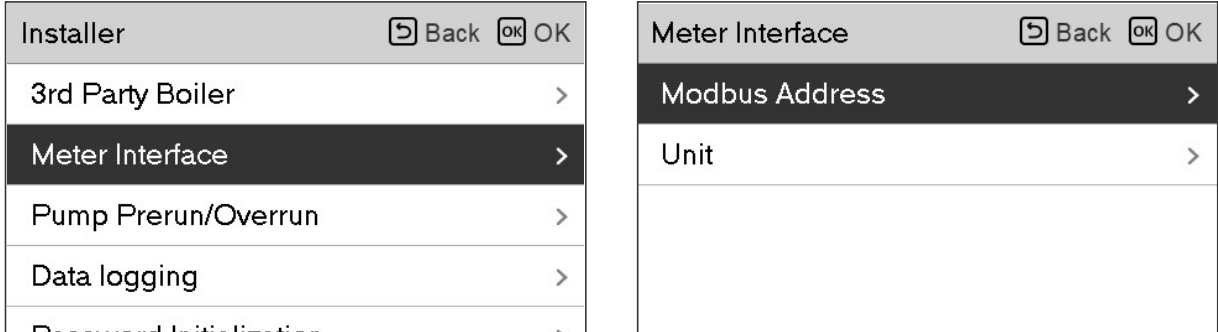
- If outdoor temperature \leq external boiler operation temperature value (installer setting), turn off the indoor unit and operate the external boiler.

External boiler OFF condition :

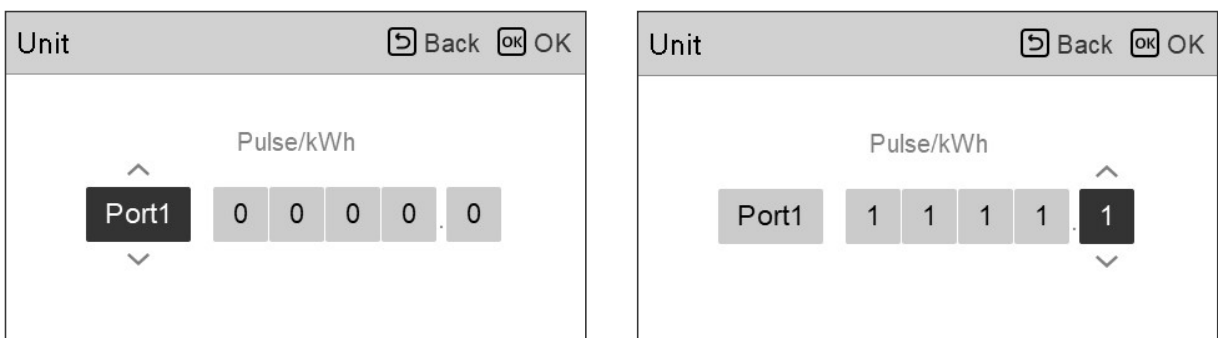
- If External air temperature \geq external boiler operation temperature value (installer setting) + Hysteresis (installer setting), turn off external boiler operation and operate indoor unit

Meter Interface

It is the function that can check the status of energy and power on screen. It collects and calculates power or calorie data to create data for energy monitoring and energy warning alarm pop-ups. This function can be activated in installer mode.



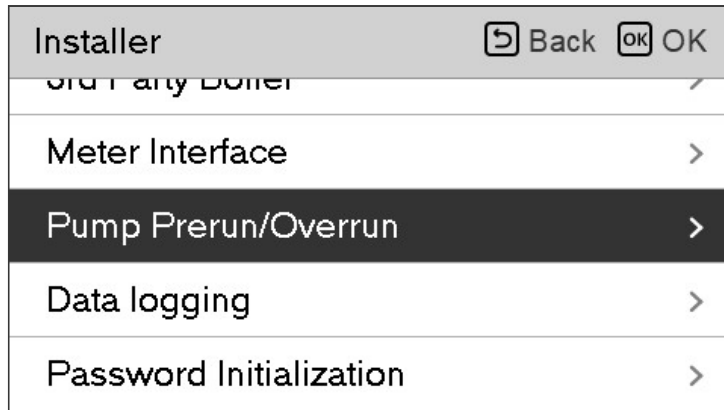
There are 2 options, modbus address and unit, in this function. Activating the modbus address option, you choose one address(B0 or B1) or don't use. Then, you set the port and specification in range of 0000.0~9999.9 [pulse/ kWh] as shown in the figure below.



Pump Prerun/Overrun

Pump Prerun operates to ensure sufficient flow before the compressor is operated. This is a function that allows heat exchange to work smoothly.

Pump Overrun is a function to prevent water pump failure and to help mechanical life. If the water pump has been off for 20 hours, Water pump will operate for the set time



| Value | Default | Setting Range |
|---------|---------|---------------|
| Prerun | 1 min | 1~10 min |
| Overrun | 10 min | 1~10 min |

Solar Thermal System

It is function to set operation reference value in Solar Thermal System.

In the installer setting list, select Solar thermal system category, and press [OK] button to move to the detail screen.

| Installer | | Back | OK |
|-----------------------------|---|------|----|
| IDU operation time | > | | |
| Solar Thermal System | > | | |
| Data logging | > | | |
| Password Initialization | > | | |
| LC Thermal Configuration | > | | |

| Solar Thermal System | | Back | OK |
|---------------------------------|---|------|----|
| Solar collector set temp | > | | |
| DHW set temp. | > | | |
| TH on/off Variable, solar | > | | |
| Boost Heater | > | | |
| Solar pump flush schedule | > | | |

| Solar collector set temp | | Back | OK |
|--------------------------|------|------|----|
| Min. | Max. | | |
| 10 | 95 | | |

| DHW set temp. | | Back | OK |
|---------------|--|------|----|
| Max. | | | |
| 80 | | | |

| TH on/off Variable, solar | | Back | OK |
|---------------------------|----------|------|----|
| Temp On | Temp Off | | |
| 8 | 2 | | |

| Boost Heater | | Back | OK |
|--------------|--|------|----|
| Boost Heater | | | |
| Enable | | | |

| Solar pump flush schedule | | Back | OK | |
|---------------------------|------------|--------------|----------|------------|
| Control | Start Hour | Start Minute | End Hour | End Minute |
| On | 06 | : 00 | 18 | : 00 |

| Solar pump flush setting | | Back | OK |
|--------------------------|------------|------|----|
| Oper. Cycle | Oper. Time | | |
| 60 | 1 | | |

| Solar pump test run | | Back | OK |
|---------------------|--|------|----|
| Solar pump test run | | | |
| Stop | | | |

NOTE

To use this function, switch No.2 of option switch 2 must be turned ON and No.3 of option switch 2 must be turned OFF.

Descriptions for each parameters are as following.

- Solar collector set temp
 - Min temp : It is the minimum solar collector temperature at which the solar thermal system can operate.
 - Max temp : It is the maximum solar collector temperature at which the solar thermal system can operate
- TH on/off Variable, solar
 - Temp on : It is the temperature difference between the current solar thermal temperature and DHW tank temperature at which the solar thermal system operates.
 - Temp off : It is the temperature difference between the current solar thermal temperature and DHW tank temperature at which the solar thermal system stops.
 - Example : If the current solar collector temperature is 80 °C and Temp on is set to 8 °C, the solar thermal system operates when the DHW tank temperature is less than 72 °C. In the same case, if Temp off is set to 2 °C, Solar Thermal System stops when DHW temperature is 78 °C.
- DHW Set Temp
 - Max : It is maximum temperature of DHW that can be reached by solar thermal system.
- Boost Heater
 - Enable : DHW tank heater can be used when operating the Solar Thermal system.
 - Disable : DHW tank heater cannot be used when operating the Solar Thermal system.
- Solar pump flush schedule
 - It is the function to circulate the solar water pump intermittently for solar collector temperature detection when the solar water pump does not operate for a long time. Turn on to use this function.
- Solar Pump flush setting
 - Oper.Cycle : When using the solar pump flush function, the solar water pump operates at the set time.
 - Oper.Time : When using the solar pump flush function, the solar water pump operates during the set time.

| Function | Value | Range | Default |
|---------------------------|--------------------------|------------------|---------|
| Solar collector set temp | Min | 5 °C ~ 50 °C | 10 °C |
| | Max | 60 °C~105 °C | 95 °C |
| DHW set temp | Max | 20 °C~90 °C | 80 °C |
| TH on/off Variable, solar | Temp On | 3 °C ~ 40 °C | 8 °C |
| | Temp Off | 1 °C ~ 20 °C | 2 °C |
| Boost Heater | Boost Heater | Enable/Disable | Enable |
| Solar pump flush schedule | On/OFF | On/Off | On |
| | Start Hour, Start Minute | 00:00 ~ 24:00 | 6:00 |
| | End Hour, End Minute | 00:00 ~ 24:00 | 18:00 |
| Solar pump test run | Pump test Run | Start/Stop | Stop |
| Solar pump flush setting | Oper.Cycle | 30 min ~ 120 min | 60 min |
| | Oper.Time | 1 min ~ 10 min | 1 min |

Data logging

It is the function to set the operation reference value in Seasonal Auto mode.

- In the installer setting list, select Data logging category, and press [OK] button to move to the detail screen.

| Installer | | Back | OK |
|-----------------------------|--|--------|----|
| Heating only mode | | NO USE | |
| Pump frequency setting(PWM) | | | > |
| Smart Grid(SG) | | | > |
| Seasonal auto temp | | | > |
| Data logging | | | > |



| Data logging | | | | | Back |
|--------------|-------|-------|---------|-----------|------|
| Date | Time | Oper. | Settemp | In/Out | |
| 1970.01.01 | 00:10 | Off | - | 24° / 25° | |
| 1970.01.01 | 00:09 | Off | - | 24° / 25° | |
| 1970.01.01 | 00:09 | Off | - | 24° / 25° | > |
| 1970.01.01 | 00:09 | Off | - | 24° / 25° | |
| 1970.01.01 | 00:09 | Off | - | 24° / 25° | |

! NOTE

Error history lookup range: 50

Error history information

Item: date, time, mode (including Off), set temperature, incoming temperature, outgoing temperature, room temperature, Hot water operation / stop, Hot water set temperature, Hot water temperature, Outdoor unit On / Off, Error code

Number of Display: Within 50

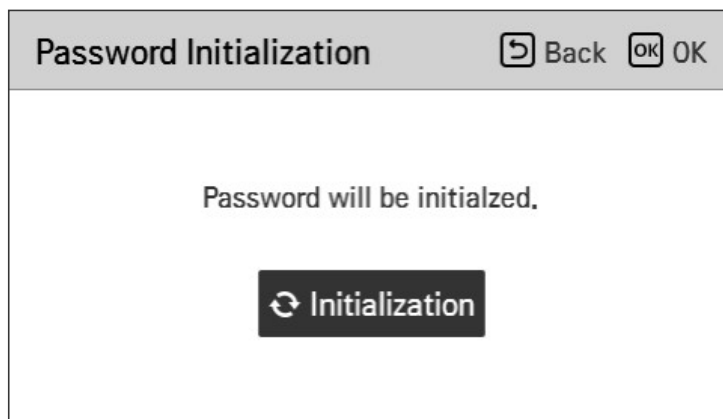
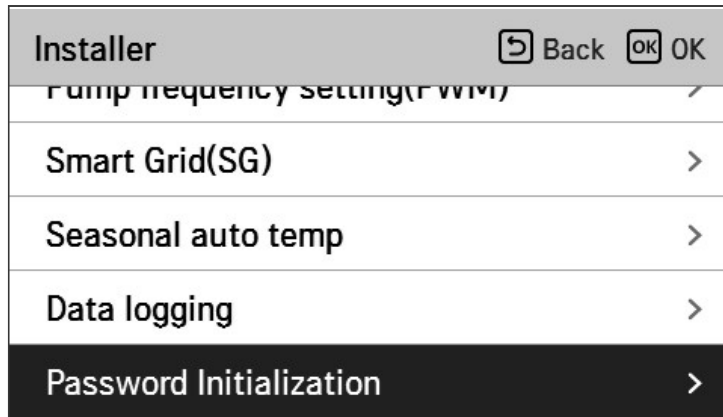
- Save criteria ∨

- ∨ Error occurred, released
- ON / OFF of outdoor unit operation

Password Initialization





It is the function to initialize (0000) when you forgot the password set in the remote controller.

- In the installer setting list, select the password initialization setting category, and press [OK] button to move to the detail screen.
- When you press "initialization" button, a popup screen appears, and when you press "check" button, password initialization starts, and the user password is changed to 0000.



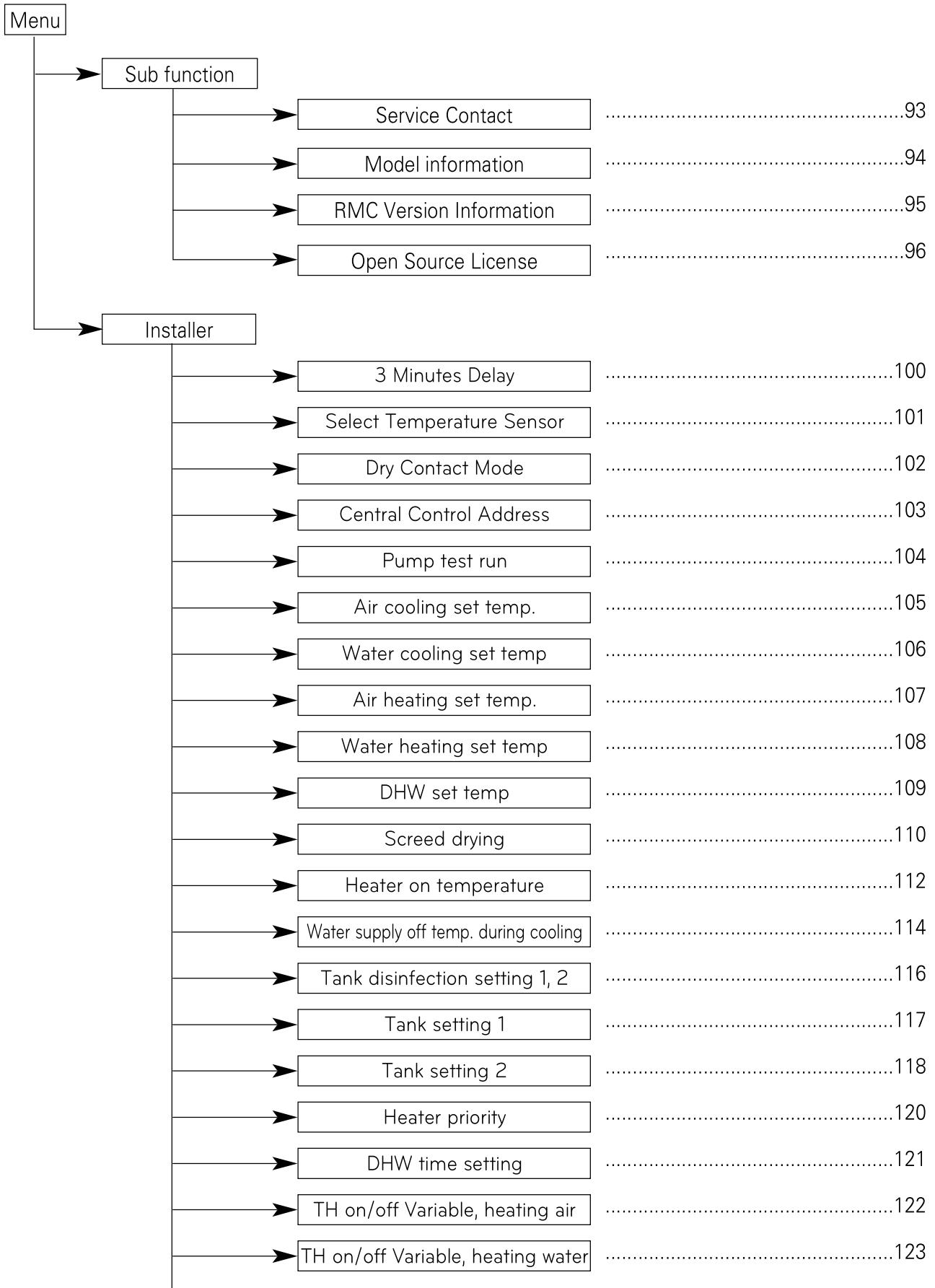
Power Supply Blockage (SG Ready)

The heat pump operated automatically by the power supply status signals from power supply companies. This function can respond to European countries' special tariff for heat pump using on a smart grid.

| <p style="text-align: center;">4 modes depending on power supply status</p> | Power Supply Status | Operating Mode | |
|---|---|---|--|
| |  | 0:0 [Normal Operation] | The heat pump works at maximum efficiency. |
| |  | 1:0 [Switch-off command, Utility lock] | Deactivates the heat pump to avoid peak load. The maximum blocking time depends on the system's thermal storage capacity, but amounts to at least 2 hours 3 times a day. (No frost protection) |
| |  | 0:1 [Switch-on recommendation] | The switch-on recommendation and set value storage tank temperature is increased, depending on the parameter "Mode SG" |
| |  | 1:1 [Switch-on command] | The command activates the compressor. Optionally, electrical booster heaters can be activated to utilize electricity surpluses |

Overview settings

Menu Structure



| | | | |
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| → | TH on/off Variable, cooling water | | 125 |
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