# Functions and Specification

## ACP 5

ACP 5 is a central controller that can manage individual or group of maximum of 256 units in one space.
ACP 5 can monitor or control the units installed in each room of a building from a place such as building management office or school administration office.

**[ACP 5 Functions]**

- Environment Setting Function using External Buttons
- Web Server Embedded Function
- Devices that can be interfaced

**[ACP 5 Components]**

- Components

**[Name of Each Part of ACP 5]**

- Name of Each Part

**[ACP 5 Hardware Specification]**

- Hardware Specification

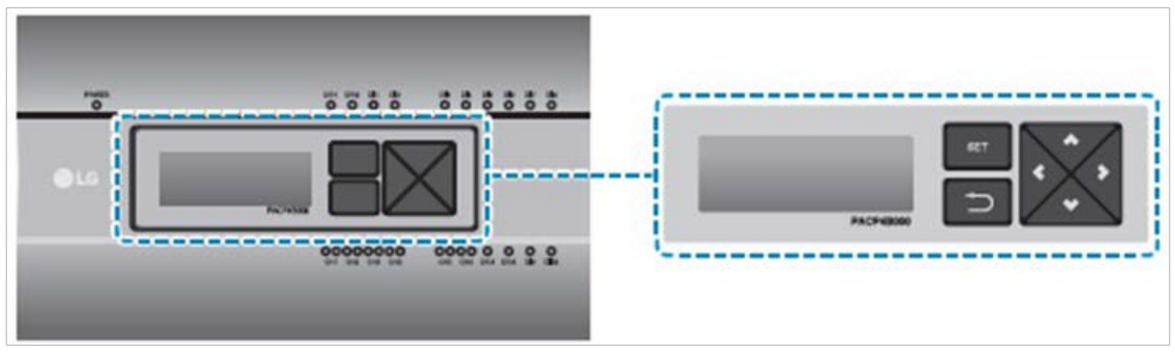
### WARNING

This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

## Environment Setting Function using External Buttons

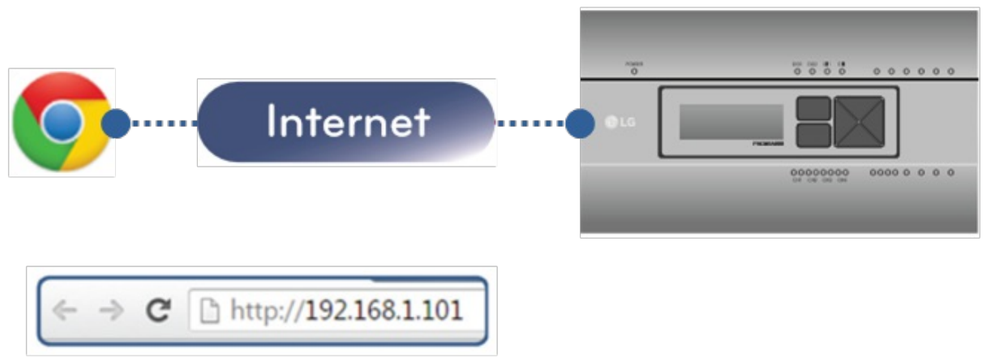
ACP 5 can set the following functions using the externally mounted buttons.

- Network Environment (IP Address, Netmask, Gateway) Setting
- SW Upgrade Function
- Data Backup Function
- Data Recovery Function
- RS-485 communication logging function
- ACP 5-screen display language setup
- Check the network connection function
- HTTPS port initialization function



## Web Server Embedded Function

Without installing a separate program, you can use web browser to input IP address of ACP 5 in the address window to access ACP 5 web server for device control and monitoring.




- Control of Max. of 256 air conditioner units
- Error and Operation Status Monitoring
- Peak/Demand Power Control
- System Setting Function

## Devices that can be interfaced

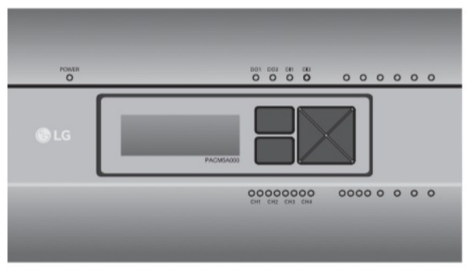
The devices of ACP 5 that can be interfaced are as follows.

| Device | ACP 5 |
|---|---|
| AC Ez(Touch) | o |
| Simple Central Controller | o |
| AC Smart 5 | o |
| AC Manager 5 | o |
| Air conditioner | o |
| ERV | o |
| Heating | o |
| AHU | o |
| Chiller | o |
| EXP. I/O | o |
| Air purifier | o |
| Demand Controller | o |

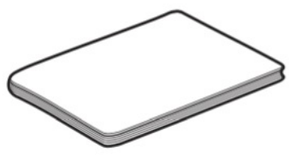
## Components

The components of the following figure are included in ACP 5 package box.

Open the package box, and check if all corresponding components are included.

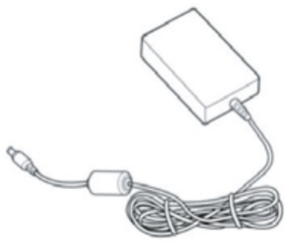


ACP 5

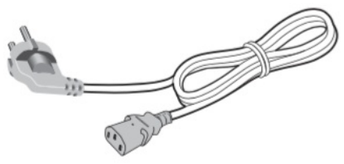


Manual

Screw



Power Supply Adaptor
Input: 100-240 V~ 50/60 Hz, 1.2 A
Output: 12 V⎓ 3.33 A, 40 W MAX



Power Cord
250 V~, 3 A

SD Card 8 GB

## Note

Components or options may differ from the actual product picture.

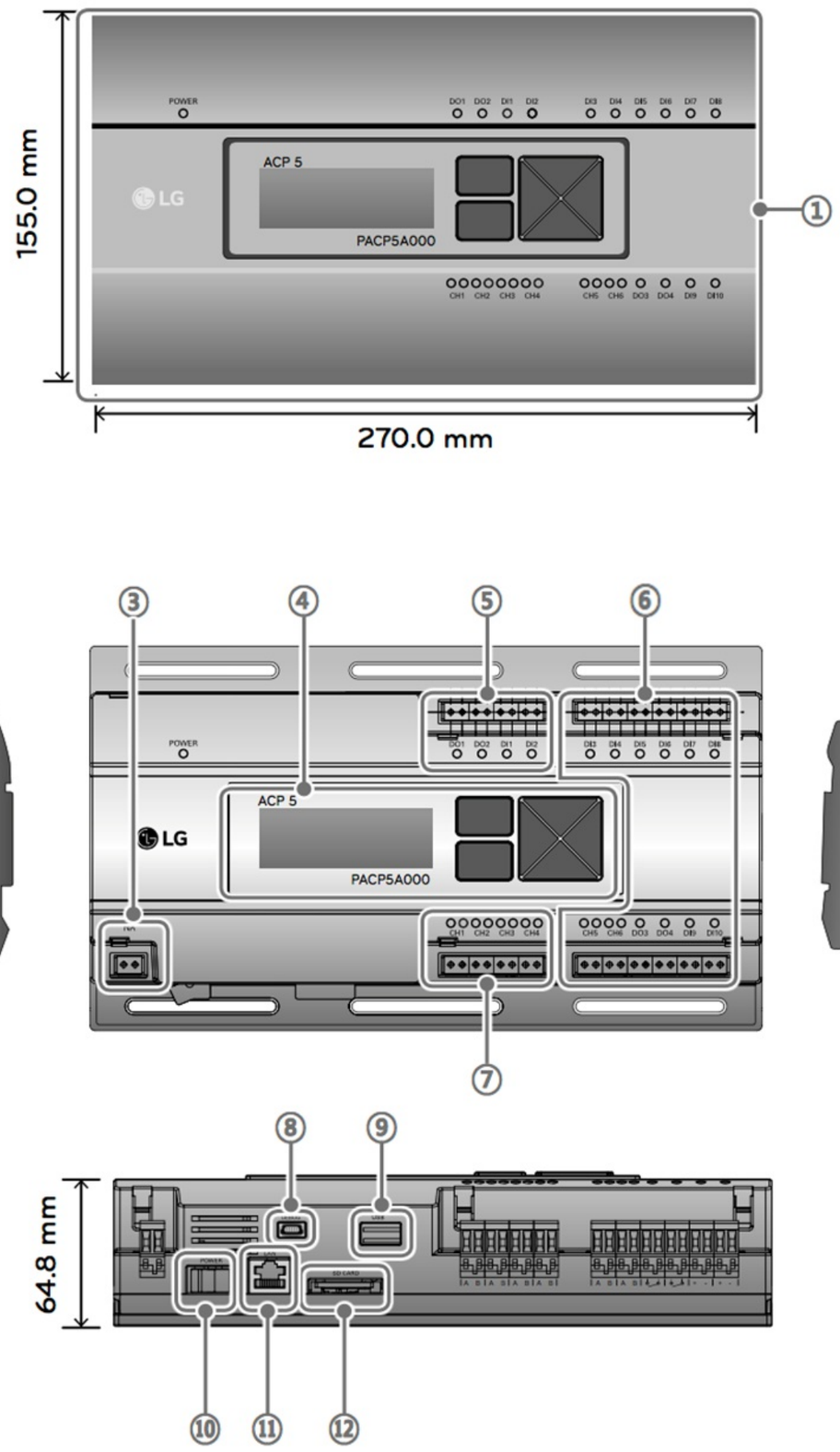
The power supply adaptor, power cord are not provided with the package sold in the U.S.

## Caution

The SD card provided by our company is for backup and restoration of data when service is provided by qualified service engineer. Do not use on other purpose.

## Name of Each Part

ACP 5 is composed as the following form.




| No. | Category | Contents |
|---|---|---|
| ① | Cover | Front cover of ACP 5 |
| ② | Adaptor connection jack | Jack for DC 12 V to connect to the power supply adaptor |
| ③ | Power port | 24 V~ port for power connection (not supported by DC 12 V model) |
| ④ | Buttons and LCD | Buttons and LCD to set network environment and to display other information |
| ⑤ | Basic external input/output signal connectors | Connection ports to connect to external input/output signals (DI:2, DO:2) |
| ⑥ | Optional input/output and RS-485 communication port | Connection port to connect to external input/output signals and RS-485 communication port for external expansion. (8 DI's, 2 DO's, 2 RS-485 communication ports) |
| ⑦ | RS-485 communication port | RS-485 communication ports to connect to air conditioner and ERV equipment (4 in total) |
| ⑧ | Mini USB port | USB to Serial port for software debugging |
| ⑨ | USB port | For software update and data backup, Lonworks Commission with U60FT module |
| ⑩ | Power switch | Switch to turn on or off the power of ACP 5 |
| ⑪ | Ethernet port | Ethernet port to connect to internet and AC Manager IV |
| ⑫ | SD card slot | For RS-485 communication data backup. |

## Hardware Specification

ACP 5 hardware specification is as follows.

| Category | Contents |
|---|---|
| Boundary of usage temperature | 0 °C ~ 40 °C |
| Rated Voltage | DC 12V ⎓ |
| Rated Current | Max 2.3A |
| Communication ports | • Ethernet 10 / 100 BASE-T<br>• USB : USB Host (SW upgrade, data backup, Lonworks Commission with U60FT module)<br>• mini USB : Device (Debug)<br>• RS-485 communication ports 6EA<br>• SD card slot (For data backup, RS-485 communication data backup) |
| External input/output ports | DI 10 EA, DO 4 EA |
| LED | 27 EA (power and communication status) |
| LCD | 20×4 Character-LCD (network environment setting and information display) |

# User Manual

## Installation and Setting

It describes ACP 5 Installation and Setting Method.

**[Installation Order]**

- Order of ACP 5 Installation

**[Installation and Cable Connection]**

- Fixing to wall
- Mounting on DIN RAIL
- Connecting Ethernet cable (LAN cable)

**[LCD Environment Setting]**

- LCD Environment Setting

**① Network Address Setting[Network Info]**

- Network Address Setting Method
- IP Address Setting
- Using Dynamic IP with DHCP
- Check the access

**② [Function]**

- Software Update
- DB back up
- DB recover

## Order of Installation

To use ACP 5, it shall be installed in the following order.

**STEP 1.** Check points during the ACP 5 installation

Before installing the ACP 5, check the cautions.

**STEP 2.** Study the cable connections diagram of the entire system.

Study the cable connection diagram of the site where the ACP 5 is installed.

**STEP 3.** Set the all device unit address

Set the address of the ACP 5 not to be overlapped with the connecting device unit.

**STEP 4.** Set PI485 and connect cables

Set DIP switch of PI485 correctly, and connect RS-485 communication cable.

**STEP 5.** ACP 5 Installation and Cable Connection

Install ACP 5 and connect network and other cables.

**STEP 6.** ACP 5 Network Address Setting

Set the network address to be able to access the ACP 5 through internet.

**STEP 7.** Set web GUI access environment

Set the access environment in web GUI, which is the operation program of the ACP 5.

**STEP 8.** Input all device information

Input and save device information in Web GUI, which is ACP 5 operating program.

**STEP 9.** Check Web GUI Control/Monitoring

Access to Web GUI, which is ACP 5 operating program, and check if control/monitoring are properly carried out.

### Caution

- **ACP 5 Installation**

  The ACP 5 installation work needs the professional technique. Therefore, the installation described in this chapter should be performed by the certified installation professional.

  For questions and requests with regard to the installation, please contact the service center or installation specialty store approved by LG.

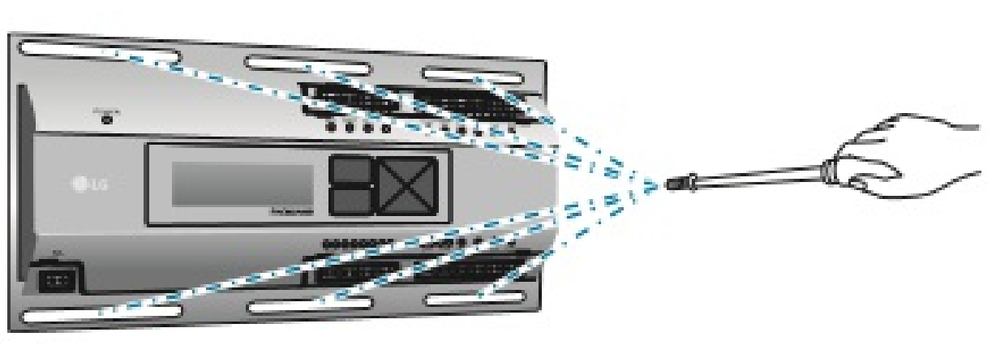
## Fixing to wall

product can be installed by fixing to the wall.

To install product in adequate place, proceed according to the following instructions.

Here, it describes the installation method of product with the example of installing product on the wall.

- Decide the space to install product.
  Before installing product, check if it is an adequate place for the connection of product, power, and LAN cable.
- Use driver to fix on the wall. According to the installation location, you can fix it as in the following figure.



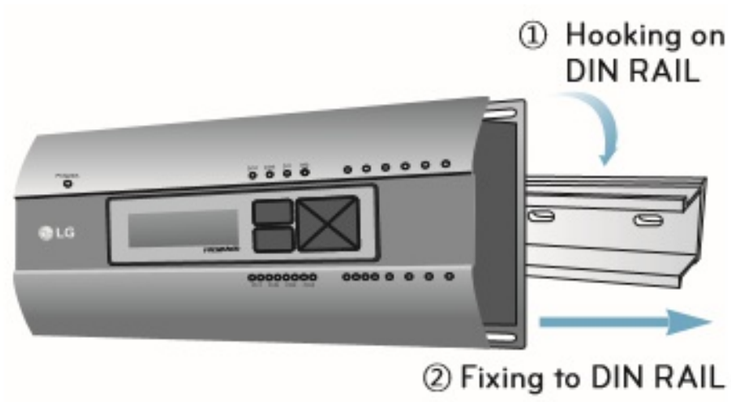
### Caution

When selecting a place to install, select a place that is difficult for outside people to access. Product control rights may be exploited by outsiders.

## Mounting on DIN RAIL

product can be installed in DIN RAIL with width 35 mm and height 7.5 mm. To install product in adequate place, proceed according to the following instructions. Here, it describes the installation method with the example of installing on DIN RAIL.

- Decide the space to install.
- Before installing product, check if it is an adequate place for the connection of product, power, and LAN cable.
- Install DIN RAIL.
- Hook the top part of product on DIN RAIL.
- Push the main body of product until you hear the sound of installation.
- Pull product to check if it is fixed.




### Caution

- After installing to DIN RAIL, do not fix to the wall using screws. product may be damaged.
- DIN RAIL fixing screw spec: M3, screw head height 1.75 mm ~ 2.0 mm, screw head diameter 5.5 mm ~ 7.0 mm

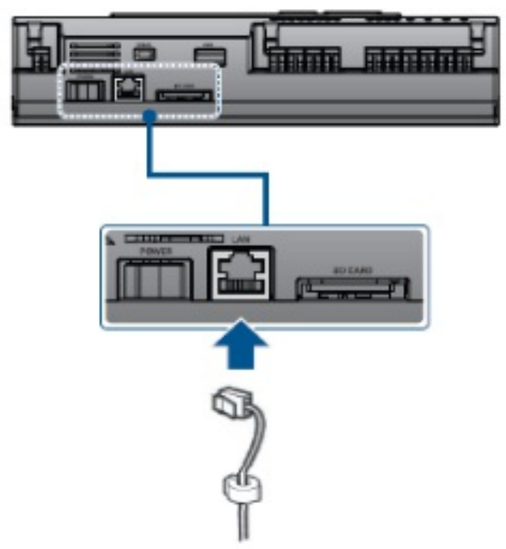
# Connecting Ethernet cable (LAN cable)

You need to connect Ethernet cable to product.

AC Manager 5 can be connected to hub or ACP through Ethernet cable.

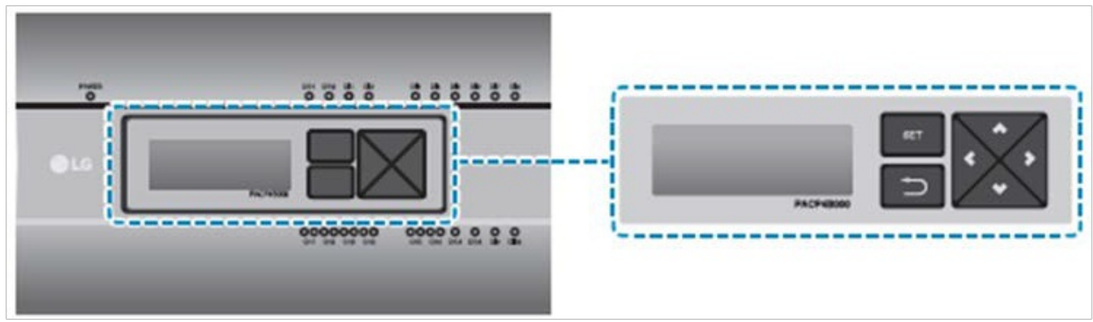
ACP 5 can be connected to hub or PC through Ethernet cable.

It is the case of connecting the product to the basic internet network installed at the site, and it is generally connected to the hub. Use Ethernet cable to connect to LAN port of the product.



## LCD Environment Setting

The network environment of product can be set by the LCD and the buttons at the front side of product. The current product information and the menu are displayed on the LCD, and you can press , button and **[▲], [▼], [◀], [▶]** buttons to change and select menu.



When you press **[SET]** button, it enters Environment Setting mode. When you press **[SET]** button for the first time, the menu to set the IP address is displayed as shown below.

Press **[▲], [▼]** button to locate the arrow on the desired function.

- In **[Network Info]** menu, input the network information such as product's IP address.
- In **[Function]** menu, it supports product's software service functions.

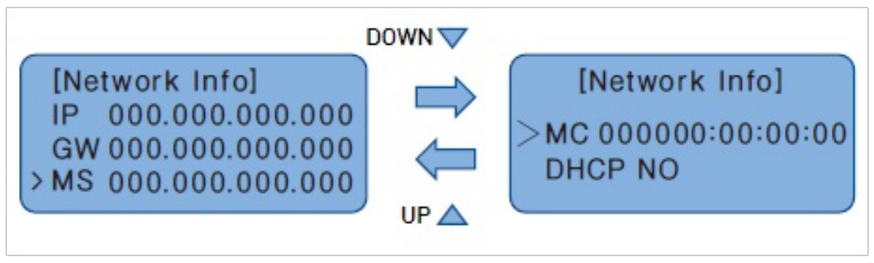
### Caution

- **[Function] menu is used by the system air conditioner service technician, and user shall not use this function. If this function is used incorrectly, it may cause failure of ACP 5.**

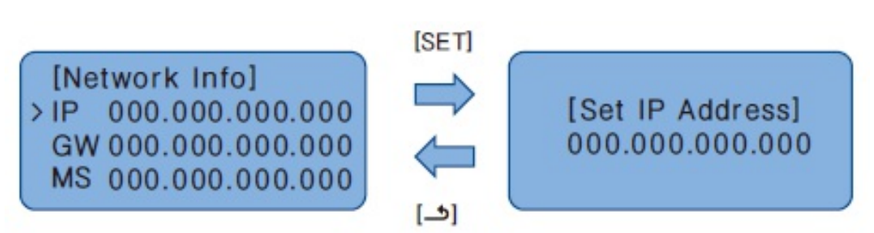
## Network Address Setting Method

In **[Network Info]** menu, select the category to set using **[▲], [▼]** button.

In the first screen on **[Network Info]** menu, IP, Gateway, and Netmask settings are displayed, and you can use **[▼]** button to check MAC address and DHCP setting.



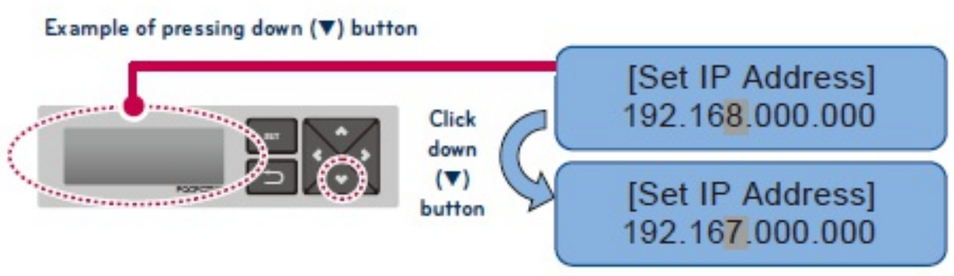

To change the network setting, locate the arrow on the corresponding setting position and press **[SET]** button to enter the corresponding setting screen.



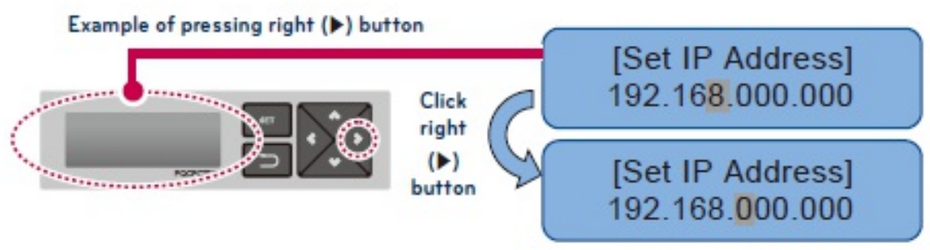

The network address consists of four 3-digit numbers. In case of setting the network address, the, name of the related address is displayed on the LCD of ACP 5, and you need to press **[▲], [▼], [◀], [▶]** button for the setting.

When you press **[▲], [▼]** button, the number of the digit where cursor is on increases/decrease, and when you press **[◀], [▶]** button, it moves to the left/right digit of the network address.

Example of pressing **[▼]** button




Example of pressing **[▶]** button




### Caution

- Network Address Setting
  The network address can be separated to 4 digits based on '.', and each number shall be 255 or less. Number exceeding 255 may not be input.

### Note

Assigning Network Address

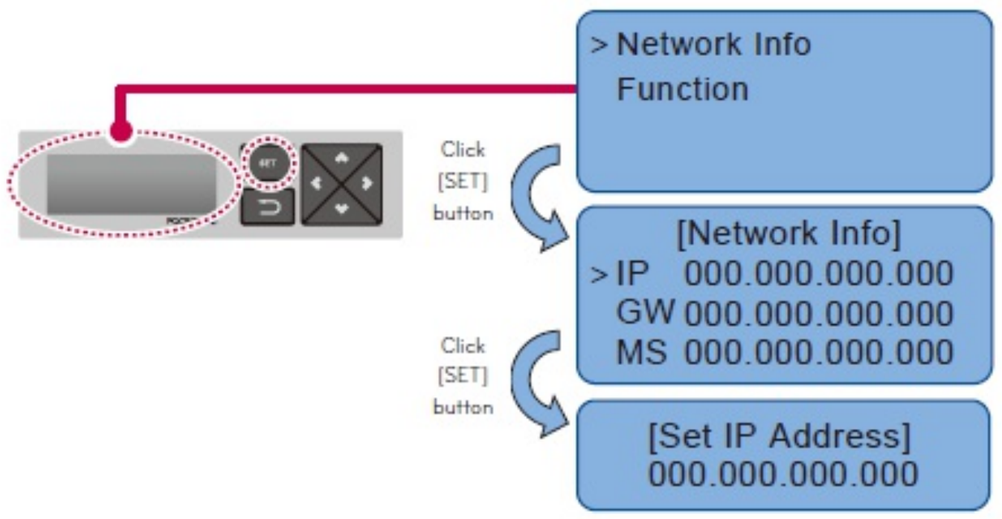
- Network shall be assigned by the person in charge of the network of the corresponding site. (IP address, Gateway address, Netmask)
- AC Manager 5 can use both fixed IP type and dynamic IP type, but fixed IP type is recommended, and if dynamic IP type is used, it may cause inconvenience to the user.
- When fixed IP type is used, you need to receive network (IP address, gateway address, Netmask) from the person in charge of the network of the corresponding site.

## IP Address Setting

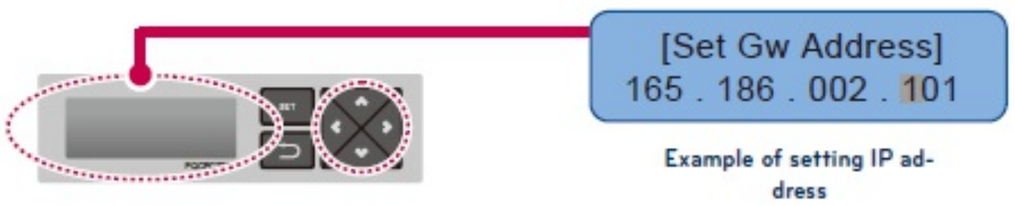
For user to use the functions of product through the web, a unique IP address may be assigned to product or dynamic IP setting may be used.

The next is how to set fixed IP address. Please proceed according to the order.

1. Press product's **[SET]** button. The following menu screen will be displayed.
   - When you press **[SET]** button again, **[Network Info]** setting screen is displayed.




2. While IP is selected, if you press **[SET]** button, screen to input IP address is displayed.



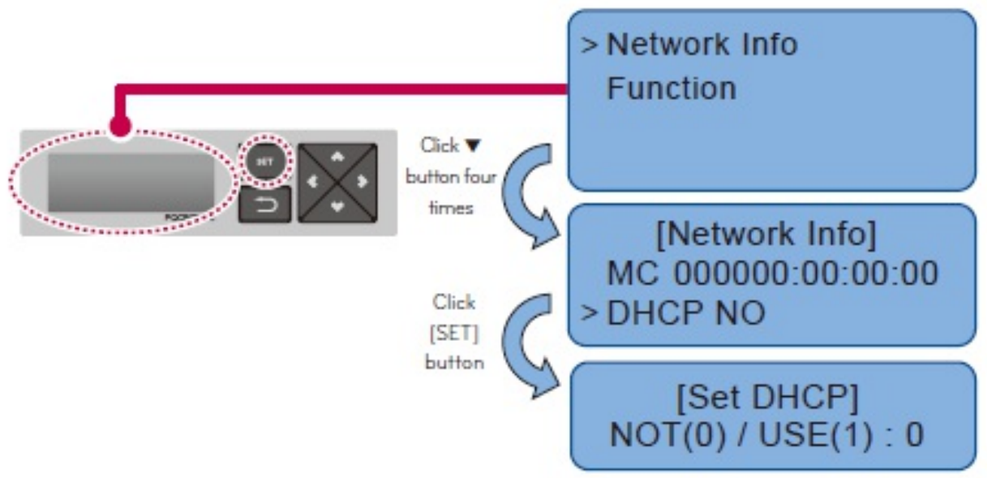

Example of setting IP address

## Using Dynamic IP with DHCP

For user to use the functions of product through the web, a unique IP address may be assigned to product or dynamic IP setting may be used.

The next is how to set dynamic IP address. Please proceed according to the order.

1. Press product's **[SET]** button. The following menu screen will be displayed.
   - When you press **[SET]** button again, [Network Info] setting screen is displayed.
   - While DHCP is selected, if you press **[SET]** button, you can input whether to use DHCP function.




2. Use **[▲], [▼]** button to set whether to use DHCP function.
   - When you press **[▲]** button, DHCP function is set to use, and when you press **[▼]** button, DHCP function is set to no-use.
3. To use dynamic IP, set to use DHCP function.

Example of setting to use DHCP function

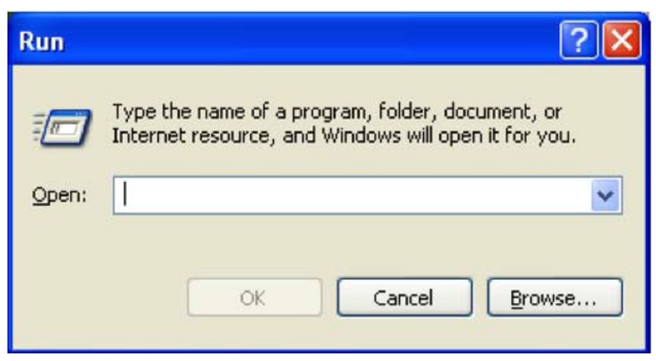
### Caution

- When dynamic IP type is used, the IP in use is returned to DHCP server, and you may not be able to access. In such case, you can check newly set IP address in the front LCD.

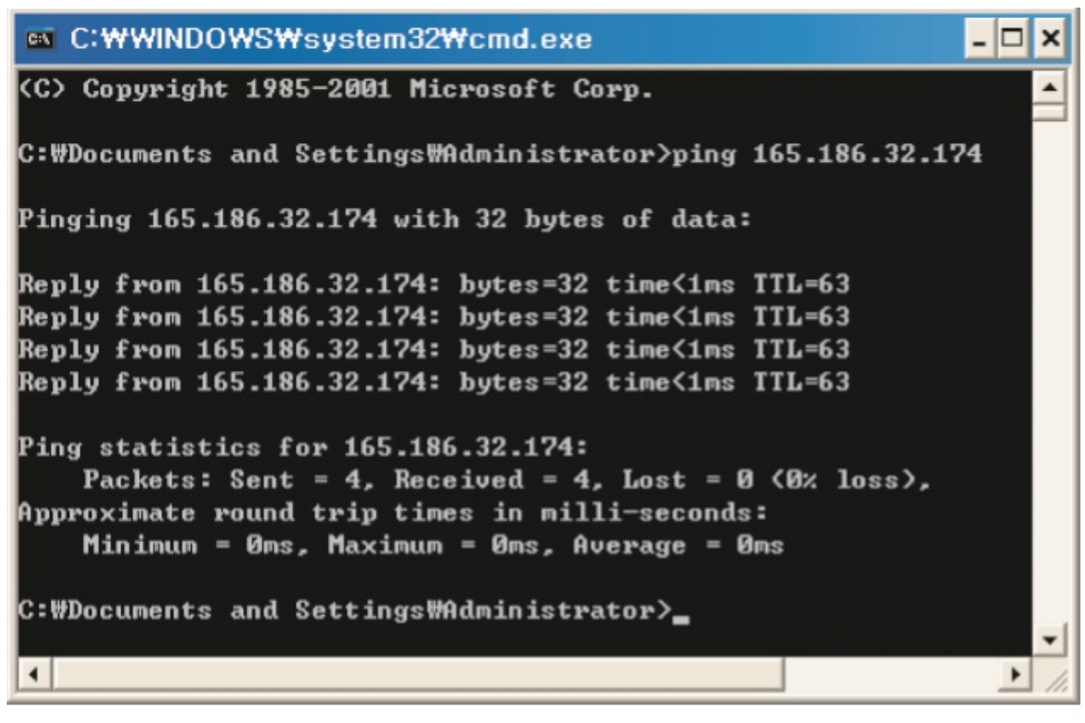
## Check the access

It checks whether network address setting is properly done.
You can check the possibility of accessing product through PING test.

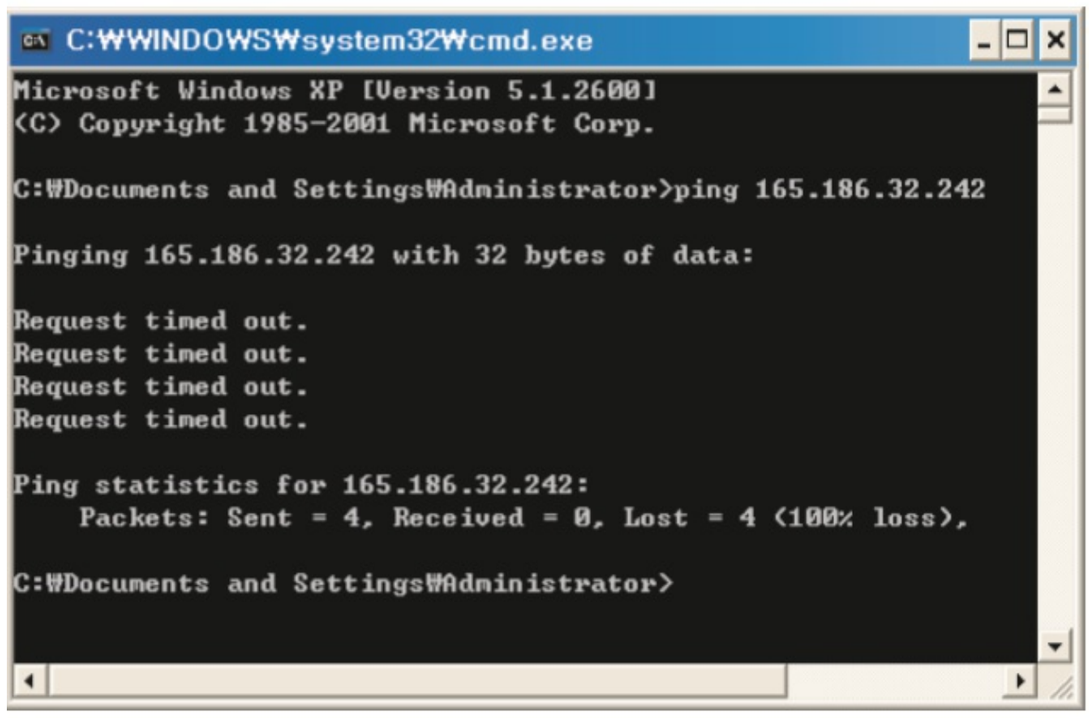
1. With Windows **[Start]**, **[Run]**, and **[cmd]** input, you can open DOS screen as follows.




2. In DOS screen, you can input "ping" to run PING test as follows.



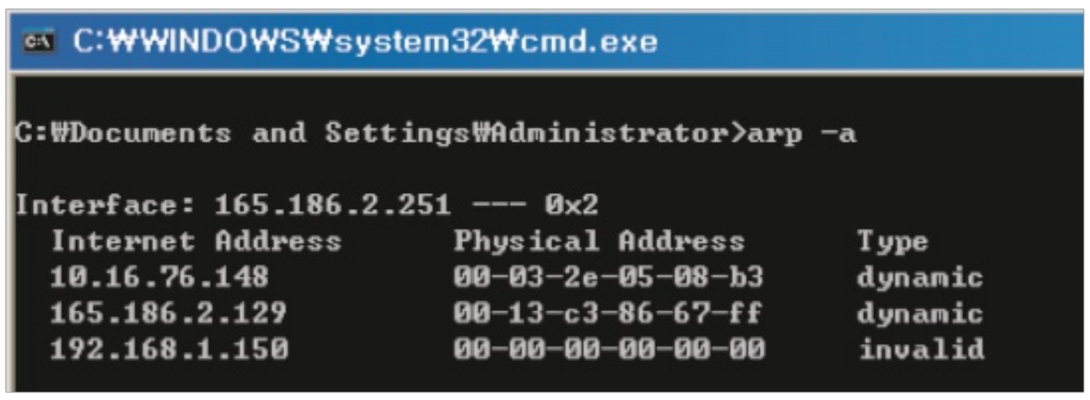

When the network setting is properly done




When the network setting is not properly done

### Note: When PC and product are connected together in a hub or a switch hub, and you cannot access product.

- If it is right after changing the IP setting of product, reset the power of product.
- If it is right after connecting LAN cable to the hub or switch, it may take time for the hub or the switch to recognize product. In such case, it may help to turn off and turn on the power of the hub or the switch.
- Check the status of the Ethernet cable (LAN cable).
- Check ARP table of the PC to see if the IP address of product correctly corresponds to the MAC address. If duplicate MAC addresses correspond to one IP address, or if different address from the MAC address of the PC is output, there may be a host with the same IP address as the IP address of product. In such case, the IP address of product or the IP address of the corresponding host shall be changed.

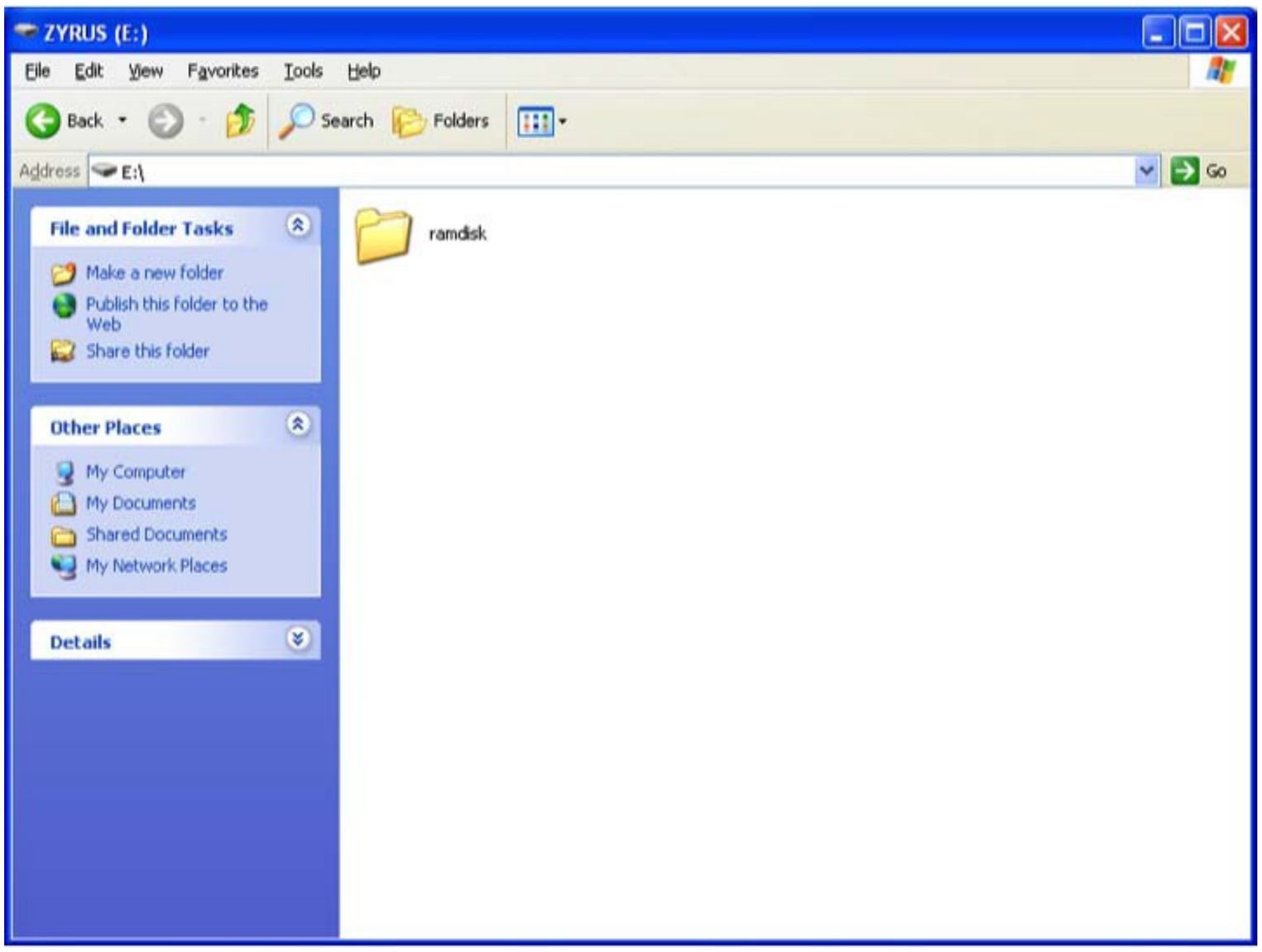


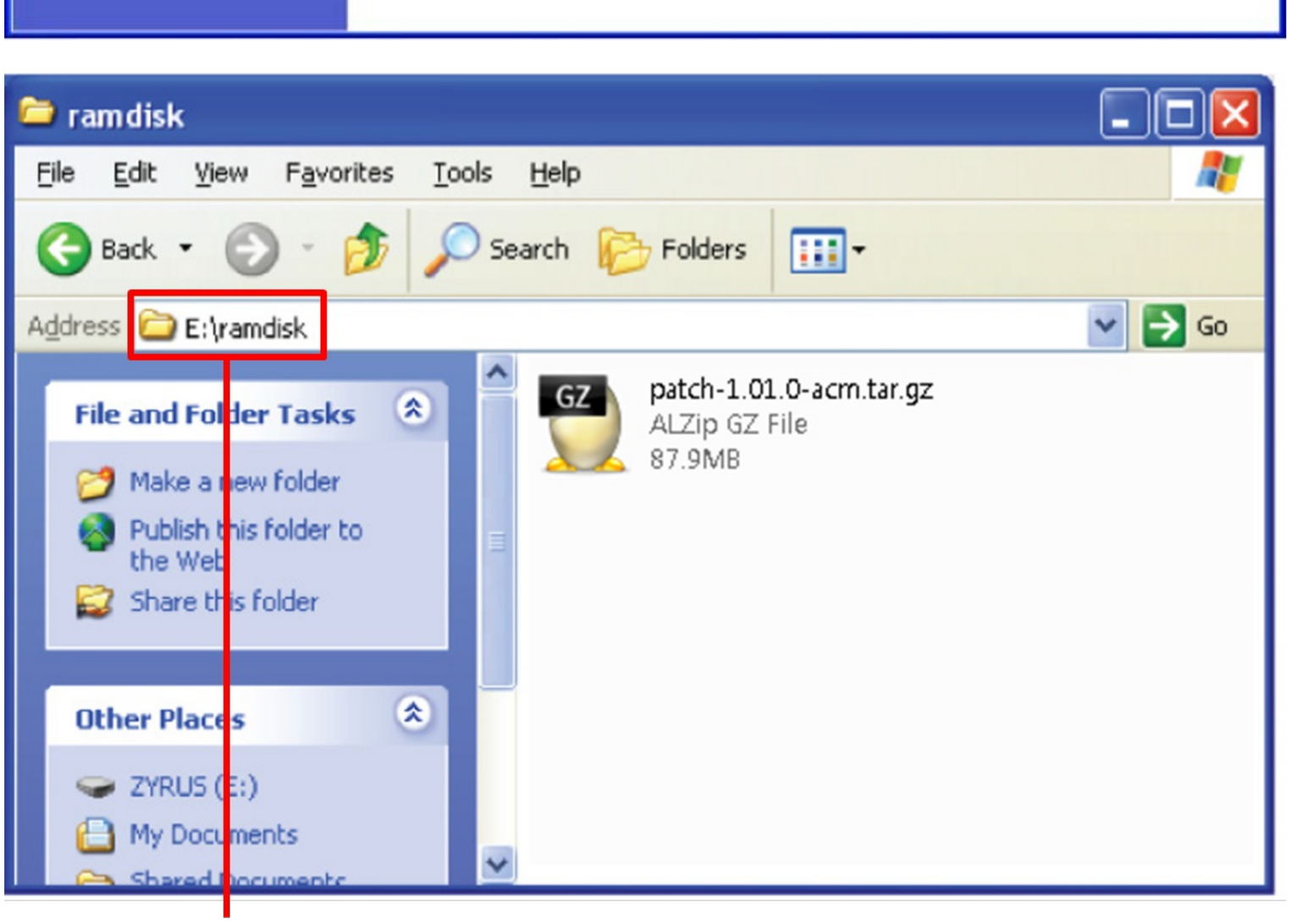

**How to check ARP table**

## Software Update

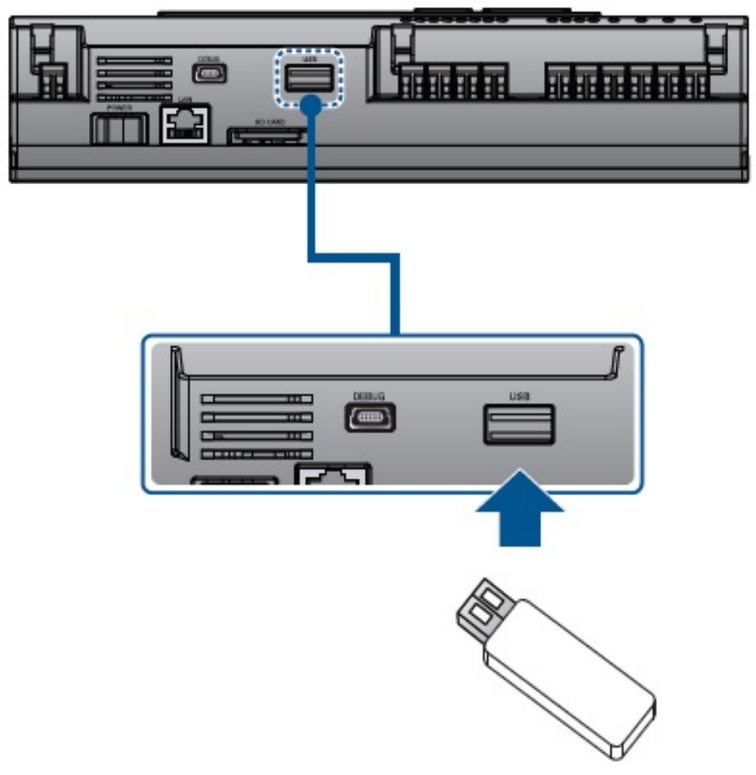
When it is necessary to update product software, it must be carried out by the specialized service technician. Software update can be done with USB memory. Proceed in the following order.

1. Create “ramdisk” folder in USB memory.
2. Put the S/W file to update in 'ramdisk' folder.
   - At this time, only one S/W file must be put.
     (New version software file can be downloaded from LG Electronics System Air Conditioner homepage.)

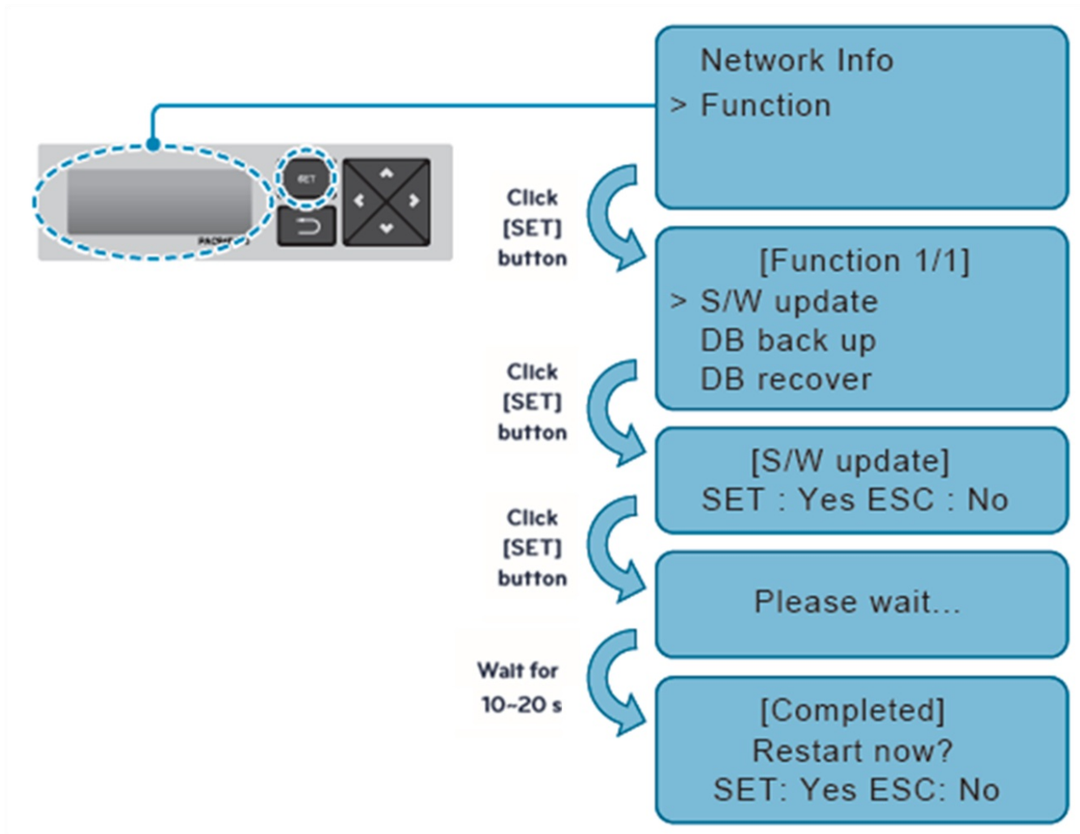



E: may be changed.




3. Press product's **[SET]** button.
4. Select **[Function]** menu and press **[SET]** button.
5. Select **[S/W update]** menu and press **[SET]** button again.
6. To run Software Update, press **[SET]** button again.
   - Wait while Software Update is running.
7. After completing the update, to restart product, press **[SET]** button.
   - Even when you do not immediately restart, update will be applied only after rebooting product in the future.




## Caution

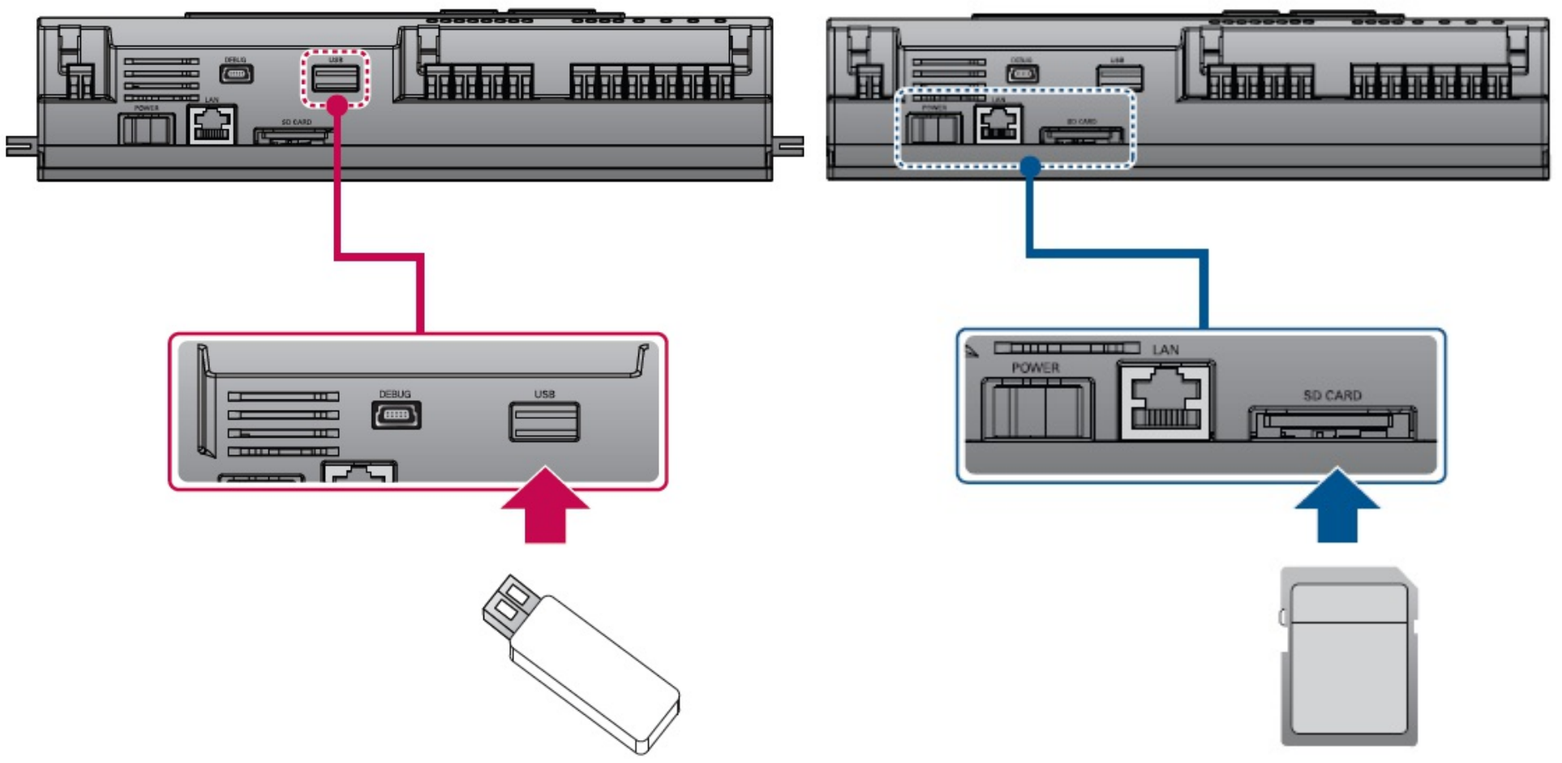
- While software update is in progress and while “Please wait…” is displayed, turning off the power of product or removing USB memory may cause critical damage to product.

## DB back up

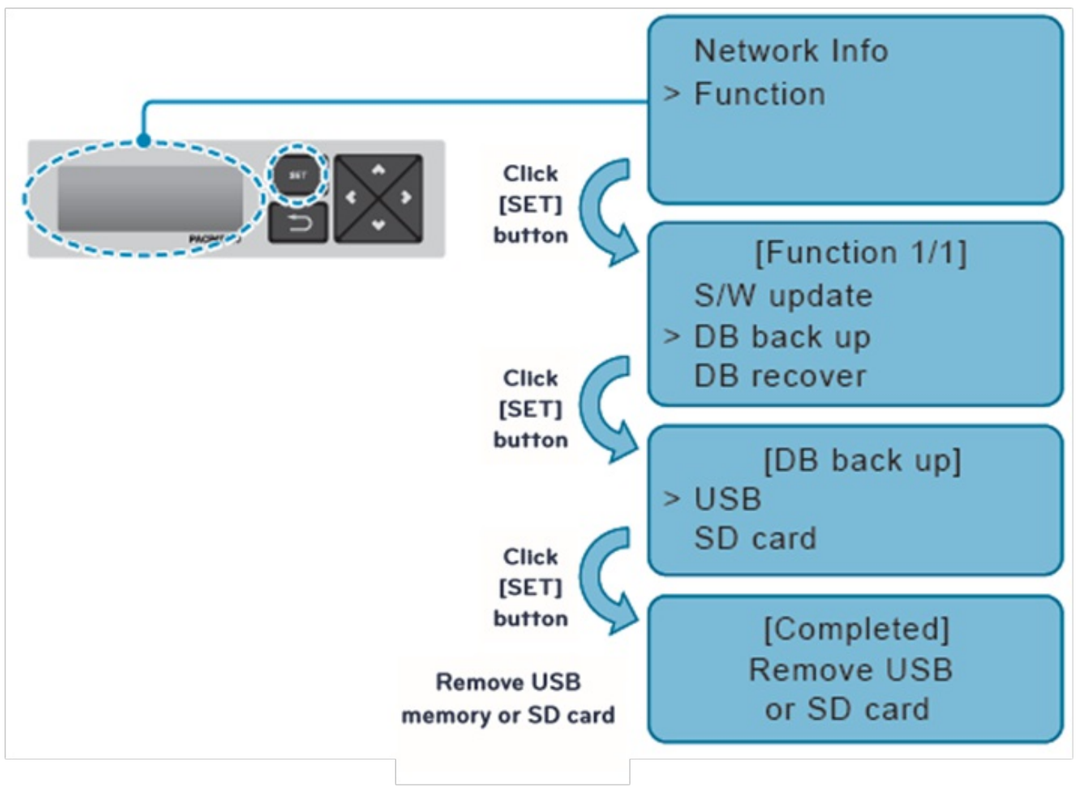
If product data backup is necessary, it must be carried out by the specialized service technician.

Data backup can be done with USB memory or SD card. Proceed in the following order.

1. Insert USB memory or SD card into product.




2. Press product's **[SET]** button.
3. Select **[Function]** menu and press **[SET]** button.
4. Select **[DB back up]** menu and press **[SET]** button again.
5. Select **[USB]** or **[SD card]** and press **[SET]** button.
6. After completing back-up, remove the USB memory or SD card.




### Caution

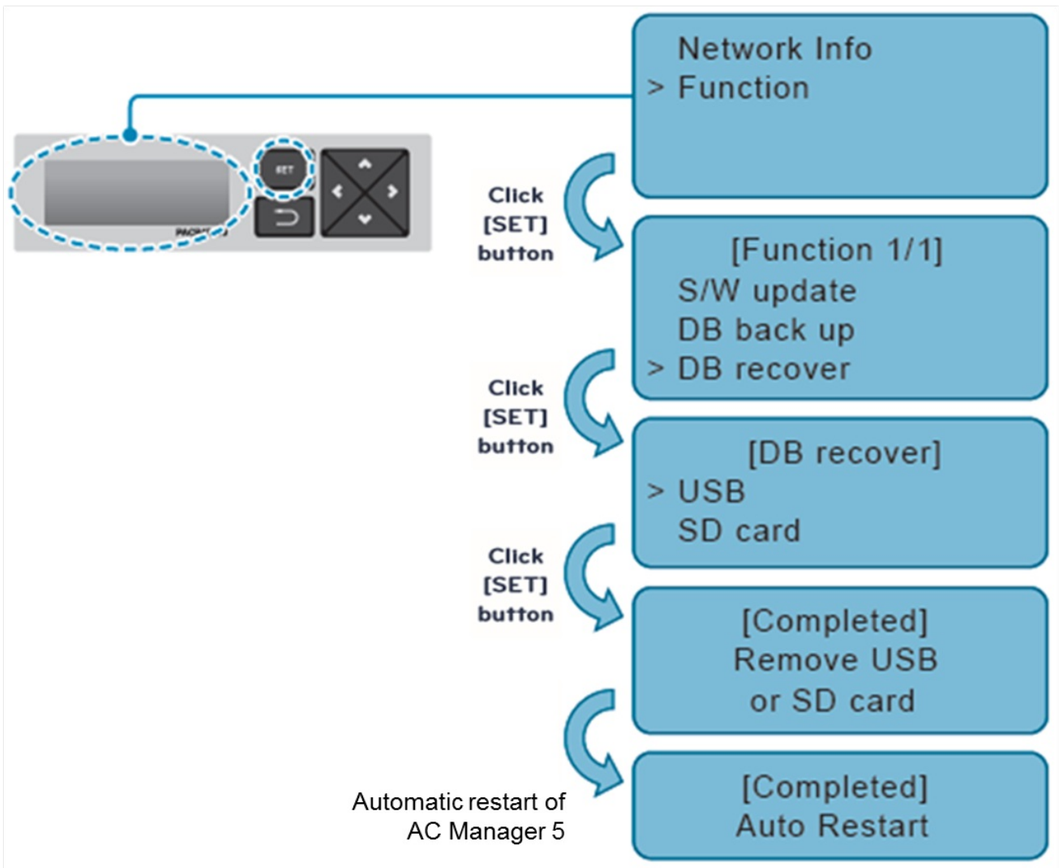
- Before data backup is completed, turning off the power of product or removing USB memory or SD card may cause critical damage to product.

## DB recover

If product data recovery is necessary, it must be carried out by the specialized service technician.

Data recovery can be done with USB memory or SD card. Proceed in the following order.

1. Save the database file to recover in USB memory or SD card.
   - Save the files in “db” folder as follows.
2. Insert USB memory or SD card into product.
3. Press product's **[SET]** button.
4. Select **[Function]** menu and press **[SET]** button.
5. Select **[DB recover]** menu and press **[SET]** button again.
6. Select **[USB]** or **[SD card]** and press **[SET]** button.
7. After completing back-up, remove the USB memory or SD card.
   - For data recovery, automatically restarts.




### Caution

- Before data recovery is completed, turning off the power of product or removing USB memory or SD card may cause critical damage to product.

# User Manual

## Usage (PC)

- LogIn / LogOut
- Account
- Dashboard
- Indoor Fine Dust Monitoring

**[Control]**

- Device Control
- Schedule Control
- InterLocking
- Time limit control
- Hotel Solution(BACnet)

**[Energy]**

- Energy Usage
- Energy Navigation
- Peak demand control
- Energy Unit Cost

**[History]**

- Operation History
- Energy Navigation History
- Operation Trend
- Cycle

**[Setting]**

- Device setting
- Group Setting
- System Setting
- Network Setting
- Notification Settings
- Administrator Setting
- Additional User Setting
- Advance Setting
- TMS Setting
- BACnet/Modbus/Lonworks Setting
- Set Fine Dust Monitoring

# User Manual

You can access to the product with IP address in internet address window to use various central control functions.

### Note

- Chrome browser is recommended for web control.
- For access to web, IP address needs to be set.
- At the time of the first access, you need to set password of the manager account.
- On every 90 days, popup is provided to change password.
  For personal information protection and safe service usage, please change password periodically.

## LogIn

Login method is as follows.

1. Please input IP address of the product in the internet address window.
2. Input ID and password in the login window and click **[Login]** button.

## LogOut

Logout method is as follows.

1. In menu, click **[Account]** menu.
2. In Account information window, click **[Logout]** button.

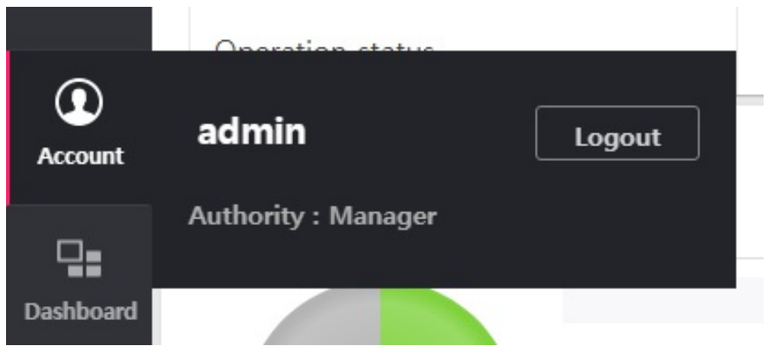
## Automatic Login

Once you check the Automatic Login option, you will remain logged in until you delete the browser cookies or choose to log out.

- Automatic Login is deactivated when you log out.
- If you use the Internet via InPrivate Browsing which is provided in some browsers, this option cannot be used since cookies are not saved.

# Account

You can check the information of the currently logged in account.

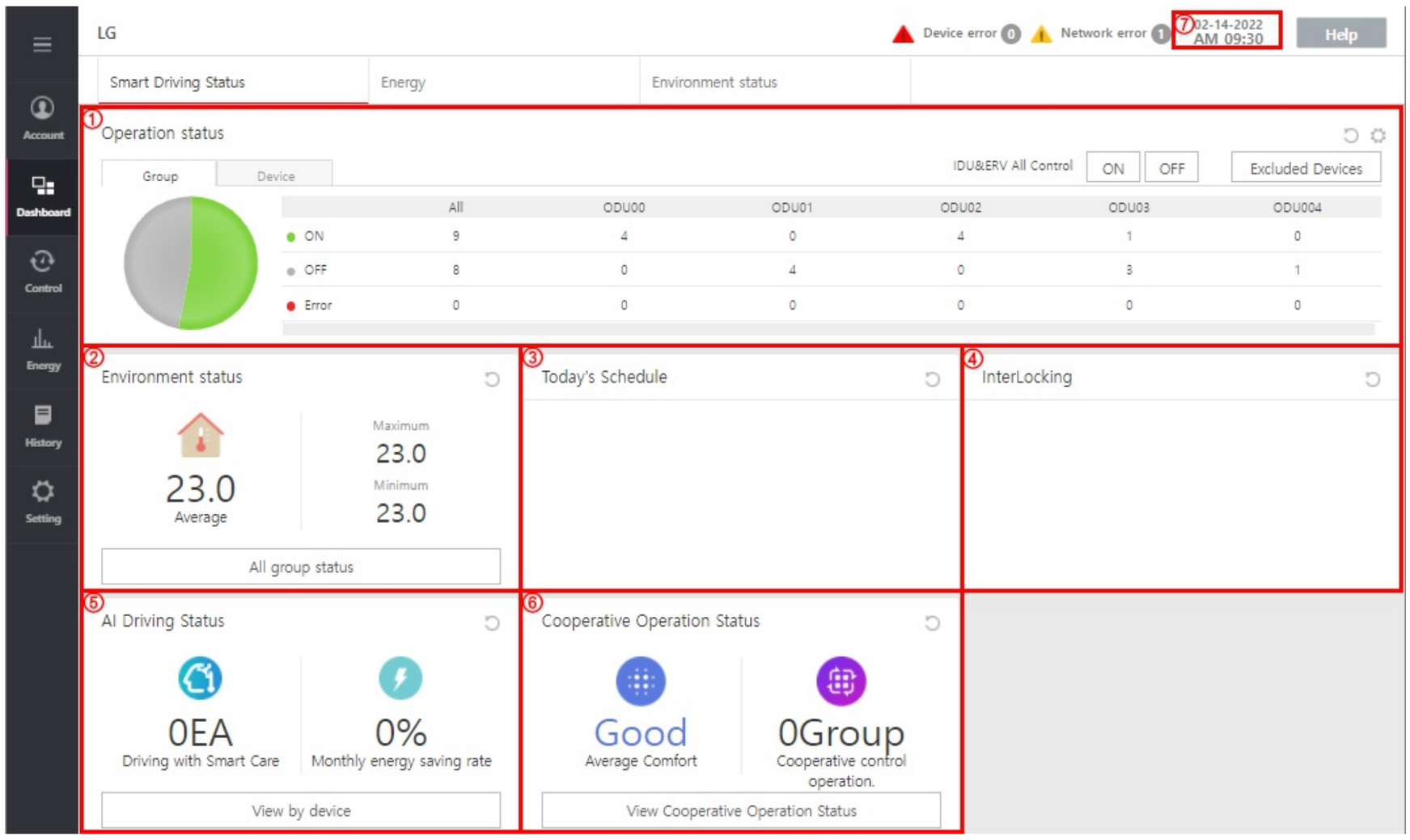


# User Manual

You can check the current operation status and energy usage trend of the equipment installed in the product.

## Operation status

It describes the dash board's current operation status tab composition and functions.




| No. | Category | Contents |
|---|---|---|
| ① | Operation status | Check operation status (ON/OFF/Error) of the equipment installed in the product<br><br>[group]<br>• Checking of operation status of each management group designated by user<br><br>[device]<br>• Check operation status of each device designated by the user<br><br>All indoor units and ERV ON / OFF control<br>• All indoor units and ERV ON / OFF control<br>• When exception device is registered, it is excluded from overall control |
| ② | Environment status | Checking of average indoor temperature, Max./Min. indoor temperature and group |
| ③ | Today's Schedule | Checking today's schedule list |
| ④ | InterLocking | Checking of InterLocking list |
| ⑤ | AI Driving Status | Check the number of devices running Smart Care and monthly energy saving rates<br>• Click View by Device to see the number of outdoor units running AI Smart Care, energy usage, energy savings, and monthly energy savings rate of each device |
| ⑥ | Cooperative Operation Status | Use of cooperative control widget<br>• Average Comfort<br>• Cooperative control operation<br>• View Cooperative Operation Status |
| ⑦ | Time/date display | View the device time and date |

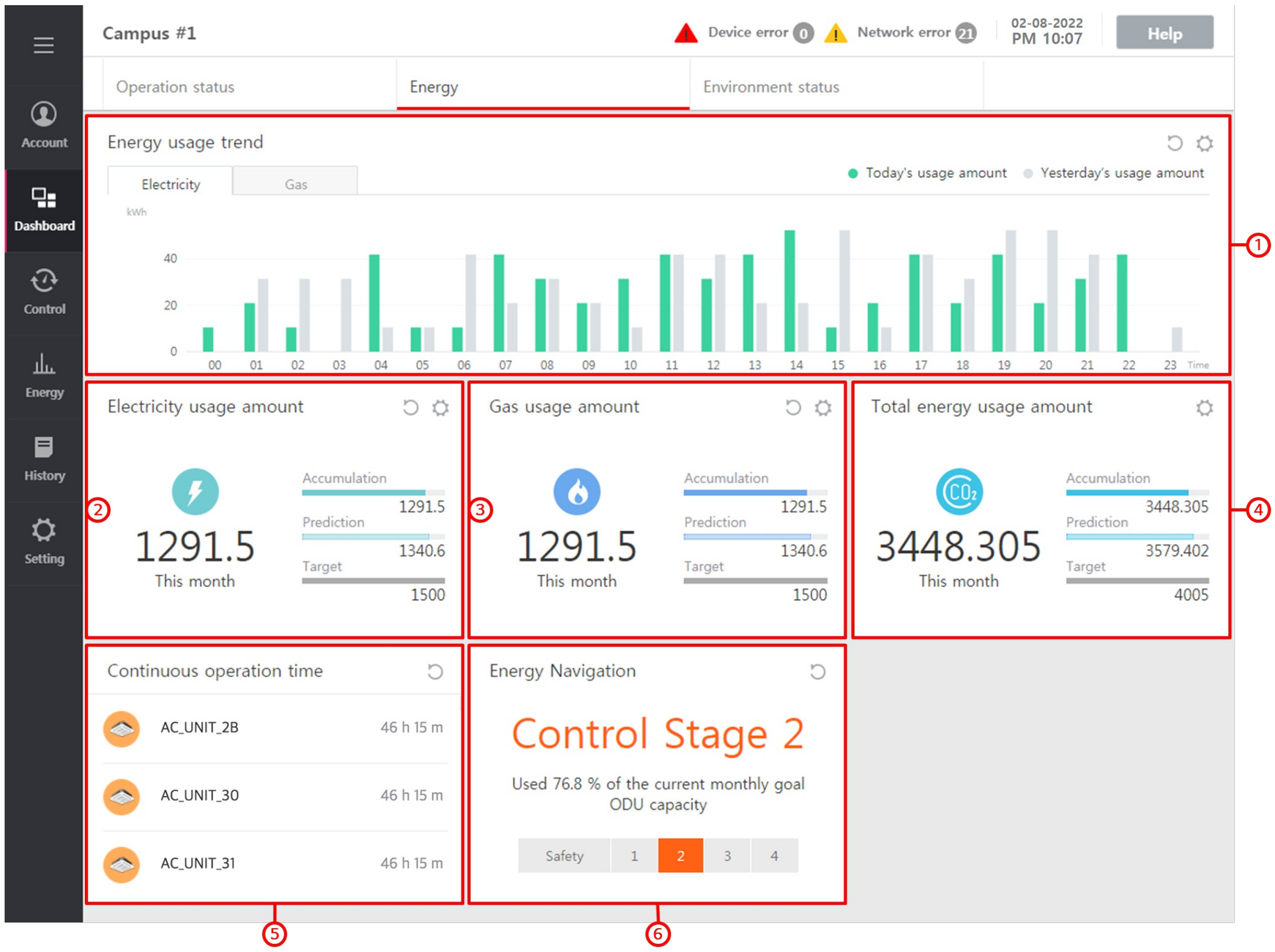
**[Widget setting]**

You can select the monitoring setting through each widget of the dash board.

- Operation status Widget

## Energy

It describes the dash board's energy tab composition and functions.




| No. | Category | Contents |
|---|---|---|
| ① | Energy usage trend | Checking of daily, monthly, and yearly trend of electricity/gas usage amount<br>The monthly/yearly energy use trends include data up to the previous date. |
| ② | Electricity usage amount | Checking of electricity usage amount accumulation, forecast, and goal |
| ③ | Gas usage amount | Checking of gas usage amount accumulation, forecast, and goal |
| ④ | Total energy usage amount | Checking of total energy usage amount accumulation, forecast, and goal |
| ⑤ | Continuous operation time | Check continuous operation time ranking of indoor unit |
| ⑥ | Energy Navigation | Check energy navigation status |

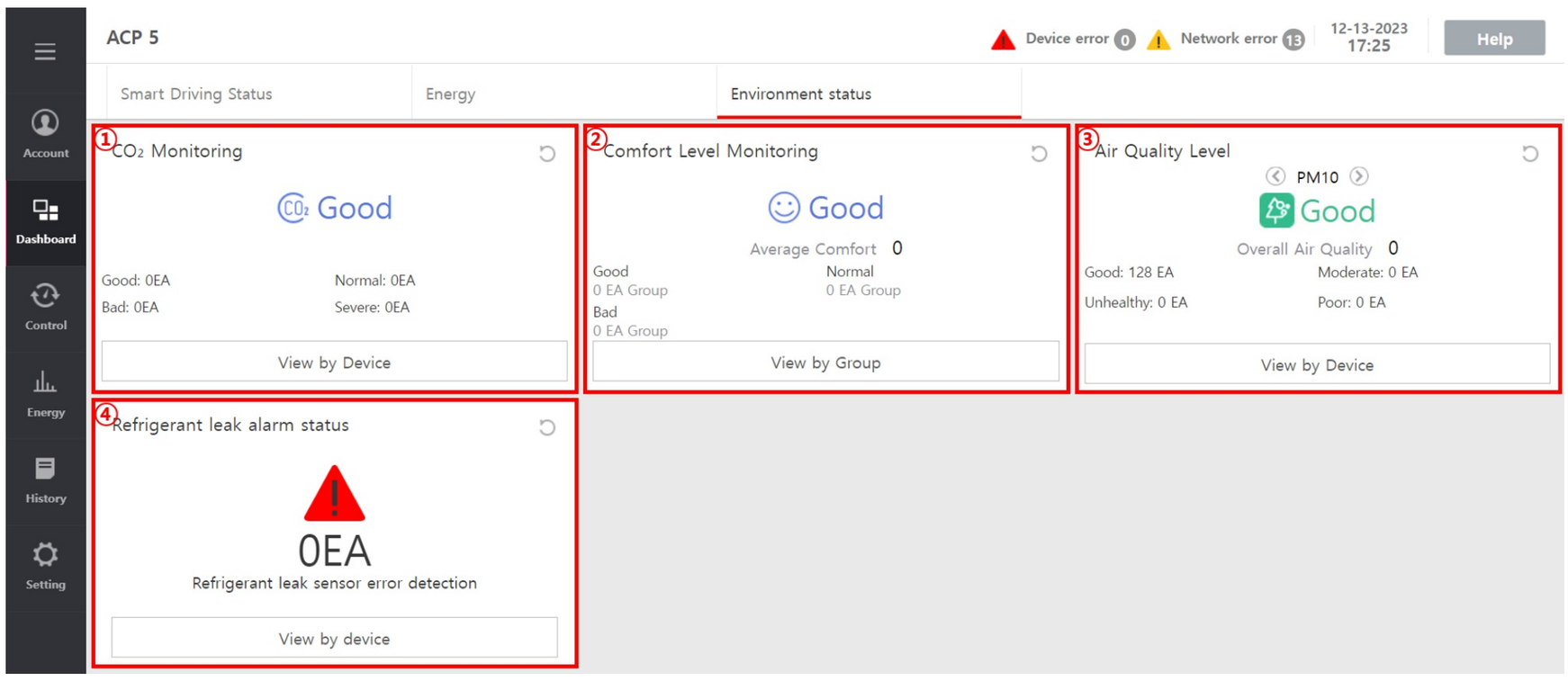
[Widget setting]

You can select the monitoring setting through each widget of the dash board.

- Energy usage trend Widget
- Electricity usage amount Widget
- Gas usage amount Widget
- Total energy usage amount Widget

## Environment status

It describes the composition and functions of dash board environment status tab



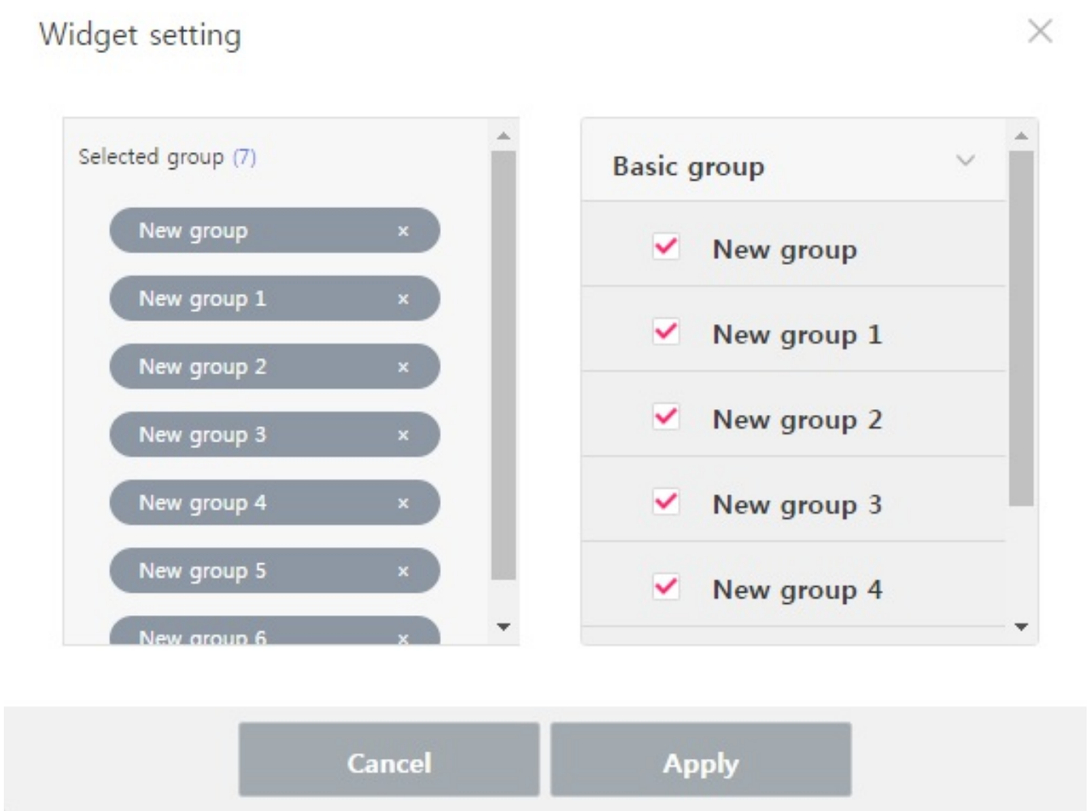

| No. | Category | Contents |
|---|---|---|
| ① | $CO_2$ monitoring | Check $CO_2$ status of registered ERV |
| ② | Comfort Level Monitoring | Check registered indoor unit's pleasantness status |
| ③ | Fine dust monitoring | Check registered indoor unit, air purifier's fine dust status<br>Fine dust is classified to PM10, PM2.5, and PM1.0, and it indicates each status and concentration |

| | | |
|---|---|---|
| ④ | Refrigerant leak alarm status | Check registered indoor unit's refrigerant leak alarm status |

# Operation status Widget

You can set the group to monitor the operation status.

1. In the left menu tab, click **[Dashboard]** > **[Operation status]** menu.
   - The current operation status screen is displayed.
2. Click the current operation status screen's ☼ button.
   - The Widget setting screen is displayed.

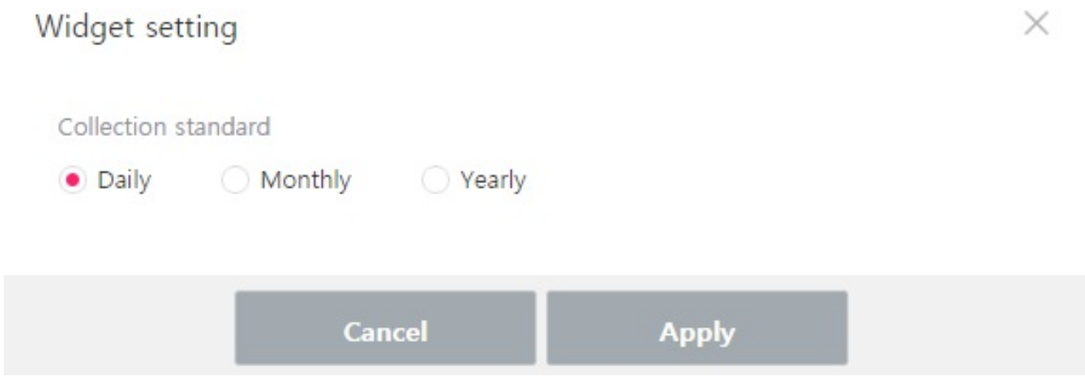



3. Select the group to monitor the operation status.
4. When selection is completed, click **[Apply]** button.

# Energy usage trend Widget

You can select the standard for energy usage amount trend monitoring collection.

1. In the left menu tab, click **[Dashboard]** > **[Energy]** menu.
   - The energy screen is displayed.
2. Click the energy usage trend screen's ⚙ button.
   - The Widget setting screen is displayed.

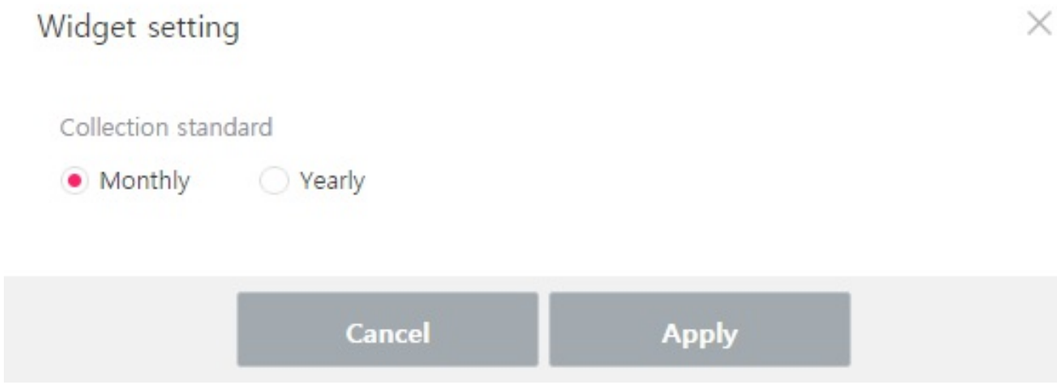



3. Select the collection standard(**Daily/Monthly/Yearly**).
4. When selection is completed, click **[Apply]** button.

# Electricity usage amount Widget

You can select the standard for the electricity usage amount collection standard.

1. In the left menu tab, click **[Dashboard]** > **[Energy]** menu.
   - The energy screen is displayed.
2. Click the electricity usage amount screen's ⚙ button.
   - The Widget setting screen is displayed.

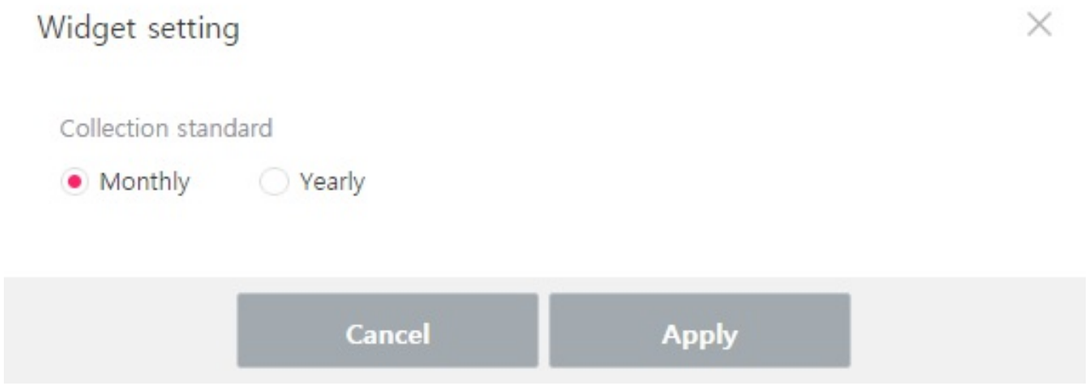



3. Select the collection standard(**Monthly/Yearly**).
4. When selection is completed, click **[Apply]** button.

# Gas usage amount Widget

You can select the standard for gas usage amount collection.

1. In the left menu tab, click **[Dashboard]** > **[Energy]** menu.
   - The energy screen is displayed.
2. Click the gas usage amount screen's ⚙ button.
   - The Widget setting screen is displayed.

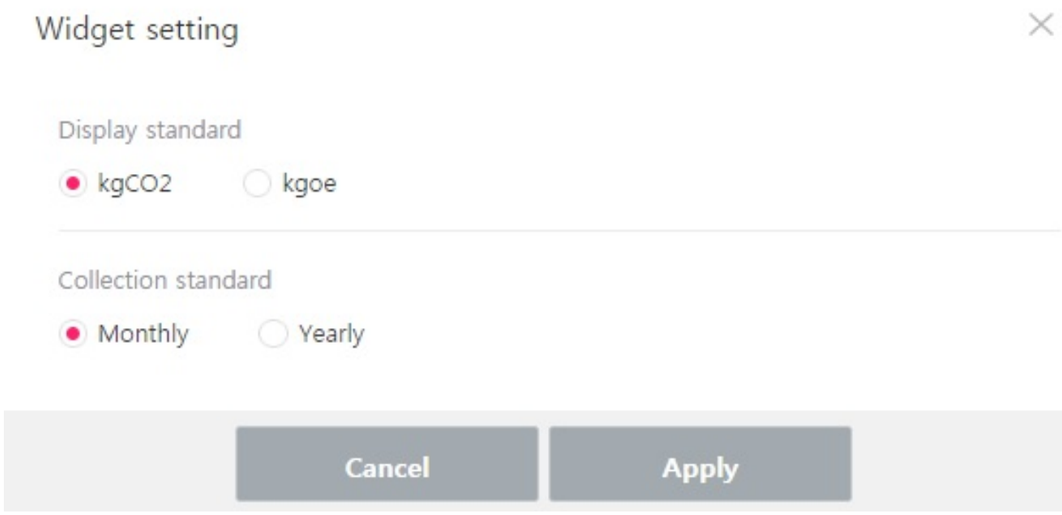



3. Select the collection standard(**Monthly/Yearly**).
4. When selection is completed, click **[Apply]** button.

# Total energy usage amount Widget

You can select the display and collection standard for the total energy usage amount.

1. In the left menu tab, click **[Dashboard]** > **[Energy]** menu.
   - The energy screen is displayed.
2. Click the total energy usage amount screen's ☼ button.
   - The Widget setting screen is displayed.




3. Select the display standard(**kgCO₂/kgoe**) and the collection standard(**Monthly/Yearly**).
4. When selection is completed, click **[Apply]** button.

# Indoor Fine Dust Monitoring

You can view the Fine Dust status on the indoor units and air purifiers connected to the product.

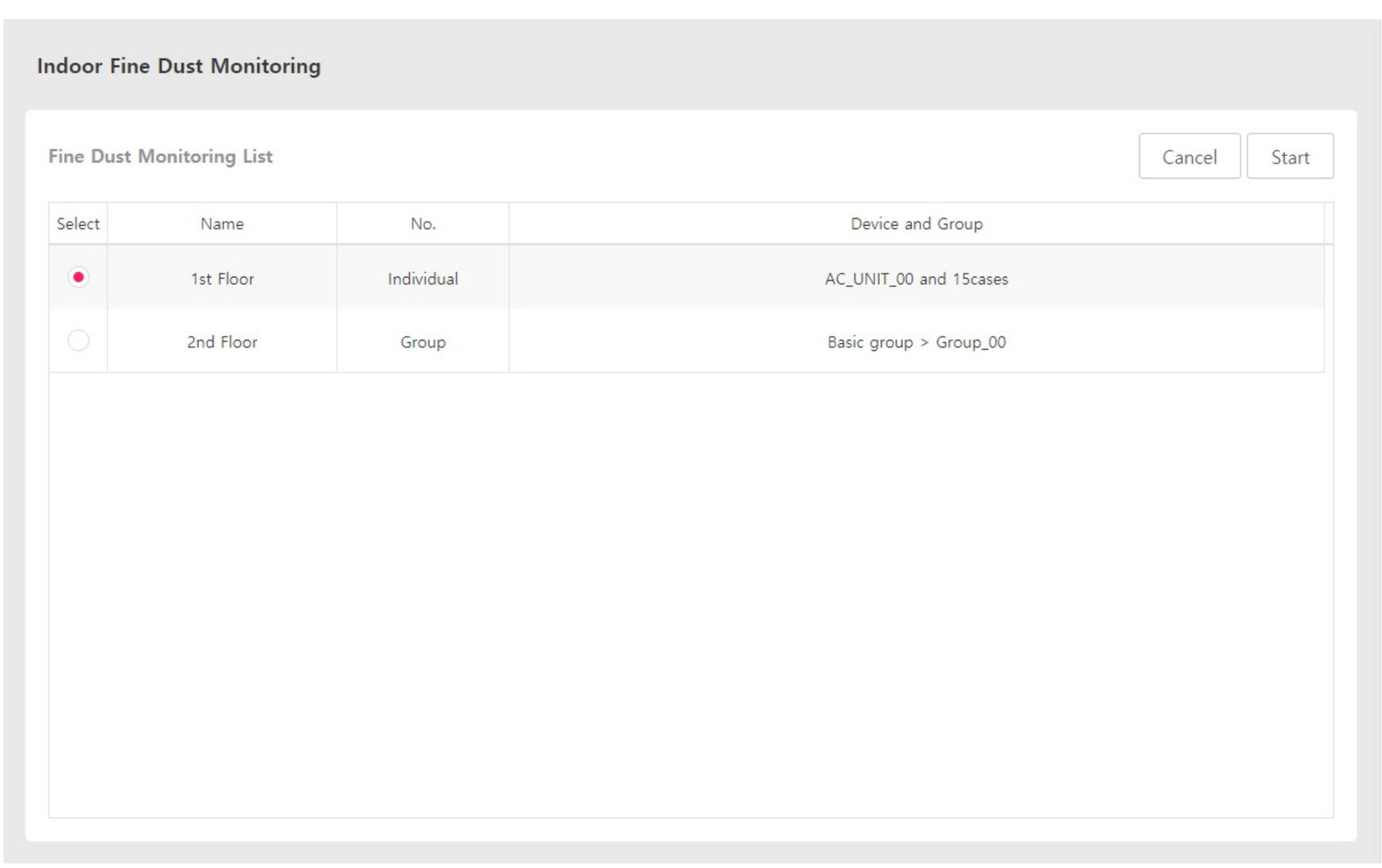
## Connect to Indoor Fine Dust Monitoring

The method to connect to the Indoor Fine Dust Monitoring screen is as follows.

1. Input IP address of the product in internet address window.
2. On the login window, enter the ID and password and click the **[Indoor Fine Dust Monitoring]** button.

## List of Indoor Fine Dust Monitoring

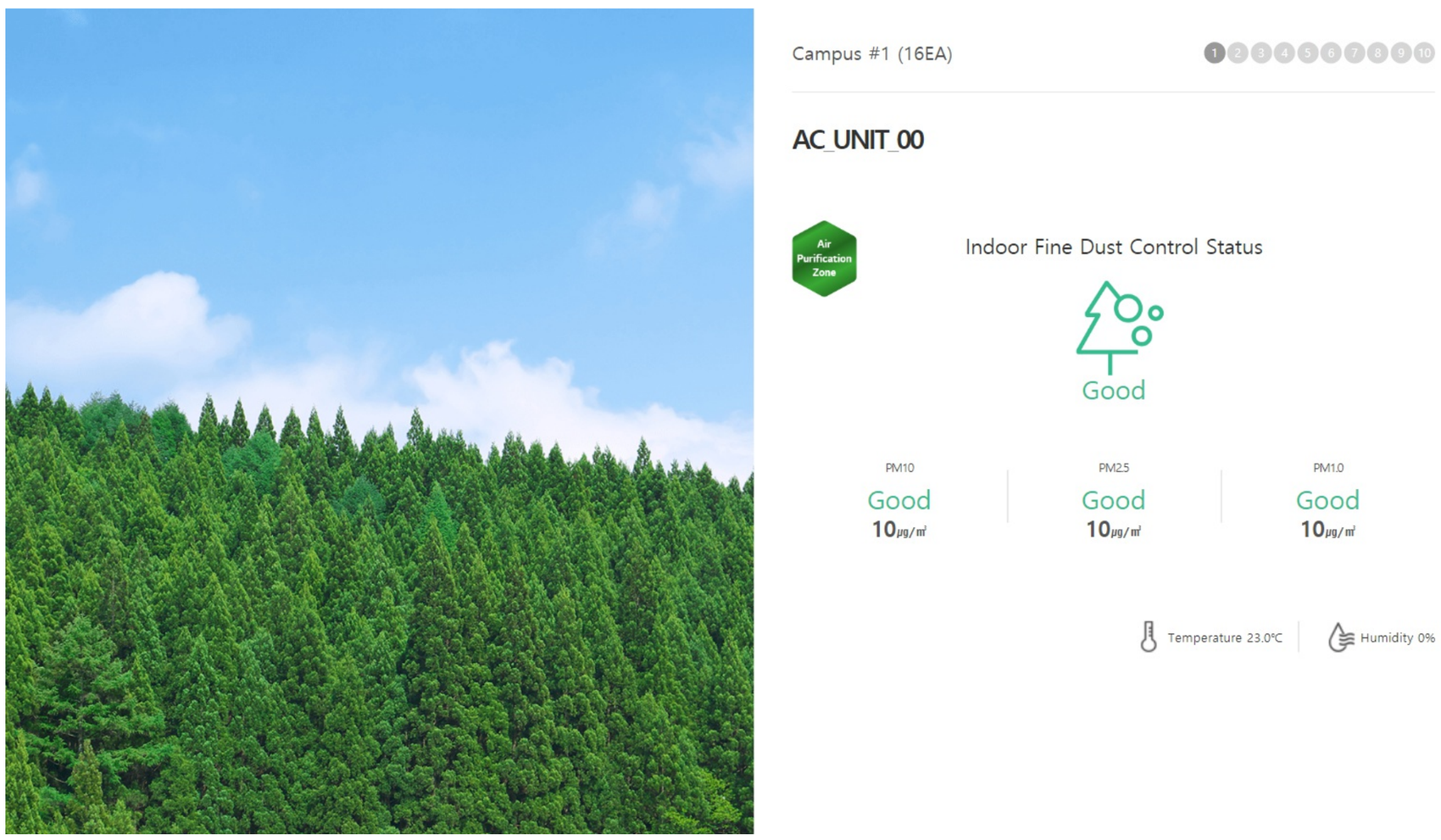
You can view the current list of Indoor Fine Dust Monitoring and start monitoring.




| Item | Description |
|---|---|
| Select | Select an item for Indoor Fine Dust Monitoring to run monitoring. |
| Start | Start the selected indoor Fine Dust monitoring task. |
| Cancel | Move back to the Login page. |

## Individual Device Monitoring

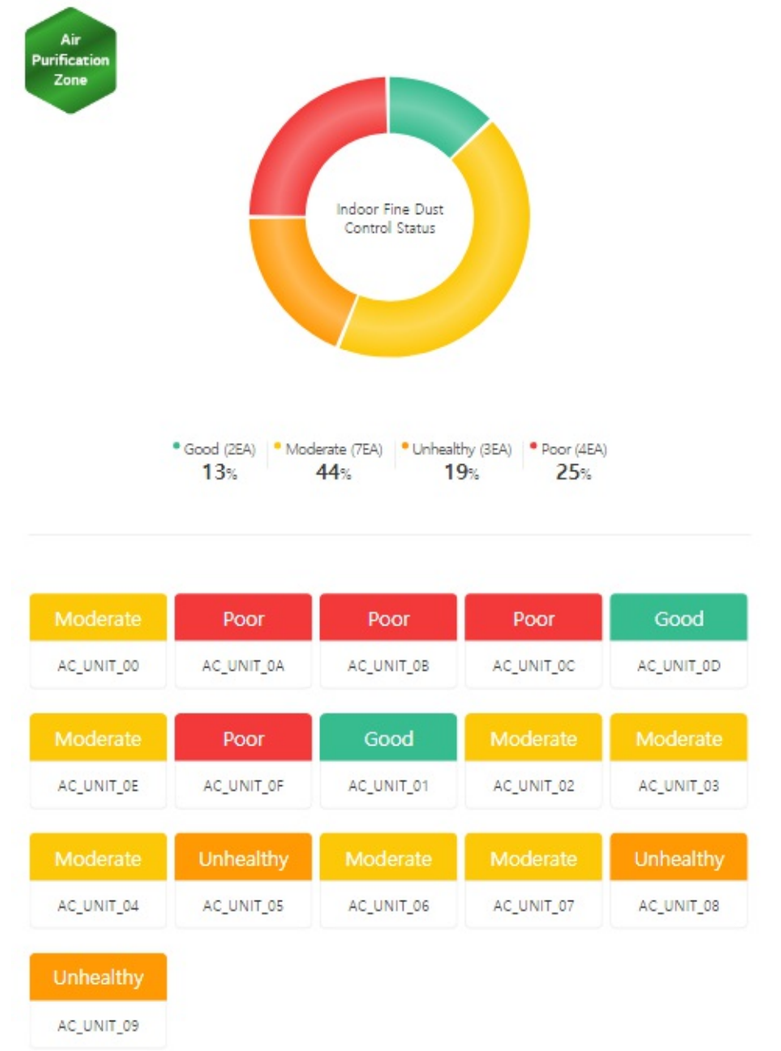
The following describes options and functions of Individual Device Monitoring.



| Item | Description |
|---|---|
| Indoor Fine Dust Management Status | Checks the Fine Dust status on the registered indoor units and air purifiers.<br>Displays the total cleanliness, and displays the odor and density status for fine dust [pm10], fine Fine Dust [pm2.5], and ultra-fine Fine Dust [pm1.0].<br>• Odor information is only displayed on air purifiers and only displays status information. |
| Temperature/Humidity | Displays current temperature and humidity<br>• Indoor units only |
| Fine Dust management zone | Displays the Fine Dust control areas that LG Whisen produces<br>• To make the settings, go to **[Settings] > [Set Fine Dust Monitoring]**. |
| Image | To set the images to display, go to **[Settings] > [Set Fine Dust Monitoring]**.<br>• Up to 10 images can be set. |

## Group Monitoring

The following describes options and functions of group monitoring.




| Item | Description |
|---|---|
| Indoor Fine Dust Control Status Statistics | Displays statistical data of group's total cleanliness in a donut graph and information by item |
| Total cleanliness by device | Displays the total cleanliness for each device in the group. |
| Fine Dust management zone | Displays the Fine Dust control areas that LG Whisen produces<br>• To make the settings, go to **[Settings] > [Set Fine Dust Monitoring]**. |

## Cancel Indoor Fine Dust Monitoring

The following describes how to cancel indoor Fine Dust monitoring.

1. Place the mouse pointer on the top of the screen.
   - The (⊗) button will appear on the top of the screen.
2. Click the ⊗ button.
   - You will be directed to the list of Indoor Fine Dust Monitoring.

# Device Control

It describes the method to control the device and to monitor the device status.

**[Screen and Icon]**

- Screen Structure and Function
- Device Icon

**[Control Window]**

- Control of Each Device
- Device Information

**[Control/Monitoring]**

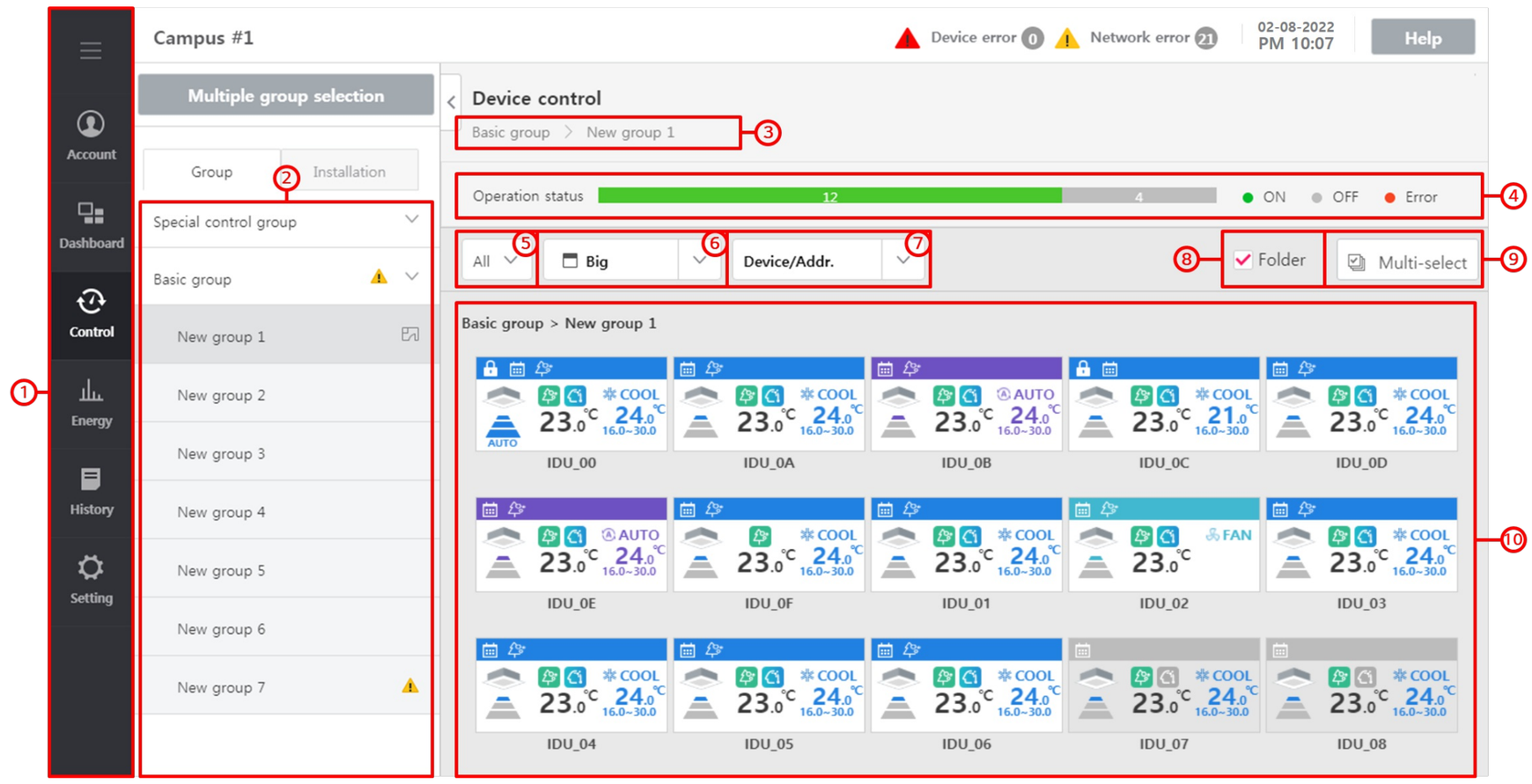
- Control
- Monitoring

**[Drawing]**

- Edit Drawing
- Delete Drawing

## Screen Structure and Function

1. In the left menu tab, click **[Control]** > **[Device control]** menu.
   - The device control screen is displayed.




| No. | Category | Contents |
|---|---|---|
| ① | Main Menu | Main Menu Tab |
| ② | Group List | Check control group |
| ③ | Group Information | Group name and group location |
| ④ | Operation status | Check the devices' current operation status (ON/OFF/Error) |
| ⑤ | Filtering | Device category and device status filtering |
| ⑥ | Viewing method | Select viewing method of device icon<br>: Big<br>: Small<br>: List<br>: Drawing |
| ⑦ | Sorting device | Select the sorting method of the device<br>• Name<br>• Device/Name<br>• Device/Addr.<br>• Operation |
| ⑧ | View folder | Check the lower level group category of the current group when it is checked |
| ⑨ | Multi-select | Select multiple devices when it is clicked |
| ⑩ | Device section | Check the information of the devices set in the group |

## Management/installation group

1. Group

- management group set for convenience

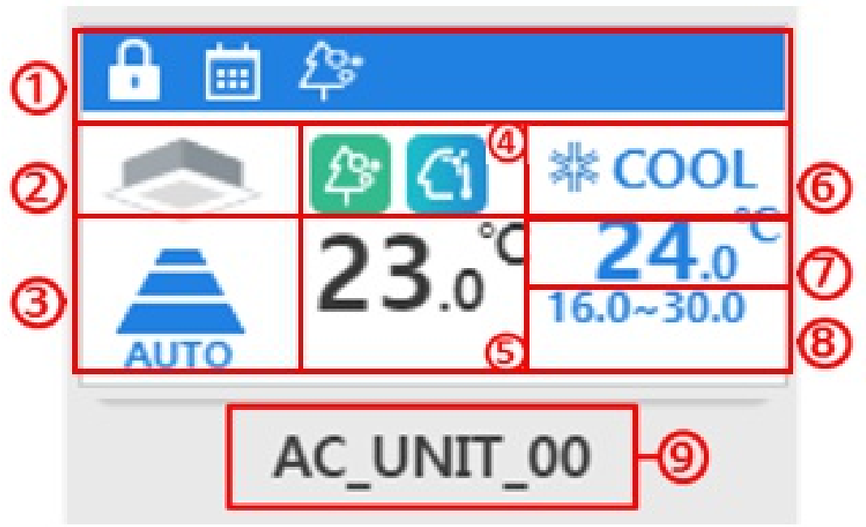
2. Installation

- Provides the information of actually connected device

## Device Icon

You can check important information of individual devices with icon.

1. Big icon




| No. | Category | Contents |
|---|---|---|
| ① | Device status indicating icon | Check Device Status Indicator Icon |
| ② | Device Icon | Check device icon |
| ③ | Fan speed | Check device's Fan speed |
| ④ | Fine Dust status and Smart Care status | Check Fine Dust status and Smart Care operating status<br>Blue (good), Green (normal), Orange (bad), Red (very bad) |
| ⑤ | Current temperature | Check current temperature |
| ⑥ | Mode | Check mode |
| ⑦ | Set temperature | Check set temperature |
| ⑧ | Set temp range | Check upper limit/lower limit temperature |
| ⑨ | Device name | Check device name |

Device status indicating icon

| Icon | Contents |
|---|---|
| | Lock |
| | Schedule |
| | Occupied |
| | Peak control |
| | Filter replacement alarm / Prefilter replacement alarm / Fine dust filter replacement alarm |
| | Oil replacement alarm |
| | Air cleaning |
| | Air quality sensor |
| | Multi-V Interlocking Energy Saving Control |
| | UVnano |
| | UVnano LED inspection required |
| | Cooperative control operation |
| | Group Control (Slave) |

2. Small icon

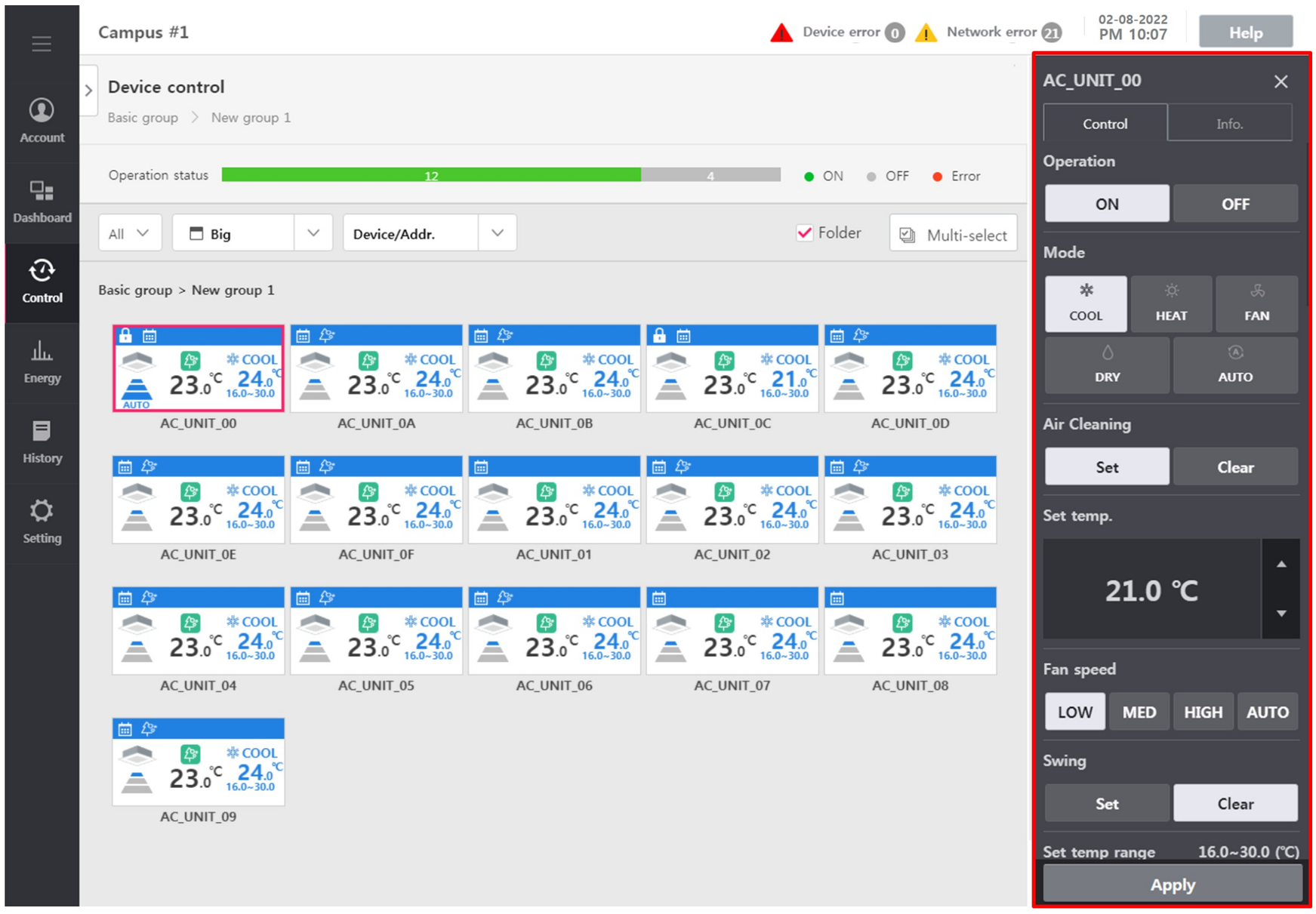
- Check device icon/operation/mode/device name

3. View list

- indication of attribute of the device in the group (device name, operation status, operation mode, current temperature, set temperature, error code, ACP address, outdoor unit addres, device address, etc.).

# User Manual

When a devices selected in the device section, control window is created in the right side as in the following screen. You can control the selected device through the control window.



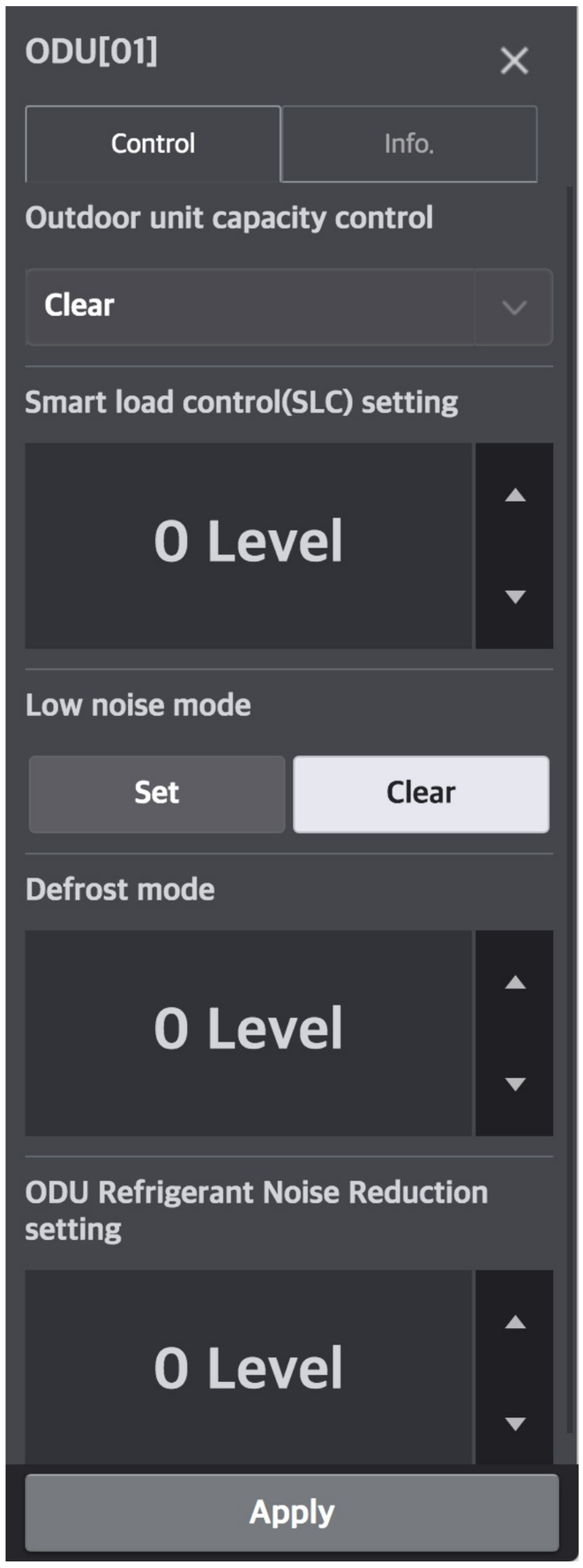

## Note

- The detail control boundary for each device may be different from the actual device, so make sure to refer to the corresponding device's manual.
- ACS I/O devices may have different control tool name, unit, upper limit, lower limit, etc. according to the setting.

## Control of Each Device

- Outdoor Unit
- IDU
  IDU (2Set)
- ERV
- ERV DX
- Floor mounted vent
- Heating
- AHU
- Scroll chiller
- Screw chiller
- Turbo chiller
- Absorption Chiller
- Scroll Chiller Mini
- DOKIT
- DO
- AO
- Air purifier

## Outdoor Unit

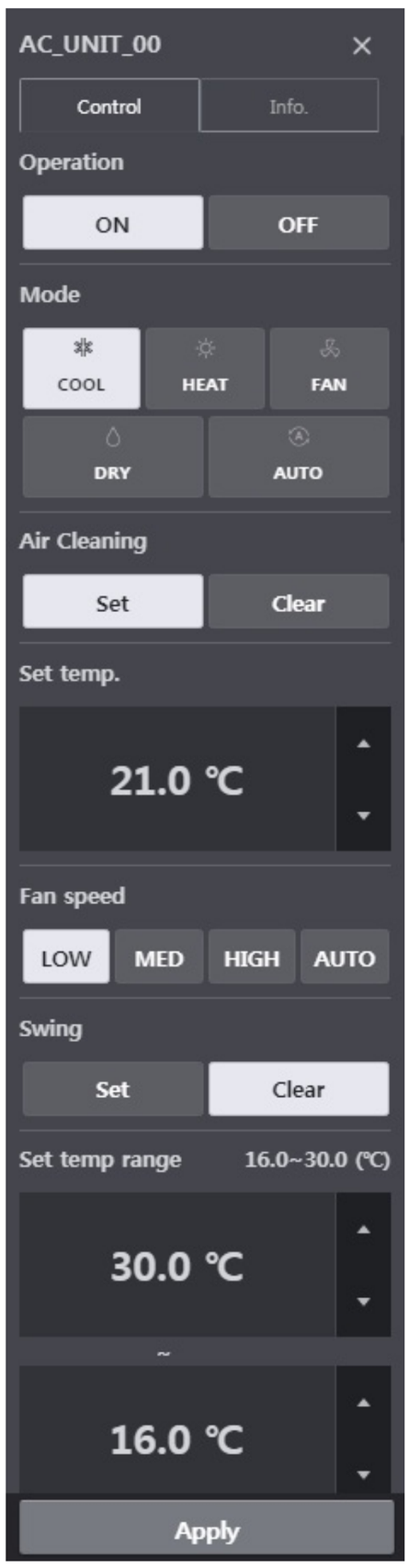


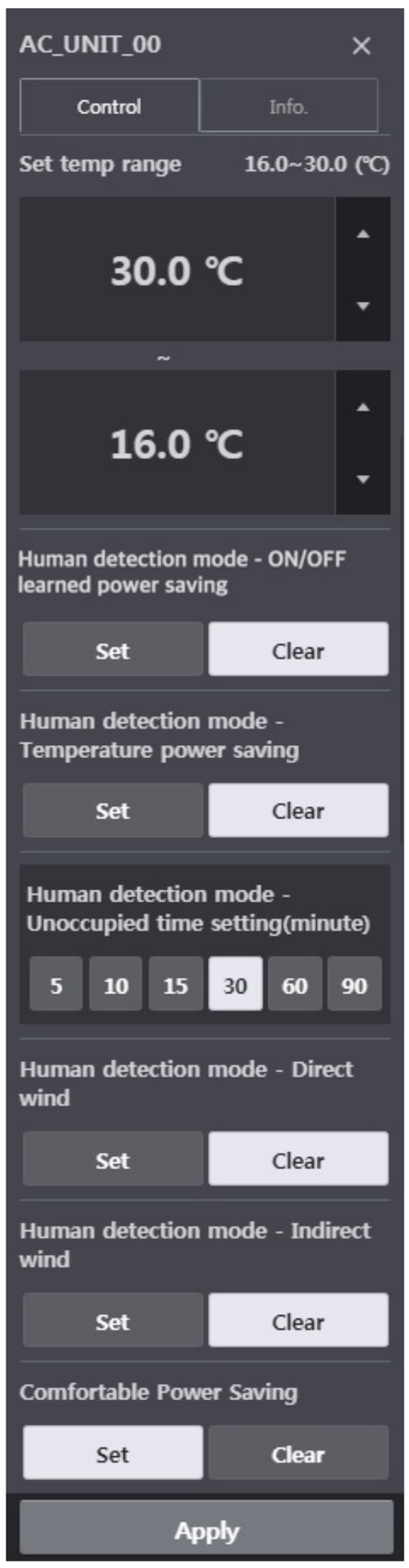

| Category | Contents |
|---|---|
| Outdoor unit capacity control | • Press **[▼]** button to set operation rate (%) |
| Smart load control function | • Press **[▲]/[▼]** button to set smart load control stage (0stage, 1stage, 2stage, 3stage, 4stage) |
| Low noise operation | • **[Set/Clear]** button: outdoor unit low noise operation Set/Clear |
| Defrost mode | • Press **[▲]/[▼]** button to set defrost mode stage (0stage, 1stage, 2stage, 3stage) |
| ODU Refrigerant Noise Reduction setting | • Press **[▲]/[▼]** button to set outdoor unit refrigerant noise reduction stage (0stage, 1stage, 2stage) |

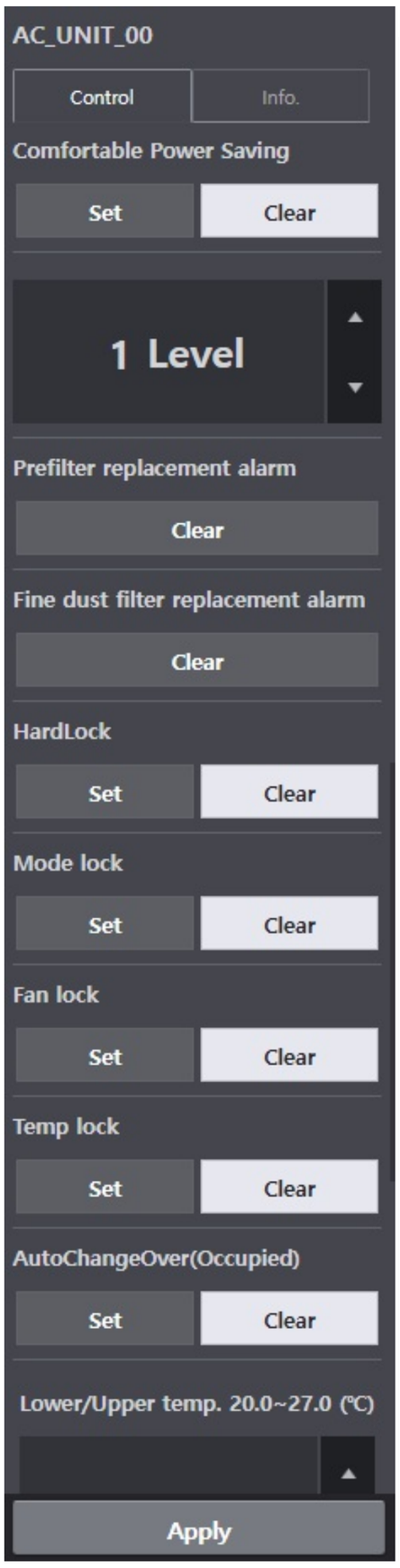
### Note

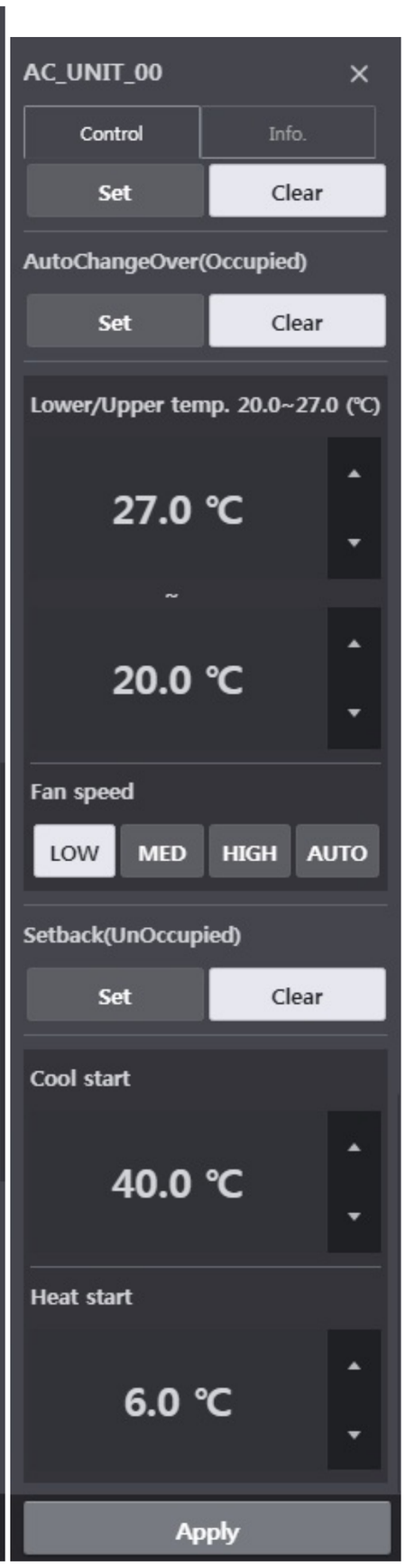
In the central controller, if 'outdoor unit low noise operation' is used, in the installed indoor unit's remote controller, you need to set [Installer setting] > [Low noise mode] to 'ODU'. (Default value 'ODU')

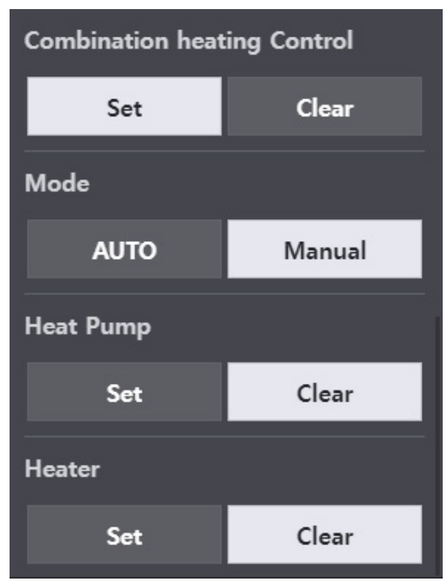
## IDU

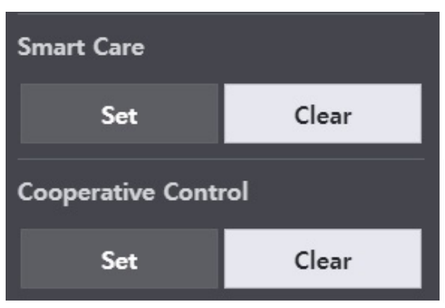


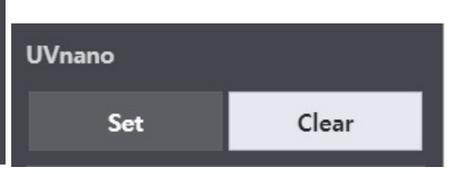



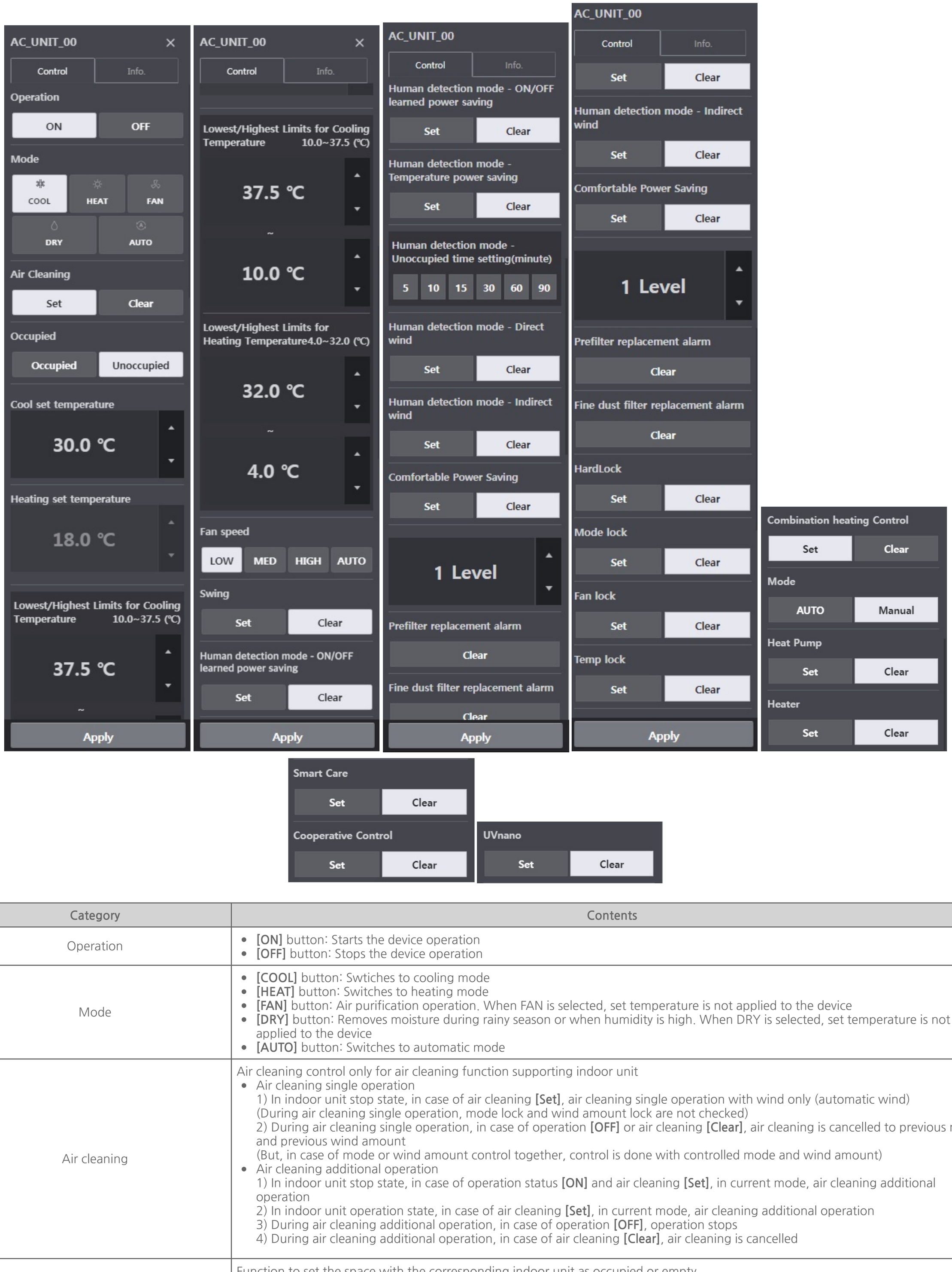




| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[COOL]** button: Swtiches to cooling mode<br>• **[HEAT]** button: Switches to heating mode<br>• **[FAN]** button: Air purification operation. When FAN is selected, set temperature is not applied to the device<br>• **[DRY]** button: Removes moisture during rainy season or when humidity is high. When DRY is selected, set temperature is not applied to the device<br>• **[AUTO]** button: Switches to automatic mode |
| Air cleaning | Air cleaning control only for air cleaning function supporting indoor unit<br>• Air cleaning single operation<br>1) In indoor unit stop state, in case of air cleaning **[Set]**, air cleaning single operation with wind only (automatic wind)<br>(During air cleaning single operation, mode lock and wind amount lock are not checked)<br>2) During air cleaning single operation, in case of operation **[OFF]** or air cleaning **[Clear]**, air cleaning is cancelled to previous mode and previous wind amount<br>(But, in case of mode or wind amount control together, control is done with controlled mode and wind amount)<br>• Air cleaning additional operation<br>1) In indoor unit stop state, in case of operation status **[ON]** and air cleaning **[Set]**, in current mode, air cleaning additional operation<br>2) In indoor unit operation state, in case of air cleaning **[Set]**, in current mode, air cleaning additional operation<br>3) During air cleaning additional operation, in case of operation **[OFF]**, operation stops<br>4) During air cleaning additional operation, in case of air cleaning **[Clear]**, air cleaning is cancelled |
| Set temperature | Press **[▲]/[▼]** button to set the desired temperature |
| Fan speed | Wind strength setting<br>• **[LOW]** button: Set the fan speed to slow<br>• **[MED]** button: Set the fan speed to normal<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[AUTO]** button: **[LOW]**-**[MED]**-**[HIGH]** automatic switching |
| Swing | • **[Set/Clear]** button: Set/Clear the Swing function |
| Set temp range | When user set the desired temperature individually, the desired temperature outside the designated temperature boundary cannot be set |

| | |
|---|---|
| Human detection mode - ON/OFF learned power saving | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - ON/OFF learned power saving Set/Clear |
| Human detection mode - Temperature power saving | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - temperature power saving Set/Clear |
| Human detection mode - Unoccupied time setting(minute) | Only for human detection mode - supporting indoor unit, human detection mode - control<br>Set empty decision time to 5, 10, 15, 30, 60, or 90 min. |
| Human detection mode - Direct wind | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - direct wind Set/Clear |
| Human detection mode - Indirect wind | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - indirect wind Set/Clear |
| Comfortable Power Saving | • **[Set/Clear]** button: Comfortable Power Saving function Set/Clear<br>• You can press **[▲]/[▼]** button to set stage<br>Only when indoor unit is in cooling operation, Comfortable Power Saving control is possible |
| Prefilter replacement alarm | • **[Clear]** button: In case of prefilter replacement alarm, it cancels prefilter replacement alarm |
| Fine dust filter replacement alarm | • **[Clear]** button: In case of fine dust filter replacement alarm, it cancels fine dust filter replacement alarm |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |
| Mode lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control mode setting with individual remote controller |
| Fan lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control Fan speed setting with individual remote controller |
| TempLock | • **[Set/Clear]** button: Set/clear lock so that user cannot control temperature setting with individual remote controller |
| Auto change over(Occupied) | It is a function to automatically switch to cooling operation if indoor temperature exceeds upper limit temperature, to heating operation if it is less than lower limit temperature, and to wind only operation if it is between upper limit temperature and lower limit temperature (supported only in outdoor unit with both cooling/heating)<br>• **[Set/Clear]** button: Set/clear Auto change over(Occupied) |
| Lower /Upper temp. | Auto change over(Occupied)'s lower limit temperature and upper limit temperature setting |
| Auto change over(Occupied) Fan speed | Select the Fan speed value to set in the indoor unit during Auto change over(Occupied) operation<br>• **[LOW]** button: Set the fan speed to slow<br>• **[MED]** button: Set the fan speed to normal<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[AUTO]** button: **[LOW]**-**[MED]**-**[HIGH]** automatic switching |
| Setback(UnOccupied) | Function to maintain the temperature of the space where the device is installed in certain boundary (Only supported by cooling/heating simultaneous type outdoor unit)<br>• **[Set/Clear]** button: Set/clear the Setback(UnOccupied) |
| Cool start | Press **[▲]/[▼]** button to set the cooling operation start temperature(21˚C~40˚C) |
| Heat start | Press **[▲]/[▼]** button to set the heating operation start temperature(1˚C~20˚C) |
| Combination heating control | (Supported for certain indoor and outdoor units only)<br>**[Set/Clear]** button : Activates/deactivates control based on outdoor temperature. |
| Mode | It is activated only when combination heating control is set.<br>• **[AUTO]** button : Sets the control mode to auto.<br>• **[Manual]** button : Sets the control mode to manual.<br>You can activate/deactivate control of the heat pump and the heater. You cannot deactivate control of both the heat pump and the heater. |
| Temp. 1 | It is activated only in the auto mode.<br>You can set Temp. 1 for the outdoor temperatures. According to the set temperatures, the heat pump and the heater operate automatically.<br>Press **[▲]/[▼]** to set Temp. 1 (-23℃-16℃). |
| Temp. 2 | It is activated only in the auto mode.<br>You can set Temp. 2 for the outdoor temperatures. According to the set temperatures, the heat pump and the heater operate automatically.<br>Press **[▲]/[▼]** to set Temp. 2 (-23℃-51℃). |
| Heat pump | It is activated only in the manual mode.<br>**[Set/Clear]** button : Activates/Deactivates heat pump control. |
| Heater | It is activated only in the manual mode.<br>**[Set/Clear]** button : Activates/deactivates heater control. |
| Smart Care | Activated only when an AI controller is connected<br>**[Set/Clear]** button: Activate/Deactivate Smart Care |
| Cooperative control | Activated only when an AI controller is connected<br>**[Set/Clear]** button: Activate/Deactivate cooperative control |
| UVnano | Only for UVnano mode - supporting indoor unit, UVnano mode - control<br>**[Set/Clear]** button: Activate/Deactivate UVnano |

## IDU (2Set)

When 2Set function supporting outdoor unit/indoor unit/remote controller are used and in **[Setting] > [Installing]**, if ACP''s 2Set automatic mode is selected as **IDU**, indoor unit 2Set control window is generated on the right side as in the following screen.




| Category | Contents |
|---|---|
| Operation | • **[ON]** button: Starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[COOL]** button: Swtiches to cooling mode<br>• **[HEAT]** button: Switches to heating mode<br>• **[FAN]** button: Air purification operation. When FAN is selected, set temperature is not applied to the device<br>• **[DRY]** button: Removes moisture during rainy season or when humidity is high. When DRY is selected, set temperature is not applied to the device<br>• **[AUTO]** button: Switches to automatic mode |
| Air cleaning | Air cleaning control only for air cleaning function supporting indoor unit<br>• Air cleaning single operation<br>1) In indoor unit stop state, in case of air cleaning **[Set]**, air cleaning single operation with wind only (automatic wind)<br>(During air cleaning single operation, mode lock and wind amount lock are not checked)<br>2) During air cleaning single operation, in case of operation **[OFF]** or air cleaning **[Clear]**, air cleaning is cancelled to previous mode and previous wind amount<br>(But, in case of mode or wind amount control together, control is done with controlled mode and wind amount)<br>• Air cleaning additional operation<br>1) In indoor unit stop state, in case of operation status **[ON]** and air cleaning **[Set]**, in current mode, air cleaning additional operation<br>2) In indoor unit operation state, in case of air cleaning **[Set]**, in current mode, air cleaning additional operation<br>3) During air cleaning additional operation, in case of operation **[OFF]**, operation stops<br>4) During air cleaning additional operation, in case of air cleaning **[Clear]**, air cleaning is cancelled |
| Occupancy | Function to set the space with the corresponding indoor unit as occupied or empty<br>• **[Occupied]** button: occupied setting<br>• **[Unoccupied]** button: empty setting |
| Cooling set temperature | Press **[▲]/[▼]** button to set cooling set temperature |

| | |
|---|---|
| Heating setting temperature | Press **[▲]/[▼]** button to set heating set temperature |
| Cooling lower limit/upper limit temperature | Cooling lower limit temperature and upper limit temperature setting |
| Heating lower limit/upper limit temperature | Heating lower limit temperature and upper limit temperature setting |
| Fan speed | Wind strength setting<br>• **[LOW]** button: Set the fan speed to slow<br>• **[MED]** button: Set the fan speed to normal<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[AUTO]** button: **[LOW]**-**[MED]**-**[HIGH]** automatic switching |
| Swing | • **[Set/Clear]** button: Set/Clear the Swing function |
| Human detection mode - ON/OFF learned power saving | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - ON/OFF learned power saving Set/Clear |
| Human detection mode - Temperature power saving | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - temperature power saving Set/Clear |
| Human detection mode - Unoccupied time setting(minute) | Only for human detection mode - supporting indoor unit, human detection mode - control<br>Set empty decision time to 5, 10, 15, 30, 60, or 90 min. |
| Human detection mode - Direct wind | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - direct wind Set/Clear |
| Human detection mode - Indirect wind | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - indirect wind Set/Clear |
| Comfortable Power Saving | • **[Set/Clear]** button: Comfortable Power Saving function Set/Clear<br>• You can press **[▲]/[▼]** button to set stage<br>Only when indoor unit is in cooling operation, Comfortable Power Saving control is possible |
| Prefilter replacement alarm | • **[Clear]** button: In case of prefilter replacement alarm, it cancels prefilter replacement alarm |
| Fine dust filter replacement alarm | • **[Clear]** button: In case of fine dust filter replacement alarm, it cancels fine dust filter replacement alarm |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |
| Mode lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control mode setting with individual remote controller |
| Fan lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control Fan speed setting with individual remote controller |
| TempLock | • **[Set/Clear]** button: Set/clear lock so that user cannot control temperature setting with individual remote controller |
| Combination heating control | (Supported for certain indoor and outdoor units only)<br>**[Set/Clear]** button : Activates/deactivates control based on outdoor temperature. |
| Mode | It is activated only when combination heating control is set.<br>• **[AUTO]** button : Sets the control mode to auto.<br>• **[Manual]** button : Sets the control mode to manual.<br>You can activate/deactivate control of the heat pump and the heater. You cannot deactivate control of both the heat pump and the heater. |
| Temp. 1 | It is activated only in the auto mode.<br>You can set Temp. 1 for the outdoor temperatures. According to the set temperatures, the heat pump and the heater operate automatically.<br>• Press **[▲]/[▼]** to set Temp. 1 (-23℃-16℃). |
| Temp. 2 | It is activated only in the auto mode.<br>You can set Temp. 2 for the outdoor temperatures. According to the set temperatures, the heat pump and the heater operate automatically.<br>• Press **[▲]/[▼]** to set Temp. 2 (-23℃-51℃). |
| Heat pump | It is activated only in the manual mode.<br>• **[Set/Clear]** button : Activates/Deactivates heat pump control. |
| Heater | It is activated only in the manual mode.<br>• **[Set/Clear]** button : Activates/deactivates heater control. |
| Smart Care | Activated only when an AI controller is connected<br>**[Set/Clear]** button: Activate/Deactivate Smart Care |
| Cooperation control | Activated only when an AI controller is connected<br>**[Set/Clear]** button: Activate/Deactivate cooperation control |
| UVnano | Only for UVnano mode - supporting indoor unit, UVnano mode - control<br>**[Set/Clear]** button: Activate/Deactivate UVnano |

## Note

2set automatic mode

- Only with 2Set automatic mode supporting indoor/outdoor air, the corresponding function can be used. (For whether each device supports 2Set, please refer to the manual of the corresponding device.)
- Override is a function that can be set from remote controller. For override function related contents, please refer to remote controller manual.
- In 2Set automatic mode, along with Auto icon, product's actual operation mode (cooling, heating) status is displayed.

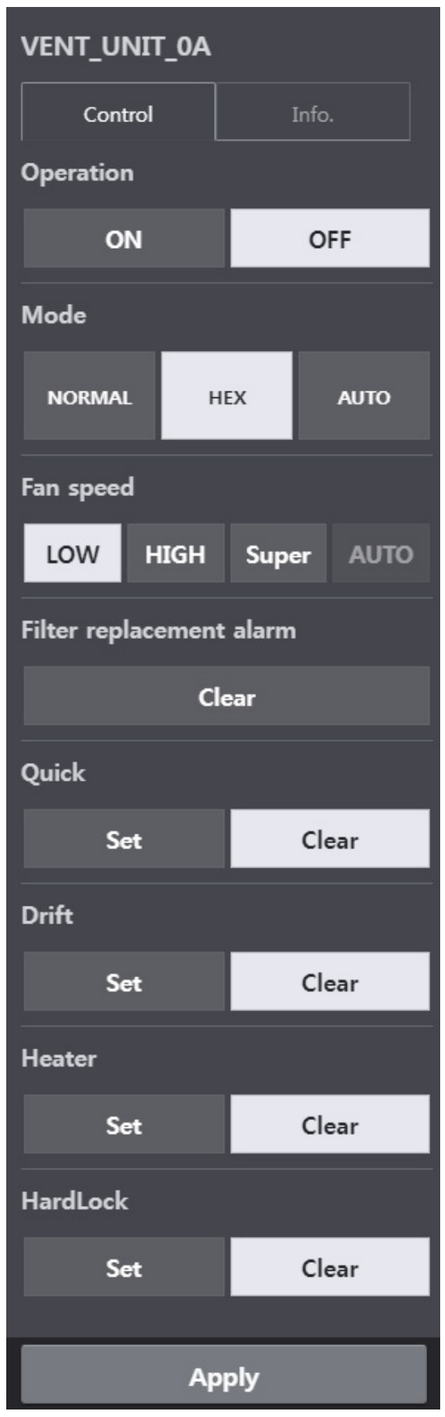
Occupancy

- If occupancy sensor is interlinked to indoor unit, setting from the central control has priority over the corresponding occupancy sensor. For occupancy sensor related contents, please refer to indoor unit or Dry Contact manual.
- When occupied setting is changed, automatically set cooling set temperature and heating set temperature are the most recently run schedule's cooling set temperature and heating set temperature, and if there is no previously run schedule, it is set to default value.

  (Example)
  09:00 - 12:00: occupied / cooling set temperature 27°C / heating set temperature 18°C
  12:00 - 13:00: occupied / cooling set temperature 29°C / heating set temperature 16°C
  13:00 - 15:00: occupied / cooling set temperature 26°C / heating set temperature 19°C

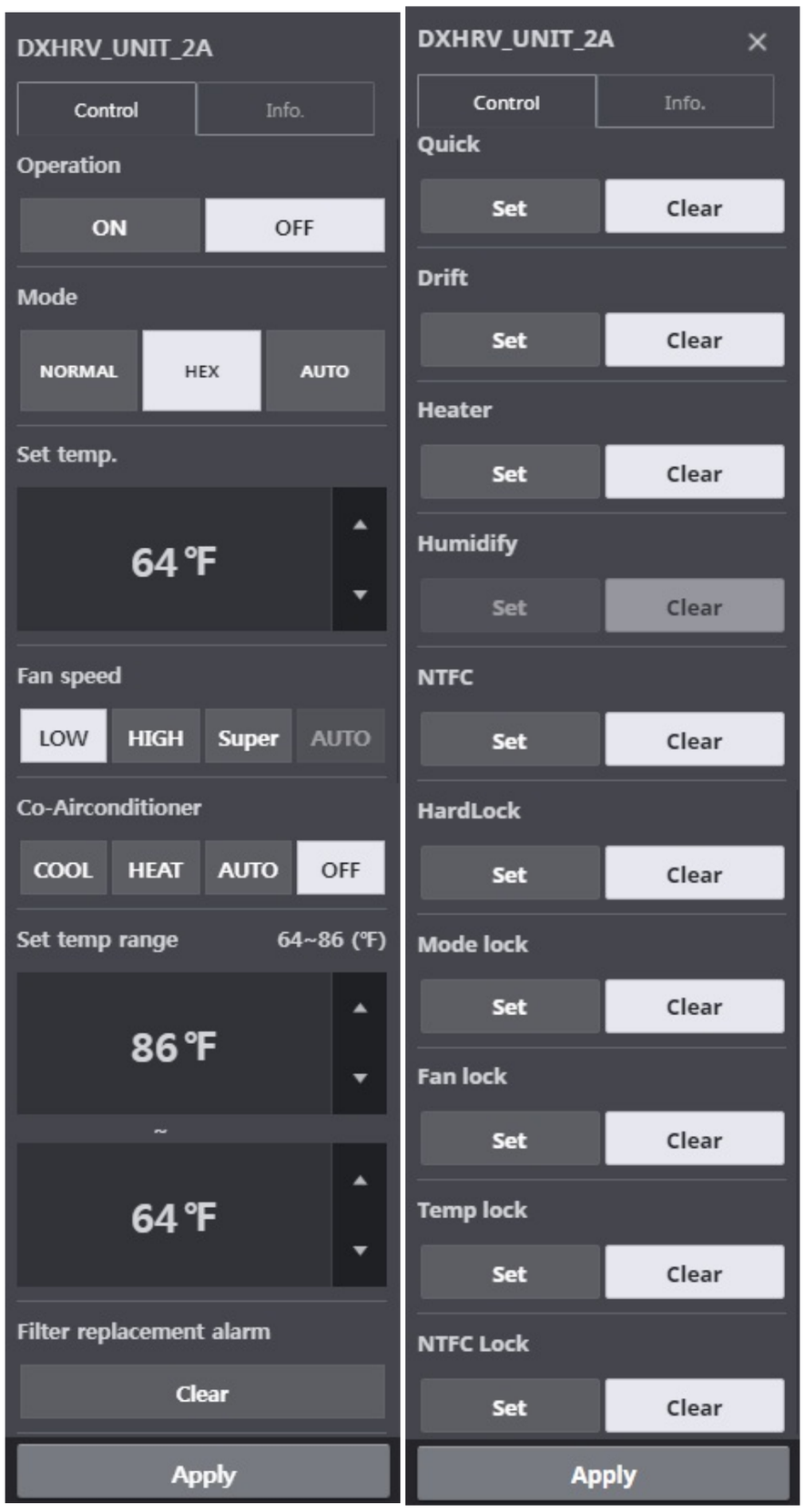
  If it is empty without schedule after 15:00, cooling set temperature is 29°C and heating set temperature is 16°C, and if it is occupied, cooling set temperature becomes 26°C and heating set temperature becomes 19°C.

# ERV



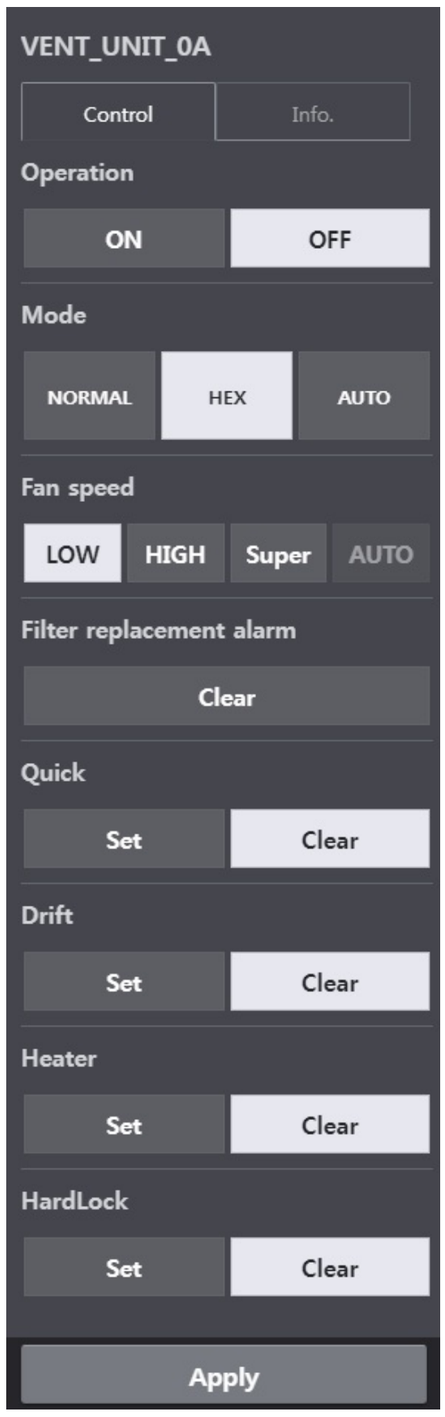

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[NORMAL]** button: Discharged air ventilates without going trough the electric heat exchanger<br>• **[HEX]** button: Both air supply/discharge ventilates through the electric heat exchanger<br>• **[AUTO]** button: Switches to four seasons mode |
| Fan speed | Wind strength setting<br>• **[LOW]** button: Set the fan speed to slow<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[SUPER]** button: Set the fan speed to Max. speed<br>• **[AUTO]** button: **[LOW]**-**[HIGH]**-**[SUPER]** automatic switching<br>- User setting is impossible<br>- When Drift/Quick is set, **[AUTO]** Fan speed is selected<br>- When Drift/Quick is cleared, **[HIGH]** Fan speed is selected<br>- During **[AUTO]** operation, when **[LOW]/[HIGH]/[SUPER]** is selected, Drift/Quick function in operation is cleared |
| Filter replacement alarm | • **[Clear]** button: in case of filter replacement alarm, it cancels filter replacement alarm |
| Additional function | • Quick **[Set/Clear]** button: Set/clear Quick function (When Quick function is selected, Drift function is cleared)<br>• Drift **[Set/Clear]** button: Set/clear Drift function (When Drift function is selected, Quick function is cleared)<br>• Heater **[Set/Clear]** button: Set/clear heater function |
| Midnight air cooling(NTFC) | • **[Set/Clear]** button: Set/Clear Midnight air cooling(NTFC) function that can outdoor unit cooling when outdoor temperature is lower than the base temperature at night time |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |

# ERV DX



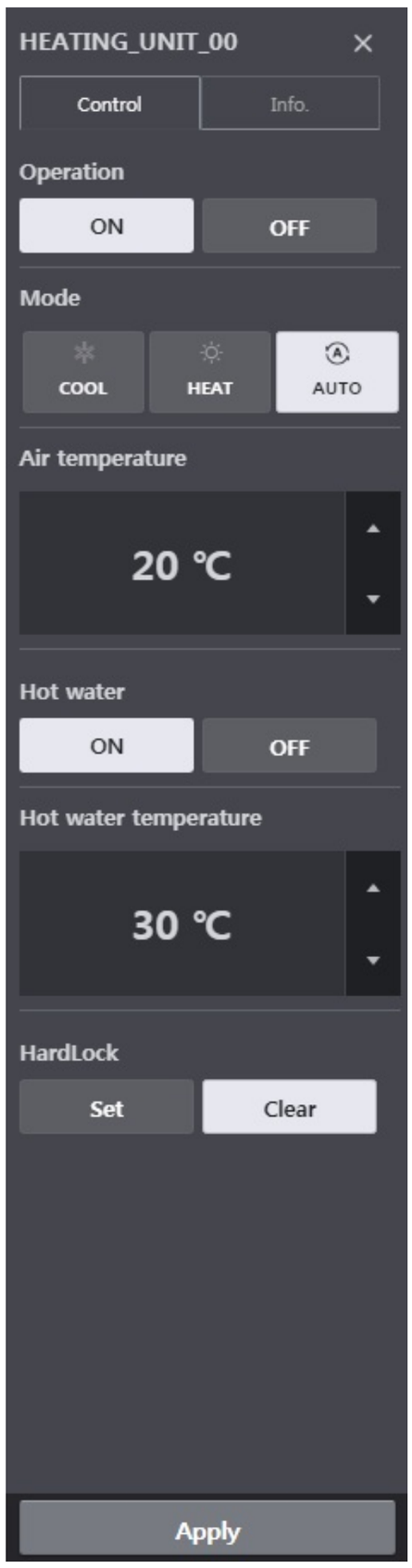

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[NORMAL]** button: Discharged air ventilates without going trough the electric heat exchanger<br>• **[HEX]** button: Both air supply/discharge ventilates through the electric heat exchanger<br>• **[AUTO]** button: Switches to four seasons mode |
| Set temperature | Press **[▲]/[▼]** button to set the desired temperature |
| Fan speed | Wind strength setting<br>• **[LOW]** button: Set the fan speed to slow<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[SUPER]** button: Set the fan speed to Max. speed<br>• **[AUTO]** button: **[LOW]**-**[HIGH]**-**[SUPER]** automatic switching<br>- User setting is impossible<br>- When Drift/Quick is set, **[AUTO]** Fan speed is selected<br>- When Drift/Quick is cleared, **[HIGH]** Fan speed is selected<br>- During **[AUTO]** operation, when **[LOW]/[HIGH]/[SUPER]** is selected, Drift/Quick function in operation is cleared |
| Air conditioner | • **[COOL]** button: Operates the ERV DX in cooling mode<br>• **[AUTO]** button: Operates the ERV DX in auto mode<br>• **[HEAT]** button: Operates the ERV DX as heating mode<br>• **[OFF]** button: Stops the air conditioner of the ERV DX |
| Set temp range | When user set the desired temperature individually, the desired temperature outside the designated temperature boundary cannot be set |
| Filter replacement alarm | • **[Clear]** button: in case of filter replacement alarm, it cancels filter replacement alarm |
| Additional function | • Quick **[Set/Clear]** button: Set/clear Quick function (When Quick function is selected, Drift function is cleared)<br>• Drift **[Set/Clear]** button: Set/clear Drift function (When Drift function is selected, Quick function is cleared)<br>• Heater **[Set/Clear]** button: Set/clear heater function<br>• Humidify **[Set]** button: Set Humidify function (only for air conditioner heating mode) |
| Midnight air cooling(NTFC) | • **[Set/Clear]** button: Set/Clear Midnight air cooling(NTFC) function that can outdoor unit cooling when outdoor temperature is lower than the base temperature at night time |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |
| Mode lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control mode setting with individual remote controller |
| Fan lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control Fan speed setting with individual remote controller |
| TempLock | • **[Set/Clear]** button: Set/clear lock so that user cannot control temperature setting with individual remote controller |
| Midnight air cooling(NTFC) lock | • **[Set/Clear]** button: Set/Clear Midnight air cooling(NTFC) schedule set in the remote controller |

## Floor mounted vent



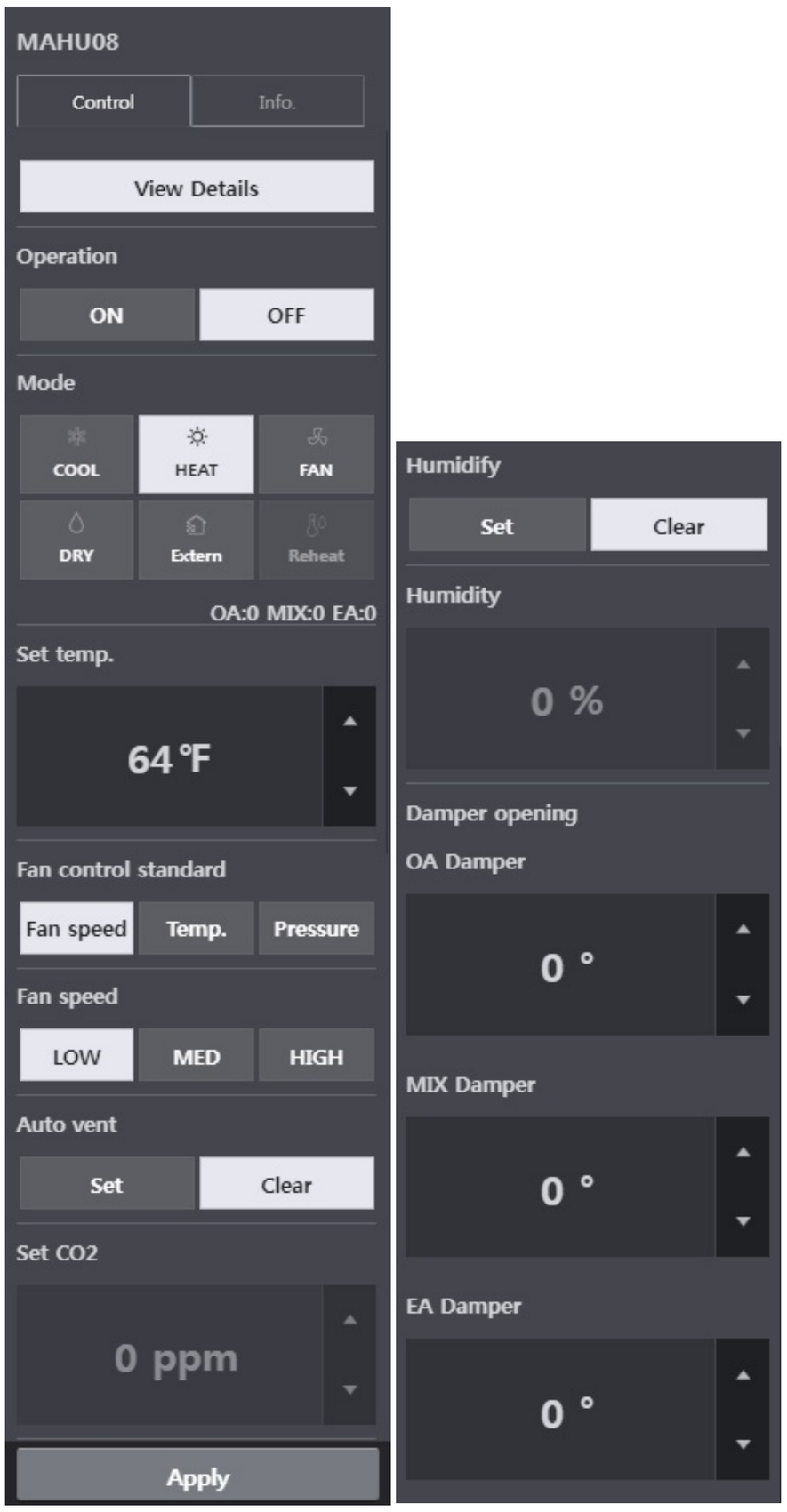

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[NORMAL]** button: Discharged air ventilates without going trough the electric heat exchanger<br>• **[HEX]** button: Both air supply/discharge ventilates through the electric heat exchanger<br>• **[AUTO]** button: Switches to four seasons mode |
| Fan speed | Wind strength setting<br>• **[LOW]** button: Set the fan speed to slow<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[SUPER]** button: Set the fan speed to Max. speed<br>• **[AUTO]** button: **[LOW]**-**[HIGH]**-**[SUPER]** automatic switching<br>- User setting is impossible<br>- When Drift/Quick is set, **[AUTO]** Fan speed is selected<br>- When Drift/Quick is cleared, **[HIGH]** Fan speed is selected<br>- During **[AUTO]** operation, when **[LOW]/[HIGH]/[SUPER]** is selected, Drift/Quick function in operation is cleared |
| Filter replacement alarm | • **[Clear]** button: in case of filter replacement alarm, it cancels filter replacement alarm |
| Additional function | • Quick **[Set/Clear]** button: Set/clear Quick function (When Quick function is selected, Drift function is cleared)<br>• Drift **[Set/Clear]** button: Set/clear Drift function (When Drift function is selected, Quick function is cleared)<br>• Heater **[Set/Clear]** button: Set/clear heater function |
| Midnight air cooling(NTFC) | • **[Set/Clear]** button: Set/Clear Midnight air cooling(NTFC) function that can outdoor unit cooling when outdoor temperature is lower than the base temperature at night time |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |

## Heating




| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[COOL]** button: Swtiches to cooling mode<br>• **[HEAT]** button: Switches to heating mode<br>• **[AUTO]** button: Switches to automatic mode |
| Air/Water in/out temperature | Press **[▲]/[▼]** button to set Air/Water in/out temperature<br><br>It is displayed based on the set temperature selected in **[Setting]-[Installing]**<br>• When **[Water in/out]** is selected, it is displayed as water in/out temperature<br>• When **[indoor]** is selected, it is displayed as air temperature |
| Hot water | • **[ON]** button: Starts hot water operation<br>- If hot water is operated while the device is in automatic/cooling operation, the corresponding mode and hot water are displayed in the icon of the contents display section<br>- If hot water is operated while the device is stopped, the icon in the contents display section is enabled, and hot water is displayed<br>• **[OFF]** button: Stops hot water operation |
| Hot water temperature | Press **[▲]/[▼]** button to set hot water temperature |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |

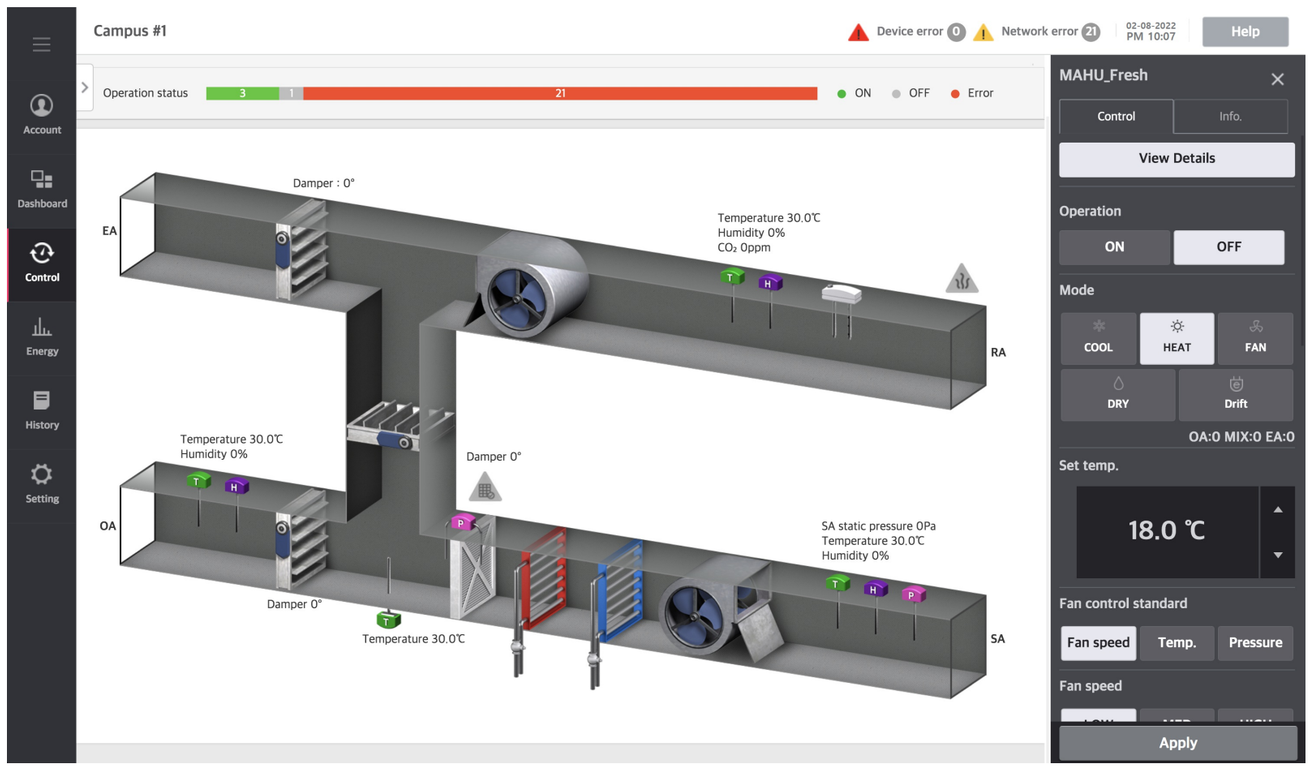
# AHU




| Category | Contents |
|---|---|
| View Details | Press **[View Details]** button to check detail information (But, mobile is excluded) |
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[COOL]** button: Swtiches to cooling mode<br>• **[HEAT]** button: Switches to heating mode<br>• **[FAN]** button: Air purification operation. When FAN is selected, you cannot set the desired temperature<br>• **[DRY]** button: Removes moisture in rainy season or when humidity is high. When DRY is selected, you cannot set the desired temperature<br>• **[Drift]** button: Operation to find the operation point with the best ventilation system efficiency to save power consumption. It fluently discharges the contaminated indoor air by having bigger discharger Fan speed than air supply<br>• **[Reheat]** button : Maintains a constant temperature and humidity while the cooling/heating function is active. (Available only when the AHU reheat coil is in use.) |
| Set temperature | Press **[▲]/[▼]** button to set the temperature |
| Fan control standard | • **[Fan speed]** button: Controls the fan based on Fan speed status<br>• **[Temp]** button: Controls the fan based on temperature status<br>• **[Pressure]** button: Controls the fan based on Pressure status |
| Fan speed | It is displayed only when fan control standard is Fan speed<br>• **[LOW]** button: Set the fan speed to slow<br>• **[MED]** button: Set the fan speed to normal<br>• **[HIGH]** button: Set the fan speed to fast |
| Automatic ventilation | It is displayed only when the additional function's automatic ventilation or automatic ventilation and Humidify are selected during AHU device registration<br>• Automatic ventilation **[Set/Clear]** button: Starts/stops automatic ventilation |
| Set $CO_2$ | It is enabled only when automatic ventilation function is set<br>Press **[▲]/[▼]** button to set in the unit of 100ppm within 100 ppm ~ 2 000 ppm range |
| Humidify | It is displayed only when the addtitional function's Humidify or automatic ventilation and Humidify are selected during AHU device registration<br>• Humidify **[Set/Clear]** button: Starts/stops Humidify function |
| Humidity | It is enabled only when Humidify function is set<br>Press **[▲]/[▼]** button to set the target humidity |
| Damper opening | • Press **[OA Damper]** : **[▲]/[▼]** button to set the outdoor unit air damper opening value in the unit of 1 º within 0 º ~ 90 º range<br>• Press **[MIX Damper]** : **[▲]/[▼]** button to set the mixer damper opening value in the unit of 1 º within 0 º ~ 90 º range<br>• Press **[EA Damper]** : **[▲]/[▼]** button to set the air discharge damper opening value in the unit of 1 º within 0 º ~ 90 º range<br><br>When you set **[Setting]-[system setting]'s Apply damper opening formula** as **set**, it operates as OA Damper = EA Damper, OA Damper = MIX Damper = 90 |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |

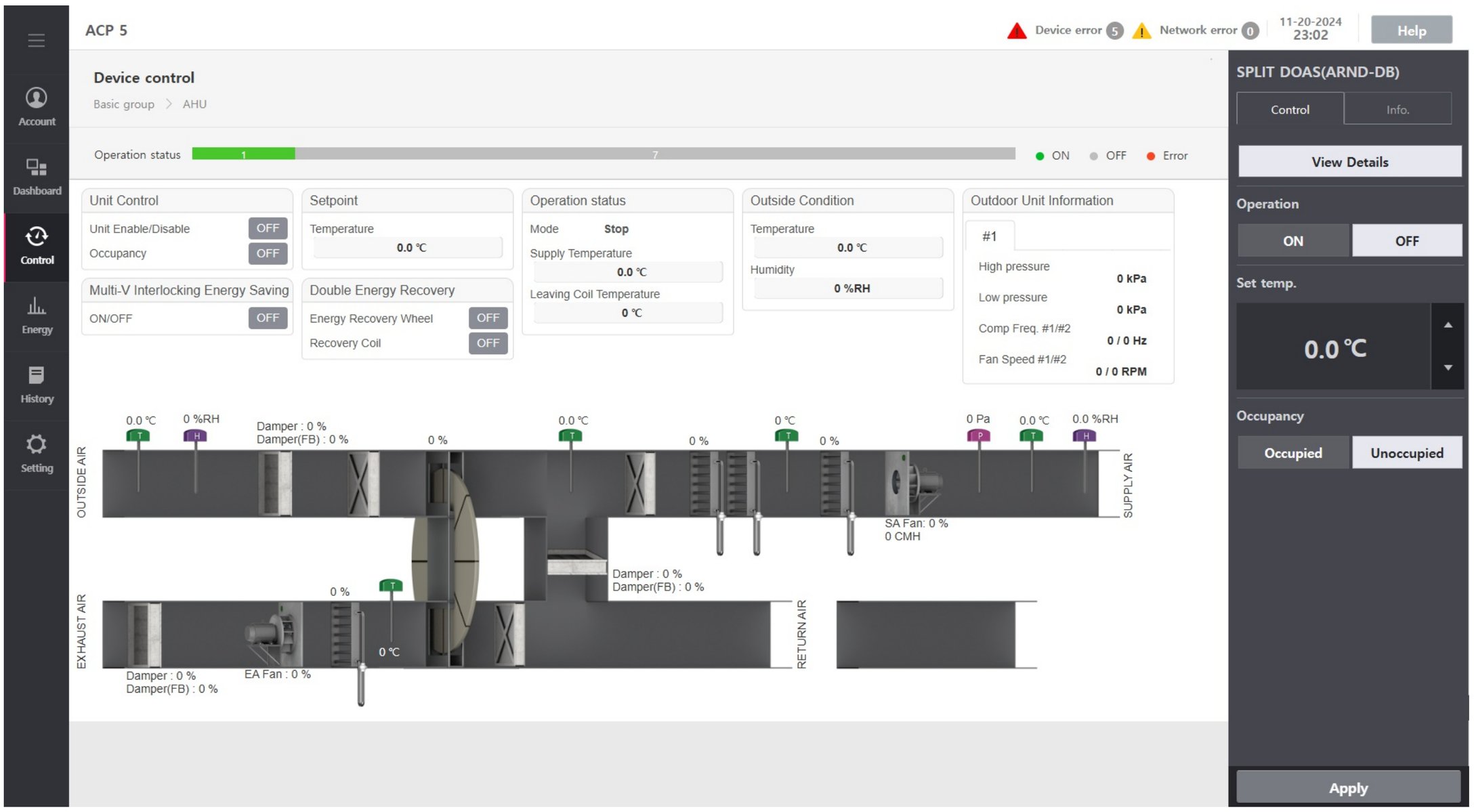
# View AHU in detail

In AHU's control screen, you can press **[View Details]** button to check detail information.



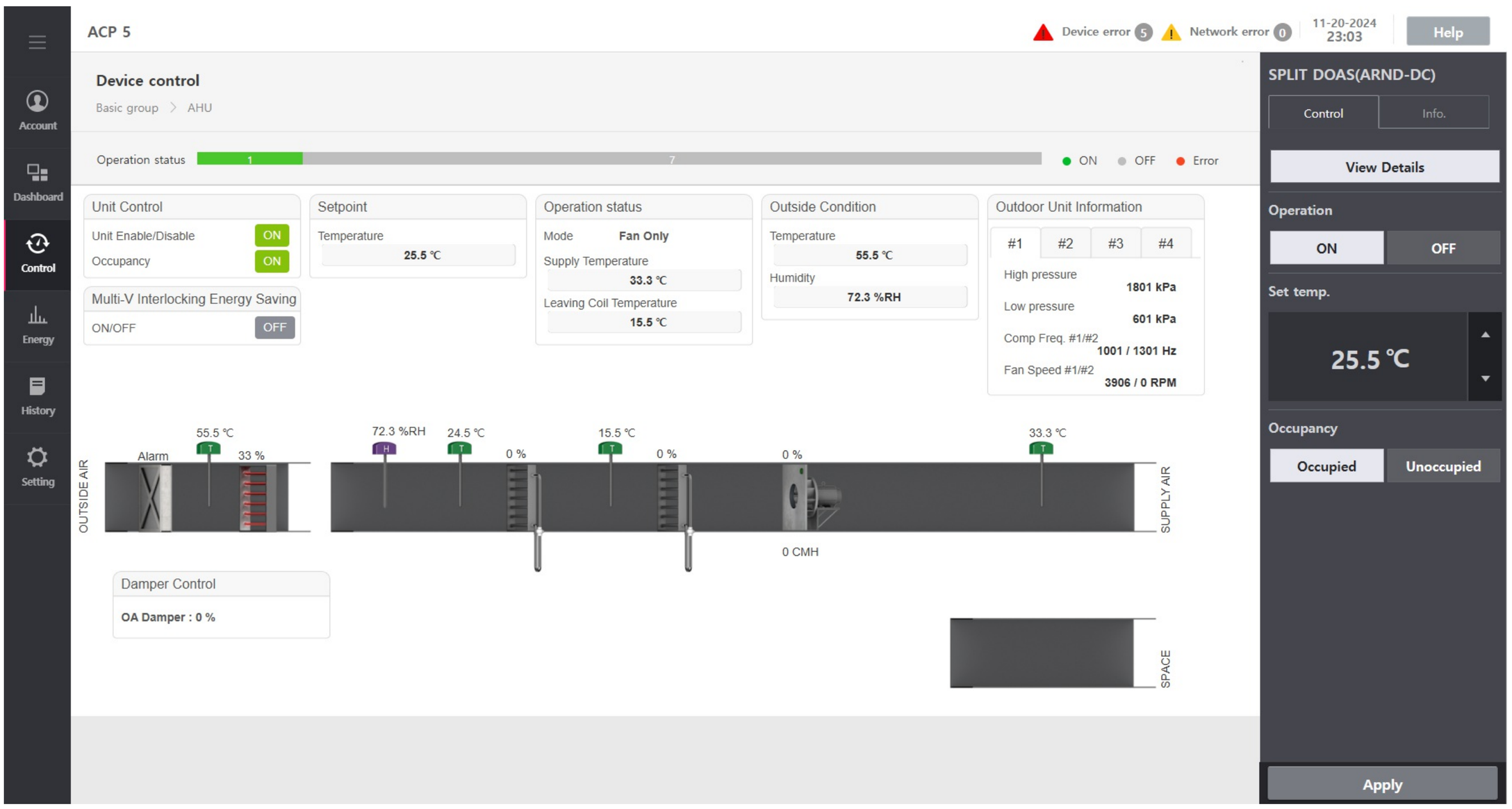

- SPLIT DOAS

## SPLIT DOAS(ARND/DB)




| Item | Description |
|---|---|
| View details | Click the **[View Details]** button to view detailed information (Not available on mobile) |
| Operating status | • **[Start Operation]** button: Starts device operation<br>• **[Stop Operation]** button: Stops device operation |
| Target temperature | Press the **[▲]/[▼]** button to set target temperature |
| Occupied | Function to set the space managed by DOAS as occupied or vacant<br>• **[Occupied]** button: Set to Occupied<br>• **[Vacant]** button: Set to Vacant |

## SPLIT DOAS(ARND/DC)




| Item | Description |
|---|---|
| View details | Click the **[View Details]** button to view detailed information (Not available on mobile) |
| Operating status | • **[Start Operation]** button: Starts device operation |

| | |
|---|---|
| | • **[Stop Operation]** button: Stops device operation |
| Target temperature | Press the **[▲]/[▼]** button to set target temperature |
| Occupied | Function to set the space managed by DOAS as occupied or vacant<br>• **[Occupied]** button: Set to Occupied<br>• **[Vacant]** button: Set to Vacant |

## Multi-V Interlocking Energy Saving Control

This is a function to control DOAS and Multi-V operation modes based on the operation status of Multi-V and indoor and outdoor air temperature/humidity in order to save the system's energy.

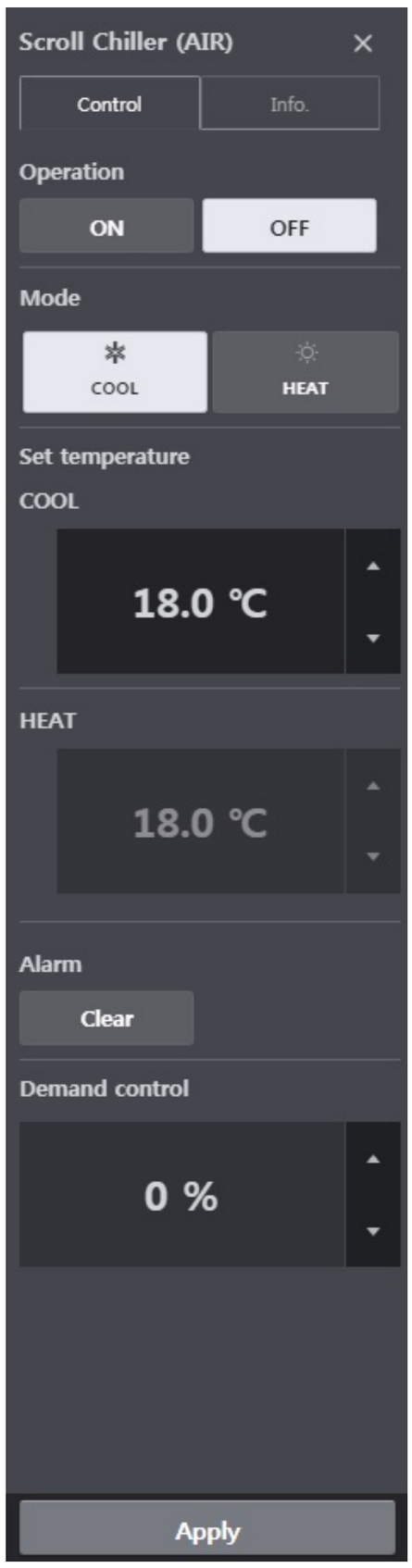
Energy saving operation can be run only under agreeable indoor conditions (for cooling, temperature of 28℃ or lower and relative humidity of 60% or lower). You can adjust the degree of freshness and energy saving as preferred.

### Note

- To use Multi-V Interlocking Energy Saving Control, you need a DOAS indoor humidity sensor.
- Energy saving operation can be run only when DOAS is running in the cooling or dehumidification mode and all indoor units are in cooling operation.
- Energy saving step: As you get closer to step 3, dehumidification weakens and energy saving increases.

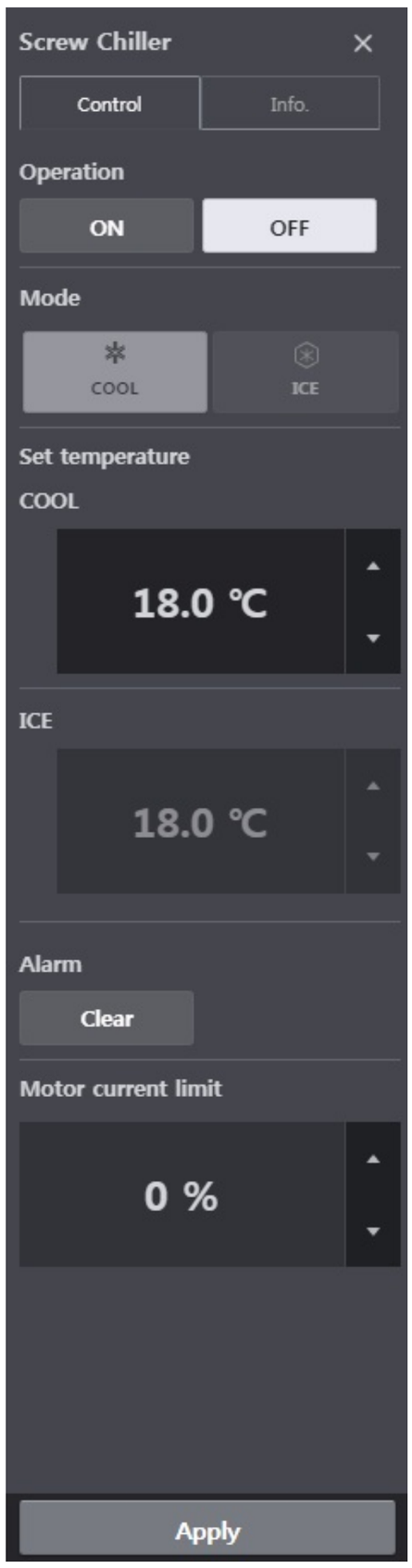
➔ Set Multi-V Interlocking Energy Saving Control

## Scroll chiller



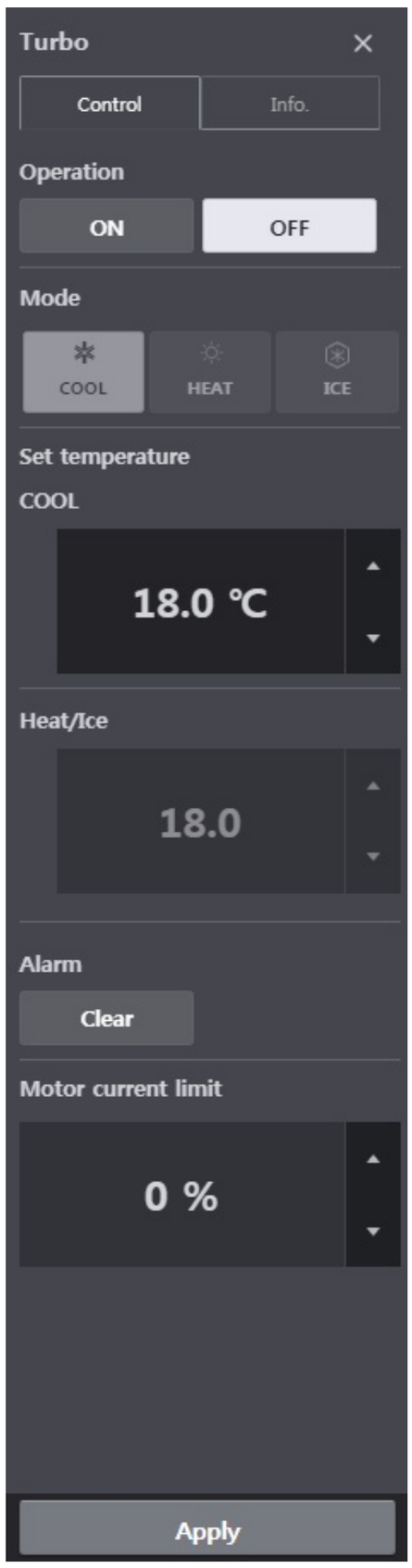

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | (It is displayed only when device supports the corresponding mode)<br>• **[COOL]** button: Swtiches to cooling mode<br>• **[HEAT]** button: Switches to heating mode |
| Set temperature | Set the load water out temperature for indoor cooling/heating<br>Press **[▲]/[▼]** button to set the temperature of cooling mode and heating mode |
| Alarm | **[Clear]** button: Clears Chiller alarm in case of Chiller alarm |
| Demand control | Press **[▲]/[▼]** button to set demand limit ratio |

# Screw chiller



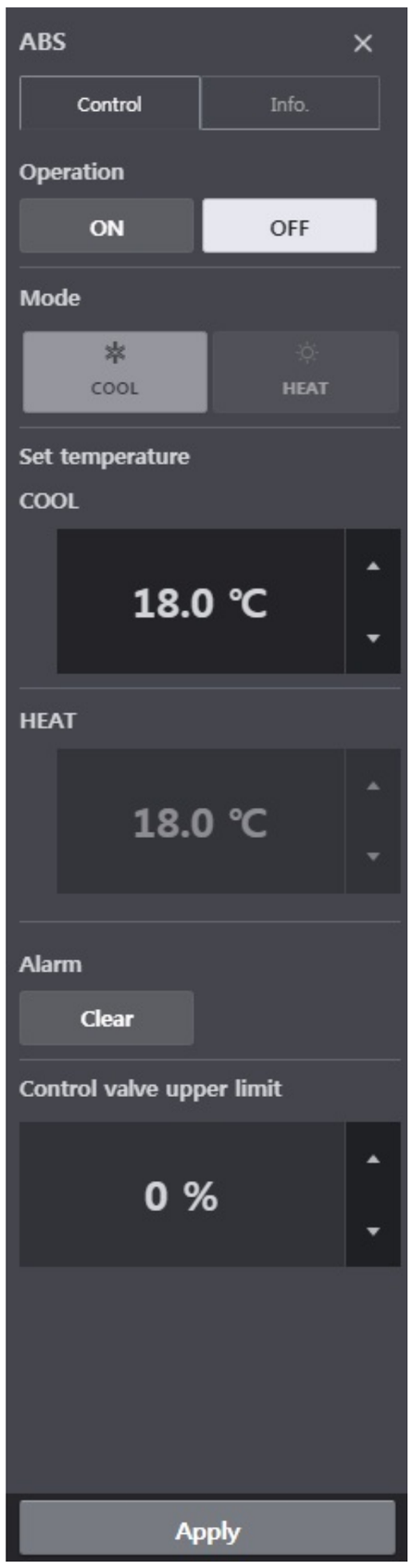

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | Mode control is impossible. Controls monitored operation mode's set temperature |
| Set temperature | Set the load water out temperature for indoor cooling/ice making<br>Press **[▲]/[▼]** button to set the temperature of cooling mode and ice making mode |
| Alarm | **[Clear]** button: Clears Chiller alarm in case of Chiller alarm |
| Motor current limit | Press **[▲]/[▼]** button to set motor current limit ratio |

# Turbo chiller



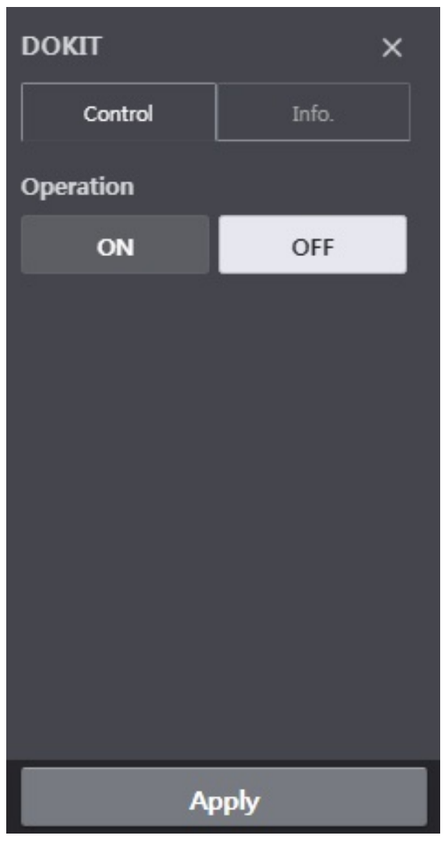

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | Mode control is impossible. Controls monitored operation mode's set temperature |
| Set temperature | Set the load water out temperature for indoor cooling/heating/ice making<br>Press **[▲]/[▼]** button to set the temperature of cooling mode and heating/ice making mode |
| Alarm | **[Clear]** button: Clears Chiller alarm in case of Chiller alarm |
| Motor current limit | Press **[▲]/[▼]** button to set motor current limit ratio |

# Absorption Chiller



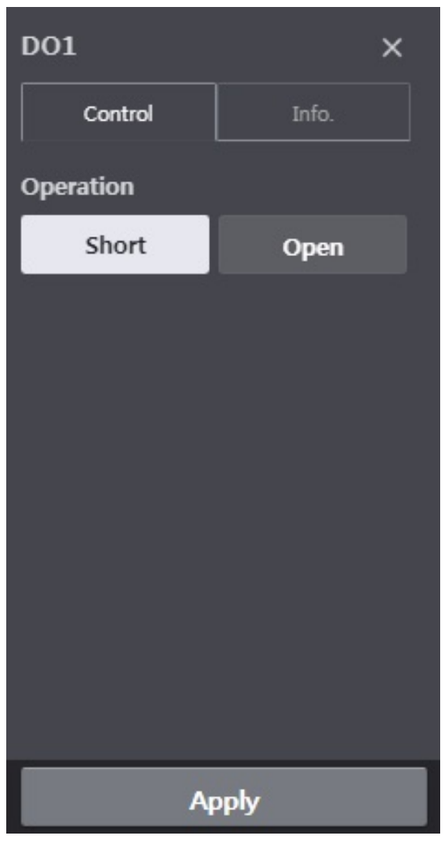

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | Mode control is impossible. Controls monitored operation mode's set temperature |
| Set temperature | Set the load water out temperature for indoor cooling/heating<br>Press **[▲]/[▼]** button to set the temperature of cooling mode and heating mode |
| Alarm | **[Clear]** button: Clears Chiller alarm in case of Chiller alarm |
| Control valve upper limit | Press **[▲]/[▼]** button to set the control valve upper limit ratio |

# DOKIT




| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |

## DO




| Category | Contents |
|---|---|
| Operation | • **[Short]** button: Short signal output<br>• **[Open]** button: Open signal output |

# AO

| Category | Contents |
|---|---|
| Temperature | Set temperature value |

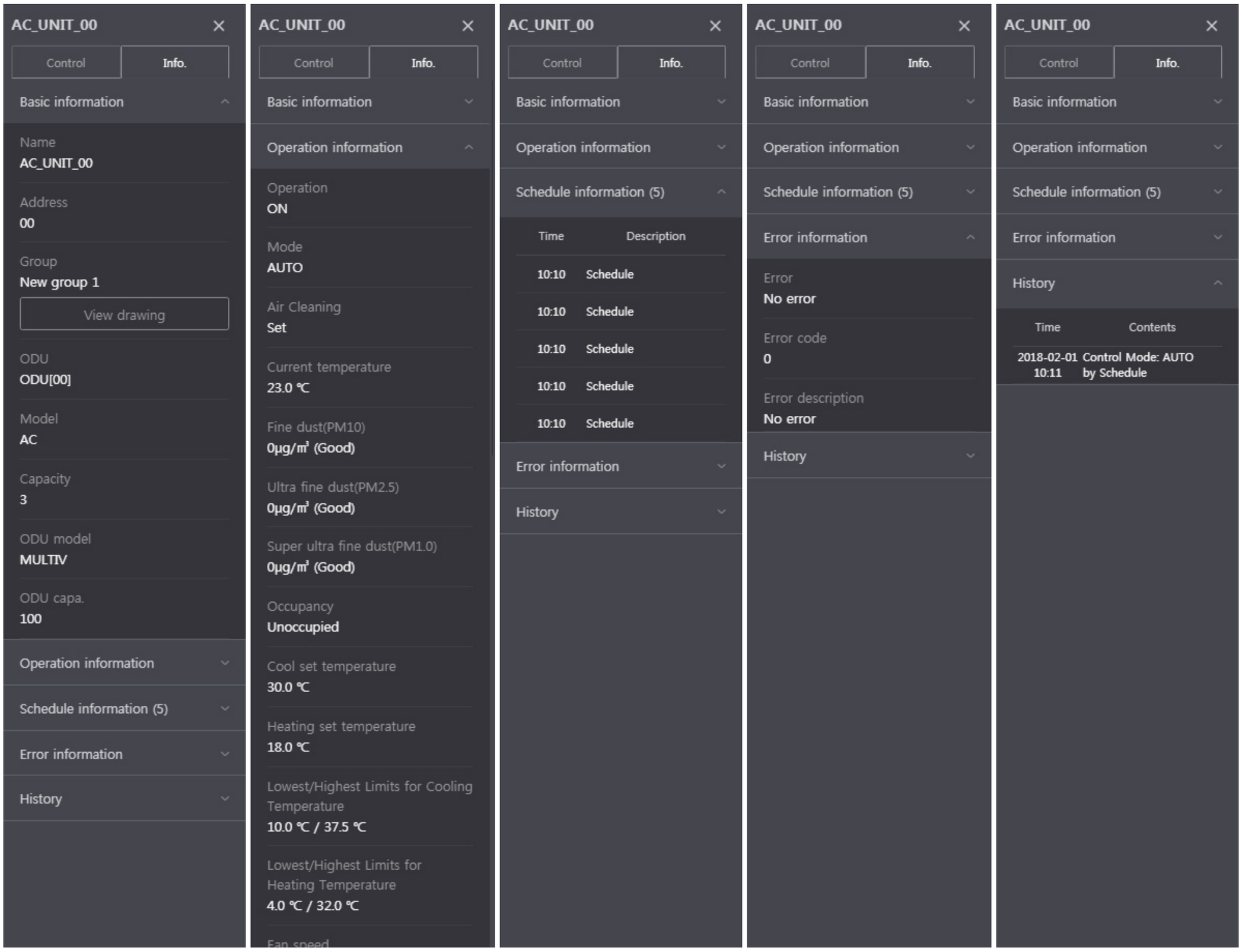
## Note

Unit symbol may change according to the usage set during device registration.

# Device Information

When you click device information tab in the device's control screen, you can check the device information.

You can check device's basic information, operation information, schedule information, error information, and today's history.



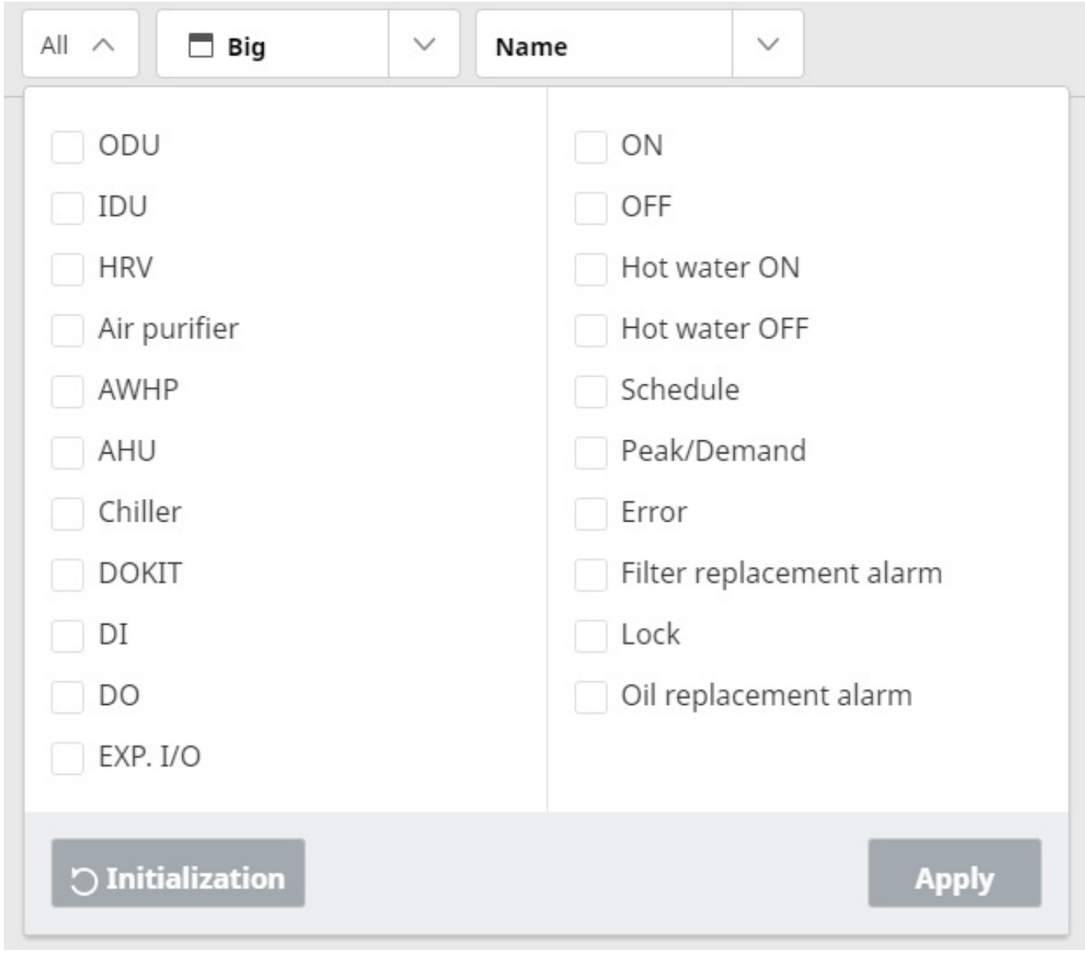
# Control

You can set the registered device to the desired status and control.

1. In the left side menu tab, click **[Control]** > **[Device control]** menu.
2. In the device list tab section, click the desired tab.

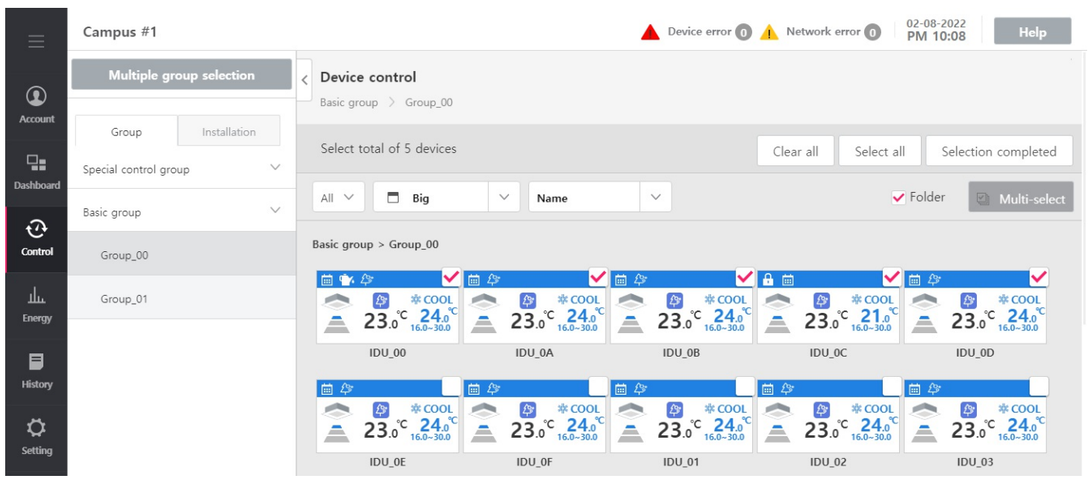
| Category | Description |
|---|---|
| Group | List of group set for convenience |
| Installation | Provides actually connected device information |

3. In the filter section, click the filter button of the device type or status to control.
   - All filter buttons can be selected in multiple.
   - Only the corresponding information are selected and displayed.




| Filter type | Detail category |
|---|---|
| Device | Outdoor unit, indoor unit, air purifier, AHU, chiller, ERV, Heating, ON/OFF device, DI, DO, Exp.I/O |
| Status | ON, OFF, Hot water ON, Hot water OFF, Schedule, Peak control, Error, Filter replacement alarm, Lock, Oil replacement alarm |

4. In the device section, select the device to control.
   - You can select several devices at once to control. To select all devices in certain group, click **[Multi-select]** button, and click **[Select All]** button. According to the multiple selected device types, the category to control is limited.




5. In the control window, set the corresponding equipment's control status.
6. When setting is completed, click **[Apply]** button.

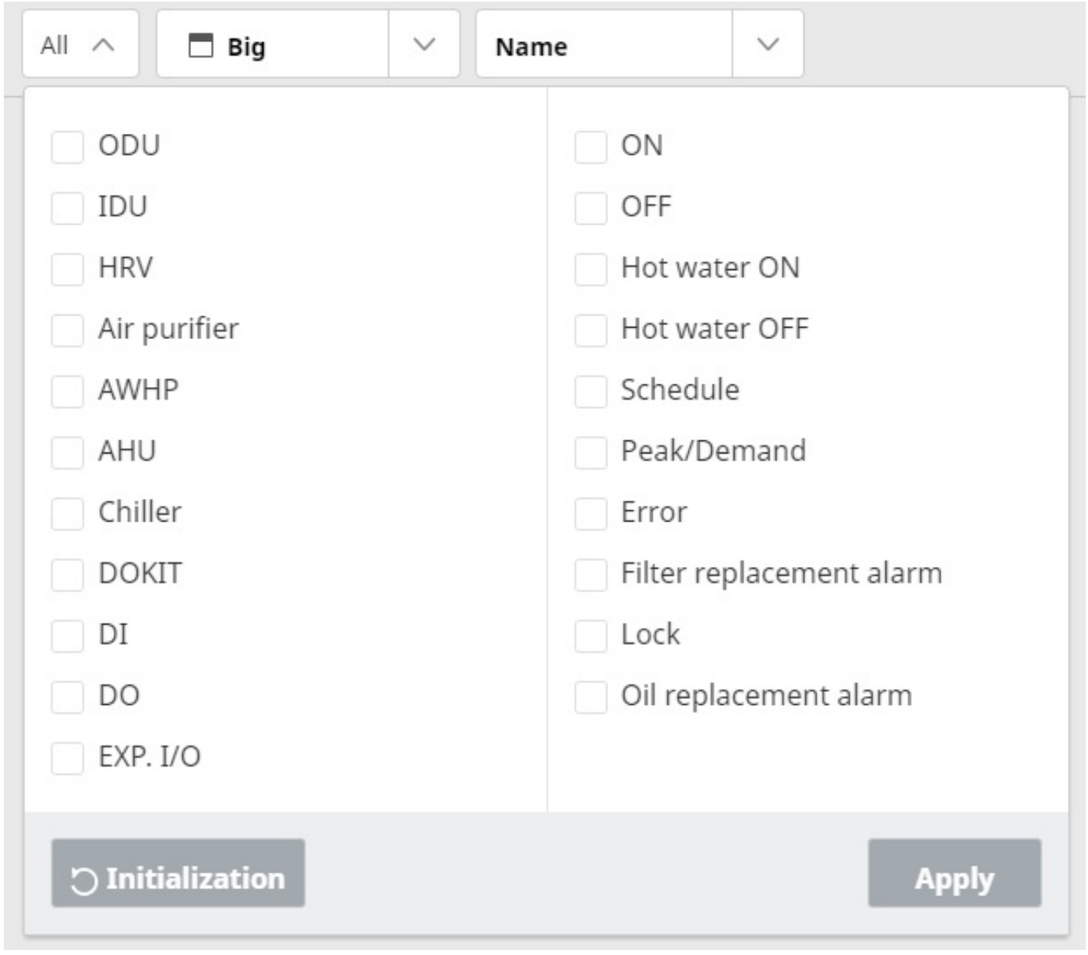
# Monitoring

You can check the registered device's control status.

1. In the left side menu tab, click **[Control]** > **[Device control]** menu.
2. In the device list tab section, click the desired tab.

| Category | Description |
|---|---|
| Group | List of group set for convenience |
| Installation | Provides actually connected device information |

3. In the filter section, click the filter button of the device type or status to check.
   - All filter buttons can be selected in multiple.
   - Only the corresponding information are selected and displayed.



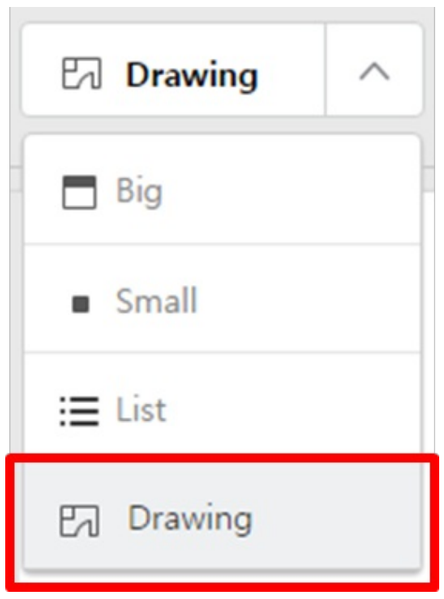

| Filter type | Detail category |
|---|---|
| Device | Outdoor unit, indoor unit, AHU, chiller, ERV, Heating, ON/OFF device, DI, DO, Exp.I/O |
| Status | ON, OFF, Hot water ON, Hot water OFF, Schedule, Peak control, Error, Filter replacement alarm, Lock, Oil replacement alarm |

4. In the device section, check the device information.
5. To check the device's detail control status, click the corresponding device icon.
   - The corresponding device's control window is displayed.

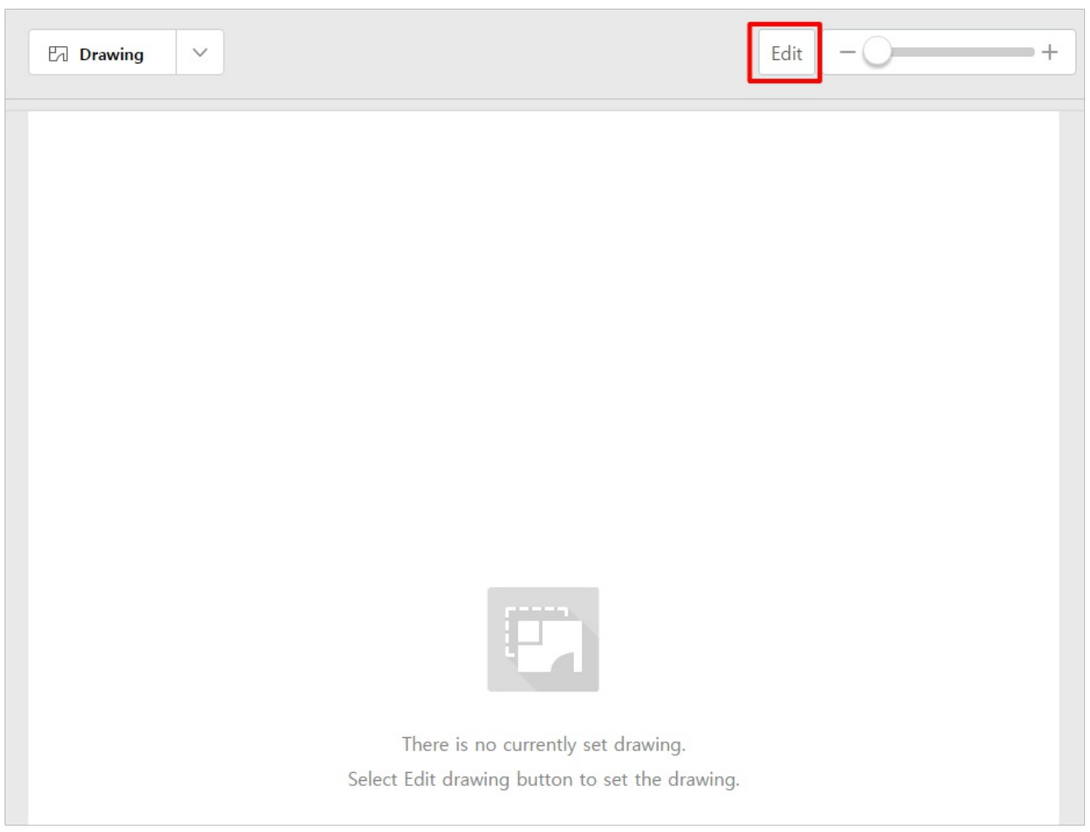
# Edit Drawing

When **[Setting]** > **[System setting]**'s **Use 'Drawing'** is selected as **Set**, you can edit the drawing.

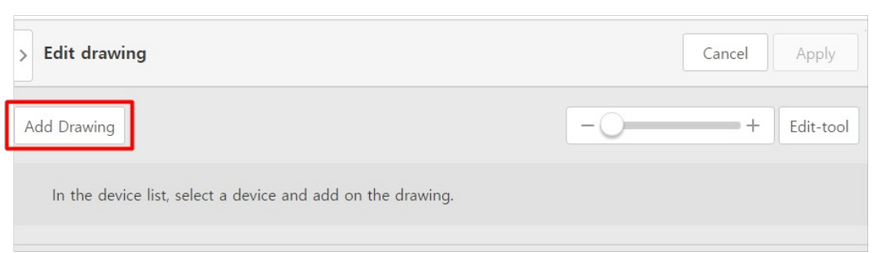
1. In the left side menu tab, click **[Control]** > **[Device control]** menu.
2. In device group tab area, click **[Group]** tab.
   - When you select **[Installation]** tab, the viewing method's **[Drawing]** is disabled.
3. In the viewing method, click **[View Drawing]**.



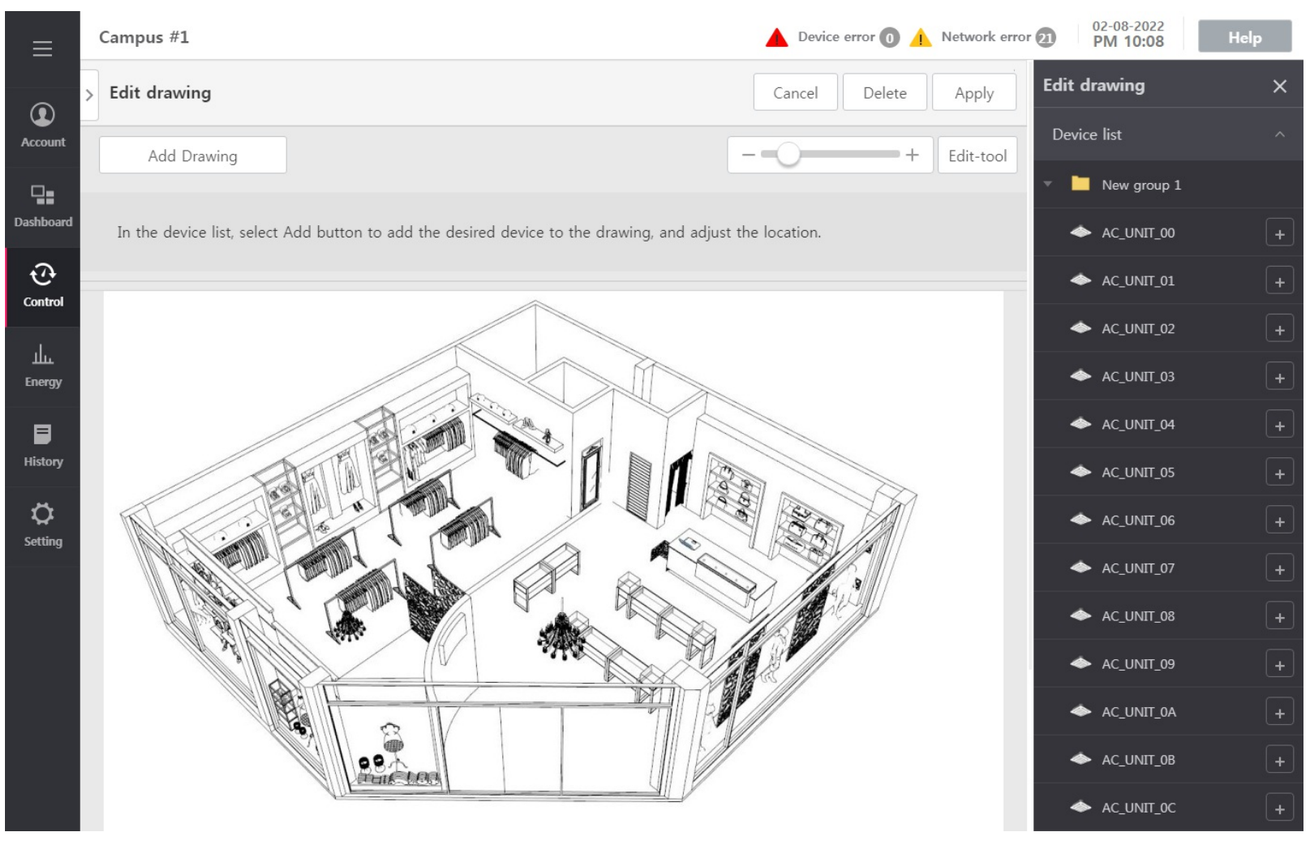

4. Click **[Edit]** button.



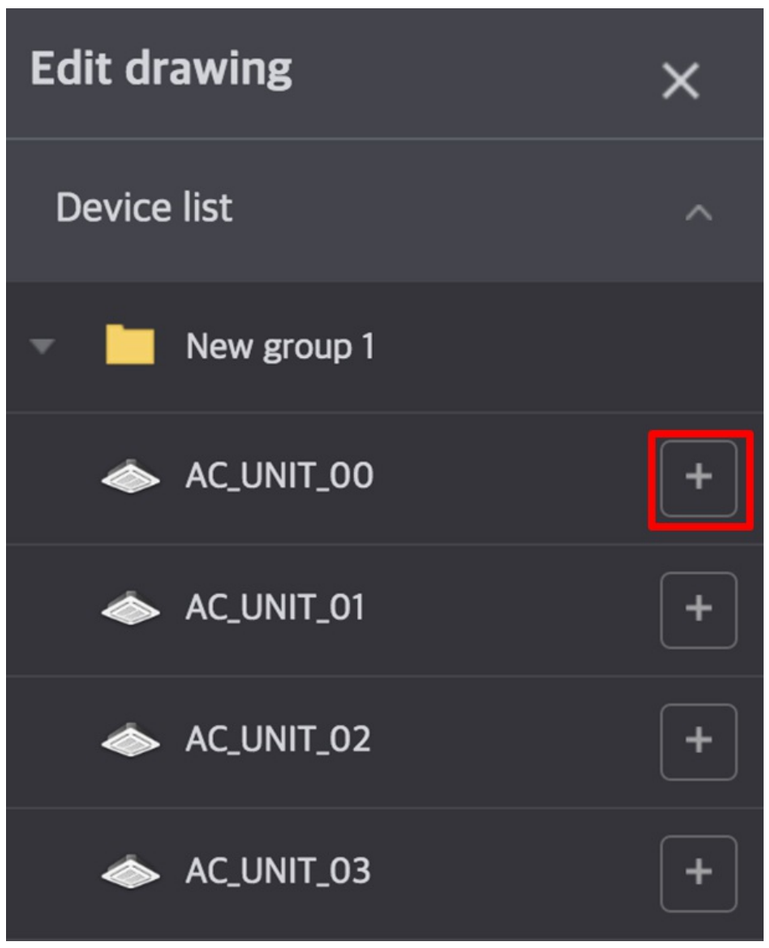

5. When you add or change drawing, click **[Add Drawing]** button.



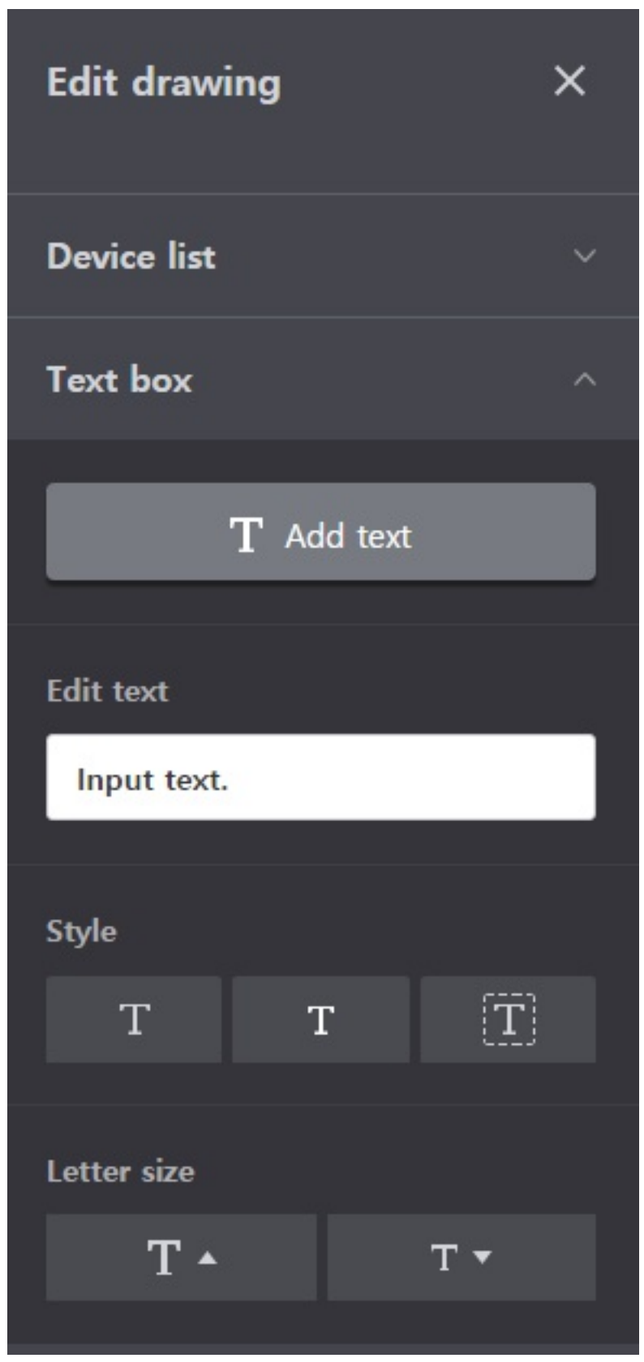

6. When file load window is displayed, select the drawing file to add and click **[Open]** button.
   - The selected drawing is displayed in the Edit drawing screen.



7. To add device in the drawing, select the desired device in the device list in the right side Edit drawing window, and click **[+]** button. The device is added in the drawing section.

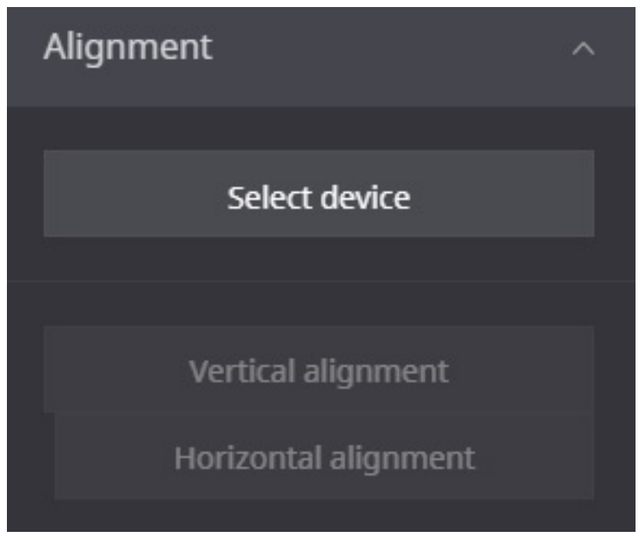



8. To add text or change text in the drawing, use text box.




| Category | Description |
|---|---|
| Add text | Add text box in drawing section |
| Edit text | Edit text in text box |
| Style | : Normal letter, thick, Italic, underline<br>• : Display in normal letter<br>• : Display in thick letter<br>• : Display in Italic letter<br>• : Display with underlined letter<br>: Change letter color<br>: Change letter background color |
| Letter size | : Larger letter<br>: Smaller letter |

9. To align the device icons on the drawing, use the Alignment Box.




| Category | Description |
|---|---|
| Select device | Select a device to align on the drawing |
| Alignment | Vertical alignment : Aligns the selected device icons vertically.<br>Horizontal alignment : Aligns the selected device icons horizontally. |

10. When setting is completed, click **[Apply]** button.

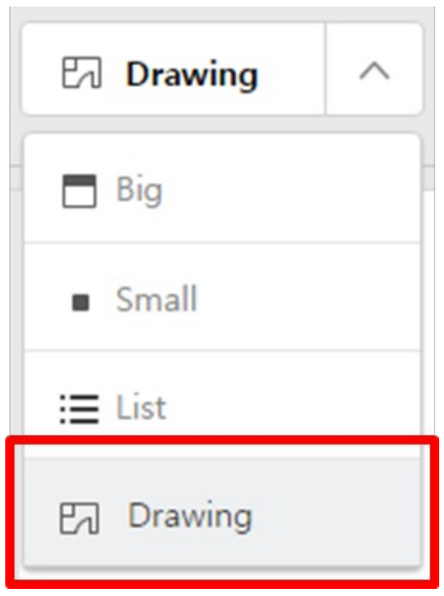
## Note

- Part of drawing image with vertical resolution of 1000px or more may not be displayed, and please use image of adequate resolution according to the display resolution.
  In environment with display resolution of 1920x1080, image of 1478x1000 or less is recommended.
- File format : jpg, png, bmp / Max size : 10MB
- During text add / edit, special symbol (^','"|₩) may not be used.
- You can enter up to 40 characters.

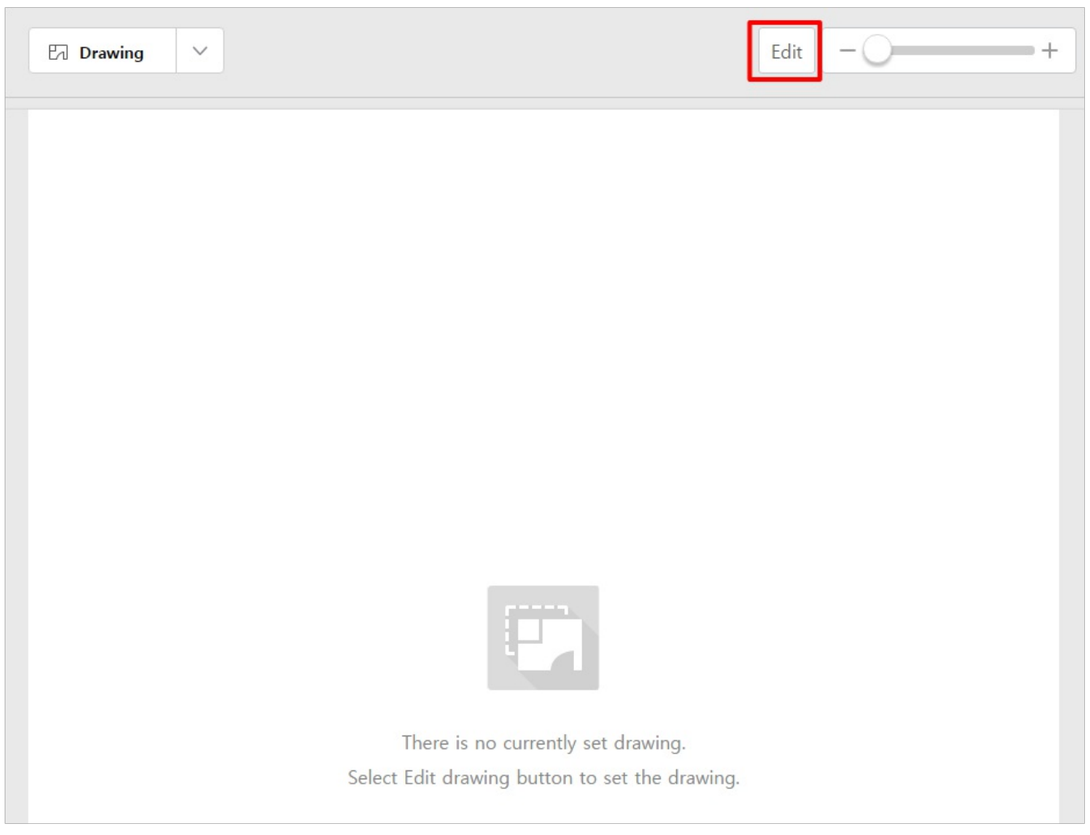
# Delete Drawing

You can delete the added drawing.

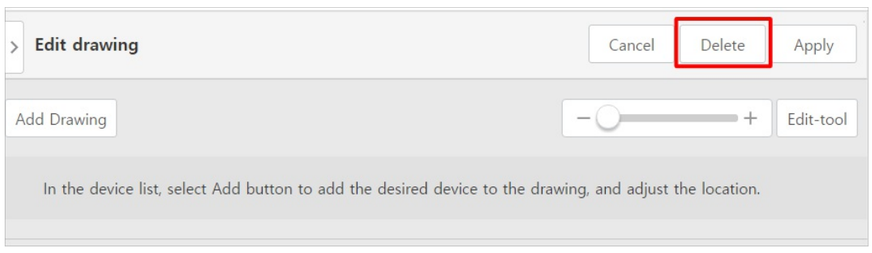
1. In the left side menu tab, click **[Control]** > **[Device control]** menu.
2. In device group tab area, click **[Group]** tab.
3. In the viewing method, click **[View Drawing]**.




4. Click **[Edit]** button.
   - The Edit drawing screen is displayed.




5. Click **[Delete]** button at the top.
   - The drawing is deleted.



# Schedule Control

Schedule is the function to designate the device operation in advance and let the deivce perform the operation reserved at certain time. When you use this function, you can efficiently manage the device operation in time unit for excellent energy saving effect.

**[Schedule]**

- View entire schedule
- Add Schedule
- Delete schedule
- Copy schedule
- Edit schedule

**[Exception Date]**

- Load exception date
- Add exception date
- Delete exception date

## Note

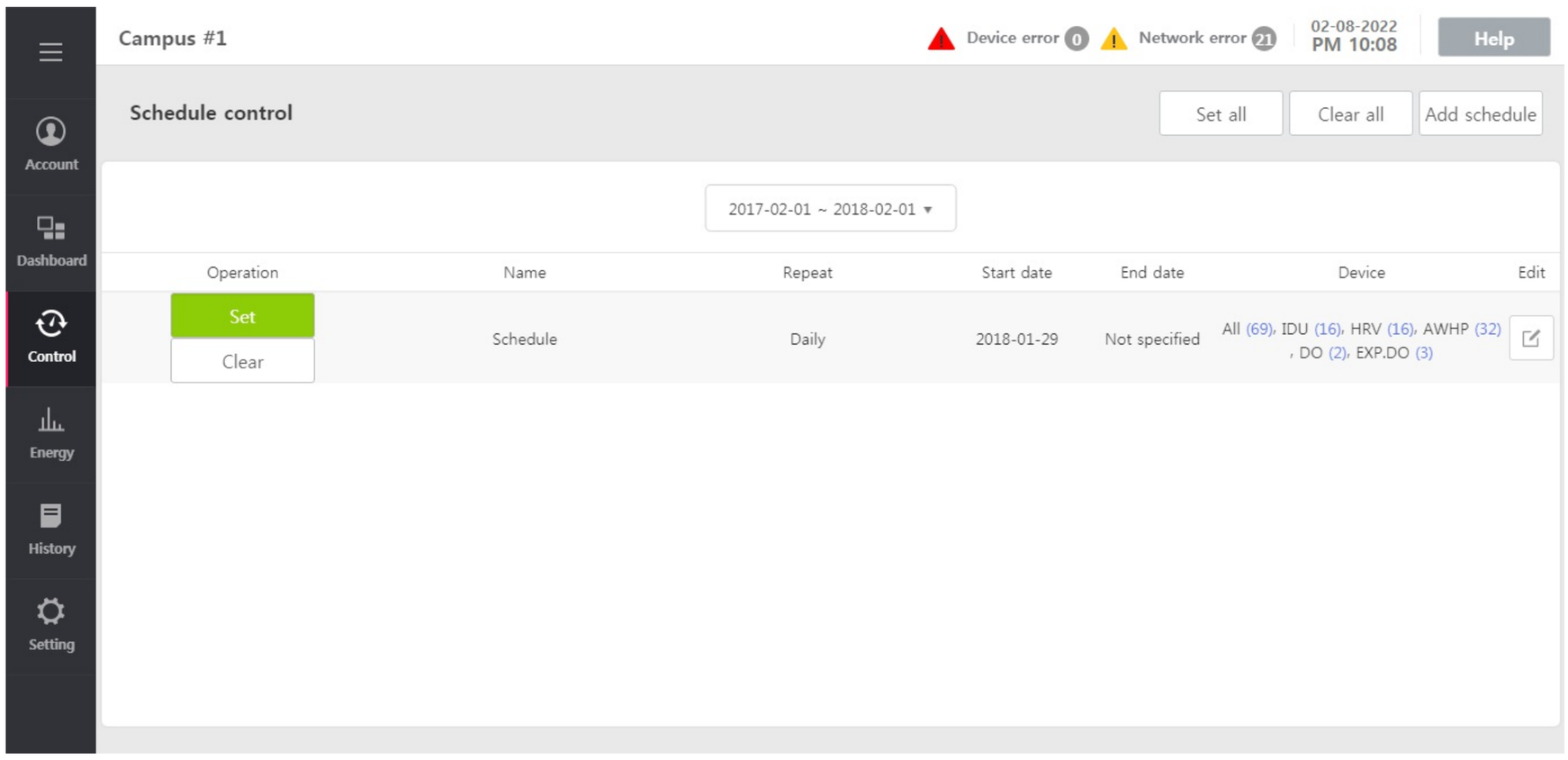
Recommended specification

- Schedule: No. of all events included in entire schedule is 50
- If it is set to be over the recommended specification, performance degradation may occur.

# View entire schedule

You can see the list of schedule in the set period.

You can check whether the set schedule is applied, name, whether to repeat, start date, end date, and device list, and directly **[Set]** or **[Clear]** the desired schedule.



# Add Schedule

You can add schedule category.

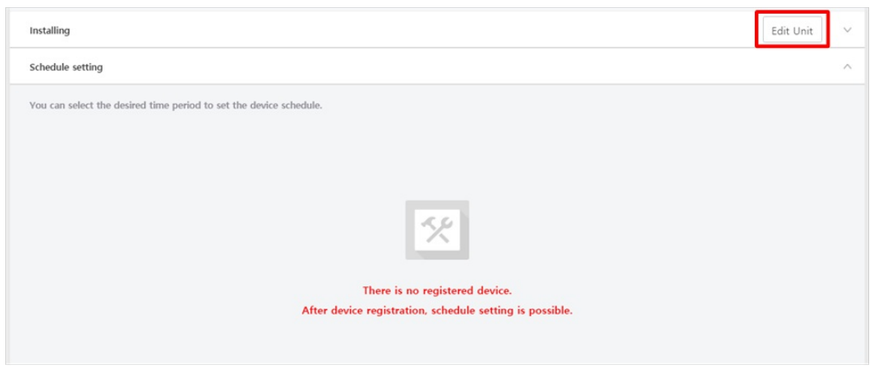
1. In the left menu tab, click **[Control]** > **[Schedule Control]** menu.
   - The schedule control screen is displayed.
2. In the schedule list, click **[Add Schedule]** button.
   - The Add schedule screen is displayed.
3. In the schedule name input field, input the desired schedule name.
4. Set whether to repeat the schedule.

| Category | Description |
|---|---|
| Once | Apply the corresponding schedule only to one day designated in **[Period]** |
| Day of week selection | Select the desired day of week, and apply the schedule only to the corresponding day of week from the start date to the end date |

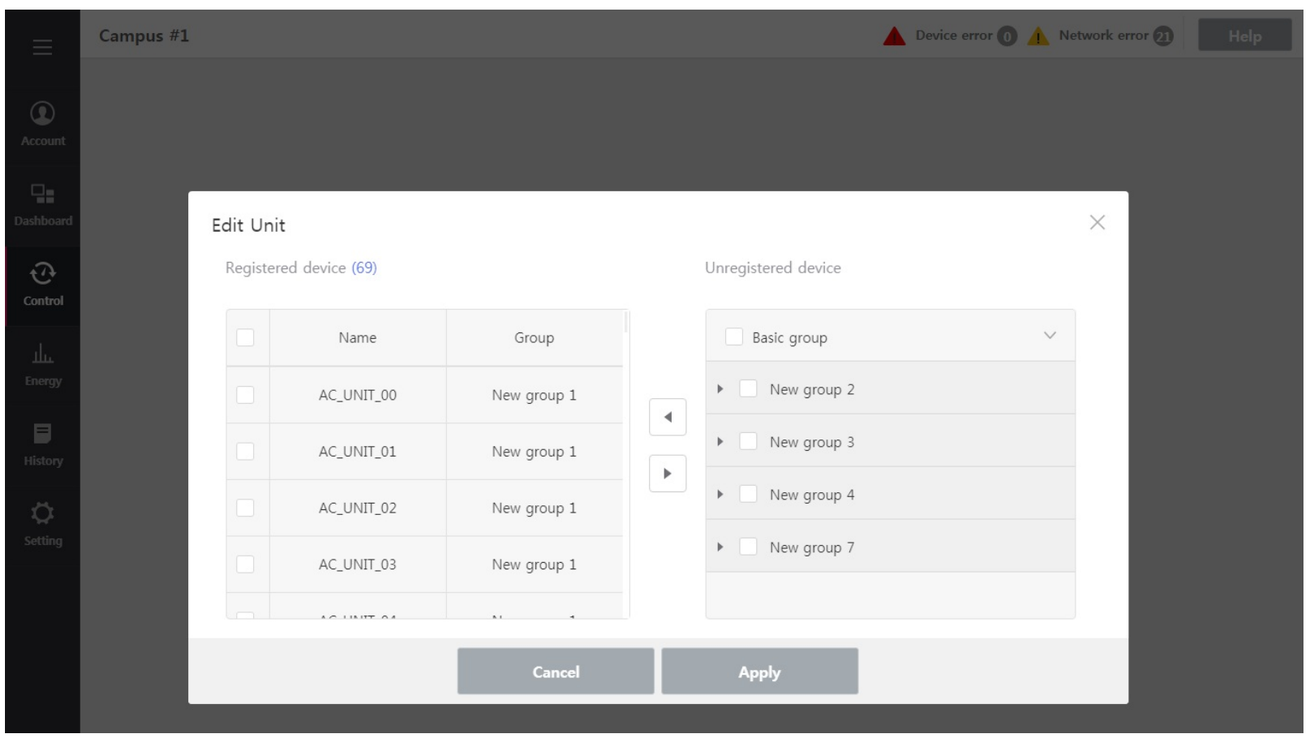
5. Set the desired period.
   - When repetition is selected as **[Once]**, select only 1 day
   - When repetition is selected as **[select day of week]**, select start and end date

| Category | Description |
|---|---|
| Start Date | • Select the desired start date in mini calendar<br>• Initial start date is selected as today's date |
| End date | • Select the desired end date in mini calendar<br>• You cannot set the end date before the start date |
| End date not specified | • Apply the schedule repeatedly without designating the end date |

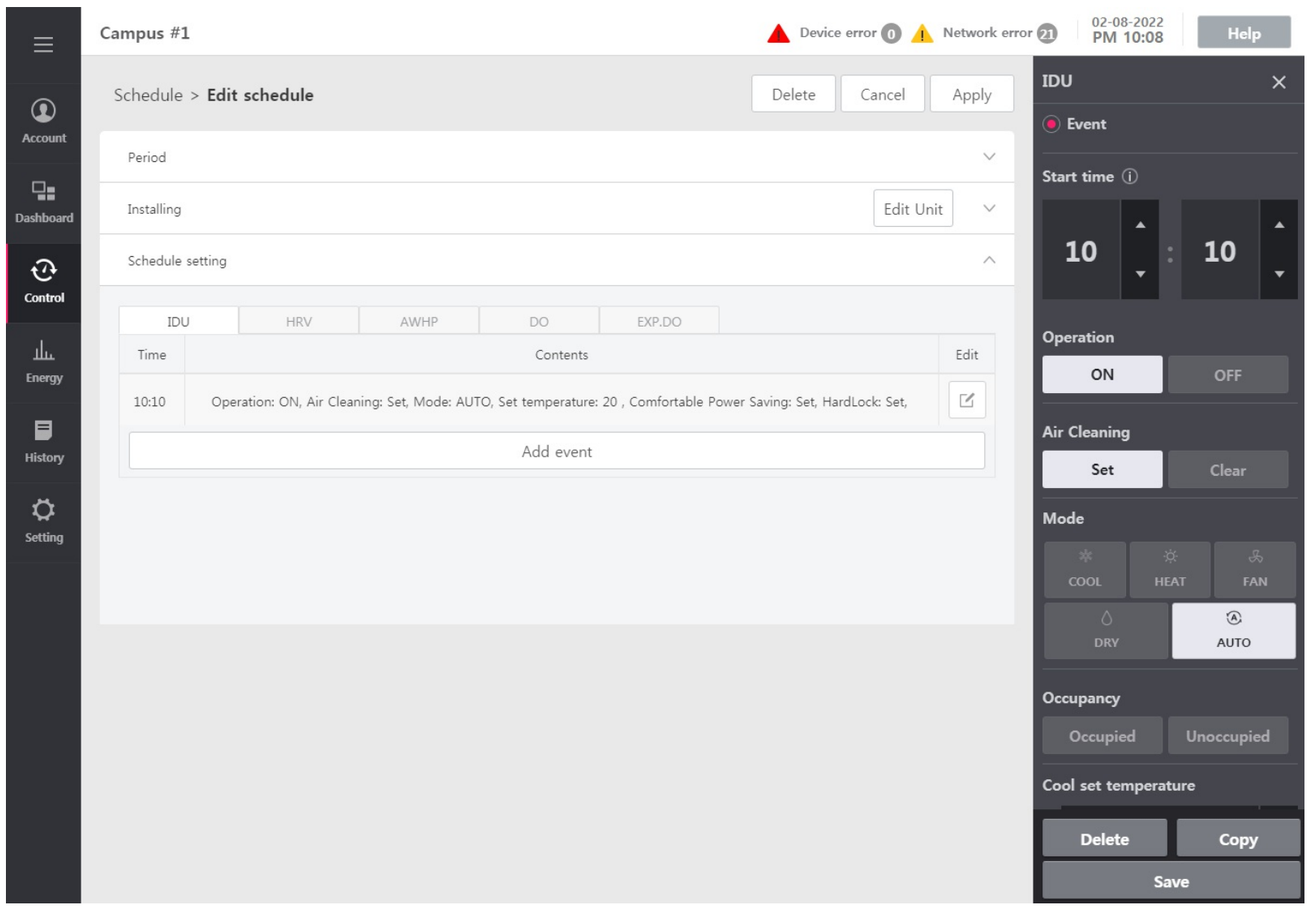
6. To apply the set exception date, click **[Load]** button.
   - The exception date set in **[Setting]-[system setting]'s schedule exception date setting** is updated and displayed.
7. To apply the new exception date, click **[Add Exception Date]** button to set the exception date name and date to add.
8. In the device setting section, click **[Edit Unit]** button.
   - The Edit Unit window is displayed.




9. In the unregistered device list, click the checkbox of the device to register and click **[◀]** button.
   - To register several groups at once, click the checkbox of the group to register and click **[◀]** button.
   - The selected devices are added to the registered device list.




10. When device registration is completed, click **[Apply]** button.
11. To add schedule event, in **Schedule setting**, select device type tab, and click **[Add event]** button or edit button to set control status of the device in the right side control area.

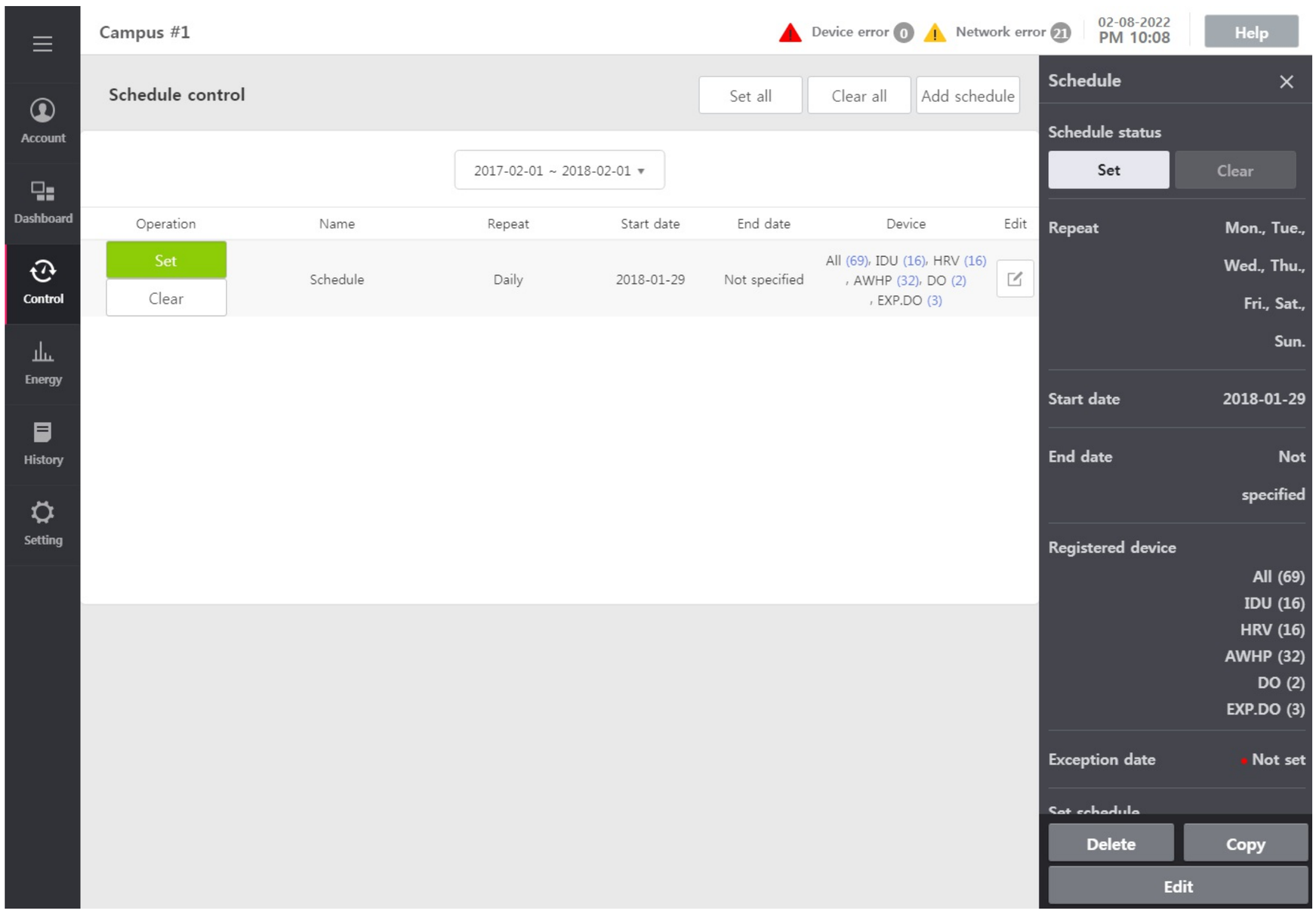



12. When control setting is completed, click **[Save]** button.
13. When all settings are completed, click **[Apply]** button.

# Delete schedule

You can delete already registered schedule.

1. In the left menu tab, click **[Control]** > **[Schedule Control]** menu.
   - The schedule control screen is displayed.
2. In the schedule list, click the Edit button of the schedule to delete.

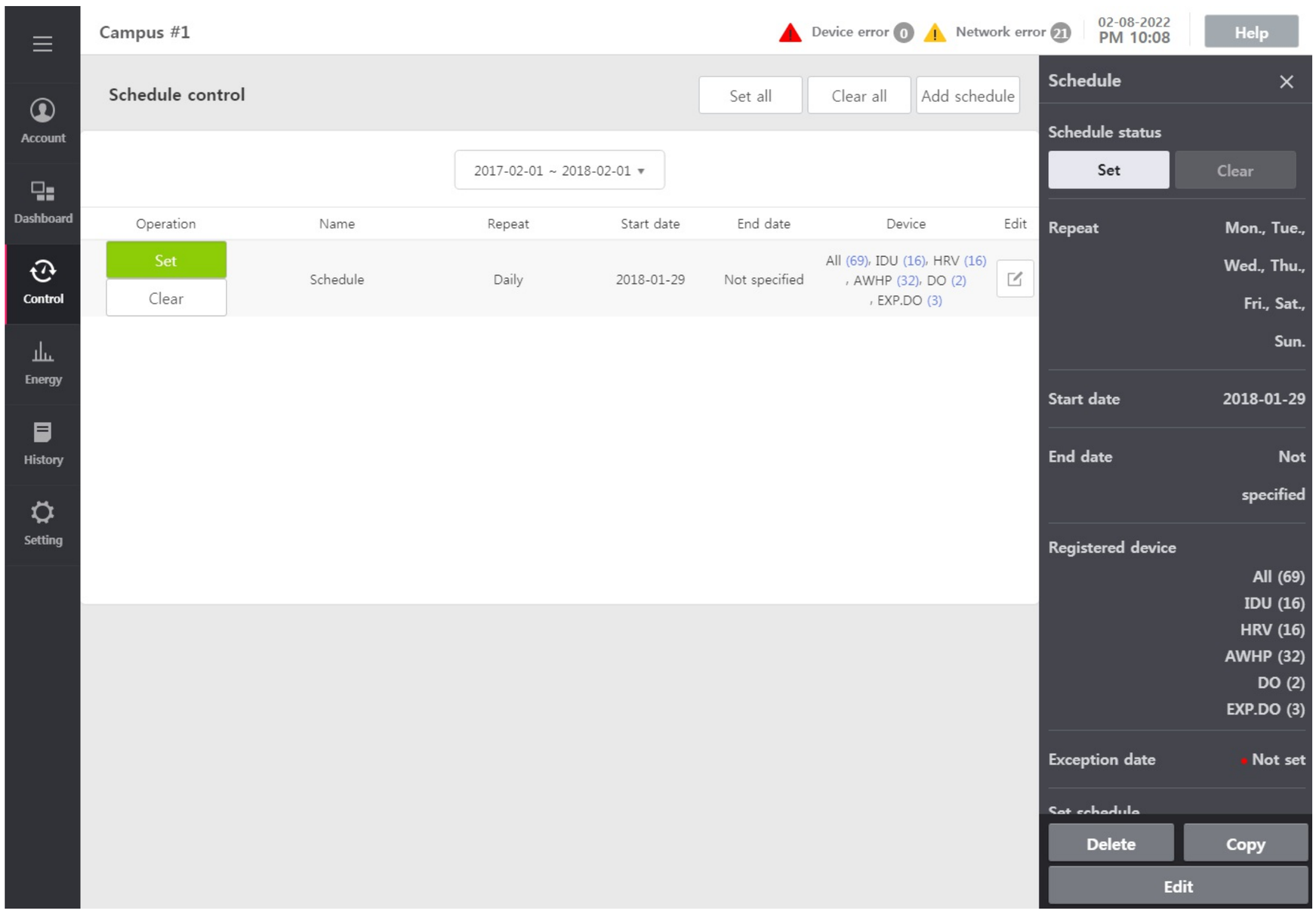



3. In the right side Edit window screen, click **[Delete]** button.
4. When notice popup window is created, click **[Check]** button.

# Copy schedule

You can copy and use registered schedule.

1. In the left menu tab, click **[Control]** > **[Schedule Control]** menu.
   - The schedule control screen is displayed.
2. In schedule list, click edit button of the schedule to copy.

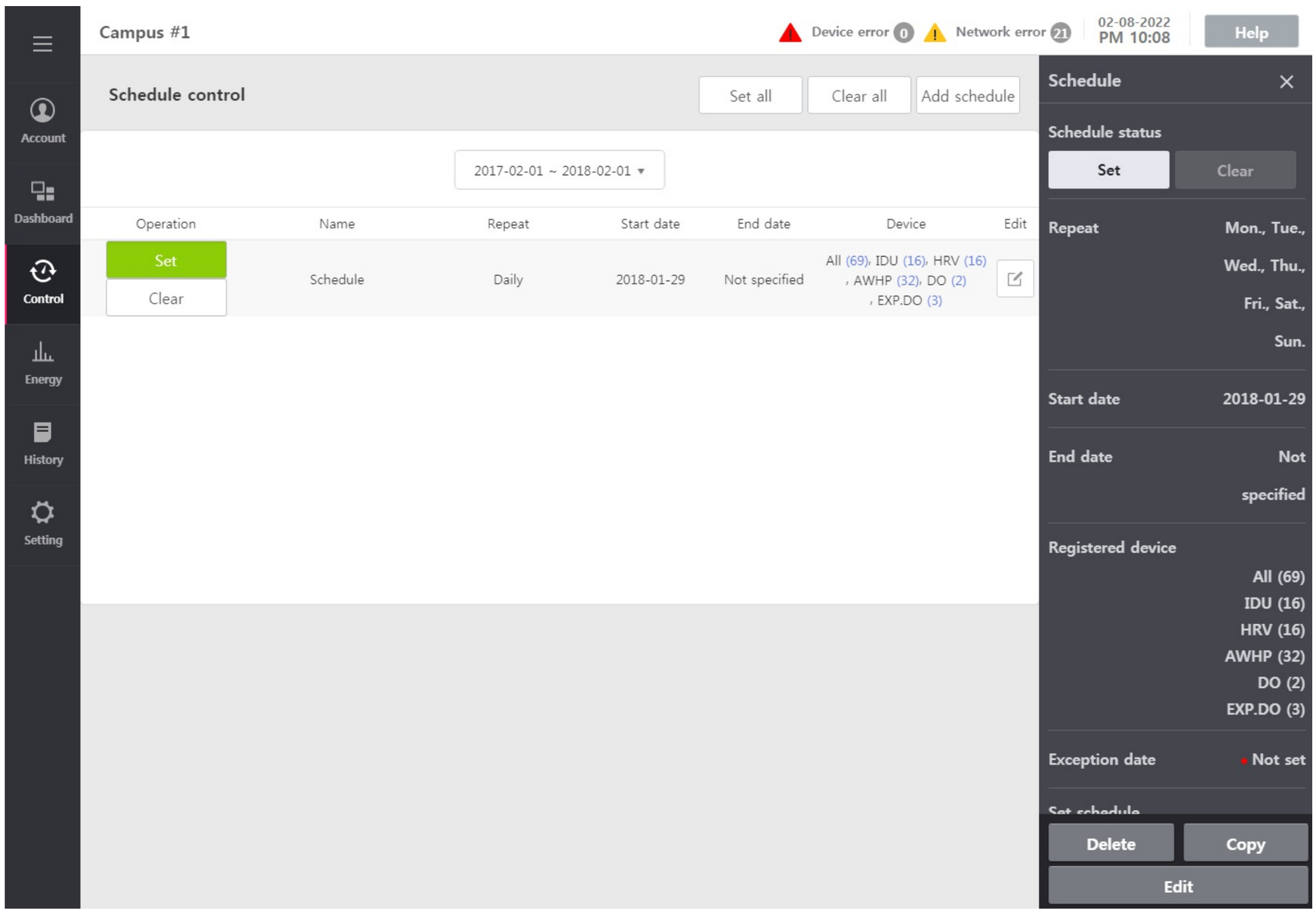



3. In the right side edit window screen, click **[Copy]** button.
4. When notice popup window is created, click **[Check]** button.

# Edit schedule

You can change the set contents of the already registered schedule.

1. In the left menu tab, click **[Control] > [Schedule Control]** menu.
   - The schedule control screen is displayed.
2. In the schedule list, click Edit buttoin of the schedule to edit.

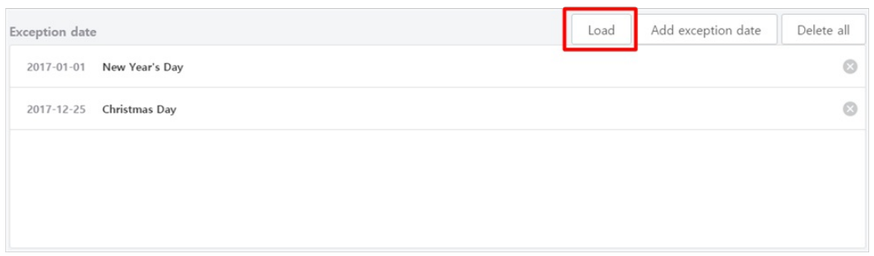



3. In the right side edit window screen, click **[Edit]** button.
4. Edit the schedule contents.
   - To check the detail contents, check 'Add Schedule' Category.

# Load exception date

You can load already set exception date.

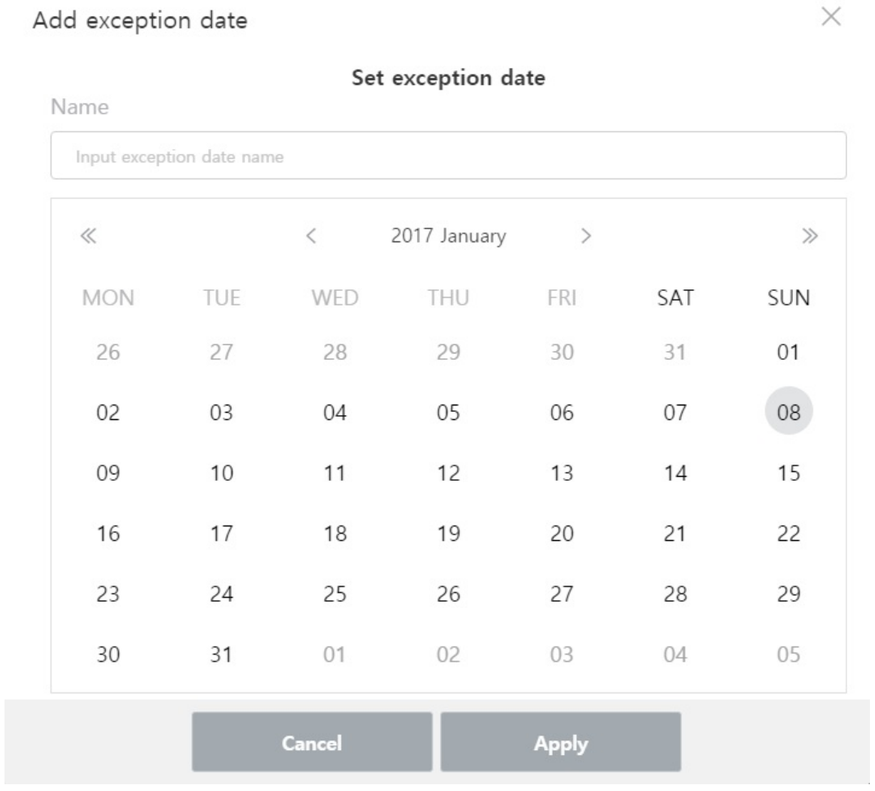
1. In the left menu tab, click **[Control]** > **[Schedule Control]** menu.
   - The schedule control screen is displayed.
2. In the schedule list, click **[Add Schedule]** button.
   - The Add schedule screen is displayed.
3. In the exception date tab, click **[Load]** button
   - The exception date set in **[Setting]-[system setting]'s schedule exception date setting** is updated and displayed.



# Add exception date

You can add new exception date.

1. In the left menu tab, click **[Control]** > **[Schedule Control]** menu.
   - The schedule control screen is displayed.
2. In the schedule list, click **[Add Schedule]** button.
   - The Add schedule screen is displayed.
3. In the exception date tab, click **[Add Exception Date]** button
   - The Add exception date screen is dispalyed.

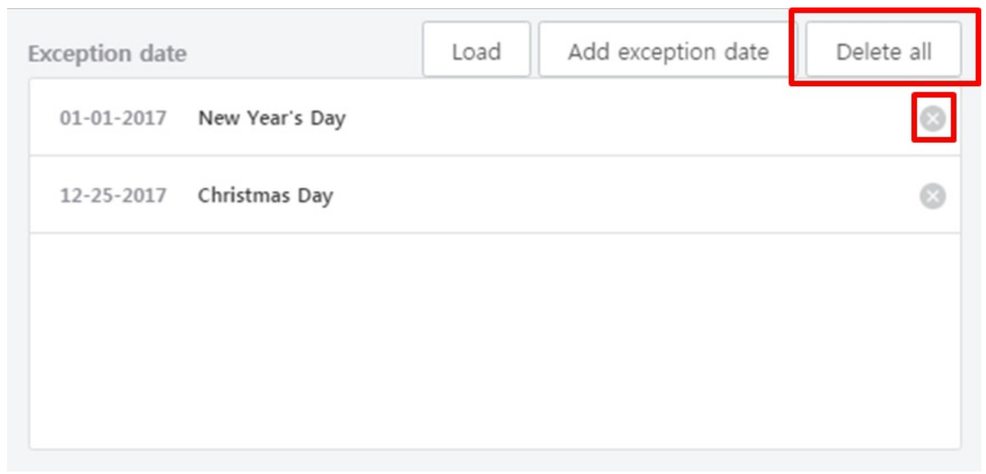



4. Input the desired exception date name.
5. Select the exception date to set.
6. When selection is completed, click **[Apply]** button.

# Delete exception date

You can delete alreday registered exception date.

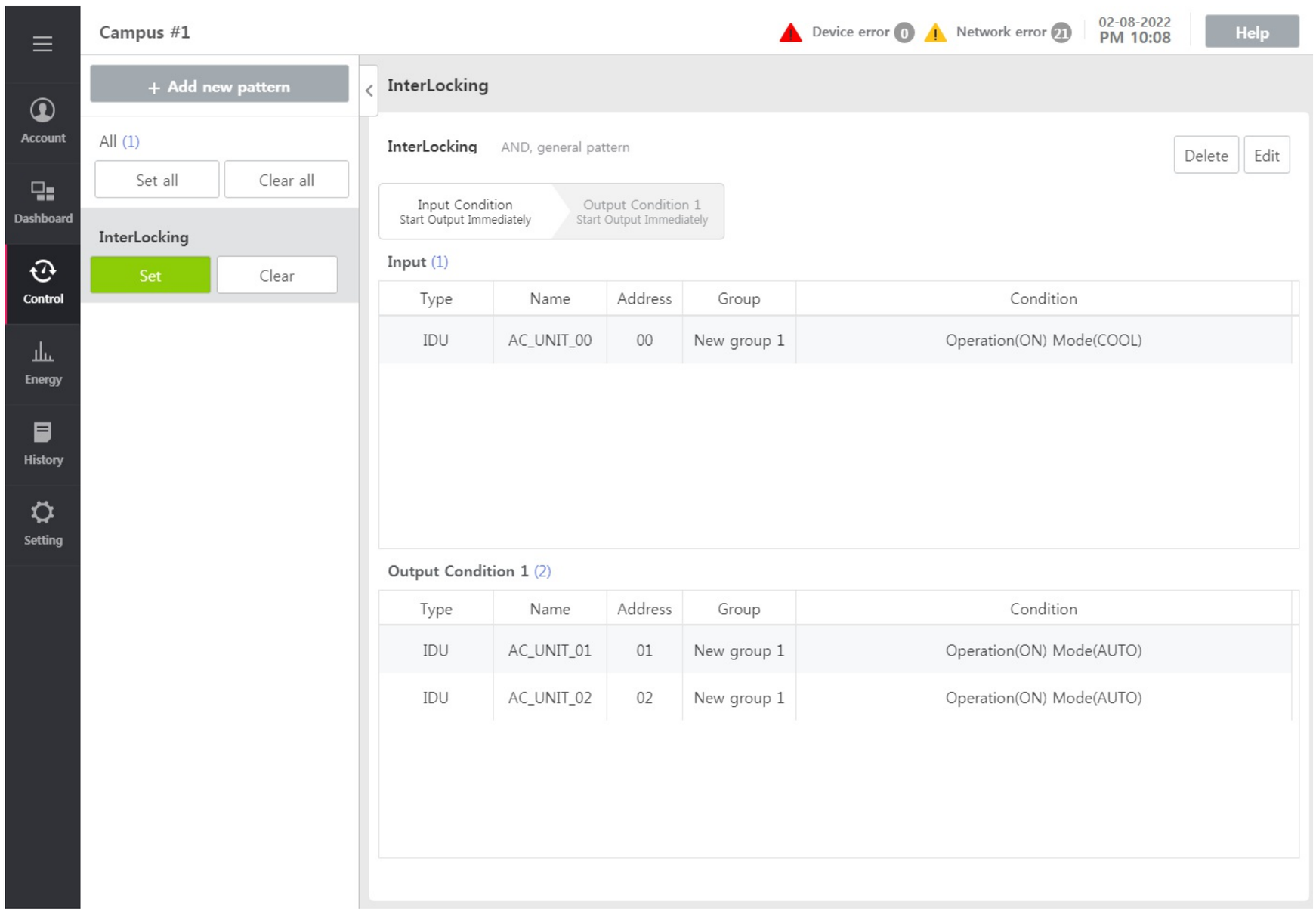
1. In the left menu tab, click **[Control]** > **[Schedule Control]** menu.
   - The schedule control screen is displayed.
2. In Edit schedule screen, click **[X]** button to delete exception date.
   - To delete the entire category, click **[Delete All]** button.



# InterLocking

InterLocking is the function to interface with one or more equipment and to control output operation when input condition is satisfied. For InterLocking, you need to group the equipment to mutual interface in one group and apply the control setting. It describes the method to create and manage the group and equpment interface control method.

1. In the left menu tab, click **[Control] > [InterLocking]** menu.
   - The InterLocking screen is displayed.




2. In the group list, select the group to check the setting.
   - The the corresponding group's setting status is displayed in the screen.
3. In the group list, when you click **[Set] / [Clear]** button, you can set the InterLocking operation.
4. To start all the registered group, click **[Set All]** button, and to stop all, click **[Clear All]** button.

### Note

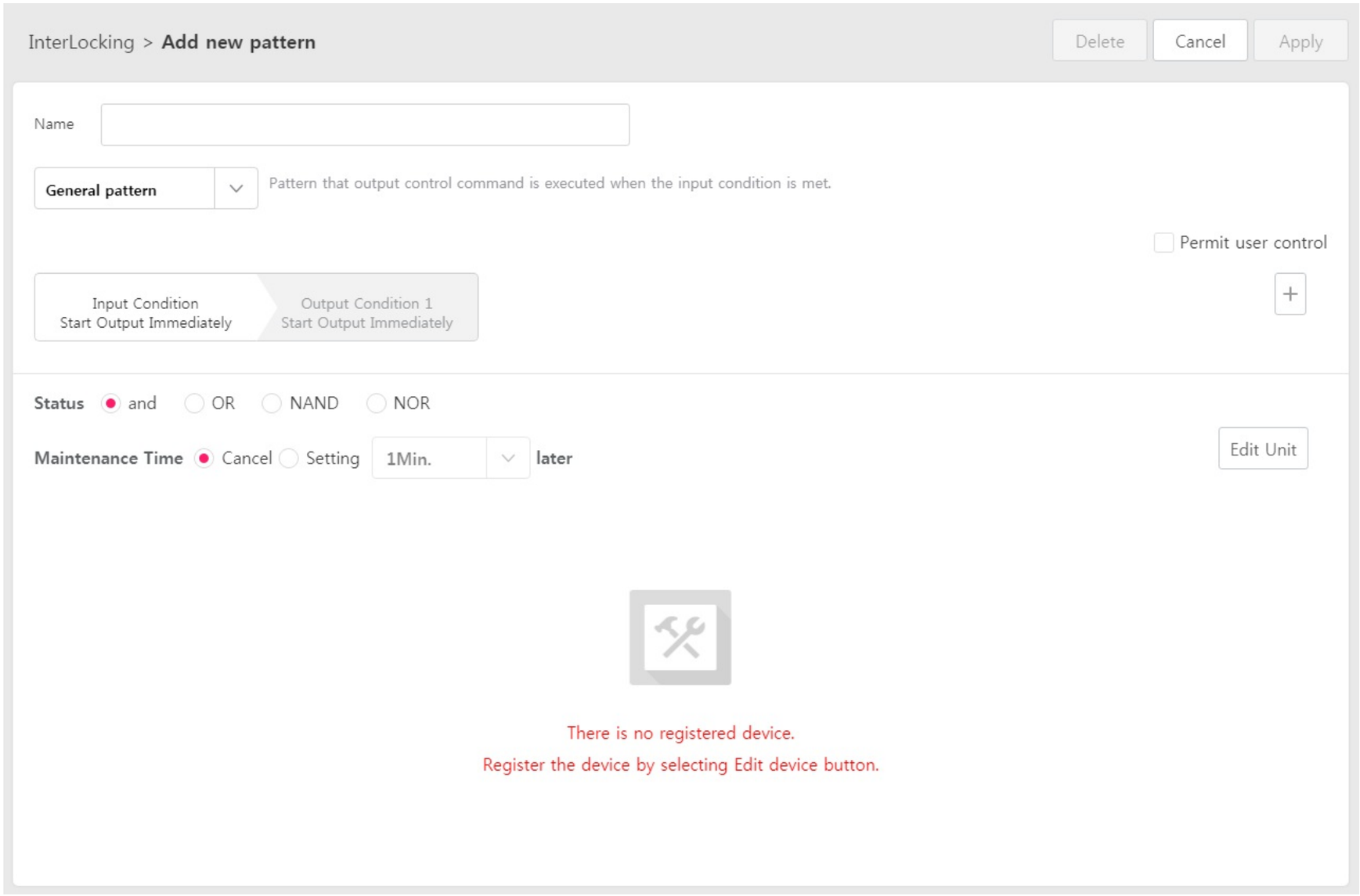
**Recommended specification**

- **Equipment interface control : No. of patterns is 20, No. of input devices is 500, and No. of output devices is 1000**
- **If it is set to be over the recommended specification, performance degradation may occur.**

# Add/edit InterLocking

You can add and edit new InterLocking.

1. In the left menu tab, click **[Control] > [InterLocking]** menu.
   - The InterLocking screen is displayed.
2. Click **[+ Add new pattern]** button.
   - Add InterLocking screen is displayed.




3. In the InterLocking name input field, input the desired InterLocking name.

4. Select pattern type.

| Category | Description |
|---|---|
| General pattern | • The pattern that output control command is executed when the input condition is satisfied |
| Copy pattern | • The pattern that the output device follows the input device's status<br>(Some control functions may not be copied.)<br>• You can add only 1 device to input condition, and only the device with the same attribute with the added input device is registered to the output device |
| Emergency pattern | • The pattern that it recognizes as emergency situation when input condition is satisfied<br>• When the input condition is satisfied, it tells the alarm with screen and sound |
| 1:1 pattern | • Pattern to conveniently register many devices if input device is the same as output device |

5. Select whether to permit user control. (Only general pattern is possible)
   - When check box is selected, even if the status is changed by the InterLocking, user may change the status of the equipment.

6. Set equipment interface condition. When you press **[+]** button, you can add up to 3 output conditions.
   - It only appears when input condition tab is selected.

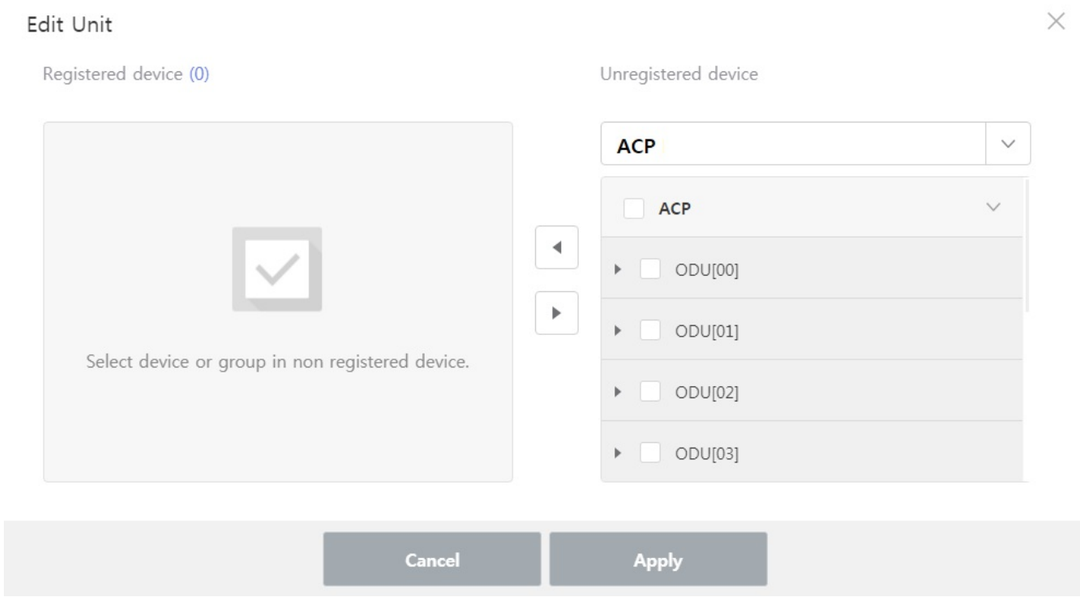
| Category | Description |
|---|---|
| Status | • AND : all device conditions match<br>• OR : one or more device conditions match<br>• NAND : one or more device conditions do not match<br>• NOR : no condition matches |
| Maintaining time | If it is set, while all input conditions are met, output condition control after maintaining time<br>Press **[▼]** button to select maintaining time |

   - It only appears when output condition tab is selected.

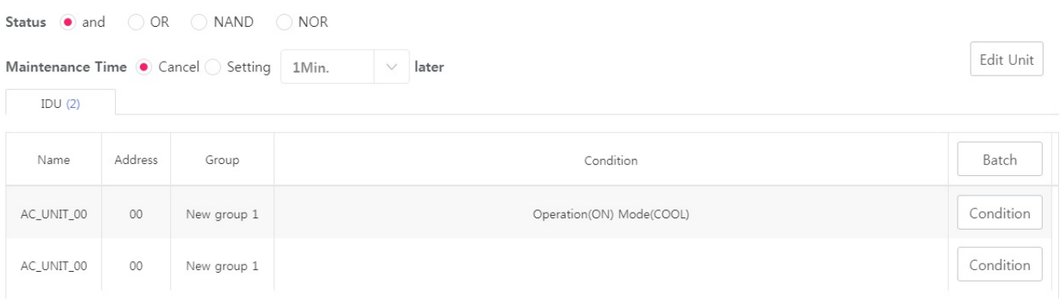
| Category | Description |
|---|---|
| Send e-mail | When check box is selected, if the corresponding event is executed in ACP, whether event occurred is sent to the e-mail set in Setting > Administrator Setting > receiving e-mail address<br>• ACP shall be connected to internet network that can send e-mail. |
| Delay time | If it is set, when input condition is met, output condition is controlled after the registered delay time<br>Press **[▼]** button to select delay time<br>• If input condition is met, even if it becomes a status that does not meet the input condition during the delay time, output condition is controlled after delay time. |

7. To add device, click **[Edit Unit]** button.
   - The Edit Unit popup window appears.

8. In the selectable device list, click the checkbox of the device to register and click **[◀]** button.
   - To register several groups at once, click the checkbox of the group to register and click **[◀]** button.
   - The selected devices are added to the registered device list.




9. When device registration is completed, click **[Apply]** button.
10. Click registered device's **[Condition]** button.




11. In the right side control window section, set the desired control status.
12. Select output condition tab, and run No. 7~11 processes in the order.
13. To save the set contents, click **[Apply]** button.

## Note

Meaning of Odor Conditions by Level

- Reference Value 2 : Weak
- Reference Value 4 : Moderate
- Reference Value 5 : Strong
- Reference Value 6 : Very strong

## Delete InterLocking

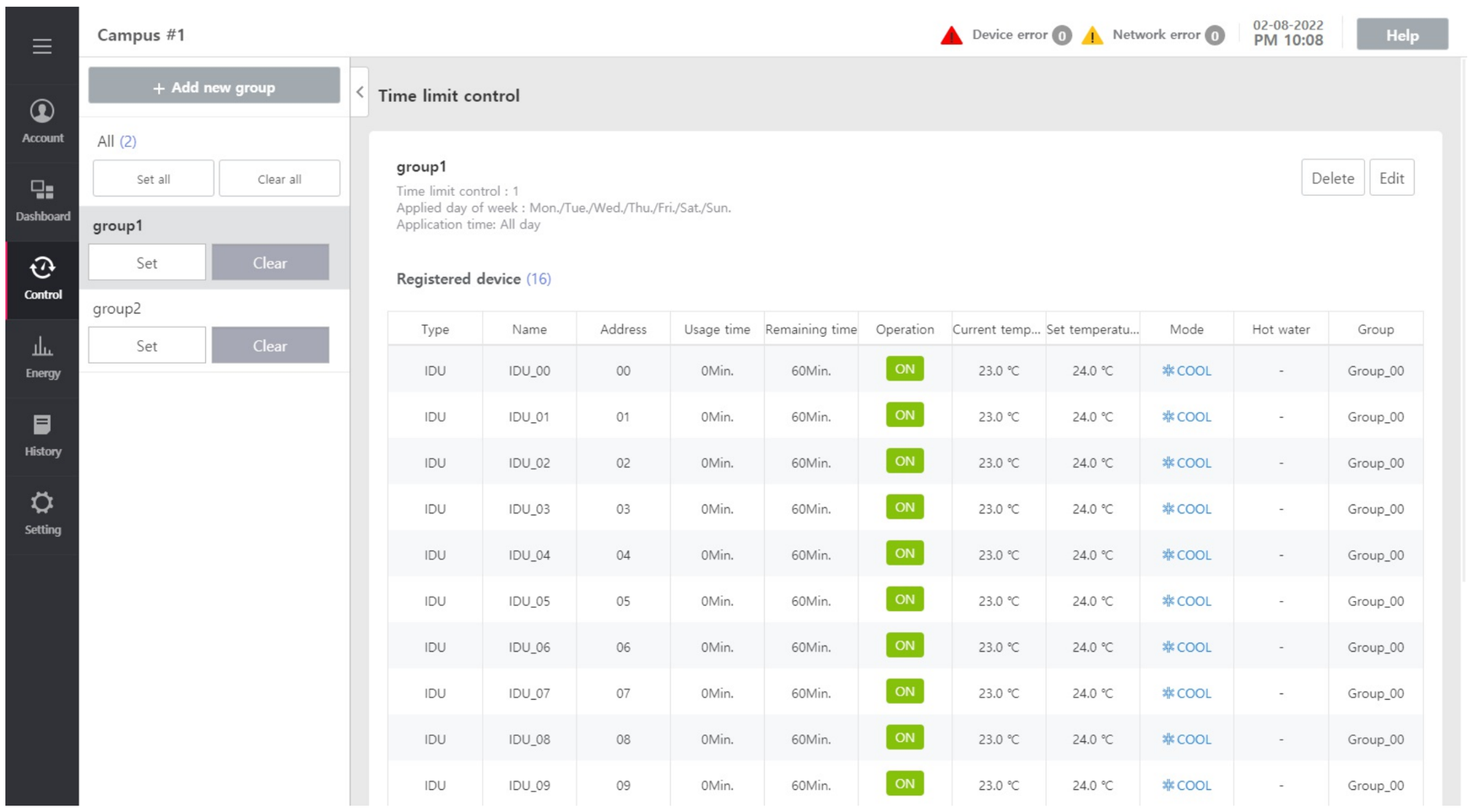
You can delete registerd InterLocking.

1. In the left menu tab, click **[Control]** > **[InterLocking]** menu.
   - The InterLocking screen is displayed.
2. In the InterLocking list, select the group to delete, and click **[Delete]** button.
3. When InterLocking delete popup window appears, click **[Yes]** button.
   - In the InterLocking list, the selected category is deleted.

## Time limit control

You can control the device to operate for the set time and automatically stop.

1. In the left menu tab, click **[Control] > [Time limit control]** menu.
2. In the group list, select the group to check the setting.
   - The the corresponding group's setting status is displayed in the screen.
3. In the group list, you can click **[Set] / [Clear]** button to set the time limit operation.
4. To start all the registered group, click **[Set All]** button, and to stop all, click **[Clear All]** button.




### Note

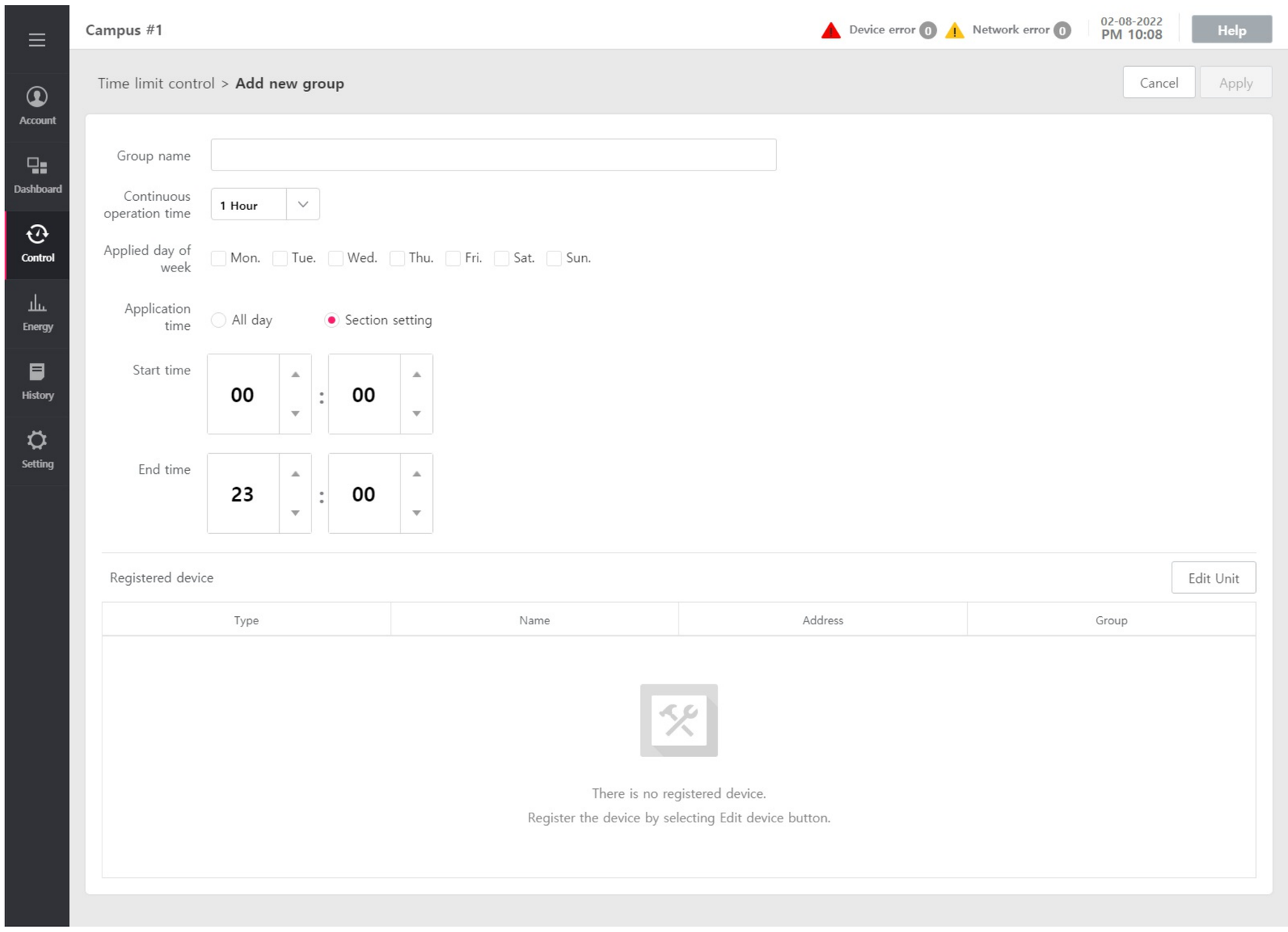
Recommended specification

- Time limited operation : No. of groups is 10
- If it is set to be over the recommended specification, performance degradation may occur.

## Add/edit Time limit control group

You can add and edit Time limit control group.

1. In the left menu tab, click **[Control] > [Time limit control]** menu.
   - Time limit control screen is displayed.
2. Click **[+ Add New Group]** button.
   - Add new group screen is displayed.
   - During the edicting, when you select the group to edit and click **[Edit]** button, the following screen is displayed.

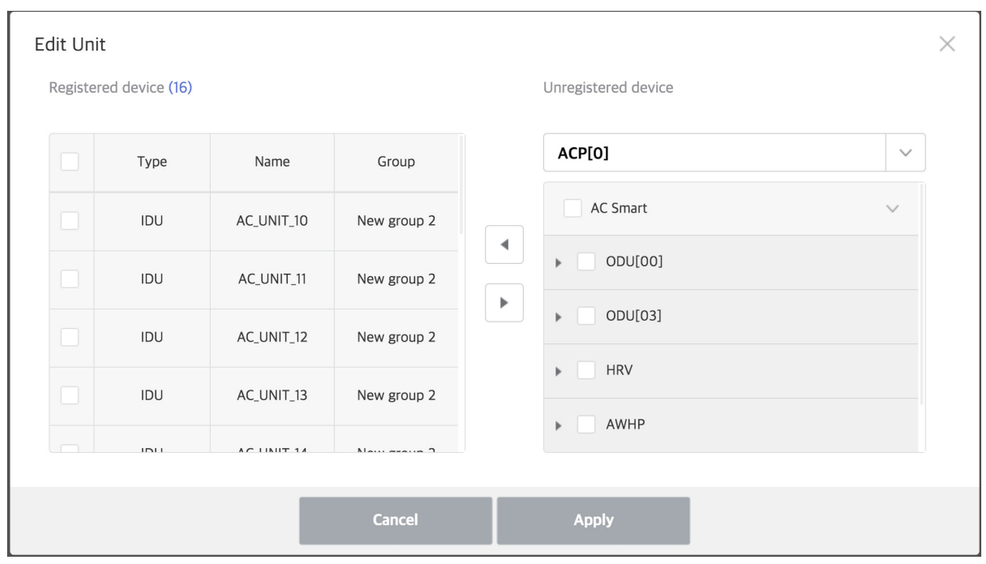



3. Input group name.

4. Select continuous operation time, days of week for application and application time.

| Category | Description |
|---|---|
| Continuous operation time | • Press **[▼]** button, and set the desired continuous operation time (1 hour ~ 4 hours) |
| Applied day of week | • Select checkbox to select day of week to run the time limit operation |
| Application time | Check box to select time to start time-limited operation<br>• All Day: Runs time-limited operation for 24 hours<br>• Set Period: Runs time-limited operation from start time to end time set by user |

5. To add device, click **[Edit Unit]** button.
   - The Edit Unit popup window appears.




6. In the selectable device list, click the checkbox of the device to register and click **[◀]** button.
   - For time limited control, you can register all devices except DI, DO, ON/OFF, Chiller, and Exp.I/O device.
   - To register several groups at once, click the checkbox of the group to register and click **[◀]** button.
   - The selected devices are added to the registered device list.
7. Wheh device registration is completed, click Edit Unit popup window's **[Apply]** button.
8. Click **[Apply]** button at the top right side.

## Delete Time limit control

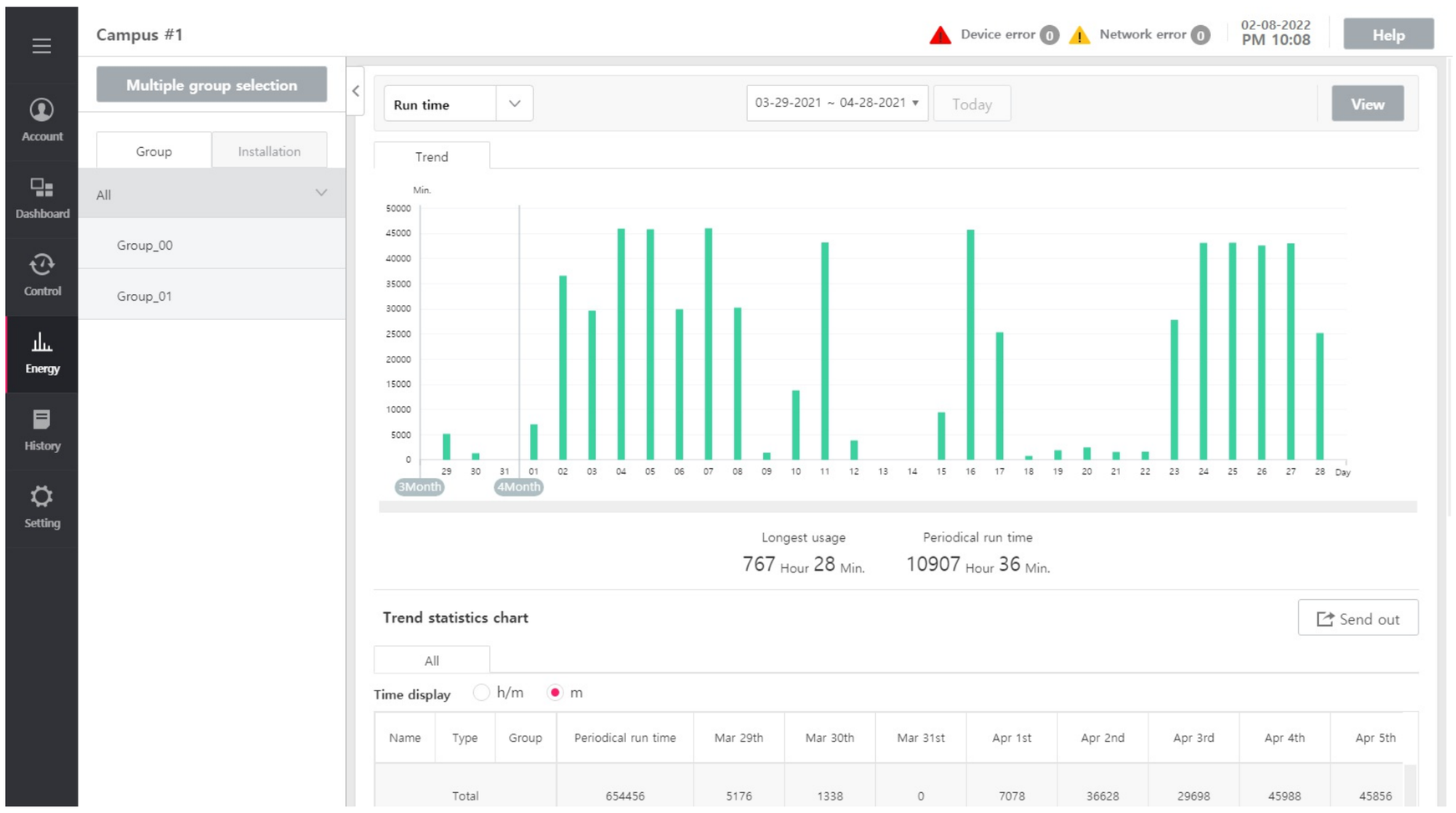
You can delete Time limit control group.

1. In the left menu tab, click **[Control]** > **[Time limit control]** menu.
   - Time limit control screen is displayed.
2. In the group list, select the group to delete and click **[Delete]** button.
3. When Delete group popup window appears, click **[Yes]** button.

# Energy Usage

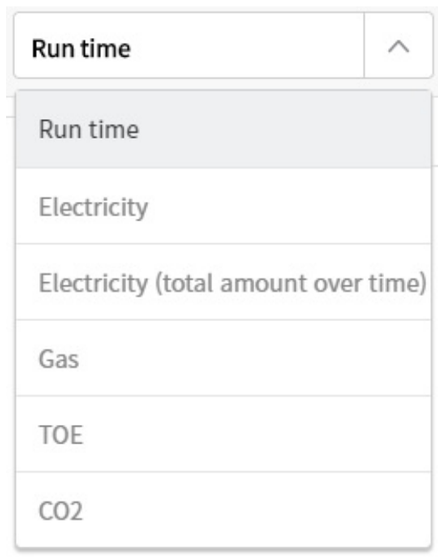
It describes the method to check the device's operation time, electricity usage amount, electricity usage amount(total amount over time), gas usage amount, TOE, and $CO_2$ with values and graph.

1. In the left menu tab, click **[Energy] > [Energy Usage]** menu.
   - Energy usage amount screen is displayed.



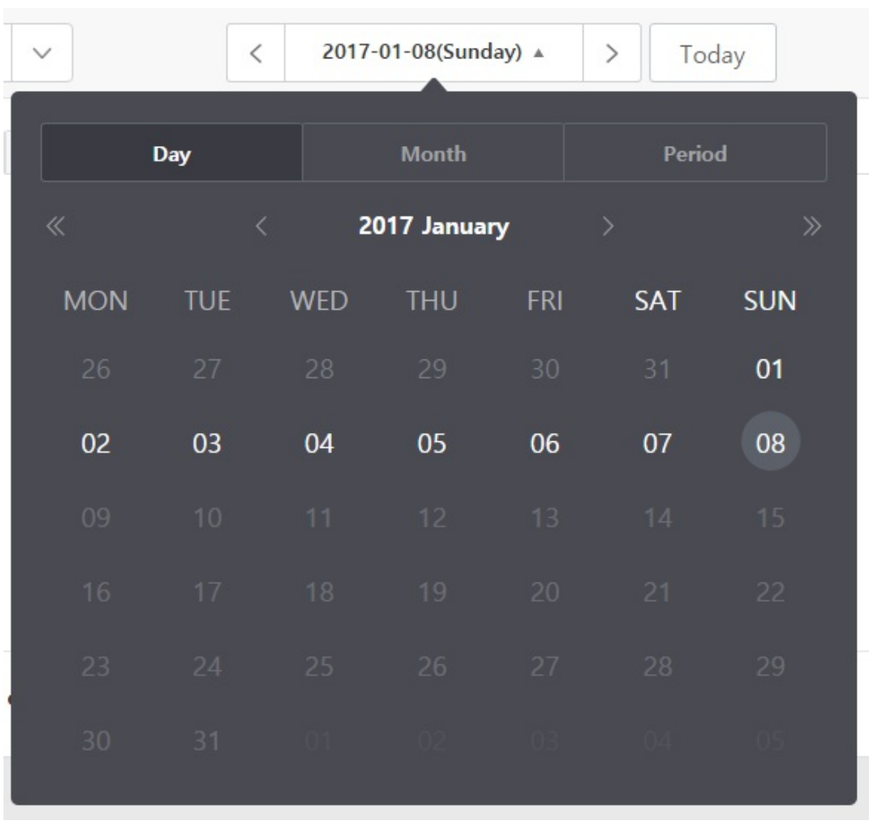

2. In the group list, select group to view.

3. In the top left side box, select the category to view.




4. Set the viewing period.

| Category | Description |
|---|---|
| Day | Set the desired day in mini calendar |
| Month | Set the desired month in mini calendar |
| Period | Set the desired period in mini calendar |
| Today | Set today's date as the base date |




5. To view the set contents, click **[View]** button.

- Energy usage amount of the set period is displayed.
- To save the viewed contents, click **[Send Out]** button.

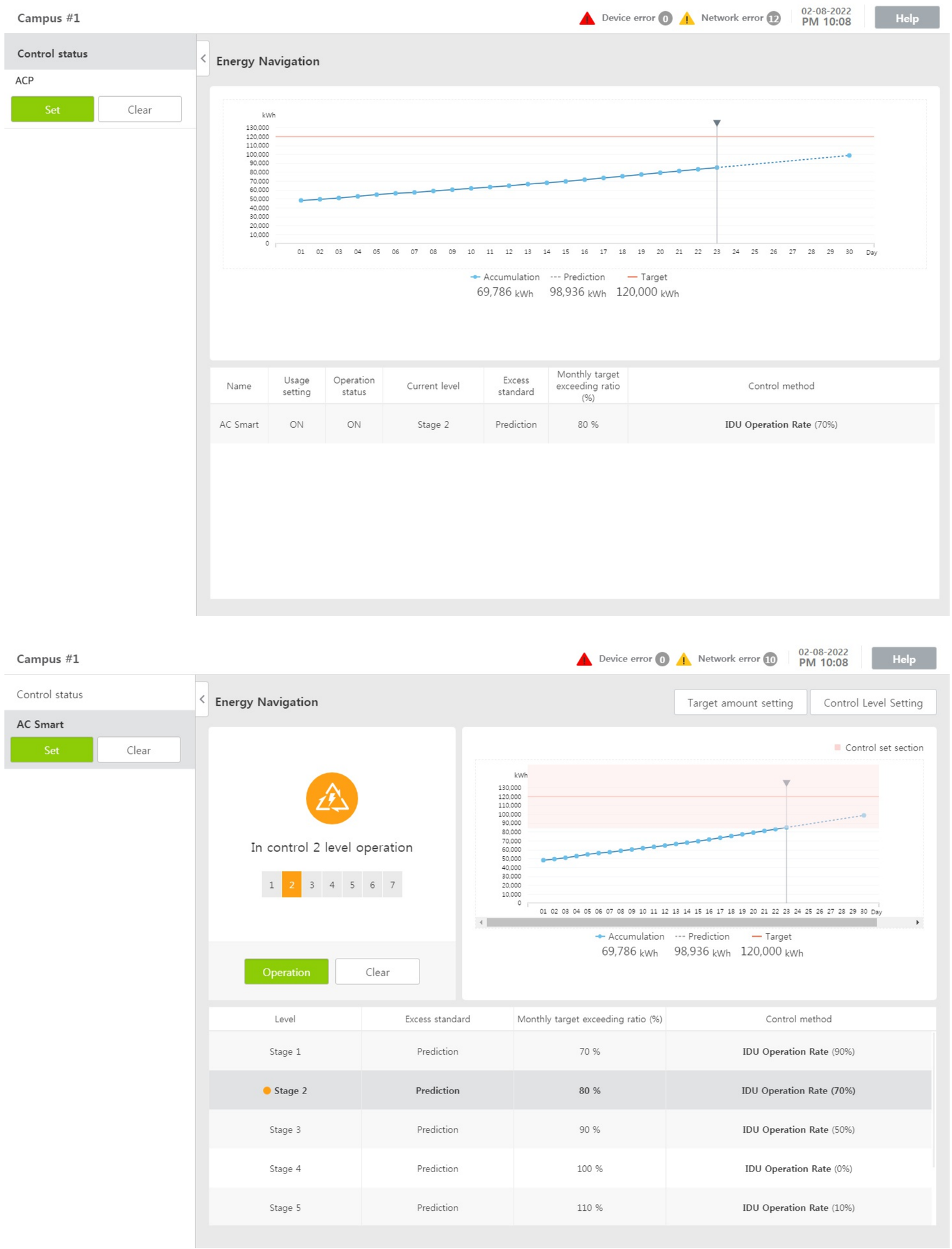
  (In AC Smart 5 Device, it is stored in USB.)

## Note

- Viewing power is possible only when PDI is installed.
- If PDI is installed, indoor unit, ERV DX, and Heating address shall be set to avoid overlapping.
- The power consumption amount appeared in the program may be a little different from the power consumption amount marked on actual bill.
- In [Setting]-[Installing], only ACP with [Electricity Usage Amount] set can be monitored.
- Viewing gas is possible only when GDI is installed.
- The gas amount appeared in the program may be a little different from the gas amount marked on actual bill.
- In [Setting]-[Installing], only ACP with [Gas usage amount] set can be monitored.
- Energy monitor maintains only the last 1 year's data.
- Hourly data is provided up to last 3 months.

# Energy Navigation

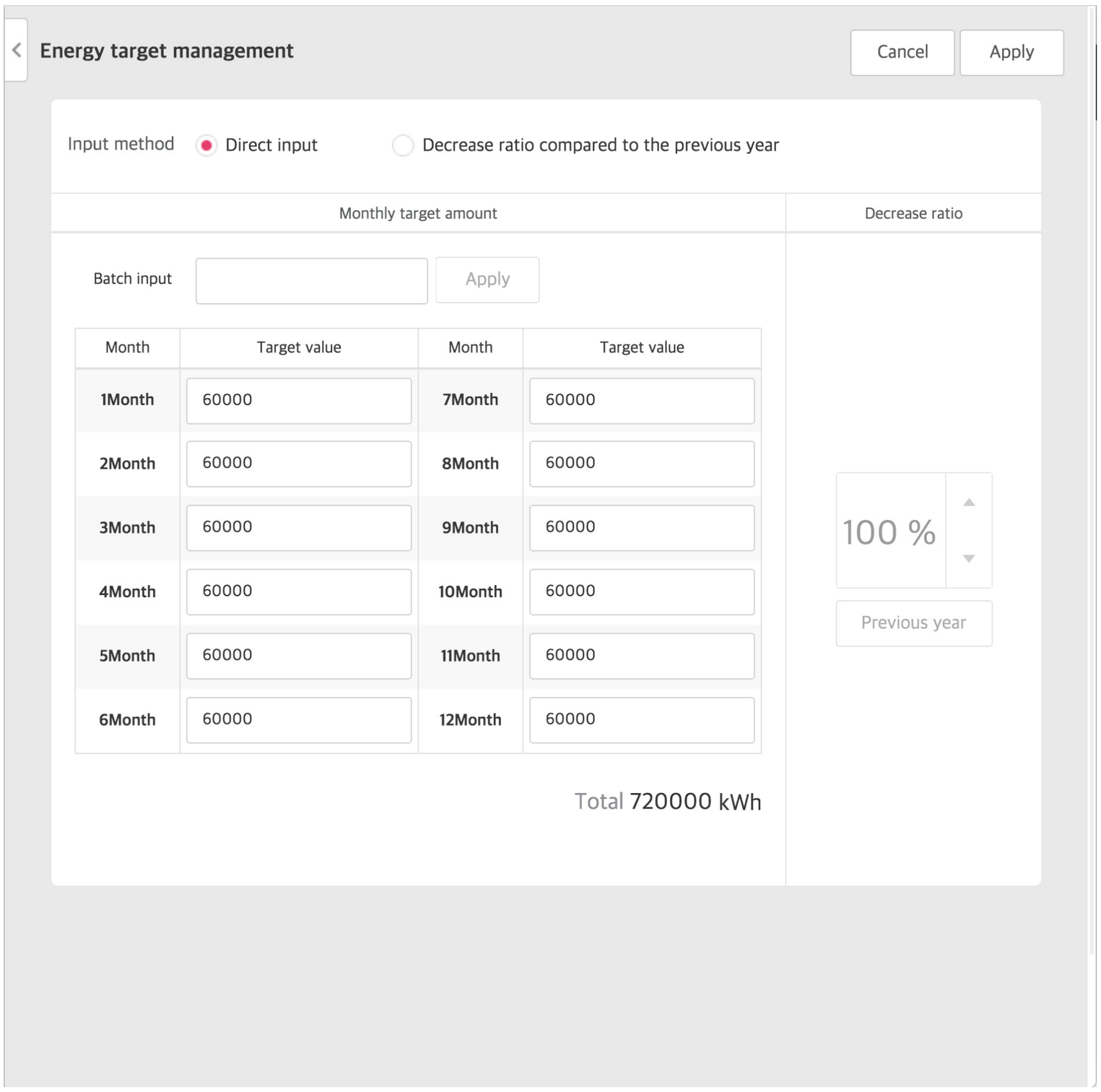
Energy Navigation is the function that can control **[ODU capacity]/[IDU Operation Rate]/[IDU]** for each level according to the power usage amount forecast and current power usage amount to be able to manage the monthly power usage amount below the target amount.




## Add target amount

You can add Energy Navigation's target amount.

1. In the left menu tab, click **[Energy]** > **[Energy Navigation]** menu.
2. In the control status tab, click the group to add target amount.
3. Click **[Target amount setting]** button at the top right side.
   - Target amount setting window appears.

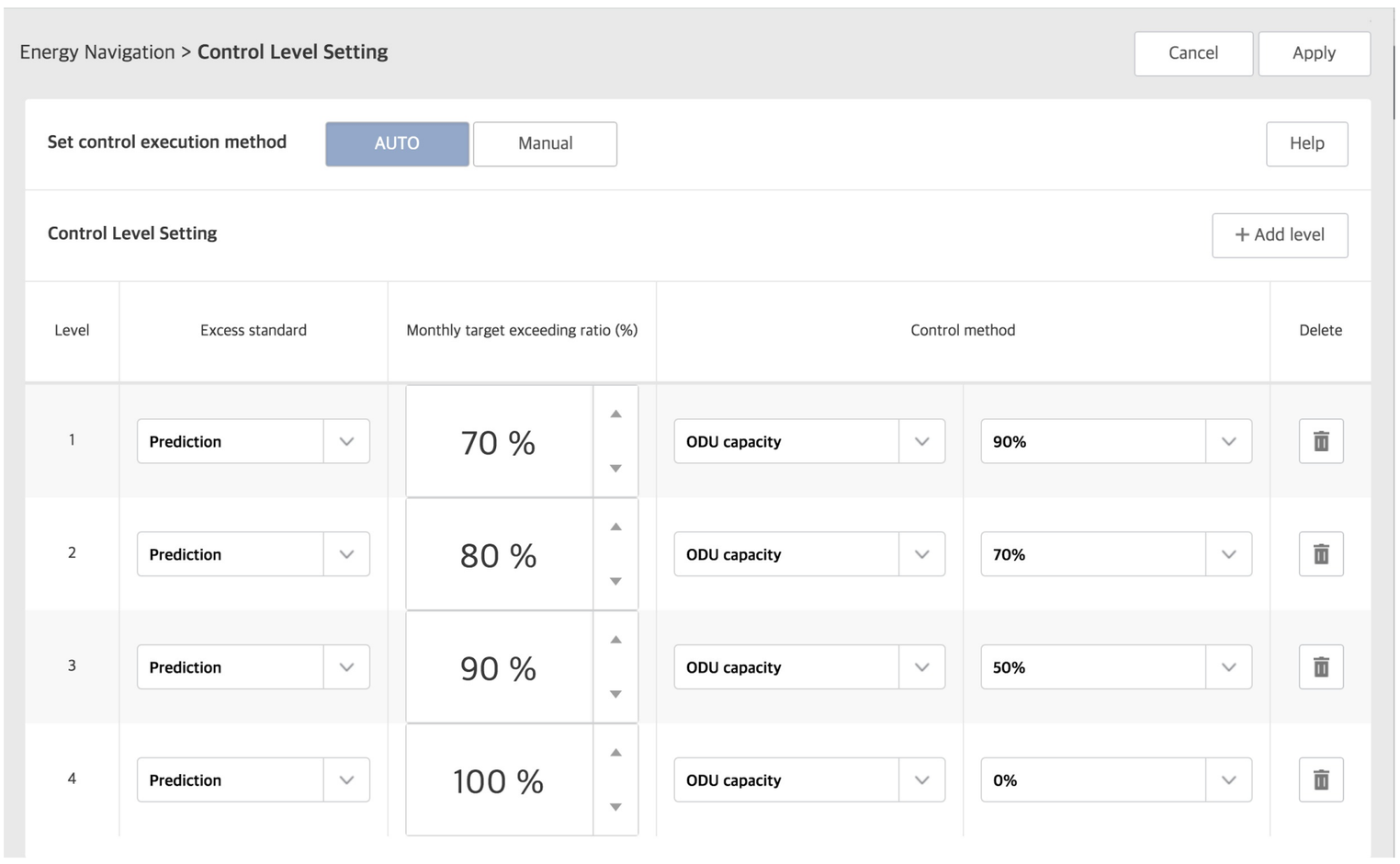



4. Input target amount in each month.
   - To input in all months at once, input target amount in batch input field and click **[Apply]** button on the side.
5. When target amount input is completed, click **[Apply]** button at the top right side.
6. When Apply notice window appears, click **[Check]** button.

## Control Level Setting

You can set control level of Energy Navigation.

1. In the left menu tab, click **[Energy]** > **[Energy Navigation]** menu.
2. In the control status tab, click the group to set the control level.
3. Click **[Control Level setting]** button at the top right side.
   - Control Level Setting window appears.




4. Select control run method setting.

| Category | Description |
|---|---|
| AUTO | At the time of the alarm, control method set for each level is automatically executed. |
| Manual | At the time of the alarm, you select whether to execute the control method set for each level. |

5. Click Control Level Setting window's **[+Add Level]** button.

6. Set the Control Level Setting categories.

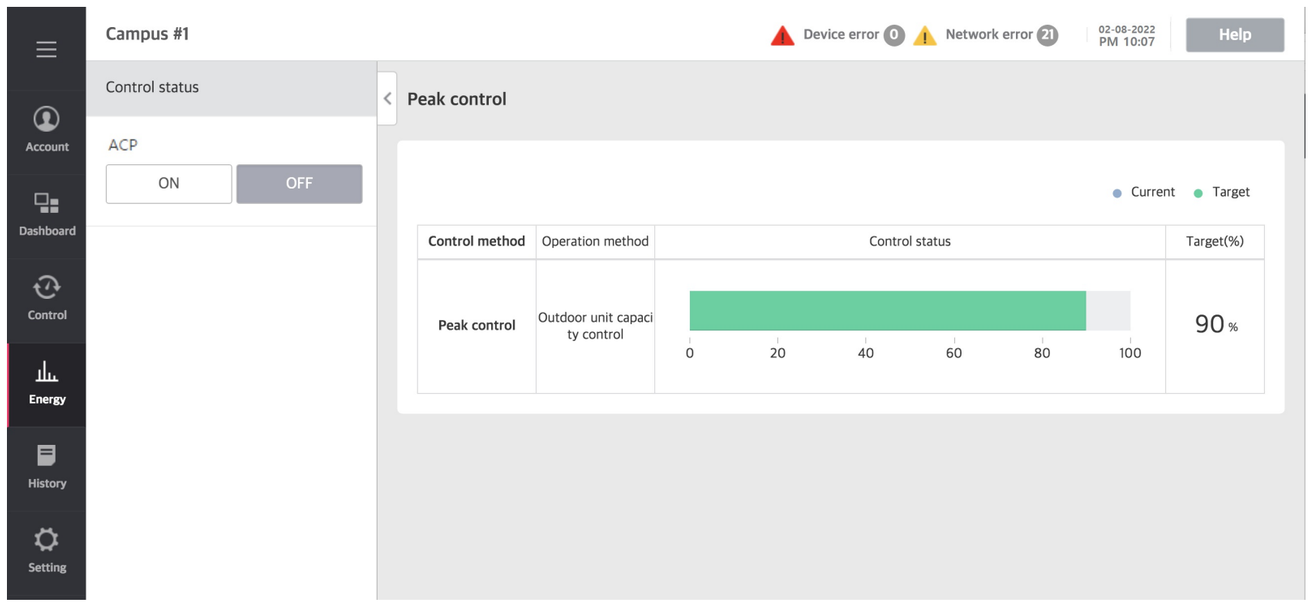
| Category | Description |
|---|---|
| Excess Standard | You can select between usage amount forecast and actual usage amount. |
| Monthly target excess ratio | You can set in 10% unit within 70~130% |
| Control method | ODU capacity: You can set in 10% unit within 0~100%.<br>IDU operation ratio: You can set in 10% unit within 0~100%.<br>IDU: IDU control |

7. When setting is completed, click **[Apply]** button at the top right side.

8. When Apply notice window appears, click **[Check]** button.

# Peak demand control

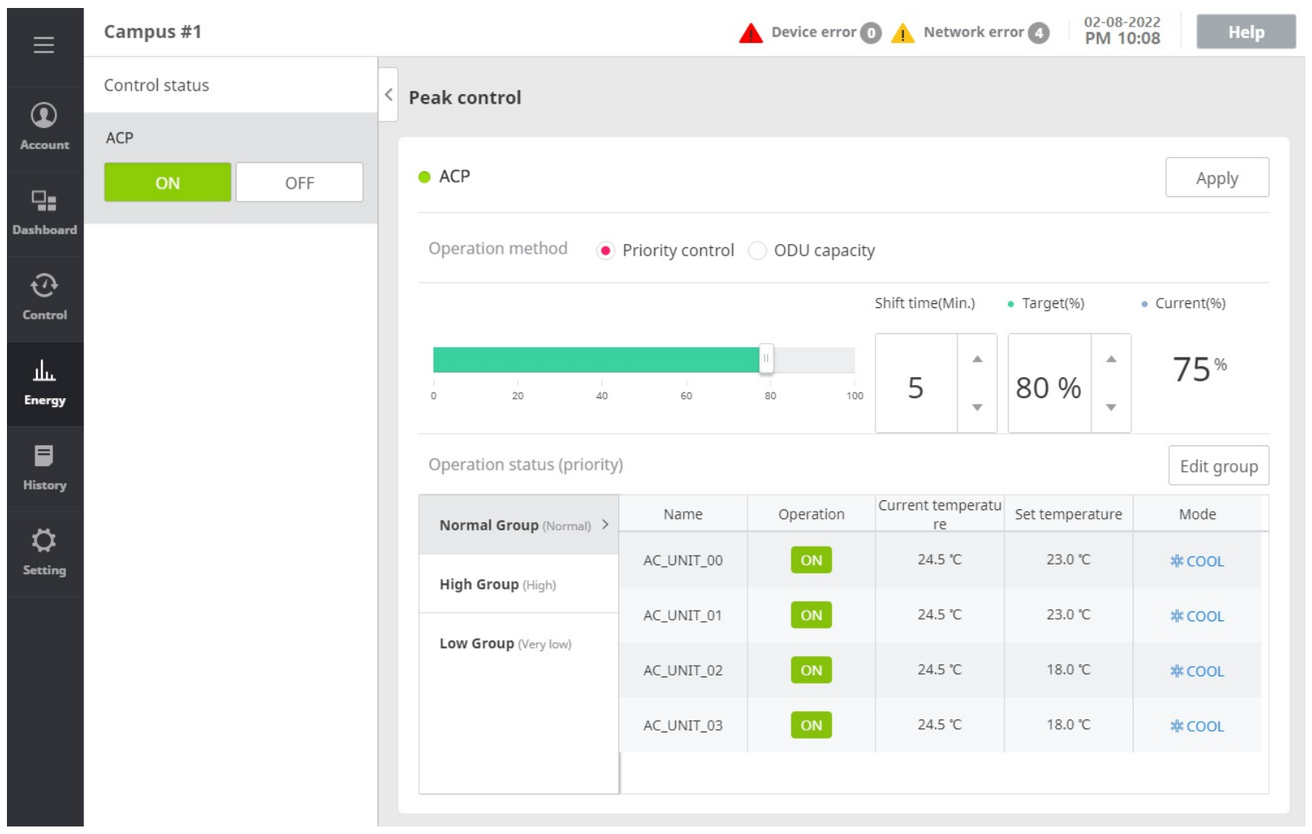
In the control status, you can check ACP name, control method, operation method, control status, and target operation ratio.




## Peak Control

Peak control is a function to set the target operation rate to limit the maximum power usage and to control total power usage not to exceed the target operation rate. To prevent total power usage from exceeding target operation rate, cooling mode is automatically converted to wind only mode according to the priority and heating mode automatically stops, so the power usage amount can be saved.

1. In the left menu tab, click **[Energy] > [Peak demand control]** menu.
   - Peak demand control screen is displayed.
2. In ACP list, select ACP to control.
   - The corresponding ACP's control setting status is displayed in the screen.




3. In the control information display, set the desired control status.

| Category | Description |
|---|---|
| Operation Method | • Outdoor unit capacity control: Target operation ratio is applied in the units of outdoor unit to control outdoor unit capacity operation ratio<br>• Priority control: Controls according to the priority of ACP lower level gropus |
| Operation rato bar | • Indoor unit's target operation ratio is displayed as bar graph<br>• You can drag the bar of the graph to set the target operation ratio |
| Current(%) | Among all of the selected ACP indoor units, it marks the % reached by the device currently in operation |
| Target(%) | Press **[▲]/[▼]** button to set the target operation ratio |
| Shift time(min.) | • Press **[▲]/[▼]** button to set the cycle of forced operation stop in min. unit<br>• You can set to 5 ~ 15 min. range in the units of 1 min. |
| Operation status | It displays device name/whether operating/current temperature/set temperature/mode information |

4. To apply the control setting, click **[Apply]** button.
   - The set control status is saved.
5. To start the corresponding group with the set status, click the group list's **[ON]** button. To stop the corresponding group's operation, click the group list's **[OFF]** button.

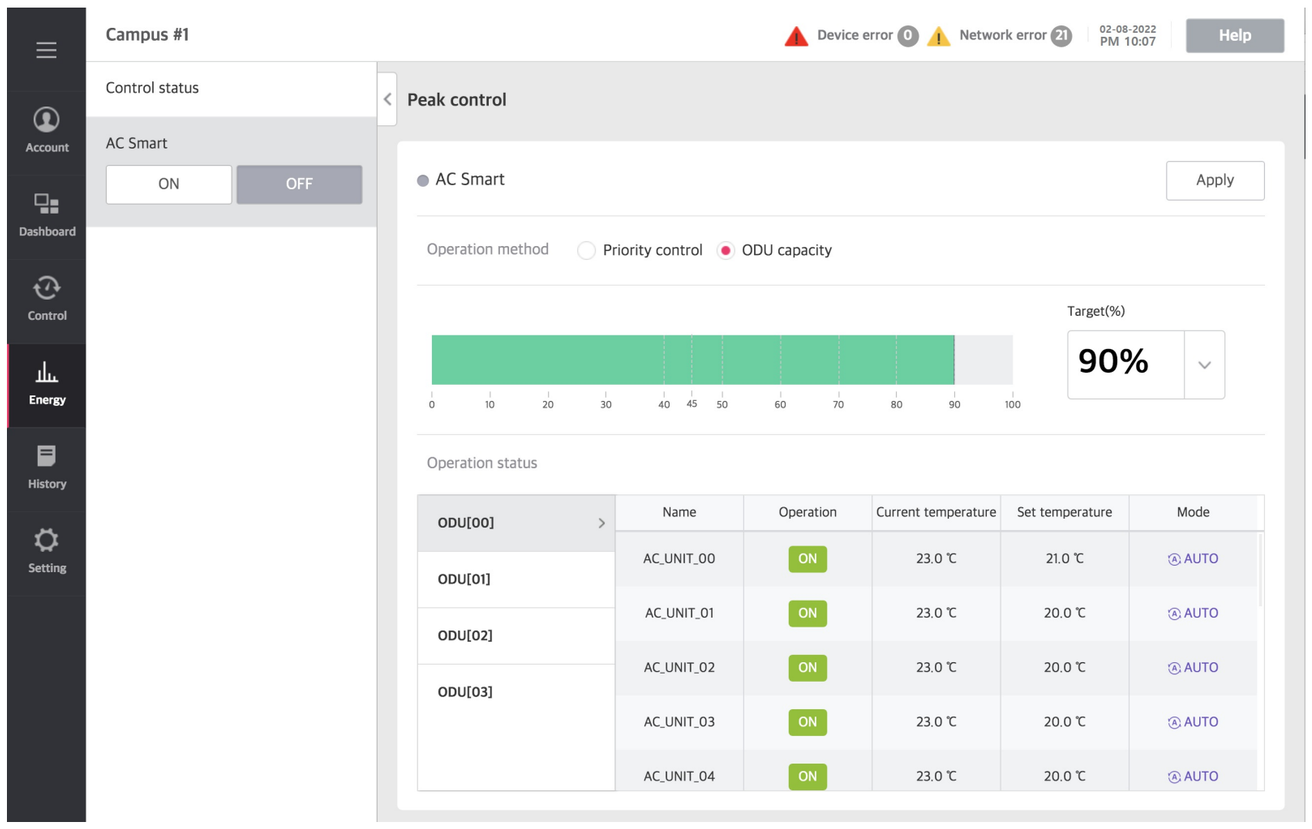
### Note

**To change the control settings, stop the peak control operation first. (Stop peak control → Change and apply control settings → Operate peak control)**

## Demand control

You can observe the power usage change trend and limit the power usage from exceeding preset contract power usage amount. When it is set to demand control, when it is expected to exceed the contract power usage amount, it stops from the most unnecessary device and the power usage is distributed, so you can save the power usage amount.

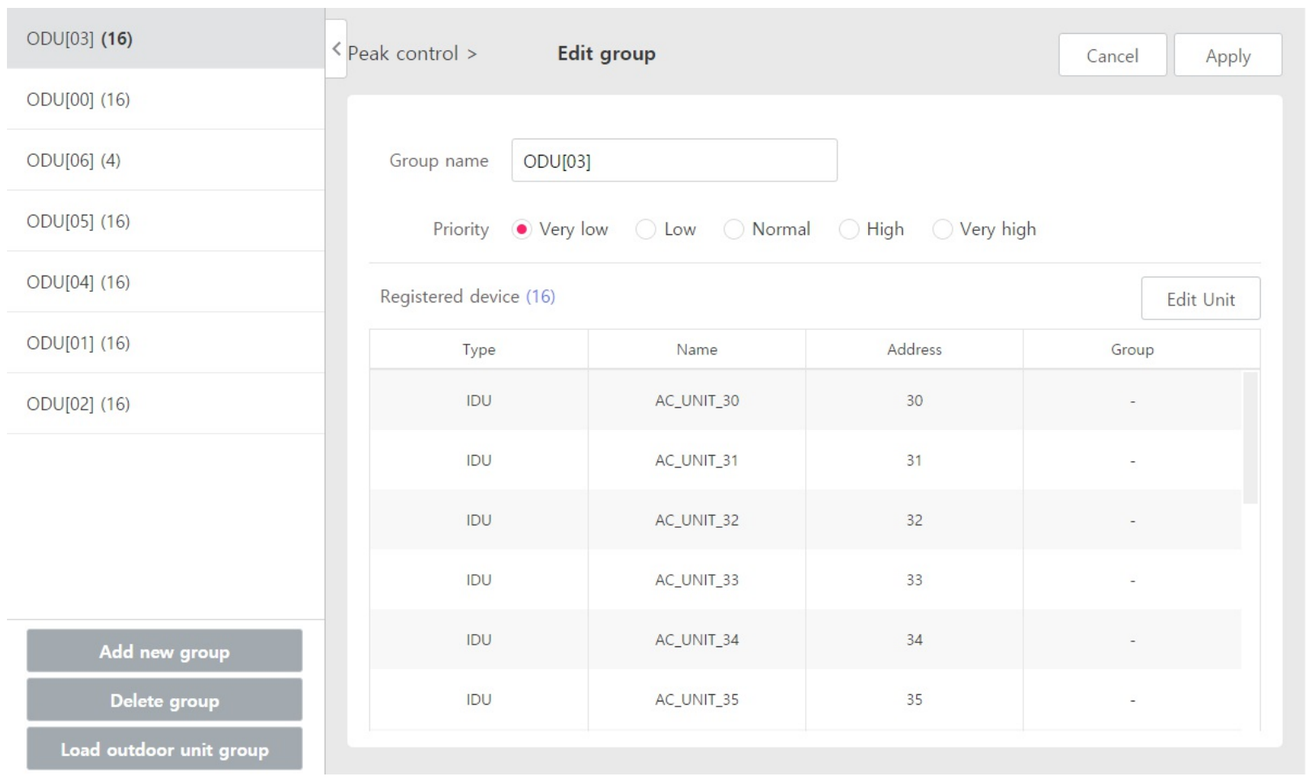
- In demand control menu, you can check demand control status or edit group. But, you cannot set target operation ratio, operation switching time, and operation control.




## Add/edit peak group

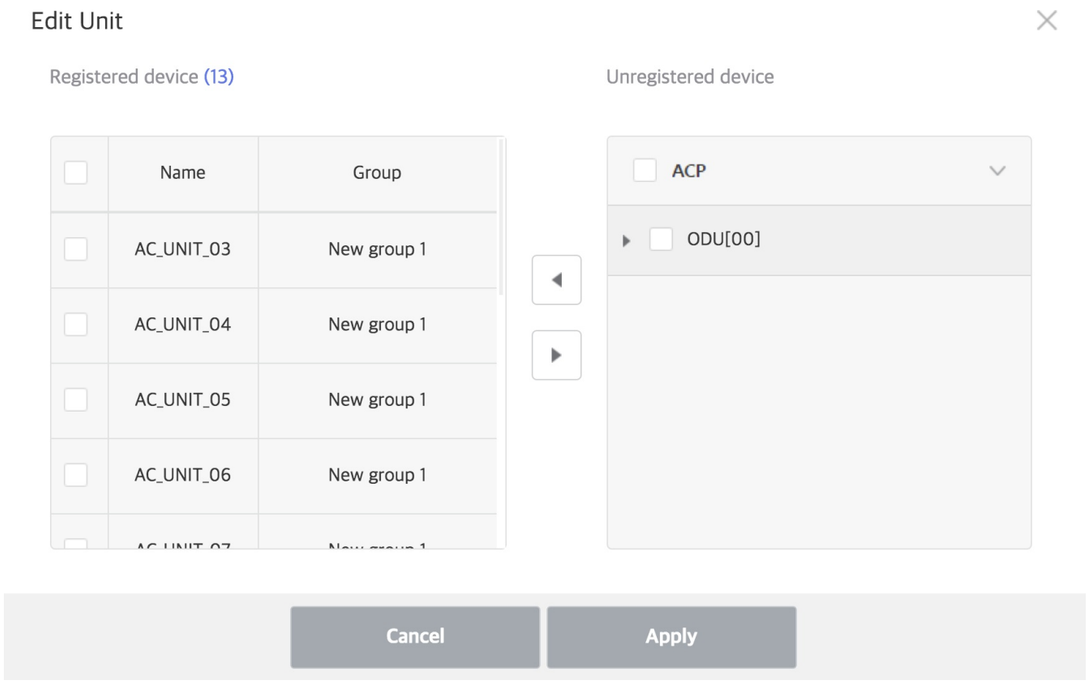
You can add and edit peak control group.

1. In the left menu tab, click **[Energy] > [Peak demand control]** menu.
   - Peak demand control screen is displayed.
2. Click **[Edit Group]** button.
   - Edit group screen is displayed.




| Category | Description |
|---|---|
| Group name | Input the name of the group to add |
| Priority | Select the desired priority among very low/low/normal/high/very high |
| **[Edit Unit]** | Open device edit window (add or delete device list) |
| Registered device | It displays the device list registered in the group |
| **[Add New Group]** | Add group for peak control |
| **[Delete Group]** | Delete the selected peak group |
| **[Load outdoor unit group]** | Applied in the units of outdoor unit registerd in ACP |

3. Input the name of the corresponding group in the group name input field.
4. Select the desired priority.
   - The control levels are as follows: Very Low → Low → Medium → High→ Very High
5. To register the device, click **[Edit Unit]** button.
   - Edit Unit popup window appears.
6. In the unregistered device list, click the checkbox of the device to register and click **[◀]** button.
   - For peak control, only indoor units can be registered.
   - To register several devices at once, click the check boxes of the devices to register and click **[◀]** button.
   - The selected devices are added to the registered device list.



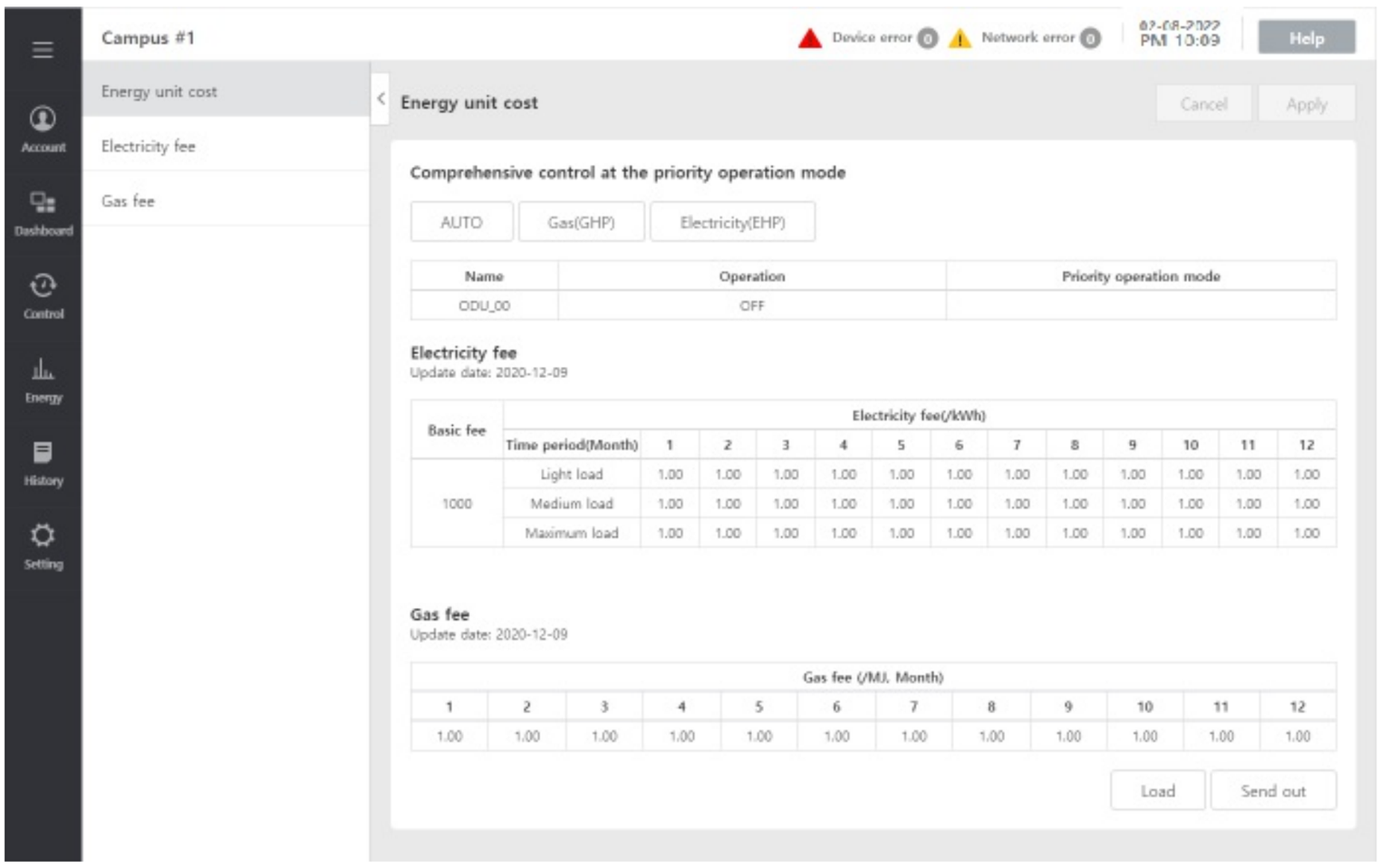

7. To apply in Edit Unit popup window, click **[Apply]** button.
8. To save the set contents, click Peak demand control screen's **[Apply]** button.

# Energy Unit Cost

In the Energy Unit Cost menu, you can check the Priority Mode Total Control option and the electricity and gas fee states currently set.

## Note

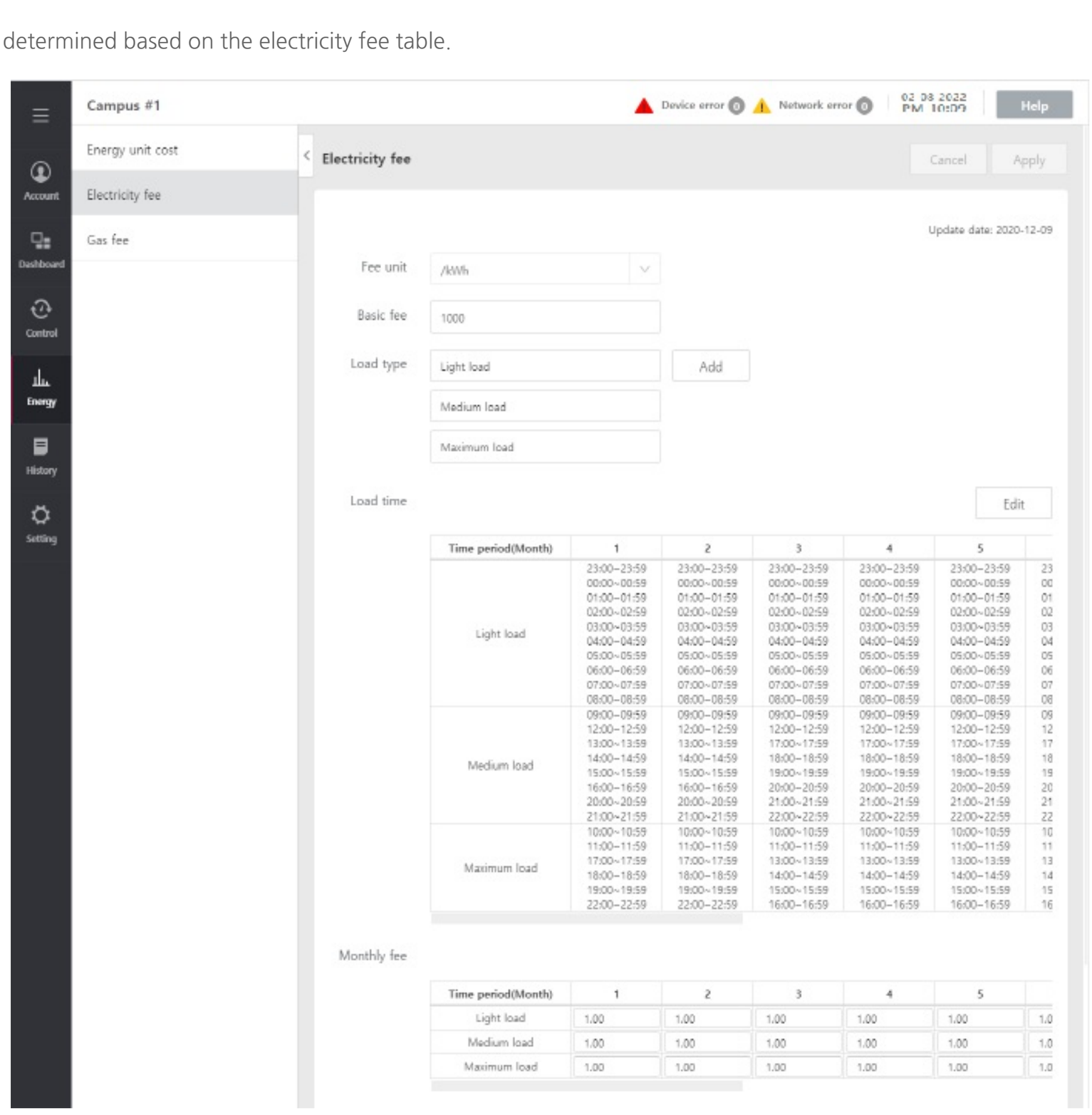
- Energy Unit Cost is an exclusive menu for a GHP Hybrid outdoor unit. It is not available when other outdoor units are linked.




# Electricity Fee

The Electricity Fee option allows you to set the monthly fee based on the load hour.

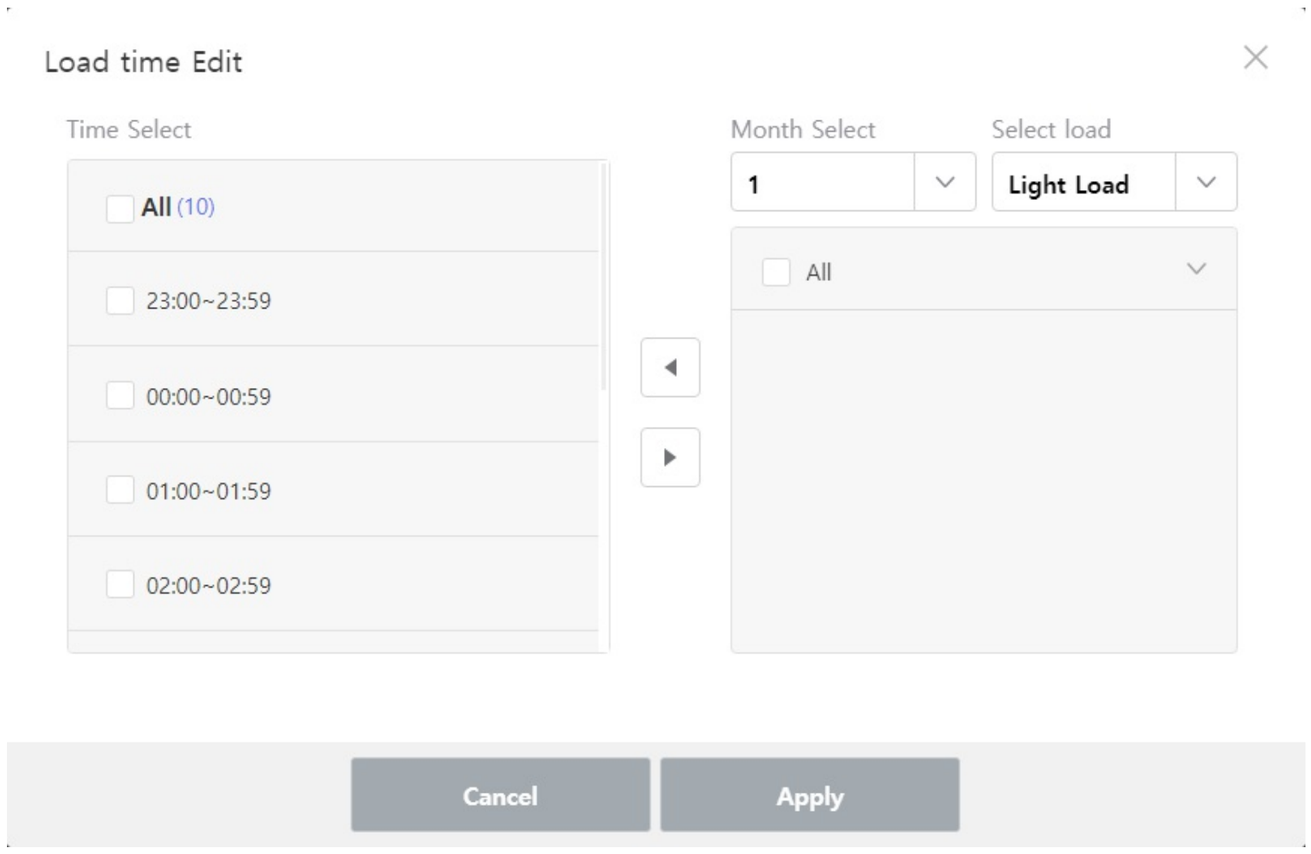
Monthly electricity fee must be determined based on the electricity fee table.




1. You can edit the basic fee.
2. You can add or edit the load type.
3. You can edit the monthly fee.

## Edit Load Hour

You can edit the load hour based on the month and load type.




| Category | Description |
|---|---|
| Select Month | Select a month to edit the load hours. |
| Select Load | Select a load type for the selected month. |
| Select Hour | Select hours to be applied to the selected month and load. |

1. Select a month to edit the load hours.
2. Select a load type for the selected month.
3. Select hours to be applied to the selected month and load, click a checkbox, and press the > button.

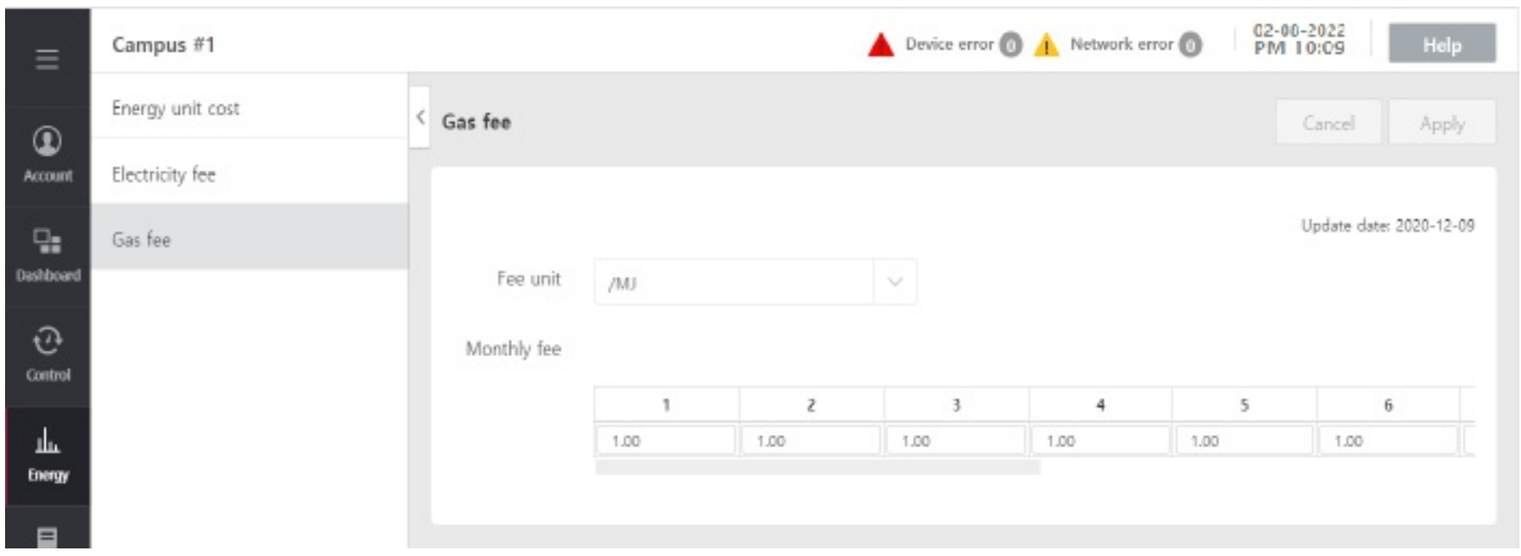
### Note

- If all the hours are not applied, the Apply button is not activated.
- For Monthly Fee, you can enter up to six digits, but the value cannot exceed 655.35.
- The update date is applied when you apply the Edit Electricity Fee option.

## Gas Fee

The Gas Fee option allows you to set the monthly fee based on the load hour.

Monthly gas fee must be determined based on the gas fee table.



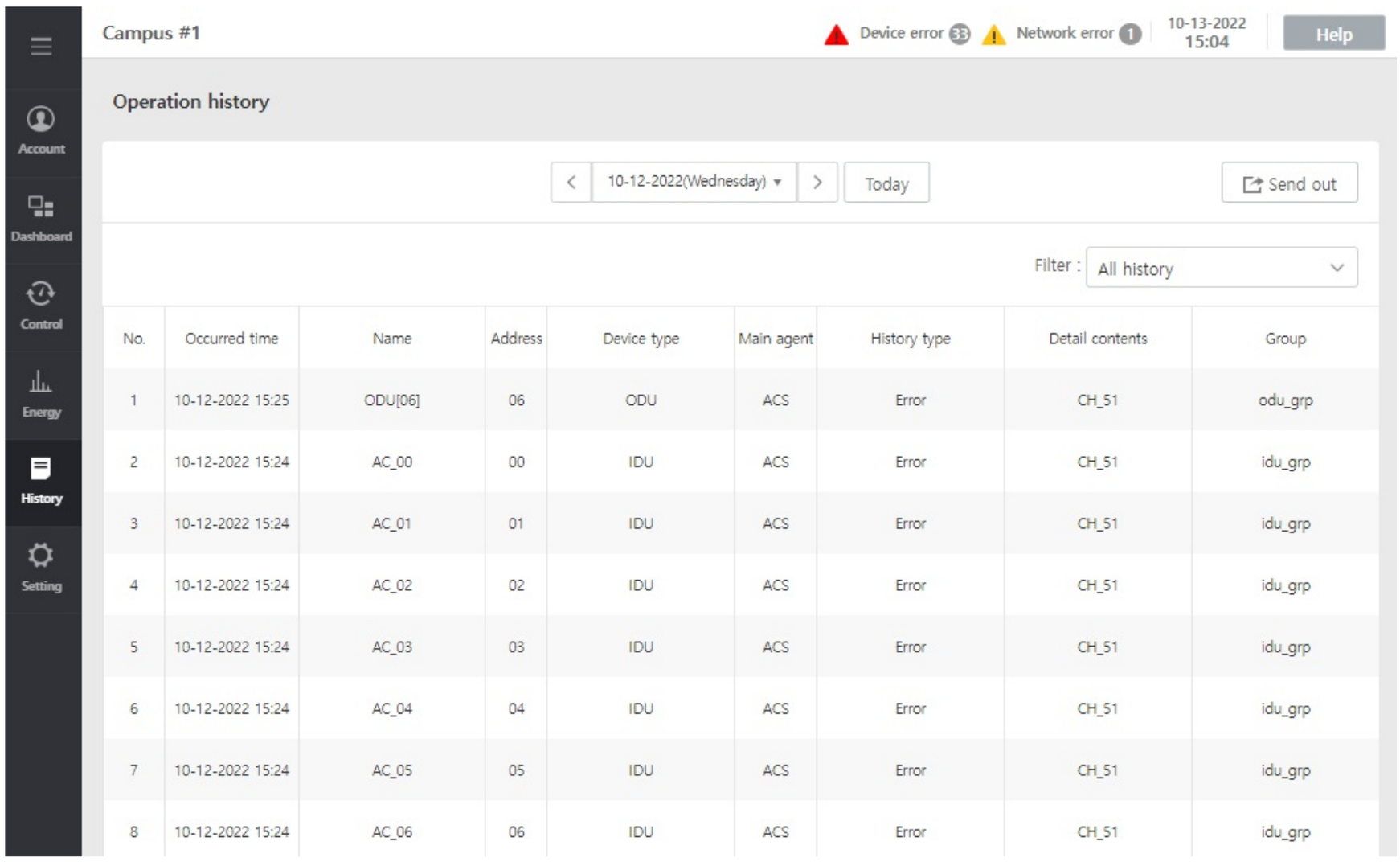

### Note

- For Monthly Fee, you can enter up to six digits, but the value cannot exceed 65.535.
- The update date is applied when you apply the Edit Gas Fee option

# Operation History

You can view user/automatic control's operation history and the connected device's status change or error status.

1. In the left menu tab, click **[History]** > **[Operation History]** menu.
   - Operation history screen is displayed




2. Set the period to view.

| Category | Description |
|---|---|
| Viewing period | • Day: Views the history of the selected date<br>• Period: Views the history of the selected period<br>• Today: Views today's history |

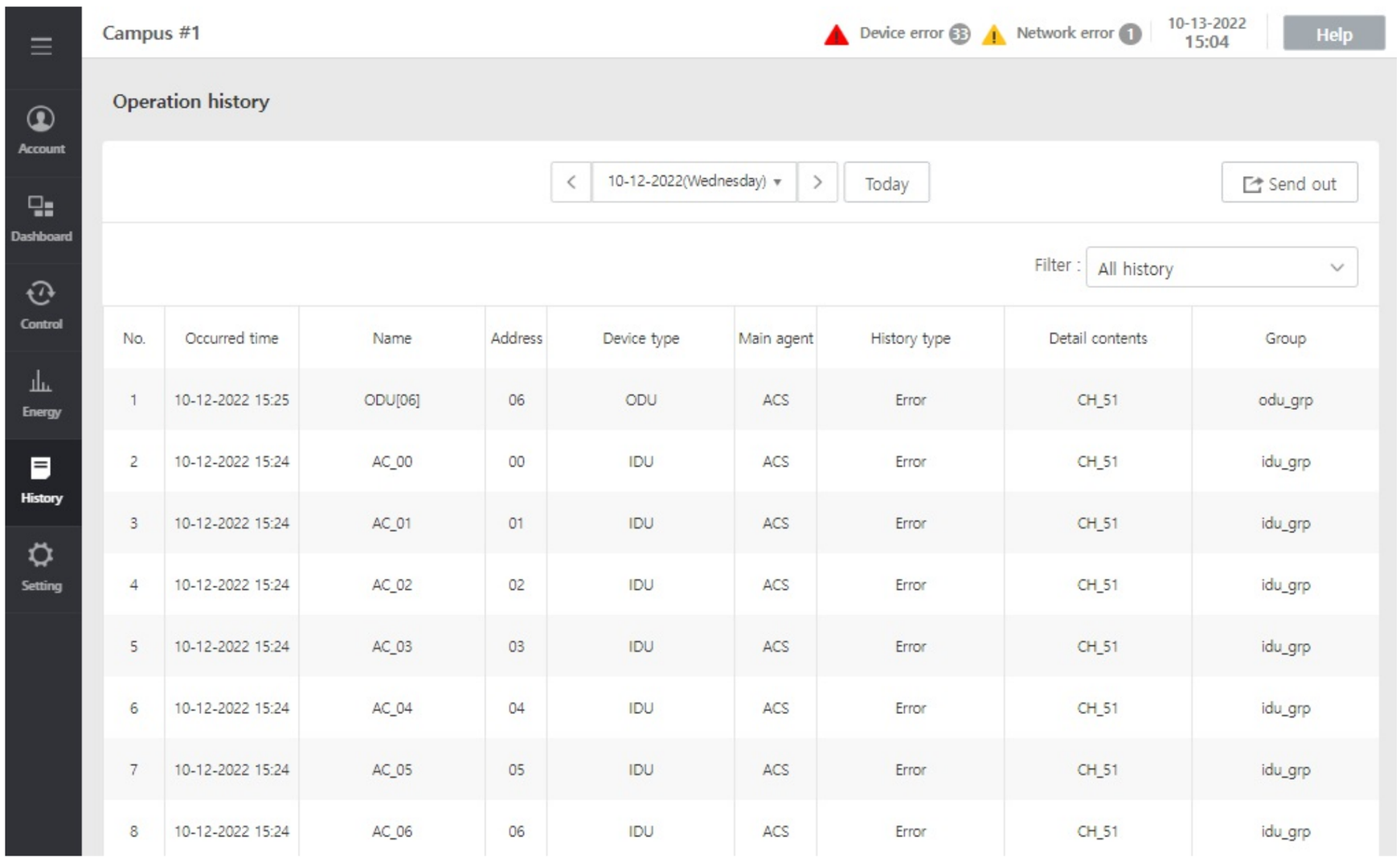
3. In filter category, select device or history type.
   - You can click the checkbox to select multiple information.
   - You can initialize the selected contents through **[Initialization]** button.
4. When device and history type selection is completed, click **[Apply]** button.
   - The operation history of the set period is displayed.

| Operating unit details displayed | Operation details (central controller) | Operating unit details displayed | Operation details (Others than central controller) |
|---|---|---|---|
| ACS | Monitoring the result of the command sent by the central controller. | Remote control | History of control by units other than central controller (e.g. remote control/Drycontact/indoor and outdoor units' automated logic) |
| Admin | User control details of central controller | BMS | Control by BACnet |
| Slave controller | Control by slave central controller | Lonworks | Control by LonWorks |
| ACM | Control by AC Manager | TMS EMS engine control | Control by EMS engine of TMS |
| Schedule | Control by central controller's schedule | TMS energy saving control | Control by energy saving function of TMS |
| AutoChangeOver(Occupied) | Control by automatic switch operation of central controller | TMS Mobile | Control by TMS mobile user |
| Setback(UnOccupied) | Control by temperature limit operation of central controller | TMS Web | Control by TMS web user |
| Peak control | Control by peak control operation of central controller | KEPCO | Control by Korea Electric Power Corporation |
| Peak clear | Control by peak removal command of central controller | | |
| Time limit control | Control by operation time limit command of central controller | | |
| InterLocking | Control by device interlock command of central controller | | |
| InterLocking | Control by device interlock copying pattern of central controller | | |
| Emergency situation | Control by DI1 port's short-circuit signal of the central controller | | |
| Energy Navigation | Control by energy navigation operation control of central controller | | |
| | Control by 2-set override function of | | |

| | | | |
|---|---|---|---|
| Override | indoor unit of central controller | | |

## Send out information

1. In the left menu tab, click **[History] > [Operation History]** menu.
   - Operation history screen is displayed




2. Set the period to view.

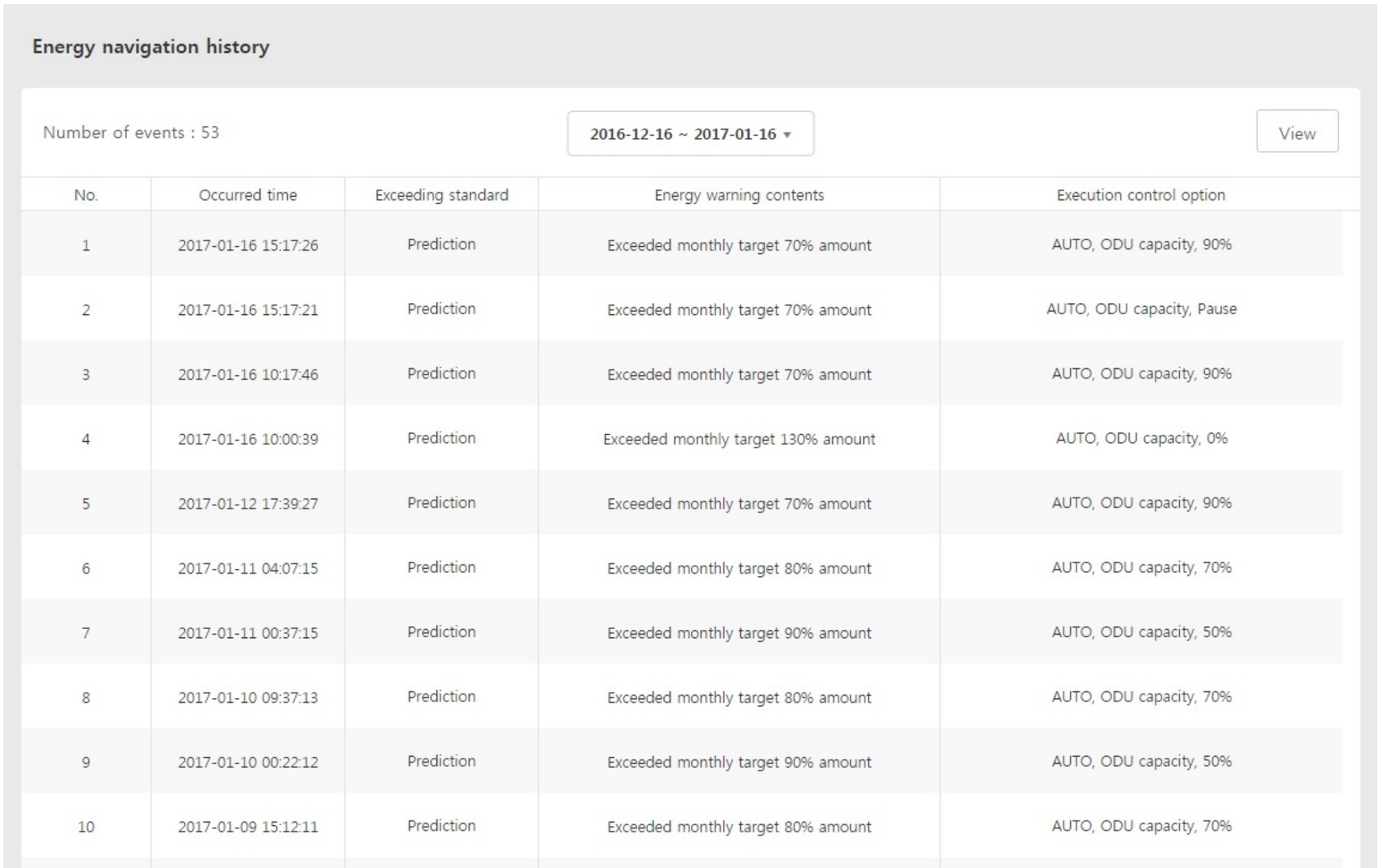
| Category | Description |
|---|---|
| Viewing period | • Day: Views the history of the selected date<br>• Period: Views the history of the selected period<br>• Today: Views today's history |

3. Click **[Send Out]** button.
   - Excel File, Max 20000 EA
   - In AC Smart 5 Device, it is stored in USB.

# Energy Navigation History

You can view history of Energy Navigation alarm and control operation.

1. In the left menu tab, click **[History]** > **[Energy Navigation History]** menu.
   - Energy navigation screen is displayed.



**Energy navigation history**

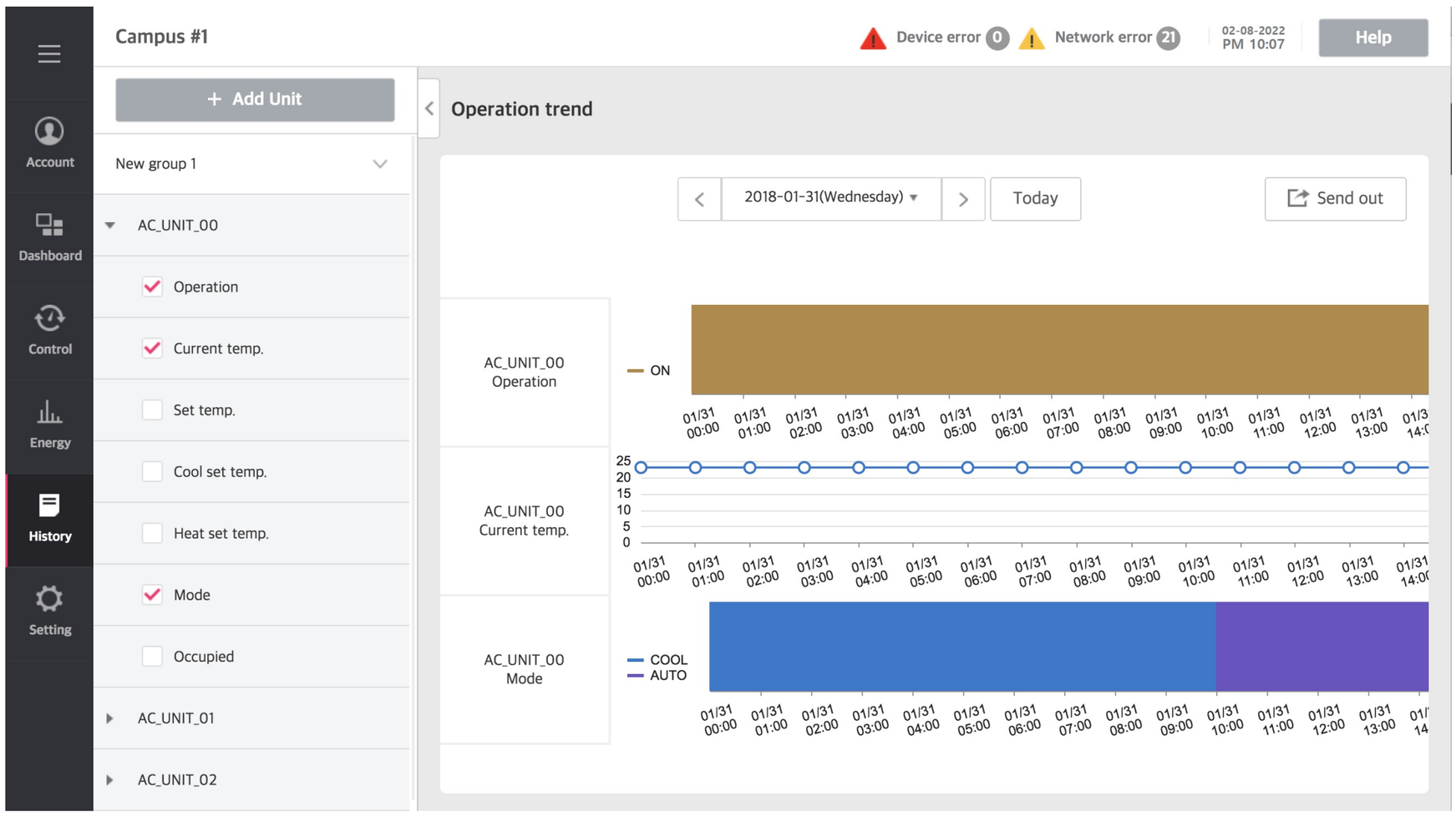
Number of events : 53 | 2016-12-16 ~ 2017-01-16 | View

| No. | Occurred time | Exceeding standard | Energy warning contents | Execution control option |
|---|---|---|---|---|
| 1 | 2017-01-16 15:17:26 | Prediction | Exceeded monthly target 70% amount | AUTO, ODU capacity, 90% |
| 2 | 2017-01-16 15:17:21 | Prediction | Exceeded monthly target 70% amount | AUTO, ODU capacity, Pause |
| 3 | 2017-01-16 10:17:46 | Prediction | Exceeded monthly target 70% amount | AUTO, ODU capacity, 90% |
| 4 | 2017-01-16 10:00:39 | Prediction | Exceeded monthly target 130% amount | AUTO, ODU capacity, 0% |
| 5 | 2017-01-12 17:39:27 | Prediction | Exceeded monthly target 70% amount | AUTO, ODU capacity, 90% |
| 6 | 2017-01-11 04:07:15 | Prediction | Exceeded monthly target 80% amount | AUTO, ODU capacity, 70% |
| 7 | 2017-01-11 00:37:15 | Prediction | Exceeded monthly target 90% amount | AUTO, ODU capacity, 50% |
| 8 | 2017-01-10 09:37:13 | Prediction | Exceeded monthly target 80% amount | AUTO, ODU capacity, 70% |
| 9 | 2017-01-10 00:22:12 | Prediction | Exceeded monthly target 90% amount | AUTO, ODU capacity, 50% |
| 10 | 2017-01-09 15:12:11 | Prediction | Exceeded monthly target 80% amount | AUTO, ODU capacity, 70% |

2. Select device to view the history.
3. Set the start date and end date of the period to view history.
4. To view the set contents, click **[View]** button.
   - Energy Navigation history of the set period is displayed.

# Operation Trend

Operation trend function is the function to provide the past status change of the selected device to help establishing reasonable site operation plan.




## Add Device

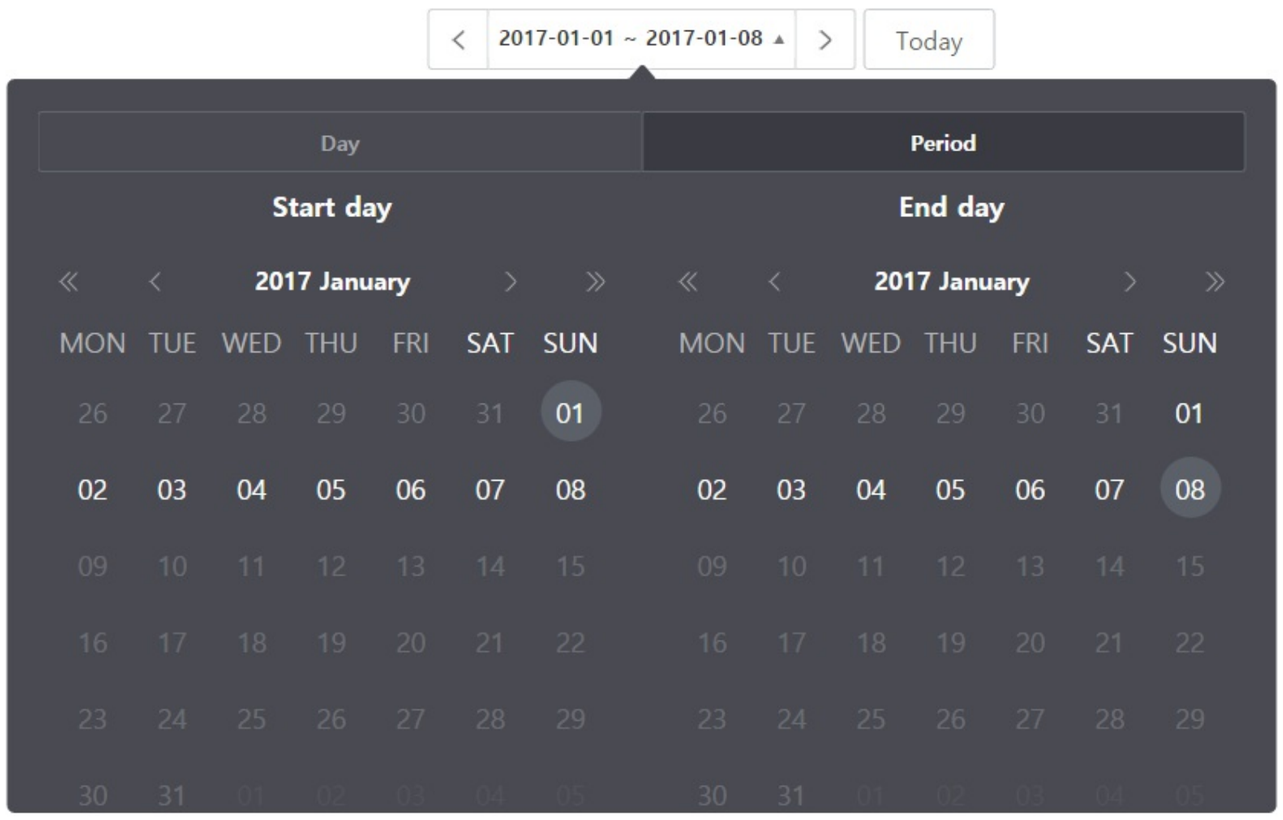
You can add unit to view operation trend.

1. In the left menu tab, click **[History]** > **[Operation Trend]** menu.
   - Operation trend screen is displayed.
2. Click **[+ Add Unit]** button.
   - Add device screen is displayed.
3. In the unregistered device list, click the checkbox of the device to register and click **[◀]** button.
   - To register several devices at once, click the check boxes of the devices to register and click **[◀]** button.
   - The selected devices are added to the registered device list.
4. To apply in Edit Unit popup window, click **[Apply]** button.

## View Information

You can view the selected device's operation trend information.

1. In the left menu tab, click **[History]** > **[Operation Trend]** menu.
   - Operation trend screen is displayed.
2. In the device list tab section, select the category of the device to view.
3. Select the period to view operation trend.




| Category | Description |
|---|---|
| | **[Day]** button: Select the desired date in mini calendar and set as the base date |

| | |
|---|---|
| Period | **[Period]** button: Set the start date and end date of the period to view<br>• The maximum period to view is 1 week.<br>**[Today]** button: Set today's date as the base date |

## Send out information

You can send out the viewed device's operation trend information.

1. In the left menu tab, click **[History]** > **[Operation Trend]** menu.
   - Operation trend screen is displayed.
2. In the left side category, select the category to send out and click **[Send Out]** button at the top right side.

   (In AC Smart 5 Device, it is stored in USB.)

### Note

**Each device stores the following information.**

- **Indoor unit : operation, current temperature, set temperature, cooling set temperature, heating set temperature, operation mode, occupancy, PM10, PM2.5, PM1.0**
- ERV: operation, mode, current temperature (only for ERV DX), set temperature (only for ERV DX), $CO_2$ concentration (only for ERV)
- AHU: operation, mode, set temperature, air supply temperature, air supply humidity, ventilation temperature, ventilation humidity
- Heating: Operation, Water inlet temperature, Water outlet temperature, Hot water temperature, Set temperature, Hot water set temp., Mode, Hot water operation
- Chiller: Operation, Water inlet temperature, Water outlet temperature, Mode
- DOKIT: Operation
- DI: Operation
- DO: Operation
- Exp.I/O's Port : value
- Air purifier : Operation, Odor, PM 10, PM 2.5, PM 1.0

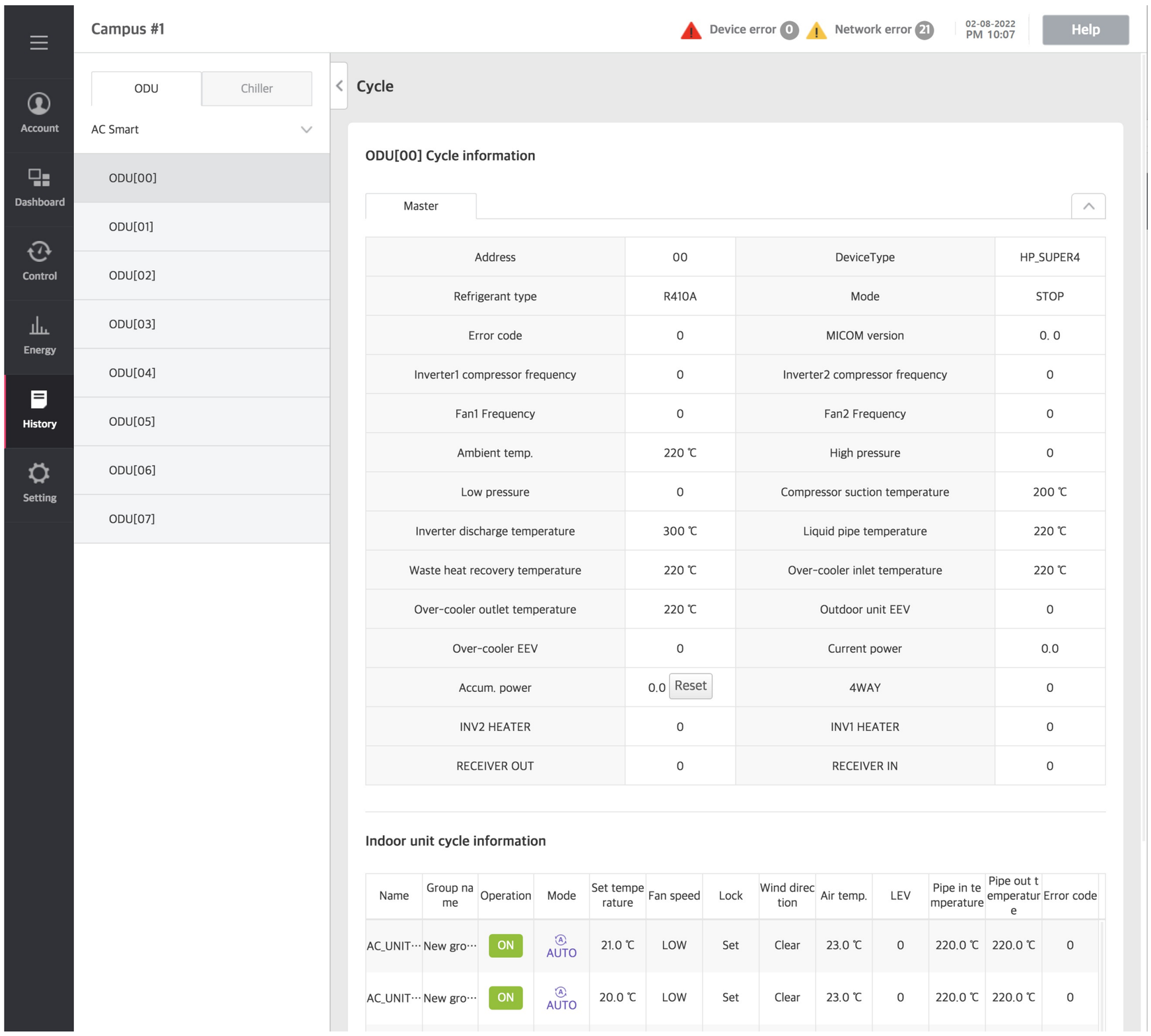
# Cycle

You can view indoor/outdoor unit and chiller's cycle information.

## Outdoor Unit

It provides the selected outdoor unit's cycle information data.

1. In the left menu tab, click **[History] > [Cycle]** menu.
   - Cycle screen is displayed.




| Category | Description |
|---|---|
| Outdoor unit cycle information | Master/slave outdoor unit information display |
| Indoor unit cycle information | Displays all indoor unit information connected to the outdoor unit |

2. In the outdoor unit list, select the outdoor unit to check cycle information.
   - The corresponding outdoor unit's cycle information is displayed.

### Note

**You can view only when the outdoor unit providing cycle information is installed.**

## Chiller

It provides the selected chiller's cycle information data.

1. In the left menu tab, click **[History] > [Cycle]** menu.
   - Cycle screen is displayed.
2. In the chiller list, select the chiller to check cycle information.
   - The corresponding chiller's cycle information is displayed.

## Cycle

### Screw Chiller AIR Cycle information

View all | Evaporator | Compressor | Condenser

| | | | |
|---|---|---|---|
| Mode | ❄ COOL | Evaporator water out temperature | 0 ℃ |
| Operation | ON | Motor current | 0 A |

Evaporator

| | | | |
|---|---|---|---|
| Flow amount | OFF | Refrigerant temperature | 0 ℃ |
| Water in temperature | 0 ℃ | Pressure | 0 kgf/cm² |
| Water out temperature | 0 ℃ | - | - |

Compressor

| | | | |
|---|---|---|---|
| Operation | OFF | Outlet temperature | 0 ℃ |
| Inlet temperature | 0 ℃ | - | - |

Condenser

| | | | |
|---|---|---|---|
| Flow amount | OFF | Condenser refrigerant saturation t emperature | 0 ℃ |
| Outdoor air temperature | 0 ℃ | Pressure | 0 Kgf/cm² |

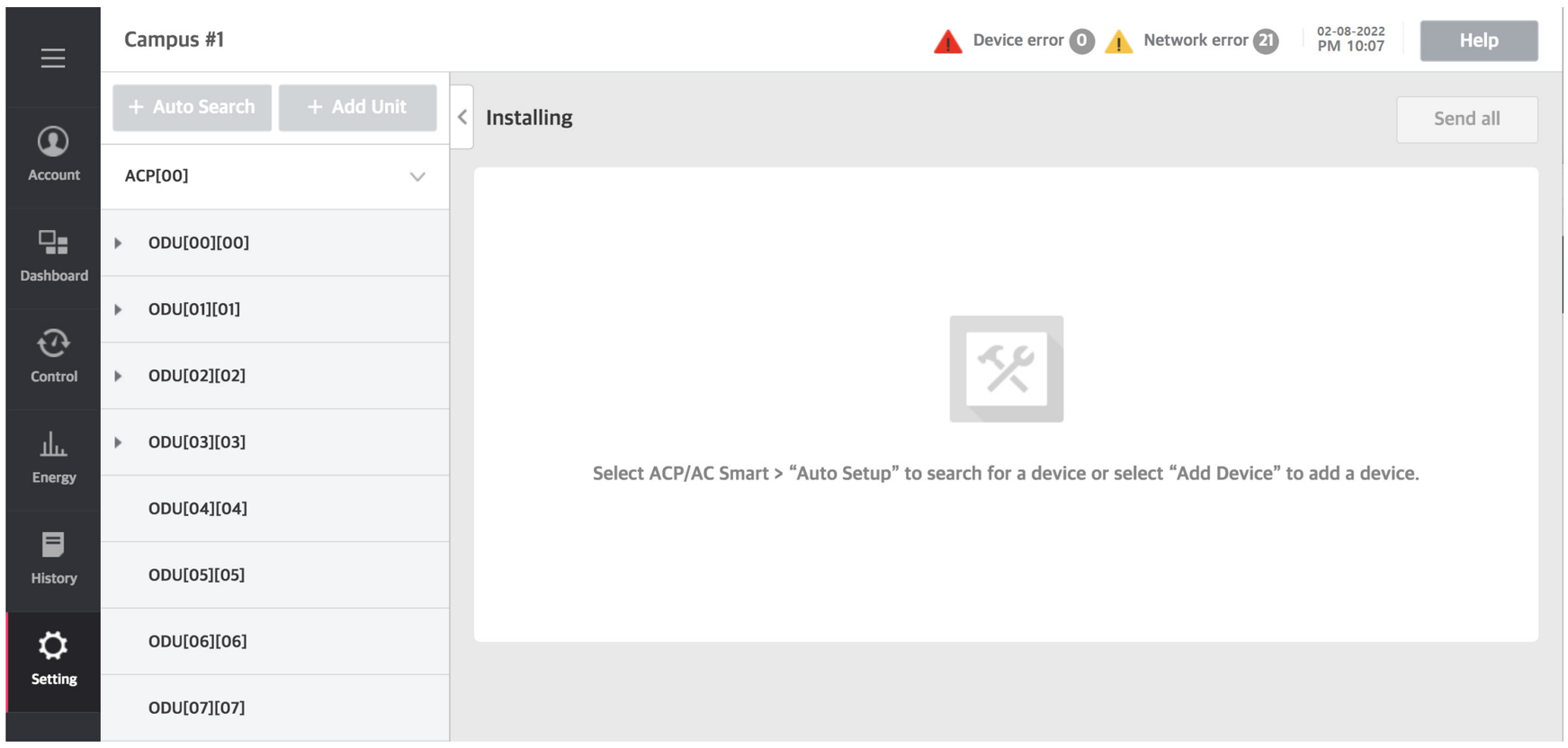
# Device setting

You can change ACP setting, add device, or change registered device's setting.

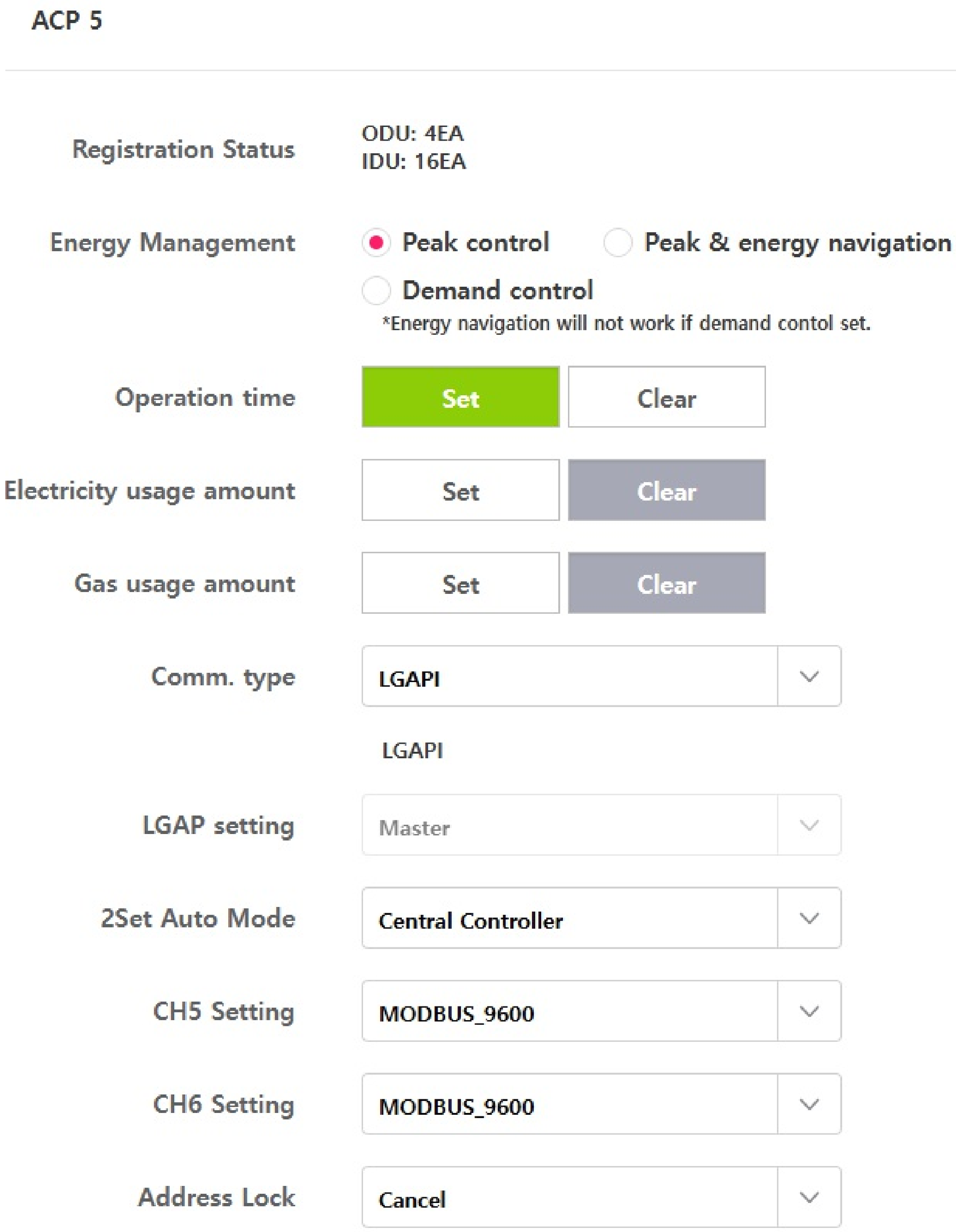
## Edit ACP

You can change ACP setting.

1. In the left menu tab, click **[Setting]** > **[Installing]** menu.
   - Device setting screen is displayed.




2. In the device list, select ACP.
   - ACP edit screen is displayed.
   - In device edit area, you can change ACP setting information.




| Category | Description |
|---|---|
| Energy Management | Select among peak control / peak control & energy navigation / demand control<br>When demand control is set, Energy Navigation does not operate. |
| Operation Time | Operation time collection and view Set/Clear |
| Electricity usage amount | Electricity usage amount collection and view Set/Clear |
| Gas usage amount | Gas usage amount collection and view Set/Clear |
| Communication method | LGAPI / LGAPII setting |
| LGAP setting | Communication Master / Slave setting function, and it is activated only in AC Smart |
| 2Set automatic mode | Press **[▼]** button to select main agent of 2Set automatic mode<br>Central controller / indoor unit |
| Channel 5 setting | Press **[▼]** button to select communication type of the device to connect to CH5 port<br>• LGAP_AHU: for AHU (general, all fresh air, waste heat recovery) connection<br>• MODBUS_9600, MODBUS_19200: for AHU (modular air conditioner, modular all fresh air, DOAS), Exp.I/O, and chiller connection |
| Channel 6 setting | Press **[▼]** button to select communication type of the device to connect to CH6 port<br>• MODBUS_9600, MODBUS_19200: for AHU (modular air conditioner, modular all fresh air, DOAS), Exp.I/O, and chiller connection |
| Address lock | When it is set, you cannot change address in indoor unit and ERV remote controller |

**Note**

**Some models do not support LGAPII.**

3. When input is completed, click **[Apply]** button.
4. Click **[Send All]** button.

## Automatic setting

You can automatically search device connected to ACP and register.

1. In the left menu tab, click **[Setting]** > **[Installing]** menu.
   - Device setting screen is displayed.
2. In device list, select ACP, and click **[Auto Search]** button.
3. To overwrite ACP device setting on the existing setting, click **[Check]** button.
   - ACP device setting status is applied.
4. When automatic setting is finished, before device edit, click **[Send All]** button.

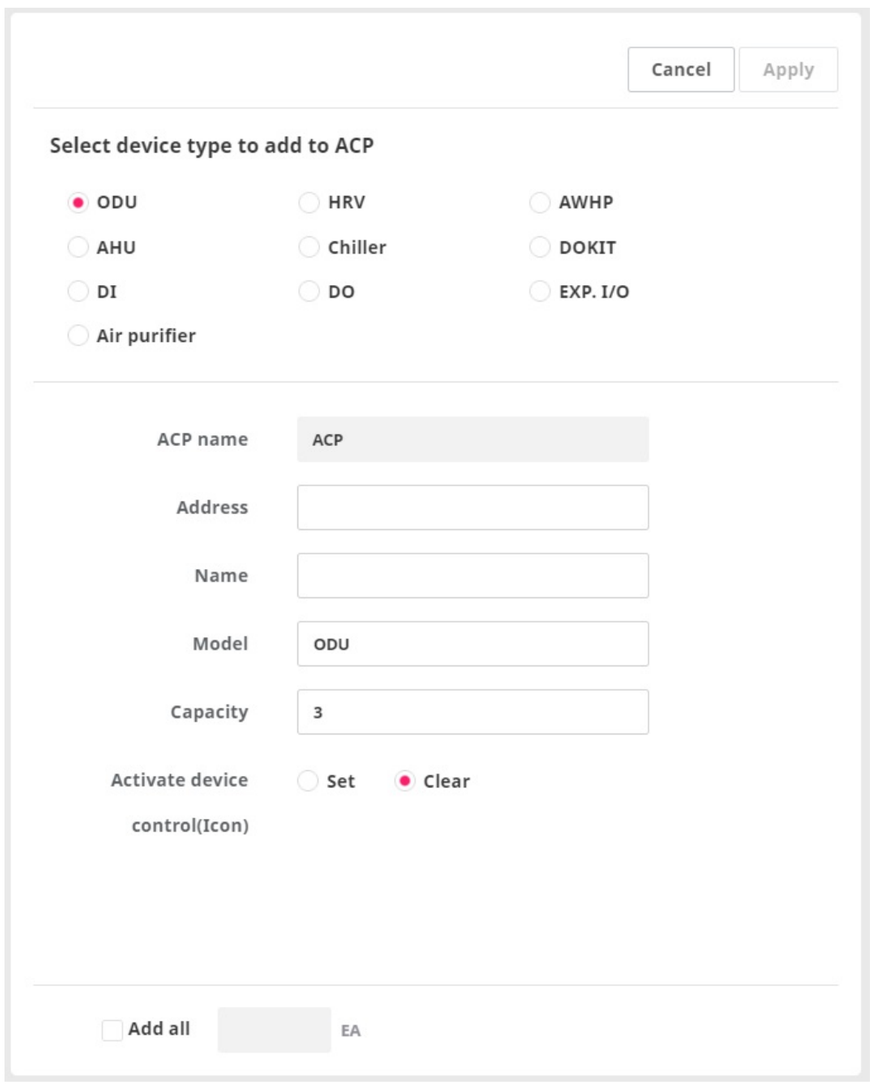
### Note

- **Automatic setting takes about 10 min.**
- **Some AHU (modular air conditioner, modular all fresh air, DOAS), chiller, and Exp.I/O do not support automatic setting function.**
- **Exp.I/O is activated when you check 'use' in device edit window after device registration.**

## Add Device

You can additionally register new device to the device list.

1. In the left menu tab, click **[Setting]** > **[Installing]** menu.
   - Device setting screen is displayed.
2. Click **[+ Add Unit]** button.
   - Add device screen is displayed.




3. In the device list, select upper level group to add device.
   - When you select ACP in device list, you can add outdoor unit, ERV, Heating, Air purifier, AHU, Chiller, ON/OFF device, DI, DO, and Exp.I/O.
   - In the device list, when outdoor unit is selected, you can add only indoor units.
4. In Add device section, input the setting information of the device to add.
   - According to the selected device, the setting category according to the corresponding device is displayed differently. For the setting information of each device, refer to the next page.
5. To save the set contents, click **[Apply]** button.
6. To complete adding device, click **[Send All]** button.

## Device edit

In device list, you can edit registered device.

1. In the left menu tab, click **[Setting]** > **[Installing]** menu.
   - Device setting screen is displayed.
2. In device list, select device to edit.
3. Device setting screen is displayed.
4. Edit device setting information.

- According to the selected device, the setting category according to the corresponding device is displayed differently. For the setting information of each device, refer to the next page.

5. To save the set contents, click **[Apply]** button.
6. To complete device edit, click **[Send All]** button.

## Delete Device

In the device list, you can delete registered device.

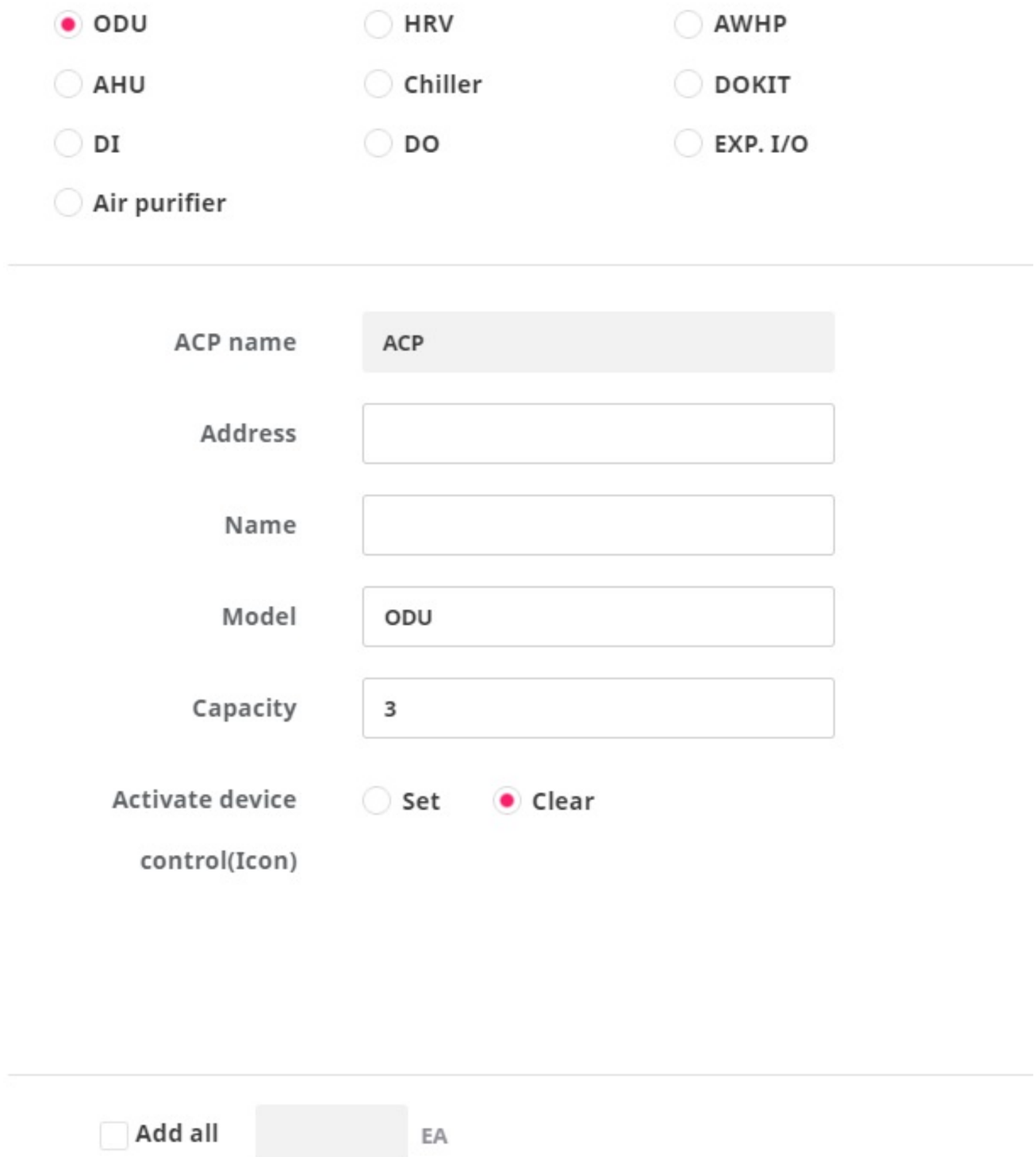
1. In the left menu tab, click **[Setting]** > **[Installing]** menu.
   - Device setting screen is displayed.
2. In the group list, select the group to delete and click **[Delete]** button.
3. When Delete group popup window appears, click **[Yes]** button.
   - In the group list, the selected category is deleted.
4. To complete device deleting, click **[Send All]** button.

## Setting information of each device

Setting information of each device is as follows.

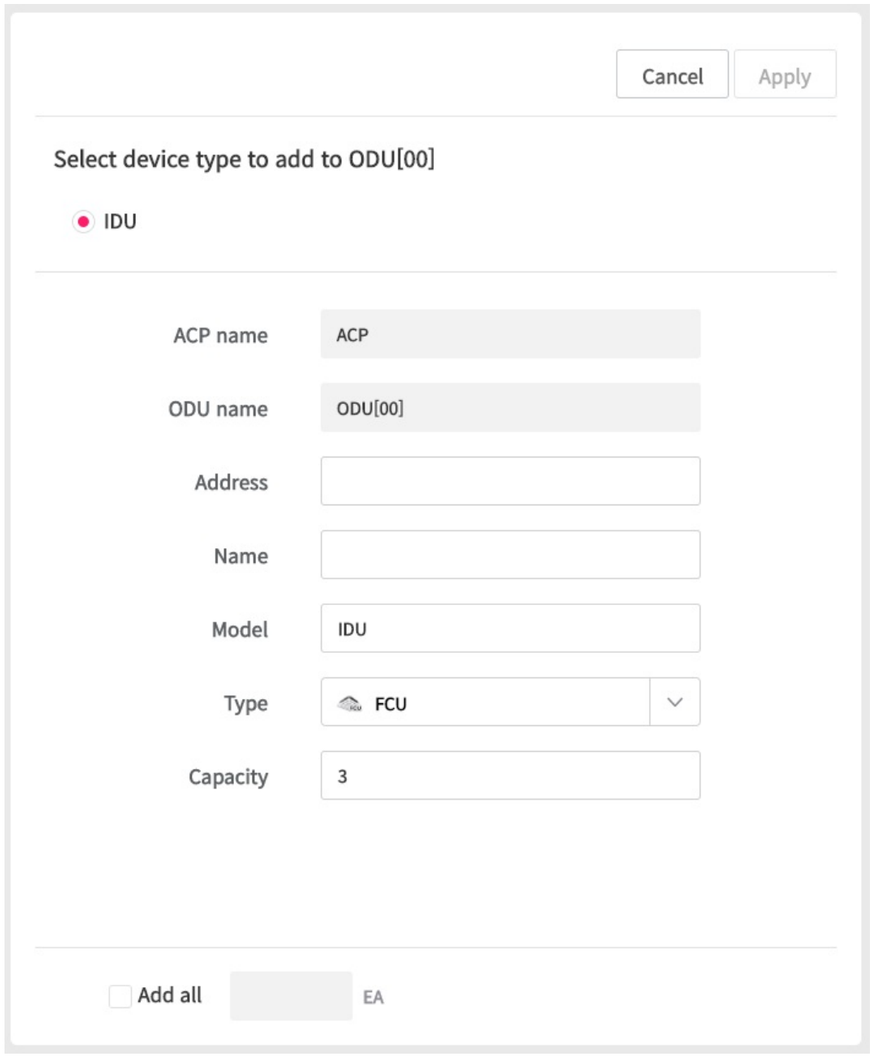
- Outdoor Unit
- IDU
- ERV
- Heating
- AHU
- Chiller
- DOKIT
- DI/DO
- Exp.I/O
- Exp.I/O's lower level setting
- Air purifier

## Outdoor Unit



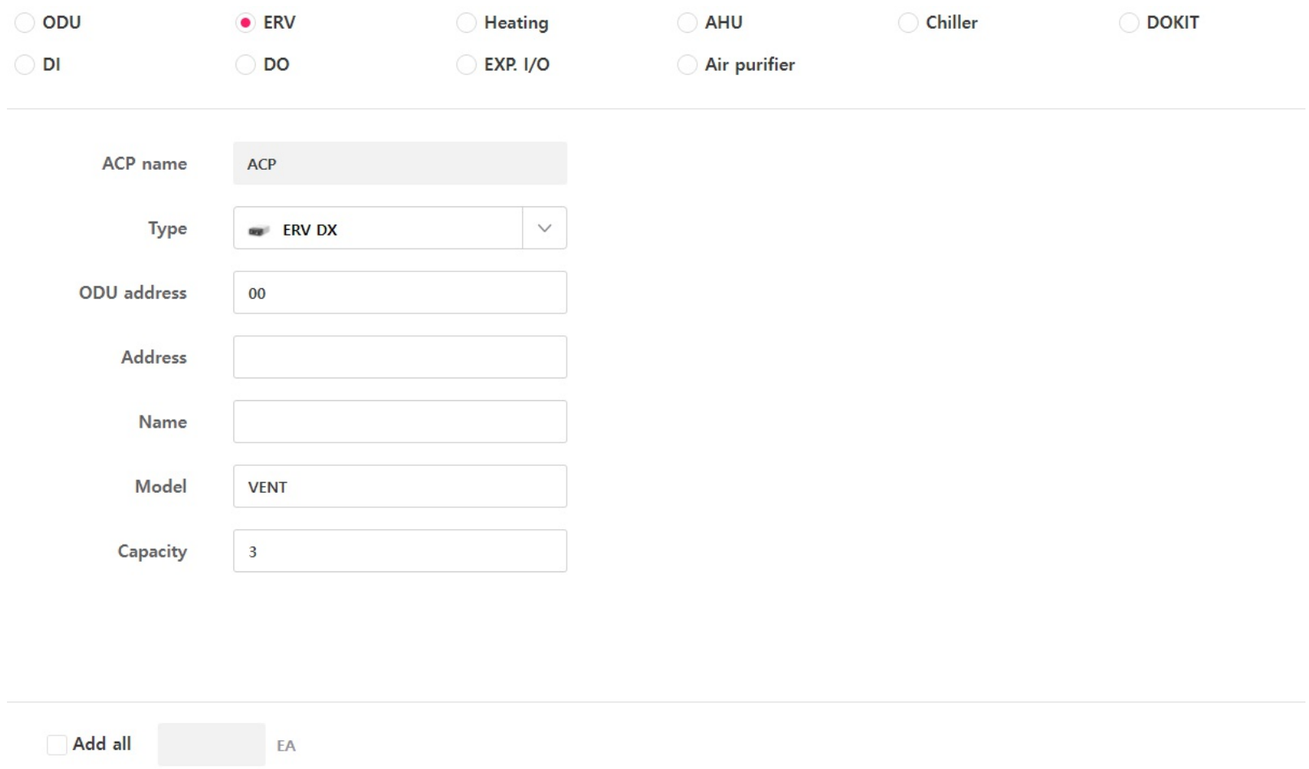

| Category | Description |
|---|---|
| ACP name | The corresponding device's upper level ACP name |
| Address | Device address |
| Name | Device name to be displayed in the system<br>• For batch add, it is displayed as “Name_device address” form |
| Model | Product model name |
| Capacity | Product capacity |
| Activate device control(Icon) | Set whether to activate ODU device icon<br>• ODU device is displayed in Group setting, Device control, Device error and Operation history only when ODU activate device control(Icon) is set. |
| Add All | When checkboxes are selected, all selected devices are added |

# IDU



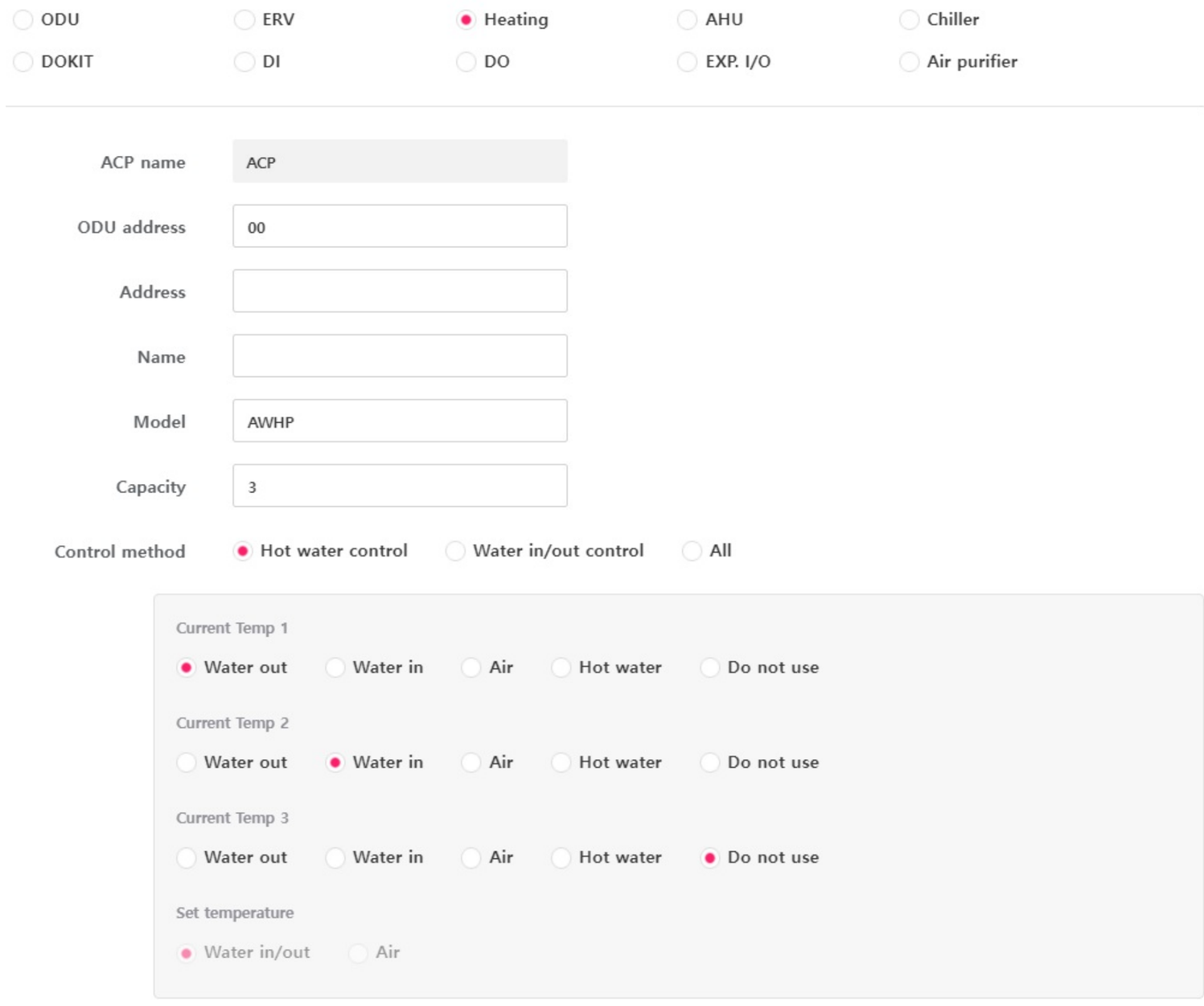

| Category | Description |
|---|---|
| ACP name | The corresponding device's upper level ACP name |
| ODU name | Name of the outdoor unit connected to the corresponding device |
| Address | Device address |
| Name | Device name to be displayed in the system<br>• For batch add, it is displayed as “Name_device address” form |
| Model | Product model name |
| Type | Indoor unit type selection |
| Capacity | Product capacity |
| Add All | When checkboxes are selected, all selected devices are added |

# ERV



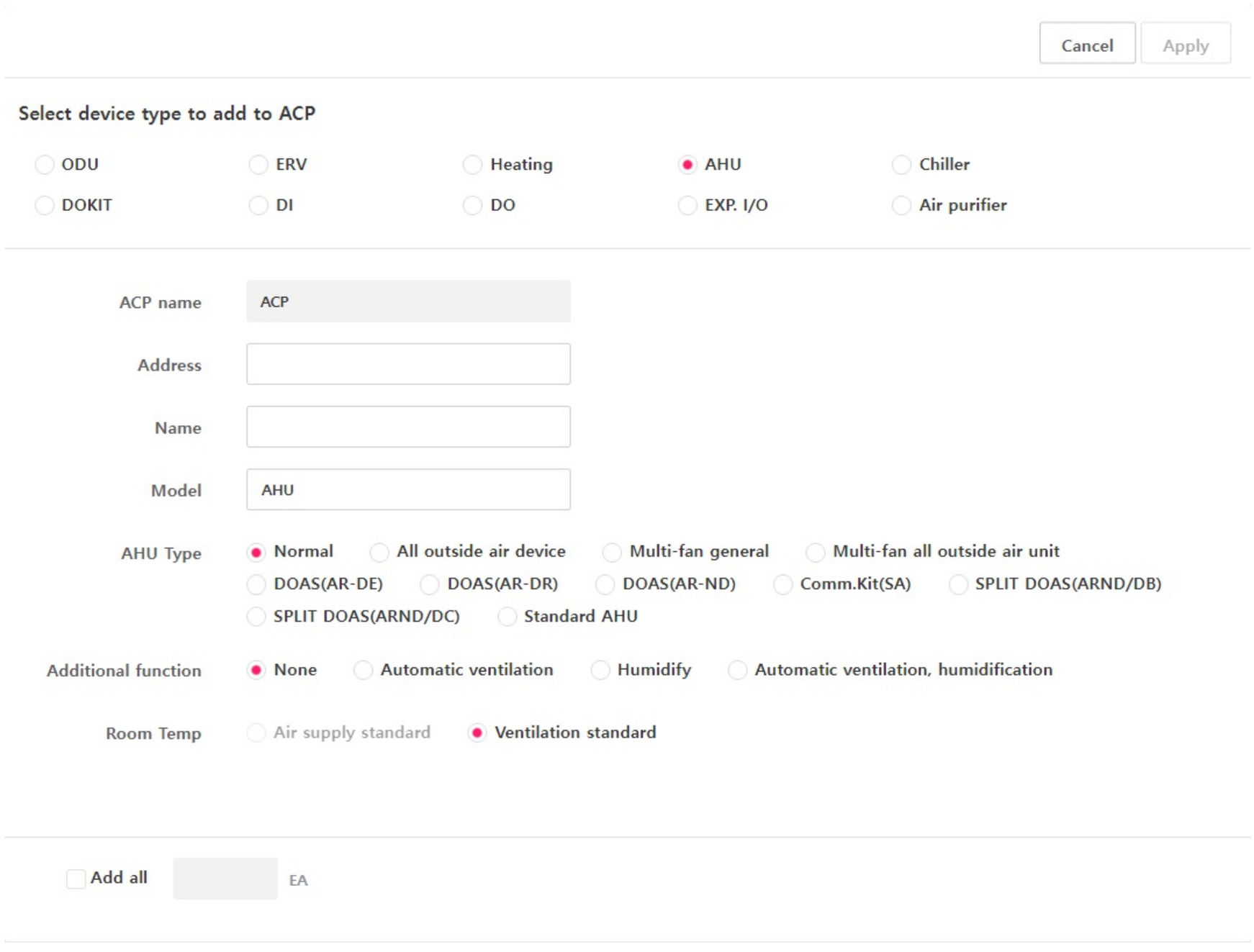

| Category | Description |
|---|---|
| ACP name | The corresponding device's upper level ACP name |
| ODU address | Address of the outdoor unit connected to the device<br>• Activation in case of ERV DX / Floor mounted vent |
| Type | ERV type selection |
| Address | Device address |
| Name | Device name to be displayed in the system<br>• For batch add, it is displayed as “Name_device address” form |
| Model | Product model name |
| Capacity | Product capacity |
| Add All | When checkboxes are selected, all selected devices are added |

# Heating



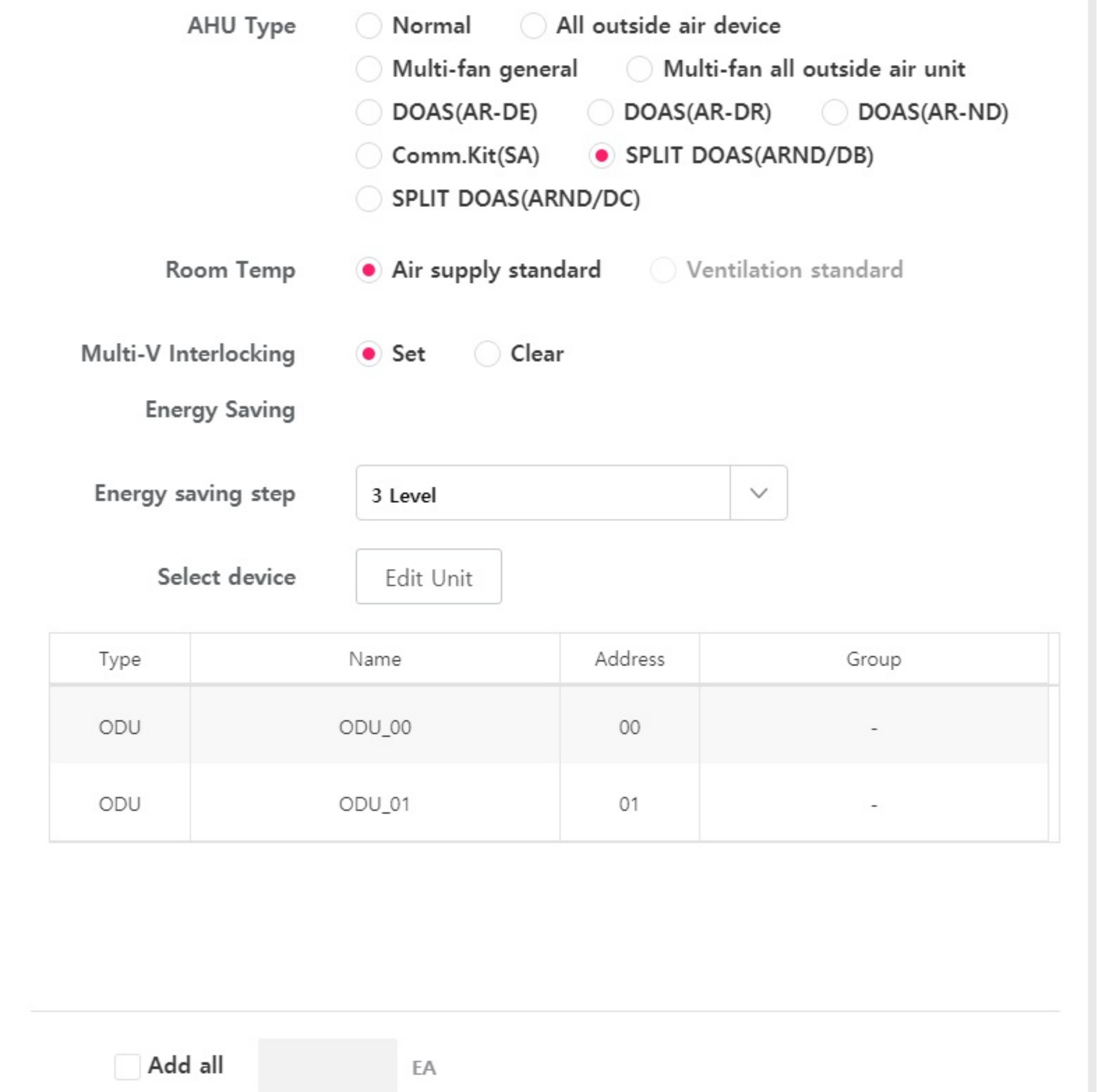

| Category | Description |
|---|---|
| ACP name | The corresponding device's upper level ACP name |
| ODU address | Address of the outdoor unit connected to the device |
| Address | Device address |
| Name | Device name to be displayed in the system<br>• For batch add, it is displayed as “Name_device address” form |
| Model | Product model name |
| Capacity | Product capacity |
| Control method | Select control method |
| Current Temp 1 | Type of the current temperature to be displayed first |
| Current Temp 2 | Type of the current temperature to be displayed second |
| Current Temp 3 | Type of the current temperature to be displayed third |
| Set temperature | Type of the set temperature to control |
| Add All | When checkboxes are selected, all selected devices are added |

## AHU




| Category | Description |
|---|---|
| ACP name | The corresponding device's upper level ACP name |
| Address | Device address |
| Name | Device name to be displayed in the system<br>• For batch add, it is displayed as “Name_device address” form |
| Model | Product model name |
| AHU type | Select AHU type |
| Additional function | Select function to add |
| Room Temp | Between air supply or ventilation, selecte the desired indoor temperature setting standard |
| Add All | When checkboxes are selected, all selected devices are added |

## Set Multi-V Interlocking Energy Saving Control



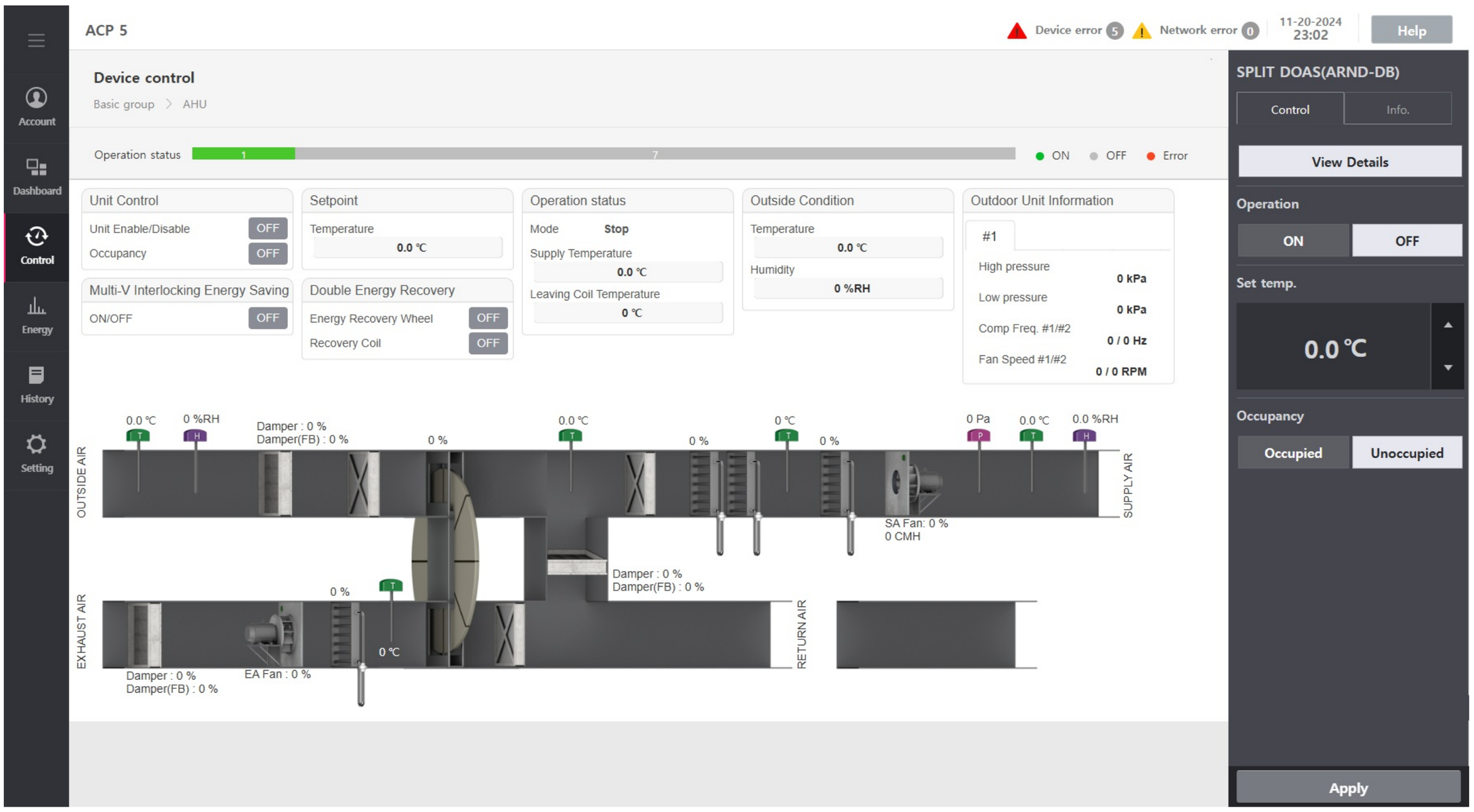

| Category | Description |
|---|---|
| Set Multi-V Interlocking Energy Saving Control | Activate/Deactivate Multi-V Interlocking Energy Saving Control<br>• Setting Multi-V Interlocking Energy Saving Control activates the energy saving step and device selection options. |
| Energy saving step | Select energy saving steps among steps 1~3 |
| Select a device | Select an outdoor device to which to apply Multi-V Interlocking Energy Saving Control |

## Note

- Only SPLIT DOAS(ARND/DB) is available for Multi-V Interlocking Energy Saving Control.
- When Multi-V Interlocking Energy Saving Control is in operation, the main coil, reheat coil, and energy recovery wheel may turn off and on automatically.

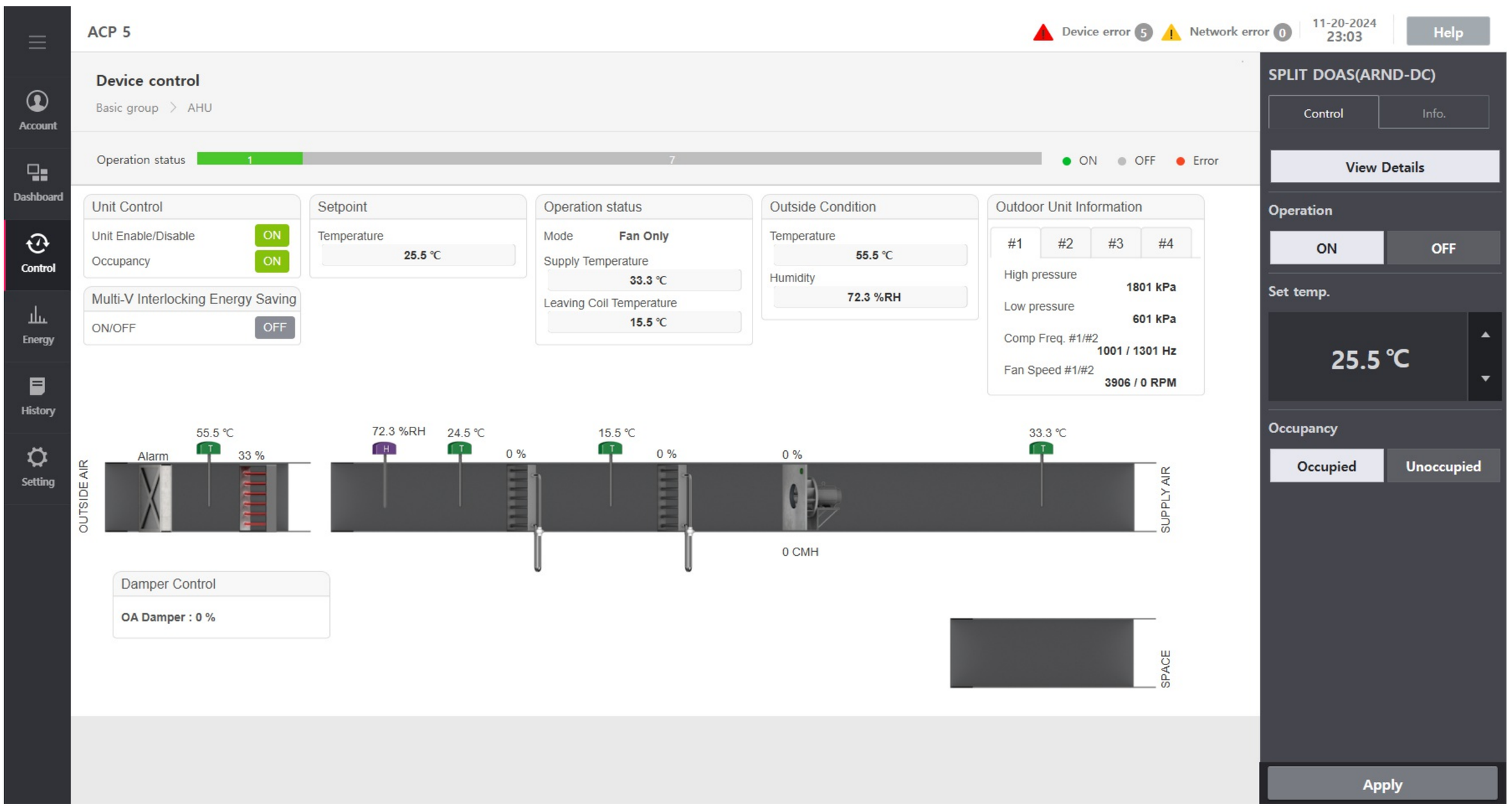
Multi-V Interlocking Energy Saving Control

## SPLIT DOAS(ARND/DB)




| Item | Description |
|---|---|
| View details | Click the **[View Details]** button to view detailed information (Not available on mobile) |
| Operating status | • **[Start Operation]** button: Starts device operation<br>• **[Stop Operation]** button: Stops device operation |
| Target temperature | Press the **[▲]/[▼]** button to set target temperature |
| Occupied | Function to set the space managed by DOAS as occupied or vacant<br>• **[Occupied]** button: Set to Occupied<br>• **[Vacant]** button: Set to Vacant |

## SPLIT DOAS(ARND/DC)




| Item | Description |
|---|---|
| View details | Click the **[View Details]** button to view detailed information (Not available on mobile) |
| Operating status | • **[Start Operation]** button: Starts device operation |

| | |
|---|---|
| | • **[Stop Operation]** button: Stops device operation |
| Target temperature | Press the **[▲]/[▼]** button to set target temperature |
| Occupied | Function to set the space managed by DOAS as occupied or vacant<br>• **[Occupied]** button: Set to Occupied<br>• **[Vacant]** button: Set to Vacant |

## Multi-V Interlocking Energy Saving Control

This is a function to control DOAS and Multi-V operation modes based on the operation status of Multi-V and indoor and outdoor air temperature/humidity in order to save the system's energy.

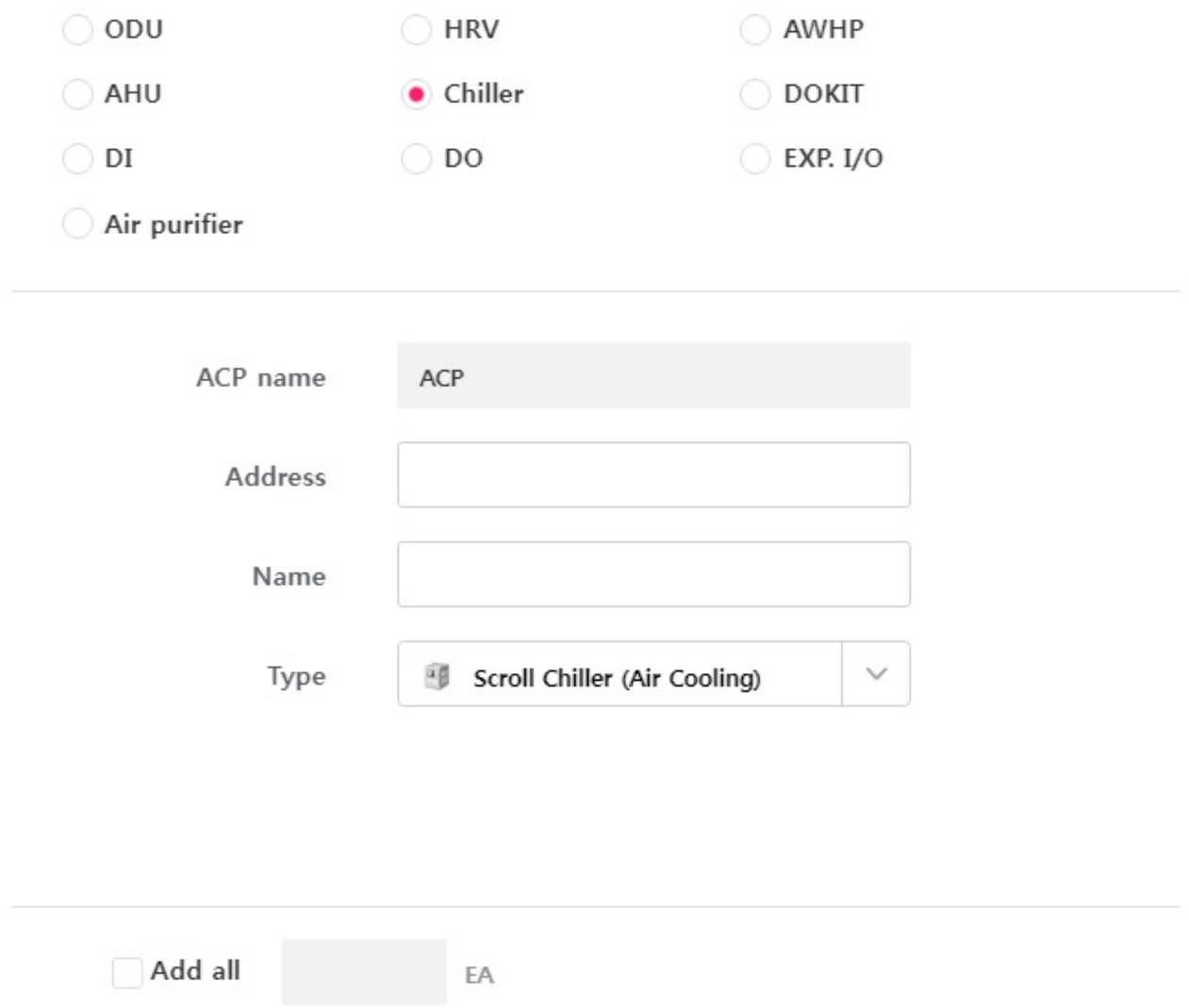
Energy saving operation can be run only under agreeable indoor conditions (for cooling, temperature of 28℃ or lower and relative humidity of 60% or lower). You can adjust the degree of freshness and energy saving as preferred.

### Note

- To use Multi-V Interlocking Energy Saving Control, you need a DOAS indoor humidity sensor.
- Energy saving operation can be run only when DOAS is running in the cooling or dehumidification mode and all indoor units are in cooling operation.
- Energy saving step: As you get closer to step 3, dehumidification weakens and energy saving increases.

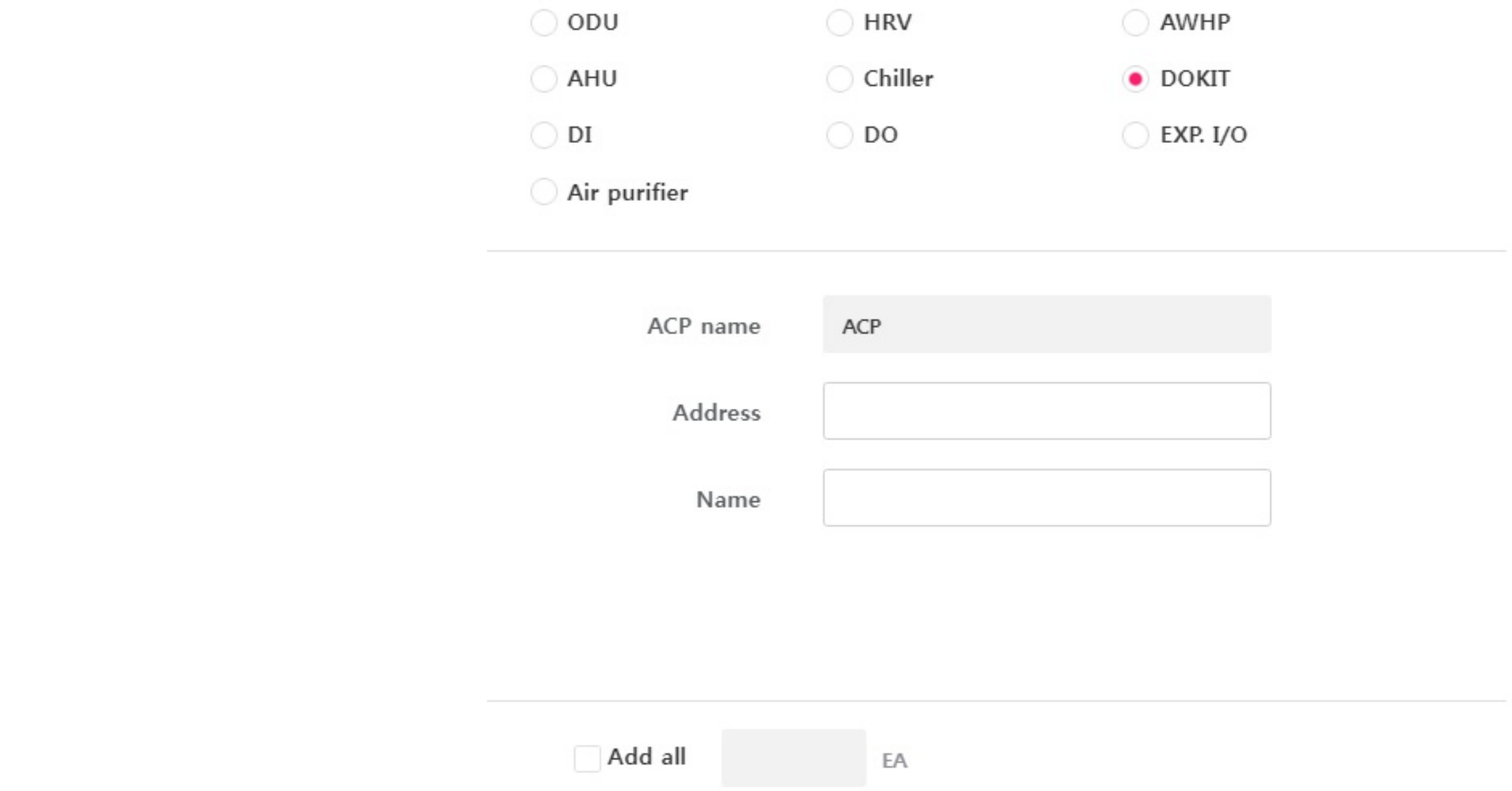
➔ Set Multi-V Interlocking Energy Saving Control

# Chiller



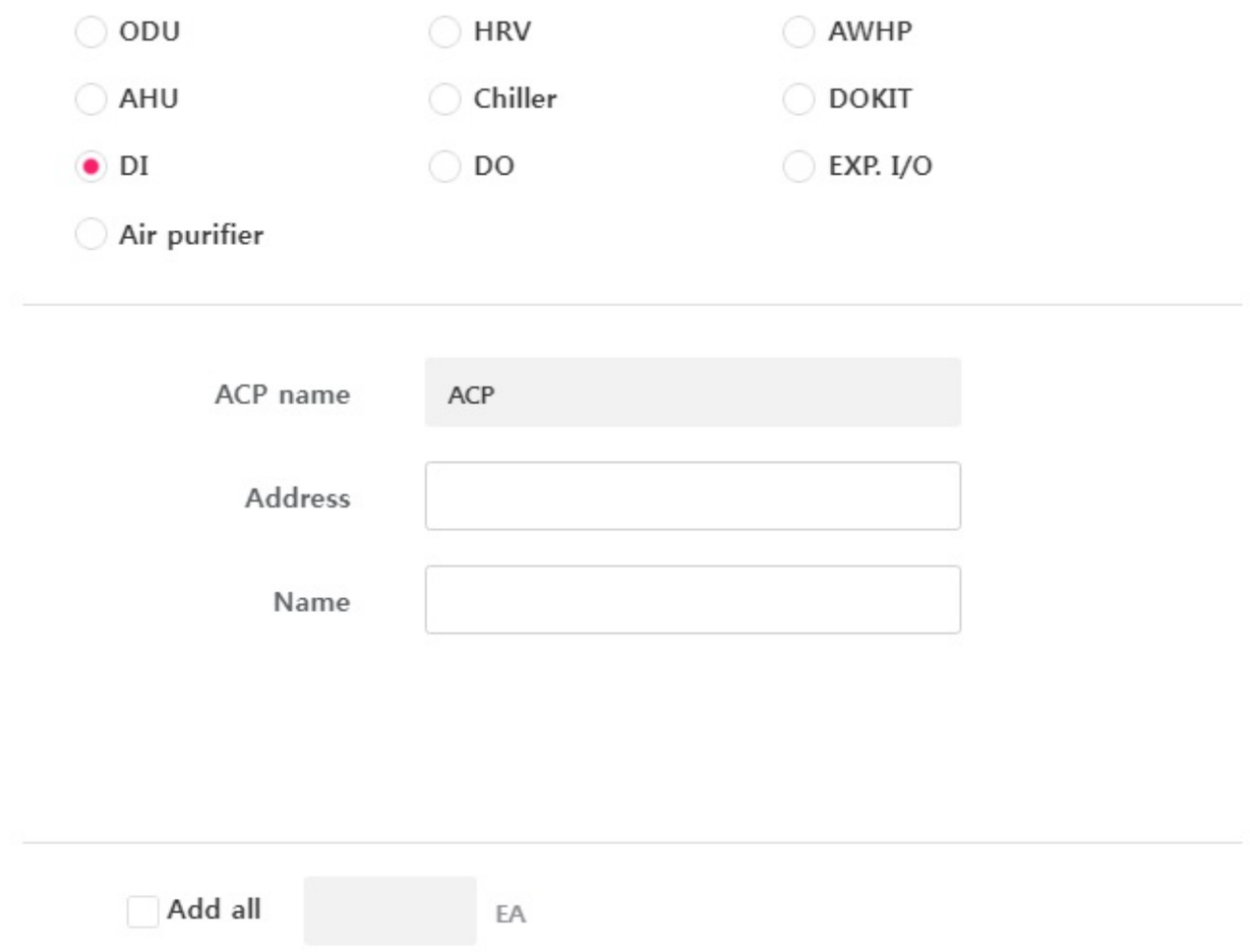

| Category | Description |
|---|---|
| ACP name | The corresponding device's upper level ACP name |
| Address | Device address |
| Name | Device name to be displayed in the system<br>• For batch add, it is displayed as “Name_device address” form |
| Type | Select chiller type |
| Add All | When checkboxes are selected, all selected devices are added |

# DOKIT




| Category | Description |
|---|---|
| ACP name | The corresponding device's upper level ACP name |
| Address | Device address |
| Name | Device name to be displayed in the system<br>• For batch add, it is displayed as “Name_device address” form |
| Add All | When checkboxes are selected, all selected devices are added |

## DI/DO

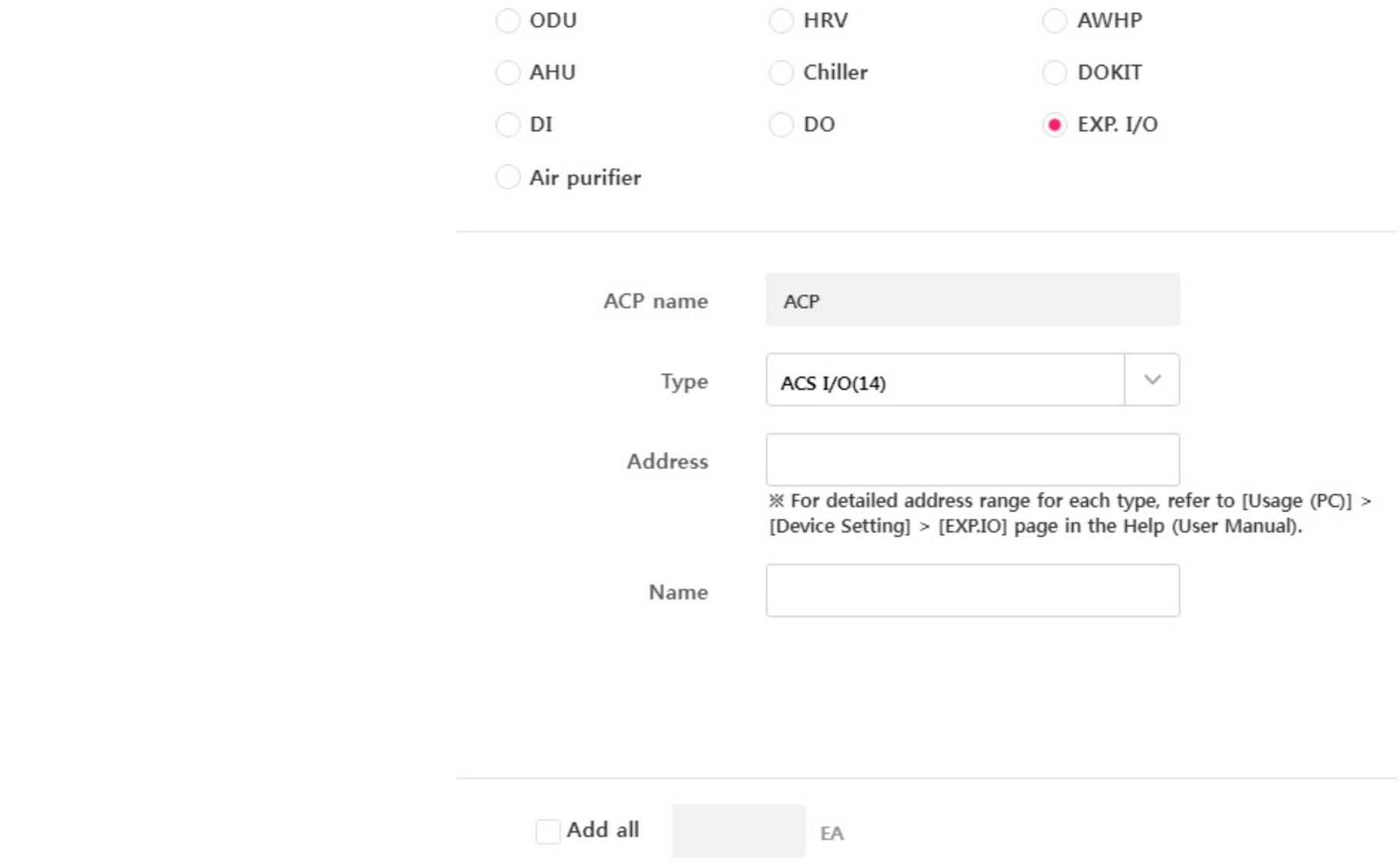



| Category | Description |
|---|---|
| ACP name | The corresponding device's upper level ACP name |
| Address | Device address |
| Name | Device name to be displayed in the system<br>• For batch add, it is displayed as “Name_device address” form |
| Add All | When checkboxes are selected, all selected devices are added |

### Note

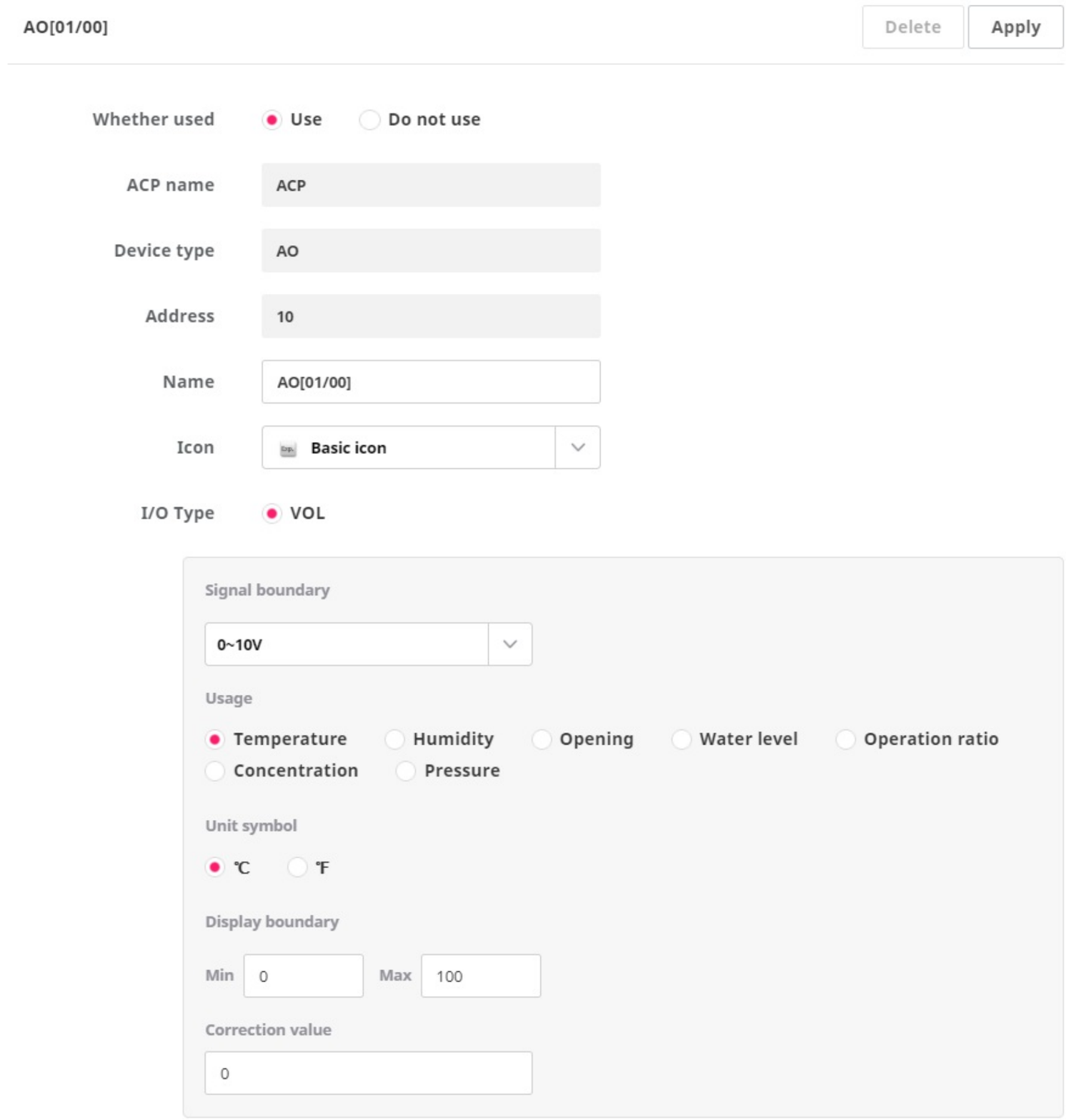
- DI1 port can only be used for emergency purpose and cannot be configured for other purposes.
- DI1 port must always be in open state except the emergency situation.
- If DI1 port is short-circuited, an alarm sounds and all devices linked to the port stop.

# Exp.I/O




| Category | Description |
|---|---|
| ACP name | The corresponding device's upper level ACP name |
| Type | Select DeviceType |
| Address | Device address<br>• Address Range of ACS I/O : 01 ~ F7<br>• Address Range of ACU UIO : 60 ~ 67<br>• Address Range of ACU UI : 70 ~ 77<br>• Address Range of ACU UO : 80 ~ 87 |
| Name | Device name to be displayed in the system<br>• For batch add, it is displayed as “Name_device address” form |
| Add All | When checkboxes are selected, all selected devices are added |

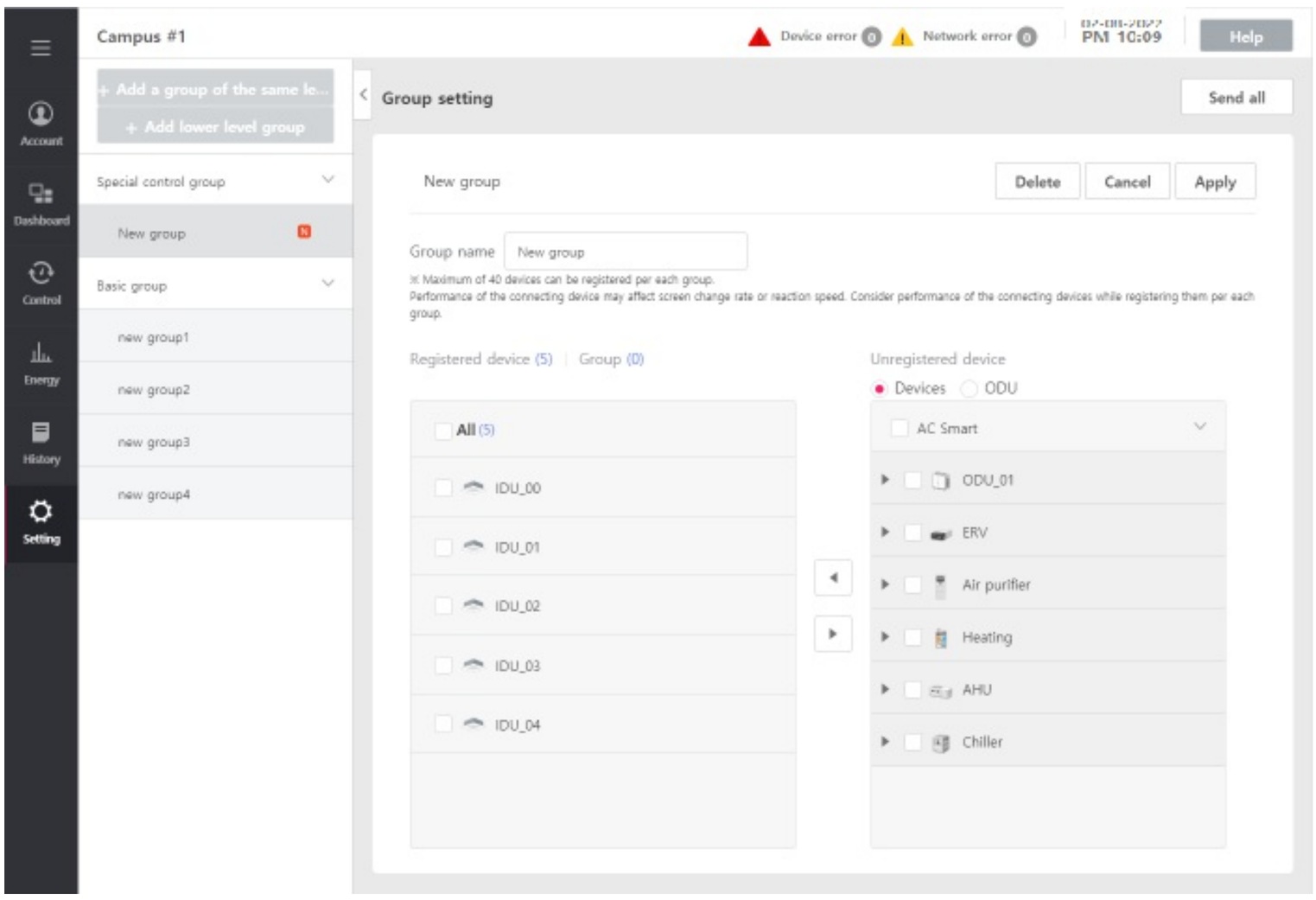
# Exp.I/O's lower level setting




| Category | Description |
|---|---|
| Whether used | Select whether to use the device |
| ACP name | The corresponding device's upper level ACP name |
| Device type | Device type |
| Address | Device address |
| Name | Device name |
| Icon | Select icon type |
| I/O type | Select I/O type<br>• AO: VOL<br>• UI: BI, VOL, CUR, PT1000, NTC10K, NI1000 (But, when EXP/IO type is ACU UIO, ACU UI, it can be selected from BI or VOL.)<br>• DO: BI<br>• DI: BI |
| Signal boundary | Select signal boundary |
| Usage | Select usage of the device (Usage selection is different according to I/O type)<br>• Status information: On/Off, short/Open, Warning/Normal, Close/Open, On/Off, Occupied/Unoccupied, 1/0<br>• Value information: Temperature, Humidity, Opening, Water level, Operation ratio, Concentration, Pressure |
| Unit Symbol | Select unit symbol<br>Flexibly changed according to the usage selection |
| Display boundary | Max./Min. value input |
| Correction value | Correction value input |

# Group Setting

You can add/delete management group created according to user's usage.




## Add Group

You can add new group.

1. In the left menu tab, click **[Setting]** > **[Group Setting]** menu.
   - Group setting screen is displayed.
2. Select a group and click the Add Group button.
   - Select **[+ Add lower level group]** to create a sub-group.
   - Select **[+ Add a group of the same level]** to create a same-level group.
3. Input group name in the group name input field.
4. To register new device in the device list, in the unregistered device list, click the checkbox of the device to register and click **[◀]** button.
5. To save the set contents, click **[Apply]** button.
6. To complete group addition, click **[Send All]** button.

## Group edit

You can edit group.

1. In the left menu tab, click **[Setting]** > **[Group Setting]** menu.
   - Group setting screen is displayed.
2. In group list, select group to edit.
3. Edit group information.
4. To save the set contents, click **[Apply]** button.
5. To complete group addition, click **[Send All]** button.

## Delete group

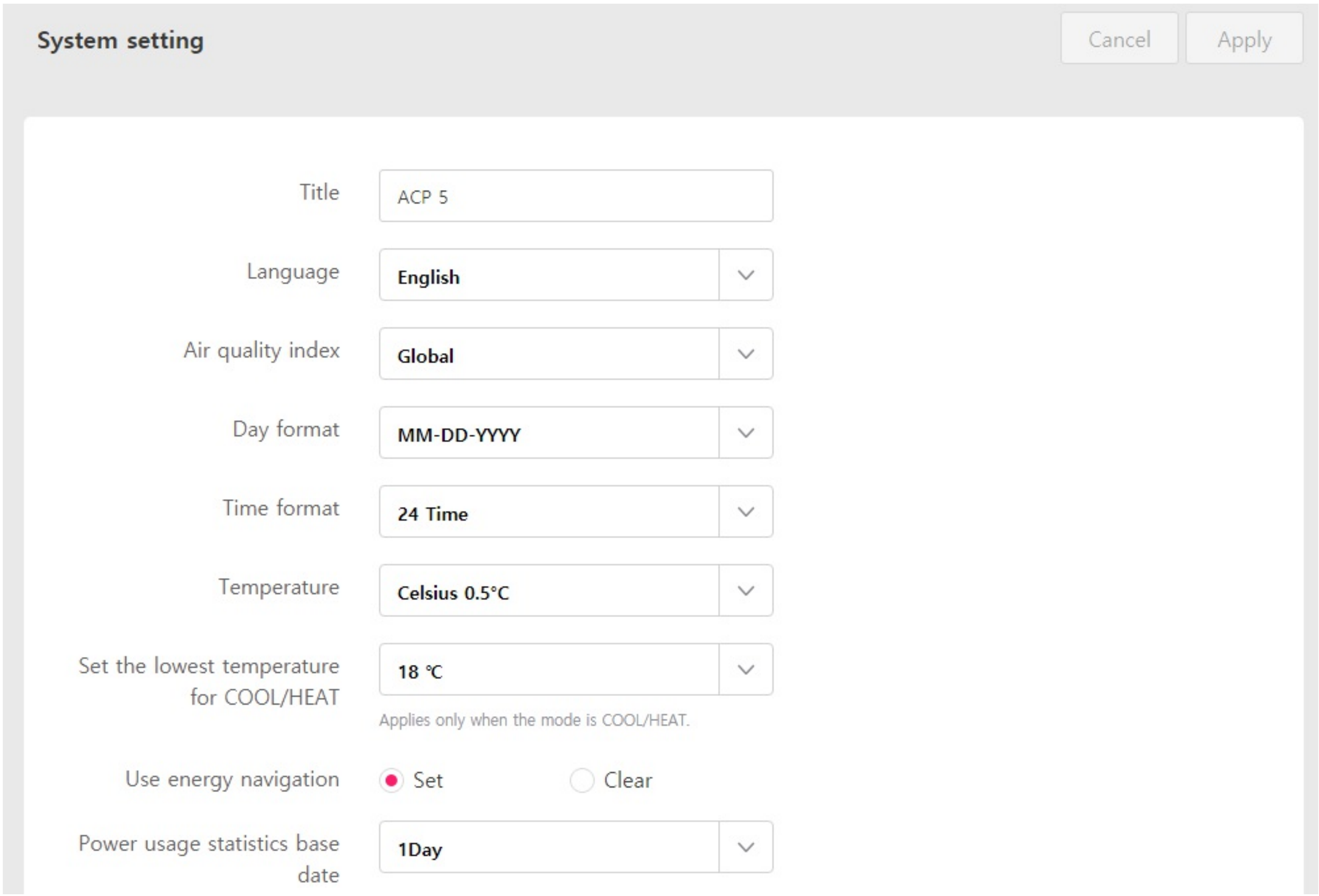
In the group list, you can select and delete the desired group.

1. In the left menu tab, click **[Setting]** > **[Group Setting]** menu.
   - Group setting screen is displayed.
   - In the group list, select the group to delete and click **[Delete]** button.
2. When Delete group popup window appears, click **[Yes]** button.
   - The selected group is deleted.
3. To complete group deletion, click **[Send All]** button.

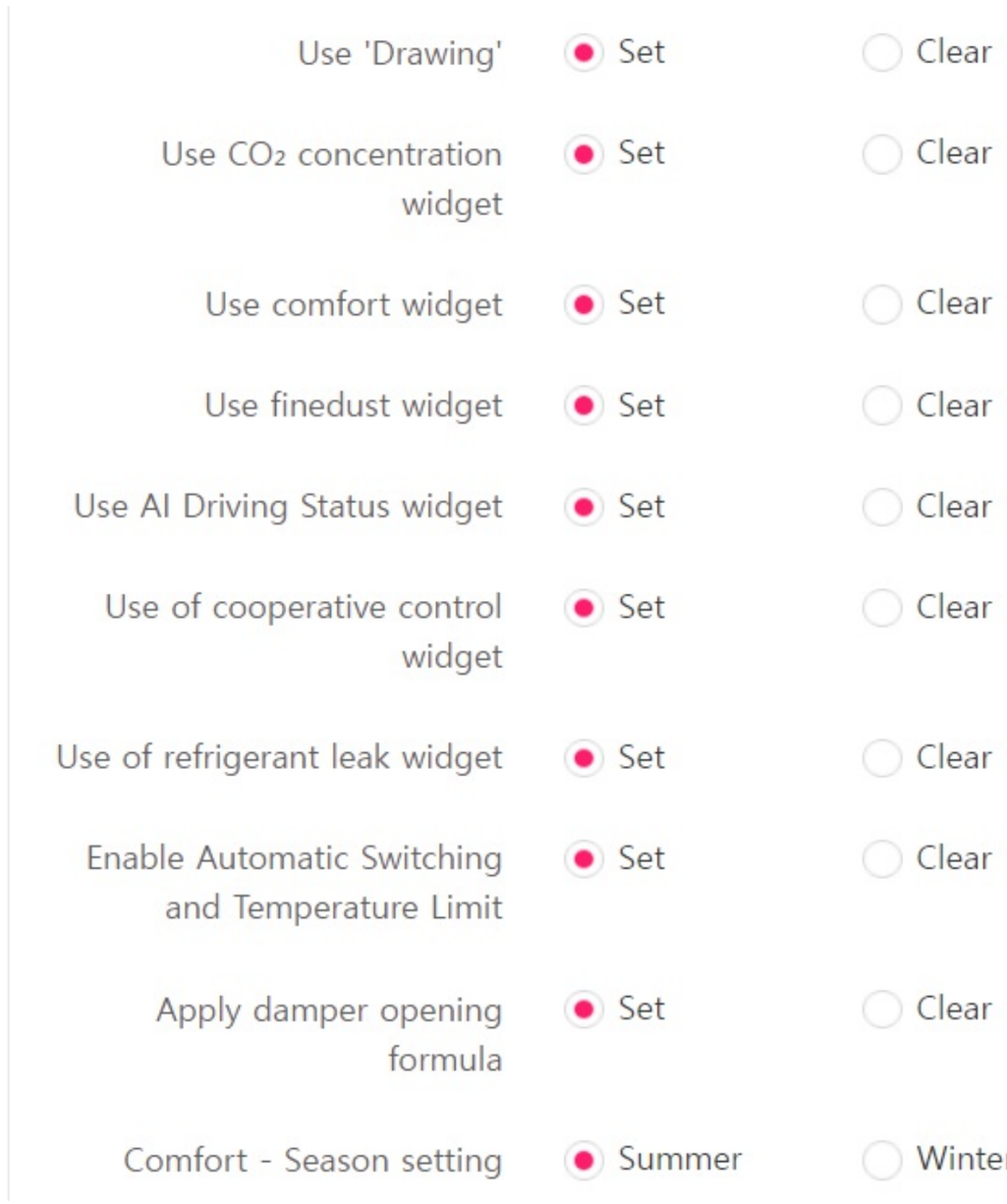
# System Setting

You can change the system setting.

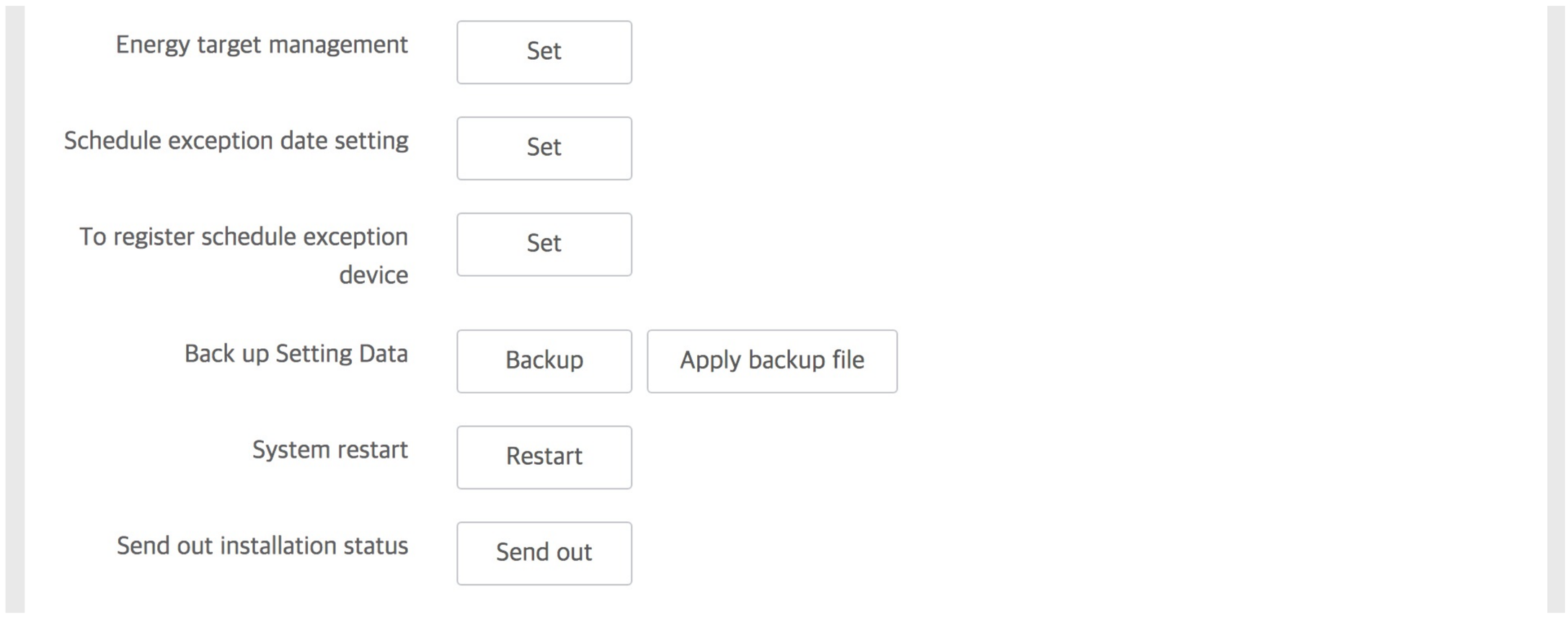
1. In the left menu tab, click **[Setting]** > **[System Setting]** menu.
   - System setting screen is displayed.
2. Set the system.



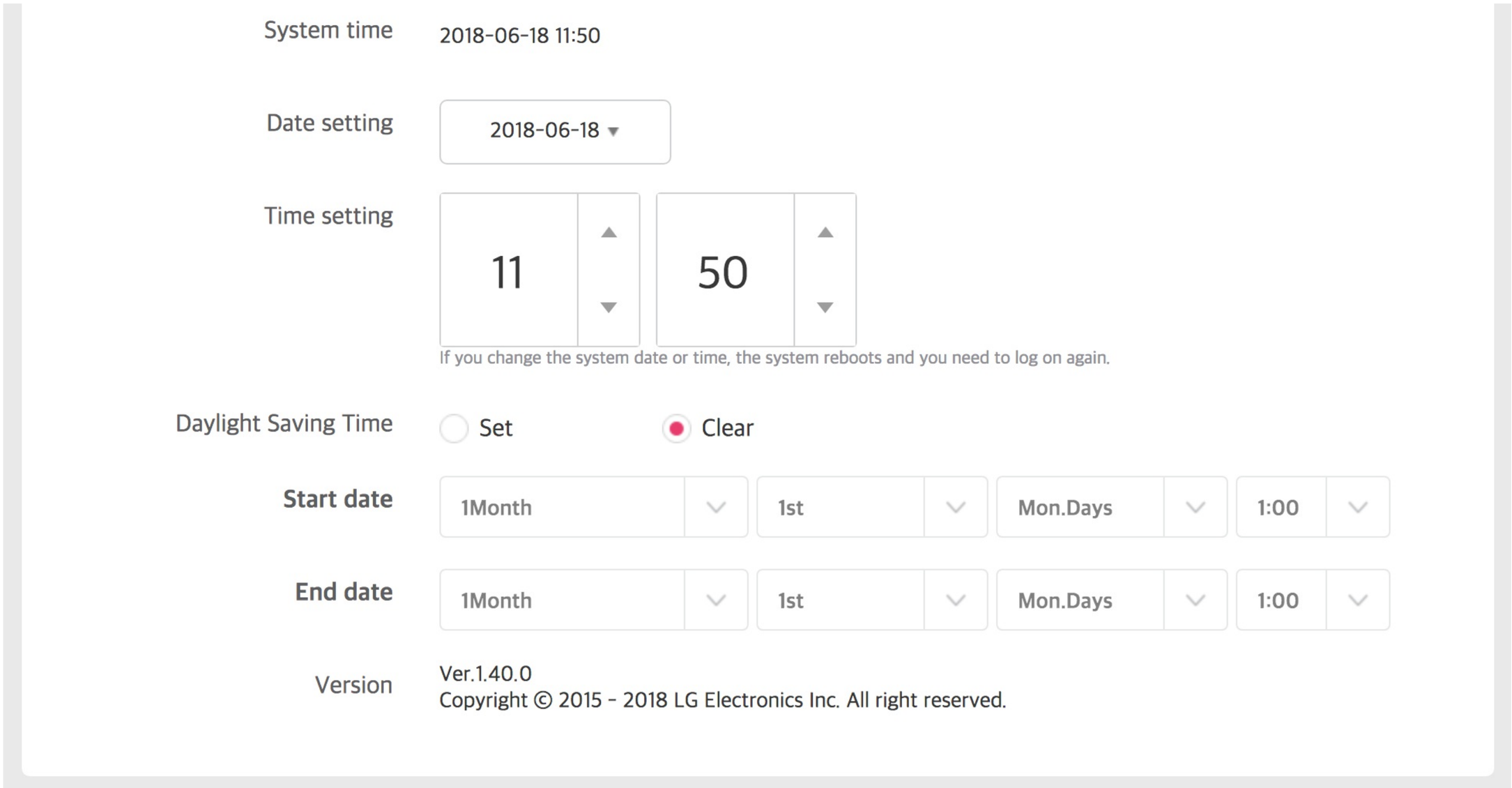

| Category | Description |
|---|---|
| Title | Input the desired name in the input field |
| Language | Press **[▼]** button to select the desired language<br>(한국어/ English/ Español/ Português/ Italiano/ Deutsch/ Türkçe/ Polski/ русский/ Français/ 中文/ Čeština/ Українська) |
| Air quality index | Select the reference country for the fine dust level display.<br>(한국/Global/USA/中国/India) |
| Day format | You can set the Day format. (YYYY-MM-DD / MM-DD-YYYY / DD-MM-YYYY) |
| Time format | You can set the Time format. (12 / 24) |
| Temperature | Press **[▼]** button to select the desired control temperature unit (Celsius 0.5℃ / Celsius 1℃ / Fahrenheit 1℉) |
| Set the lowest temperature for COOL/HEAT | Press **[▼]** button to select the desired cooling/heating lower limit temperature (16℃ / 18℃) |
| Use Energy Navigation | Select wehther to use Energy Navigation |
| Energy navigation base date | Press **[▼]** button to select the desired date<br>• Energy navigation monthly power usage amount base date setting<br>• Calculate the days to the one day before in the next month from the set date |




| Category | Description |
|---|---|
| Use 'Drawing' | Select wehther to use 'Drawing' |
| Use $CO_2$ concentration widget | When it is set, dash board $CO_2$ concentration widget is activated |
| Use pleasantness widget | When it is set, dash board pleasantness widget is activated |
| Use fine dust widget | When it is set, dash board fine dust widget is activated |
| Use AI Driving Status widget | Setting this option activates the AI Driving Status Widget on the dashboard. |
| Use of cooperative control widget | Setting this option activates the cooperative control widget on the dashboard. |
| Use of refrigerant leak widget | Setting this option activates the refrigerant leak widget on the dashboard. |
| Enable Automatic Switching and Temperature Limit | Enables the automatic central control switching and the temperature limit function. |
| Apply damper opening formula | • Select whether to apply damper opening formula<br>• When damper opening is set, it operates at OA=EA and OA+MIX=90 |
| Pleasantness season setting | Winter/summer setting for pleasantness calculation<br>When summer is set, pleasantness range is formed in lower temperature |




| Category | Description |
|---|---|
| Energy target amount setting | Target energy amount setting for energy(Dashboard) management |
| Schedule exception date setting | Set exception date for schedule setting |
| To register schedule exception device | Set the device to except in schedule setting in advance |
| Setting data backup | • Backup: backup of data to PC (In AC Smart 5 Device, it is stored in USB.)<br>• Backup file application: overwrite data with backup file stored in PC |
| System restart | Restart the entire system |
| Send out installation status | Save installation status to PC<br>(In AC Smart 5 Device, it is stored in USB.) |




| Category | Description |
|---|---|
| System time | Check system time |
| Date setting | You can set the date. |
| Time setting | You can set the time. |
| Daylight saving time setting | Daylight saving time (summer time) start and end date Set/Clear |
| Version | You can check the version. |

3. When setting is completed, click **[Apply]** button.

- Setting the exception date
- Delete exception date
- Register schedule exception device

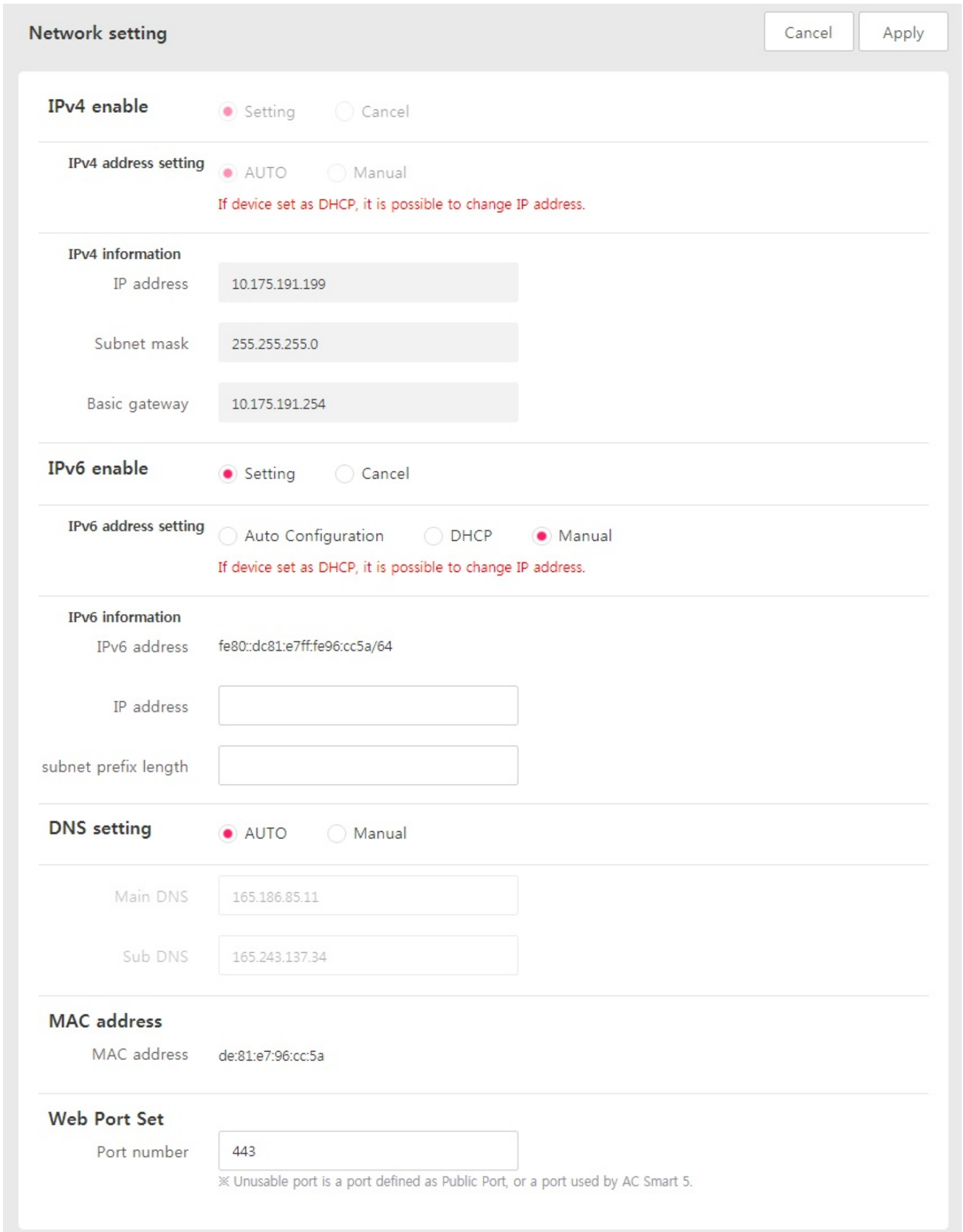
**Note**

- When system time or date is changed, it can be logged out, and you need to log in again.

# Network Setting

You can set or change network information.

1. In the left menu tab, click **[Setting]** > **[Network Setting]** menu.
   - Network setting screen is displayed.
2. Set the network information.




| Category | Description |
|---|---|
| IPv4 enable | IPv4 usage address **Set/Clear** |
| IPv4 address setting | Check IPv4 address setting **AUTO(DHCP)/Manual**<br>If you use AUTO(DHCP), the IP address may be changed. So we recommend using the manual IP address configuration. |
| IPv4 information | Check IPv4 address |
| IPv6 enable | IPv6 usage address **Set/Clear** |
| IPv6 address setting | Check IPv6 address setting **Auto Configuration/DHCP/Manual**<br>If you use DHCP, the IP address may be changed. So we recommend using the automatic or manual IP address configuration. |
| IPv6 information | Check IPv6 address |
| DNS setting | **[AUTO]**: Automatically sets main DNS and secondary DNS<br>**[Manual]**: User sets main DNS and secondary DNS |
| MAC address | Check MAC address |
| Web Port setting | Port setting (range: 443, 1024~49151) |

## Note

**Network setting can be set in Device, and only some settings may be changed in Web.**

3. When setting is completed, click **[Apply]** button.

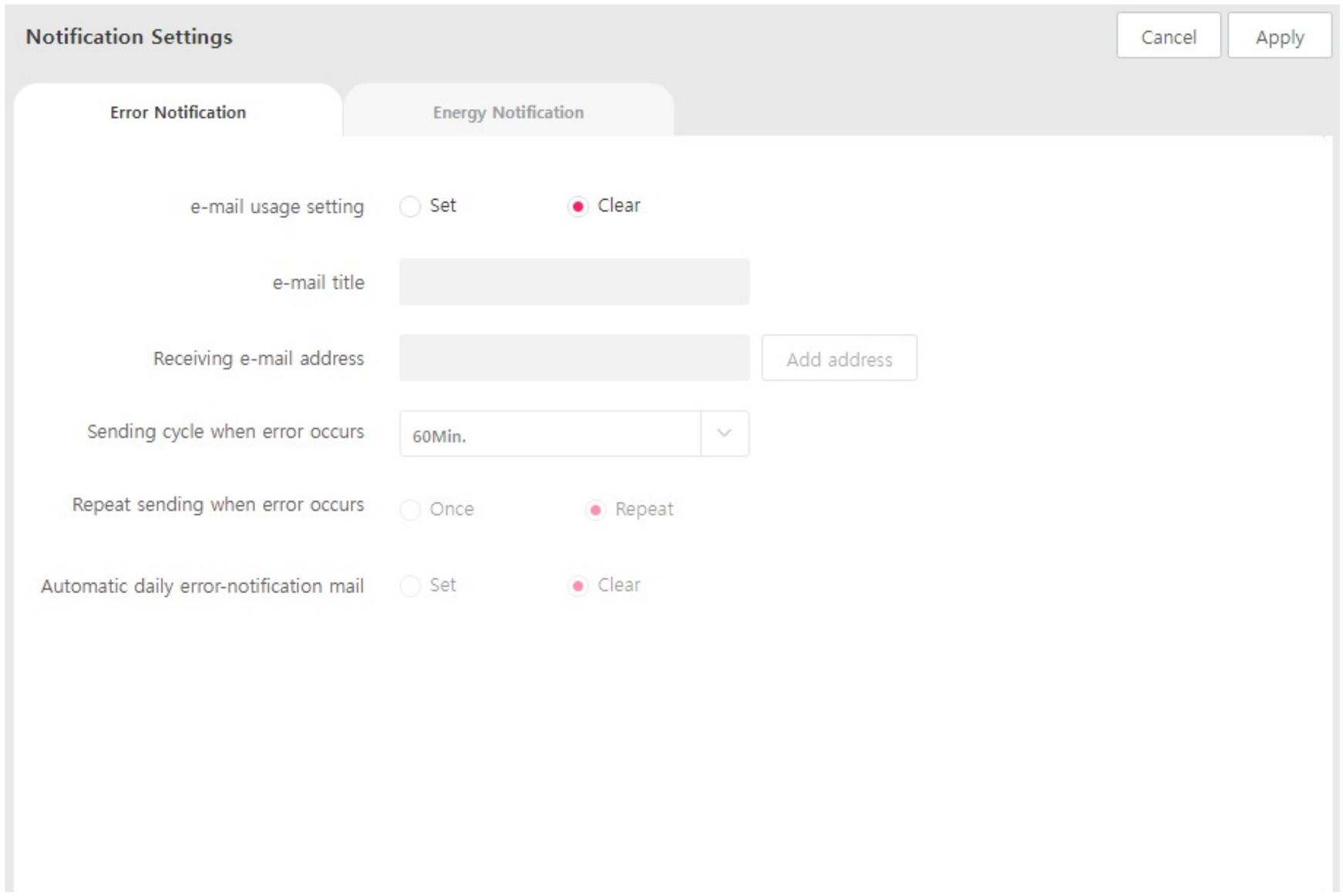
# Notification Settings

You can set or change Error Notification and Energy Notification.

## Error Notification

You can set or change error notice.

1. In the left menu tab, click **[Setting]** > **[Notification Settings]** menu.
   - Notification Settings screen is displayed.
2. Set the error notice.



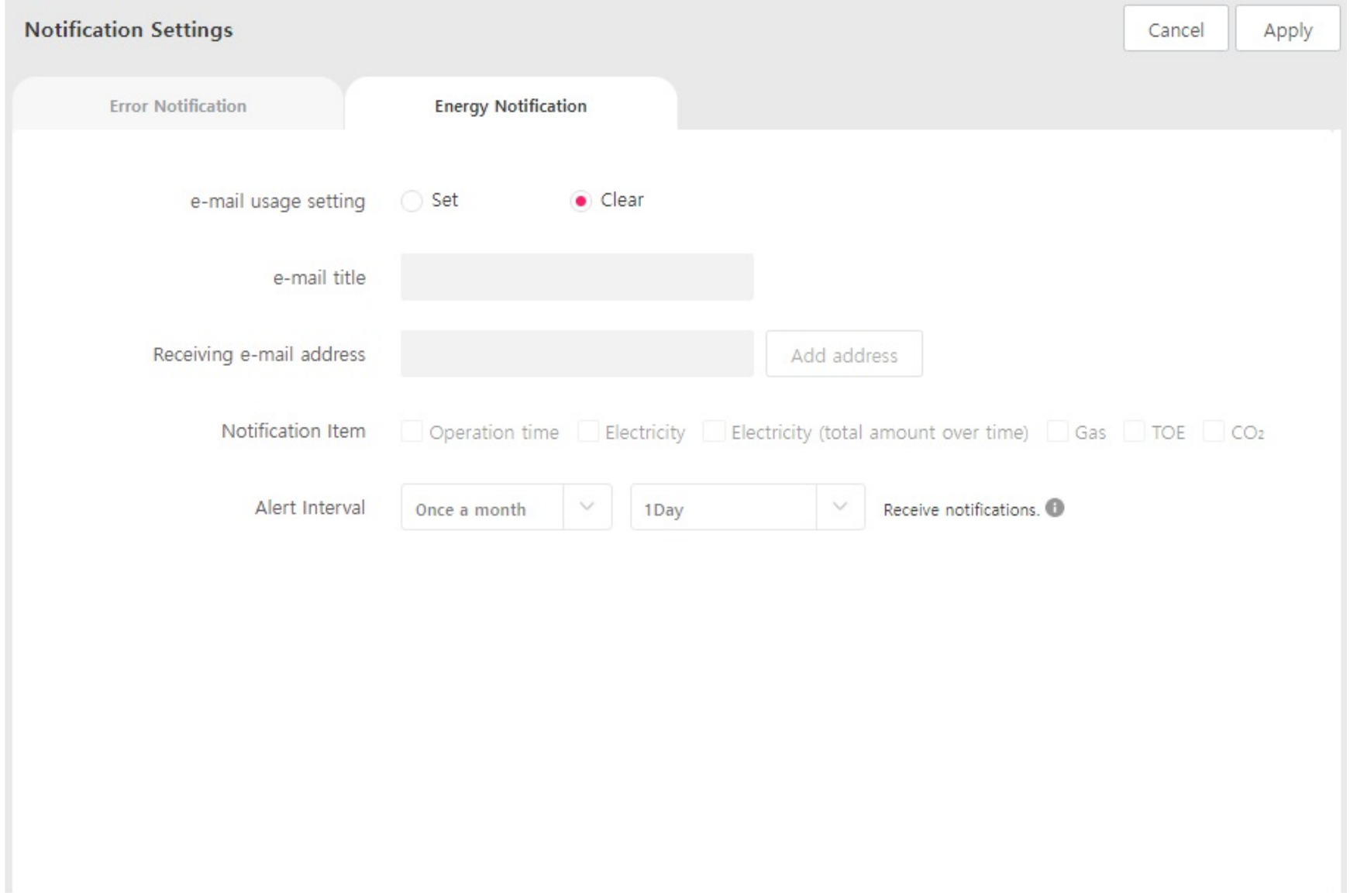

| Category | Description |
|---|---|
| e-mail usage setting | Selection of set/clear of whether to send the error occurred device's address and error No. through e-mail |
| e-mail title | e-mail title setting |
| Receiving e-mail address | Input receiving e-mail address |
| Sending cycle when error occurs | Set transmission cycle in case of error (10/20/30/40/50/60 min.) |
| Repeat sending when error occurs | Once: Sending once same error alarm when error occur.<br>Repeat: Sending same error alarm repeatly every cycle. |
| Automatic daily error-notification mail | Automatic sending of e-mail once a day when no error occurs |

3. To save the set contents, click **[Apply]** button.

## Energy Notification

You can set or change Energy Notification.

1. Press the **[Energy Notification]** tab at the top of the screen.
2. Set Energy Notification.




| Category | Description |
|---|---|
| e-mail usage setting | Set whether to send energy usage data via email. |
| e-mail title | e-mail title setting |
| Receiving e-mail address | Input receiving e-mail address |
| Notification Item | Select energy items |
| Alert Interval | Press the **[▼]** button to select the desired date.<br>• Set the date to receive energy usage data via email.<br>• Calculate the data for one month period up to the day before the set date. |

3. To save the set contents, click **[Apply]** button.

## Note

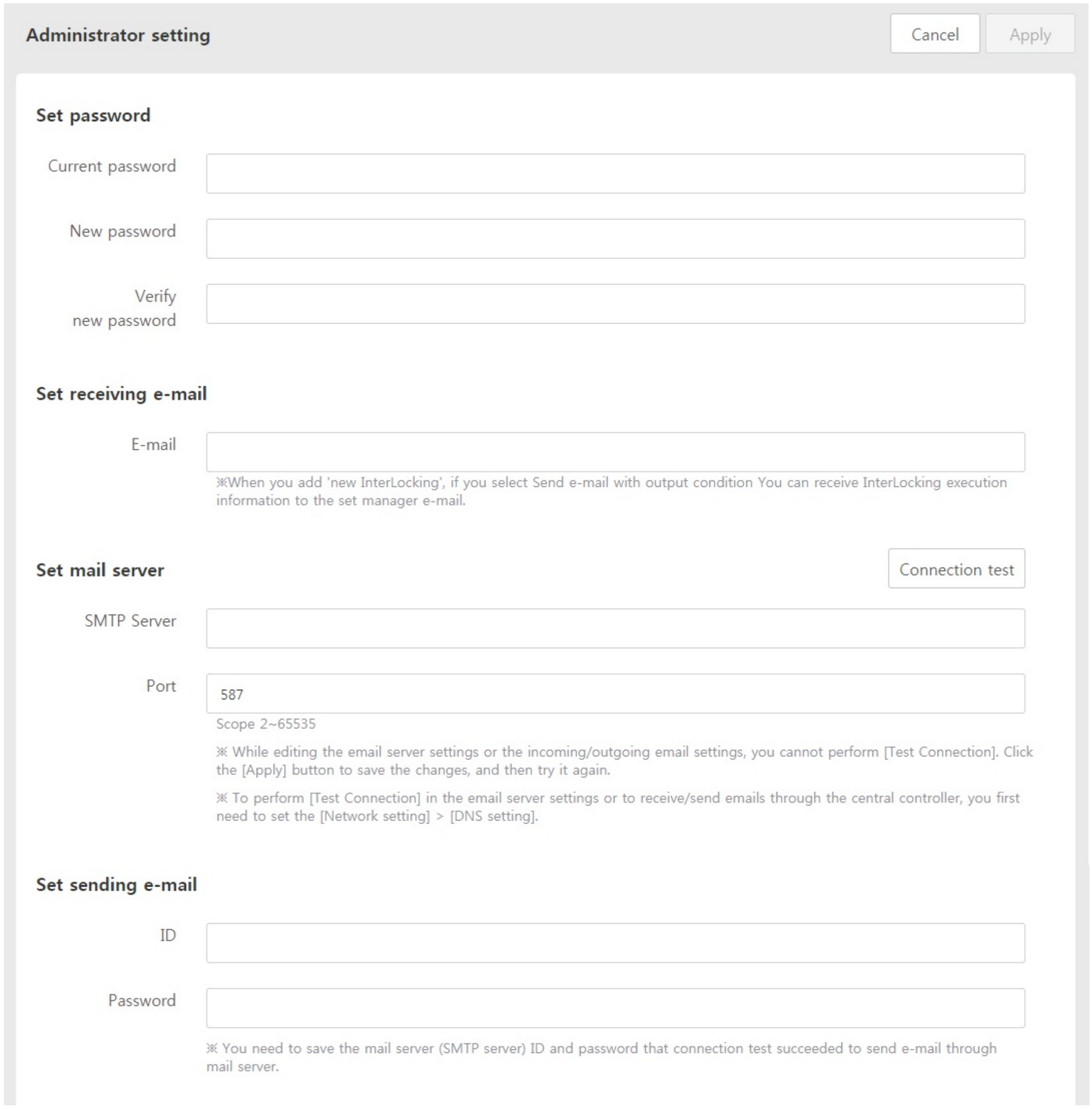
Before e-mail usage setting, check the following categories.

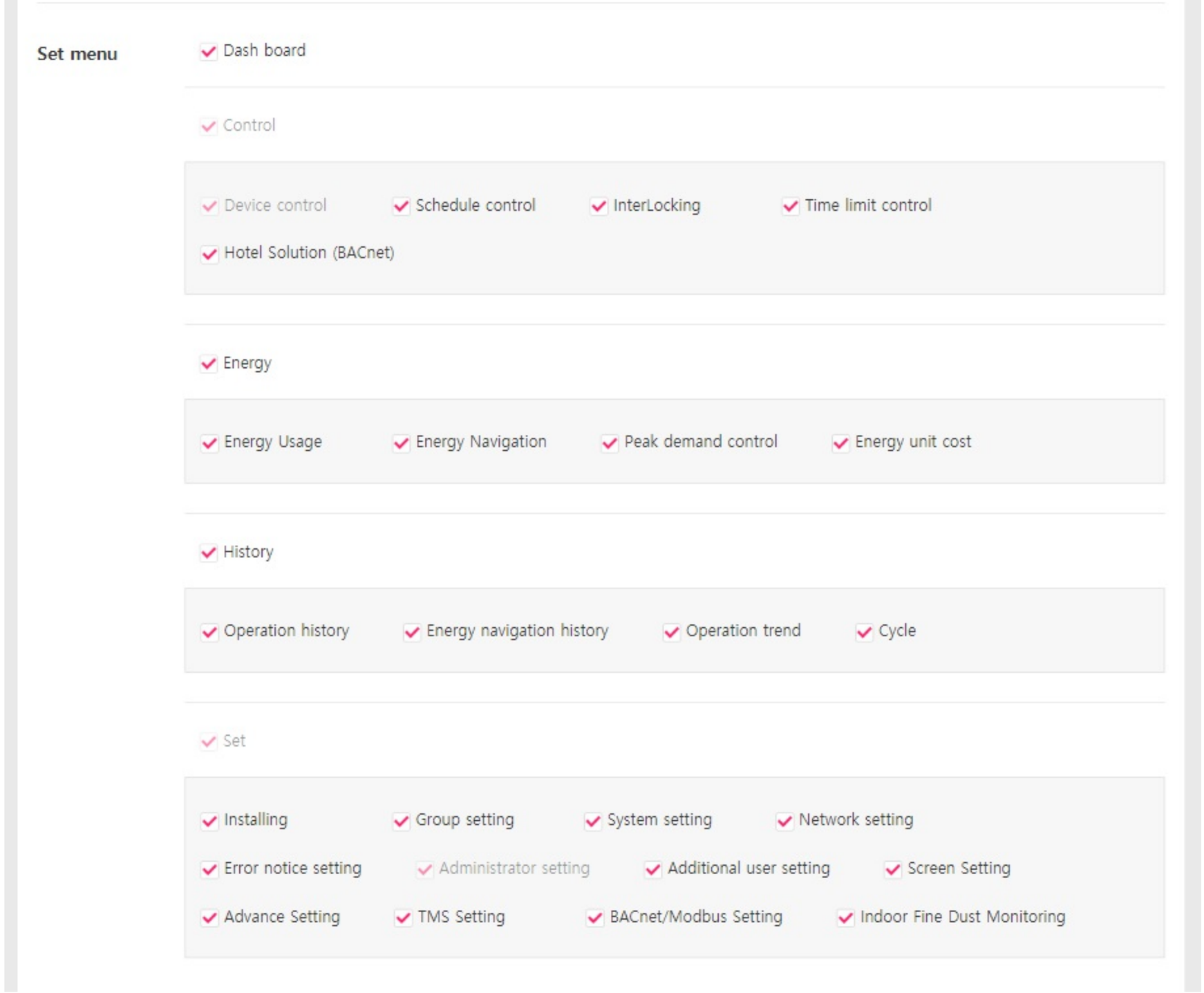
- [Setting] > [Network setting]'s DNS server shall be set.
- [Setting] > [Administrator setting]'s mail server and sending e-mail shall be set.

# Administrator Setting

You can set or change the user management environment when the user logs in with manager authority.

1. In the left menu tab, click **[Setting] > [Administrator Setting]** menu.
   - Administrator setting screen is displayed. You can change the manager information or set the system usage environment.





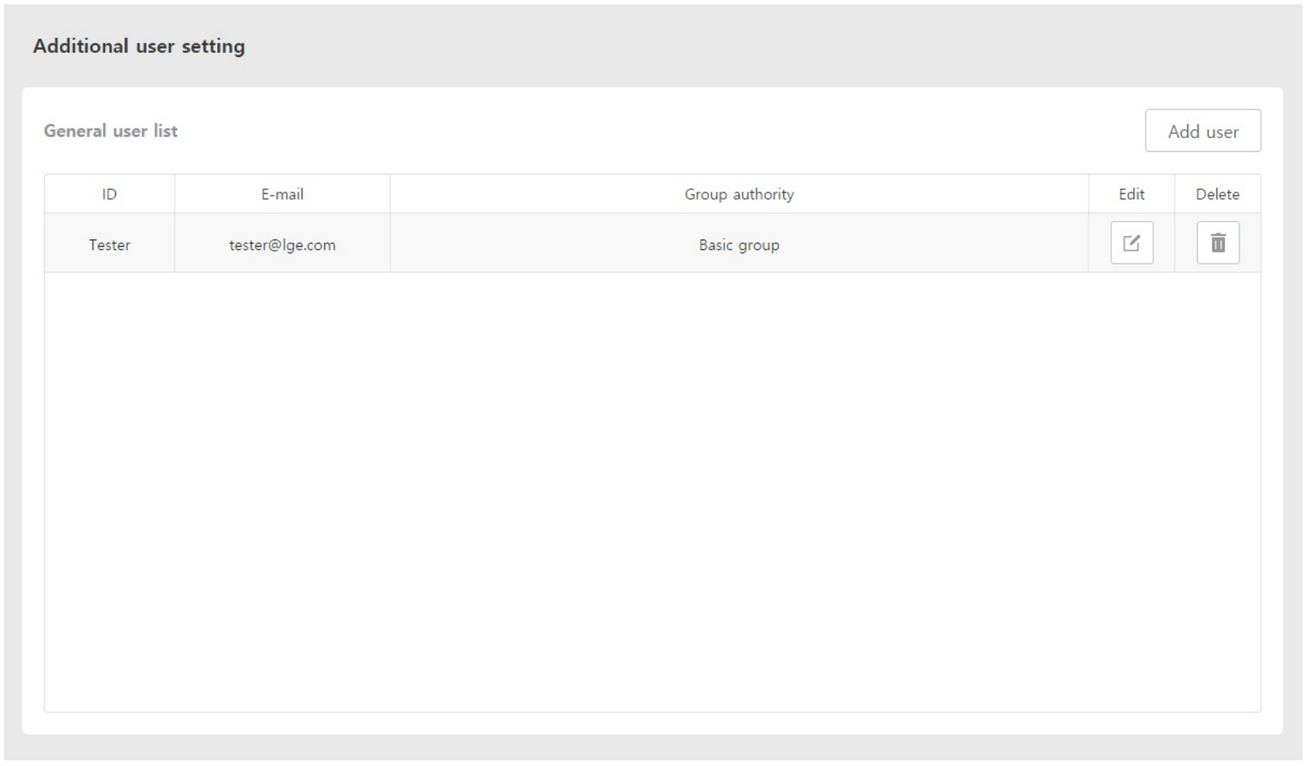

| Category | Description |
|---|---|
| Set password | Set the password to use during login<br>• Current password: Input password used currently for login<br>• New password: Input new password<br>• New password verification: Input the same new password one more time |
| Set receiving e-mail | Input e-mail address |
| Set Mail server | Manager mail server setting<br>• SMTP server: Input SMTP server address<br>• Port: Input port No.<br>• Connection test: Input mail account test (network shall be connected) |
| Set sending e-mail | • ID: Input user ID<br>• Password: Input user password |
| Set Menu | Click checkbox to select the desired manager menu (you can select multiple)<br>• Dashboard<br>• Control: device control, schedule control, InterLocking, Time limit control, Hotel Solution(BACnet)<br>• Energy: Energy usage, Energy Navigation, Peak demand control, Energy Unit Cost<br>• History: operation history, Energy Navigation history, operation trend, cycle<br>• Setting: Installing, Group setting, System setting, Network setting, Notification Settings, Administrator setting, Additional user setting, Advance Setting, TMS Setting, BACnetModbus Setting, Innenraum-Feinstaub-Überwachung, Set Fine Dust Monitoring |

2. To save the set contents, click **[Apply]** button.

## Additional User Setting

You can manage the additional user list when you login with manager authority.

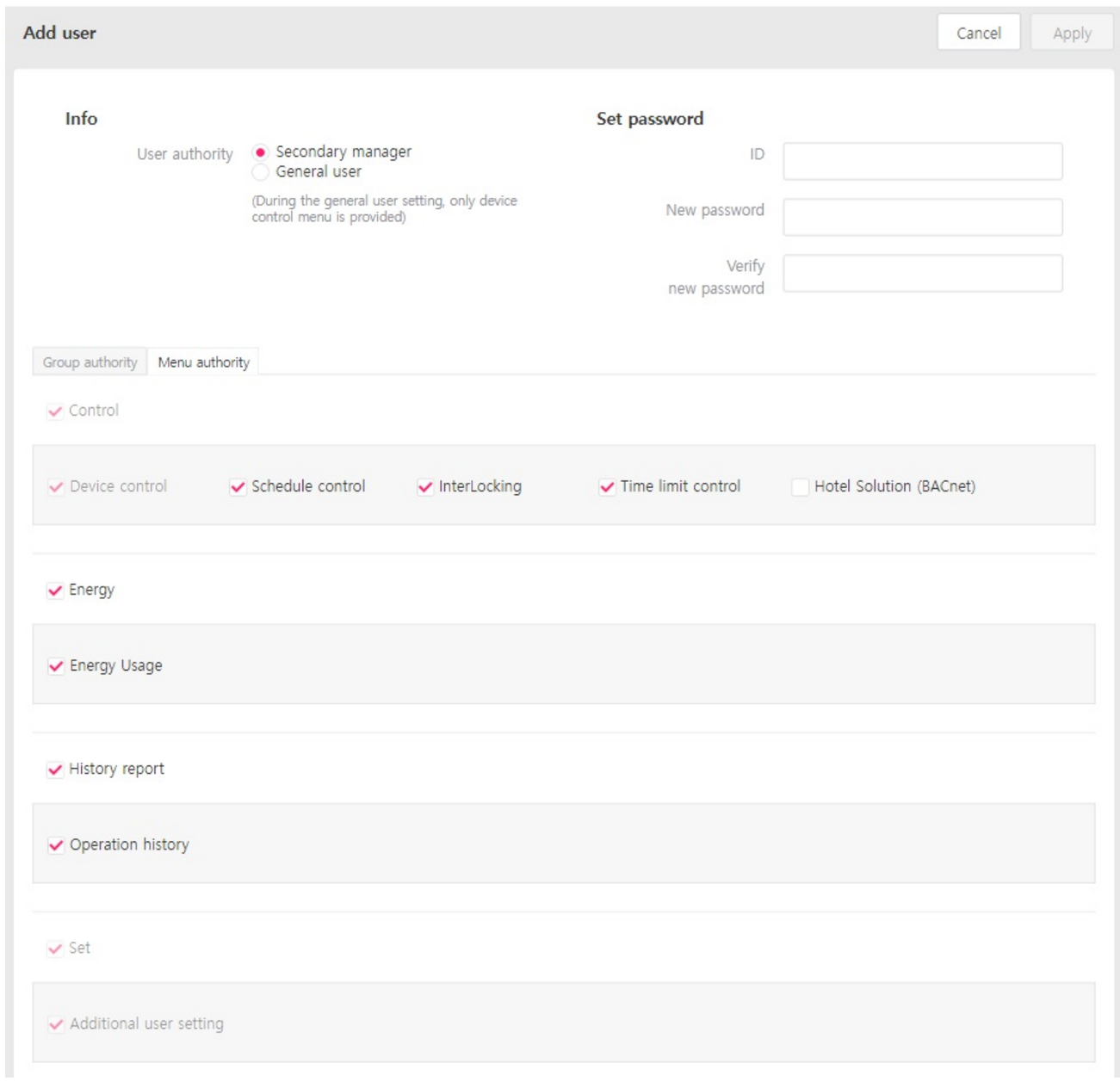
1. In the left menu tab, click **[Setting] > [Additional User Setting]** menu.
   - Additional user setting screen is displayed. You can add user or edit or delete registered user information.




## Add User

You can add secondary manager and general user.

1. In the left menu tab, click **[Setting] > [Additional User Setting]** menu.
   - Additinal user setting screen is displayed.
2. Click **[Add User]** button.
   - Add user screen is displayed.
3. Set each category.




| Category | Description |
|---|---|
| Info | **[User authority]**<br>• Secondary manager: Provides authority assigned menu<br>• General user: Provides only device control menu |
| Set password | **[ID]**: input ID to use<br>**[password]**: input password to use<br>**[Verify password]**: input password to use again |
| Group Authority | Assign additional user's group authority<br>• When group is selected, only the corresponding group can control |
| | ASssign menu authority used by additional user |

| | |
|---|---|
| Menu Authority | • For general user, only **[Control]-[Device Control], [Setting]-[Additional User Setting]** menu authorities are assigned |

4. When setting is completed, click **[Apply]** button.

## Delete User

You can delete registered user.

1. In the left menu tab, click **[Setting]** > **[Additional User Setting]** menu.
   - Additinal user setting screen is displayed.
2. Click **[Delete]** button of the user to delete.
   - Delete user screen is displayed.
3. Click **[Yes]** button

# Screen Setting

You can set product screen related usage environment.

1. In the left side menu tab, click **[Setting] > [Screen Setting]** menu.
   - Screen setting screen is displayed.
2. Set screen information.



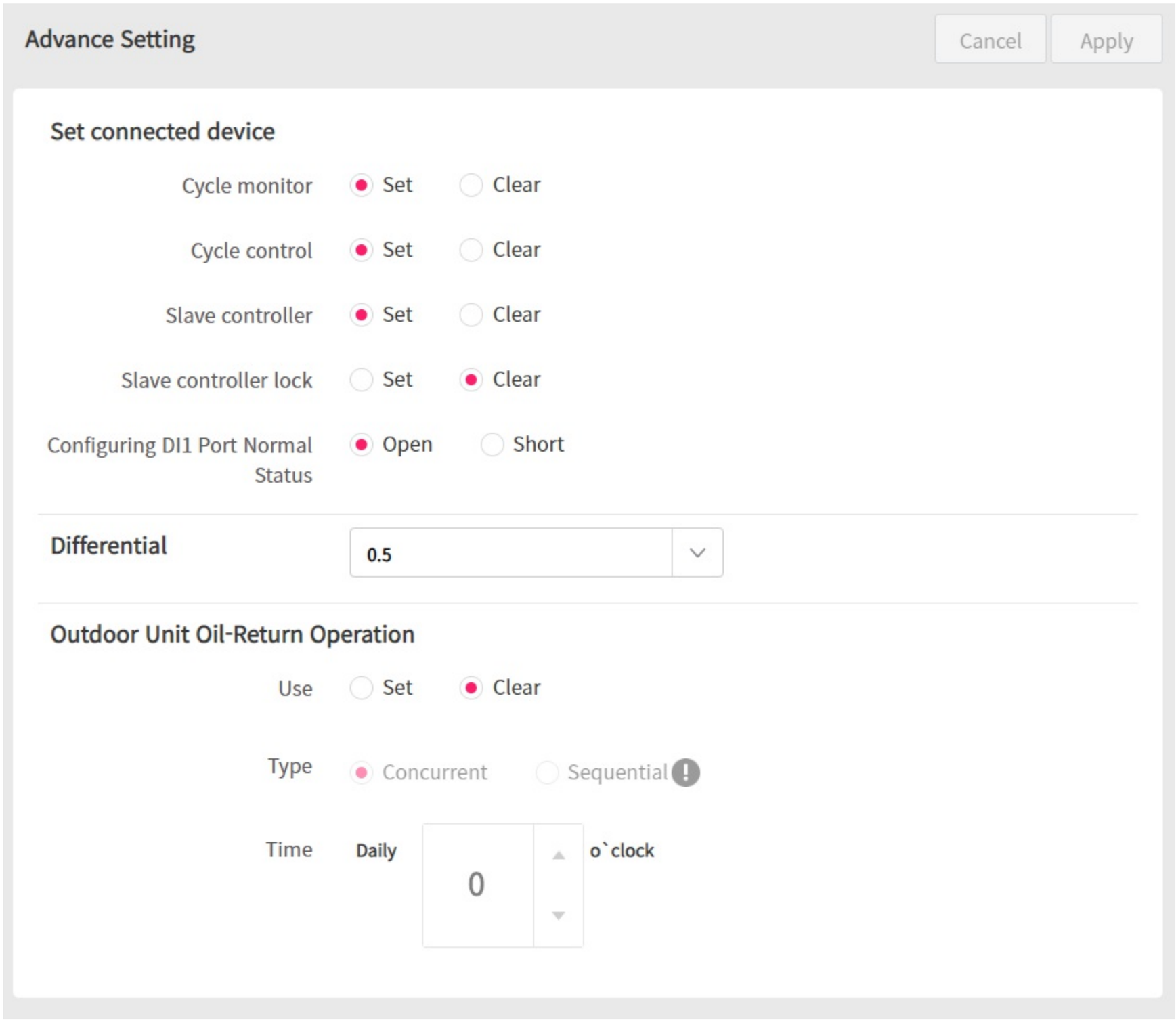

| Category | Description |
|---|---|
| Screen saver setting | • Monitor OFF usage: use of monitor power OFF function **Set/Clear**<br>• Monitor OFF standby time (min.): set standby time until monitor power OFF (10/20/30/40/50/60 min.) |

3. When setting is completed, click **[Apply]** button.

# Advance Setting

You can set functions required for device operation.

1. In the left side menu tab, click **[Setting]** > **[Advance Setting]** menu.
   - Advance Setting screen is displayed.



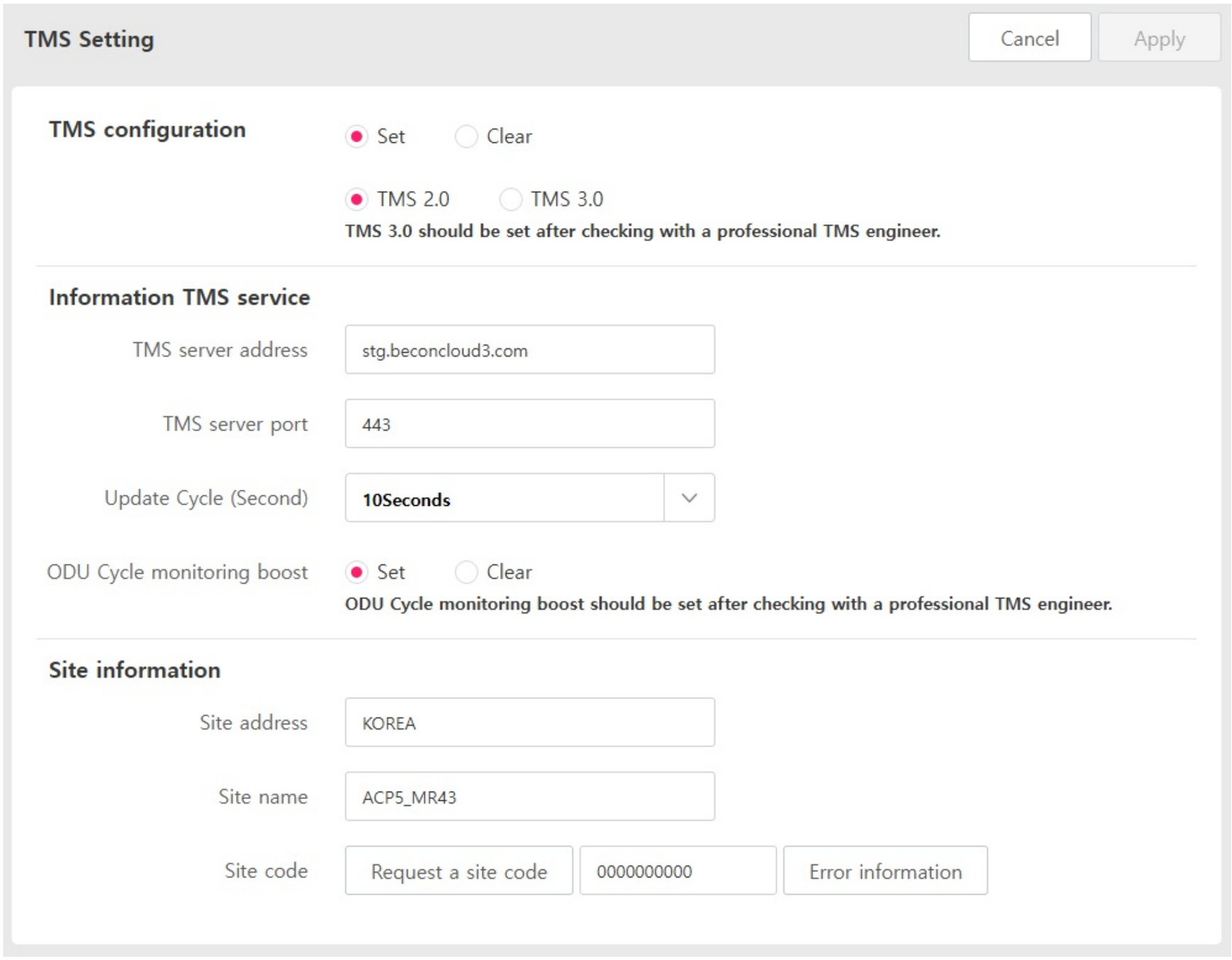

| Category | Description |
|---|---|
| Set connected device | • Outdoor unit cycle monitoring: set whether to use cycle information monitoring<br>• Outdoor unit cycle control: set whether to run cycle control<br>• Slave controller: set whether slave controller control is possible<br>• Slave controller lock: set whether slave controller control is possible for indoor unit with all lock set (Use: Slave controller control is not possible)<br>• Configuring DI1 Port Normal Status: Configures the DI1 port normal status. |
| Differential | Press **[▼]** button to set temperature difference for automatic switching operation |
| Outdoor Unit Oil-Return Operation | • Set whether to run Outdoor Unit Oil-Return Operation<br>• Set outdoor unit oil recovery to Concurrent/Sequential operation.<br>- Concurrent operation: Operates outdoor unit oil recovery at the same time.<br>- Sequential operation: Operates outdoor unit oil recovery sequentially at a 10-minute interval<br>• Press **[▲]/[▼]** button to set Outdoor Unit Oil-Return Operation time |

2. To save the set contents, click **[Apply]** button.

# TMS Setting

You can set remote service that can manage the system remotely.

1. In the left side menu tab, click **[Setting]** > **[TMS Setting]** menu.
   - TMS Setting screen is displayed.




| Category | Description |
|---|---|
| TMS configuration | • Set whether to use remote service<br>• Sets the server type for remote service.<br>- **[TMS 2.0]** button: Connect to TMS 2.0 server<br>- **[TMS 3.0]** button: Connect to TMS 3.0 server |
| Information TMS service | • Service server address: input remote service server address<br>• Service server port: input remote service server port number<br>• Update cycle (sec.):Press **[▼]** button to select remote service update cycle<br>10 / 30 / 60 / 90 / 120 seconds<br>• ODU Cycle monitoring boost: Sets whether to ODU Cycle monitoring boost |
| Site information | • Site address: remote site address input<br>• Site name: input remote site name<br>• Site code: Press **[Request a site code]** button to input site code<br>• Error Information: After requesting the site code, press the **[Error information]** button to check the connection information.<br>- **[Save]** button: Save the error information to a file. |

2. To save the set contents, click **[Apply]** button.

# BACnet/Modbus/Lonworks Setting

## Guide on BTL authentication

**You need to set BACnet to Type C to make the devices operate using the functions authenticated by BTL.**

BACnet Type A/B exists to maintain compatibility with existing products. If you set BACnet to Type A/B, the devices may use the functions not authenticated by BTL, making them to operate differently from the standard.

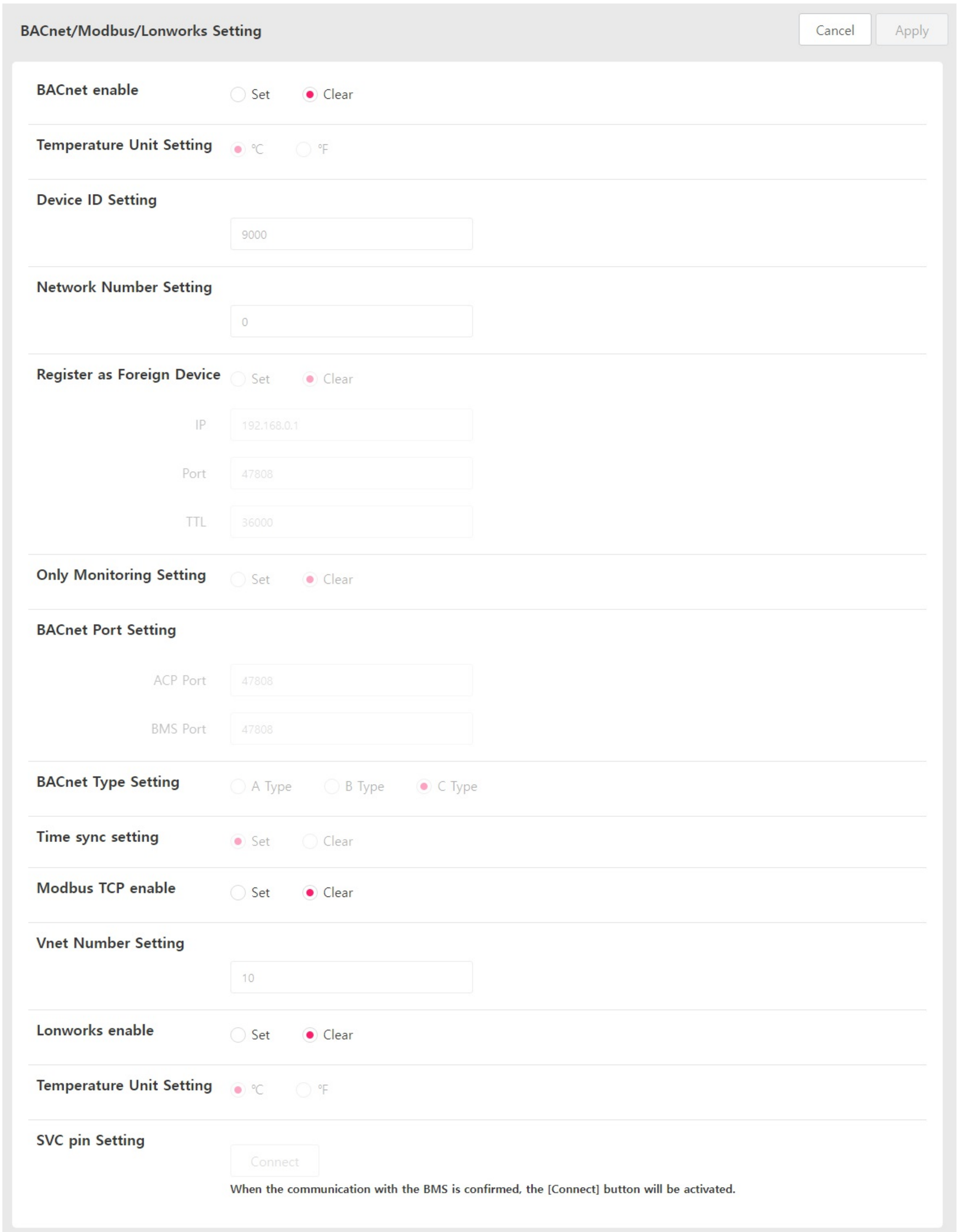
**Operation method according to BACnet type**

- Type A: It creates multiple devices, and the objects are included in the device of each equipment. Multiple devices respond using the same MAC address for their physical addresses.
- Type B: It creates multiple devices, and the objects are included in the device of each equipment. Devices respond with unique physical addresses.
- **Type C: It creates only one device, which includes all objects.**

**※ Caution: If you change the type, the device number may be changed, making it necessary to perform additional engineering with the BMS.**

You can change BACnet/Modbus/Lonworks Setting.

1. In the left side menu tab, click **[Setting] > [BACnet/Modbus/Lonworks Setting]** menu.
   - BACnet/Modbus/Lonworks Setting screen is displayed.
2. Set BACnet/Modbus/Lonworks information.



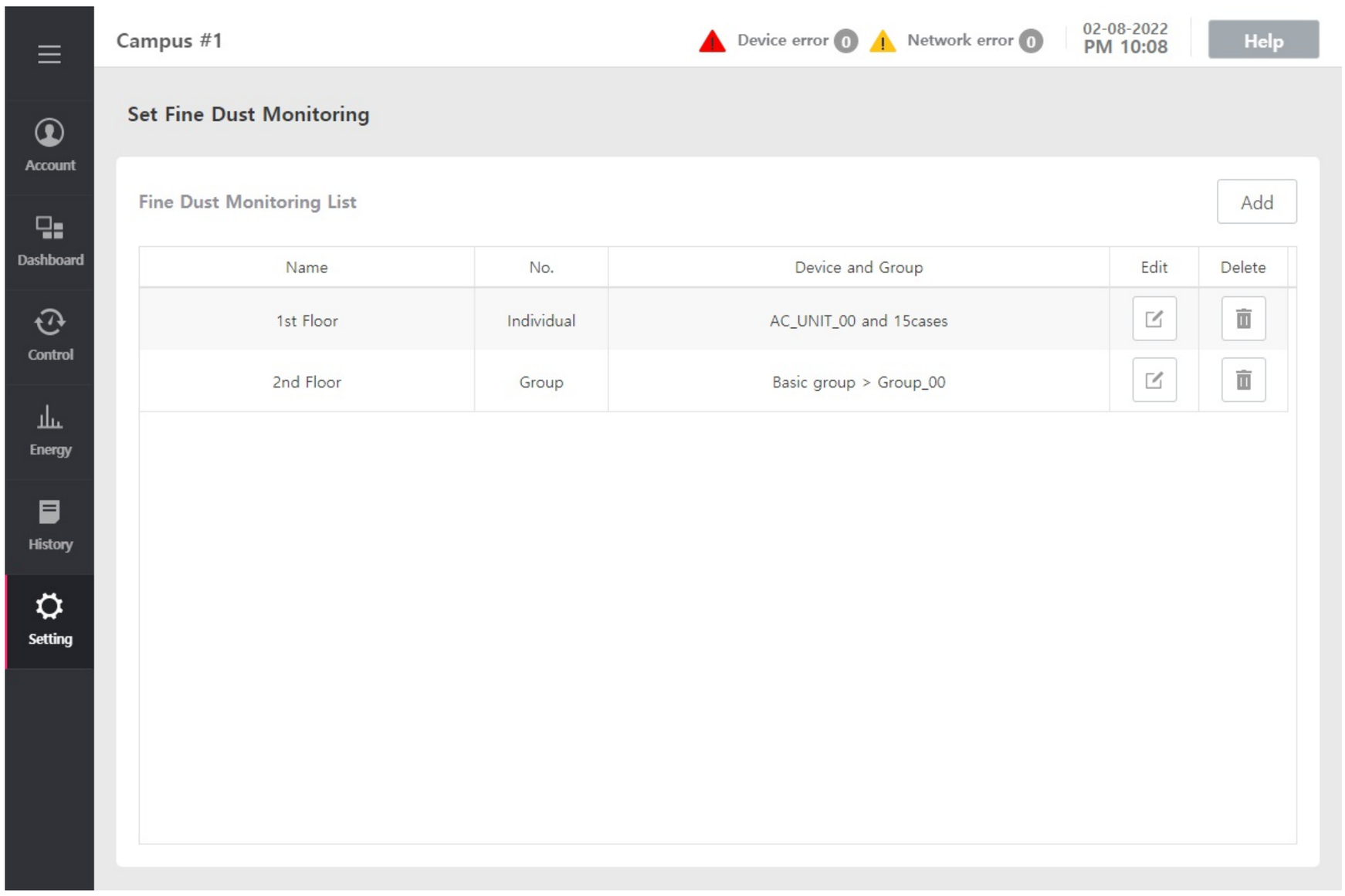
| Category | Description |
|---|---|
| BACnet enable | BACnet enable **Set/Clear** |
| Temperature unit setting | Select temperature unit type (℃/℉) |
| Device ID setting | Device ID setting to designate Device Instance Number<br>• Air conditioner: Device ID<br>• ERV: Device ID + 1<br>• AHU: Device ID + 2<br>• Outdoor unit cycle information: Device ID + 3<br>• Heating: Device ID + 4<br>• Normal : Device ID + 5 |
| Network Number Setting | Network Number Setting |
| Register as Foreign Device | Foreign Device **Set/Clear** |
| Only Monitoring setting | Only Monitoring **Set/Clear** |
| BACnet Port setting | BACnet Port setting |
| BACnet Type setting | BACnet Type selection (A/B/C) |
| Time sync setting | Time sync setting **Set/Clear** |
| Modbus TCP enable | Modbus TCP enable **Set/Clear** |
| Vnet Number setting | Vnet Number setting to use Modbus TCP function<br>Set Vnet Number value operates as Modbus TCP's Slave ID Address |
| Lonworks enable | Lonworks enable **Set/Clear** |
| Temperature Unit Setting | Select Lonworks temperature unit type (℃/℉) |
| SVC pin Setting | Input connection when commissioning with LON BMS |

3. When setting is completed, click **[Apply]** button.

# Set Fine Dust Monitoring

This option allows you to set and manage Fine Dust monitoring.

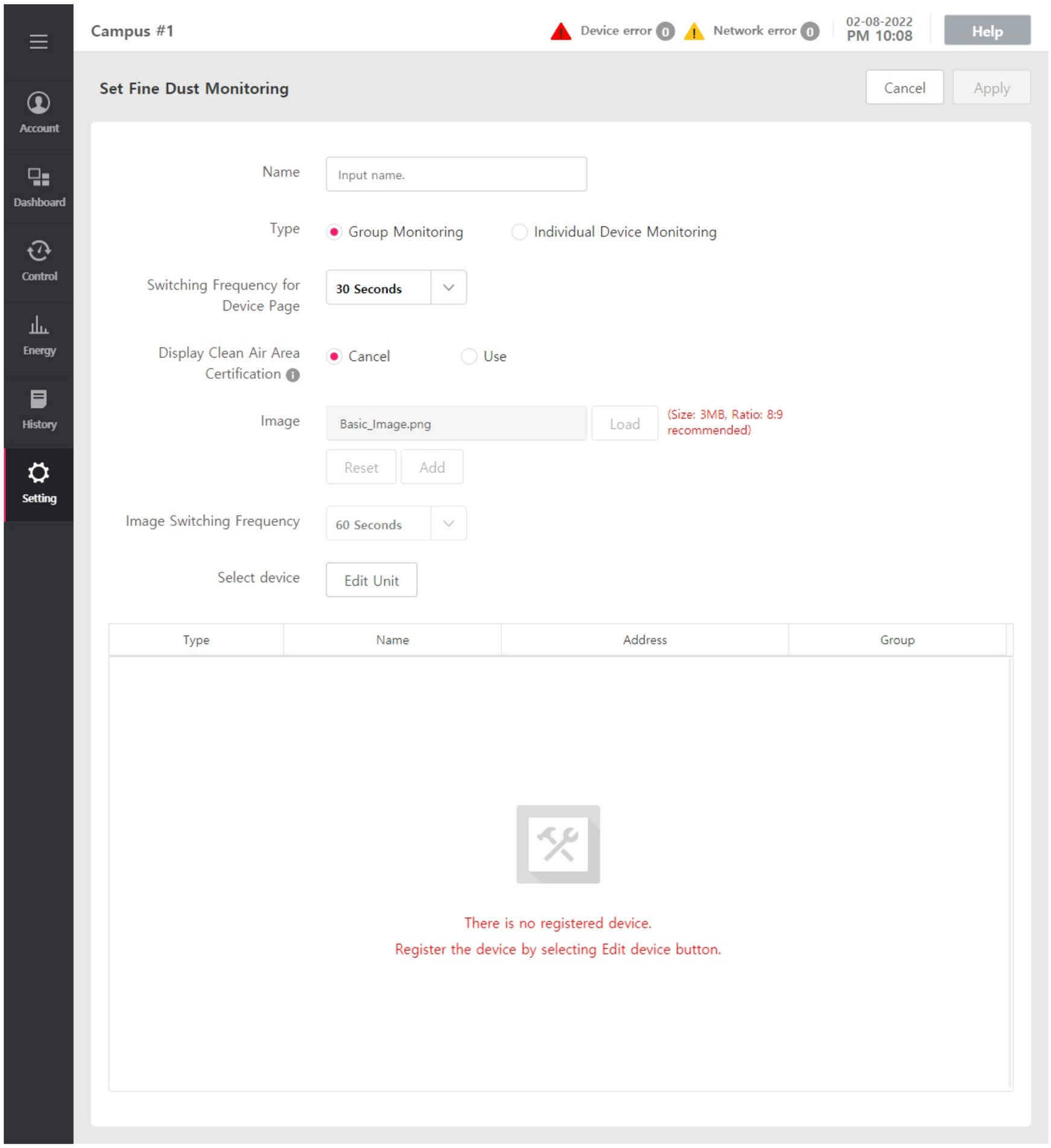
1. On the left menu tab, click **[Settings] > [Set Fine Dust Monitoring]**.
   - The screen for setting Fine Dust monitoring will appear. You can add Fine Dust monitoring tasks and edit or delete the listed tasks.

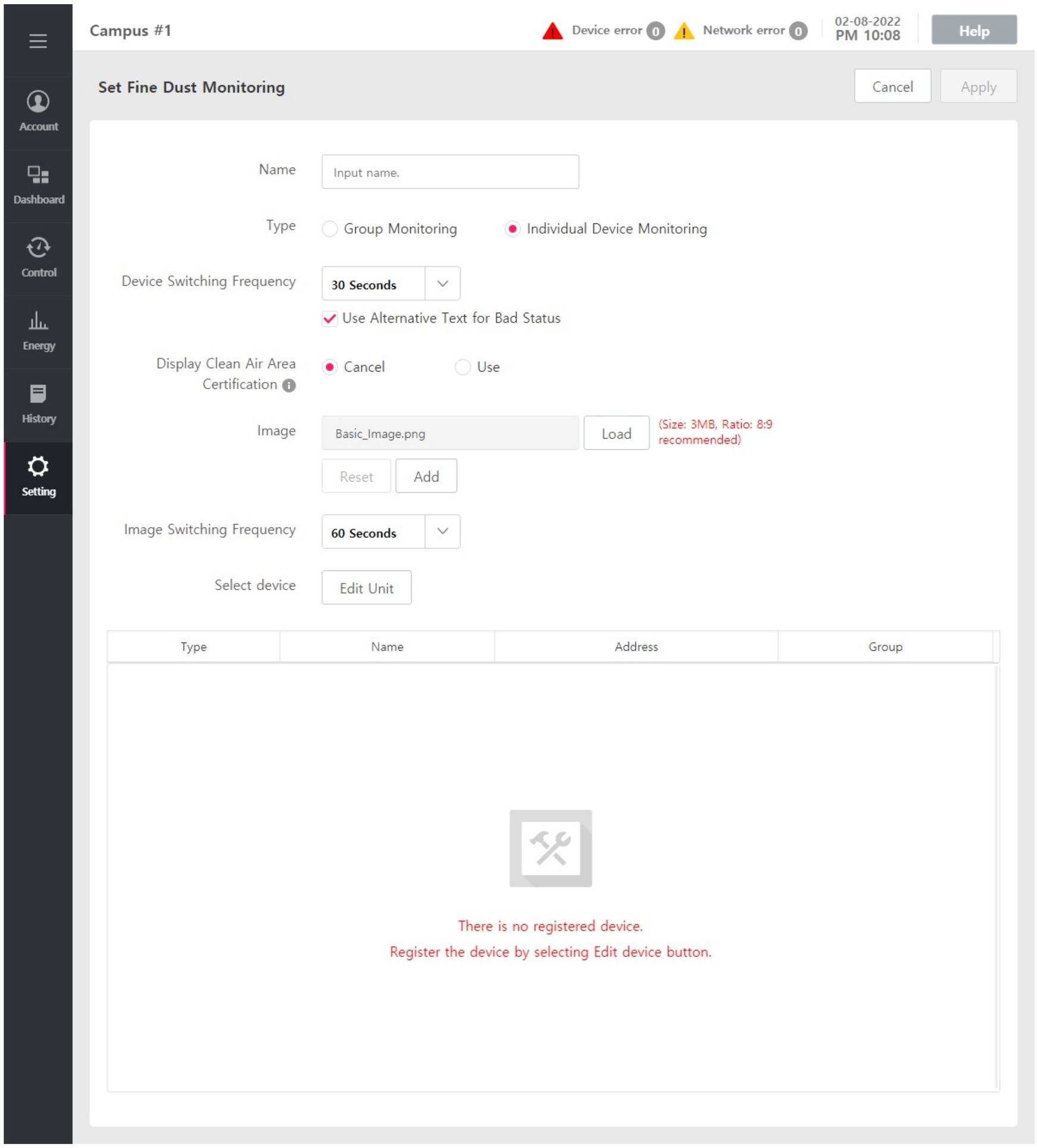



## Add/edit Fine Dust monitoring task

You can add or edit Fine Dust monitoring tasks.

1. On the left menu tab, click **[Settings] > [Set Fine Dust Monitoring]**.
   - The screen for setting Fine Dust monitoring will appear.
2. Click the **[Add]** button.
   - The screen for adding Fine Dust monitoring task will appear.
3. Set the items on the screen.


Campus #1
Device error 0
Network error 0
02-08-2022
PM 10:08
Help
Account
Dashboard
Control
Energy
History
Setting
Set Fine Dust Monitoring
Cancel
Apply
Name
Input name.
Type
Group Monitoring
Individual Device Monitoring
Switching Frequency for Device Page
30 Seconds
Display Clean Air Area Certification
Cancel
Use
Image
Basic_Image.png
Load
(Size: 3MB, Ratio: 8:9 recommended)
Reset
Add
Image Switching Frequency
60 Seconds
Select device
Edit Unit
Type
Name
Address
Group
There is no registered device.
Register the device by selecting Edit device button.




| Item | Setup |
|---|---|
| Name | Set the name of Fine Dust monitoring |
| Type | Set the monitoring type<br>• Group Monitoring: Provides total cleanliness level and statistical data of group<br>• Individual Device Monitoring: Provides total cleanliness level and images for each device |
| Device Page Switching Cycle/Device Switching Cycle | Set the Device Page Switching Cycle/Device Switching Cycle |
| Use Alternative Text for Bad Status | Provides alternative text and images for total cleanliness status of Bad or lower<br>• Available only for individual device monitoring |
| Display Clean Air Area Certification | Display or hide the Clean Air Area Certification sticker |
| Image | Set the image to be displayed during monitoring. Up to 10 images can be set.<br>• **[Import]**: Import an image to use. When the Import window appears, select the image file to add and click the **[Open]** button.<br>• **[Add]**: Adds an image setting tab.<br>• **[Delete]**: Deletes an image setting tab.<br>• **[Reset]**: Resets the added image.<br>• Available only for individual device monitoring |
| Image Switching Frequency | Set Image Switching Frequency<br>• Available only for individual device monitoring |
| Device edit | Select the device or group for which to perform Fine Dust monitoring<br>• Click the **[Device edit]** button to bring up the pop-up window for editing the device.<br>• On the list of non-registered devices, check the box for the device or group to register and click the **[◀]** button.<br>• Once the device is registered successfully, click the **[Apply]** button. |

4. Once the setting is completed, click the **[Apply]** button.

## Delete Fine Dust Monitoring

You can delete the listed particulate monitoring setting.

1. On the left menu tab, click **[Settings]** > **[Set Fine Dust Monitoring]**.
   - The screen for setting Fine Dust monitoring will appear.
2. Click the **[Delete]** button next to the item to delete.
   - The pop-up window for deleting will appear.
3. Click the **[Yes]** button.

## Note

Recommended image size (for 1920x1080 resolution)

- Horizontal: 960x1080px
- Vertical: 1080x840px

# User Manual

## Usage (Mobile, Tablet)

- LogIn / LogOut
- Dashboard
- Device Control
- Schedule Control

# User Manual

You can access to the product with IP address in internet address window to use various central control functions.

**Note**

- **Chrome browser is recommended for web control.**
- **For access to web, IP address needs to be set.**

## LogIn

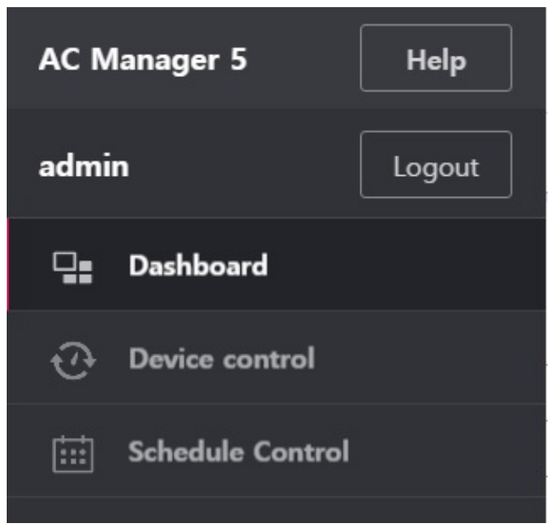
Login method is as follows.

1. Please input IP address of the product in the internet address window.
2. Input ID and password in the login window and click **[Login]** button.

## LogOut

Logout method is as follows.

1. In the menu, click **[LogOut]** button.

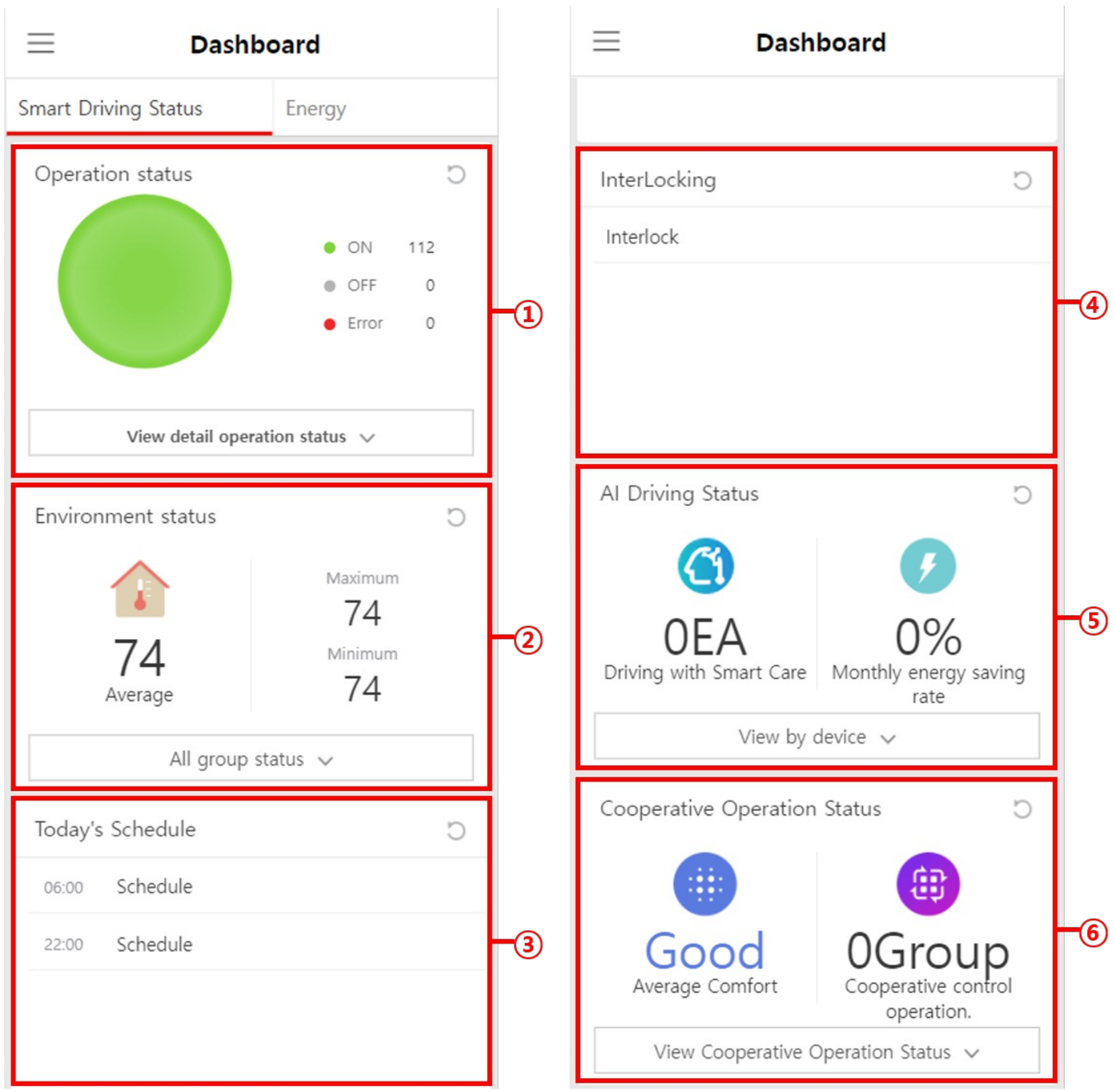


# User Manual

You can check the current operation status and energy usage trend of the equipment installed in the product.

## Operation status

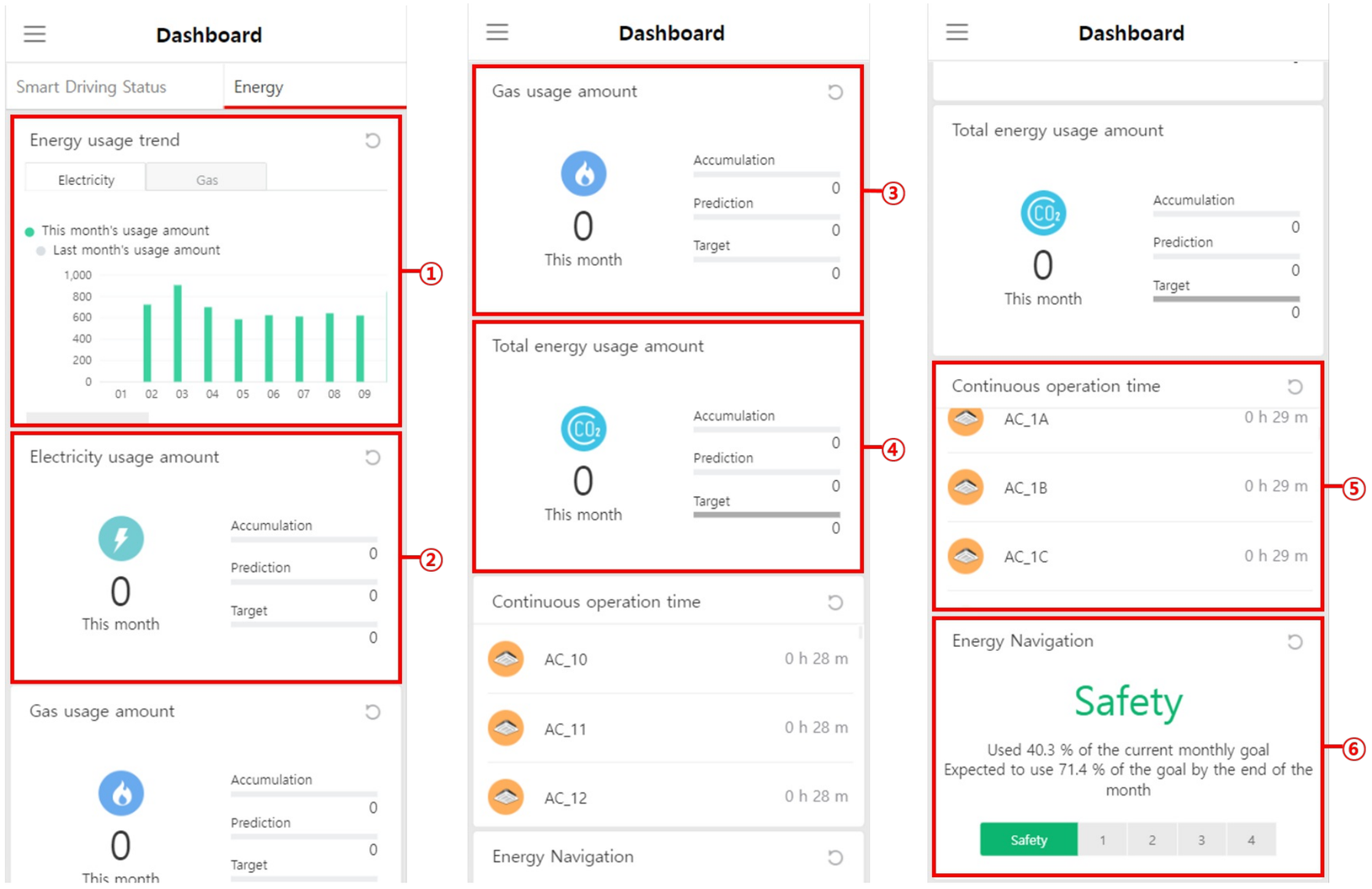
It describes the dash board's current operation status tab composition and functions.




| No. | Category | Contents |
|---|---|---|
| ① | Operation status | Check operation status (start/stop/error) of the equipment installed in the product<br><br>[group]<br>• Checking of operation status of each management group designated by user<br><br>[device]<br>• Checking of operation status of each device |
| ② | Environment status | Checking of average indoor temperature, Max./Min. indoor temperature and group |
| ③ | Today's Schedule | Checking today's schedule list |
| ④ | InterLocking | Checking of InterLocking list |
| ⑤ | AI Driving Status | Check the number of devices running Smart Care and monthly energy saving rates<br>• Click View by Device to see the number of outdoor units running AI Smart Care, energy usage, energy savings, and monthly energy savings rate of each device |
| ⑥ | Cooperative Operation Status | Use of cooperative control widget<br>• Average Comfort<br>• Cooperative control operation<br>• View Cooperative Operation Status |

## Energy

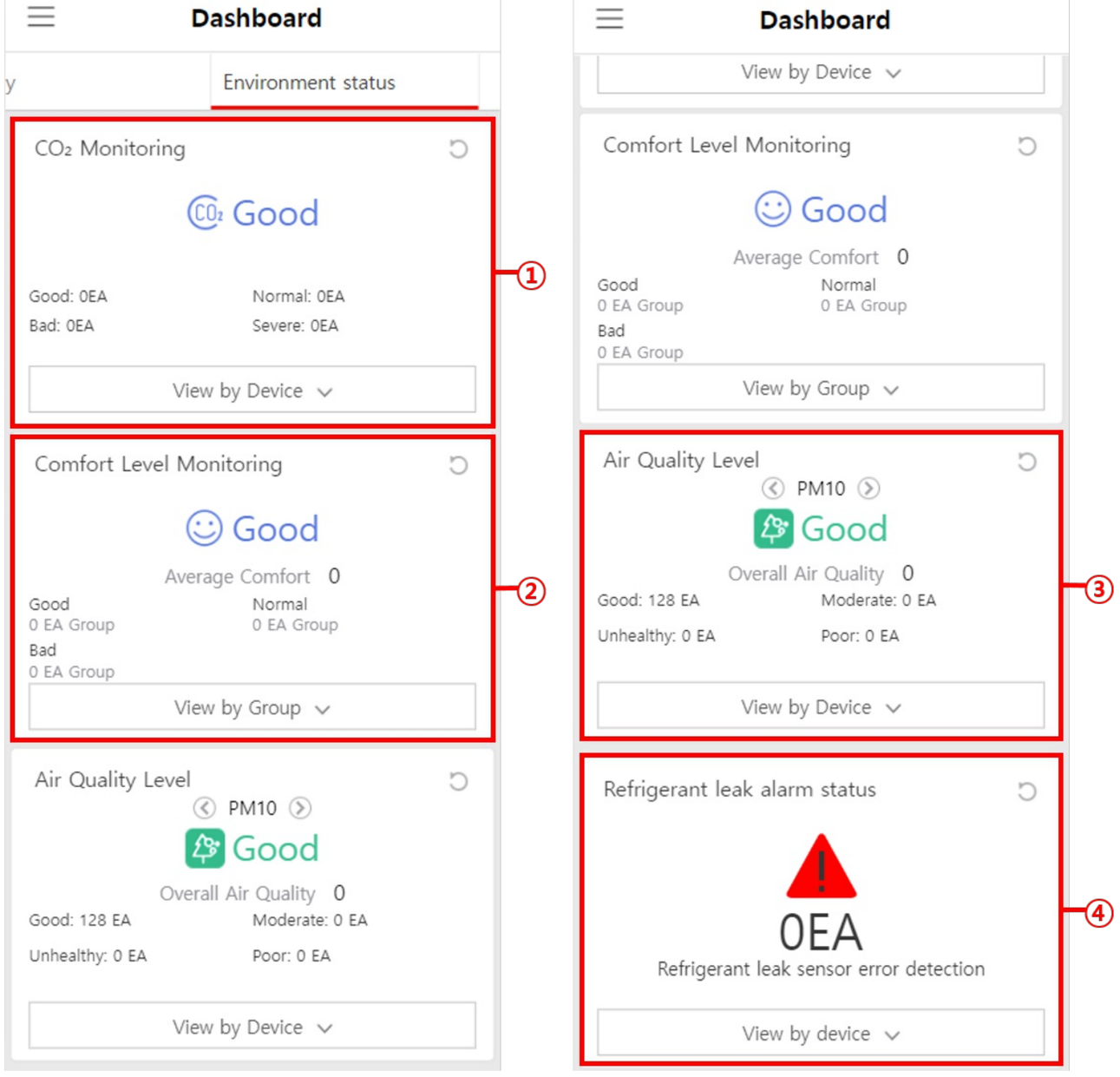
It describes the dash board's energy tab composition and functions.




| No. | Category | Contents |
|---|---|---|
| ① | Energy usage trend | Checking of daily, monthly, and yearly trend of electricity/gas usage amount |
| ② | Electricity usage amount | Checking of electricity usage amount accumulation, forecast, and goal |
| ③ | Gas usage amount | Checking of gas usage amount accumulation, forecast, and goal |
| ④ | Total energy usage amount | Checking of total energy usage amount accumulation, forecast, and goal |
| ⑤ | Continuous operation time | Checking of continuous operation time rank of indoor unit |
| ⑥ | Energy Navigation | Check energy navigation status |

## Environment status

It describes the composition and functions of dash board environment status tab




| No. | Category | Contents |
|---|---|---|
| ① | $CO_2$ monitoring | Check $CO_2$ status of registered ERV |
| ② | Comfort Level Monitoring | Check registered indoor unit's pleasantness status |
| ③ | Fine dust monitoring | Check registered indoor unit, air purifier's fine dust status<br>Fine dust is classified to PM10, PM2.5, and PM1.0, and it indicates each status and concentration |
| ④ | Refrigerant leak alarm status | Check registered indoor unit's refrigerant leak alarm status |

# Device Control

It describes the method to control the device and to monitor the device status.

**[Screen]**

- Screen Structure and Function

**[Control Window]**

- Control of Each Device
- Device Information

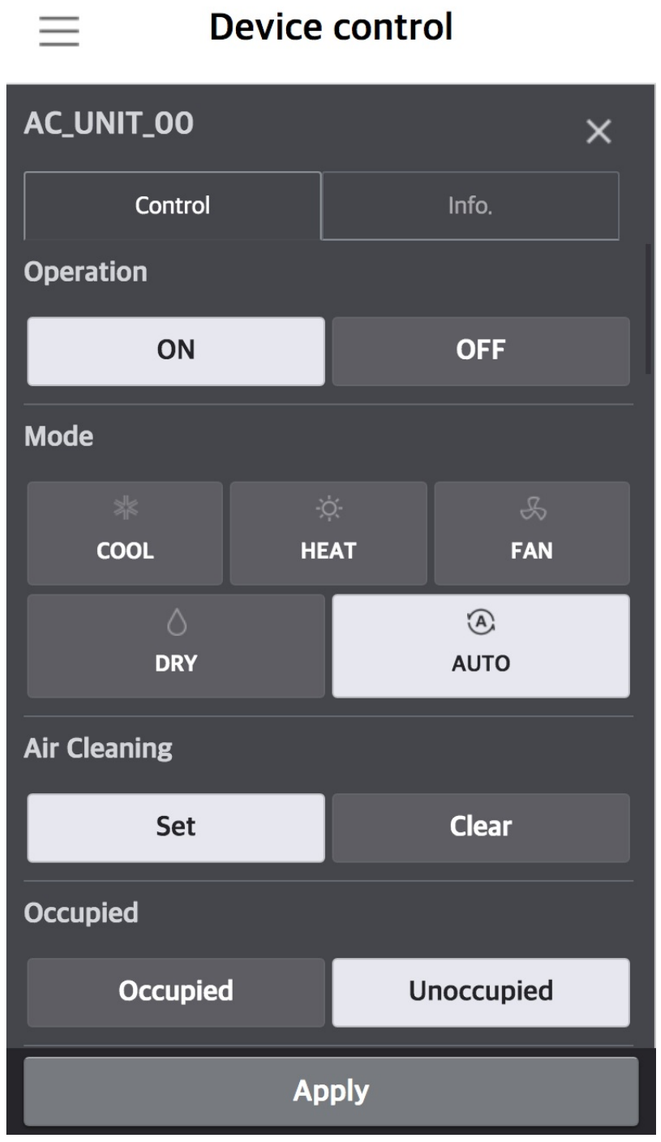
## Screen Structure and Function

1. In the left menu tab, click **[Control]** > **[Device Control]** menu.
   - The device control screen is displayed.

| No. | Category | Contents |
|---|---|---|
| ① | Group Information | Group name and group location |
| ② | Filtering | Device category filtering |
| ③ | Multi-select | Select multiple devices when it is clicked |
| ④ | Device section | Check the information of the devices set in the group |

## Control of Each Device

When a device is selected in the device section, control window is created as in the following screen. Through the control window, you can control the selected device.



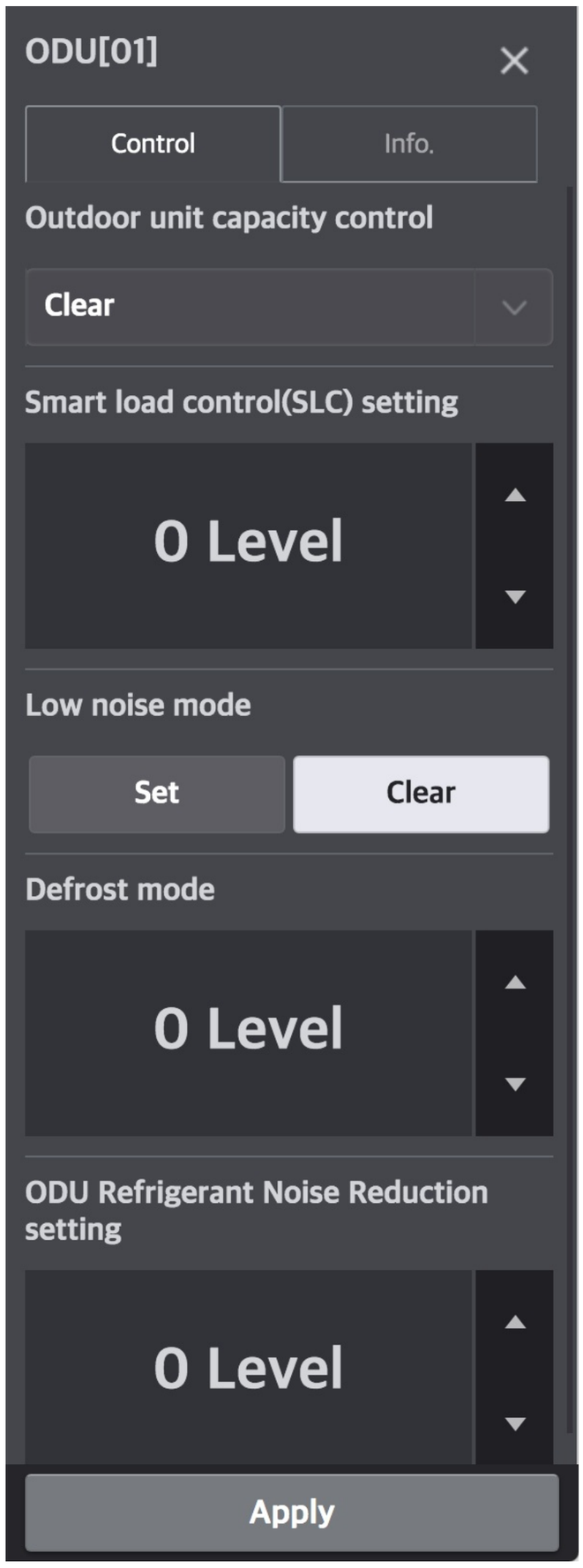

### Note

- The detail control boundary for each device may be different from the actual device, so make sure to refer to the corresponding device's manual.
- ACS I/O devices may have different control tool name, unit, upper limit, lower limit, etc. according to the setting.

## Detail controls for each device

- Outdoor Unit
- IDU
  IDU (2Set)
- ERV
- ERV DX
- Floor mounted vent
- Heating
- AHU
- Scroll chiller
- Screw chiller
- Turbo chiller
- Scroll Chiller Mini
- Absorption Chiller
- DOKIT
- DO
- AO
- Air purifier

## Outdoor Unit

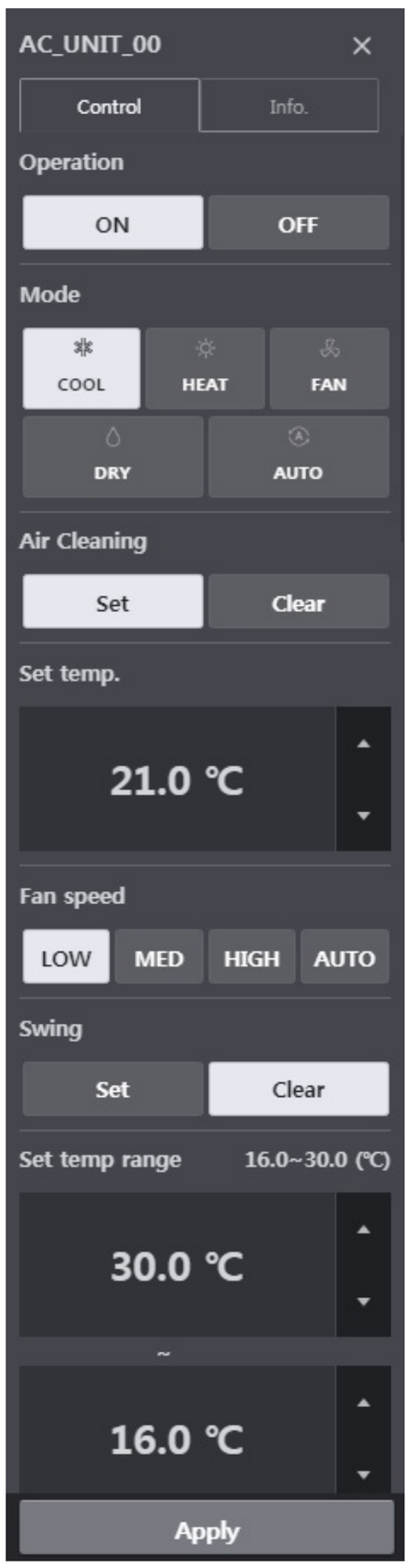


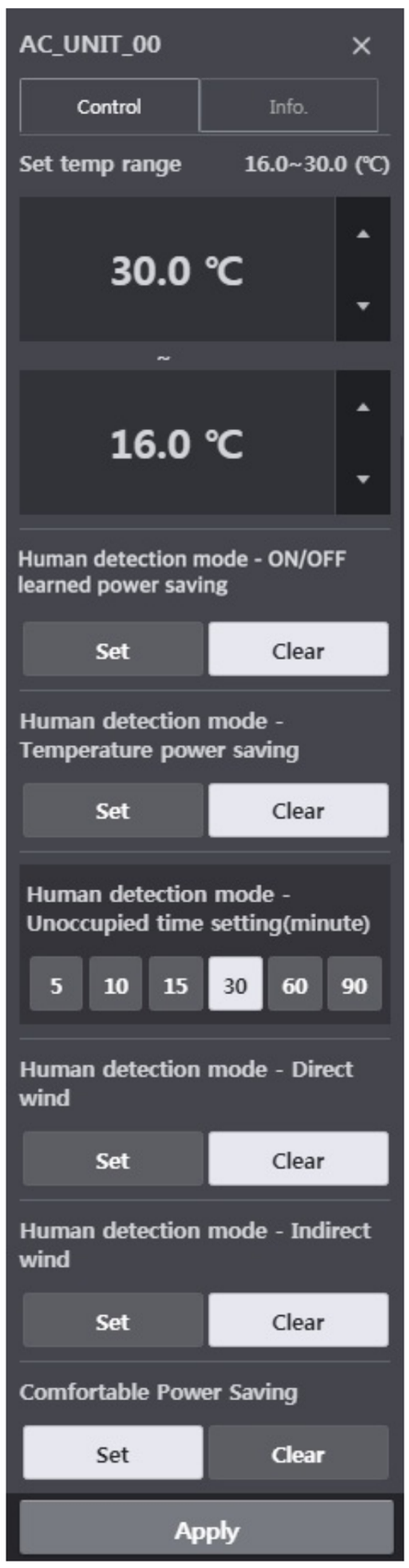

| Category | Contents |
|---|---|
| Outdoor unit capacity control | • Press **[▼]** button to set operation rate (%) |
| Smart load control function | • Press **[▲]/[▼]** button to set smart load control stage (0stage, 1stage, 2stage, 3stage, 4stage) |
| Low noise operation | • **[Set/Clear]** button: outdoor unit low noise operation Set/Clear |
| Defrost mode | • Press **[▲]/[▼]** button to set defrost mode stage (0stage, 1stage, 2stage, 3stage) |
| ODU Refrigerant Noise Reduction setting | • Press **[▲]/[▼]** button to set outdoor unit refrigerant noise reduction stage (0stage, 1stage, 2stage) |

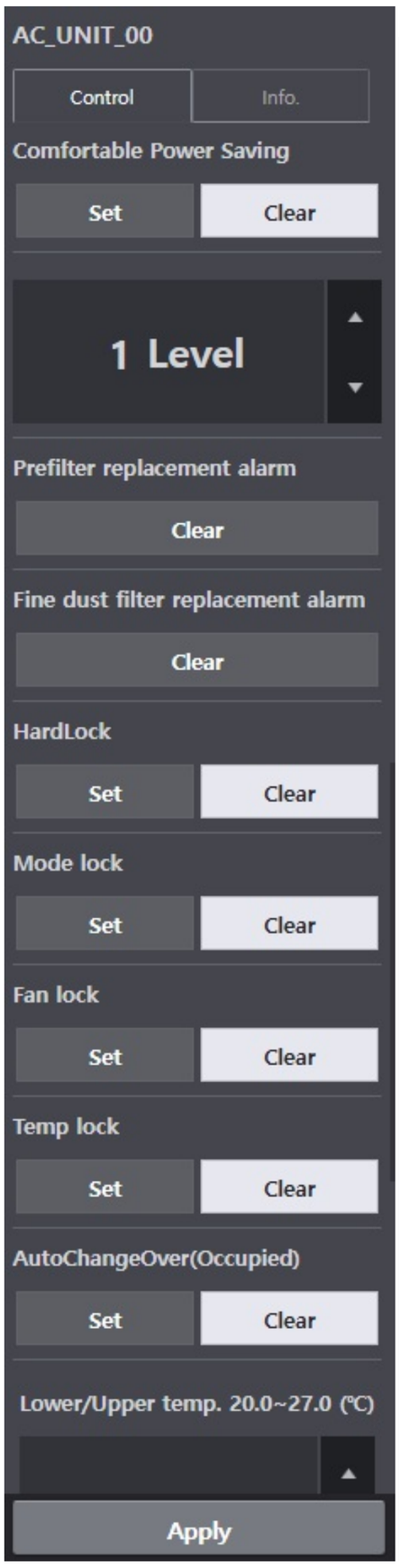
### Note

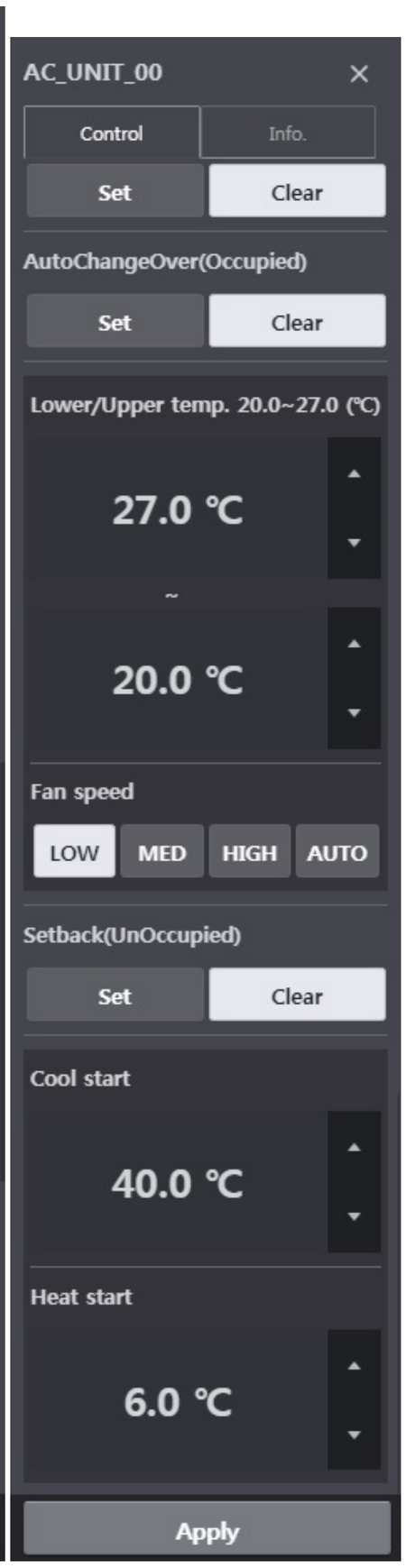
In the central controller, if 'outdoor unit low noise operation' is used, in the installed indoor unit's remote controller, you need to set [Installer setting] > [Low noise mode] to 'ODU'. (Default value 'ODU')

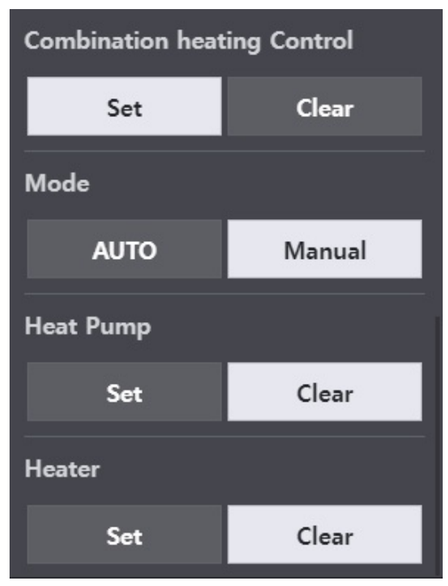
## IDU

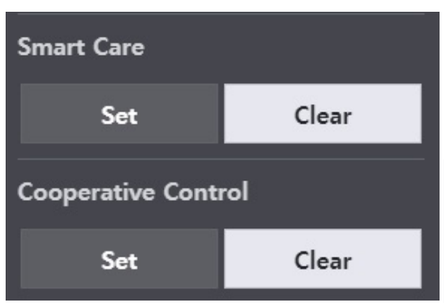


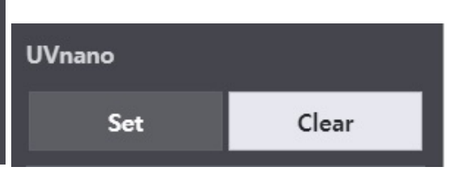



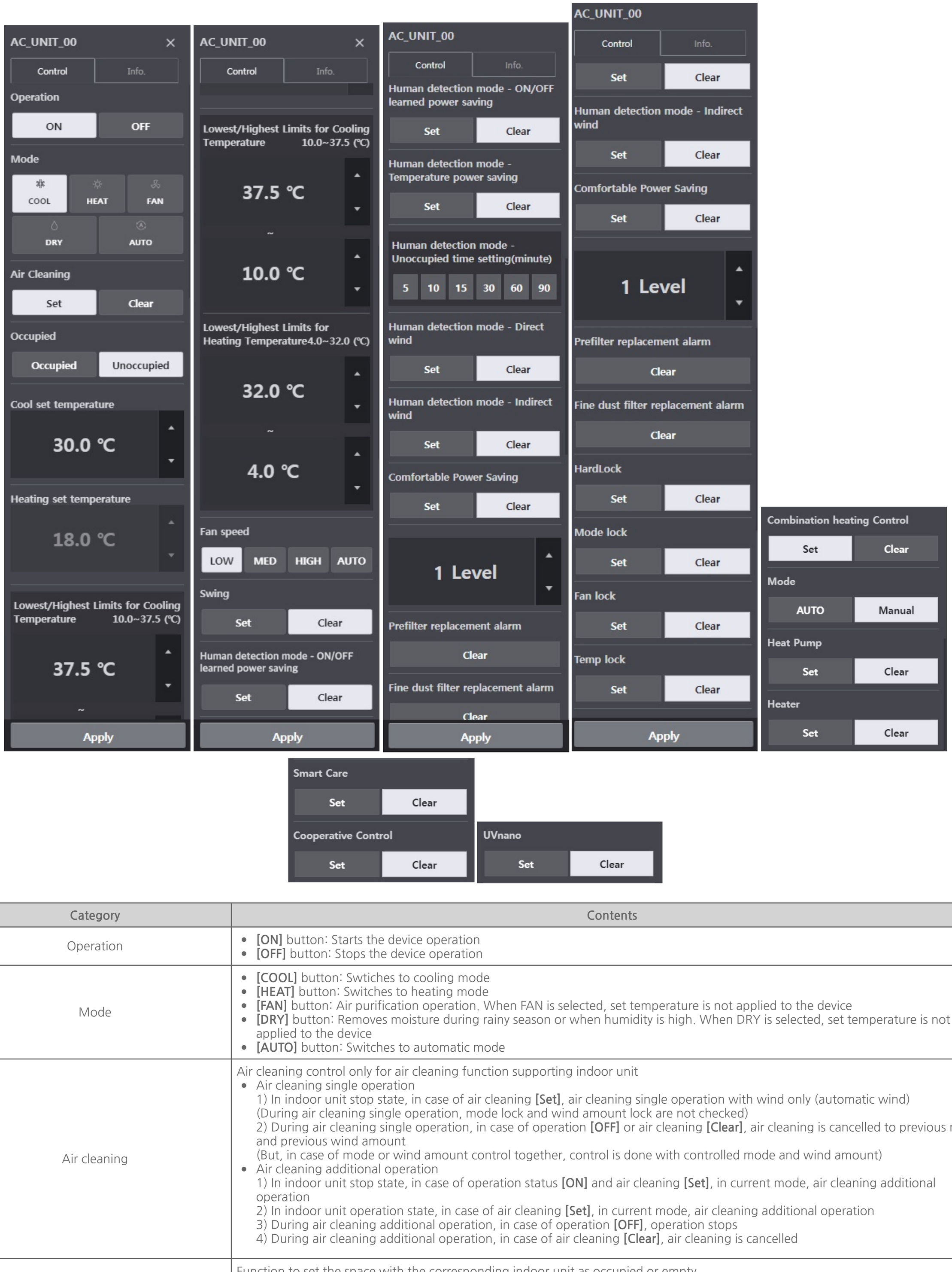




| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[COOL]** button: Swtiches to cooling mode<br>• **[HEAT]** button: Switches to heating mode<br>• **[FAN]** button: Air purification operation. When FAN is selected, set temperature is not applied to the device<br>• **[DRY]** button: Removes moisture during rainy season or when humidity is high. When DRY is selected, set temperature is not applied to the device<br>• **[AUTO]** button: Switches to automatic mode |
| Air cleaning | Air cleaning control only for air cleaning function supporting indoor unit<br>• Air cleaning single operation<br>1) In indoor unit stop state, in case of air cleaning **[Set]**, air cleaning single operation with wind only (automatic wind)<br>(During air cleaning single operation, mode lock and wind amount lock are not checked)<br>2) During air cleaning single operation, in case of operation **[OFF]** or air cleaning **[Clear]**, air cleaning is cancelled to previous mode and previous wind amount<br>(But, in case of mode or wind amount control together, control is done with controlled mode and wind amount)<br>• Air cleaning additional operation<br>1) In indoor unit stop state, in case of operation status **[ON]** and air cleaning **[Set]**, in current mode, air cleaning additional operation<br>2) In indoor unit operation state, in case of air cleaning **[Set]**, in current mode, air cleaning additional operation<br>3) During air cleaning additional operation, in case of operation **[OFF]**, operation stops<br>4) During air cleaning additional operation, in case of air cleaning **[Clear]**, air cleaning is cancelled |
| Set temperature | Press **[▲]/[▼]** button to set the desired temperature |
| Fan speed | Wind strength setting<br>• **[LOW]** button: Set the fan speed to slow<br>• **[MED]** button: Set the fan speed to normal<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[AUTO]** button: **[LOW]**-**[MED]**-**[HIGH]** automatic switching |
| Swing | • **[Set/Clear]** button: Set/Clear the Swing function |
| Set temp range | When user set the desired temperature individually, the desired temperature outside the designated temperature boundary cannot be set |

| | |
|---|---|
| Human detection mode - ON/OFF learned power saving | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - ON/OFF learned power saving Set/Clear |
| Human detection mode - Temperature power saving | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - temperature power saving Set/Clear |
| Human detection mode - Unoccupied time setting(minute) | Only for human detection mode - supporting indoor unit, human detection mode - control<br>Set empty decision time to 5, 10, 15, 30, 60, or 90 min. |
| Human detection mode - Direct wind | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - direct wind Set/Clear |
| Human detection mode - Indirect wind | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - indirect wind Set/Clear |
| Comfortable Power Saving | • **[Set/Clear]** button: Comfortable Power Saving function Set/Clear<br>• You can press **[▲]/[▼]** button to set stage<br>Only when indoor unit is in cooling operation, Comfortable Power Saving control is possible |
| Prefilter replacement alarm | • **[Clear]** button: In case of prefilter replacement alarm, it cancels prefilter replacement alarm |
| Fine dust filter replacement alarm | • **[Clear]** button: In case of fine dust filter replacement alarm, it cancels fine dust filter replacement alarm |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |
| Mode lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control mode setting with individual remote controller |
| Fan lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control Fan speed setting with individual remote controller |
| TempLock | • **[Set/Clear]** button: Set/clear lock so that user cannot control temperature setting with individual remote controller |
| Auto change over(Occupied) | It is a function to automatically switch to cooling operation if indoor temperature exceeds upper limit temperature, to heating operation if it is less than lower limit temperature, and to wind only operation if it is between upper limit temperature and lower limit temperature (supported only in outdoor unit with both cooling/heating)<br>• **[Set/Clear]** button: Set/clear Auto change over(Occupied) |
| Lower /Upper temp. | Auto change over(Occupied)'s lower limit temperature and upper limit temperature setting |
| Auto change over(Occupied) Fan speed | Select the Fan speed value to set in the indoor unit during Auto change over(Occupied) operation<br>• **[LOW]** button: Set the fan speed to slow<br>• **[MED]** button: Set the fan speed to normal<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[AUTO]** button: **[LOW]**-**[MED]**-**[HIGH]** automatic switching |
| Setback(UnOccupied) | Function to maintain the temperature of the space where the device is installed in certain boundary (Only supported by cooling/heating simultaneous type outdoor unit)<br>• **[Set/Clear]** button: Set/clear the Setback(UnOccupied) |
| Cool start | Press **[▲]/[▼]** button to set the cooling operation start temperature(21˚C~40˚C) |
| Heat start | Press **[▲]/[▼]** button to set the heating operation start temperature(1˚C~20˚C) |
| Combination heating control | (Supported for certain indoor and outdoor units only)<br>**[Set/Clear]** button : Activates/deactivates control based on outdoor temperature. |
| Mode | It is activated only when combination heating control is set.<br>• **[AUTO]** button : Sets the control mode to auto.<br>• **[Manual]** button : Sets the control mode to manual.<br>You can activate/deactivate control of the heat pump and the heater. You cannot deactivate control of both the heat pump and the heater. |
| Temp. 1 | It is activated only in the auto mode.<br>You can set Temp. 1 for the outdoor temperatures. According to the set temperatures, the heat pump and the heater operate automatically.<br>Press **[▲]/[▼]** to set Temp. 1 (-23℃-16℃). |
| Temp. 2 | It is activated only in the auto mode.<br>You can set Temp. 2 for the outdoor temperatures. According to the set temperatures, the heat pump and the heater operate automatically.<br>Press **[▲]/[▼]** to set Temp. 2 (-23℃-51℃). |
| Heat pump | It is activated only in the manual mode.<br>**[Set/Clear]** button : Activates/Deactivates heat pump control. |
| Heater | It is activated only in the manual mode.<br>**[Set/Clear]** button : Activates/deactivates heater control. |
| Smart Care | Activated only when an AI controller is connected<br>**[Set/Clear]** button: Activate/Deactivate Smart Care |
| Cooperative control | Activated only when an AI controller is connected<br>**[Set/Clear]** button: Activate/Deactivate cooperative control |
| UVnano | Only for UVnano mode - supporting indoor unit, UVnano mode - control<br>**[Set/Clear]** button: Activate/Deactivate UVnano |

## IDU (2Set)

When 2Set function supporting outdoor unit/indoor unit/remote controller are used and in **[Setting] > [Installing]**, if ACP''s 2Set automatic mode is selected as **IDU**, indoor unit 2Set control window is generated on the right side as in the following screen.




| Category | Contents |
|---|---|
| Operation | • **[ON]** button: Starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[COOL]** button: Swtiches to cooling mode<br>• **[HEAT]** button: Switches to heating mode<br>• **[FAN]** button: Air purification operation. When FAN is selected, set temperature is not applied to the device<br>• **[DRY]** button: Removes moisture during rainy season or when humidity is high. When DRY is selected, set temperature is not applied to the device<br>• **[AUTO]** button: Switches to automatic mode |
| Air cleaning | Air cleaning control only for air cleaning function supporting indoor unit<br>• Air cleaning single operation<br>1) In indoor unit stop state, in case of air cleaning **[Set]**, air cleaning single operation with wind only (automatic wind)<br>(During air cleaning single operation, mode lock and wind amount lock are not checked)<br>2) During air cleaning single operation, in case of operation **[OFF]** or air cleaning **[Clear]**, air cleaning is cancelled to previous mode and previous wind amount<br>(But, in case of mode or wind amount control together, control is done with controlled mode and wind amount)<br>• Air cleaning additional operation<br>1) In indoor unit stop state, in case of operation status **[ON]** and air cleaning **[Set]**, in current mode, air cleaning additional operation<br>2) In indoor unit operation state, in case of air cleaning **[Set]**, in current mode, air cleaning additional operation<br>3) During air cleaning additional operation, in case of operation **[OFF]**, operation stops<br>4) During air cleaning additional operation, in case of air cleaning **[Clear]**, air cleaning is cancelled |
| Occupancy | Function to set the space with the corresponding indoor unit as occupied or empty<br>• **[Occupied]** button: occupied setting<br>• **[Unoccupied]** button: empty setting |
| Cooling set temperature | Press **[▲]/[▼]** button to set cooling set temperature |

| | |
|---|---|
| Heating setting temperature | Press **[▲]/[▼]** button to set heating set temperature |
| Cooling lower limit/upper limit temperature | Cooling lower limit temperature and upper limit temperature setting |
| Heating lower limit/upper limit temperature | Heating lower limit temperature and upper limit temperature setting |
| Fan speed | Wind strength setting<br>• **[LOW]** button: Set the fan speed to slow<br>• **[MED]** button: Set the fan speed to normal<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[AUTO]** button: **[LOW]**-**[MED]**-**[HIGH]** automatic switching |
| Swing | • **[Set/Clear]** button: Set/Clear the Swing function |
| Human detection mode - ON/OFF learned power saving | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - ON/OFF learned power saving Set/Clear |
| Human detection mode - Temperature power saving | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - temperature power saving Set/Clear |
| Human detection mode - Unoccupied time setting(minute) | Only for human detection mode - supporting indoor unit, human detection mode - control<br>Set empty decision time to 5, 10, 15, 30, 60, or 90 min. |
| Human detection mode - Direct wind | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - direct wind Set/Clear |
| Human detection mode - Indirect wind | Only for human detection mode - supporting indoor unit, human detection mode - control<br>• **[Set/Clear]** button: human detection mode - indirect wind Set/Clear |
| Comfortable Power Saving | • **[Set/Clear]** button: Comfortable Power Saving function Set/Clear<br>• You can press **[▲]/[▼]** button to set stage<br>Only when indoor unit is in cooling operation, Comfortable Power Saving control is possible |
| Prefilter replacement alarm | • **[Clear]** button: In case of prefilter replacement alarm, it cancels prefilter replacement alarm |
| Fine dust filter replacement alarm | • **[Clear]** button: In case of fine dust filter replacement alarm, it cancels fine dust filter replacement alarm |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |
| Mode lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control mode setting with individual remote controller |
| Fan lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control Fan speed setting with individual remote controller |
| TempLock | • **[Set/Clear]** button: Set/clear lock so that user cannot control temperature setting with individual remote controller |
| Combination heating control | (Supported for certain indoor and outdoor units only)<br>**[Set/Clear]** button : Activates/deactivates control based on outdoor temperature. |
| Mode | It is activated only when combination heating control is set.<br>• **[AUTO]** button : Sets the control mode to auto.<br>• **[Manual]** button : Sets the control mode to manual.<br>You can activate/deactivate control of the heat pump and the heater. You cannot deactivate control of both the heat pump and the heater. |
| Temp. 1 | It is activated only in the auto mode.<br>You can set Temp. 1 for the outdoor temperatures. According to the set temperatures, the heat pump and the heater operate automatically.<br>• Press **[▲]/[▼]** to set Temp. 1 (-23℃-16℃). |
| Temp. 2 | It is activated only in the auto mode.<br>You can set Temp. 2 for the outdoor temperatures. According to the set temperatures, the heat pump and the heater operate automatically.<br>• Press **[▲]/[▼]** to set Temp. 2 (-23℃-51℃). |
| Heat pump | It is activated only in the manual mode.<br>• **[Set/Clear]** button : Activates/Deactivates heat pump control. |
| Heater | It is activated only in the manual mode.<br>• **[Set/Clear]** button : Activates/deactivates heater control. |
| Smart Care | Activated only when an AI controller is connected<br>**[Set/Clear]** button: Activate/Deactivate Smart Care |
| Cooperation control | Activated only when an AI controller is connected<br>**[Set/Clear]** button: Activate/Deactivate cooperation control |
| UVnano | Only for UVnano mode - supporting indoor unit, UVnano mode - control<br>**[Set/Clear]** button: Activate/Deactivate UVnano |

## Note

2set automatic mode

- Only with 2Set automatic mode supporting indoor/outdoor air, the corresponding function can be used. (For whether each device supports 2Set, please refer to the manual of the corresponding device.)
- Override is a function that can be set from remote controller. For override function related contents, please refer to remote controller manual.
- In 2Set automatic mode, along with Auto icon, product's actual operation mode (cooling, heating) status is displayed.

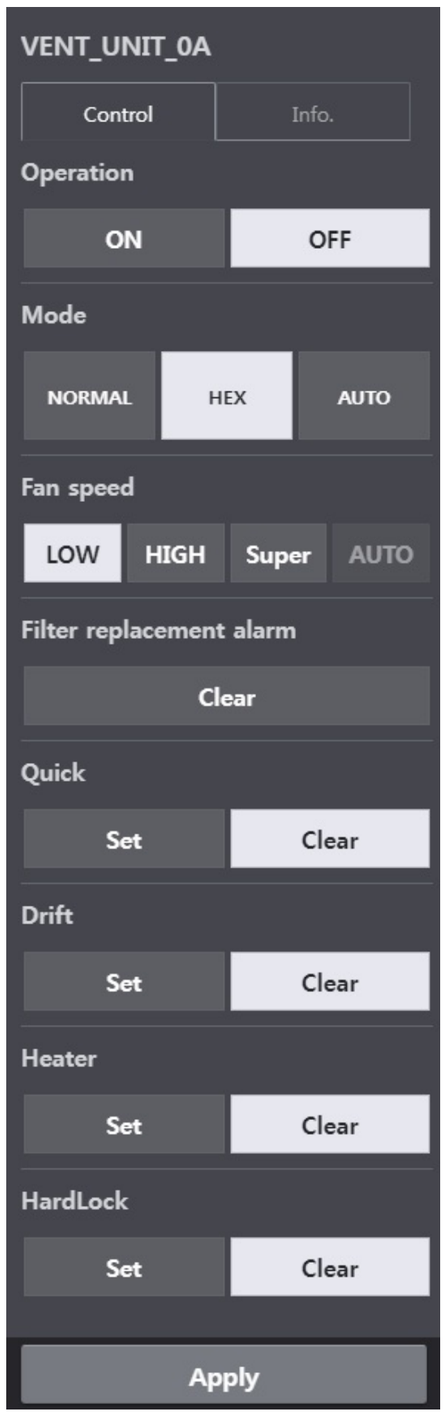
Occupancy

- If occupancy sensor is interlinked to indoor unit, setting from the central control has priority over the corresponding occupancy sensor. For occupancy sensor related contents, please refer to indoor unit or Dry Contact manual.
- When occupied setting is changed, automatically set cooling set temperature and heating set temperature are the most recently run schedule's cooling set temperature and heating set temperature, and if there is no previously run schedule, it is set to default value.

  (Example)
  09:00 - 12:00: occupied / cooling set temperature 27°C / heating set temperature 18°C
  12:00 - 13:00: occupied / cooling set temperature 29°C / heating set temperature 16°C
  13:00 - 15:00: occupied / cooling set temperature 26°C / heating set temperature 19°C

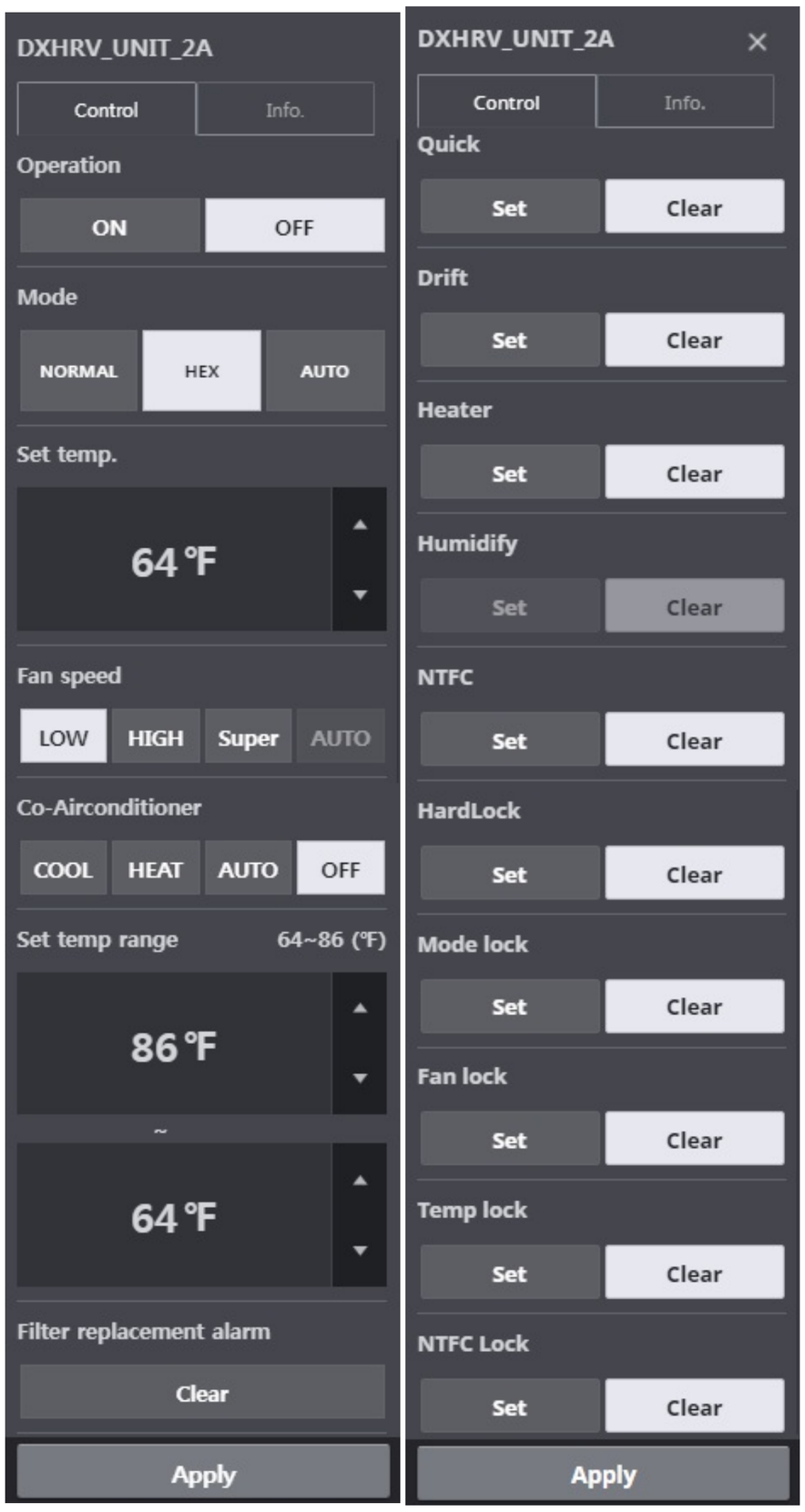
  If it is empty without schedule after 15:00, cooling set temperature is 29°C and heating set temperature is 16°C, and if it is occupied, cooling set temperature becomes 26°C and heating set temperature becomes 19°C.

# ERV



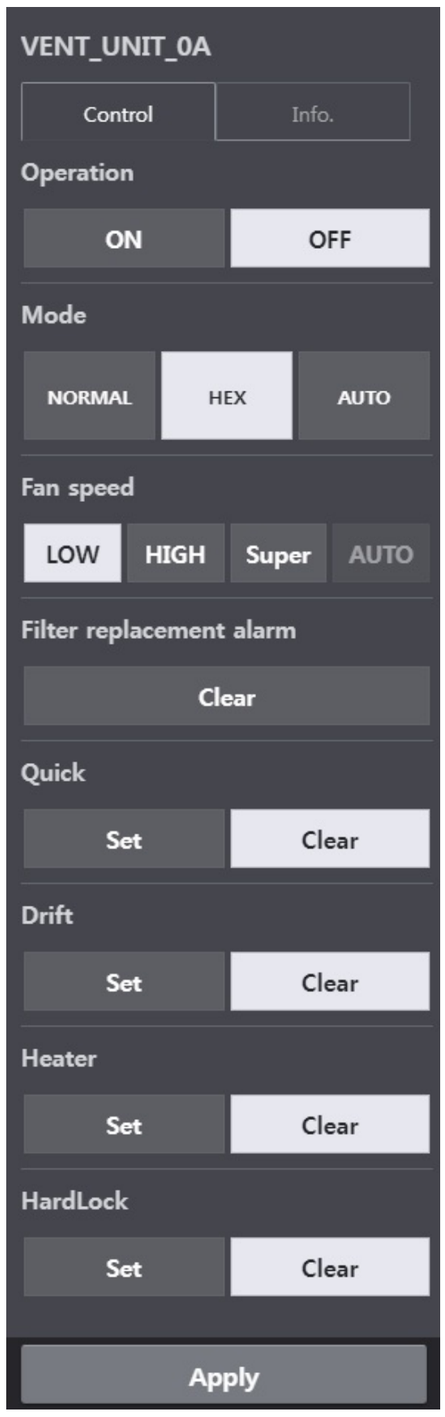

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[NORMAL]** button: Discharged air ventilates without going trough the electric heat exchanger<br>• **[HEX]** button: Both air supply/discharge ventilates through the electric heat exchanger<br>• **[AUTO]** button: Switches to four seasons mode |
| Fan speed | Wind strength setting<br>• **[LOW]** button: Set the fan speed to slow<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[SUPER]** button: Set the fan speed to Max. speed<br>• **[AUTO]** button: **[LOW]**-**[HIGH]**-**[SUPER]** automatic switching<br>- User setting is impossible<br>- When Drift/Quick is set, **[AUTO]** Fan speed is selected<br>- When Drift/Quick is cleared, **[HIGH]** Fan speed is selected<br>- During **[AUTO]** operation, when **[LOW]/[HIGH]/[SUPER]** is selected, Drift/Quick function in operation is cleared |
| Filter replacement alarm | • **[Clear]** button: in case of filter replacement alarm, it cancels filter replacement alarm |
| Additional function | • Quick **[Set/Clear]** button: Set/clear Quick function (When Quick function is selected, Drift function is cleared)<br>• Drift **[Set/Clear]** button: Set/clear Drift function (When Drift function is selected, Quick function is cleared)<br>• Heater **[Set/Clear]** button: Set/clear heater function |
| Midnight air cooling(NTFC) | • **[Set/Clear]** button: Set/Clear Midnight air cooling(NTFC) function that can outdoor unit cooling when outdoor temperature is lower than the base temperature at night time |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |

# ERV DX



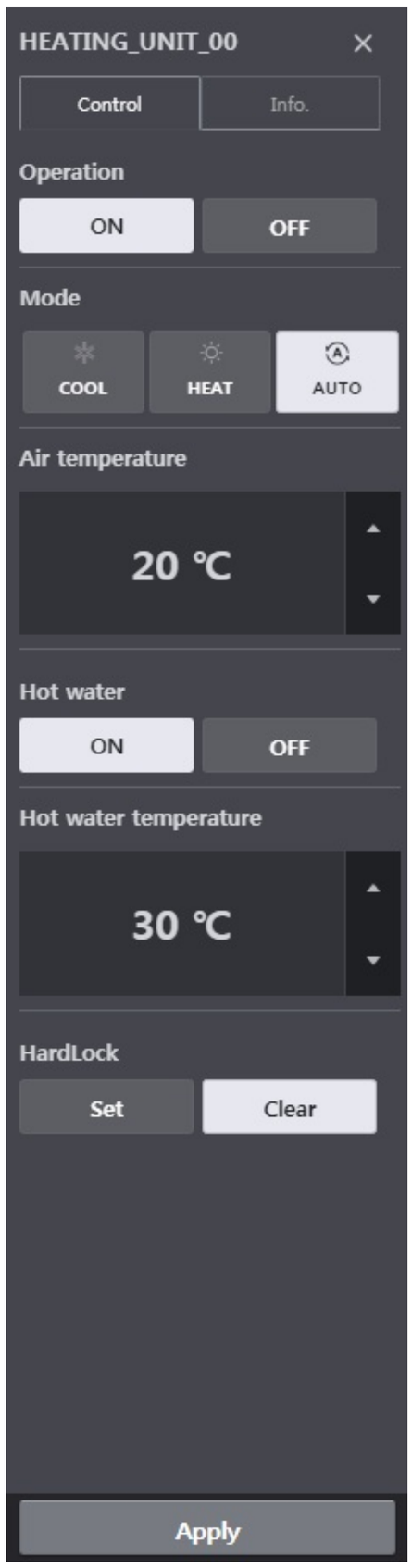

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[NORMAL]** button: Discharged air ventilates without going trough the electric heat exchanger<br>• **[HEX]** button: Both air supply/discharge ventilates through the electric heat exchanger<br>• **[AUTO]** button: Switches to four seasons mode |
| Set temperature | Press **[▲]/[▼]** button to set the desired temperature |
| Fan speed | Wind strength setting<br>• **[LOW]** button: Set the fan speed to slow<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[SUPER]** button: Set the fan speed to Max. speed<br>• **[AUTO]** button: **[LOW]**-**[HIGH]**-**[SUPER]** automatic switching<br>- User setting is impossible<br>- When Drift/Quick is set, **[AUTO]** Fan speed is selected<br>- When Drift/Quick is cleared, **[HIGH]** Fan speed is selected<br>- During **[AUTO]** operation, when **[LOW]/[HIGH]/[SUPER]** is selected, Drift/Quick function in operation is cleared |
| Air conditioner | • **[COOL]** button: Operates the ERV DX in cooling mode<br>• **[AUTO]** button: Operates the ERV DX in auto mode<br>• **[HEAT]** button: Operates the ERV DX as heating mode<br>• **[OFF]** button: Stops the air conditioner of the ERV DX |
| Set temp range | When user set the desired temperature individually, the desired temperature outside the designated temperature boundary cannot be set |
| Filter replacement alarm | • **[Clear]** button: in case of filter replacement alarm, it cancels filter replacement alarm |
| Additional function | • Quick **[Set/Clear]** button: Set/clear Quick function (When Quick function is selected, Drift function is cleared)<br>• Drift **[Set/Clear]** button: Set/clear Drift function (When Drift function is selected, Quick function is cleared)<br>• Heater **[Set/Clear]** button: Set/clear heater function<br>• Humidify **[Set]** button: Set Humidify function (only for air conditioner heating mode) |
| Midnight air cooling(NTFC) | • **[Set/Clear]** button: Set/Clear Midnight air cooling(NTFC) function that can outdoor unit cooling when outdoor temperature is lower than the base temperature at night time |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |
| Mode lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control mode setting with individual remote controller |
| Fan lock | • **[Set/Clear]** button: Set/clear lock so that user cannot control Fan speed setting with individual remote controller |
| TempLock | • **[Set/Clear]** button: Set/clear lock so that user cannot control temperature setting with individual remote controller |
| Midnight air cooling(NTFC) lock | • **[Set/Clear]** button: Set/Clear Midnight air cooling(NTFC) schedule set in the remote controller |

## Floor mounted vent



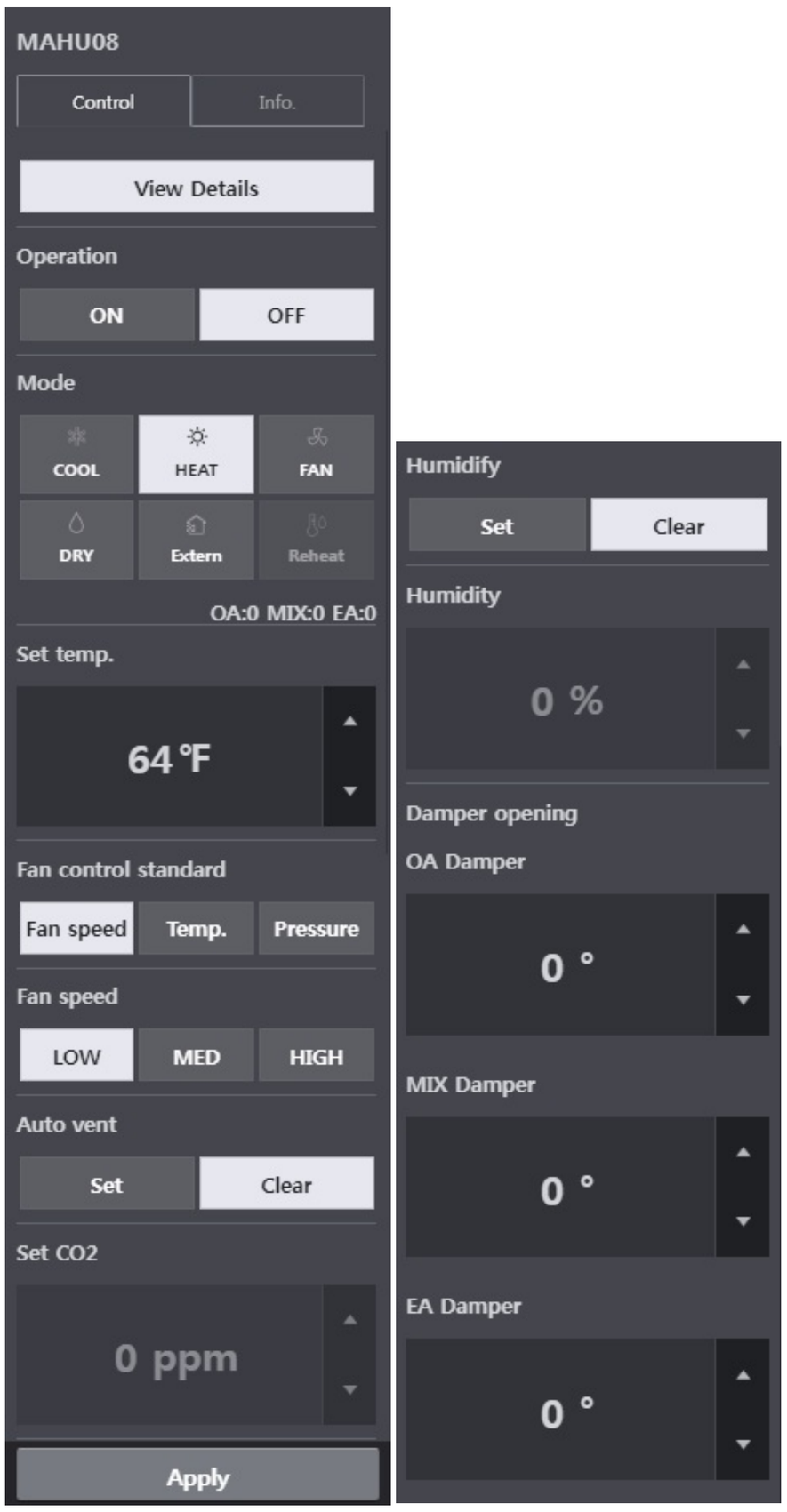

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[NORMAL]** button: Discharged air ventilates without going trough the electric heat exchanger<br>• **[HEX]** button: Both air supply/discharge ventilates through the electric heat exchanger<br>• **[AUTO]** button: Switches to four seasons mode |
| Fan speed | Wind strength setting<br>• **[LOW]** button: Set the fan speed to slow<br>• **[HIGH]** button: Set the fan speed to fast<br>• **[SUPER]** button: Set the fan speed to Max. speed<br>• **[AUTO]** button: **[LOW]**-**[HIGH]**-**[SUPER]** automatic switching<br>- User setting is impossible<br>- When Drift/Quick is set, **[AUTO]** Fan speed is selected<br>- When Drift/Quick is cleared, **[HIGH]** Fan speed is selected<br>- During **[AUTO]** operation, when **[LOW]/[HIGH]/[SUPER]** is selected, Drift/Quick function in operation is cleared |
| Filter replacement alarm | • **[Clear]** button: in case of filter replacement alarm, it cancels filter replacement alarm |
| Additional function | • Quick **[Set/Clear]** button: Set/clear Quick function (When Quick function is selected, Drift function is cleared)<br>• Drift **[Set/Clear]** button: Set/clear Drift function (When Drift function is selected, Quick function is cleared)<br>• Heater **[Set/Clear]** button: Set/clear heater function |
| Midnight air cooling(NTFC) | • **[Set/Clear]** button: Set/Clear Midnight air cooling(NTFC) function that can outdoor unit cooling when outdoor temperature is lower than the base temperature at night time |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |

## Heating




| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[COOL]** button: Swtiches to cooling mode<br>• **[HEAT]** button: Switches to heating mode<br>• **[AUTO]** button: Switches to automatic mode |
| Air/Water in/out temperature | Press **[▲]/[▼]** button to set Air/Water in/out temperature<br><br>It is displayed based on the set temperature selected in **[Setting]-[Installing]**<br>• When **[Water in/out]** is selected, it is displayed as water in/out temperature<br>• When **[indoor]** is selected, it is displayed as air temperature |
| Hot water | • **[ON]** button: Starts hot water operation<br>- If hot water is operated while the device is in automatic/cooling operation, the corresponding mode and hot water are displayed in the icon of the contents display section<br>- If hot water is operated while the device is stopped, the icon in the contents display section is enabled, and hot water is displayed<br>• **[OFF]** button: Stops hot water operation |
| Hot water temperature | Press **[▲]/[▼]** button to set hot water temperature |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |

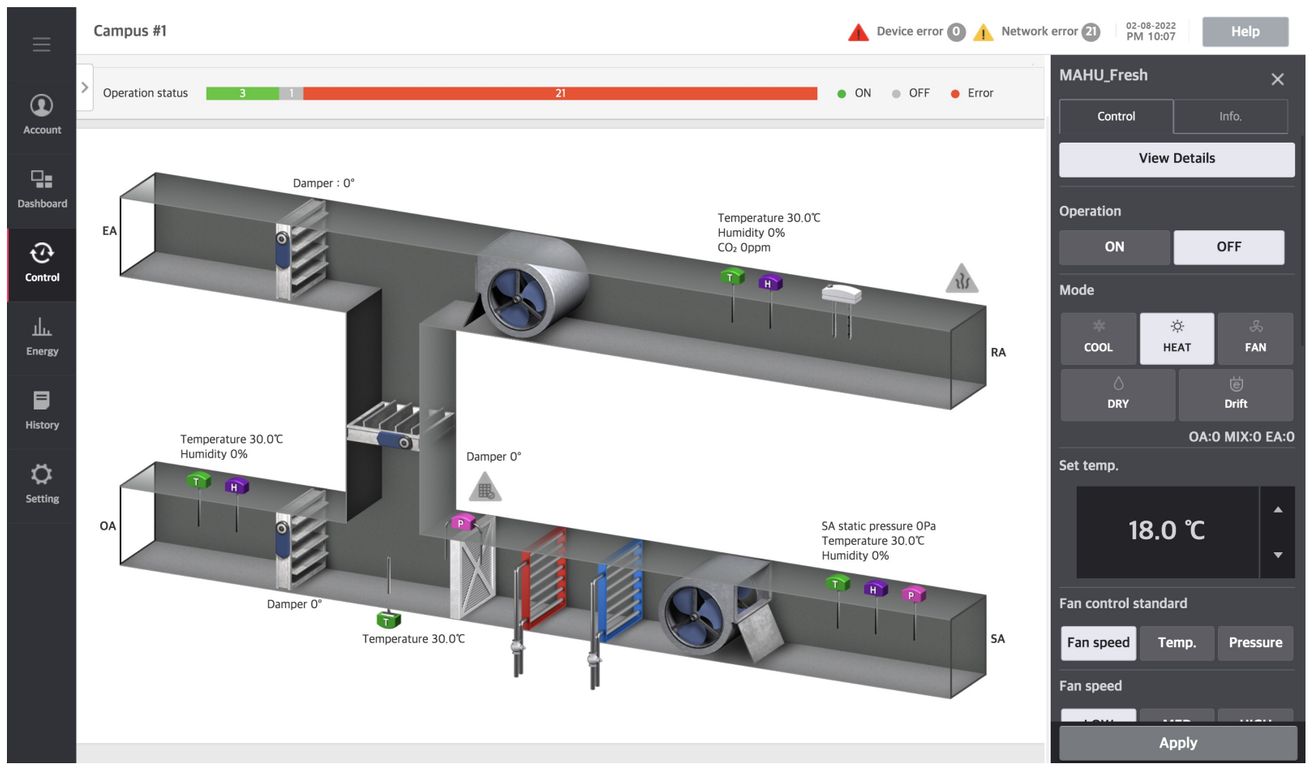
# AHU




| Category | Contents |
|---|---|
| View Details | Press **[View Details]** button to check detail information (But, mobile is excluded) |
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | • **[COOL]** button: Swtiches to cooling mode<br>• **[HEAT]** button: Switches to heating mode<br>• **[FAN]** button: Air purification operation. When FAN is selected, you cannot set the desired temperature<br>• **[DRY]** button: Removes moisture in rainy season or when humidity is high. When DRY is selected, you cannot set the desired temperature<br>• **[Drift]** button: Operation to find the operation point with the best ventilation system efficiency to save power consumption. It fluently discharges the contaminated indoor air by having bigger discharger Fan speed than air supply<br>• **[Reheat]** button : Maintains a constant temperature and humidity while the cooling/heating function is active. (Available only when the AHU reheat coil is in use.) |
| Set temperature | Press **[▲]/[▼]** button to set the temperature |
| Fan control standard | • **[Fan speed]** button: Controls the fan based on Fan speed status<br>• **[Temp]** button: Controls the fan based on temperature status<br>• **[Pressure]** button: Controls the fan based on Pressure status |
| Fan speed | It is displayed only when fan control standard is Fan speed<br>• **[LOW]** button: Set the fan speed to slow<br>• **[MED]** button: Set the fan speed to normal<br>• **[HIGH]** button: Set the fan speed to fast |
| Automatic ventilation | It is displayed only when the additional function's automatic ventilation or automatic ventilation and Humidify are selected during AHU device registration<br>• Automatic ventilation **[Set/Clear]** button: Starts/stops automatic ventilation |
| Set $CO_2$ | It is enabled only when automatic ventilation function is set<br>Press **[▲]/[▼]** button to set in the unit of 100ppm within 100 ppm ~ 2 000 ppm range |
| Humidify | It is displayed only when the addtitional function's Humidify or automatic ventilation and Humidify are selected during AHU device registration<br>• Humidify **[Set/Clear]** button: Starts/stops Humidify function |
| Humidity | It is enabled only when Humidify function is set<br>Press **[▲]/[▼]** button to set the target humidity |
| Damper opening | • Press **[OA Damper]** : **[▲]/[▼]** button to set the outdoor unit air damper opening value in the unit of 1 º within 0 º ~ 90 º range<br>• Press **[MIX Damper]** : **[▲]/[▼]** button to set the mixer damper opening value in the unit of 1 º within 0 º ~ 90 º range<br>• Press **[EA Damper]** : **[▲]/[▼]** button to set the air discharge damper opening value in the unit of 1 º within 0 º ~ 90 º range<br><br>When you set **[Setting]-[system setting]'s Apply damper opening formula** as **set**, it operates as OA Damper = EA Damper, OA Damper = MIX Damper = 90 |
| HardLock | • **[Set/Clear]** button: Set/clear HardLock so that user cannot control any function with individual remote controller |

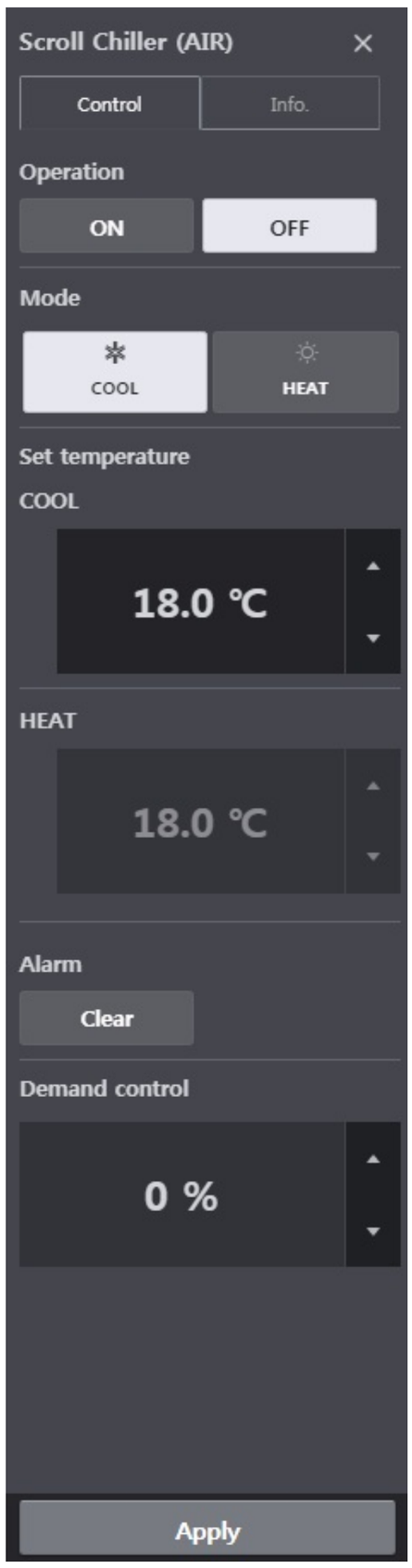
# View AHU in detail

In AHU's control screen, you can press **[View Details]** button to check detail information.



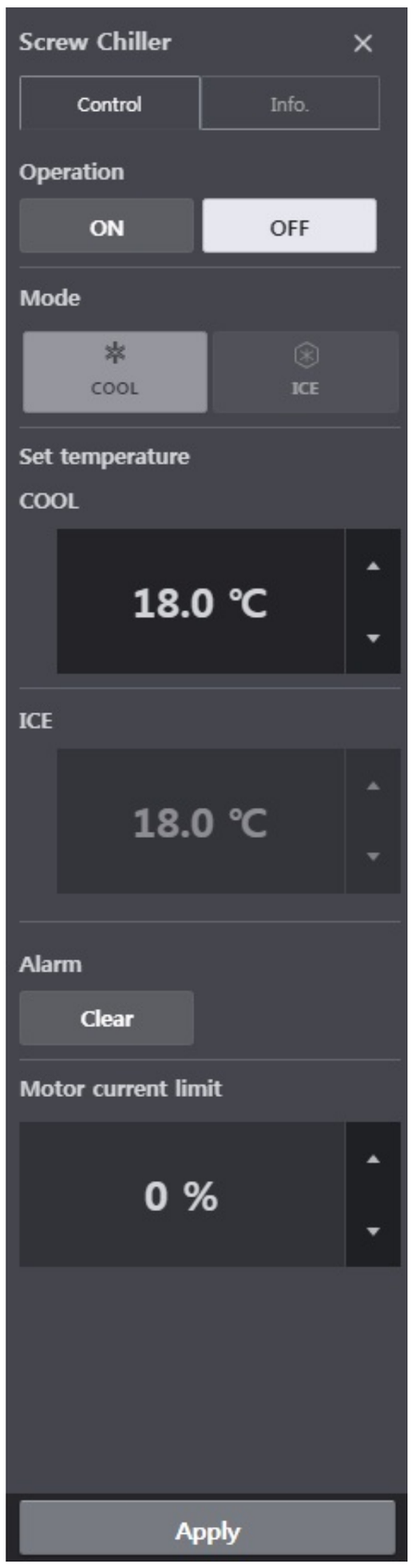

- SPLIT DOAS

## Scroll chiller



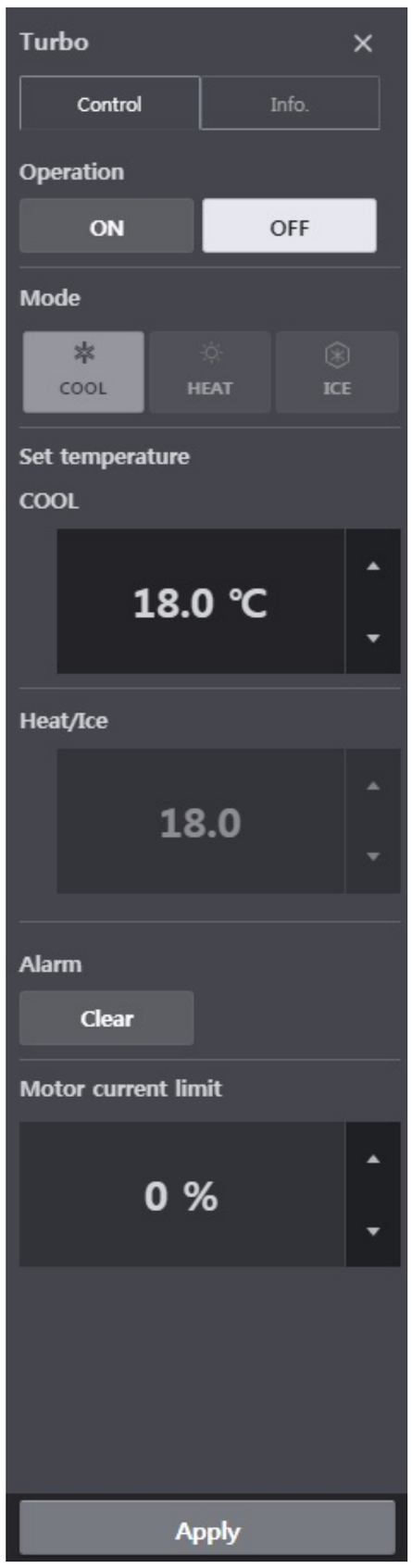

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | (It is displayed only when device supports the corresponding mode)<br>• **[COOL]** button: Swtiches to cooling mode<br>• **[HEAT]** button: Switches to heating mode |
| Set temperature | Set the load water out temperature for indoor cooling/heating<br>Press **[▲]/[▼]** button to set the temperature of cooling mode and heating mode |
| Alarm | **[Clear]** button: Clears Chiller alarm in case of Chiller alarm |
| Demand control | Press **[▲]/[▼]** button to set demand limit ratio |

# Screw chiller



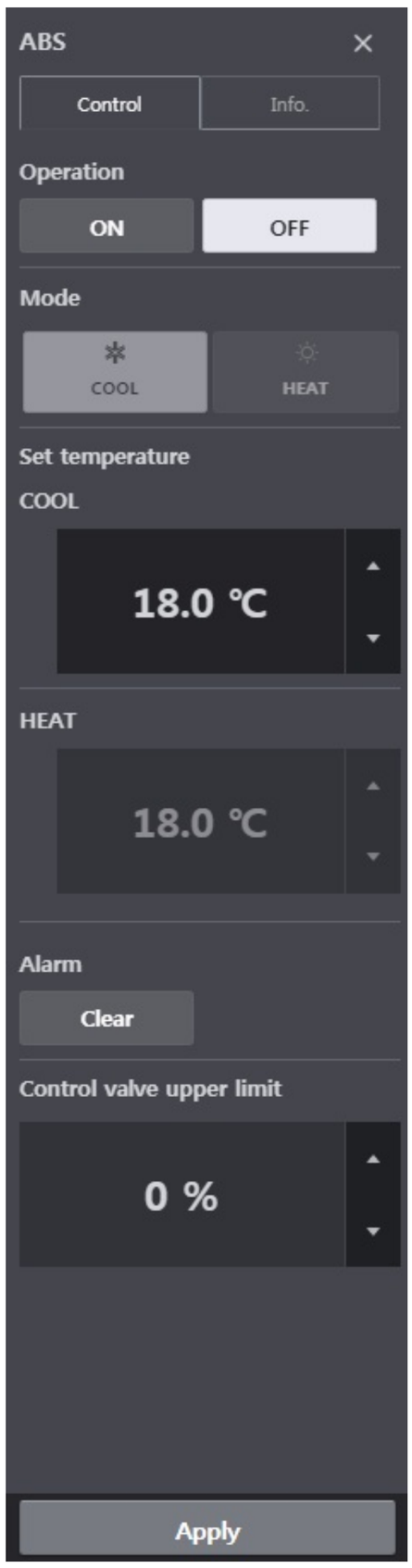

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | Mode control is impossible. Controls monitored operation mode's set temperature |
| Set temperature | Set the load water out temperature for indoor cooling/ice making<br>Press **[▲]/[▼]** button to set the temperature of cooling mode and ice making mode |
| Alarm | **[Clear]** button: Clears Chiller alarm in case of Chiller alarm |
| Motor current limit | Press **[▲]/[▼]** button to set motor current limit ratio |

# Turbo chiller



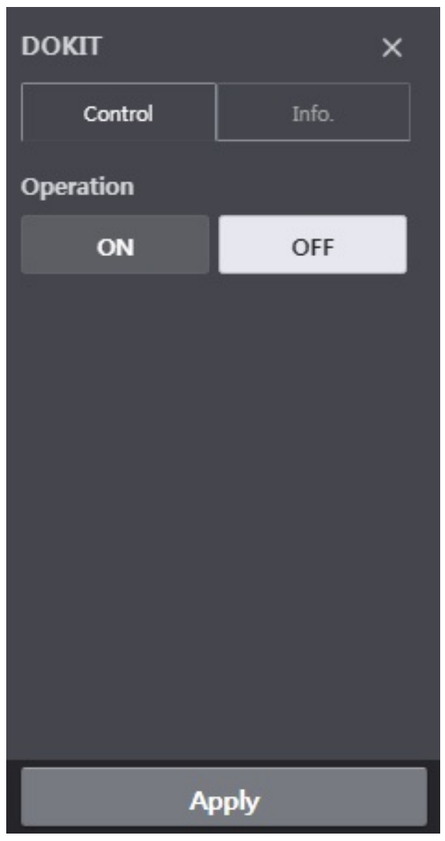

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | Mode control is impossible. Controls monitored operation mode's set temperature |
| Set temperature | Set the load water out temperature for indoor cooling/heating/ice making<br>Press **[▲]/[▼]** button to set the temperature of cooling mode and heating/ice making mode |
| Alarm | **[Clear]** button: Clears Chiller alarm in case of Chiller alarm |
| Motor current limit | Press **[▲]/[▼]** button to set motor current limit ratio |

# Absorption Chiller



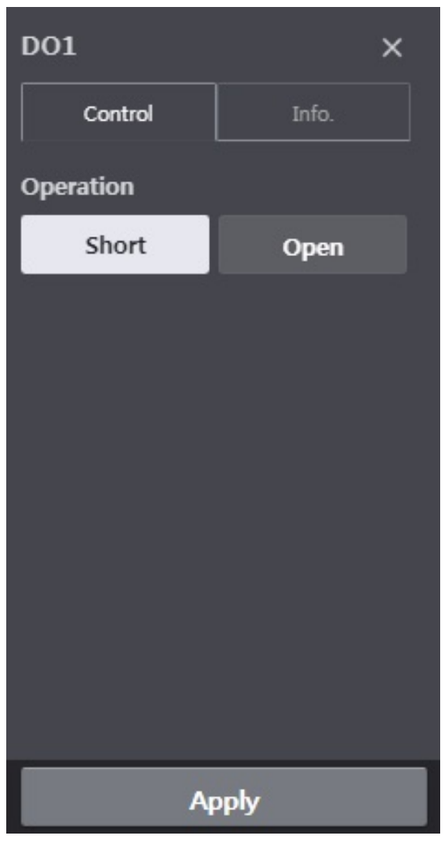

| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |
| Mode | Mode control is impossible. Controls monitored operation mode's set temperature |
| Set temperature | Set the load water out temperature for indoor cooling/heating<br>Press **[▲]/[▼]** button to set the temperature of cooling mode and heating mode |
| Alarm | **[Clear]** button: Clears Chiller alarm in case of Chiller alarm |
| Control valve upper limit | Press **[▲]/[▼]** button to set the control valve upper limit ratio |

# DOKIT




| Category | Contents |
|---|---|
| Operation | • **[ON]** button: starts the device operation<br>• **[OFF]** button: Stops the device operation |

## DO




| Category | Contents |
|---|---|
| Operation | • **[Short]** button: Short signal output<br>• **[Open]** button: Open signal output |

# AO

| Category | Contents |
|---|---|
| Temperature | Set temperature value |

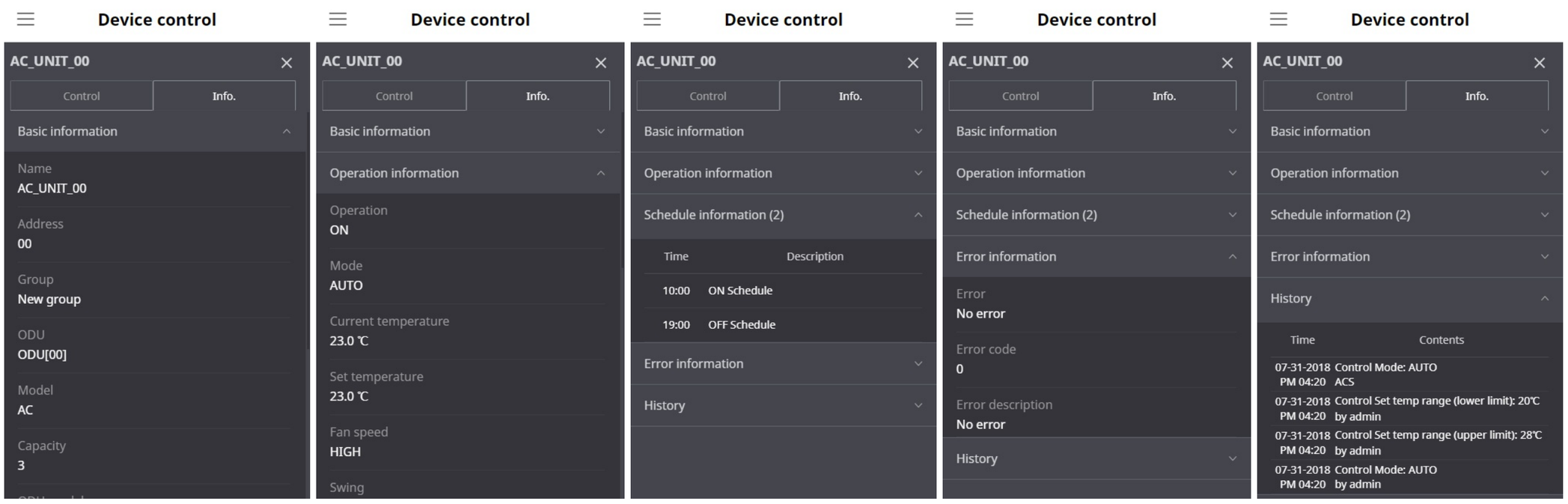
## Note

Unit symbol may change according to the usage set during device registration.

# Device Information

When you click device information tab in the device's control screen, you can check the device information.

You can check device's basic information, operation information, schedule information, error information, and today's history.



# Schedule Control

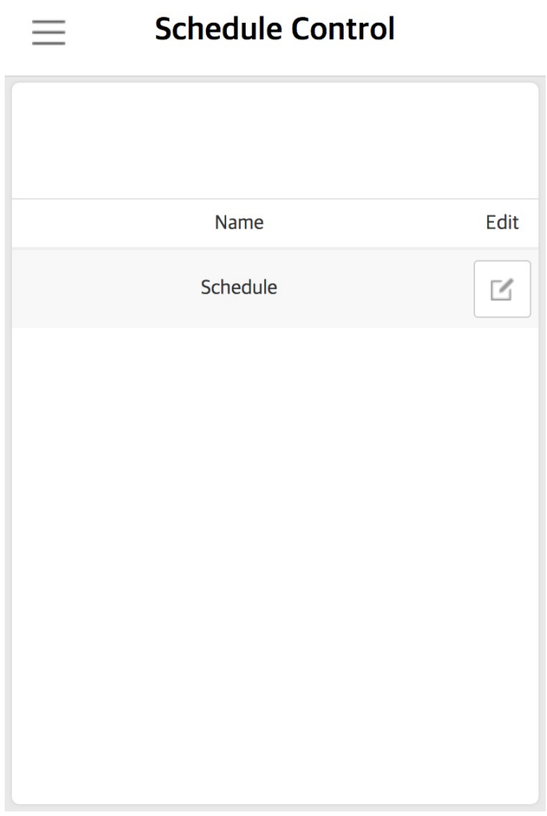
Schedule is a function for device to perform reserved operation at certain time by designating device operation in advance. When this function is used, device operation can be managed in time unit efficiently and energy saving effect is excellent.

**[Schedule]**

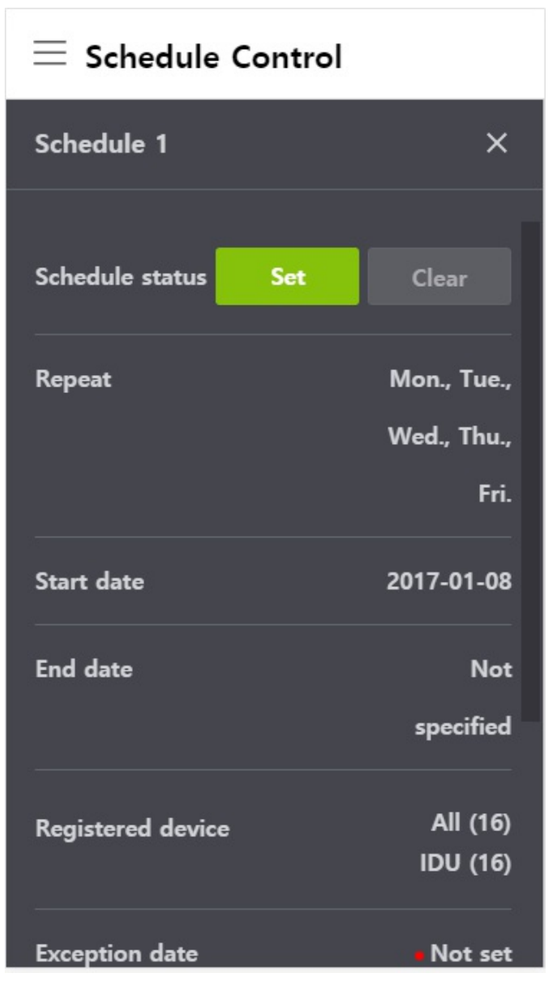
- Check schedule

# Check schedule

You can see all set schedules.




When you click Edit icon, you can check detail contents of the chedule.



# BACnet/Modbus/Lonworks Setting

## Guide on BTL authentication

**You need to set BACnet to Type C to make the devices operate using the functions authenticated by BTL.**

BACnet Type A/B exists to maintain compatibility with existing products. If you set BACnet to Type A/B, the devices may use the functions not authenticated by BTL, making them to operate differently from the standard.

For BACnet Type settings, go to **[Usage (PC)] > [BACnet/Modbus/Lonworks Setting]** menu.

**Operation method according to BACnet type**

- Type A: It creates multiple devices, and the objects are included in the device of each equipment. Multiple devices respond using the same MAC address for their physical addresses.

- Type B: It creates multiple devices, and the objects are included in the device of each equipment. Devices respond with unique physical addresses.

**- Type C: It creates only one device, which includes all objects.**

**※ Caution: If you change the type, the device number may be changed, making it necessary to perform additional engineering with the BMS.**

ACP 5 can be linked with the BMS (Building Management System) that supports the BACnet IP/Modbus TCP/Lonworks protocol.
The functions that can be controlled or monitored by the BMS vary depending on the protocol.

**[BACnet]**

- Commission
- Object List
- BIBBs
- PICS

**[Modbus]**

- Commission
- Function code
- Register List

**[Lonworks]**

- Commission
- Function Block List
- Network Variables

# BACnet Commission

Commissioning is the process of verifying the subsystems to achieve the owner's project requirements as intended by the building owner and as designed by the building architects and engineers.

After ACP 5 installation, you can check the operation status of the device by using the web function before connection with the BMS system.

Creating of the Points. This is NOT to be done by LG since it is directly related to the BMS side. The BMS engineer is to carry out the engineering of the Point, however LG is responsible for providing the method of how the Points are calculated.

# Precautions

- To use BACnet feature, you must select **[Settings] > [BACnet/Modbus/Lonworks Setting] > [BACnet enable]** as **Set**.
- In case of installing 2 or more ACP 5, you must change **[Settings] > [BACnet/Modbus/Lonworks Setting] > [Device ID Setting]** so that the Device IDs are not duplicate among ACP 5. It is recommended that you keep a difference of 10 or more for different Device IDs.
- If Device Discover doesn't work well, change **[Settings] > [BACnet/Modbus/Lonworks Setting] > [BACnet Type Setting]**.
- It is recommended that you request ReadProperty/WriteProperty at an interval of 200 ms or more for each property.
- It is recommended that you request ReadPropertyMultiple/WritePropertyMultiple at an interval of 500 ms or more for each property.
- SubscribeCOV can be registered up to 1024.
- If ACP 5 and BMS are located on different networks, BBMD (BACnet/IP Broadcast Management Device) is needed.
- As ACP 5 does not support the BBMD function, a separate BBMD is required. You can register ACP 5 as a foreign device in BBMD using **[Settings] > [BACnet/Modbus/Lonworks Setting] > [Register as Foreign Device]** function.

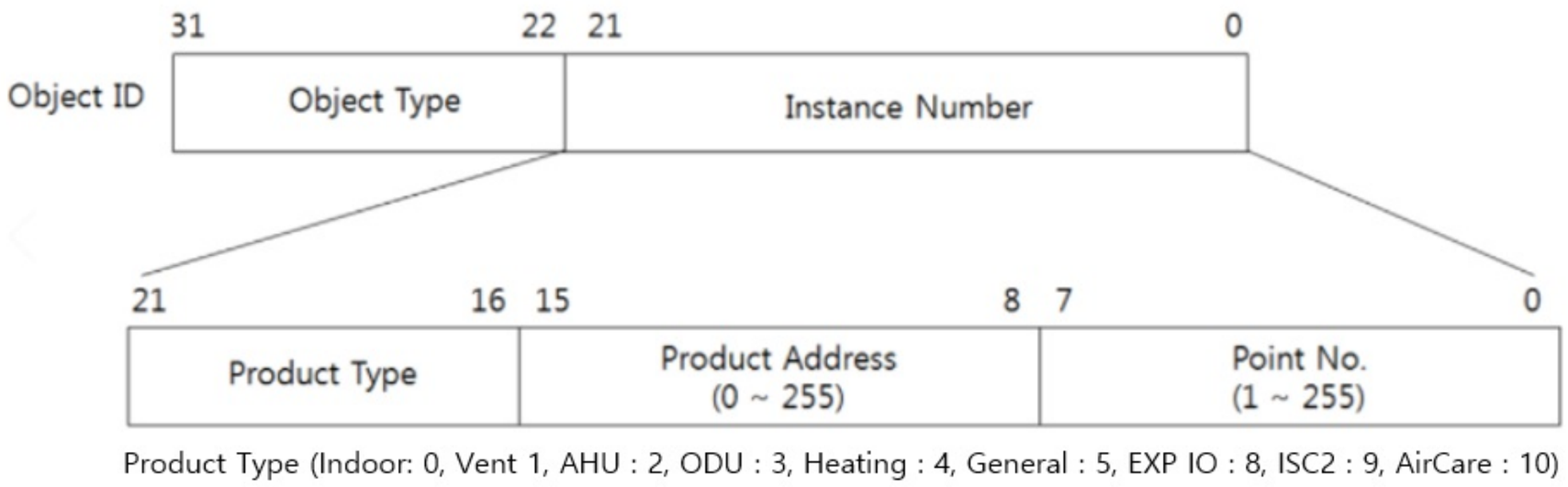
# BACnet Object List

It describes the BACnet object list provided by ACP 5.

- Instance Number
- Indoor Unit Object List
- ERV Object List
- AHU Object List
- Outdoor Unit Object List
- Heating Object List
- General Object List
- EXP.I/O object list
- Scroll Chiller(Air Cooling) object list
- Air purifier object list

## Definition of Instance Number

The instance number of each device is assigned as follows




Product Type (Indoor: 0, Vent 1, AHU : 2, ODU : 3, Heating : 4, General : 5, EXP IO : 8, ISC2 : 9, AirCare : 10)

## Example of Instance Number

| Description | Product Type | Product Address | Point | Instance Number |
|---|---|---|---|---|
| IDU Address 0x00, On/Off (Setting) | 0 | 0 | 1 | 1 |
| IDU Address 0x00, Operation Mode (Setting) | 0 | 0 | 7 | 7 |
| IDU Address 0x1B, On/Off (Setting) | 0 | 27 | 1 | 6913 |
| IDU Address 0x1B, Operation Mode (Setting) | 0 | 27 | 7 | 6919 |
| ERV Address 0x00, On/Off (Setting) | 1 | 0 | 1 | 65537 |
| ERV Address 0x00, Operation Mode (Setting) | 1 | 0 | 7 | 65543 |
| ERV Address 0x1B, On/Off (Setting) | 1 | 27 | 1 | 72449 |
| ERV Address 0x1B, Operation Mode (Setting) | 1 | 27 | 7 | 72455 |
| AHU Address 0x00, On/Off (Setting) | 2 | 0 | 1 | 131073 |
| AHU Address 0x00, Operation Mode (Setting) | 2 | 0 | 7 | 131079 |
| AHU Address 0x0F, On/Off (Setting) | 2 | 15 | 1 | 134913 |
| AHU Address 0x0F, Operation Mode (Setting) | 2 | 15 | 7 | 134919 |
| ODU Address 0x00, Compressor Operation | 3 | 0 | 1 | 196609 |
| ODU Address 0x00, Operation Mode | 3 | 0 | 14 | 196622 |
| ODU Address 0x0F, Compressor Operation | 3 | 15 | 1 | 200449 |
| ODU Address 0x0F, Operation Mode | 3 | 15 | 14 | 200462 |
| Heating Address 0x00, On/Off (Setting) | 4 | 0 | 1 | 262145 |
| Heating Address 0x00, Operation Mode (Setting) | 4 | 0 | 5 | 262149 |
| Heating Address 0x0F, On/Off (Setting) | 4 | 15 | 1 | 265985 |
| Heating Address 0x0F, Operation Mode (Setting) | 4 | 15 | 5 | 265989 |
| Scroll-Air-Inv-Gen2 Address 0x00, On/Off (Setting) | 9 | 0 | 1 | 589825 |
| Scroll-Air-Inv-Gen2 Address 0x00, Operation Mode (Setting) | 9 | 0 | 39 | 589863 |
| Scroll-Air-Inv-Gen2 Address 0x0F, On/Off (Setting) | 9 | 15 | 1 | 595201 |
| Scroll-Air-Inv-Gen2 Address 0x0F, Operation Mode (Setting) | 9 | 15 | 39 | 595239 |
| Air purifier Address 0x00, On/Off (Setting) | 10 | 0 | 1 | 655361 |
| Air purifier Address 0x00, Operation Mode (Setting) | 10 | 0 | 5 | 655365 |
| Air purifier Address 0x0F, On/Off (Setting) | 10 | 15 | 1 | 660737 |
| Air purifier Address 0x0F, Operation Mode (Setting) | 10 | 15 | 5 | 660741 |
| General Object, All Unit Run/Stop (Setting) | 5 | 0 | 1 | 327681 |
| General Object, All Unit Set Room Temperature (Setting) | 5 | 0 | 2 | 327682 |

## Indoor Unit Object List

One Indoor unit has the following list of points. Some points may not be supported depending on the product.

| Point | Description | Object Name(_XXX : Address) | Object Type | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | On/Off (Setting) | StartStopCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | On/Off (Status) | StartStopStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 3 | Lock (Setting) | LockCommand_XXX | BO | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 4 | Lock (Status) | LockStatus_XXX | BI | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 5 | Filter Sign | FilterSign_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 6 | Filter Sign reset | FilterSignReset_XXX | BV | - | - | Reset (1) | - | - | - | - | - |
| 7 | Operation Mode (Setting) | AirConModeCommand_XXX | MO | - | - | Cool (1) | Dry (2) | Fan (3) | Auto (4) | Heat (5) | - |
| 8 | Operation Mode (Status) | AirConModeStatus_XXX | MI | - | - | Cool (1) | Dry (2) | Fan (3) | Auto (4) | Heat (5) | - |
| 9 | Swing (Setting) | SwingCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 10 | Swing (Status) | SwingStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 11 | Fan Speed (Setting) | FanSpeedCommand_XXX | MO | - | - | Low (1) | Middle (2) | High (3) | Auto (4) | - | - |
| 12 | Fan Speed (Status) | FanSpeedStatus_XXX | MI | - | - | Low (1) | Middle (2) | High (3) | Auto (4) | - | - |
| 13 | Set Room Temperature | SetRoomTemp_XXX | AV | ℃(℉) | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 14 | Room Temperature | RoomTemp_XXX | AI | ℃(℉) | | | | | | | |
| 15 | Alarm | Alarm_XXX | BI | - | Normal (0) | Abnormal (1) | - | - | - | - | - |
| 16 | Error Code | MalfunctionCode_XXX | AI | - | Please refer to LG error code list. | | | | | | |
| 17 | - | - | - | - | - | | | | | | |
| 18 | - | - | - | - | - | | | | | | |
| 19 | Set Temperature (Status) | SetTempStatus_XXX | AI | ℃(℉) | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 20 | Accumulated Power Distribution (Status) | Accumulated power(100 Watt)_XXX | AI | 100 Watt | Wattage values | | | | | | |
| 21 | - | - | - | - | - | | | | | | |
| 22 | - | - | - | - | - | | | | | | |
| 23 | - | - | - | - | - | | | | | | |
| 24 | - | - | - | - | - | | | | | | |
| 25 | - | - | - | - | - | | | | | | |
| 26 | - | - | - | - | - | | | | | | |
| 27 | Set Upper Temperature (Setting) | TempRangeUpperLimitCommand_XXX | AV | ℃(℉) | 18 ℃ ~ 30 ℃ (64 ℉ ~ 86 ℉) | | | | | | |
| 28 | Set Upper Tempaerature (Status) | TempRangeLowerLimitCommand_XXX | AV | ℃(℉) | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 29 | Set Lower Temperature (Setting) | TempRangeUpperLimitStatus_XXX | AI | ℃(℉) | 18 ℃ ~ 30 ℃ (64 ℉ ~ 86 ℉) | | | | | | |
| 30 | Set Lower Temperature (Status) | TempRangeLowerLimitStatus_XXX | AI | ℃(℉) | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 31 | Mode Lock (Setting) | ModeLockCommand_XXX | BO | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 32 | Mode Lock (Status) | ModeLockStatus_XXX | BI | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 33 | Fan Lock (Setting) | FanLockCommand_XXX | BO | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 34 | Fan Lock (Status) | FanLockStatus_XXX | BI | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 35 | Occupancy (Setting) | OccupancyCommand_XXX | BO | - | Unoccupied (0) | Occupied (1) | - | - | - | - | - |
| 36 | Occupancy (Status) | OccupancyStatus_XXX | BI | - | Unoccupied (0) | Occupied (1) | - | - | - | - | - |
| 37 | 2Set Cooling Set Temperature (Setting) | 2SetCoolingTempCommand_XXX | AV | ℃(℉) | 10 ℃ ~ 37.5 ℃ (50 ℉ ~ 99 ℉) | | | | | | |
| 38 | 2Set Cooling Set Temperature (Status) | 2SetCoolingTempStatus_XXX | AI | ℃(℉) | 10 ℃ ~ 37.5 ℃ (50 ℉ ~ 99 ℉) | | | | | | |
| 39 | 2Set Heating Set Temperature (Setting) | 2SetHeatingTempCommand_XXX | AV | ℃(℉) | 4 ℃ ~ 32 ℃ (40 ℉ ~ 90 ℉) | | | | | | |
| 40 | 2Set Heating Set Temperature (Status) | 2SetHeatingTempStatus_XXX | AI | ℃(℉) | 4 ℃ ~ 32 ℃ (40 ℉ ~ 90 ℉) | | | | | | |
| 41 | 2Set Cooling Upper Temperature (Setting) | 2SetCoolingUpperLimitCommand_XXX | AV | ℃(℉) | 10 ℃ ~ 37.5 ℃ (50 ℉ ~ 99 ℉) | | | | | | |
| 42 | 2Set Cooling Upper Temperature (Status) | 2SetCoolingUpperLimitStatus_XXX | AI | ℃(℉) | 10 ℃ ~ 37.5 ℃ (50 ℉ ~ 99 ℉) | | | | | | |
| 43 | 2Set Cooling Lower Temperature | 2SetHeatingUpperLimitCommand_XXX | AV | ℃(℉) | 4 ℃ ~ 32 ℃ (40 ℉ ~ 90 ℉) | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Setting) | | | | | | | | | | |
| 44 | 2Set Cooling Lower Temperature (Status) | 2SetHeatingUpperLimitStatus_XXX | AI | ℃(℉) | 4 ℃ ~ 32 ℃ (40 ℉ ~ 90 ℉) | | | | | | |
| 45 | 2Set Heating Upper Temperature (Setting) | 2SetCoolingLowerLimitCommand_XXX | AV | ℃(℉) | 10 ℃ ~ 37.5 ℃ (50 ℉ ~ 99 ℉) | | | | | | |
| 46 | 2Set Heating Upper Temperature (Status) | 2SetCoolingLowerLimitStatus_XXX | AI | ℃(℉) | 10 ℃ ~ 37.5 ℃ (50 ℉ ~ 99 ℉) | | | | | | |
| 47 | 2Set Heating Lower Temperature (Setting) | 2SetHeatingLowerLimitCommand_XXX | AV | ℃(℉) | 4 ℃ ~ 32 ℃ (40 ℉ ~ 90 ℉) | | | | | | |
| 48 | 2Set Heating Lower Temperature (Status) | 2SetHeatingLowerLimitStatus_XXX | AI | ℃(℉) | 4 ℃ ~ 32 ℃ (40 ℉ ~ 90 ℉) | | | | | | |
| 49 | Thermo Status (Status) | ThermoStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 50 | Accumulated Gas Distribution (Status) | AccumulatedGas(100 Watt)_XXX | AI | 100 Liter | Gas values | | | | | | |
| 51 | Dust Sensor Available (Status) | DustSensorAvail_XXX | BI | - | Disabled (0) | Enabled (1) | - | - | - | - | - |
| 52 | Air Cleaning Opereration (Setting) | AirCleaningOperCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 53 | Air Cleaning Opereration (Status) | AirCleaningOperStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 54 | PM10 (Status) | FineDustStatus_XXX | AI | $\mu g/m^3$ | | | | | | | |
| 55 | PM2.5 (Status) | UltraFineDustStatus_XXX | AI | $\mu g/m^3$ | | | | | | | |
| 56 | PM1.0 (Status) | SuperUltraFineDustStatus_XXX | AI | $\mu g/m^3$ | | | | | | | |
| 57 | Humidity (Status) | HumidityStatus_XXX | AI | % | | | | | | | |
| 58 | Comfort Cooling Available (Status) | ComfortCoolingAvail_XXX | BI | - | Disabled (0) | Enabled (1) | - | - | - | - | - |
| 59 | Comfort Cooling Opereration (Setting) | ComfortCoolingOperCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 60 | Comfort Cooling Opereration (Status) | ComfortCoolingOperStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 61 | Comfort Cooling Step (Setting) | ComfortCoolingStepCommand_XXX | AV | - | 1 step ~ 3 step | | | | | | |
| 62 | Comfort Cooling Step (Status) | ComfortCoolingStepStatus_XXX | AI | - | 1 step ~ 3 step | | | | | | |
| 63 | Human Detection Available (Status) | HumanDetectionAvail_XXX | BI | - | Disabled (0) | Enabled (1) | - | - | - | - | - |
| 64 | Human Detection Opereration (Setting) | HumanDetectionOperCommand_XXX | MO | - | - | Stop (1) | OnOffSaving (2) | TempSaving (3) | - | - | - |
| 65 | Human Detection Opereration (Status) | HumanDetectionOperStatus_XXX | MI | - | - | Stop (1) | OnOffSaving (2) | TempSaving (3) | - | - | - |
| 66 | Human Detection Wind (Setting) | HumanDetectionWindCommand_XXX | MO | - | - | Stop (1) | Direct (2) | Indirect (3) | - | - | - |
| 67 | Human Detection Wind (Status) | HumanDetectionWindStatus_XXX | MI | - | - | Stop (1) | Direct (2) | Indirect (3) | - | - | - |
| 68 | Human Detection Time (Setting) | HumanDetectionTimeCommand_XXX | MO | - | - | 5 min (1) | 10 min (2) | 15 min (3) | 30 min (4) | 60 min (5) | 90 min (6) |
| 69 | Human Detection Time (Status) | HumanDetectionTimeStatus_XXX | MI | - | - | 5 min (1) | 10 min (2) | 15 min (3) | 30 min (4) | 60 min (5) | 90 min (6) |
| 70 | Hotel Check In (Setting) | HotelCheckinCommand_XXX | BO | - | Check_out (0) | Check_in (1) | - | - | - | - | - |
| 71 | Hotel Mode (Setting) | HotelModeCommand_XXX | MO | - | - | Comfort (1) | Pre_comfort (2) | Economy (3) | - | - | - |

## ERV Object List

One ERV has the following list of points. Some points may not be supported depending on the product.

| Point | Description | Object Name(_XXX : Address) | Object Type | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | On/Off (Setting) | StartStopCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | On/Off (Status) | StartStopStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 3 | Lock (Setting) | LockCommand_XXX | BO | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 4 | Lock (Status) | LockStatus_XXX | BI | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 5 | Filter Sign | FilterSign_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 6 | Filter Sign reset | FilterSignReset_XXX | BV | - | - | Reset (1) | - | - | - | - | - |
| 7 | Operation Mode (Setting) | AirConModeCommand_XXX | MO | - | - | Heat Exchange (1) | Auto (2) | Normal (3) | - | - | - |
| 8 | Operation Mode (Status) | AirConModeStatus_XXX | MI | - | - | Heat Exchange (1) | Auto (2) | Normal (3) | - | - | - |
| 9 | - | - | - | - | - | | | | | | |
| 10 | - | - | - | - | - | | | | | | |
| 11 | Fan Speed (Setting) | FanSpeedCommand_XXX | MO | - | - | Low (1) | High (2) | Super High (3) | Auto (4) | - | - |
| 12 | Fan Speed (Status) | FanSpeedStatus_XXX | MI | - | - | Low (1) | High (2) | Super High (3) | Auto (4) | - | - |
| 13 | Set Room Temperature | SetRoomTemp_XXX | AV | ℃(℉) | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 14 | Room Temperature | RoomTemp_XXX | AI | ℃(℉) | | | | | | | |
| 15 | Alarm | Alarm_XXX | BI | - | Normal (0) | Abnormal (1) | - | - | - | - | - |
| 16 | Error Code | MalfunctionCode_XXX | AI | - | Please refer to LG error code list. | | | | | | |
| 17 | User Mode (Setting) | UserModeCommand_XXX | MO | - | - | Quick fresh (1) | Energy saving (2) | Clear (3) | - | - | - |
| 18 | User Mode (Status) | UserModeStatus_XXX | MI | - | - | Quick fresh (1) | Energy saving (2) | Clear (3) | - | - | - |
| 19 | Set Temperature (Status) | SetTempStatus_XXX | AI | ℃(℉) | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 20 | Accumulated Power Distribution (Status) | Accumulated power(100 Watt)_XXX | AI | 100 Watt | Wattage values | | | | | | |
| 21 | AC Operation Mode (Setting) | UserModeAcCommand_XXX | MO | - | - | Cool (1) | Auto (2) | Heat (3) | - | - | - |
| 22 | AC Operation Mode (Status) | UserModeStatus_XXX | MI | - | - | Cool (1) | Auto (2) | Heat (3) | - | - | - |
| 23 | AC ON/OFF (Setting) | UserModeAcCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 24 | AC ON/OFF (Status) | UserModeAcStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 25 | AC Humidify (Setting) | HumidifierOperCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 26 | AC Humidify (Status) | HumidifierOperStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 27 | Partial Lock Available (Status) | PatialLockAvail_XXX | BI | - | Disabled (0) | Enabled (1) | - | - | - | - | - |
| 28 | Set Upper Temperature (Setting) | TempRangeUpperLimitCommand_XXX | AV | ℃(℉) | 18 ℃ ~ 30 ℃ (64 ℉ ~ 86 ℉) | | | | | | |
| 29 | Set Upper Tempaerature (Status) | TempRangeLowerLimitCommand_XXX | AV | ℃(℉) | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 30 | Set Lower Temperature (Setting) | TempRangeUpperLimitStatus_XXX | AI | ℃(℉) | 18 ℃ ~ 30 ℃ (64 ℉ ~ 86 ℉) | | | | | | |
| 31 | Set Lower Temperature (Status) | TempRangeLowerLimitStatus_XXX | AI | ℃(℉) | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 32 | Mode Lock (Setting) | ModeLockCommand_XXX | BO | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 33 | Mode Lock (Status) | ModeLockStatus_XXX | BI | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 34 | Fan Lock (Setting) | FanLockCommand_XXX | BO | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 35 | Fan Lock (Status) | FanLockStatus_XXX | BI | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 36 | NTFC Available (Status) | NtfcAvail_XXX | BI | - | Disabled (0) | Enabled (1) | - | - | - | - | - |
| 37 | NTFC Operation (Setting) | NtfcOperCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 38 | NTFC Operation (Status) | NtfcOperStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 39 | NTFC Lock (Setting) | NtfcLockCommand_XXX | BO | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 40 | NTFC Lock (Status) | NtfcLockStatus_XXX | BI | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 41 | Co2 Value | Co2Value_XXX | AI | PPM | | | | | | | |

## AHU Object List

One AHU has the following list of points. Some points may not be supported depending on the product.

| Point | Description | Object Name(_XXX : Address) | Object Type | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | On/Off (Setting) | StartStopCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | On/Off (Status) | StartStopStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 3 | Lock (Setting) | LockCommand_XXX | BO | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 4 | Lock (Status) | LockStatus_XXX | BI | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 5 | Filter Sign | FilterSign_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 6 | - | - | - | - | - | | | | | | |
| 7 | Operation Mode (Setting) | AirConModeCommand_XXX | MO | - | - | Cool (1) | Dry (2) | Fan (3) | Heat (4) | Energy saving (5) | - |
| 8 | Operation Mode (Status) | AirConModeStatus_XXX | MI | - | - | Cool (1) | Dry (2) | Fan (3) | Heat (4) | Energy saving (5) | - |
| 9 | - | - | - | - | - | | | | | | |
| 10 | - | - | - | - | - | | | | | | |
| 11 | Fan Speed (Setting) | FanSpeedCommand_XXX | MO | - | - | High (1) | Middle (2) | Low (3) | - | - | - |
| 12 | Fan Speed (Status) | FanSpeedStatus_XXX | MI | - | - | High (1) | Middle (2) | Low (3) | - | - | - |
| 13 | Set Room Temperature | SetRoomTemp_XXX | AV | ℃(℉) | 18 ℃ ~ 30 ℃ (64 ℉ ~ 86 ℉) | | | | | | |
| 14 | Room Temperature | RoomTemp_XXX | AI | ℃(℉) | | | | | | | |
| 15 | Alarm | Alarm_XXX | BI | - | Normal (0) | Abnormal (1) | - | - | - | - | - |
| 16 | Error Code | MalfunctionCode_XXX | AI | - | Please refer to LG error code list. | | | | | | |
| 17 | - | - | - | - | - | | | | | | |
| 18 | - | - | - | - | - | | | | | | |
| 19 | Set Temperature (Status) | SetTempStatus_XXX | AI | ℃(℉) | 18 ℃ ~ 30 ℃ (64 ℉ ~ 86 ℉) | | | | | | |
| 20 | FireAlarm (Setting) | FireAlarmCommand_XXX | BO | - | Off (0) | On (1) | - | - | - | - | - |
| 21 | FireAlarm (Status) | FireAlarmStatus_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 22 | Humidity (Setting) | SetHumidityCommand_XXX | AV | % | 40 % ~ 60 % | | | | | | |
| 23 | Humidity (Status) | SetHumidityStatus_XXX | AI | % | 40 % ~ 60 % | | | | | | |
| 24 | Humidify ON/OFF (Setting) | HumidifyCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 25 | Humidify ON/OFF (Status) | HumidifyStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 26 | Auto Ventilation ON/OFF (Setting) | AutoVentilCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 27 | Auto Ventilation ON/OFF (Status) | AutoVentilStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 28 | Supply Unit Temperature (Status) | SupplyTempStatus_XXX | AI | ℃(℉) | | | | | | | |
| 29 | Outdoor Unit Temperature (Status) | OutdoorTempStatus_XXX | AI | ℃(℉) | | | | | | | |
| 30 | Mix Unit Temperature (Status) | MixTempStatus_XXX | AI | ℃(℉) | | | | | | | |
| 31 | Supply Unit Humidity (Status) | SupplyHumidifyStatus_XXX | AI | % | | | | | | | |
| 32 | Outdoor Unit Humidity (Status) | OutdoorHumidifyStatus_XXX | AI | % | | | | | | | |
| 33 | Ventilation Unit Humidity (Status) | VentilHumidifyStatus_XXX | AI | % | | | | | | | |
| 34 | CO2 Value (Status) | $CO_2$ValueStatus_XXX | AI | - | 0~255 (Real Value = Value*10, Example : In case Value is 20, CO2 is 20*10=200ppm) | | | | | | |
| 35 | Humidity Unit ON/OFF (Status) | HumidifyUnitStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 36 | Heating Unit ON/OFF (Status) | HeaterUnitStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 37 | Ventilator FAN ON/OFF (Status) | VentilFanStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 38 | Supply Unit FAN ON/OFF (Status) | SupplyFanStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 39 | Current OA Damper (Status) | CurrOADamperStatus_XXX | AI | º | 0 º ~ 90 º | | | | | | |
| 40 | Current EA Damper (Status) | CurrEADamperStatus_XXX | AI | º | 0 º ~ 90 º | | | | | | |
| 41 | Current Mix Damper (Status) | CurrMixDamperStatus_XXX | AI | º | 0 º ~ 90 º | | | | | | |
| 42 | Cooling OA Damper (Setting) | OADamperCoolCommand_XXX | AV | º | 0 º ~ 90 º | | | | | | |
| 43 | Cooling OA Damper (Status)) | OADamperCoolStatus_XXX | AI | º | 0 º ~ 90 º | | | | | | |
| 44 | Cooling EA Damper (Setting) | EADamperCoolCommand_XXX | AV | º | 0 º ~ 90 º | | | | | | |
| 45 | Cooling EA Damper (Status)) | EADamperCoolStatus_XXX | AI | º | 0 º ~ 90 º | | | | | | |
| 46 | Cooling Mix Damper (Setting) | MixDamperCoolCommand_XXX | AV | º | 0 º ~ 90 º | | | | | | |
| 47 | Cooling Mix Damper (Status)) | MixDamperCoolStatus_XXX | AI | º | 0 º ~ 90 º | | | | | | |
| 48 | Heating OA Damper (Setting) | OADamperHeatCommand_XXX | AV | º | 0 º ~ 90 º | | | | | | |
| 49 | Heating OA Damper (Status)) | OADamperHeatStatus_XXX | AI | º | 0 º ~ 90 º | | | | | | |
| 50 | Heating EA Damper (Setting) | EADamperHeatCommand_XXX | AV | º | 0 º ~ 90 º | | | | | | |
| 51 | Heating EA Damper (Status)) | EADamperHeatStatus_XXX | AI | º | 0 º ~ 90 º | | | | | | |
| 52 | Heating Mix Damper (Setting) | MixDamperHeatCommand_XXX | AV | º | 0 º ~ 90 º | | | | | | |
| 53 | Heating Mix Damper (Status)) | MixDamperHeatStatus_XXX | AI | º | 0 º ~ 90 º | | | | | | |
| 54 | FAN OA Damper (Setting) | OADamperFanCommand_XXX | AV | º | 0 º ~ 90 º | | | | | | |
| 55 | FAN OA Damper (Status)) | OADamperFanStatus_XXX | AI | º | 0 º ~ 90 º | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 56 | FAN EA Damper (Setting) | EADamperFanCommand_XXX | AV | º | 0 º ~ 90 º |
| 57 | FAN EA Damper (Status)) | EADamperFanStatus_XXX | AI | º | 0 º ~ 90 º |
| 58 | FAN Mix Damper (Setting) | MixDamperFanCommand_XXX | AV | º | 0 º ~ 90 º |
| 59 | FAN Mix Damper (Status)) | MixDamperFanStatus_XXX | AI | º | 0 º ~ 90 º |

## Outdoor unit Object List

One outdoor unit has the following list of points. Some points may not be supported depending on the product.

| Point | Description | Object Name(_XXX : Address) | Object Type | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Compressor Operation | CompressorOperation_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | Refrigerant Type | RefrigerantType_XXX | MI | - | - | R407C (1) | R22 (2) | R410A (3) | - | - | - |
| 3 | Fan1 Frequency | Fan1Frequency_XXX | AI | rpm | | | | | | | |
| 4 | High Pressure | HighPressure_XXX | AI | kPa | | | | | | | |
| 5 | Low Pressure | LowPressure_XXX | AI | kPa | | | | | | | |
| 6 | Compressor Suction Temp | CompressorSunctionTemp_XXX | AI | ℃(℉) | | | | | | | |
| 7 | Liquid Pipe Temp | LiquidPipeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 8 | Heat Exchange Temp | HeatExchangeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 9 | Outdoor Unit EEV | OutdoorUnitEEV_XXX | AI | - | | | | | | | |
| 10 | Over-cooler EEV | Over-coolerEEV_XXX | AI | - | | | | | | | |
| 11 | Hot Gas Valve | HotGasValue_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 12 | Inverter Discharge Temp | InverterDischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 13 | Air Temp | AirTemp_XXX | AI | ℃(℉) | | | | | | | |
| 14 | Operation Mode | OperationMode_XXX | MI | - | - | Stop (1) | Cool (2) | Heat (3) | - | - | - |
| 15 | Error Code | ErrorCode_XXX | AI | 0~255 | | | | | | | |
| 16 | Inverter1 Compressor Frequency | Inverter1CompressorFrequency_XXX | AI | rpm | | | | | | | |
| 17 | Inverter2 Compressor Frequency | Inverter2CompressorFrequency_XXX | AI | rpm | | | | | | | |
| 18 | Fan2 Frequency | Fan2Frequency_XXX | AI | rpm | | | | | | | |
| 19 | Inverter2 Discharge Temp | Inverter2DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 20 | Std1 Discharge Temp | Std1DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 21 | Std2 Discharge Temp | Std2DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 22 | Upper Hex Temp | UpperHexTemp_XXX | AI | ℃(℉) | | | | | | | |
| 23 | Lower Hex Temp | LowerHexTemp_XXX | AI | ℃(℉) | | | | | | | |
| 24 | Sub Cool Pipe In Temp | SubCoolPipeInTemp_XXX | AI | ℃(℉) | | | | | | | |
| 25 | Sub Cool Pipe Out Temp | SubCoolPipeOutTemp_XXX | AI | ℃(℉) | | | | | | | |
| 26 | Sub EEV Pulse | SubEevPulse_XXX | AI | - | | | | | | | |
| 27 | Oil Equalizing EEV | OilEqualizingEEV_XXX | AI | - | | | | | | | |
| 28 | Vapor Injection EEV1 | ViEev1_XXX | AI | - | | | | | | | |
| 29 | Vapor Injection EEV2 | ViEev2_XXX | AI | - | | | | | | | |
| 30 | Inverter1 Heater | Inverter1Heater_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 31 | Inverter2 Heater | Inverter2Heater_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 32 | Inverter1 Oil Sensor | Inverter1OilSensor_XXX | BI | - | Not Detect Oil (0) | Detect Oil (1) | - | - | - | - | - |
| 33 | Inverter2 Oil Sensor | Inverter2OilSensor_XXX | BI | - | Not Detect Oil (0) | Detect Oil (1) | - | - | - | - | - |
| 34 | Inverter1 Backup | Inverter1Backup_XXX | BI | - | Not Used (0) | Used (1) | - | - | - | - | - |
| 35 | Inverter2 Backup | Inverter2Backup_XXX | BI | - | Not Used (0) | Used (1) | - | - | - | - | - |
| 36 | DDC | DDC_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 37 | DEFROST | DEFROST_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 38-64 | Additional Point for Master Outdoor Unit | | | | | | | | | | |
| 65 | (Slave1) Compressor Operation | CompressorOperation_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 66 | (Slave1) Refrigerant Type | RefrigerantType_XXX | MI | - | - | R407C (1) | R22 (2) | R410A (3) | - | - | - |
| 67 | (Slave1) Fan1 Frequency | Fan1Frequency_XXX | AI | rpm | | | | | | | |
| 68 | (Slave1) High Pressure | HighPressure_XXX | AI | kPa | | | | | | | |
| 69 | (Slave1) Low Pressure | LowPressure_XXX | AI | kPa | | | | | | | |
| 70 | (Slave1) Compressor Suction Temp | CompressorSunctionTemp_XXX | AI | ℃(℉) | | | | | | | |
| 71 | (Slave1) Liquid Pipe Temp | LiquidPipeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 72 | (Slave1) Heat Exchange Temp | HeatExchangeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 73 | (Slave1) Outdoor Unit EEV | OutdoorUnitEEV_XXX | AI | - | | | | | | | |
| 74 | (Slave1) Over-cooler EEV | Over-coolerEEV_XXX | AI | - | | | | | | | |
| 75 | (Slave1) Hot Gas Valve | HotGasValue_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 76 | (Slave1) Inverter Discharge Temp | InverterDischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 77 | (Slave1) Air Temp | AirTemp_XXX | AI | ℃(℉) | | | | | | | |
| 78 | (Slave1) Operation Mode | OperationMode_XXX | MI | - | - | Stop (1) | Cool | Heat (3) | - | - | - |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | (2) | | | | |
| 79 | (Slave1) Error Code | ErrorCode_XXX | AI | 0~255 | | | | | | | |
| 80 | (Slave1) Inverter1 Compressor Frequency | Inverter1CompressorFrequency_XXX | AI | rpm | | | | | | | |
| 81 | (Slave1) Inverter2 Compressor Frequency | Inverter2CompressorFrequency_XXX | AI | rpm | | | | | | | |
| 82 | (Slave1) Fan2 Frequency | Fan2Frequency_XXX | AI | rpm | | | | | | | |
| 83 | (Slave1) Inverter2 Discharge Temp | Inverter2DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 84 | (Slave1) Std1 Discharge Temp | Std1DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 85 | (Slave1) Std2 Discharge Temp | Std2DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 86 | (Slave1) Upper Hex Temp | UpperHexTemp_XXX | AI | ℃(℉) | | | | | | | |
| 87 | (Slave1) Lower Hex Temp | LowerHexTemp_XXX | AI | ℃(℉) | | | | | | | |
| 88 | (Slave1) Sub Cool Pipe In Temp | SubCoolPipeInTemp_XXX | AI | ℃(℉) | | | | | | | |
| 89 | (Slave1) Sub Cool Pipe Out Temp | SubCoolPipeOutTemp_XXX | AI | ℃(℉) | | | | | | | |
| 90 | (Slave1) Sub EEV Pulse | SubEevPulse_XXX | AI | - | | | | | | | |
| 91 | (Slave1) Oil Equalizing EEV | OilEqualizingEEV_XXX | AI | - | | | | | | | |
| 92 | (Slave1) Vapor Injection EEV1 | ViEev1_XXX | AI | - | | | | | | | |
| 93 | (Slave1) Vapor Injection EEV2 | ViEev2_XXX | AI | - | | | | | | | |
| 94 | (Slave1) Inverter1 Heater | Inverter1Heater_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 95 | (Slave1) Inverter2 Heater | Inverter2Heater_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 96 | (Slave1) Inverter1 Oil Sensor | Inverter1OilSensor_XXX | BI | - | Not Detect Oil (0) | Detect Oil (1) | - | - | - | - | - |
| 97 | (Slave1) Inverter2 Oil Sensor | Inverter2OilSensor_XXX | BI | - | Not Detect Oil (0) | Detect Oil (1) | - | - | - | - | - |
| 98 | (Slave1) Inverter1 Backup | Inverter1Backup_XXX | BI | - | Not Used (0) | Used (1) | - | - | - | - | - |
| 99 | (Slave1) Inverter2 Backup | Inverter2Backup_XXX | BI | - | Not Used (0) | Used (1) | - | - | - | - | - |
| 100 | (Slave1) DDC | DDC_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 101 | (Slave1) DEFROST | DEFROST_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 102-128 | Additional Point for Slave1 Outdoor Unit | | | | | | | | | | |
| 129 | (Slave2) Compressor Operation | CompressorOperation_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 130 | (Slave2) Refrigerant Type | RefrigerantType_XXX | MI | - | - | R407C (1) | R22 (2) | R410A (3) | - | - | - |
| 131 | (Slave2) Fan1 Frequency | Fan1Frequency_XXX | AI | rpm | | | | | | | |
| 132 | (Slave2) High Pressure | HighPressure_XXX | AI | kPa | | | | | | | |
| 133 | (Slave2) Low Pressure | LowPressure_XXX | AI | kPa | | | | | | | |
| 134 | (Slave2) Compressor Suction Temp | CompressorSunctionTemp_XXX | AI | ℃(℉) | | | | | | | |
| 135 | (Slave2) Liquid Pipe Temp | LiquidPipeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 136 | (Slave2) Heat Exchange Temp | HeatExchangeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 137 | (Slave2) Outdoor Unit EEV | OutdoorUnitEEV_XXX | AI | - | | | | | | | |
| 138 | (Slave2) Over-cooler EEV | Over-coolerEEV_XXX | AI | - | | | | | | | |
| 139 | (Slave2) Hot Gas Valve | HotGasValue_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 140 | (Slave2) Inverter Discharge Temp | InverterDischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 141 | (Slave2) Air Temp | AirTemp_XXX | AI | ℃(℉) | | | | | | | |
| 142 | (Slave2) Operation Mode | OperationMode_XXX | MI | - | - | Stop (1) | Cool (2) | Heat (3) | - | - | - |
| 143 | (Slave2) Error Code | ErrorCode_XXX | AI | 0~255 | | | | | | | |
| 144 | (Slave2) Inverter1 Compressor Frequency | Inverter1CompressorFrequency_XXX | AI | rpm | | | | | | | |
| 145 | (Slave2) Inverter2 Compressor Frequency | Inverter2CompressorFrequency_XXX | AI | rpm | | | | | | | |
| 146 | (Slave2) Fan2 Frequency | Fan2Frequency_XXX | AI | rpm | | | | | | | |
| 147 | (Slave2) Inverter2 Discharge Temp | Inverter2DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 148 | (Slave2) Std1 Discharge Temp | Std1DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 149 | (Slave2) Std2 Discharge Temp | Std2DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 150 | (Slave2) Upper Hex Temp | UpperHexTemp_XXX | AI | ℃(℉) | | | | | | | |
| 151 | (Slave2) Lower Hex Temp | LowerHexTemp_XXX | AI | ℃(℉) | | | | | | | |
| 152 | (Slave2) Sub Cool Pipe In Temp | SubCoolPipeInTemp_XXX | AI | ℃(℉) | | | | | | | |
| 153 | (Slave2) Sub Cool Pipe Out Temp | SubCoolPipeOutTemp_XXX | AI | ℃(℉) | | | | | | | |
| 154 | (Slave2) Sub EEV Pulse | SubEevPulse_XXX | AI | - | | | | | | | |
| 155 | (Slave2) Oil Equalizing EEV | OilEqualizingEEV_XXX | AI | - | | | | | | | |
| 156 | (Slave2) Vapor Injection EEV1 | ViEev1_XXX | AI | - | | | | | | | |
| 157 | (Slave2) Vapor Injection EEV2 | ViEev2_XXX | AI | - | | | | | | | |
| 158 | (Slave2) Inverter1 Heater | Inverter1Heater_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 159 | (Slave2) Inverter2 Heater | Inverter2Heater_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 160 | (Slave2) Inverter1 Oil Sensor | Inverter1OilSensor_XXX | BI | - | Not Detect Oil (0) | Detect Oil (1) | - | - | - | - | - |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 161 | (Slave2) Inverter2 Oil Sensor | Inverter2OilSensor_XXX | BI | - | Not Detect Oil (0) | Detect Oil (1) | - | - | - | - | - |
| 162 | (Slave2) Inverter1 Backup | Inverter1Backup_XXX | BI | - | Not Used (0) | Used (1) | - | - | - | - | - |
| 163 | (Slave2) Inverter2 Backup | Inverter2Backup_XXX | BI | - | Not Used (0) | Used (1) | - | - | - | - | - |
| 164 | (Slave2) DDC | DDC_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 165 | (Slave2) DEFROST | DEFROST_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 166-192 | Additional Point for Slave2 Outdoor Unit | | | | | | | | | | |
| 193 | (Slave3) Compressor Operation | CompressorOperation_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 194 | (Slave3) Refrigerant Type | RefrigerantType_XXX | MI | - | - | R407C (1) | R22 (2) | R410A (3) | - | - | - |
| 195 | (Slave3) Fan1 Frequency | Fan1Frequency_XXX | AI | rpm | | | | | | | |
| 196 | (Slave3) High Pressure | HighPressure_XXX | AI | kPa | | | | | | | |
| 197 | (Slave3) Low Pressure | LowPressure_XXX | AI | kPa | | | | | | | |
| 198 | (Slave3) Compressor Suction Temp | CompressorSunctionTemp_XXX | AI | ℃(℉) | | | | | | | |
| 199 | (Slave3) Liquid Pipe Temp | LiquidPipeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 200 | (Slave3) Heat Exchange Temp | HeatExchangeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 201 | (Slave3) Outdoor Unit EEV | OutdoorUnitEEV_XXX | AI | - | | | | | | | |
| 202 | (Slave3) Over-cooler EEV | Over-coolerEEV_XXX | AI | - | | | | | | | |
| 203 | (Slave3) Hot Gas Valve | HotGasValue_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 204 | (Slave3) Inverter Discharge Temp | InverterDischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 205 | (Slave3) Air Temp | AirTemp_XXX | AI | ℃(℉) | | | | | | | |
| 206 | (Slave3) Operation Mode | OperationMode_XXX | MI | - | - | Stop (1) | Cool (2) | Heat (3) | - | - | - |
| 207 | (Slave3) Error Code | ErrorCode_XXX | AI | 0~255 | | | | | | | |
| 208 | (Slave3) Inverter1 Compressor Frequency | Inverter1CompressorFrequency_XXX | AI | rpm | | | | | | | |
| 209 | (Slave3) Inverter2 Compressor Frequency | Inverter2CompressorFrequency_XXX | AI | rpm | | | | | | | |
| 210 | (Slave3) Fan2 Frequency | Fan2Frequency_XXX | AI | rpm | | | | | | | |
| 211 | (Slave3) Inverter2 Discharge Temp | Inverter2DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 212 | (Slave3) Std1 Discharge Temp | Std1DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 213 | (Slave3) Std2 Discharge Temp | Std2DischargeTemp_XXX | AI | ℃(℉) | | | | | | | |
| 214 | (Slave3) Upper Hex Temp | UpperHexTemp_XXX | AI | ℃(℉) | | | | | | | |
| 215 | (Slave3) Lower Hex Temp | LowerHexTemp_XXX | AI | ℃(℉) | | | | | | | |
| 216 | (Slave3) Sub Cool Pipe In Temp | SubCoolPipeInTemp_XXX | AI | ℃(℉) | | | | | | | |
| 217 | (Slave3) Sub Cool Pipe Out Temp | SubCoolPipeOutTemp_XXX | AI | ℃(℉) | | | | | | | |
| 218 | (Slave3) Sub EEV Pulse | SubEevPulse_XXX | AI | - | | | | | | | |
| 219 | (Slave3) Oil Equalizing EEV | OilEqualizingEEV_XXX | AI | - | | | | | | | |
| 220 | (Slave3) Vapor Injection EEV1 | ViEev1_XXX | AI | - | | | | | | | |
| 221 | (Slave3) Vapor Injection EEV2 | ViEev2_XXX | AI | - | | | | | | | |
| 222 | (Slave3) Inverter1 Heater | Inverter1Heater_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 223 | (Slave3) Inverter2 Heater | Inverter2Heater_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 224 | (Slave3) Inverter1 Oil Sensor | Inverter1OilSensor_XXX | BI | - | Not Detect Oil (0) | Detect Oil (1) | - | - | - | - | - |
| 225 | (Slave3) Inverter2 Oil Sensor | Inverter2OilSensor_XXX | BI | - | Not Detect Oil (0) | Detect Oil (1) | - | - | - | - | - |
| 226 | (Slave3) Inverter1 Backup | Inverter1Backup_XXX | BI | - | Not Used (0) | Used (1) | - | - | - | - | - |
| 227 | (Slave3) Inverter2 Backup | Inverter2Backup_XXX | BI | - | Not Used (0) | Used (1) | - | - | - | - | - |
| 228 | (Slave3) DDC | DDC_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 229 | (Slave3) DEFROST | DEFROST_XXX | BI | - | Off (0) | On (1) | - | - | - | - | - |
| 230-256 | Additional Point for Slave3 Outdoor Unit | | | | | | | | | | |

## Heating Object List

One Heating has the following list of points. Some points may not be supported depending on the product.

| Point | Description | Object Name(_XXX : Address) | Object Type | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | On/Off (Setting) | StartStopCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | On/Off (Status) | StartStopStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 3 | Lock (Setting) | LockCommand_XXX | BO | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 4 | Lock (Status) | LockStatus_XXX | BI | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 5 | Operation Mode (Setting) | AirConModeCommand_XXX | MO | - | - | Cool (1) | Heat (2) | Auto (3) | - | - | - |
| 6 | Operation Mode (Status) | AirConModeStatus_XXX | MI | - | - | Cool (1) | Heat (2) | Auto (3) | - | - | - |
| 7 | Set Room Temperature (Setting) | SetRoomTempCommand_XXX | AV | ℃(℉) | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 8 | Set Room Temperature (Status) | SetRoomTempStatus_XXX | AI | ℃(℉) | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 9 | Set Hot Water Temperature (Setting) | SetHotWaterTempCommand_XXX | AV | ℃(℉) | 30 ℃ ~ 80 ℃ (86 ℉ ~ 176 ℉) | | | | | | |
| 10 | Set Hot Water Temperature (Status) | SetHotWaterTempStatus_XXX | AI | ℃(℉) | 30 ℃ ~ 80 ℃ (86 ℉ ~ 176 ℉) | | | | | | |
| 11 | Set PipeOut Water Temperature (Setting) | SetPipeOutWaterTempCommand_XXX | AV | ℃(℉) | 6 ℃ ~ 80 ℃ (42 ℉ ~ 176 ℉) | | | | | | |
| 12 | Set PipeOut Water Temperature (Status) | SetPipeOutWaterTempStatus_XXX | AI | ℃(℉) | 6 ℃ ~ 80 ℃ (42 ℉ ~ 176 ℉) | | | | | | |
| 13 | Setting Temperature Reference (Air/Water) | AirWaterFlag_XXX | BI | - | Air (0) | Water (1) | - | - | - | - | - |
| 14 | Hot Water Only Mode | HotWaterOnlyFlag_XXX | BI | - | Normal (0) | Hot Water Only (1) | - | - | - | - | - |
| 15 | Room Temperature | RoomTemp_XXX | AI | ℃(℉) | | | | | | | |
| 16 | Alarm | Alarm_XXX | BI | - | Normal (0) | Abnormal (1) | - | - | - | - | - |
| 17 | Error Code | MalfunctionCode_XXX | AI | - | Please refer to LG error code list. | | | | | | |
| 18 | HotWater On/Off (Setting) | HotWaterCommand_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 19 | HotWater On/Off (Status) | HotWaterStatus_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 20 | Pipe Inlet Temperature Status | PipeInTempStatus_XXX | AI | ℃(℉) | | | | | | | |
| 21 | Water Tank Temperature Status | TankTempStatus_XXX | AI | ℃(℉) | | | | | | | |
| 22 | Solar Temperature Status | SolarTempStatus_XXX | AI | ℃(℉) | | | | | | | |
| 23 | Pipe Outlet Temperature tatus | PipeOutTempStatus_XXX | AI | ℃(℉) | | | | | | | |
| 24 | Accumulated Power Distribution (Status) | Accumulated power(100 Watt)_XXX | AI | 100 Watt | Wattage values | | | | | | |

## General Object List

This is the list of BACnet objects provided for the general information. Some points may not be supported depending on the product.

| Point | Description | Object Name(_XXX : Address) | Object Type | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | All Unit Run/Stop (Setting) | AllStartStopCommand | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | All Unit Set Room Temperature (Setting) | AllSetRoomTempCommand | AV | ℃(℉) | 18 ℃ ~ 30 ℃ (64 ℉ ~ 86 ℉) | | | | | | |
| 3 | All Unit Temperature Lock (Setting) | AllTempLockCommand | BO | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 4 | Total Accumulated Power (Status) | TotalAccumulatedPower | AI | 100 Watt | Wattage values | | | | | | |
| 5 | Peak Control Operation (Setting) | PeakStartStopCommand | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 6 | Peak Control Operation (Status) | PeakStartStopStatus | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 7 | Peak Shift Time(Setting) | PeakShiftTimeCommand | AV | min | 5 min ~ 15 min | | | | | | |
| 8 | Peak Shift Time(Status) | PeakShiftTimeStatus | AI | min | 5 min ~ 15 min | | | | | | |
| 9 | Peak Target Ratio(Setting) | PeakTargetCommand | AV | % | 0 % ~ 100 % | | | | | | |
| 10 | Peak Target Ratio(Status) | PeakTargetStatus | AI | % | 0 % ~ 100 % | | | | | | |
| 11 | Peak Current Running Ratio(Status) | PeakCurrentStatus | AI | % | 0 % ~ 100 % | | | | | | |
| 12 | Remote Shutdown(Setting) | RemoteShutDownCommand | BO | - | Normal (0) | Shutdown (1) | - | - | - | - | - |
| 13 | Temperature Unit Setting (Setting) | TempUnitCommand | BO | - | ℃ (0) | ℉ (1) | - | - | - | - | - |
| 14 | Temperature Unit Setting (Status) | TempUnitStatus | BI | - | ℃ (0) | ℉ (1) | - | - | - | - | - |

## Scroll-Air-Inv-Gen2 object list

Scroll-Air-Inv-Gen2 has a point list as shown below. Some points may not be supported depending on the product.

| Point | Description | Object Name(_XXX : Address) | Object Type | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | On/Off (Setting) | Operation_XXX | BO | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | Chilled Water Flow Switch | ChilledWaterFlowSwitch_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 3 | Chilled Water Pump Output | ChilledWaterPumpOutput_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 4 | Chilled Water Pump Output | ChilledWaterPumpInterlock_XXX | BI | - | Stop (0) | Start (1) | - | - | - | - | - |
| 5 | Main PCB Version | MainPCB_Version_XXX | AI | - | | | | | | | |
| 6 | Total Current Consumption | CurrentConsumption_XXX | AI | - | | | | | | | |
| 7 | Outside Air Temp | OutsideAirTemp_XXX | AI | ℃(℉) | | | | | | | |
| 8 | Chilled Water Leaving Temp | ChilledWaterLeavingTemp_XXX | AI | ℃(℉) | | | | | | | |
| 9 | Chilled Water Entering Temp | ChilledWaterEnteringTemp_XXX | AI | ℃(℉) | | | | | | | |
| 10 | Error Cycle | ErrorCycle_XXX | AI | - | | | | | | | |
| 11 | Error Code | ErrorCode_XXX | AI | - | | | | | | | |
| 12 | Left To Start Time | LeftToStartTime_XXX | AI | sec | | | | | | | |
| 13 | Total Operation Time(high) | TotalOperationTime(high)_XXX | AI | min | | | | | | | |
| 14 | Total Operation Time(low) | TotalOperationTime(low)_XXX | AI | min | | | | | | | |
| 15 | Cycle1_1 Water Leaving Temp | Cycle1_1WaterLeavingTemp_XXX | AI | ℃(℉) | | | | | | | |
| 16 | Cycle1_2 Water Leaving Temp | Cycle1_2WaterLeavingTemp_XXX | AI | ℃(℉) | | | | | | | |
| 17 | Cycle1_1 Inverter Comp Freq | Cycle1_1InvCompFreq_XXX | AI | Hz | | | | | | | |
| 18 | Cycle1_2 Inverter Comp Freq | Cycle1_2InvCompFreq_XXX | AI | Hz | | | | | | | |
| 19 | Cycle1_1 HighPressure | Cycle1_1HighPressure_XXX | AI | kPa | | | | | | | |
| 20 | Cycle1_2 HighPressure | Cycle1_2HighPressure_XXX | AI | kPa | | | | | | | |
| 21 | Cycle1_1 LowPressure | Cycle1_1LowPressure_XXX | AI | kPa | | | | | | | |
| 22 | Cycle1_2 LowPressure | Cycle1_2LowPressure_XXX | AI | kPa | | | | | | | |
| 23 | Cycle2_1 Water Leaving Temp | Cycle2_1WaterLeavingTemp_XXX | AI | ℃(℉) | | | | | | | |
| 24 | Cycle2_2 Water Leaving Temp | Cycle2_2WaterLeavingTemp_XXX | AI | ℃(℉) | | | | | | | |
| 25 | Cycle2_1 Inverter Comp Freq | Cycle2_1InvCompFreq_XXX | AI | Hz | | | | | | | |
| 26 | Cycle2_2 Inverter Comp Freq | Cycle2_2InvCompFreq_XXX | AI | Hz | | | | | | | |
| 27 | Cycle2_1 HighPressure | Cycle2_1HighPressure_XXX | AI | kPa | | | | | | | |
| 28 | Cycle2_2 HighPressure | Cycle2_2HighPressure_XXX | AI | kPa | | | | | | | |
| 29 | Cycle2_1 LowPressure | Cycle2_1LowPressure_XXX | AI | kPa | | | | | | | |
| 30 | Cycle2_2 LowPressure | Cycle2_2LowPressure_XXX | AI | kPa | | | | | | | |
| 31 | Cycle3_1 Water Leaving Temp | Cycle3_1WaterLeavingTemp_XXX | AI | ℃(℉) | | | | | | | |
| 32 | Cycle3_2 Water Leaving Temp | Cycle3_2WaterLeavingTemp_XXX | AI | ℃(℉) | | | | | | | |
| 33 | Cycle3_1 Inverter Comp Freq | Cycle3_1InvCompFreq_XXX | AI | Hz | | | | | | | |
| 34 | Cycle3_1 Inverter Comp Freq | Cycle3_2InvCompFreq_XXX | AI | Hz | | | | | | | |
| 35 | Cycle3_1 HighPressure | Cycle3_1HighPressure_XXX | AI | kPa | | | | | | | |
| 36 | Cycle3_2 HighPressure | Cycle3_2HighPressure_XXX | AI | kPa | | | | | | | |
| 37 | Cycle3_1 LowPressure | Cycle3_1LowPressure_XXX | AI | kPa | | | | | | | |
| 38 | Cycle3_2 LowPressure | Cycle3_2LowPressure_XXX | AI | kPa | | | | | | | |
| 39 | Mode(Setting) | ModeCommand_XXX | MO | - | - | Cool | - | - | - | Heat | - |
| 40 | Mode(Status) | ModeStatus_XXX | MI | - | - | Cool | - | - | - | Heat | - |
| 41 | Set Cool Water Temp | SetCoolWaterTemp_XXX | AV | ℃(℉) | | | | | | | |
| 42 | Set Hot Water Temp | SetHotWaterTemp_XXX | AV | ℃(℉) | | | | | | | |

## BIBBs

BACnet Interoperability Building Blocks

Alarm and Event Management, Scheduling, Trending and Network Security BIBBs are not supported.

## Data Sharing BIBBs

(□:Not supported, ■: Supported)

| BIBB Type | | Supported | Service | Initiate | Execute |
|---|---|---|---|---|---|
| DS-RP-A | Data Sharing-ReadProperty-A | □ | ReadProperty | X | |
| DS-RP-B | Data Sharing-ReadProperty-B | ■ | ReadProperty | | X |
| DS-RPM-A | Data Sharing-ReadPropertyMultiple-A | □ | ReadPropertyMultiple | X | |
| DS-RPM-B | Data Sharing-ReadPropertyMultiple-B | ■ | ReadPropertyMultiple | | X |
| DS-RPC-A | Data Sharing-ReadPropertyConditional-A | □ | ReadPropertyConditional | X | |
| DS-RPC-B | Data Sharing-ReadPropertyConditional-B | □ | ReadPropertyConditional | | X |
| DS-WP-A | Data Sharing-WriteProperty-A | □ | WriteProperty | X | |
| DS-WP-B | Data Sharing-WriteProperty-B | ■ | WriteProperty | | X |
| DS-WPM-A | Data Sharing-WritePropertyMultiple-A | □ | WritePropertyMultiple | X | |
| DS-WPM-B | Data Sharing-WritePropertyMultiple-B | ■ | WritePropertyMultiple | | X |
| DS-COV-A | Data Sharing-Change Of Value-A | □ | SubscribeCOV | X | |
| | | | ConfirmedCOVNotification | | X |
| | | | UnconfirmedCOVNotification | | X |
| DS-COV-B | Data Sharing-Change Of Value-B | ■ | SubscribeCOV | | X |
| | | | ConfirmedCOVNotification | X | |
| | | | UnconfirmedCOVNotification | X | |
| DS-COVP-A | Data Sharing-Change Of Value Property-A | □ | SubscribeCOVProperty | X | |
| | | | ConfirmedCOVNotification | | X |
| | | | UnconfirmedCOVNotification | | X |
| DS-COVP-B | Data Sharing-Change Of Value Property-B | □ | SubscribeCOVProperty | | X |
| | | | ConfirmedCOVNotification | X | |
| | | | UnconfirmedCOVNotification | X | |
| DS-COVU-A | Data Sharing-Change Of Value Unsubscribed-A | □ | UnconfirmedCOVNotification | | X |
| DS-COVU-B | Data Sharing-Change Of Value Unsubscribed-B | □ | UnconfirmedCOVNotification | X | |

## Device and Network Management BIBBs

(□:Not supported, ■: Supported)

| BIBB Type | | Supported | Service | Initiate | Execute |
|---|---|---|---|---|---|
| DM-DDB-A | Device Management-Dynamic Device Binding-A | □ | Who-Is | X | |
| | | | I-Am | | X |
| DM-DDB-B | Device Management-Dynamic Device Binding-B | ■ | Who-Is | | X |
| | | | I-Am | X | |
| DM-DOB-A | Device Management-Dynamic Object Binding-A | □ | Who-Has | X | |
| | | | I-Have | | X |
| DM-DOB-B | Device Management-Dynamic Object Binding-B | ■ | Who-Has | | X |
| | | | I-Have | X | |
| DM-DCC-A | Device Management-DeviceCommunicationControl-A | □ | DeviceCommunicationControl | X | |
| DM-DCC-B | Device Management-DeviceCommunicationControl-B | ■ | DeviceCommunicationControl | | X |
| DM-TS-A | Device Management-TimeSynchronization-A | □ | TimeSynchronization | X | |
| DM-TS-B | Device Management-TimeSynchronization-B | ■ | TimeSynchronization | | X |

# PICS

BACnet Protocol Implementation Conformance Statement

### Vendor Name

LG Electronics Inc.

### Product Name

ACP 5

### Product Description

This gateway converts between BACnet IP and RS-485 LGAP (LG Aircon protocol) allowing third party control and monitoring of the LG A/C system.

It has a built in web server that does not require any additional software.

### BACnet Standardized Device Profile (Annex L)

BACnet Application Specific Controller (B-ASC)

### Segmentation Capability

Segmented responses supported Window Size - 64

### Standard Object Types Supported

| Object-Type | Dynamically Creatable | Dynamically Deletable | Optional Properties Supported | Writable Properties |
|---|---|---|---|---|
| Device | No | No | Location, Description, Max Segments Accepted, APDU Segment Timeout, Active COV Subscriptions, Profile Name | N/A |
| Analog Input | No | No | Description, Reliability, Min Pres Value, Max Pres Value, Resolution, COV Increment | N/A |
| Analog Value | No | No | Description, Reliability, Resolution, COV Increment | Present_Value |
| Binary Input | No | No | Description, Reliability, Inactive Text, Active Text | N/A |
| Binary Output | No | No | Description, Reliability, Inactive Text, Active Text | Present_Value |
| Binary Value | No | No | Description, Reliability, Inactive Text, Active Text | Present_Value |
| Multi-State Input | No | No | Description, Reliability, State Text | N/A |
| Multi-State Output | No | No | Description, Reliability, State Text | Present_Value |

### Data Link Layer Options

BACnet IP, (Annex J), Foreign Device - IPv4 only, IPv6 not supported

### Device Address Binding

Static device binding is not supported.

### Character Sets Supported

ANSI x 3.4

# Modbus Commission

Commissioning is the process of verifying the subsystems to achieve the owner's project requirements as intended by the building owner and as designed by the building architects and engineers.

After ACP 5 installation, you can check the operation status of the device by using the web function before connection with the BMS system.

Creating of the Points. This is NOT to be done by LG since it is directly related to the BMS side. The BMS engineer is to carry out the engineering of the Point, however LG is responsible for providing the method of how the Points are calculated.

# Precautions

- To use the Modbus feature, you must select **[Settings] > [BACnet/Modbus/Lonworks Setting] > [Modbus TCP enable]** as **Set**.
- In case of installing 2 or more ACP 5, you must change **[Settings] > [BACnet/Modbus/Lonworks Setting] > [Vnet Number Setting]** so that the Vnet Numbers are not duplicate among ACP 5.
- The Vnet number is used as a Slave ID of the Modbus protocol and can be set to a value from 1 to 247.
- The Read Single Coils command (Function Code 1) can read up to 2,000 commands at a time. The Read Holding Registers command (Function Code 3) can read up to 125 at a time.

## Supported Function Codes

The Modbus function codes supported by ACP 5 are as follows:

Refer to the Register List page for controlled/monitored items supported by each function code.

- 0x01
- 0x03
- 0x05
- 0x06

# Modbus Register List

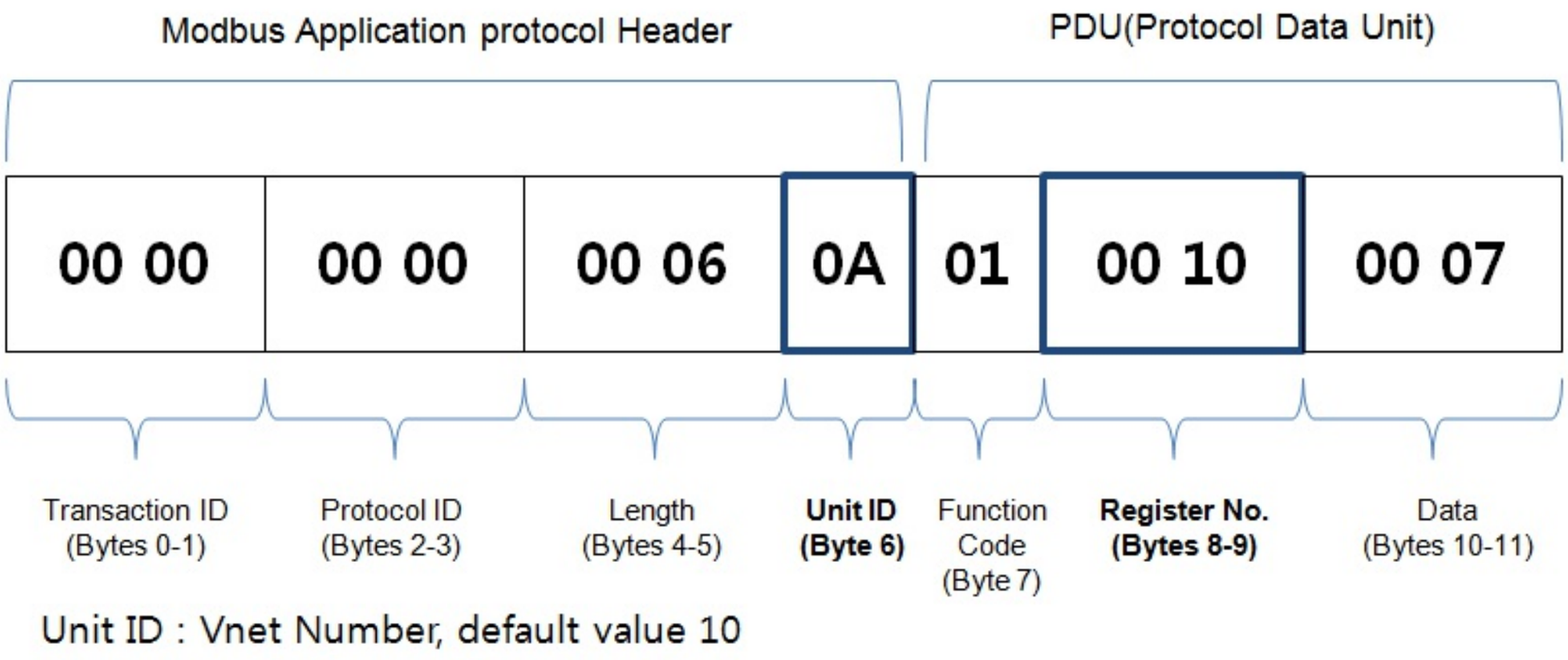
It describes the Modbus Register List provided by ACP 5.

- Definition of Register Address
- Indoor Unit Register List
- ERV Register List
- AHU Register List
- Heating Register List

## Definition of Register Address

The Register Address of each device is assigned as follows.

- Protocol Configuration




- Register No.

## Example of Register Address

| Description of Register | Product Type (Hexadecimal) | Product Address (Hexadecimal) | Point (Hexadecimal) | Function Code(Hexadecimal) | Register Address (Hexadecimal) |
|---|---|---|---|---|---|
| IDU Address 0x00, On/Off | 0x0 | 0x00 | 0x1 | 0x1 / 0x5 | 0x0000 |
| IDU Address 0x00, Operation Mode | 0x0 | 0x00 | 0x1 | 0x3 / 0x6 | 0x0000 |
| IDU Address 0x1B, On/Off | 0x0 | 0x1B | 0x1 | 0x1 / 0x5 | 0x01B0 |
| IDU Address 0x1B, Operation Mode | 0x0 | 0x1B | 0x1 | 0x3 / 0x6 | 0x01B0 |
| ERV Address 0x00, On/Off | 0x4 | 0x00 | 0x1 | 0x1 / 0x5 | 0x4000 |
| ERV Address 0x00, Operation Mode | 0x4 | 0x00 | 0x1 | 0x3 / 0x6 | 0x4000 |
| ERV Address 0x1B, On/Off | 0x4 | 0x1B | 0x1 | 0x1 / 0x5 | 0x41B0 |
| ERV Address 0x1B, Operation Mode | 0x4 | 0x1B | 0x1 | 0x3 / 0x6 | 0x41B0 |
| AHU Address 0x00, On/Off | 0x8 | 0x00 | 0x1 | 0x1 / 0x5 | 0x8000 |
| AHU Address 0x00, Operation Mode | 0x8 | 0x00 | 0x1 | 0x3 / 0x6 | 0x8000 |
| AHU Address 0x00, Current OA Damper | 0x8 | 0x01 | 0x1 | 0x3 | 0x8010 |
| AHU Address 0x0F, On/Off | 0x8 | 0x1E | 0x1 | 0x1 / 0x5 | 0x81E0 |
| AHU Address 0x0F, Operation Mode | 0x8 | 0x1E | 0x1 | 0x3 / 0x6 | 0x81E0 |
| AHU Address 0x0F, Current OA Damper | 0x8 | 0x1F | 0x1 | 0x3 | 0x81F0 |
| Heating Address 0x00, On/Off | 0xC | 0x00 | 0x1 | 0x1 / 0x5 | 0xC000 |
| Heating Address 0x00, Operation Mode | 0xC | 0x00 | 0x1 | 0x3 / 0x6 | 0xC000 |
| Heating Address 0x0F, On/Off | 0xC | 0x0F | 0x1 | 0x1 / 0x5 | 0xC0F0 |
| Heating Address 0x0F, Operation Mode | 0xC | 0x0F | 0x1 | 0x3 / 0x6 | 0xC0F0 |

## Indoor Unit Register List

One Indoor unit has the following list of points. Some points may not be supported depending on the product.

| Point | Description | Function Code | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | On/Off | 01/05 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | Swing | 01/05 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 3 | Lock | 01/05 | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 4 | Mode Lock | 01/05 | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 5 | Fan Lock | 01/05 | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 6 | Temp Lock | 01/05 | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 7 | Alarm | 01 | - | Normal (0) | Abnormal (1) | - | - | - | - | - |
| 1 | Operation Mode | 03/06 | - | - | Cool (1) | Dry (2) | Fan (3) | Auto (4) | Heat (5) | - |
| 2 | Fan Speed | 03/06 | - | - | Low (1) | Middle (2) | High (3) | Auto (4) | - | - |
| 3 | Set Room Temperature | 03/06 | ℃ | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 4 | Set Upper Temperature | 03/06 | ℃ | 18 ℃ ~ 30 ℃ (64 ℉ ~ 86 ℉) | | | | | | |
| 5 | Set Lower Temperature | 03/06 | ℃ | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 6 | Room Temperature | 03 | ℃ | | | | | | | |
| 7 | Error Code | 03 | - | Please refer to LG error code list. | | | | | | |
| 8 | Accumulated Power(LOW) | 03 | - | Accumulated Power Value(100 Watt) = Accumulated Power(HIGH) X 65536 + Accumulated Power(LOW) | | | | | | |
| 9 | Accumulated Power(HIGH) | 03 | - | | | | | | | |
| 10 | Accumulated Gas(LOW) | 03 | - | Accumulated Gas Value(100 Liter) = Accumulated Gas(HIGH) X 65536 + Accumulated Gas(LOW) | | | | | | |
| 11 | Accumulated Gas(HIGH) | 03 | - | | | | | | | |

## ERV Register List

One Indoor unit has the following list of points. Some points may not be supported depending on the product.

| Point | Description | Function Code | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | On/Off | 01/05 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | Lock | 01/05 | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 3 | Filter | 01/05 | - | Off (0) | On (1) | - | - | - | - | - |
| 4 | Alarm | 01 | - | Normal (0) | Abnormal (1) | - | - | - | - | - |
| 5 | AC ON/OFF | 01/05 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 6 | AC Humidify | 01/05 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 1 | Operation Mode | 03/06 | - | - | Heat Exchange (1) | Auto (2) | Normal (3) | - | - | - |
| 2 | Fan Speed | 03/06 | - | - | Low (1) | High (2) | Super High (3) | Auto (4) | - | - |
| 3 | User Mode | 03/06 | - | - | Quick fresh (1) | Energy saving (2) | Clear (3) | - | - | - |
| 4 | Error Code | 03 | - | Please refer to LG error code list. | | | | | | |
| 5 | AC Operation Mode | 03/06 | - | - | Cool (1) | Auto (2) | Heat (3) | - | - | - |
| 6 | Set Room Temperature | 03/06 | ℃ | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |

## AHU Register List

One AHU has the following list of points. Some points may not be supported depending on the product.

Due to the limited number of points, One AHU device uses two product addresses. Refer to the Definition of Register Address page for the detail information.

| Point | Description | Function Code | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|
| Product Address X 2 | | | | | | | | | | |
| 1 | On/Off | 01/05 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | Lock | 01/05 | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 3 | Filter | 01 | - | Off (0) | On (1) | - | - | - | - | - |
| 4 | FireAlarm | 01/05 | - | Off (0) | On (1) | - | - | - | - | - |
| 5 | Humidity Oper | 01/05 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 6 | Auto Ventilation ON/OFF | 01/05 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 7 | Humidify ON/OFF Status | 01 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 8 | Heater ON/OFF Status | 01 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 9 | Ventilator FAN ON/OFF | 01 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 10 | Supply Unit FAN ON/OFF | 01 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 11 | Alarm | 01 | - | Normal (0) | Abnormal (1) | - | - | - | - | - |
| 1 | Operation Mode | 03/06 | - | - | Cool (1) | Dry (2) | Fan (3) | Energy saving (4) | Heat (5) | - |
| 2 | Set Room Temperature | 03/06 | ℃ | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 3 | Supply Unit Temperature | 03 | ℃ | | | | | | | |
| 4 | Outdoor Unit Temperature | 03 | ℃ | | | | | | | |
| 5 | Ventilation UnitTemperature | 03 | ℃ | | | | | | | |
| 6 | Mix Unit Temperature | 03 | ℃ | | | | | | | |
| 7 | Set Humidity | 03/06 | % | 40 % ~ 60 % | | | | | | |
| 8 | Supply Unit Humidity | 03 | % | | | | | | | |
| 9 | Outdoor Unit Humidity | 03 | % | | | | | | | |
| 10 | Ventilation Unit Humidity | 03 | % | | | | | | | |
| 11 | CO2 Value | 03 | - | 0~255 (Real Value = Value*10, Example : In case Value is 20, CO2 is 20*10=200ppm) | | | | | | |
| 12 | Error Code | 03 | - | Please refer to LG error code list. | | | | | | |
| Product Address X 2 + 1 | | | | | | | | | | |
| 1 | Current OA Damper | 03 | º | | | | | | | |
| 2 | Current EA Damper | 03 | º | | | | | | | |
| 3 | Current Mix Damper | 03 | º | | | | | | | |
| 4 | Cooling OA Damper | 03/06 | º | 0 º ~ 90 º | | | | | | |
| 5 | Cooling EA Damper | 03/06 | º | 0 º ~ 90 º | | | | | | |
| 6 | Cooling Mix Damper | 03/06 | º | 0 º ~ 90 º | | | | | | |
| 7 | Heating OA Damper | 03/06 | º | 0 º ~ 90 º | | | | | | |
| 8 | Heating EA Damper | 03/06 | º | 0 º ~ 90 º | | | | | | |
| 9 | Heating Mix Damper | 03/06 | º | 0 º ~ 90 º | | | | | | |
| 10 | FAN OA Damper | 03/06 | º | 0 º ~ 90 º | | | | | | |
| 11 | FAN EA Damper | 03/06 | º | 0 º ~ 90 º | | | | | | |
| 12 | FAN Mix Damper | 03/06 | º | 0 º ~ 90 º | | | | | | |

## Heating Register List

One Heating has the following list of points. Some points may not be supported depending on the product.

| Point | Description | Function Code | Unit | Text-0 | Text-1 | Text-2 | Text-3 | Text-4 | Text-5 | Text-6 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | On/Off | 01/05 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 2 | Lock | 01/05 | - | Permit (0) | Prohibit (1) | - | - | - | - | - |
| 3 | Setting Temperature Reference (Air/Water) | 01 | - | Air (0) | Water (1) | - | - | - | - | - |
| 4 | Set Hot Water Temperature | 01 | - | Normal (0) | Hot Water Only (1) | - | - | - | - | - |
| 5 | Alarm | 01 | - | Normal (0) | Abnormal (1) | - | - | - | - | - |
| 6 | HotWater On/Off | 01/05 | - | Stop (0) | Start (1) | - | - | - | - | - |
| 1 | Operation Mode | 03/06 | - | - | Cool (1) | Heat (2) | Auto (3) | - | - | - |
| 2 | Set Room Temperature | 03/06 | ℃ | 16 ℃ ~ 30 ℃ (60 ℉ ~ 86 ℉) | | | | | | |
| 3 | Hot Water Only Mode | 03/06 | ℃ | 30 ℃ ~ 80 ℃ (86 ℉ ~ 176 ℉) | | | | | | |
| 4 | Set PipeOut Water Temperature | 03/06 | ℃ | 6 ℃ ~ 80 ℃ (42 ℉ ~ 176 ℉) | | | | | | |
| 5 | Room Temperature | 03 | ℃ | | | | | | | |
| 6 | Error Code | 03 | - | Please refer to LG error code list. | | | | | | |
| 7 | Pipe Inlet Temperature Status | 03 | ℃ | | | | | | | |
| 8 | Water Tank Temperature Status | 03 | ℃ | | | | | | | |
| 9 | Solar Temperature Status | 03 | ℃ | | | | | | | |
| 10 | Pipe Outlet Temperature tatus | 03 | ℃ | | | | | | | |

## Lonworks Commission

The first process linking the BMS system with ACP 5 is called commission.

1. After installing ACP 5, use the web function to check the operation status of the linking device before connecting to the BMS system.

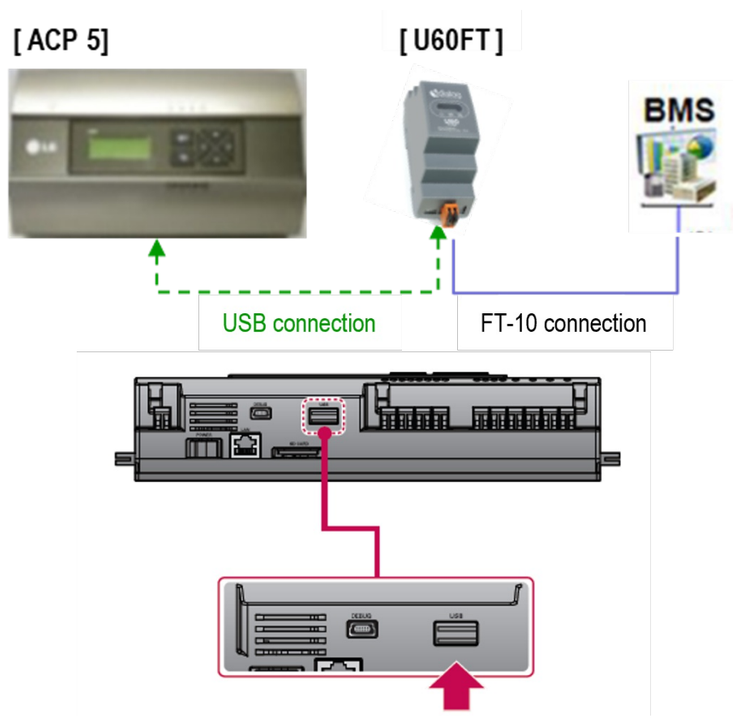
2. After preparing the U60FT communication module, connect USB with the FT-10 communication line as shown in the image.

3. In [Settings] > [BACnet/Modbus/Lonworks Settings], set [Use Lonworks] and [Temperature Unit] and press the Apply button to activate [SVC pin Settings].

4. When the SVC Pin press request screen appears on the BMS engineering screen, if the connection between BMS and communication is normal, click the “Connect” button to activate.

## Precautions

- When connecting the BMS System and communication using the Lonworks protocol, a separate communication module is needed.
- In BMS engineering, LG provides only the point list of the linkage device.



# Function Block List

It describes the Function Block list provided by ACP 5.

- Indoor Unit Function Block
- ERV Function Block
- ERV DX Function Block
- AWHP Function Block

# Indoor Unit Function Block

① Standard Function Block

| Standard Function Block | |
|---|---|
| SNVT_switch | nviOnOff |
| SNVT_hvac_mode | nviHeatCool |
| SNVT_switch | nviLock |
| SNVT_temp_p | nviSetTemp |
| SNVT_switch | nviFanSpeed |
| SNVT_switch | nviSwing_Heater |
| SNVT_switch | nviModlok |
| SNVT_switch | nviFanlok |
| SNVT_switch | nviTmplok_Humid |
| SNVT_temp_p | nviLow_HW_Tmp |
| SNVT_temp_p | nviUp_Tmp |

SCC(8500) FB

Indoor Unit Network Variables

| Standard Function Block | |
|---|---|
| SNVT_switch | nvoOnOff |
| SNVT_hvac_mode | nvoHeatCool |
| SNVT_switch | nvoLock |
| SNVT_temp_p | nvoSetTemp |
| SNVT_switch | nvoFanSpeed |
| SNVT_switch | nvoSwing_Heater |
| SNVT_switch | nvoModlok |
| SNVT_switch | nvoFanlok |
| SNVT_switch | nvoTmplok_Humid |
| SNVT_temp_p | nvoLow_HW_Tmp |
| SNVT_temp_p | nvoUp_Sol_Tmp |
| SNVT_count | nvoPType |
| SNVT_count | nvoPAddr |
| SNVT_temp_p | nvoSpaceTemp |
| SNVT_hvac_status | nvoUnitStatus |
| SNVT_elec_kwh_l | nvoAccuPw |

② General Function Block

| General Function Block | |
|---|---|
| SNVT_count | nviPeakSwTime |
| SNVT_lev_percent | nviPeakTgtRate |
| SNVT_switch | nviTempUnit |
| SNVT_switch | nviAllTemplock |
| SNVT_switch | nviTotalOnOff |
| SNVT_temp_p | nviTotalTemp |

switch(3200) FB

Indoor Unit Total Unit Network Variables

| General Function Block | |
|---|---|
| SNVT_count | nvoPeakSwTime |
| SNVT_lev_percent | nvoPeakTgtRate |
| SNVT_switch | nvoTempUnit |
| SNVT_lev_percent | nvoPeakCurRate |
| SNVT_elec_kwh_l | nvoTotalAccuPw |

| | |
|---|---|
| SNVT_state_64 | nvoDefrost |

③ Control/Monitoring Point

| Control | |
|---|---|
| On/Off | Operation Mode |
| Lock | Set Temperature |
| Fan Speed | Swing |
| Mode Lock | Fan Lock |
| Temp Lock | Lower Limit Temperature |
| Upper Limit Temperature | PeakShiftTime |
| Peak Target Ratio | Temperature Unit |
| Total Temperature Lock | Total On/Off |
| Total Setting Temperature | |

| Monitoring | |
|---|---|
| On/Off | Operation Mode |
| Lock | Set Temperature |
| Fan Speed | Swing |
| Mode Lock | Fan Lock |
| Temp Lock | Lower Limit Temperature |
| Upper Limit Temperature | Product Type |
| Product Address | Current Temperature |
| Alarm | Power |
| PeakShiftTime | Peak Target Ratio |
| Temperature Unit | Peak Current Running Ratio |
| Total Accumulated Power | Outdoor Unit Defrost |

※ You can enable control and monitoring as shown in the figure for one air conditioner unit.

※ The network variable can differ from the actual.

④ Air conditioner Standard NV(Network Variable) List

| | Name | Object Type | Network Variable | Input / Output | Unit | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | On/Off (setting) | SNVT_switch | nviOnOff | input | 0.0 0(Off) | 100.0 1(On) | | | |
| 2 | On/Off (status) | SNVT_switch | nvoOnOff | output | 0.0 0(Off) | 100.0 1(On) | | | |
| 3 | Operation Mode (setting) | SNVT_hvac_mode | nviHeatCool | input | HVAC_AUTO(Auto) | HVAC_HEAT(Heat) | HVAC_COOL(Cool) | HVAC_FAN_ONLY(Fan) | HVAC_DEHUMID(Dry) |
| 4 | Operation Mode (status) | SNVT_hvac_mode | nvoHeatCool | output | HVAC_AUTO(Auto) | HVAC_HEAT(Heat) | HVAC_COOL(Cool) | HVAC_FAN_ONLY(Fan) | HVAC_DEHUMID(Dry) |
| 5 | Lock (setting) | SNVT_switch | nviLock | input | 0.0 0(Clear) | 100.0 1(Lock) | | | |
| 6 | Lock (status) | SNVT_switch | nvoLock | output | 0.0 0(Clear) | 100.0 1(Lock) | | | |
| 7 | Set Temperature (setting) | SNVT_temp_p | nviSetTemp | input | 16 ~ 30℃ (60 ~ 86 ℉) | | | | |
| 8 | Set Temperature (status) | SNVT_temp_p | nvoSetTemp | output | 16 ~ 30℃ (60 ~ 86 ℉) | | | | |
| 9 | Fan Speed (setting) | SNVT_switch | nviFanSpeed | input | 0.0 0(Auto) | 1.0 0(Low) | 2.0 0(Middle) | 3.0 0(High) | |
| 10 | Fan Speed (status) | SNVT_switch | nvoFanSpeed | output | 0.0 0(Auto) | 1.0 0(Low) | 2.0 0(Middle) | 3.0 0(High) | |
| 11 | Swing (setting) | SNVT_switch | nviSwing_Heater | input | 0.0 0(Off) | 100.0 1(On) | | | |
| 12 | Swing (status) | SNVT_switch | nvoSwing_Heater | output | 0.0 0(Off) | 100.0 1(On) | | | |
| 13 | Mode Lock (setting) | SNVT_switch | nviModlok | input | 0.0 0(Clear) | 100.0 1(Lock) | | | |
| 14 | Mode Lock (status) | SNVT_switch | nvoModlok | output | 0.0 0(Clear) | 100.0 1(Lock) | | | |
| 15 | Fan Lock (setting) | SNVT_switch | nviFanlok | input | 0.0 0(Clear) | 100.0 1(Lock) | | | |
| 16 | Fan Lock (status) | SNVT_switch | nvoFanlok | output | 0.0 0(Clear) | 100.0 1(Lock) | | | |
| 17 | Temp Lock (setting) | SNVT_switch | nviTmplok_Humid | input | 0.0 0(Clear) | 100.0 1(Lock) | | | |
| 18 | Temp Lock (status) | SNVT_switch | nvoTmplok_Humid | output | 0.0 0(Clear) | 100.0 1(Lock) | | | |
| 19 | Lower Limit Temperature (setting) | SNVT_temp_p | nviLow_HW_Tmp | input | 16 ~ 30℃ (60 ~ 86 ℉) | | | | |
| 20 | Lower Limit Temperature | SNVT_temp_p | nvoLow_HW_Tmp | output | 16 ~ 30℃ (60 ~ 86 ℉) | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | (status) | | | | |
| 21 | Upper Limit Temperature (setting) | SNVT_temp_p | nviUp_Tmp | input | 16 ~ 30℃ (60 ~ 86 ℉) |
| 22 | Upper Limit Temperature (status) | SNVT_temp_p | nvoUp_Sol_Tmp | output | 16 ~ 30℃ (60 ~ 86 ℉) |
| 23 | Product Type | SNVT_count | nvoPType | output | 0 |
| 24 | Product Address | SNVT_count | nvoPAddr | output | 0~255 |
| 25 | Current Temperature | SNVT_temp_p | nvoSpaceTemp | output | 0 ~ 99℃ (32 ~ 211 ℉) |
| 26 | Alarm | SNVT_hvac_status | nvoUnitStatus | output | mode/0/0/0/0/0/alarm |
| 27 | Power | SNVT_elec_kwh_l | nvoAccuPw | output | 0~214,748,364.6 |

⑤ Air conditioner General NV(Network Variable) List

| | Name | Object Type | Network Variable | Input / Output | Unit | |
|---|---|---|---|---|---|---|
| 1 | PeakShiftTime(second) (setting) | SNVT_count | nviPeakSwTime | input | 300~900 | |
| 2 | PeakShiftTime(second) (status) | SNVT_count | nvoPeakSwTime | output | 300~900 | |
| 3 | Peak Target Ratio(%) (setting) | SNVT_lev_percent | nviPeakTgtRate | input | 0~100 | |
| 4 | Peak Target Ratio(%) (status) | SNVT_lev_percent | nvoPeakTgtRate | output | 0~100 | |
| 5 | Temperature Unit (setting) | SNVT_switch | nviTempUnit | input | 0.0 0(Celsius) | 100.0 1(Fahrenheit) |
| 6 | Temperature Unit (status) | SNVT_switch | nvoTempUnit | output | 0.0 0(Celsius) | 100.0 1(Fahrenheit) |
| 7 | Total Temperature Lock | SNVT_switch | nviAllTemplock | input | 0.0 0(Clear) | 100.0 1(Lock) |
| 8 | Total On/Off | SNVT_switch | nviTotalOnOff | input | 0.0 0(Off) | 100.0 1(On) |
| 9 | Total Setting Temperature | SNVT_temp_p | nviTotalTemp | input | 16 ~ 30℃ (60 ~ 86℉) | |
| 10 | Peak Current Running Ratio (%) | SNVT_lev_percent | nvoPeakCurRate | output | 0~100 | |
| 11 | Total Accumulated Power (Kwh) | SNVT_elec_kwh_l | nvoTotalAccuPw | output | 0~214,748,364.6 | |
| 12 | Outdoor Unit Defrost | SNVT_state_64 | nvoDefrost | output | 0(Off), 1(On) | |

# ERV Function Block

① Standard Function Block

| Standard Function Block | |
|---|---|
| SNVT_switch | nviOnOff |
| SNVT_hvac_mode | nviHeatCool |
| SNVT_switch | nviLock |
| SNVT_switch | nviFanSpeed |
| SNVT_switch | nviSwing_Heater |
| SNVT_count | nviUsrmod |

SCC(8500)
FB

ERV
Network
Variables

| Standard Function Block | |
|---|---|
| SNVT_switch | nvoOnOff |
| SNVT_hvac_mode | nvoHeatCool |
| SNVT_switch | nvoLock |
| SNVT_switch | nvoFanSpeed |
| SNVT_switch | nvoSwing_Heater |
| SNVT_count | nvoUsrmod |
| SNVT_count | nvoPType |
| SNVT_count | nvoPAddr |
| SNVT_hvac_status | nvoUnitStatus |

② General Function Block

| General Function Block | |
|---|---|
| SNVT_switch | nviTotalOnOff |

switch(3200)
FB

ERV
Total Unit
Network
Variables

③ Control/Monitoring Point

| Control | |
|---|---|
| On/Off | Operation Mode |
| Lock | Fan Speed |
| Heater | User Mode |
| Total On/Off | |

| Monitoring | |
|---|---|
| On/Off | Operation Mode |
| Lock | Fan Speed |
| Heater | User Mode |
| Device Type | Device address |
| Alarm | |

※ You can enable control and monitoring as shown in the figure for one ERV.

※ The network variable can differ from the actual.

④ ERV Standard NV(Network Variable) List

| | Name | Object Type | Network Variable | Input / Output | Unit | | |
|---|---|---|---|---|---|---|---|
| 1 | On/Off (setting) | SNVT_switch | nviOnOff | input | 0.0 0(Off) | 100.0 1(On) | |
| 2 | On/Off (status) | SNVT_switch | nvoOnOff | output | 0.0 0(Off) | 100.0 1(On) | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3 | Operation Mode (setting) | SNVT_hvac_mode | nviHeatCool | input | HVAC_AUTO(Auto) | HVAC_HEAT(Heat Exchange) | HVAC_FAN_ONLY(Normal) | |
| 4 | Operation Mode (status) | SNVT_hvac_mode | nvoHeatCool | output | HVAC_AUTO(Auto) | HVAC_HEAT(Heat Exchange) | HVAC_FAN_ONLY(Normal) | |
| 5 | Lock(setting) | SNVT_switch | nviLock | input | 0.0 0(Clear) | 100.0 1(Lock) | | |
| 6 | Lock (status) | SNVT_switch | nvoLock | output | 0.0 0(Clear) | 100.0 1(Lock) | | |
| 7 | Fan Speed (setting) | SNVT_switch | nviFanSpeed | input | 0.0 0(Auto) | 1.0 0(Low) | 3.0 0(High) | 4.0 0(Super High) |
| 8 | Fan Speed (status) | SNVT_switch | nvoFanSpeed | output | 0.0 0(Auto) | 1.0 0(Low) | 3.0 0(High) | 4.0 0(Super High) |
| 9 | Heater (setting) | SNVT_switch | nviSwing_Heater | input | 0.0 0(Clear) | 100.0 1(Setup) | | |
| 10 | Heater (status) | SNVT_switch | nvoSwing_Heater | output | 0.0 0(Clear) | 100.0 1(Setup) | | |
| 11 | User Mode (setting) | SNVT_count | nviUsrmod | input | 0(NONE) | 1(Quick Fresh) | 2(Energy Saving) | |
| 12 | User Mode (status) | SNVT_count | nvoUsrmod | output | 0(NONE) | 1(Quick Fresh) | 2(Energy Saving) | |
| 13 | Device Type | SNVT_count | nvoPType | output | 1 | | | |
| 14 | Device address | SNVT_count | nvoPAddr | output | 0~255 | | | |
| 15 | Alarm | SNVT_hvac_status | nvoUnitStatus | output | mode/0/0/0/0/0/alarm | | | |

⑤ ERV General NV(Network Variable) List

| | Name | Object Type | Network Variable | Input / Output | Unit | |
|---|---|---|---|---|---|---|
| 1 | Total OnOff | SNVT_switch | nviTotalOnOff | input | 0.0 0(Off) | 100.0 1(On) |

# ERV DX Function Block

① Standard Function Block

| Standard Function Block | |
|---|---|
| SNVT_switch | nviOnOff |
| SNVT_hvac_mode | nviHeatCool |
| SNVT_switch | nviLock |
| SNVT_temp_p | nviSetTemp |
| SNVT_switch | nviFanSpeed |
| SNVT_switch | nviSwing_Heater |
| SNVT_switch | nviTmplok_Humid |
| SNVT_count | nviUsrmod |
| SNVT_switch | nviIDUrun_HWEn |
| SNVT_hvac_mode | nviIDUmod |

SCC(8500)
FB

ERV DX
Network
Variables

| Standard Function Block | |
|---|---|
| SNVT_switch | nvoOnOff |
| SNVT_hvac_mode | nvoHeatCool |
| SNVT_switch | nvoLock |
| SNVT_temp_p | nvoSetTemp |
| SNVT_switch | nvoFanSpeed |
| SNVT_switch | nvoSwing_Heater |
| SNVT_switch | nvoTmplok_Humid |
| SNVT_count | nviUsrmod |
| SNVT_switch | nviIDUrun_HWEn |
| SNVT_hvac_mode | nviIDUmod |
| SNVT_count | nvoPType |
| SNVT_count | nvoPAddr |
| SNVT_hvac_status | nvoUnitStatus |
| SNVT_switch | nvoMS_HWmod |

② General Function Block

| General Function Block | |
|---|---|
| SNVT_switch | nviTempUnit |
| SNVT_switch | nviTotalOnOff |
| SNVT_temp_p | nviTotalTemp |

switch(3200)
FB

ERV DX
Total Unit
Network
Variables

| General Function Block | |
|---|---|
| SNVT_switch | nvoTempUnit |

③ Control/Monitoring Point

| Control | |
|---|---|
| On/Off | Operation Mode |
| Lock | Set Temperature |
| Fan Speed | Heater |
| Humidify | User Mode |
| AC operation | AC Mode |
| Temperature Unit | Total On/Off |
| Total Setting Temperature | |

| Monitoring | |
|---|---|
| On/Off | Operation Mode |
| Lock | Set Temperature |
| Fan Speed | Heater |
| Humidify | User Mode |
| AC operation | AC Mode |
| Device Type | Device address |
| Alarm | Master/Slave |
| Temperature Unit | |

※ You can enable control and monitoring as shown in the figure for one ERV DX.

※ The network variable can differ from the actual.

④ ERV DX Standard NV(Network Variable) List

| | Name | Object Type | Network Variable | Input / Output | Unit | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | On/Off (setting) | SNVT_switch | nviOnOff | input | 0.0 0(Off) | 100.0 1(On) | | |
| 2 | On/Off (status) | SNVT_switch | nvoOnOff | output | 0.0 0(Off) | 100.0 1(On) | | |
| 3 | Operation Mode (setting) | SNVT_hvac_mode | nviHeatCool | input | HVAC_HEAT(Heat Exchange) | HVAC_FAN_ONLY(Normal) | HVAC_AUTO(Auto) | |
| 4 | Operation Mode (status) | SNVT_hvac_mode | nvoHeatCool | output | HVAC_HEAT(Heat Exchange) | HVAC_FAN_ONLY(Normal) | HVAC_AUTO(Auto) | |
| 5 | Total Lock (setting) | SNVT_switch | nviLock | input | 0.0 0(Clear) | 100.0 1(Lock) | | |
| 6 | Total Lock (status) | SNVT_switch | nvoLock | output | 0.0 0(Clear) | 100.0 1(Lock) | | |
| 7 | Set Temperature (setting) | SNVT_temp_p | nviSetTemp | input | 16 ~ 30℃ (60 ~ 86 ℉) | | | |
| 8 | Set Temperature (status) | SNVT_temp_p | nvoSetTemp | output | 16 ~ 30℃ (60 ~ 86 ℉) | | | |
| 9 | Fan Speed (setting) | SNVT_switch | nviFanSpeed | input | 0.0 0(Auto) | 1.0 0(Low) | 3.0 0(High) | 4.0 0(Super High) |
| 10 | Fan Speed (status) | SNVT_switch | nvoFanSpeed | output | 0.0 0(Auto) | 1.0 0(Low) | 3.0 0(High) | 4.0 0(Super High) |
| 11 | Heater (setting) | SNVT_switch | nviSwing_Heater | input | 0.0 0(Clear) | 100.0 1(Setup) | | |
| 12 | Heater (status) | SNVT_switch | nvoSwing_Heater | output | 0.0 0(Clear) | 100.0 1(Setup) | | |
| 13 | Humidify (setting) | SNVT_switch | nviTmplok_Humid | input | 0.0 0(Clear) | 100.0 1(Setup) | | |
| 14 | Humidify (status) | SNVT_switch | nvoTmplok_Humid | output | 0.0 0(Clear) | 100.0 1(Setup) | | |
| 15 | User Mode(setting) | SNVT_count | nviUsrmod | input | 0(NONE) | 1(Quick Fresh) | 2(Energy Saving) | |
| 16 | User Mode(status) | SNVT_count | nvoUsrmod | output | 0(NONE) | 1(Quick Fresh) | 2(Energy Saving) | |
| 17 | AC operation (setting) | SNVT_switch | nviIDUrun_HWEn | input | 0.0 0(Off) | 100.0 1(On) | | |
| 18 | AC operation (status) | SNVT_switch | nvoIDUrun_HWEn | output | 0.0 0(Off) | 100.0 1(On) | | |
| 19 | AC Mode (setting) | SNVT_hvac_mode | nviIDUmod | input | HVAC_COOL(Cool) | HVAC_HEAT(Heat) | HVAC_AUTO(Auto) | |
| 20 | AC Mode (status) | SNVT_hvac_mode | nvoIDUmod | output | HVAC_COOL(Cool) | HVAC_HEAT(Heat) | HVAC_AUTO(Auto) | |
| 21 | Device Type | SNVT_count | nvoPType | output | 2 | | | |
| 22 | Device address | SNVT_count | nvoPAddr | output | 0~255 | | | |
| 23 | Alarm | SNVT_hvac_status | nvoUnitStatus | output | mode/0/0/0/0/0/alarm | | | |
| 24 | Master/Slave | SNVT_switch | nvoMS_HWmod | output | 0.0 0(Slave) | 100.0 1(Master) | | |

⑤ ERV DX General NV(Network Variable) List

| | Name | Object Type | Network Variable | Input / Output | Unit | |
|---|---|---|---|---|---|---|
| 1 | Temperature Unit(setting) | SNVT_switch | nviTempUnit | input | 0.0 0(Celsius) | 100.0 1(Fahrenheit) |
| 2 | Temperature Unit(status) | SNVT_switch | nvoTempUnit | output | 0.0 0(Celsius) | 100.0 1(Fahrenheit) |
| 3 | TotalOnOff | SNVT_switch | nviTotalOnOff | input | 0.0 0(Off) | 100.0 1(On) |
| 4 | Total Setting Temperature | SNVT_temp_p | nviTotalTemp | input | 16 ~ 30℃ (60 ~ 86 ℉) | |

# AWHP Function Block

① Standard Function Block

| Standard Function Block | |
|---|---|
| SNVT_switch | nviOnOff |
| SNVT_hvac_mode | nviHeatCool |
| SNVT_switch | nviLock |
| SNVT_temp_p | nviSetTemp |
| SNVT_temp_p | nviLow_HW_Tmp |
| SNVT_switch | nviIDUrun_HWEn |

SCC(8500) FB

AWHP Network Variables

| Standard Function Block | |
|---|---|
| SNVT_switch | nvoOnOff |
| SNVT_hvac_mode | nvoHeatCool |
| SNVT_switch | nvoLock |
| SNVT_temp_p | nvoSetTemp |
| SNVT_temp_p | nvoLow_HW_Tmp |
| SNVT_temp_p | nvoUp_Sol_Tmp |
| SNVT_switch | nvoFilt_Tmpsel |
| SNVT_switch | nvoIDUrun_HWEn |
| SNVT_count | nvoPType |
| SNVT_count | nvoPAddr |
| SNVT_temp_p | nvoSpaceTemp |
| SNVT_hvac_status | nvoUnitStatus |
| SNVT_temp_p | nvoTankTmp |
| SNVT_temp_p | nvoInTmp |
| SNVT_temp_p | nvoOutTmp |
| SNVT_switch | nvoMS_HWmod |

② General Function Block

| General Function Block | |
|---|---|
| SNVT_switch | nviTempUnit |
| SNVT_switch | nviTotalOnOff |
| SNVT_temp_p | nviTotalTemp |

switch(3200) FB

AWHP Total Unit Network Variables

| General Function Block | |
|---|---|
| SNVT_switch | nvoTempUnit |

③ Control/Monitoring Point

| Control | |
|---|---|
| On/Off | Operation Mode |
| Lock | Set Temperature |
| Hot Water Temperature | HotWater On/Off (setting) |
| Temperature Unit | Total On/Off |
| Total Setting Temperature | |

| Monitoring | |
|---|---|
| On/Off | Operation Mode |
| Lock | Set Temperature |

| | |
|---|---|
| Hot Water Temperature | Solar Temperature Status |
| Air/Water In/Out Temperature | HotWater On/Off (Status) |
| Device Type | Device address |
| Current Temperature | Alarm |
| Hot Water Only Mode | Water Tank Temperature Status |
| Pipe Inlet Temperature Status | Pipe Outlet Temperature Status |
| Temperature Unit | |

※ You can enable control and monitoring as shown in the figure for one AWHP.

※ The network variable can differ from the actual.

④ AWHP Standard NV(Network Variable) List

| | Name | Object Type | Network Variable | Input / Output | Unit | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | On/Off (setting) | SNVT_switch | nviOnOff | input | 0.0 0(Off) | 100.0 1(On) | | |
| 2 | On/Off (status) | SNVT_switch | nvoOnOff | output | 0.0 0(Off) | 100.0 1(On) | | |
| 3 | Operation Mode (setting) | SNVT_hvac_mode | nviHeatCool | input | HVAC_COOL(Cool) | HVAC_HEAT(Heat) | HVAC_AUTO(Auto) | |
| 4 | Operation Mode (status) | SNVT_hvac_mode | nvoHeatCool | output | HVAC_COOL(Cool) | HVAC_HEAT(Heat) | HVAC_AUTO(Auto) | |
| 5 | Lock (setting) | SNVT_switch | nviLock | input | 0.0 0(Clear) | 100.0 1(Lock) | | |
| 6 | Lock (status) | SNVT_switch | nvoLock | output | 0.0 0(Clear) | 100.0 1(Lock) | | |
| 7 | Temperature (setting) | SNVT_temp_p | nviSetTemp | input | (Air) 16 ~ 30℃ (60 ~ 86 ℉), (Pipe Inlet/Outlet) 6 ~ 80℃ (42 ~ 176 ℉) | | | |
| 8 | Temperature (status) | SNVT_temp_p | nvoSetTemp | output | (Air) 16 ~ 30℃ (60 ~ 86 ℉), (Pipe Inlet/Outlet) 6 ~ 80℃ (42 ~ 176 ℉) | | | |
| 9 | HotWater On/Off (setting) | SNVT_switch | nviIDUrun_HWEn | input | 0.0 0(Off) | 100.0 1(On) | | |
| 10 | HotWater On/Off (status) | SNVT_switch | nvoIDUrun_HWEn | output | 0.0 0(Off) | 100.0 1(On) | | |
| 11 | Hot Water Temperature (setting) | SNVT_temp_p | nviLow_HW_Tmp | input | 30 ~ 80℃ (86 ~ 176 ℉) | | | |
| 12 | Hot Water Temperature (status) | SNVT_temp_p | nvoLow_HW_Tmp | output | 30 ~ 80℃ (86 ~ 176 ℉) | | | |
| 13 | Air/Water In/Out Temperature (status) | SNVT_switch | nvoFilt_Tmpsel | output | 0.0 0(Air) | 100.0 1(Pipe Inlet/Outlet) | | |
| 14 | Device Type | SNVT_count | nvoPType | output | 3(AWHP) | 4(Hydrokit) | 7(Heat_Only_AWHP) | 8(Cascade) |
| 15 | Device address | SNVT_count | nvoPAddr | output | 0~255 | | | |
| 16 | Current Temperature | SNVT_temp_p | nvoSpaceTemp | output | 0 ~ 99℃ (32 ~ 211 ℉) | | | |
| 17 | Alarm | SNVT_hvac_status | nvoUnitStatus | output | mode/0/0/0/0/0/alarm | | | |
| 18 | Hot Water Only Mode | SNVT_switch | nvoMS_HWmod | output | 0.0 0(Off) | 100.0 1(On) | | |
| 19 | Water Tank Temperature Status | SNVT_temp_p | nvoTankTmp | output | 0 ~ 99℃ (32 ~ 211 ℉) | | | |
| 20 | Pipe Inlet Temperature Status | SNVT_temp_p | nvoInTmp | output | 0 ~ 99℃ (32 ~ 211 ℉) | | | |
| 21 | Pipe Outlet Temperature Status | SNVT_temp_p | nvoOutTmp | output | 0 ~ 99℃ (32 ~ 211 ℉) | | | |
| 22 | Solar Temperature Status | SNVT_temp_p | nvoUp_Sol_Tmp | output | 0 ~ 99℃ (32 ~ 211 ℉) | | | |

⑤ AWHP General NV(Network Variable) List

| | Name | Object Type | Network Variable | Input / Output | Unit | |
|---|---|---|---|---|---|---|
| 1 | Temperature Unit (setting) | SNVT_switch | nviTempUnit | input | 0.0 0(Celsius) | 100.0 1(Fahrenheit) |
| 2 | Temperature Unit (status) | SNVT_switch | nvoTempUnit | output | 0.0 0(Celsius) | 100.0 1(Fahrenheit) |
| 3 | Total OnOff | SNVT_switch | nviTempUnit | input | 0.0 0(Off) | 100.0 1(On) |
| 4 | Total Setting Temperature | SNVT_temp_p | nviTotalTemp | input | (Air) 16 ~ 30℃ (60 ~ 86 ℉), (Pipe Inlet/Outlet) 6 ~ 80℃ (42 ~ 176 ℉) | |

# Network Variables

It describes the Network Variables provided by ACP 5.

- IDU, ERV, ERV DX, AWHP Input/Output
- IDU, ERV, ERV DX, AWHP Output
- IDU, ERV, ERV DX, AWHP General Input/Output

# IDU, ERV, ERV DX, AWHP Input/Output

## 1. On/Off(IDU, ERV, ERV DX, AWHP)

| | | |
|---|---|---|
| Input | Function | On/Off |
| | Using NV | Network Input : (SNVT_switch) nviOnOff |
| | Operation | On/Off Control |
| Output | Function | On/Off |
| | Using NV | Network Output : (SNVT_switch) nvoOnOff |
| | Operation | On/Off Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Off |
| | | 1 = On |

## 2. Operation Mode(IDU, ERV, ERV DX, AWHP)

| | | |
|---|---|---|
| Input | Function | Operation Mode |
| | Using NV | Network Input : (SNVT_hvac_mode) nviHeatCool |
| | Operation | Operation Mode Control |
| Output | Function | Operation Mode |
| | Using NV | Network Output : (SNVT_hvac_mode) nvoHeatCool |
| | Operation | Operation Mode Monitoring |

Valid Range

| NV | Field | Operation | | | | | |
|---|---|---|---|---|---|---|---|
| SVNT_hvac_mode | Value | Not Used(Set in 0% usually) | | | | | |
| | State | HVAC_AUTO = Auto | HVAC_HEAT = Heat | HVAC_COOL = Cool | HVAC_FAN_ONLY = Fan | HVAC_DEHUMID = Dry | IDU |
| | | HVAC_AUTO = Auto | HVAC_HEAT = Heat Exchange | | HVAC_FAN_ONLY = Normal | | ERV |
| | | HVAC_AUTO = Auto | HVAC_HEAT = Heat Exchange | | HVAC_FAN_ONLY = Normal | | ERV DX |
| | | HVAC_AUTO = Auto | HVAC_HEAT = Heat | HVAC_COOL = Cool | | | AWHP(Single, Hydrokit) |
| | | HVAC_AUTO = Auto | HVAC_HEAT = Heat | | | | AWHP(Heatonly,Cascade) |

## 3. Lock(IDU, ERV, ERV DX, AWHP)

| | | |
|---|---|---|
| Input | Function | Lock |
| | Using NV | Network Input : (SNVT_switch) nviLock |
| | Operation | Lock Control |
| Output | Function | Lock |
| | Using NV | Network Output : (SNVT_switch) nvoLock |
| | Operation | Lock Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Clear |
| | | 1 = Lock |

## 4. Set Temperature(IDU, ERV DX, AWHP)

| | | |
|---|---|---|
| Input | Function | Set Temperature |
| | Using NV | Network Input : (SNVT_temp_p) nviSetTemp |
| | Operation | Set Temperature Control |
| Output | Function | Set Temperature |
| | Using NV | Network Output : (SNVT_temp_p) nvoSetTemp |
| | Operation | Set Temperature Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SVNT_temp_p | IDU, ERV DX, AWHP(Air) : 16 ~ 30 ℃ (60 ~ 86 ℉) |
| | AWHP(Pipe Inlet/Outlet) : 6 ~ 80 ℃ (42 ~ 176 ℉) |

## 5. Fan Speed(IDU, ERV, ERV DX)

| | | |
|---|---|---|
| Input | Function | Fan Speed |
| | Using NV | Network Input : (SNVT_switch) nviFanSpeed |
| | Operation | Fan Speed Control |
| Output | Function | Fan Speed |
| | Using NV | Network Output : (SNVT_switch) nvoFanSpeed |
| | Operation | Fan Speed Monitoring |

Valid Range

| NV | Field | Operation | | | | |
|---|---|---|---|---|---|---|
| SVNT_switch | Value | 0 = Auto | 1 = Low | 2 = Middle | 3 = High | 4 = Super High |
| | State | Not Used(Set in 0 usually) | | | | |

## 6. Swing(IDU), Heater(ERV, ERV DX)

| | | |
|---|---|---|
| Input | Function | Swing(IDU), Heater(ERV, ERV DX) |
| | Using NV | Network Input : (SNVT_switch) nviSwing_Heater |
| | Operation | Swing(IDU), Heater(ERV, ERV DX) Control |
| Output | Function | Swing(IDU), Heater(ERV, ERV DX) |
| | Using NV | Network Output : (SNVT_switch) nvoSwing_Heater |
| | Operation | Swing(IDU), Heater(ERV, ERV DX) Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Off/Clear |
| | | 1 = On/Setup |

## 7. Mode Lock(IDU)

| | | |
|---|---|---|
| Mode Lock(IDU) | Function | Mode Lock(IDU) |
| | Using NV | Network Input : (SNVT_switch) nviModlok |
| | Operation | Mode Lock(IDU) Control |
| Output | Function | Mode Lock(IDU) |
| | Using NV | Network Output : (SNVT_switch) nvoModlok |
| | Operation | Mode Lock(IDU) Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Clear |
| | | 1 = Lock |

## 8. Fan Lock(IDU)

| | | |
|---|---|---|
| Input | Function | Fan Lock(IDU) |
| | Using NV | Network Input : (SNVT_switch) nviFanlok |
| | Operation | Fan Lock(IDU) Control |
| Output | Function | Fan Lock(IDU) |
| | Using NV | Network Output : (SNVT_switch) nvoFanlok |
| | Operation | Fan Lock(IDU) Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Clear |
| | | 1 = Lock |

## 9. Temp Lock(IDU), Humidify(ERV DX)

| | | |
|---|---|---|
| | Function | Temp Lock(IDU), Humidify(ERV DX) |

| | | |
|---|---|---|
| Input | Using NV | Network Input : (SNVT_switch) nviTmplok_Humid |
| | Operation | Temp Lock(IDU), Humidify(ERV DX) Control |
| Output | Function | Temp Lock(IDU), Humidify(ERV DX) |
| | Using NV | Network Output : (SNVT_switch) nvoTmplok_Humid |
| | Operation | Temp Lock(IDU), Humidify(ERV DX) Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Clear |
| | | 1 = Lock |

## 10. Lower Limit Temperature(IDU), Hot Water Temperature(AWHP)

| | | |
|---|---|---|
| Input | Function | Lower Limit Temperature(IDU), Hot Water Temperature(AWHP) |
| | Using NV | Network Input : (SNVT_temp_p) nviLow_HW_Tmp |
| | Operation | Lower Limit Temperature(IDU), Hot Water Temperature(AWHP) Control |
| Output | Function | Lower Limit Temperature(IDU), Hot Water Temperature(AWHP) |
| | Using NV | Network Output : (SNVT_temp_p) nvoLow_HW_Tmp |
| | Operation | Lower Limit Temperature(IDU), Hot Water Temperature(AWHP) Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SVNT_temp_p | Lower Limit Temperature(IDU) : 16 ~ 30 ℃ (60 ~ 86 ℉) |
| | Hot Water Temperature(AWHP) : 30 ~ 80 ℃ (86 ~ 176 ℉) |

## 11. Upper Limit Temperature(IDU) Input/Output, Solar Temperature Status(AWHP) 출력

| | | |
|---|---|---|
| Input | Function | Upper Limit Temperature(IDU) |
| | Using NV | Network Input : (SNVT_temp_p) nviUp_Tmp |
| | Operation | Upper Limit Temperature(IDU) Control |
| Output | Function | Upper Limit Temperature(IDU), Solar Temperature Status(AWHP) |
| | Using NV | Network Output : (SNVT_temp_p) nvoUp_Sol_Tmp |
| | Operation | Upper Limit Temperature(IDU), Solar Temperature Status(AWHP) Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SVNT_temp_p | Upper Limit Temperature(IDU) : 16 ~ 30 ℃ (60 ~ 86 ℉) |
| | Solar Temperature Status(AWHP) : 0 ~ 99 ℃ (32 ~ 211 ℉) |

## 12. Air/Water In/Out Temperature(AWHP)

| | | |
|---|---|---|
| Output | Function | Air/Water In/Out Temperature (AWHP) |
| | Using NV | Network Output : (SNVT_switch) nvoFilt_Tmpsel |
| | Operation | Air/Water In/Out Temperature(AWHP) Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Air |
| | | 1 = Pipe Inlet/Outlet |

## 13. AC operation(ERV DX), HotWater On/Off(AWHP)

| | | |
|---|---|---|
| Input | Function | AC operation(ERV DX), HotWater On/Off(AWHP) |
| | Using NV | Network Input : (SNVT_switch) nviIDUrun_HWEn |
| | Operation | AC operation(ERV DX), HotWater On/Off(AWHP) Control |
| Output | Function | AC operation(ERV DX), HotWater On/Off(AWHP) |
| | Using NV | Network Output : (SNVT_switch) nvoIDUrun_HWEn |
| | Operation | AC operation(ERV DX), HotWater On/Off(AWHP) Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Off |

| | | |
|---|---|---|
| | | 1 = On |

## 14. AC Mode(ERV DX)

| | | |
|---|---|---|
| Input | Function | AC Mode(ERV DX) |
| | Using NV | Network Input : (SNVT_hvac_mode) nviIDUmod |
| | Operation | AC Mode(ERV DX) Control |
| Output | Function | AC Mode(ERV DX) |
| | Using NV | Network Output : (SNVT_hvac_mode) nvoIDUmod |
| | Operation | AC Mode(ERV DX) Monitoring |

Valid Range

| NV | Field | Operation | | |
|---|---|---|---|---|
| SVNT_hvac_mode | Value | Not Used(Set in 0% usually) | | |
| | State | HVAC_AUTO = Auto | HVAC_HEAT = Heat | HVAC_COOL = Cool |

## 15. User Mode(ERV, ERV DX)

| | | |
|---|---|---|
| Input | Function | User Mode(ERV, ERV DX) |
| | Using NV | Network Input : (SNVT_count) nviUsrmod |
| | Operation | User Mode(ERV, ERV DX) Control |
| Output | Function | User Mode(ERV, ERV DX) |
| | Using NV | Network Output : (SNVT_count) nvoUsrmod |
| | Operation | User Mode(ERV, ERV DX) Monitoring |

Valid Range

| NV | Operation | | |
|---|---|---|---|
| SVNT_count | 0 = NONE | 1 = Quick Fresh | 2 = Energy Saving |

## IDU, ERV, ERV DX, AWHP Output

1. Device Type(IDU, ERV, ERV DX, AWHP)

| | | |
|---|---|---|
| Output | Function | Device Type |
| | Using NV | Network Output : (SNVT_count) nvoPType |
| | Operation | Device Type Monitoring |

Valid Range

| NV | Operation | | | | | |
|---|---|---|---|---|---|---|
| SVNT_count | 0 = IDU | 1 = ERV | 2 = ERV DX | 3 = SINGLE_AWHP | 4 = HYDROKIT | 7 = Heatonly_AWHP | 8 = Cascade |

2. Device address(IDU, ERV, ERV DX, AWHP)

| | | |
|---|---|---|
| Output | Function | Device address |
| | Using NV | Network Output : (SNVT_count) nvoPAddr |
| | Operation | Device address Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SVNT_count | 0 ~ 255 |

3. Current Temperature(IDU, AWHP)

| | | |
|---|---|---|
| Output | Function | Current Temperature |
| | Using NV | Network Output : (SNVT_temp_p) nvoSpaceTemp |
| | Operation | Current Temperature Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SNVT_temp_p | 0 ~ 99℃ (32 ~ 211 ℉) |

4. Alarm (IDU, ERV, ERV DX, AWHP)

| | | |
|---|---|---|
| Output | Function | Alarm |
| | Using NV | Network Output : (SNVT_hvac_status) nvoUnitStatus |
| | Operation | Alarm Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_hvac_status (mode/0/0/0/0/0/alarm) | mode | undefined |
| | alarm | 0 = normal |
| | | 1 = abnormal |

5. Power(IDU)

| | | |
|---|---|---|
| Output | Function | Power(IDU) |
| | Using NV | Network Output : (SNVT_elec_kwh_l) nvoAccuPw |
| | Operation | Power(IDU) Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SNVT_elec_kwh_l | 0~214,748,364.6 kwh |

6. Master/Slave(ERV DX), Hot Water Only Mode(AWHP)

| | | |
|---|---|---|
| Output | Function | Master/Slave(ERV DX), Hot Water Only Mode(AWHP) |
| | Using NV | Network Output : (SNVT_switch) nvoMS_HWmod |
| | Operation | Master/Slave(ERV DX), Hot Water Only Mode(AWHP) Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Slave(ERV DX), Off(AWHP) |

| | | |
|---|---|---|
| | | 1 = Master(ERV DX), On(AWHP) |

### 7. Water Tank Temperature Status(AWHP)

| | | |
|---|---|---|
| Output | Function | Water Tank Temperature Status(AWHP) |
| | Using NV | Network Output : (SNVT_temp_p) nvoTankTmp |
| | Operation | Water Tank Temperature Status(AWHP) Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SNVT_temp_p | 0 ~ 99 ℃ (32 ~ 211 ℉) |

### 8. Pipe Inlet Temperature Status(AWHP)

| | | |
|---|---|---|
| Output | Function | Pipe Inlet Temperature Status(AWHP) |
| | Using NV | Network Output : (SNVT_temp_p) nvoInTmp |
| | Operation | Pipe Inlet Temperature Status(AWHP) Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SNVT_temp_p | 0 ~ 99 ℃ (32 ~ 211 ℉) |

### 9. Pipe Outlet Temperature Status(AWHP)

| | | |
|---|---|---|
| Output | Function | Pipe Outlet Temperature Status(AWHP) |
| | Using NV | Network Output : (SNVT_temp_p) nvoOutTmp |
| | Operation | Pipe Outlet Temperature Status(AWHP) Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SNVT_temp_p | 0 ~ 99 ℃ (32 ~ 211 ℉) |

# IDU, ERV, ERV DX, AWHP General Input/Output

## 1. PeakShiftTime (IDU)

| | | |
|---|---|---|
| Input | Function | PeakShiftTime |
| | Using NV | Network Input : (SNVT_count) nviPeakSwTime |
| | Operation | PeakShiftTime Control |
| Output | Function | PeakShiftTime |
| | Using NV | Network Output : (SNVT_count) nvoPeakSwTime |
| | Operation | PeakShiftTime Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SVNT_count | 300 ~ 900 second |

## 2. Peak Target Ratio(IDU)

| | | |
|---|---|---|
| Input | Function | Peak Target Ratio |
| | Using NV | Network Input : (SNVT_lev_percent) nviPeakTgtRate |
| | Operation | Peak Target Ratio Control |
| Output | Function | Peak Target Ratio |
| | Using NV | Network Output : (SNVT_lev_percent) nvoPeakTgtRate |
| | Operation | Peak Target Ratio Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SVNT_lev_percent | 0 ~ 100 % |

### Notes

**Enter the desired Peak Target Ratio as 0~99% for peak operation ON and 100% for OFF (stop).**

## 3. Temperature Unit(IDU, ERV DX)

| | | |
|---|---|---|
| Input | Function | Temperature Unit |
| | Using NV | Network Input : (SNVT_switch) nviTempUnit |
| | Operation | Temperature Unit Control |
| Output | Function | Temperature Unit |
| | Using NV | Network Output : (SNVT_switch) nvoTempUnit |
| | Operation | Temperature Unit Monitoring |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Celsius |
| | | 1 = Fahrenheit |

## 4. Total Setting Temperature(IDU)

| | | |
|---|---|---|
| Input | Function | Total Setting Temperature |
| | Using NV | Network Input : (SNVT_switch) nviAllTemplock |
| | Operation | Total Setting Temperature Control |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Clear |
| | | 1 = Lock |

## 5. Total OnOff(IDU, ERV, ERV DX, AWHP)

| | | |
|---|---|---|
| Input | Function | Total OnOff |
| | Using NV | Network Input : (SNVT_switch) nviTotalOnOff |
| | Operation | Total OnOff Control |

Valid Range

| NV | Field | Operation |
|---|---|---|
| SVNT_switch | Value | Not Used(Set in 0% usually) |
| | State | 0 = Off |
| | | 1 = On |

6. Total Setting Temperature(IDU, ERV DX, AWHP)

| | | |
|---|---|---|
| Input | Function | Total Setting Temperature |
| | Using NV | Network Input : (SNVT_temp_p) nviTotalTemp |
| | Operation | Total Setting Temperature Control |

Valid Range

| NV | Operation |
|---|---|
| SVNT_temp_p | IDU, ERV DX, AWHP(Air) : 16 ~ 30 ℃ (60 ~ 86 ℉) |
| | AWHP(Pipe Inlet/Outlet) : 6 ~ 80 ℃ (42 ~ 176 ℉) |

7. Peak Current Running Ratio(IDU)

| | | |
|---|---|---|
| Output | Function | Peak Current Running Ratio |
| | Using NV | Network Output : (SNVT_lev_percent) nvoPeakCurRate |
| | Operation | Peak Current Running Ratio Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SVNT_lev_percent | 0 ~ 100 % |

8. Total Accumulated Power(IDU)

| | | |
|---|---|---|
| Output | Function | Total Accumulated Power |
| | Using NV | Network Output : (SNVT_elec_kwh_l) nvoTotalAccuPw |
| | Operation | Total Accumulated Power Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SNVT_elec_kwh_l | 0~214,748,364.6 kwh |

9. Outdoor Unit Defrost(IDU)

| | | |
|---|---|---|
| Output | Function | Outdoor Unit Defrost |
| | Using NV | Network Output : (SNVT_state_64) nvoDefrost |
| | Operation | Outdoor Unit Defrost Monitoring |

Valid Range

| NV | Operation |
|---|---|
| SVNT_state_64 | 0(Off), 1(On) |

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Version 2.1, February 1999

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(d) Survival. The parties' rights and obligations under Sections 2(c), 2(d), 2(e), 2(f), 3, 4, 5, 6, 7(a), 8, 9(c), 9(d), 9(e), 10, and the relevant provisions of Section 11, shall survive any termination of this Agreement. All End User licenses granted by Licensee to End Users prior to termination of this Agreement, or during the ninety (90) day period provided for in Section 9(c) above, as applicable, shall also survive.

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