Safety precautions

SAFETY PRECAUTIONS

- This product must be installed by an installation professional from an LG authorised service center.
- Any issues stemming from an installation by an unauthorised person is the responsibility of the user and will not be covered by warranty.
- The following safety precautions are to prevent any unforeseen contingencies.
- This product has been designed for commercial purposes. This product has successfully cleared the EMI test.

⚠ WARNING

It can result in serious injury or death when the directions are ignored.

⚠ CAUTION

It can result in minor injury or product damage when the directions are ignored.

⚠ WARNING

Installation

- To reinstall the product, please contact the dealer from where you purchased the product, or a service center.
  - Installation of the product by an unauthorised person may result in fire, electric shock, explosion, injury, or a malfunctioning of the product.
- Do NOT twist or damage the power cord.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- For electrical work, please contact the dealer from where you purchased the product, or a service center.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- Install the product in an area shielded from rain.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- Do NOT install the product in a humid area.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- For installation of the product, please contact the dealer from where you purchased the product, or a service center.
  - Installation of the product by an unauthorised person may result in fire, electric shock, explosion, injury, or a malfunctioning of the product.
- For electrical work, it is advisable for the electrician to refer the installation manual and specified circuit diagram.
  - Using an unsuitable cord, or having a non-professional work on the electricals may result in fire or electrical shock.
- Do NOT place the product near a fire source.
  - It may result in combustion.
- If the product is installed in a hospital or a communication base station, shield the product from electrical noise by providing sufficient protective equipment.
  - Protective equipment prevents the product from malfunctioning.
- Securely install the product.

- If the product is not secured during installation, it may fall or malfunction.

- Read the manual thoroughly to correctly install the product.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- When wiring the product, do not use a non-standard cable, nor extend the cable excessively.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- Securely install the power cord and communication cable.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- Do NOT connect the power cord to the communication terminal.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- Do NOT install the product in an area near combustible gases.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.

Use

- Do NOT place a heavy object on the power cord.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Do NOT change or extend the power cord arbitrarily.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Use the cord specific to the product.
  - Using an unauthorised non-standard cord may result in a fire or electric shock.
- Do NOT use a heat device near the power cord.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Ensure that water never gets into the product.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Do NOT place any container with liquid on the product.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Do NOT touch the product with wet hands.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Use standard components.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- If the product has been submerged in water, you should contact a service center.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Do NOT shock the product.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Do NOT store or use any combustible gas or flammable substances near the product.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.

- Do NOT disassemble, repair, or revamp the product arbitrarily.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Children and the elderly should use the product under the supervision of a guardian.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- The guardian should prevent children from accessing the product.
  - The product can be damaged or it may fall, causing injury to children.
- Note that the operating temperature range of the product is between 0 and 40 °C (32 and 104 °F).
  - If the product is used outside this range, the product may be severely damaged.
- Do NOT depress the switch or button using a sharp object.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Do NOT wire the product while it is turned ON.
  - It may cause a fire or electric shock.
- If the product sounds different or emanates an unpleasant odor, stop using the product.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Do NOT place a heavy object on the product.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Do NOT spray water on the product, or clean it with a water-soaked cloth.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Do NOT use the product for the preservation of animals and plants, precision instruments, art pieces, or for other special purposes.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.
- Dispose the packing material safely.
  - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries, product malfunctioning or damage to property.

⚠ CAUTION

Installation

- Securely install the product in an area where the weight of the product can be supported.
  - The product may fall and be destroyed.
- Do NOT use the product where there is oil, steam, or sulfuric gas.
  - It may affect the product's performance, or damage it.
- Check the rated power capacity.
  - It may cause a fire, or a product malfunction.
- Be careful not to drop or damage the product when moving it.
  - The product may malfunction or the person may sustain an injury.
- Ensure that the cord is connected securely to protect the product from dew, water, or insects.
  - If a foreign substance gets inside, it may cause an electric shock or the product may malfunction.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

- Installation work must be performed in accordance with the national wiring standards by authorized personnel only. This equipment shall be provided with a supply conductor complying with the national regulation.

Use

- Do NOT clean the product with solvent based detergents; instead use cloth.
  - The use of a solvent-based detergent may cause a fire or deform the product.
- Do NOT touch the panel using a pointed or sharp object.
  - It can result in an electric shock, or the product may malfunction.
- Do NOT expose the product to a metal substance.
  - The product may malfunction.
- When sterilizing or disinfecting, stop using the product.
  - The product may work abnormally.
- Do NOT touch internal components of the product.
  - The product may malfunction.
- Check whether the product is in a proper condition after using the product for an extended period of time.
  - Deteriorating condition of the product, may cause injury to the user.
- Do NOT leave the product near a flower base, water bottle, or any other liquids.
  - It may cause a fire or electric shock.
- If the liquid crystal of the product is broken, please do NOT allow the product to come in contact with your skin (hands, face).
  - This may result in personal injury or property damage.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- The appliance shall be disconnected from its power source during service and when replacing parts.

Class A device

NOTE

This equipment has been tested and identified as complying with the limits for a Class A digital device, and acts in accordance with part 15 of the FCC Rules. These rules are designed to provide protect the equipment from any detrimental damages while operating in a commercial environment. This equipment generates, uses, and can emits radio frequency energy.

If it is not installed and used according to the instruction manual, it may cause detrimental damage to the radio communications. Ensure that this product is NOT operated within residential premises as it might emit dangerous radiations. In such a scenario, the user is responsible for damage repair.

CAUTION

Changes or modifications that are not approved by the manufacturer responsible for compliance could render the user authority as invalid.

Disposal of your old appliance

1. This crossed-out wheeled bin symbol indicates that waste electrical and electronic products (WEEE) should be disposed of separately from the municipal waste stream.
2. Old electrical products can contain hazardous substances so correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health. Your old appliance may contain reusable parts that could be used to repair other products, and other valuable materials that can be recycled to conserve limited resources.
3. You can take your appliance either to the shop where you purchased the product, or contact your local government waste office for details of your nearest authorised WEEE collection point. For the most up to date information for your country please see www.lg.com/global/recycling

Disposal of waste batteries/accumulators

1. This symbol may be combined with chemical symbols for mercury (Hg), cadmium (Cd) or lead (Pb) if the battery contains more than 0.0005% of mercury, 0.002% of cadmium or 0.004% of lead.
2. All batteries/accumulators should be disposed separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old batteries/accumulators will help to prevent potential negative consequences for the environment, animal and human health.
4. For more detailed information about disposal of your old batteries/accumulators, please contact your city office, waste disposal service or the shop where you purchased the product. (http://www.lg.com/global/sustainability/environment/take-back-recycling/global-network-europe)

Functions and Specification

AC Smart 5

AC Smart 5 is a central controller that can manage individual or group of maximum of 128 units in one space.
AC Smart 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.

[AC Smart 5 Functions]

- Web Server Embedded Function
- Devices that can be interfaced

[AC Smart 5 Components]

- Components

[Name of Each Part of AC Smart 5]

- Name of Each Part

[AC Smart 5 Hardware Specification]

- Hardware Specification

Web Server Embedded Function

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

- Control of Max. of 128 air conditioner units
- Error and Operation Status Monitoring
- Peak/Demand Power Control
- System Setting Function

Devices that can be interfaced

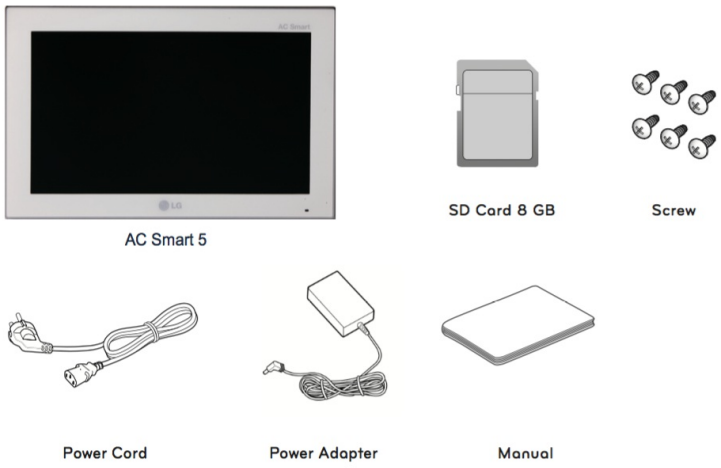
The devices of AC Smart 5 that can be interfaced are as follows.

Device	AC Smart 5
AC Ez(Touch)	o
Simple Central Controller	o
AC Manager 5	o
Air conditioner	o
HRV	o
AWHP	o
AHU	o
Chiller	o (with chiller option S/W applied)
EXP. I/O	o

Components

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

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



Note

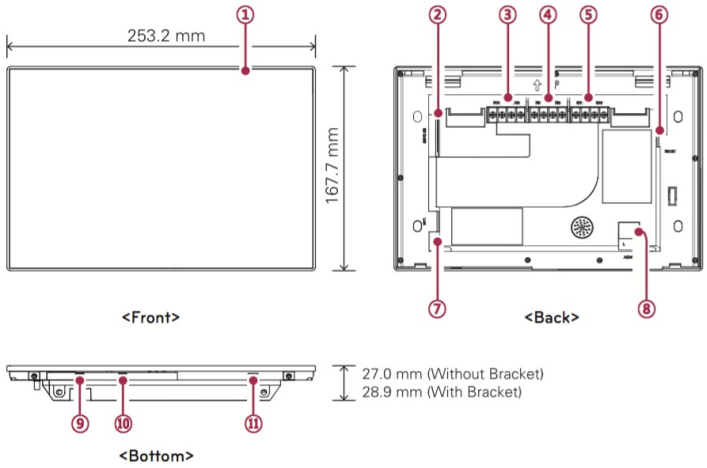
Components or options may differ from the actual product picture.

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

AC Smart 5 is composed as the following form.



No.	Category	Contents
①	Touch Screen	• 10.2 inch LCD control panel • AC Smart 5 control and information display
②	SD Memory Slot	SD card memory slot
③	DO Port	2CH DO port
④	DI Port	2CH DI port
⑤	RS-485 Port	2CH 485 port (CH1: AHU, CH2: devices other than AHU) • CH1 default setting : LGAP_AHU / CH2 default setting : LGAP I • To change default setting, refer to the contents of 'Device Setting - AC Smart 5 Editing' in the user manual provided in [Help] category.
⑥	12 V ⎓ Input Port	12 V ⎓ power input port
⑦	LAN Port	LAN cable port for Ethernet connection (100Mbps/10Mbps)
⑧	24 V~ Input Port	24 V~ power input port
⑨	Micro USB Port (for service)	Port for upgrading software and storing floor plans, reports, statistics, etc. (It needs cable to connect USB memory sticks, supporting USB 2.0 or later)
⑩	Mini USB Port	PC port for debugging software
⑪	Power ON/OFF	• If you press less than 9 seconds, AC Smart 5 LCD backlight control • Push 10 seconds or more to reset AC Smart 5. • If you are not going to use AC Smart 5 for a long time, it is recommended that the product be turned off to prolong the LCD backlight's life.

Hardware Specification

AC Smart 5 hardware specification is as follows.

Category	Contents
CPU	• ARM Cortex A9 1 GHz • Dual Core
MEMORY	2 GB
Storage	16 GB
LCD	10.2 inch(1024 x 600) TFT LCD
Speaker	Mono
RS-485	2 Port
USB/SD	• Micro USB 1EA (for external USB memory connection, for service) • Mini USB 1EA • SD Card 1EA
Ethernet	10 / 100 BASE-T
DI	2 Port
DO	2 Port
Touch Screen	C-Type Touch Panel
Button Key	Less than 9 seconds (LCD Power On/Off), 10 seconds (System reset)
POWER	12 V (3.33 A), 24 V~
Operating temperature	0 °C ~ 40 °C
Protection class	IP20

Installation and Setting

It describes AC Smart 5 Installation and Setting Method.

[Installation Order]

- Order of AC Smart 5 Installation

[Connect AC Smart 5]

- Connect AC Smart 5

Order of Installation

To use AC Smart 5, you need to establish environment for mutual communication between AC Smart 5 and devices (indoor unit, ventilation, DI/DO, DOKIT, system boiler, AHU, I/O module) and register the corresponding devices through the functions of AC Smart 5.

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

STEP 1. Installation environment inspection and device address setting

Before installing AC Smart 5, check network composition with interfacing devices and assign non-overlapping address to the connected devices.

STEP 2. PI485 setting

Install PI485 and set DIP switch.

STEP 3. PI485 and AC Smart 5 connection

Connect PI485 and AC Smart 5 through RS-485 cable.

STEP 4. Log-in and device registration

Log in to AC Smart 5 and register device with address set.

CAUTION

The installation of AC Smart 5 must be done by a professional. Be sure to contact a qualified engineer for the installation. If you have a question or request regarding the installation, contact an installation professional at an authorized LG service center or LG Electronics.

NOTE

Maximum node numbers which can be connected to RS485 communication line.

• Multi V

Maximum of 16 nodes can be connected to 1 RS485 line.

• Multi/Single

Maximum of 32 nodes can be connected to 1 RS485 line.

• ERV

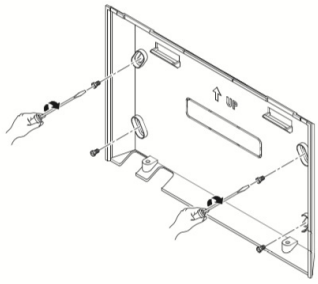
Maximum of 32 nodes can be connected to 1 RS485 line.

Connect AC Smart 5

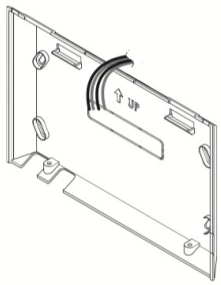
You can install AC Smart 5 and its cables as follows.

1. Choose a space for AC Smart 5.
- Prior to securing AC Smart 5, check if the space is suitable for installing AC Smart 5, an RS485 cable, power cord, and an Ethernet cable.

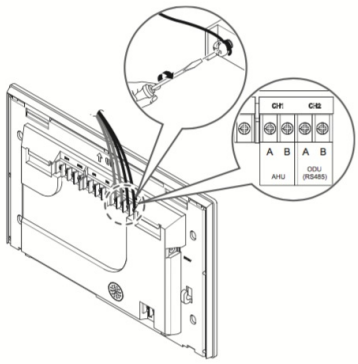
2. Secure the back panel of AC Smart 5 to the wall under which the RS485 cable is located.



3. Extend the RS485 cable through the top opening of the back panel.



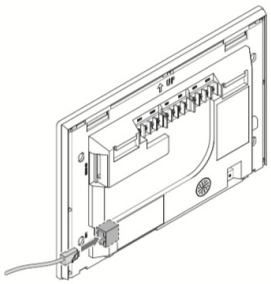
4. Connect the RS485 cable,which is located behind the AC Smart 5, to the RS485 terminal.



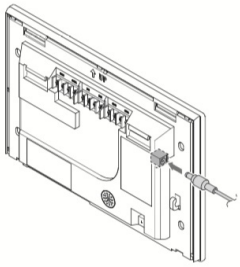
CAUTION

The RS485 cable has polarity, so be careful about keeping polarity when connecting the cables.

5. To use the network functions (email transmission and web control) provided by AC Smart 5, connect an Ethernet cable to the LAN port on the back of AC Smart 5.



6. Connect the power.
• For global models
- On the back of AC Smart 5, connect the power adapter to the power port.

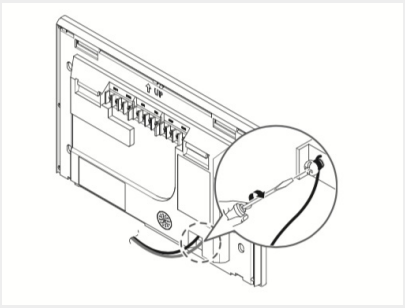


The adaptor is not provided with the AC Smart 5 package sold in the U.S.

NOTE

You can hang the power cord on the power cord hanger located below the power port.

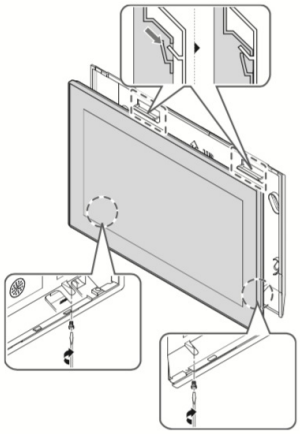
• For US models
- At the bottom of AC Smart 5, connect the power cord to the power port.



NOTE

In some countries, except for the U.S, you can connect the DC 12 V power to the AC Smart 5 by using the provided adapter. If necessary, connect the AC 24 V power to the AC Smart 5.

7. After attaching the hook on the top of the main body to the top of the rear panel installed on the wall, please push the top of the main body unit forward for firm attachment.



CAUTION

Please screws 2 points from the bottom of the unit to prevent from falling.

NOTE

Product removal
After removing 2 screws from the bottom of the body, slightly pull the body using the flatblade screwdriver and lift up the body to remove the product.

User Manual

Usage (PC)

- LogIn / LogOut
- Account
- Dashboard

[Control]

- Device Control
- Schedule Control
- InterLocking
- Time limit control

[Energy]

- Energy Usage
- Energy Navigation
- Peak control

[History]

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

[Setting]

- Device setting
- Group Setting
- System Setting
- Network Setting
- Error Notice Setting
- Administrator Setting
- Additional User Setting
- Screen Setting
- Advance Setting
- TMS Setting
- BACnet/Modbus setting

Note

- **AC Smart 5 may have different features on the web and devices.**

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.

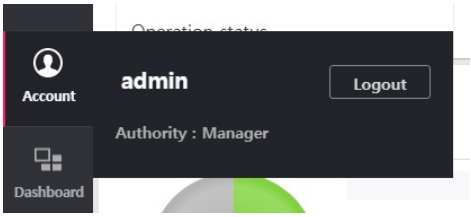
LogOut

Logout method is as follows.

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

Account

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

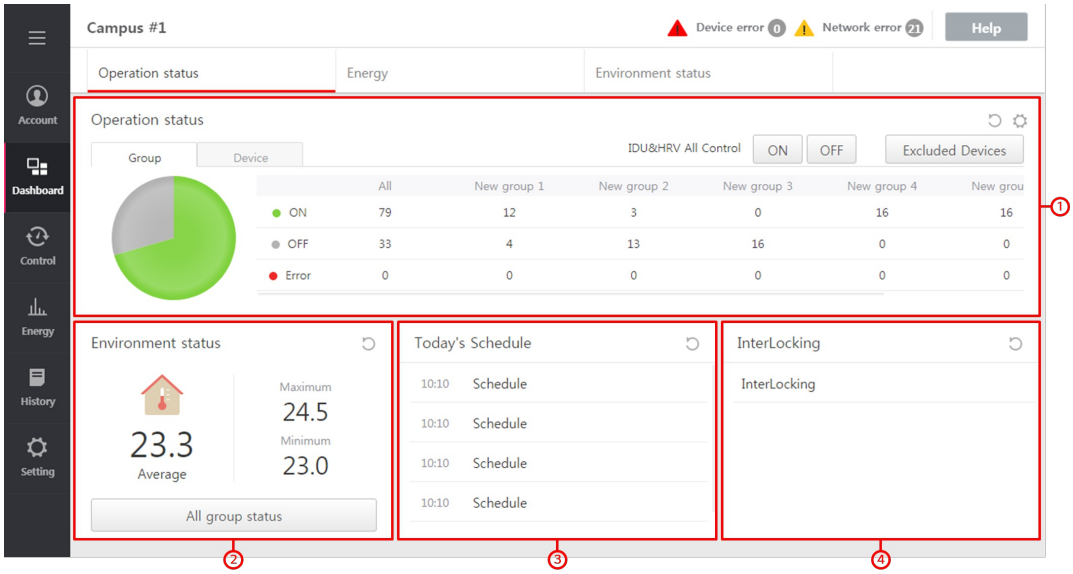


User Manual

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 [group] ● Checking of operation status of each management group designated by user [device] ● Check operation status of each device designated by the user All indoor units and ventilation ON / OFF control ● All indoor units and ventilation ON / OFF control ● 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

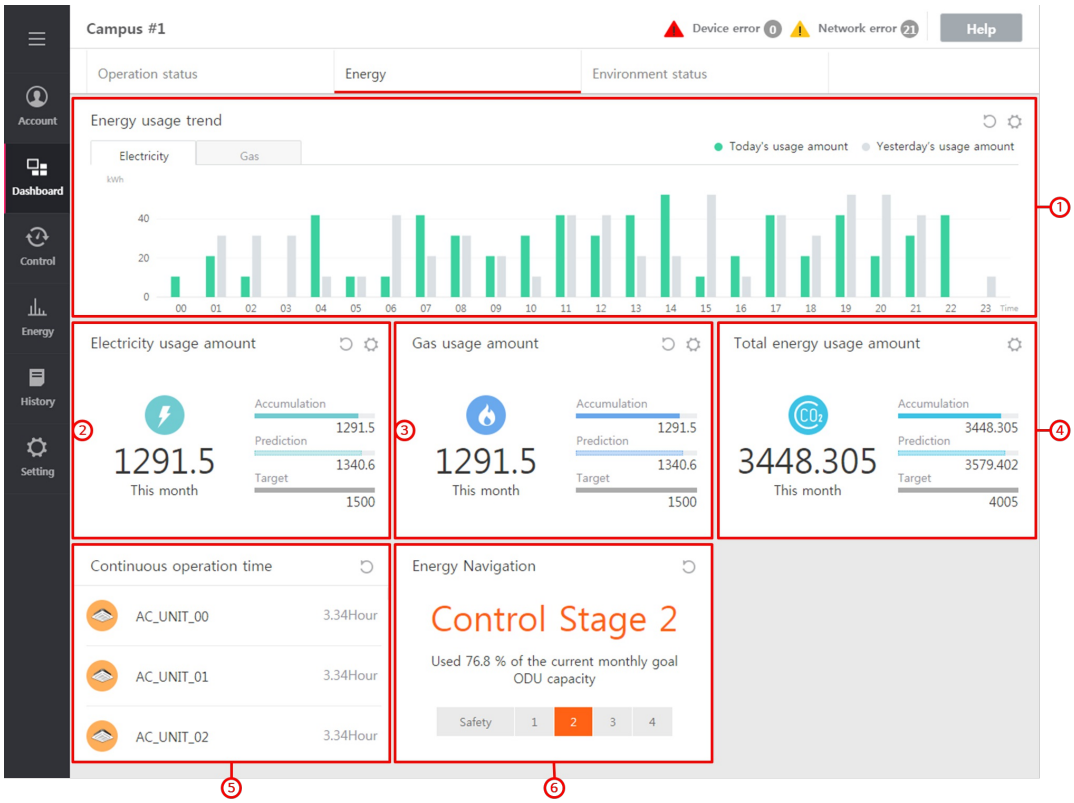
[Widget setting]

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
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

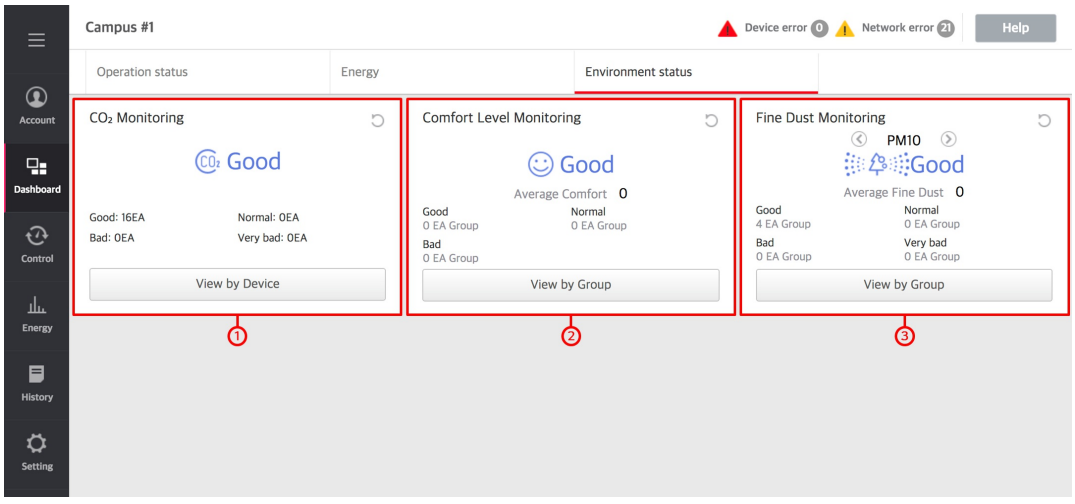
[Widget setting]

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

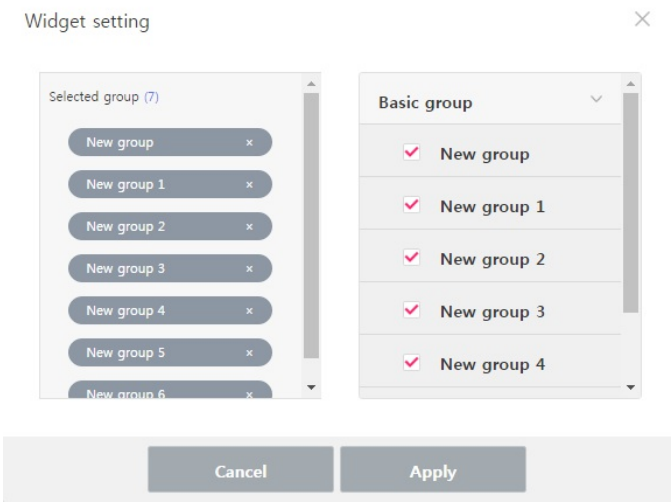


No.	Category	Contents
①	CO_2 monitoring	Check CO_2 status of registered ventilation
②	Comfort Level Monitoring	Check registered indoor unit's pleasantness status
③	Fine dust monitoring	Check registered indoor unit's fine dust status Fine dust is classified to PM10, PM2.5, and PM1.0, and it indicates each status and concentration

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.

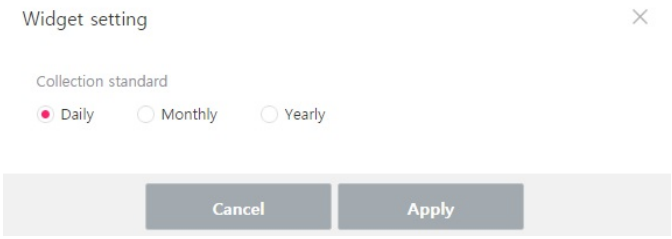


3. Select the group to monitor the operation status.
4. When selection is completed, click **[Apply]** button.

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.

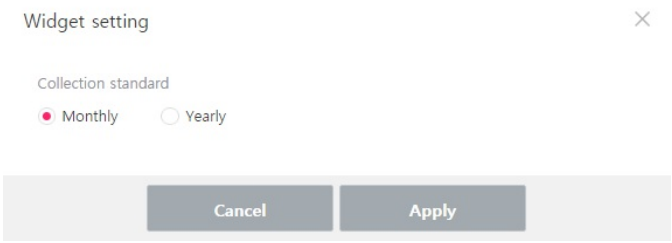


3. Select the collection standard(**Daily/Monthly/Yearly**).
4. When selection is completed, click **[Apply]** button.

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.

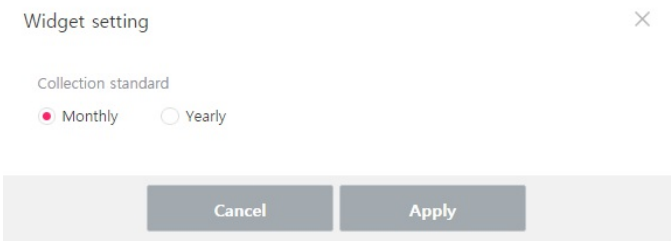


3. Select the collection standard(**Monthly/Yearly**).
4. When selection is completed, click **[Apply]** button.

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.

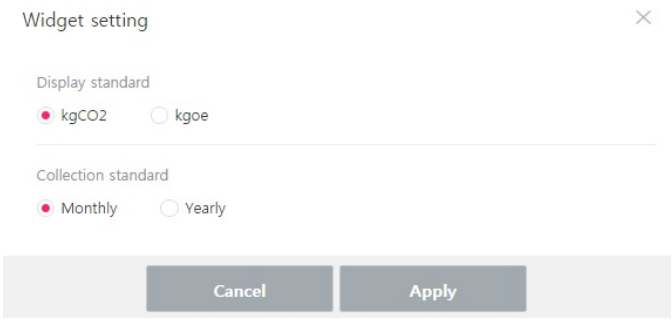


3. Select the collection standard(**Monthly/Yearly**).
4. When selection is completed, click **[Apply]** button.

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.

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

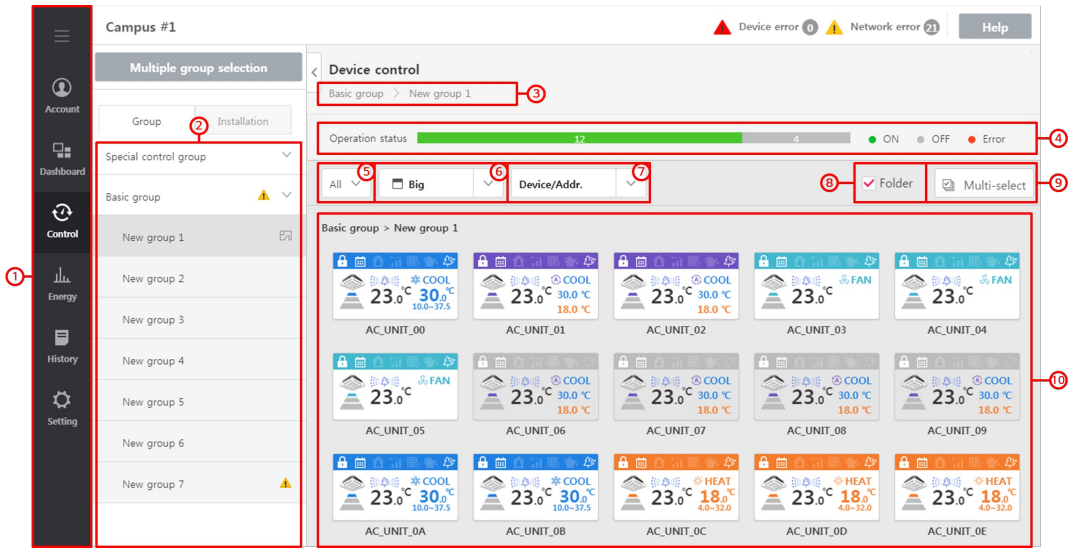
[Drawing]

- 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 : Big : Small : List : Drawing
⑦	Sorting device	Select the sorting method of the device • Name • Device/Name • Device/Addr. • 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

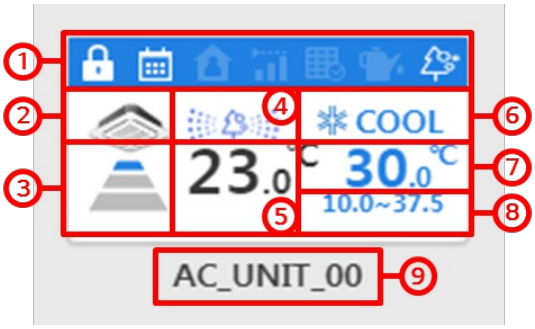
2. Installation

- 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	Lock status, schedule, occupied, peak control, filter replacement, oil alarm, air cleaning
②	Device Icon	Check device icon
③	Fan speed	Check device's Fan speed
④	Fine dust status	Check fine dust status 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
	Oil alarm
	Air cleaning

2. Small icon

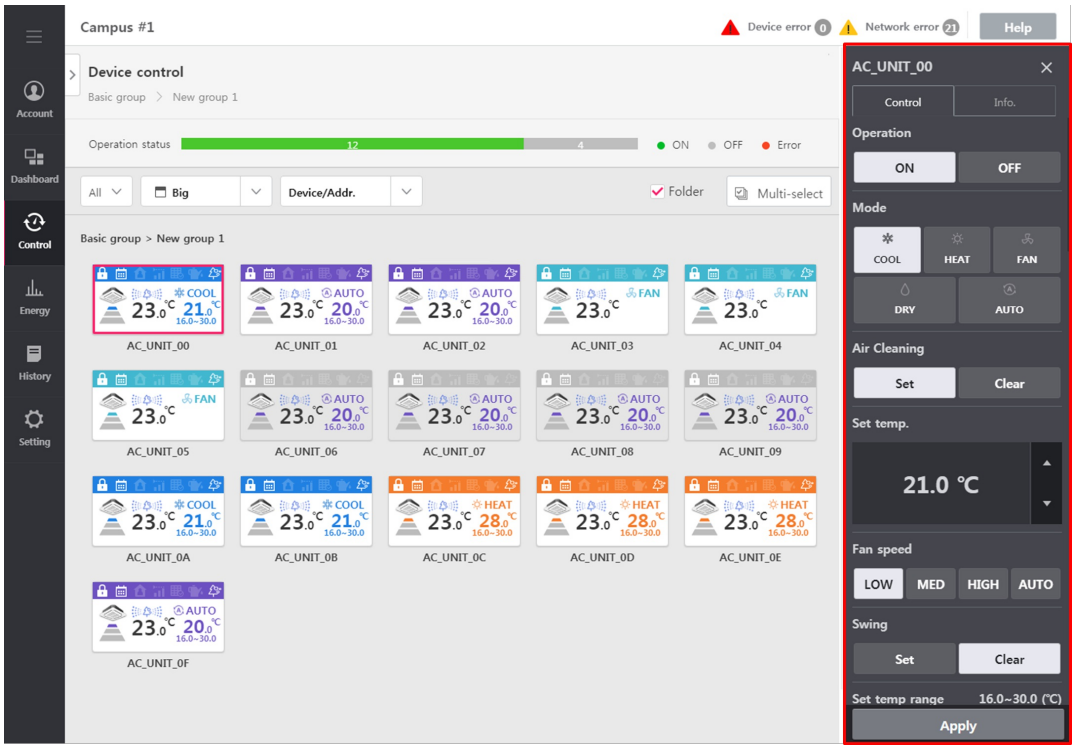
- Check device icon/operation/mode/device name

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.



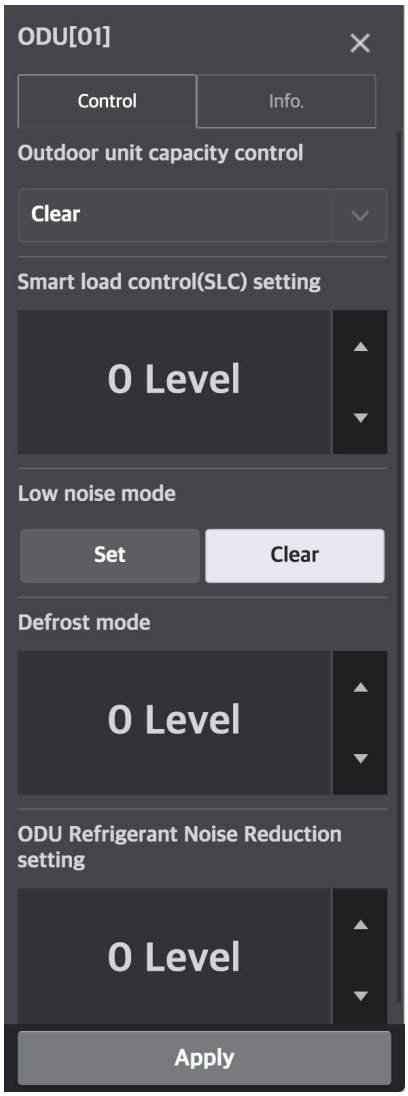
Note

- **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.**
- **Chiller interface is an optional function, and you need to separately purchase the option for chiller interface.**
- **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)
- HRV
- DXHRV
- AWHP
- AHU
- Scroll chiller
- Screw chiller
- Turbo chiller
- Absorption Chiller
- DOKIT
- DO
- AO

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 • **[OFF]** button: Stops the device operation
Mode	• **[COOL]** button: Swtiches to cooling mode • **[HEAT]** button: Switches to heating mode • **[FAN]** button: Air purification operation. When FAN is selected, set temperature is not applied to the device • **[DRY]** button: Removes moisture during rainy season or when humidity is high. When DRY is selected, set temperature is not applied to the device • **[AUTO]** button: Switches to automatic mode
Air cleaning	Air cleaning control only for air cleaning function supporting indoor unit • Air cleaning single operation 1) In indoor unit stop state, in case of air cleaning **[Set]**, air cleaning single operation with wind only (automatic wind) (During air cleaning single operation, mode lock and wind amount lock are not checked) 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 (But, in case of mode or wind amount control together, control is done with controlled mode and wind amount) • Air cleaning additional operation 1) In indoor unit stop state, in case of operation status **[ON]** and air cleaning **[Set]**, in current mode, air cleaning additional operation 2) In indoor unit operation state, in case of air cleaning **[Set]**, in current mode, air cleaning additional operation 3) During air cleaning additional operation, in case of operation **[OFF]**, operation stops 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 • **[LOW]** button: Set the fan speed to slow • **[MED]** button: Set the fan speed to normal • **[HIGH]** button: Set the fan speed to fast • **[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 power saving	Only for human detection mode - supporting indoor unit, human detection mode - control • **[Set/Clear]** button: human detection mode - ON/OFF power saving Set/Clear
Human detection mode - Temperature power saving	Only for human detection mode - supporting indoor unit, human detection mode - control • **[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 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 • **[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 • **[Set/Clear]** button: human detection mode - indirect wind Set/Clear
Comfortable Power Saving	• **[Set/Clear]** button: Comfortable Power Saving function Set/Clear • You can press **[▲]/[▼]** button to set stage Only when indoor unit is in cooling operation, Comfortable Power Saving control is possible
Filter replacement alarm	• **[Clear]** button: in case of filter replacement alarm, it cancels 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) • **[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 • **[LOW]** button: Set the fan speed to slow • **[MED]** button: Set the fan speed to normal • **[HIGH]** button: Set the fan speed to fast • **[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) • **[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)

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 • **[OFF]** button: Stops the device operation
Mode	• **[COOL]** button: Swtiches to cooling mode • **[HEAT]** button: Switches to heating mode • **[FAN]** button: Air purification operation. When FAN is selected, set temperature is not applied to the device • **[DRY]** button: Removes moisture during rainy season or when humidity is high. When DRY is selected, set temperature is not applied to the device • **[AUTO]** button: Switches to automatic mode
Air cleaning	Air cleaning control only for air cleaning function supporting indoor unit • Air cleaning single operation 1) In indoor unit stop state, in case of air cleaning **[Set]**, air cleaning single operation with wind only (automatic wind) (During air cleaning single operation, mode lock and wind amount lock are not checked) 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 (But, in case of mode or wind amount control together, control is done with controlled mode and wind amount) • Air cleaning additional operation 1) In indoor unit stop state, in case of operation status **[ON]** and air cleaning **[Set]**, in current mode, air cleaning additional operation 2) In indoor unit operation state, in case of air cleaning **[Set]**, in current mode, air cleaning additional operation 3) During air cleaning additional operation, in case of operation **[OFF]**, operation stops

	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 • **[Occupied]** button: occupied setting • **[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 • **[LOW]** button: Set the fan speed to slow • **[MED]** button: Set the fan speed to normal • **[HIGH]** button: Set the fan speed to fast • **[AUTO]** button: **[LOW]**-**[MED]**-**[HIGH]** automatic switching
Swing	• **[Set/Clear]** button: Set/Clear the Swing function
Human detection mode - ON/OFF power saving	Only for human detection mode - supporting indoor unit, human detection mode - control • **[Set/Clear]** button: human detection mode - ON/OFF power saving Set/Clear
Human detection mode - Temperature power saving	Only for human detection mode - supporting indoor unit, human detection mode - control • **[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 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 • **[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 • **[Set/Clear]** button: human detection mode - indirect wind Set/Clear
Comfortable Power Saving	• **[Set/Clear]** button: Comfortable Power Saving function Set/Clear • You can press **[▲]/[▼]** button to set stage Only when indoor unit is in cooling operation, Comfortable Power Saving control is possible
Filter replacement alarm	• **[Clear]** button: in case of filter replacement alarm, it cancels 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

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.**

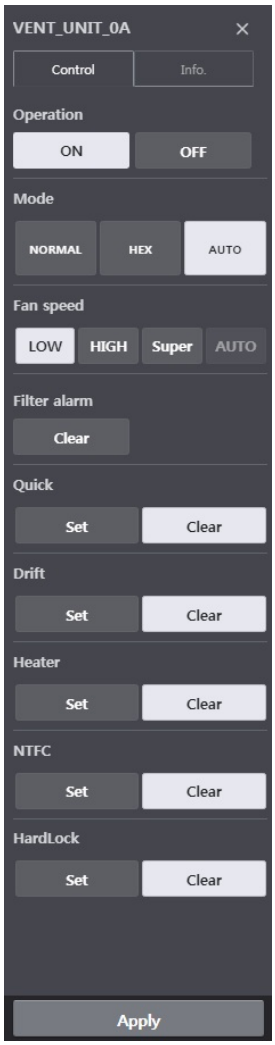
Occupancy

- **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.

HRV



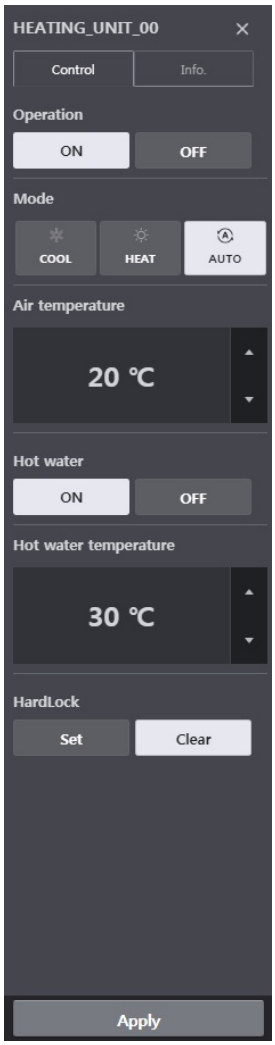
Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	• **[NORMAL]** button: Discharged air ventilates without going trough the electric heat exchanger • **[HEX]** button: Both air supply/discharge ventilates through the electric heat exchanger • **[AUTO]** button: Switches to four seasons mode
Fan speed	Wind strength setting • **[LOW]** button: Set the fan speed to slow • **[HIGH]** button: Set the fan speed to fast • **[SUPER]** button: Set the fan speed to Max. speed • **[AUTO]** button: **[LOW]**-**[HIGH]**-**[SUPER]** automatic switching - User setting is impossible - When Drift/Quick is set, **[AUTO]** Fan speed is selected - When Drift/Quick is cleared, **[HIGH]** Fan speed is selected - 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) • Drift **[Set/Clear]** button: Set/clear Drift function (When Drift function is selected, Quick function is cleared) • 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

DXHRV

Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	• **[NORMAL]** button: Discharged air ventilates without going trough the electric heat exchanger • **[HEX]** button: Both air supply/discharge ventilates through the electric heat exchanger • **[AUTO]** button: Switches to four seasons mode
Set temperature	Press **[▲]/[▼]** button to set the desired temperature
Fan speed	Wind strength setting • **[LOW]** button: Set the fan speed to slow • **[HIGH]** button: Set the fan speed to fast • **[SUPER]** button: Set the fan speed to Max. speed • **[AUTO]** button: **[LOW]**-**[HIGH]**-**[SUPER]** automatic switching - User setting is impossible - When Drift/Quick is set, **[AUTO]** Fan speed is selected - When Drift/Quick is cleared, **[HIGH]** Fan speed is selected - During **[AUTO]** operation, when **[LOW]/[HIGH]/[SUPER]** is selected, Drift/Quick function in operation is cleared
Air conditioner	• **[COOL]** button: Operates the direct cooling type ventilation in cooling mode • **[AUTO]** button: Automatically operates the direct cooling type ventilation by deciding the indoor condition • **[HEAT]** button: Operates the direct cooling type ventilation as heating mode • **[OFF]** button: Stops the air conditioner of the direct cooling type ventilation
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) • Drift **[Set/Clear]** button: Set/clear Drift function (When Drift function is selected, Quick function is cleared) • Heater **[Set/Clear]** button: Set/clear heater function • 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

AWHP



Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	• **[COOL]** button: Swtiches to cooling mode • **[HEAT]** button: Switches to heating mode • **[AUTO]** button: Switches to automatic mode
Air/Water in/out temperature	Press **[▲]/[▼]** button to set Air/Water in/out temperature It is displayed based on the set temperature selected in **[Setting]-[Installing]** • When **[Water in/out]** is selected, it is displayed as water in/out temperature • When **[indoor]** is selected, it is displayed as air temperature
Hot water	• **[ON]** button: Starts hot water operation - 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 - If hot water is operated while the device is stopped, the icon in the contents display section is enabled, and hot water is displayed • **[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

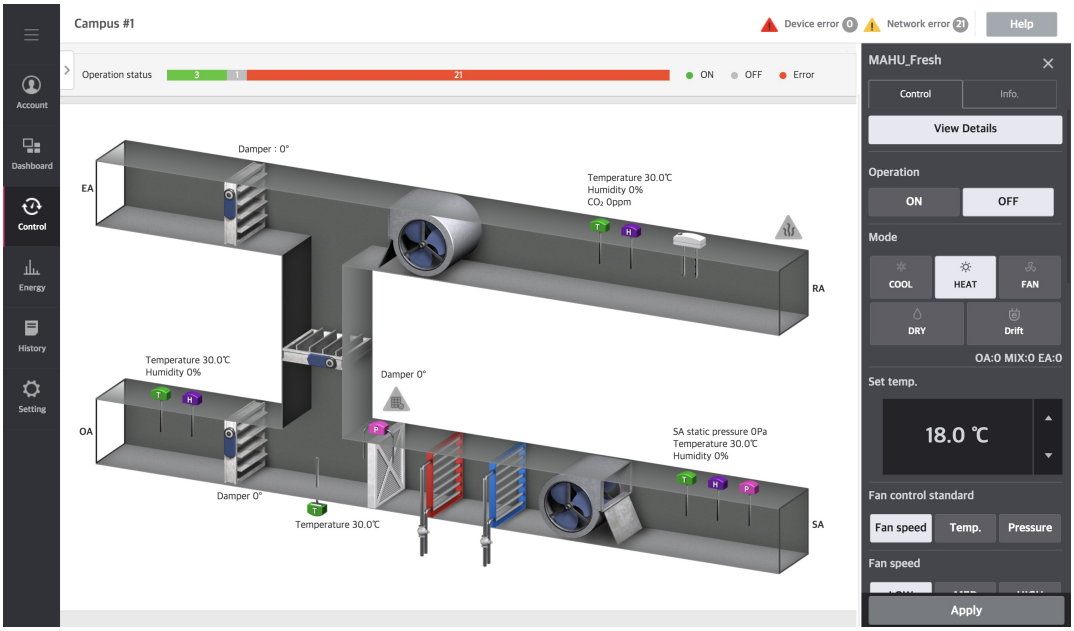
AHU

Category	Contents
View Details	Press **[View Details]** button to check detail information (But, mobile is excluded)
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	• **[COOL]** button: Swtiches to cooling mode • **[HEAT]** button: Switches to heating mode • **[FAN]** button: Air purification operation. When FAN is selected, you cannot set the desired temperature • **[DRY]** button: Removes moisture in rainy season or when humidity is high. When DRY is selected, you cannot set the desired temperature • **[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
Set temperature	Press **[▲]/[▼]** button to set the temperature
Fan control standard	• **[Fan speed]** button: Controls the fan based on Fan speed status • **[Temp]** button: Controls the fan based on temperature status • **[Pressure]** button: Controls the fan based on Pressure status
Fan speed	It is displayed only when fan control standard is Fan speed • **[LOW]** button: Set the fan speed to slow • **[MED]** button: Set the fan speed to normal • **[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 • Automatic ventilation **[Set/Clear]** button: Starts/stops automatic ventilation

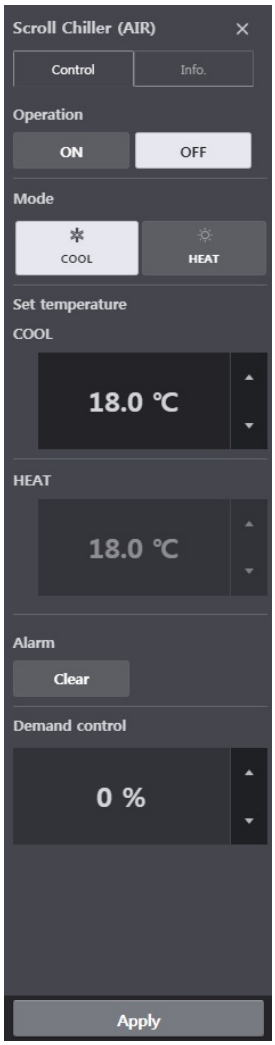
Set CO_2	It is enabled only when automatic ventilation function is set Press **[▲]/[▼]** button to set in the unit of 100ppm within 100 ppm ~ 2 000 ppm range
Humidify	It is displayed only when the addtitional function's Humidify or automatic ventilation and Humidify are selected during AHU device registration • Humidify **[Set/Clear]** button: Starts/stops Humidify function
Humidity	It is enabled only when Humidify function is set 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 ° within 0 ° ~ 90 ° range • Press **[MIX Damper]** : **[▲]/[▼]** button to set the mixer damper opening value in the unit of 1 ° within 0 ° ~ 90 ° range • Press **[EA Damper]** : **[▲]/[▼]** button to set the air discharge damper opening value in the unit of 1 ° within 0 ° ~ 90 ° range 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.

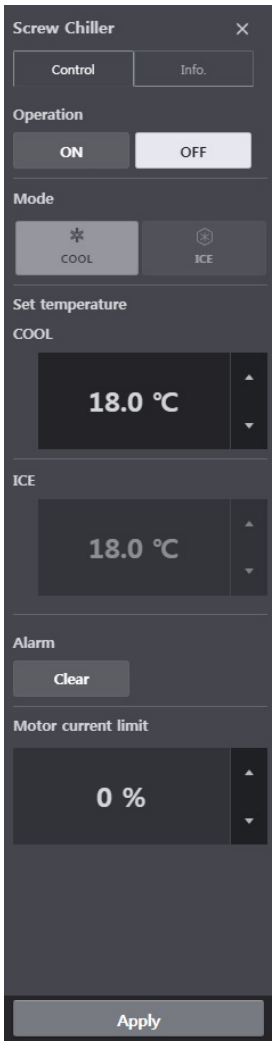


Scroll chiller



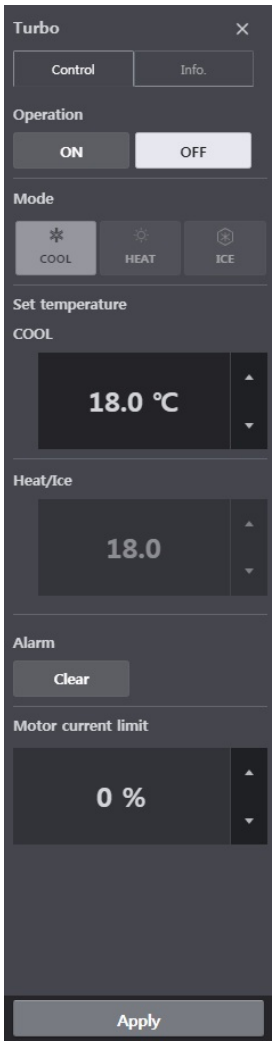
Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	(It is displayed only when device supports the corresponding mode) • **[COOL]** button: Swtiches to cooling mode • **[HEAT]** button: Switches to heating mode
Set temperature	Set the load water out temperature for indoor cooling/heating 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



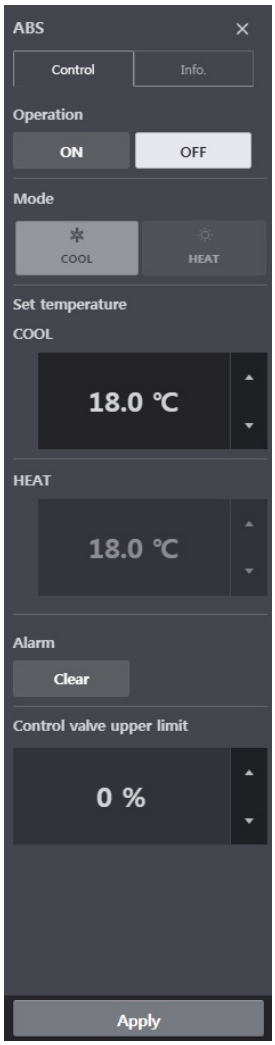
Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	Mode control is impossible. Controls monitored operation mode's set temperature
Set temperature	Set the load water out temperature for indoor cooling/ice making Press **[▲]/[▼]** 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 • **[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 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

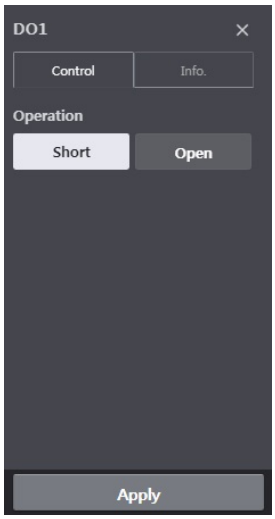


Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	Mode control is impossible. Controls monitored operation mode's set temperature
Set temperature	Set the load water out temperature for indoor cooling/heating Press **[▲]/[▼]** 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

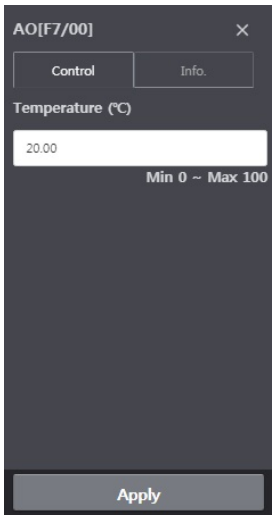
Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation

DO



Category	Contents
Operation	• **[Short]** button: Short signal output • **[Open]** button: Open signal output

AO



Category	Contents
Temperature	Set temperature value

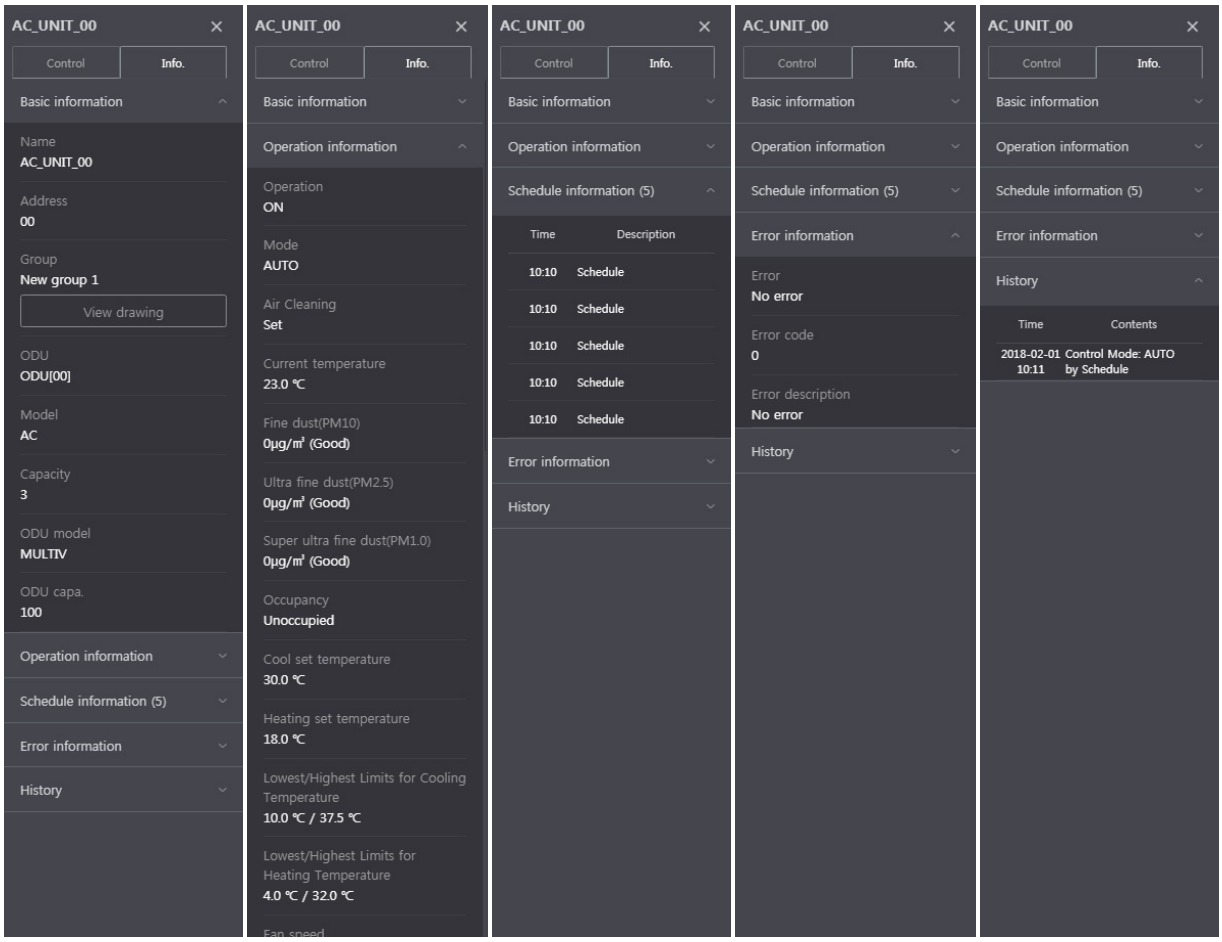
Note

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.



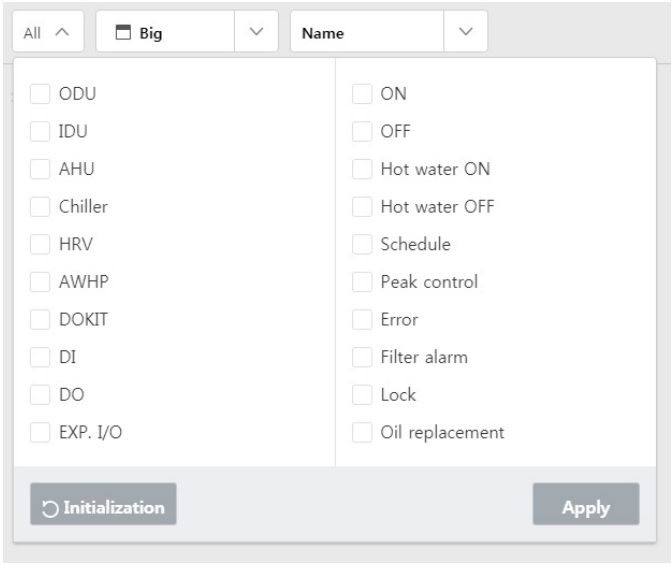
Control

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.

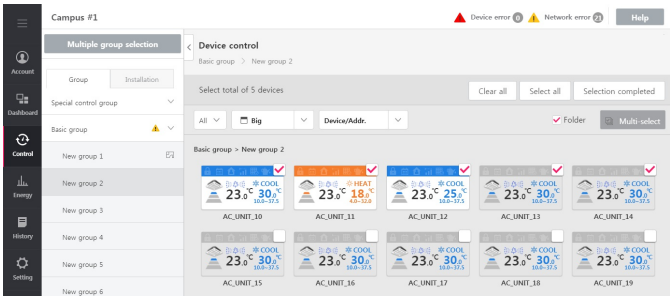
Category	Description
Group	List of group set for convenience
Installation	Provides actually connected device information

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, AHU, chiller, ventilation, system boiler, ON/OFF device, DI, DO, Exp.I/O
Status	ON, OFF, Hot water ON, Hot water OFF, Schedule, Peak control, Error, Filter alarm, Lock, Oil replacement

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.

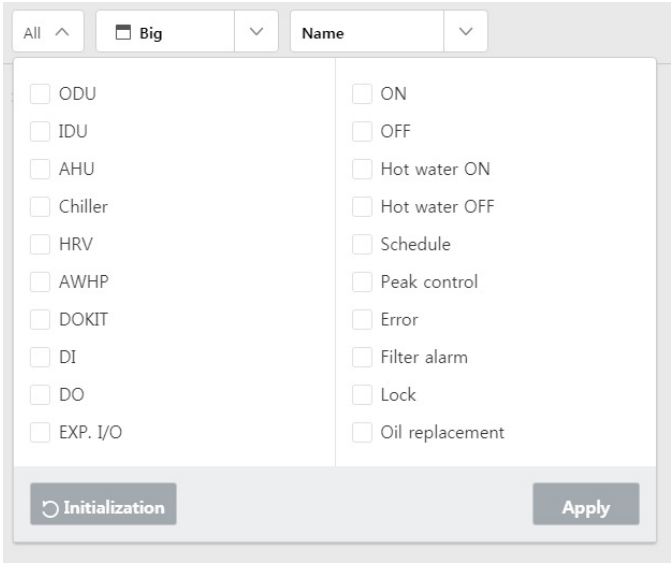
Monitoring

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.



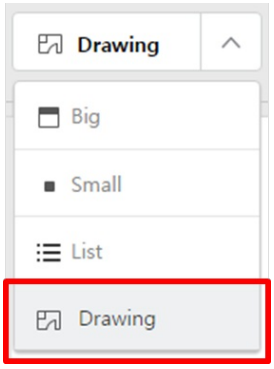
Filter type	Detail category
Device	Outdoor unit, indoor unit, AHU, chiller, ventilation, system boiler, ON/OFF device, DI, DO, Exp.I/O
Status	ON, OFF, Hot water ON, Hot water OFF, Schedule, Peak control, Error, Filter alarm, Lock, Oil replacement

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.

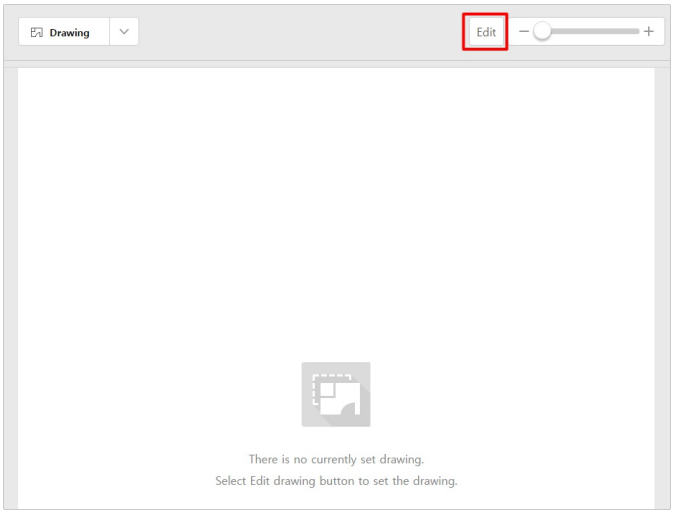
Edit Drawing

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]**.

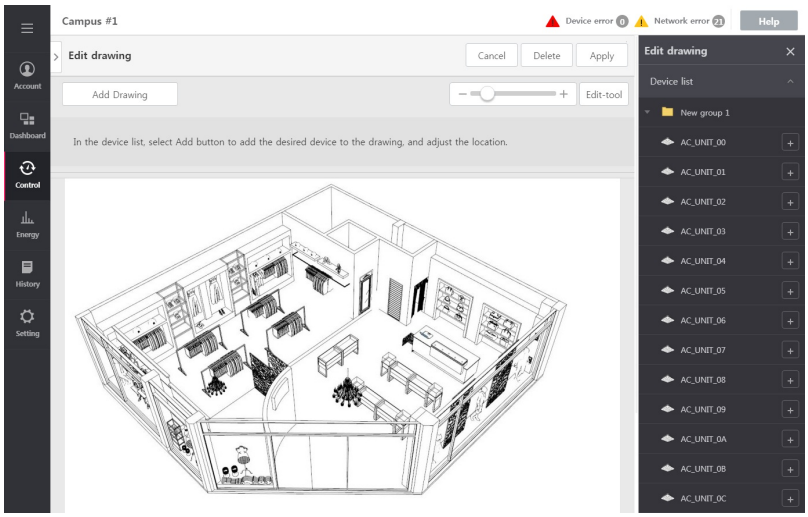


4. Click **[Edit]** button.

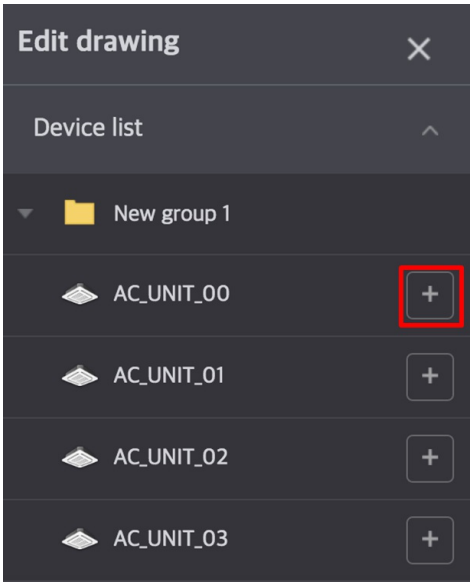


5. When you add or change drawing, click **[Add Drawing]** button.

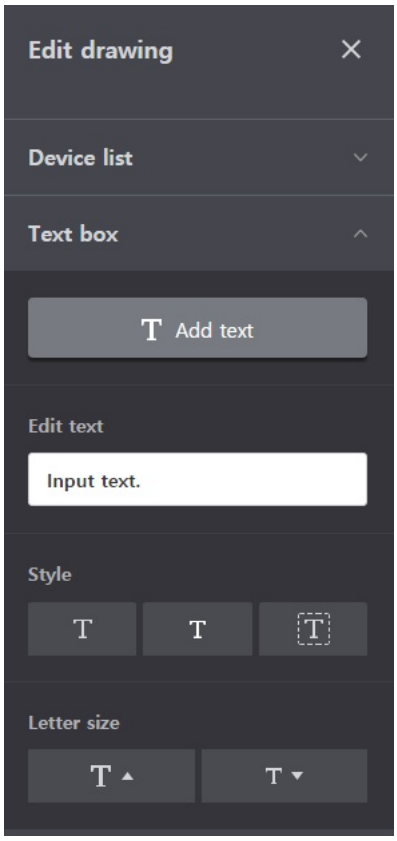
6. When file load window is displayed, select the drawing file to add and click **[Open]** button.
   - The selected drawing is displayed in the Edit drawing screen.



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 • : Display in normal letter • : Display in thick letter • : Display in Italic letter • : Display with underlined letter : Change letter color : Change letter background color
Letter size	: Larger letter : Smaller letter

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

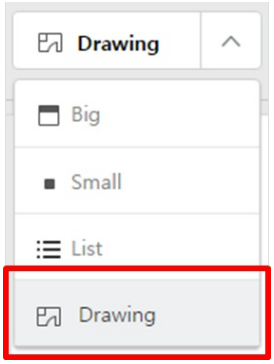
Note

- **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.
- **During text add / edit, special symbol (^','"'|\) may not be used.**

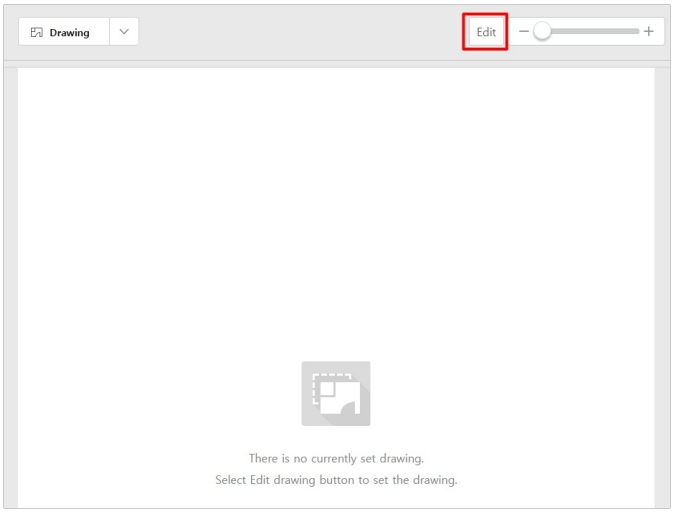
Delete Drawing

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

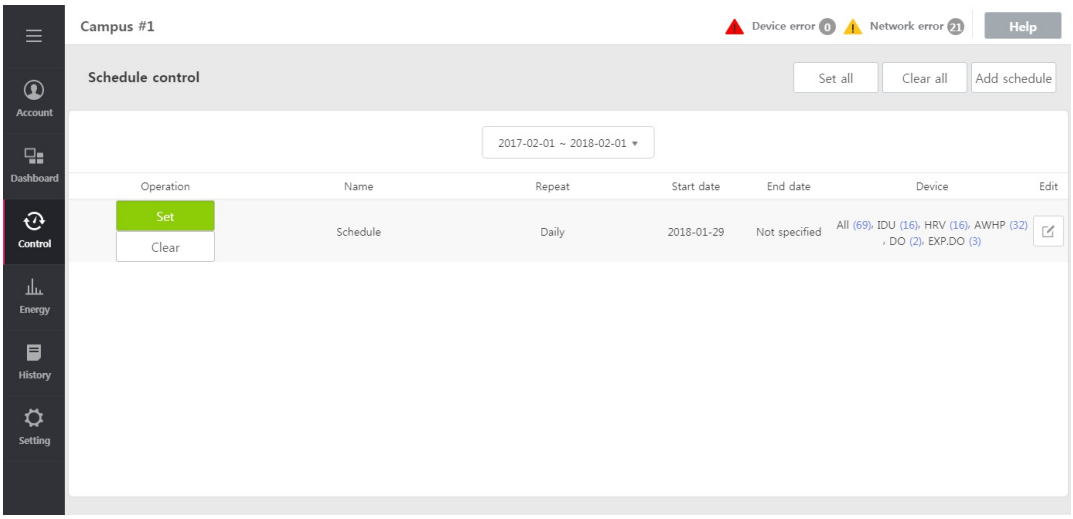
Recommended specification

- **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.

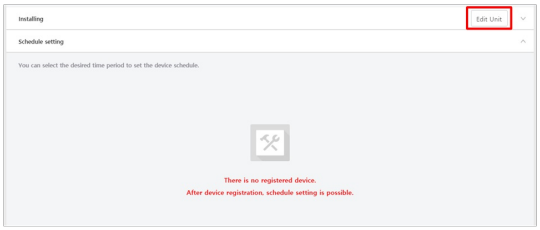
1. In the left menu tab, click **[Control] > [Schedule Control]** menu.
   - The schedule control screen is displayed.
2. In the schedule list, click **[Add Schedule]** button.
   - The Add schedule screen is displayed.
3. In the schedule name input field, input the desired schedule name.
4. Set whether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

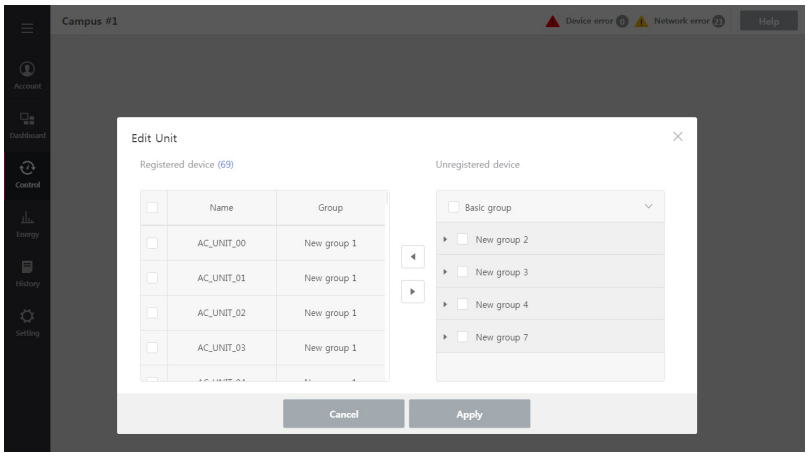
5. Set the desired period.
   - When repetition is selected as **[Once]**, select only 1 day
   - When repetition is selected as **[select day of week]**, select start and end date

Category	Description
Start Date	• Select the desired start date in mini calendar • Initial start date is selected as today's date
End date	• Select the desired end date in mini calendar • 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.

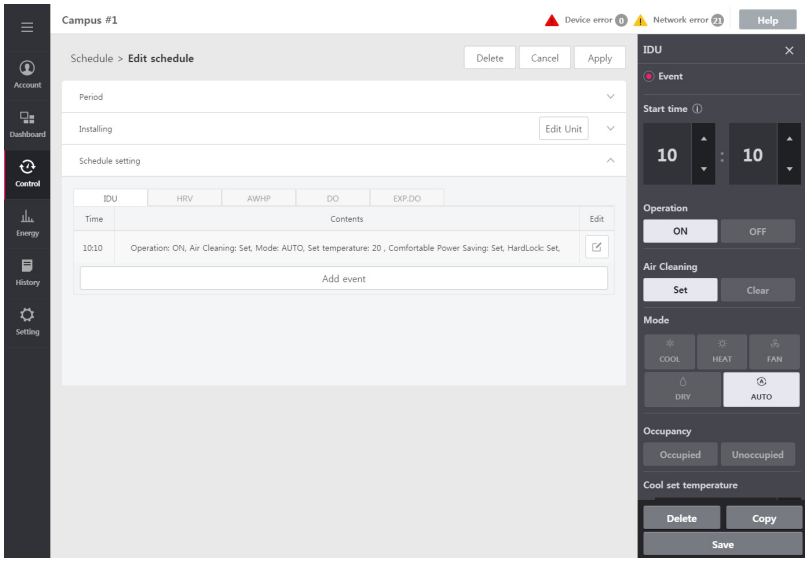


9. In the unregistered device list, click the checkbox of the device to register and click **[◀]** button.
   - To register several groups at once, click the checkbox of the group to register and click **[◀]** button.
   - The selected devices are added to the registered device list.



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.



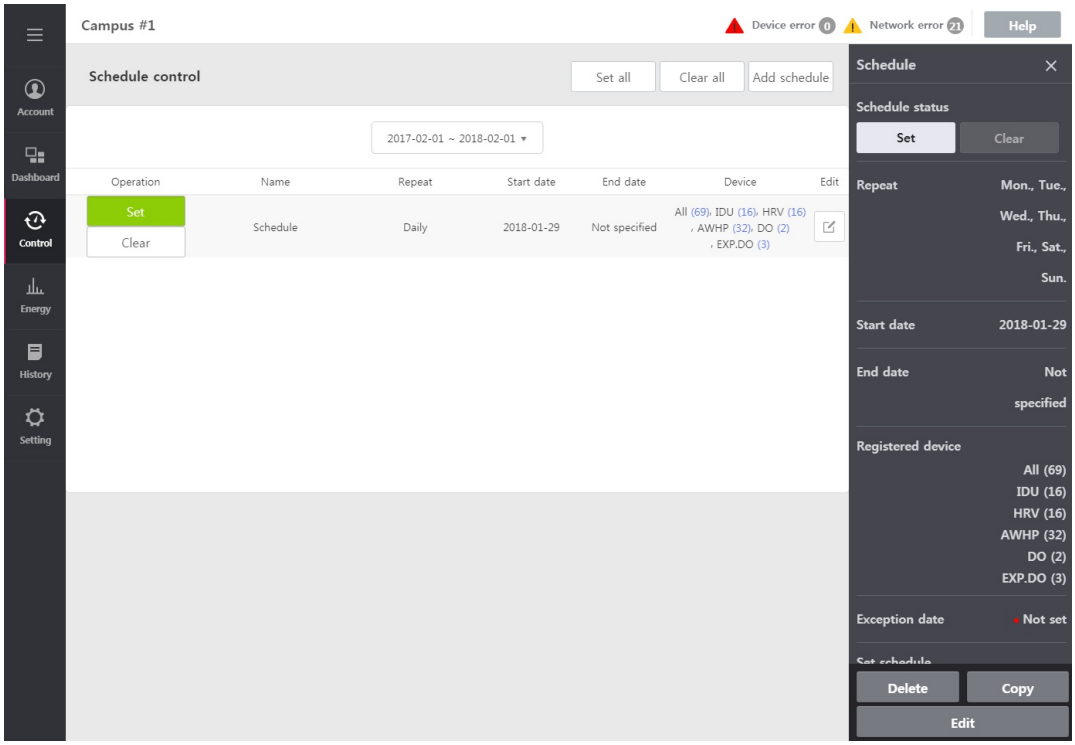
12. When control setting is completed, click **[Save]** button.

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.

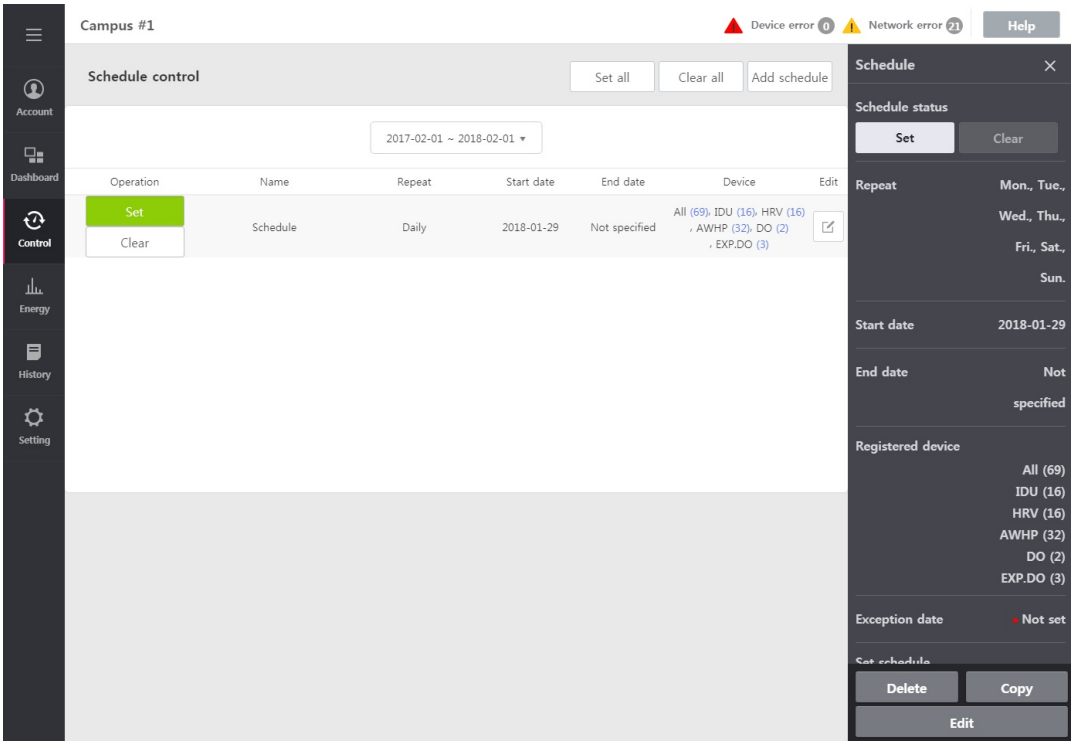


3. In the right side Edit window screen, click **[Delete]** button.
4. When notice popup window is created, click **[Check]** button.

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.

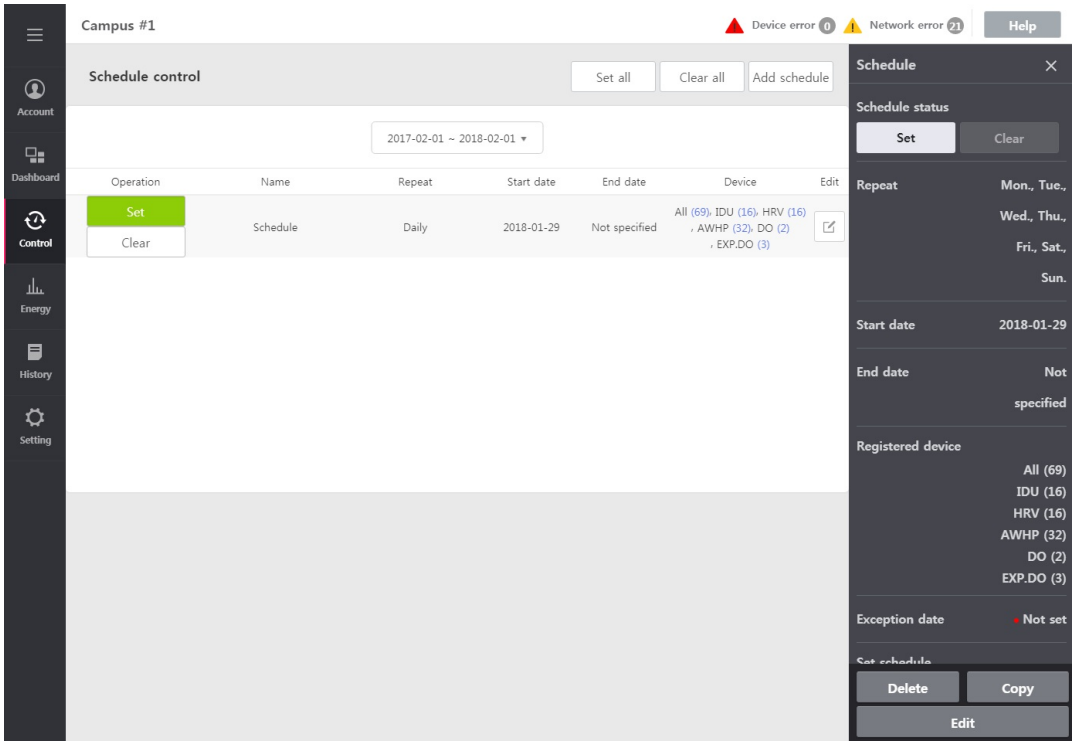


3. In the right side edit window screen, click **[Copy]** button.
4. When notice popup window is created, click **[Check]** button.

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

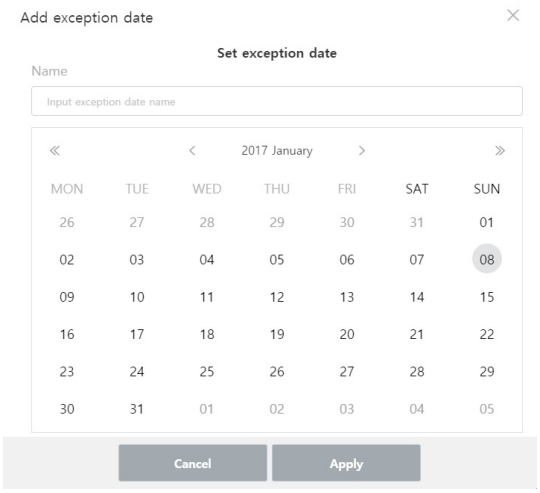
You can load already set exception date.

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.

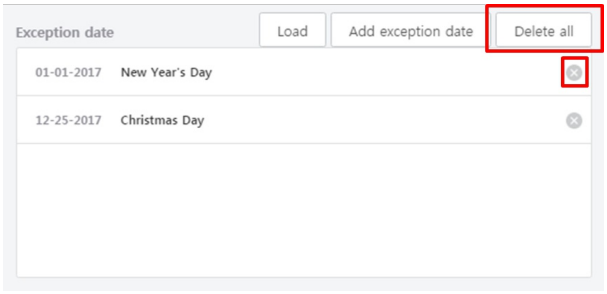


4. Input the desired exception date name.
5. Select the exception date to set.
6. When selection is completed, click **[Apply]** button.

Delete exception date

You can delete alreday registered exception date.

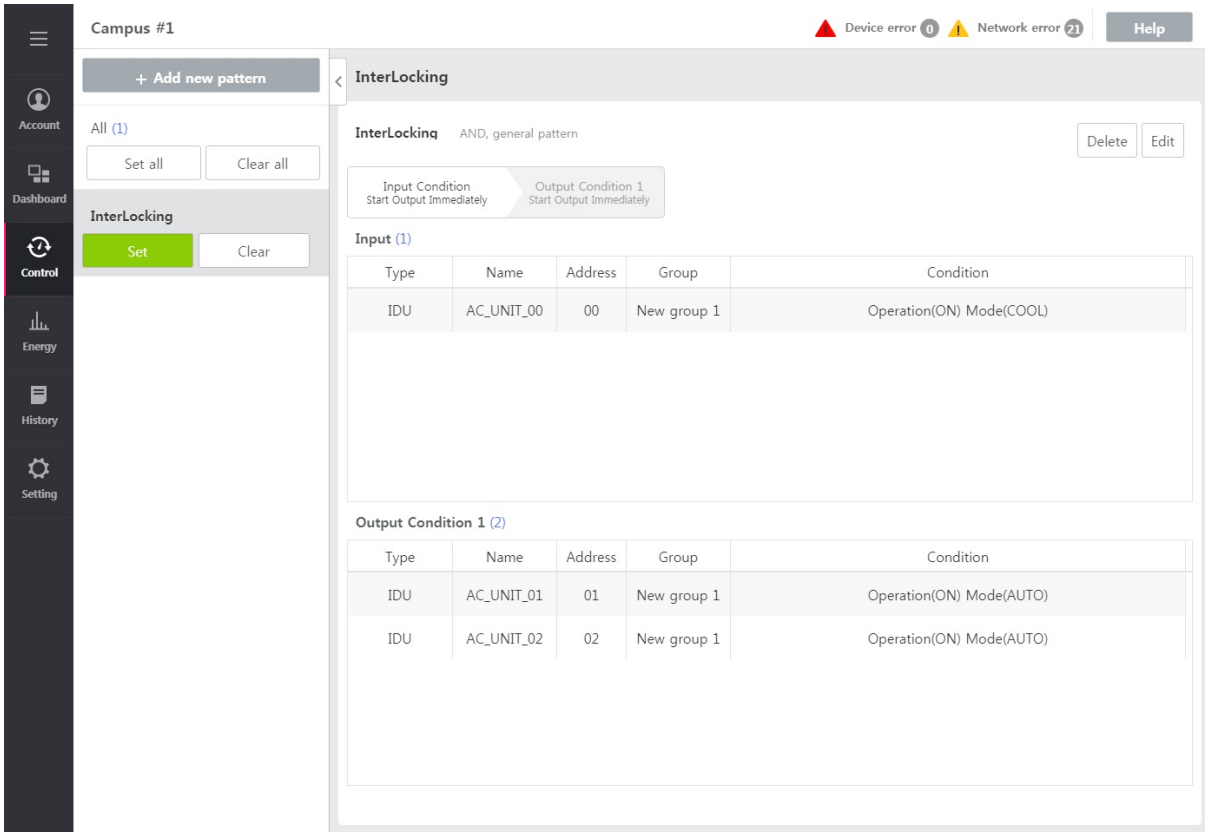
1. In the left menu tab, click **[Control] > [Schedule Control]** menu.
   - The schedule control screen is displayed.
2. In Edit schedule screen, click **[X]** button to delete exception date.
   - To delete the entire category, click **[Delete All]** button.



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

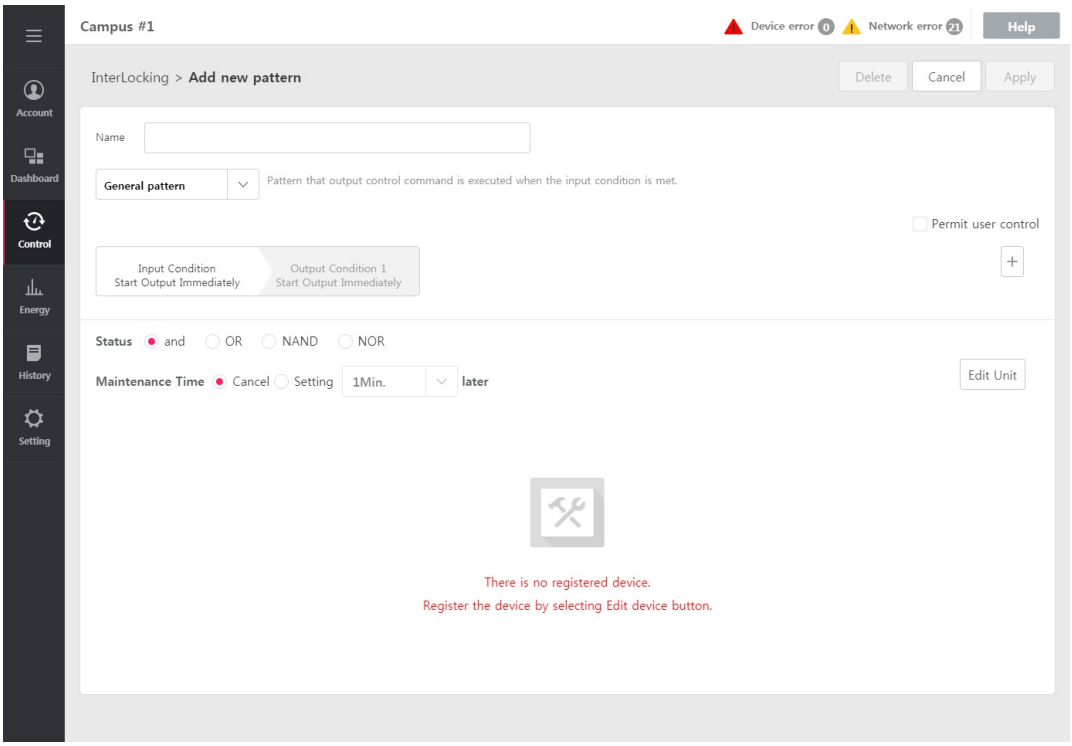
Recommended specification

- **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 (Some control functions may not be copied.) • 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 • 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.

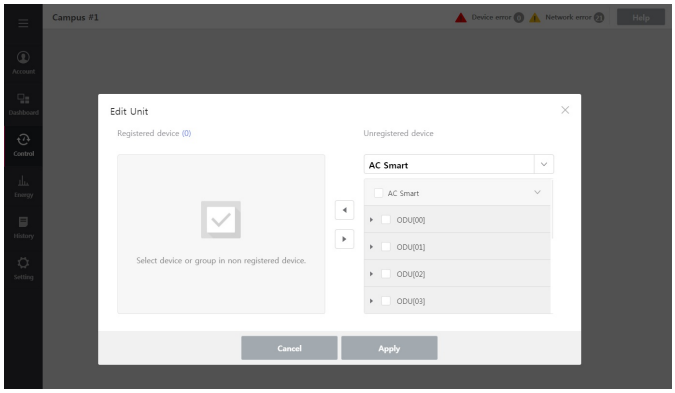
Category	Description
Status	• AND : all device conditions match • OR : one or more device conditions match • NAND : one or more device conditions do not match • NOR : no condition matches
Maintaining time	If it is set, while all input conditions are met, output condition control after maintaining time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

- It only appears when output condition tab is selected.

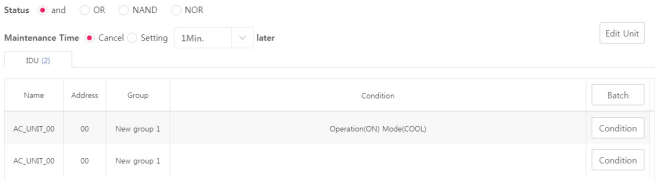
Category	Description
Send e-mail	When check box is selected, if the corresponding event is executed in ACP, whether event occurred is sent to the e-mail set in Setting > error notice setting > receiving e-mail address • ACP shall be connected to internet network that can send e-mail.
Delay time	If it is set, when input condition is met, output condition is controlled after the registered delay time Press **[▼]** button to select delay time • 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.

Delete InterLocking

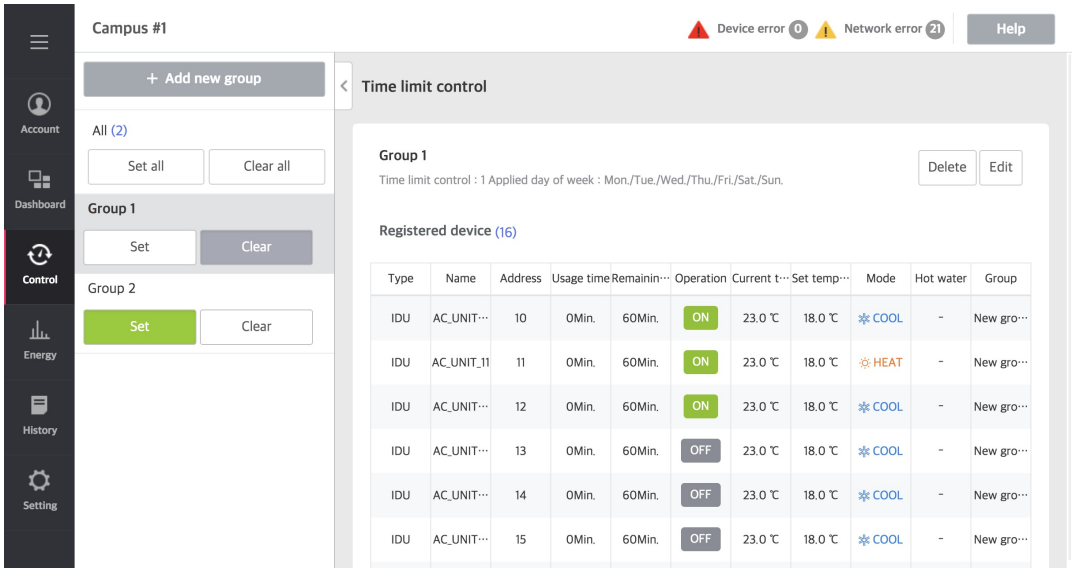
You can delete registerd InterLocking.

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

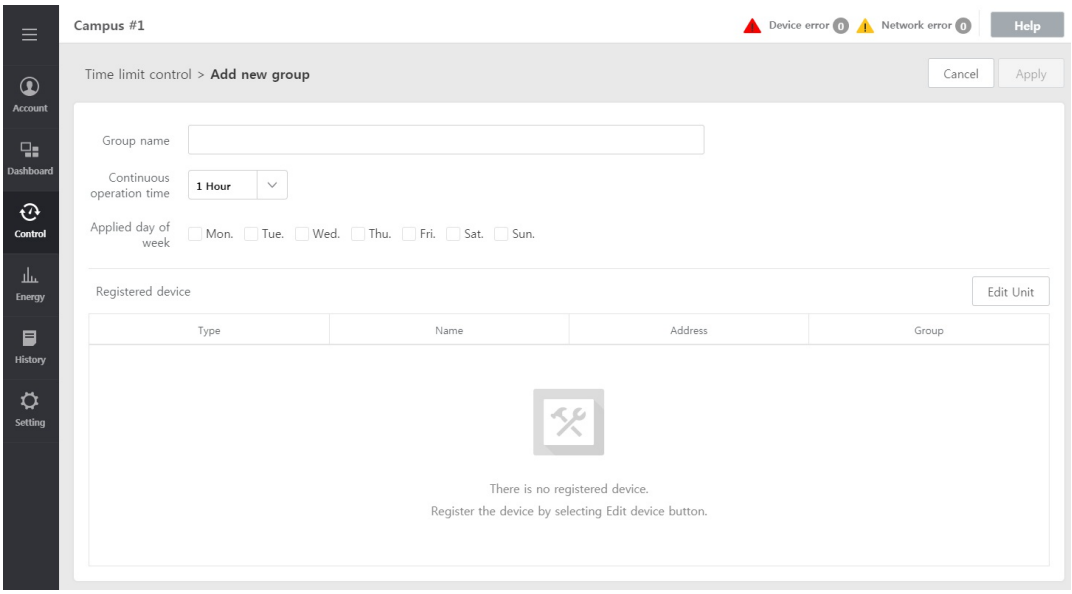
Recommended specification

- **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.



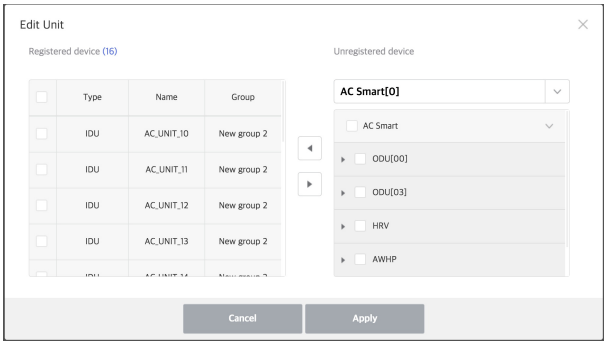
3. Input group name.

4. Select continuous operation time and applied day of week.

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

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.

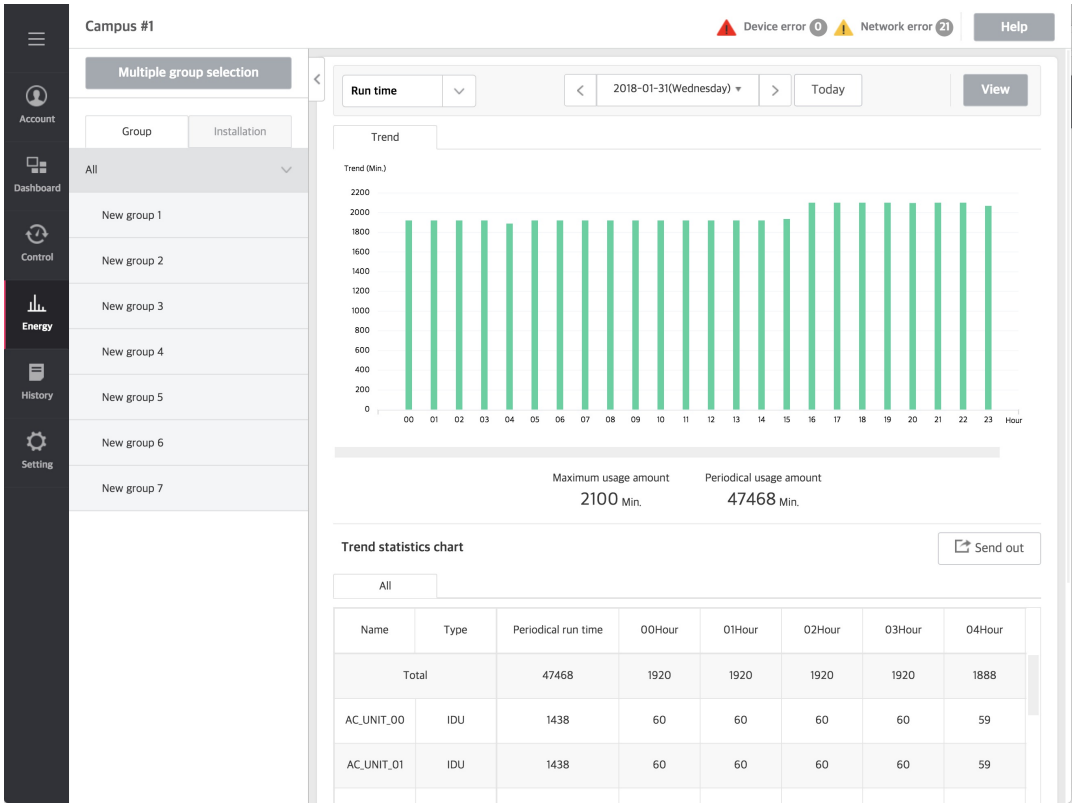
2. In the group list, select the group to delete and click **[Delete]** button.

3. When Delete group popup window appears, click **[Yes]** button.

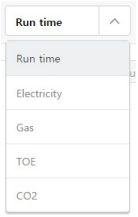
Energy Usage

It describes the method to check the device's operation time, electricity usage amount, 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.

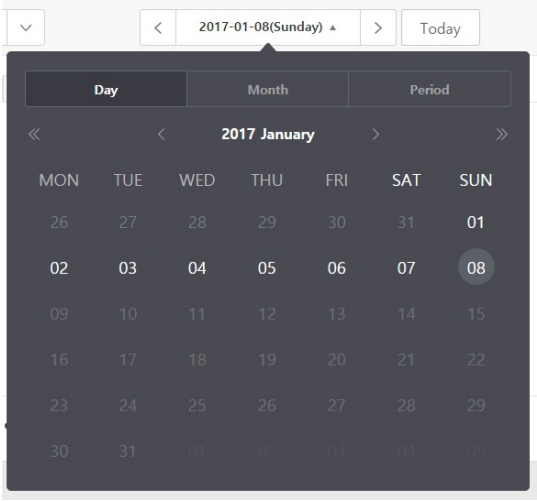


2. In the group list, select group to view.
3. In the top left side box, select the category to view.



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.

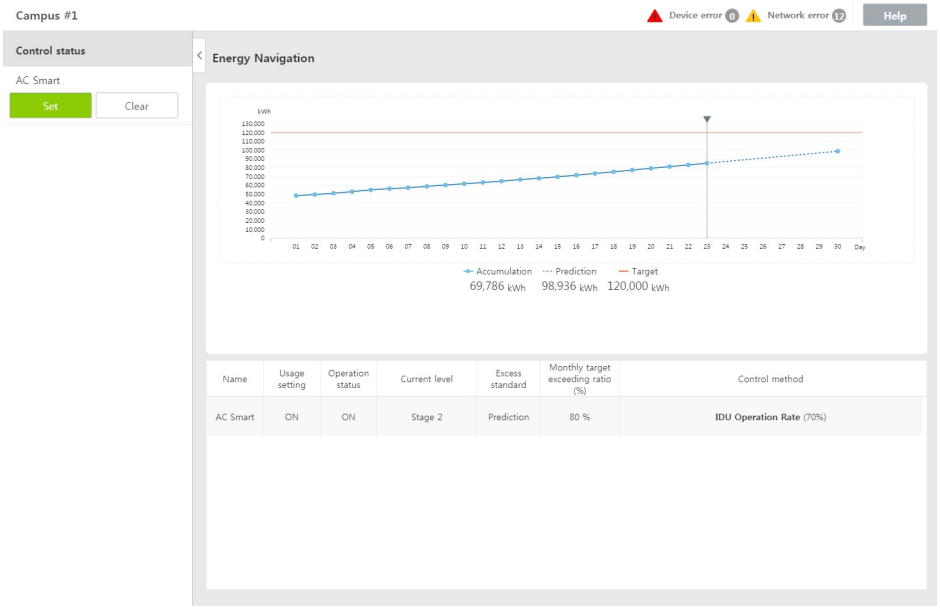
  (In AC Smart 5 Device, it is stored in USB.)

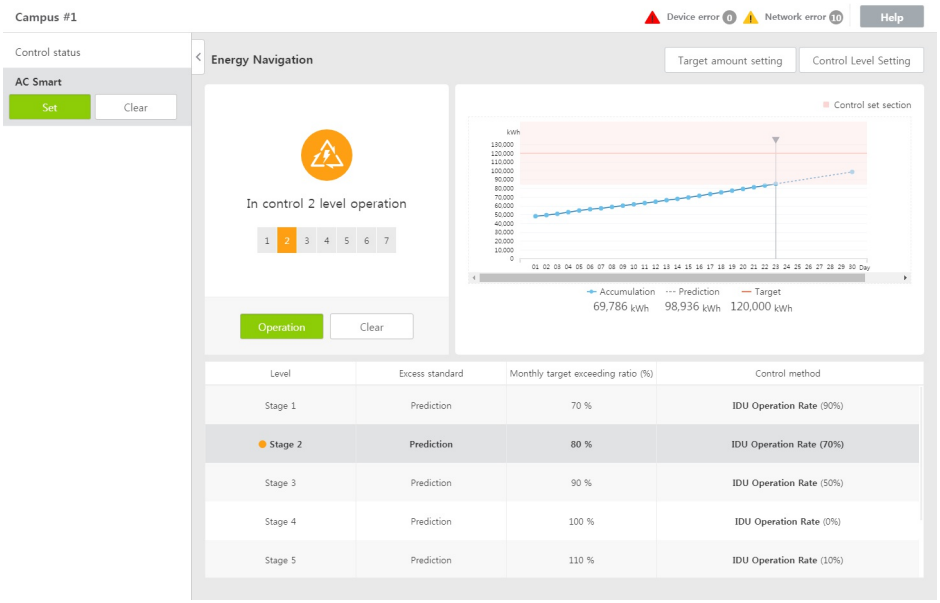
Note

- **Viewing power is possible only when PDI is installed.**
- **If PDI is installed, indoor unit, direct cooling type ventilation, and system boiler 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.

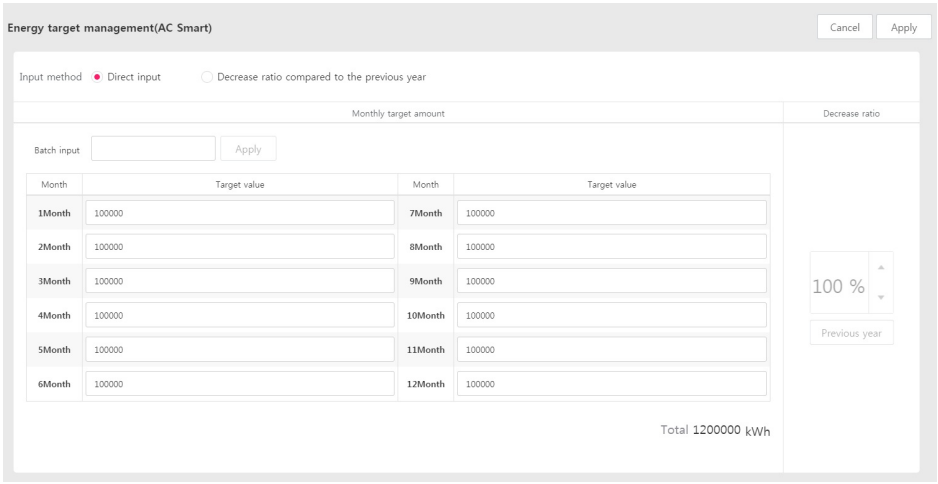




Add target amount

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.

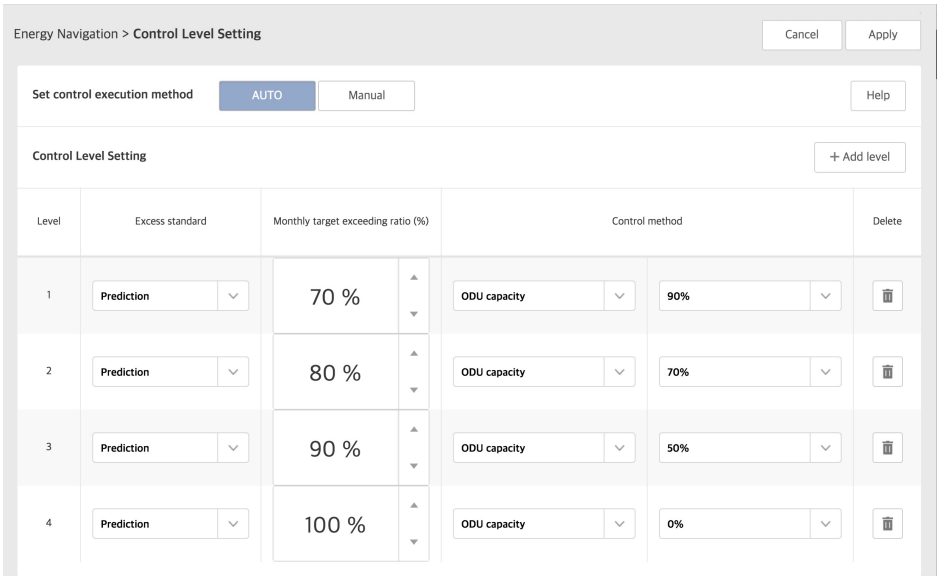


4. Input target amount in each month.
   - To input in all months at once, input target amount in batch input field and click **[Apply]** button on the side.
5. When target amount input is completed, click **[Apply]** button at the top right side.
6. When Apply notice window appears, click **[Check]**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

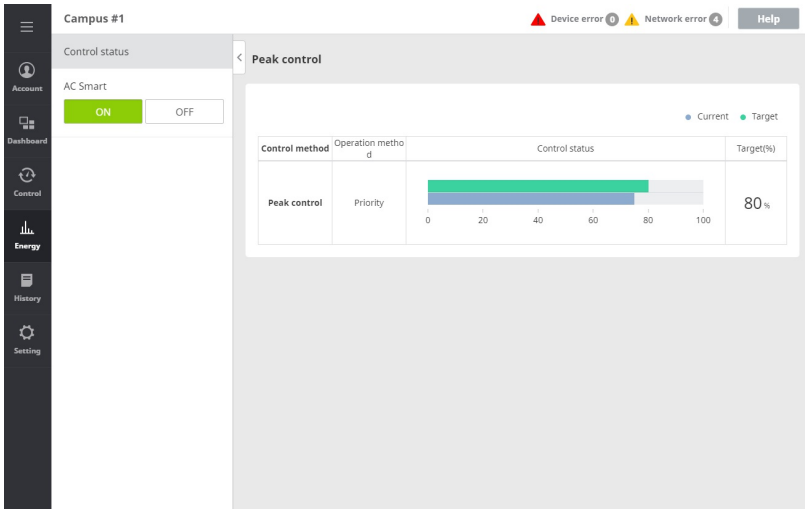
Monthly target excess ratio	You can set in 10% unit within 70~130%
Control method	ODU capacity: You can set in 10% unit within 0~100%. IDU operation ratio: You can set in 10% unit within 0~100%. IDU: IDU control

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

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

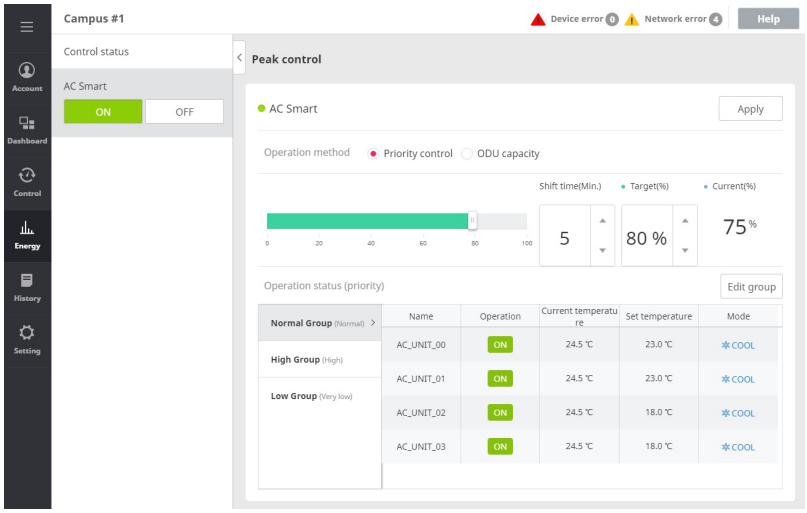
Peak control

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



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 control]** menu.
   - Peak 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.

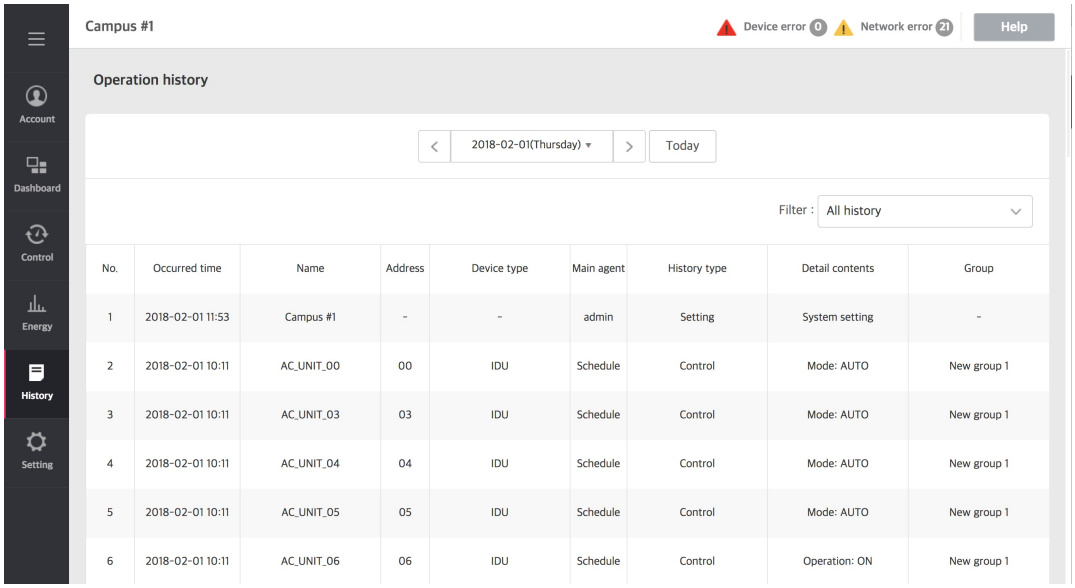
Category	Description
Operation Method	• Outdoor unit capacity control: Target operation ratio is applied in the units of outdoor unit to control outdoor unit capacity operation ratio • Priority control: Controls according to the priority of ACP lower level gropus
Operation rato bar	• Indoor unit's target operation ratio is displayed as bar graph • 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 • 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.

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.

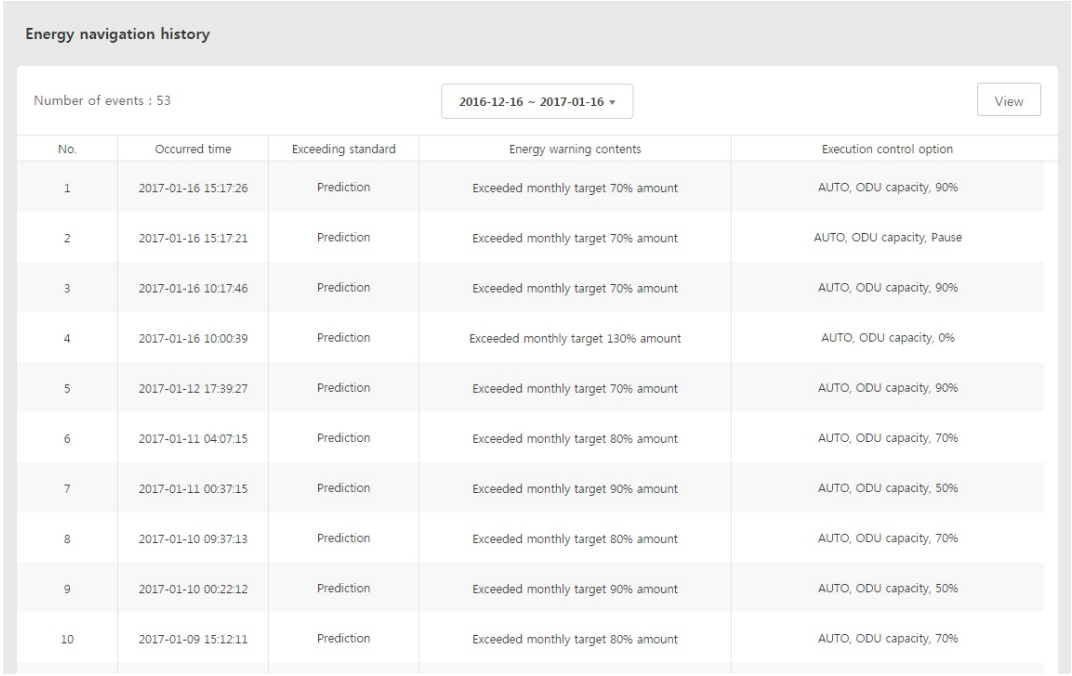
Category	Description
Viewing period	• Day: Views the history of the selected date • Today: Views today's history

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.

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.

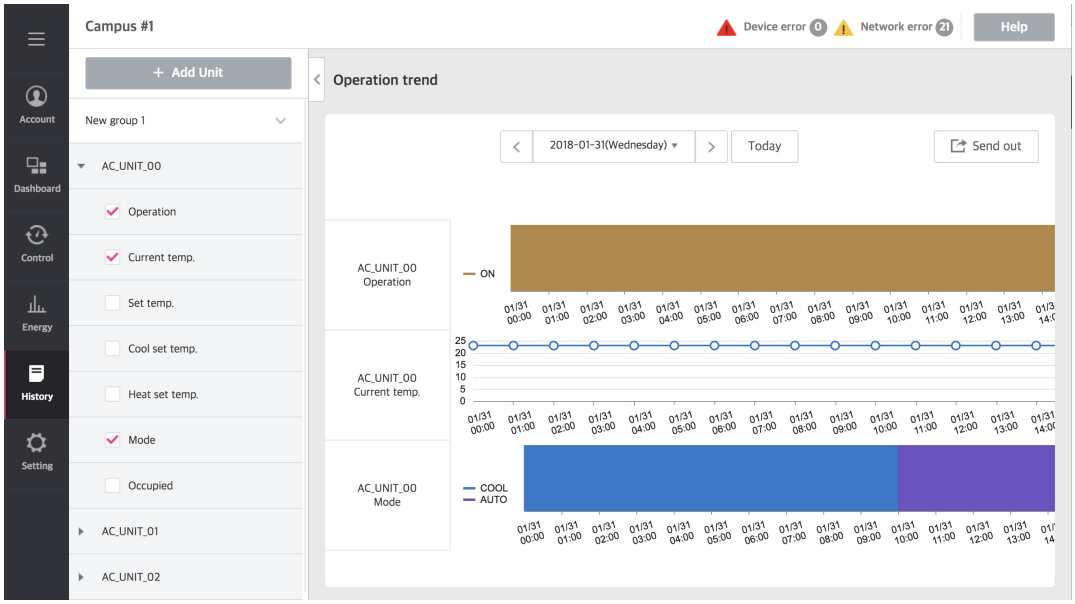


No.	Occurred time	Exceeding standard	Energy warning contents	Execution control option
1	2017-01-16 15:17:26	Prediction	Exceeded monthly target 70% amount	AUTO, ODU capacity, 90%
2	2017-01-16 15:17:21	Prediction	Exceeded monthly target 70% amount	AUTO, ODU capacity, Pause
3	2017-01-16 10:17:46	Prediction	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

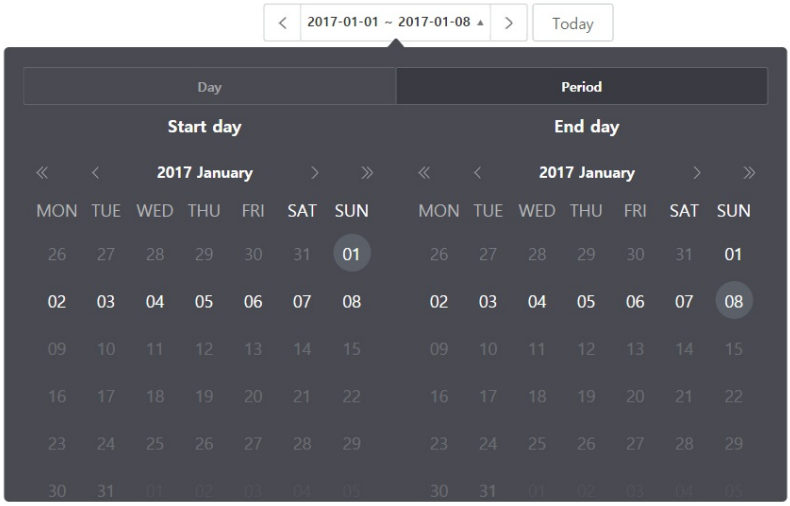
You can add unit to view operation trend.

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
Period	**[Day]** button: Select the desired date in mini calendar and set as the base date **[Period]** button: Set the start date and end date of the period to view • The maximum period to view is 1 week. **[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**
- **HRV: operation, mode, current temperature (only for direct cooling type ventilation), set temperature (only for direct cooling type ventilation)**
- **AHU: operation, ventilation temperature, air supply temperature, set temperature, mode, air supply humidity, ventilation humidity**
- **AWHP: 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**

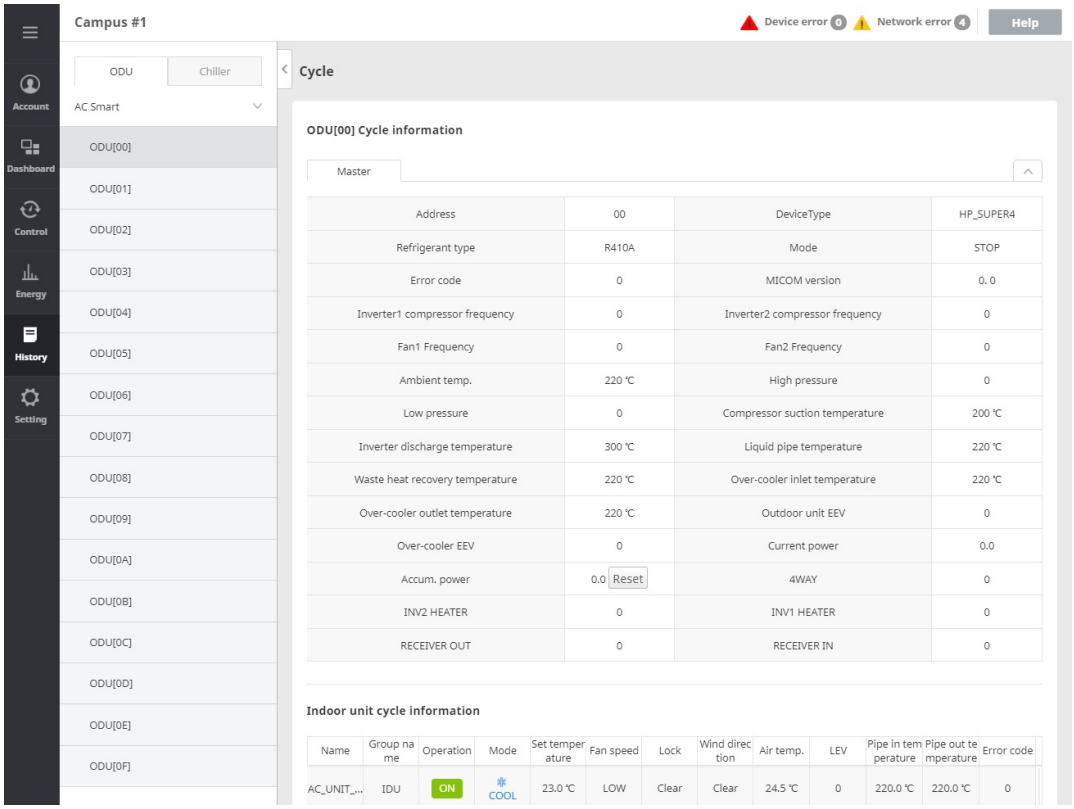
Cycle

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.

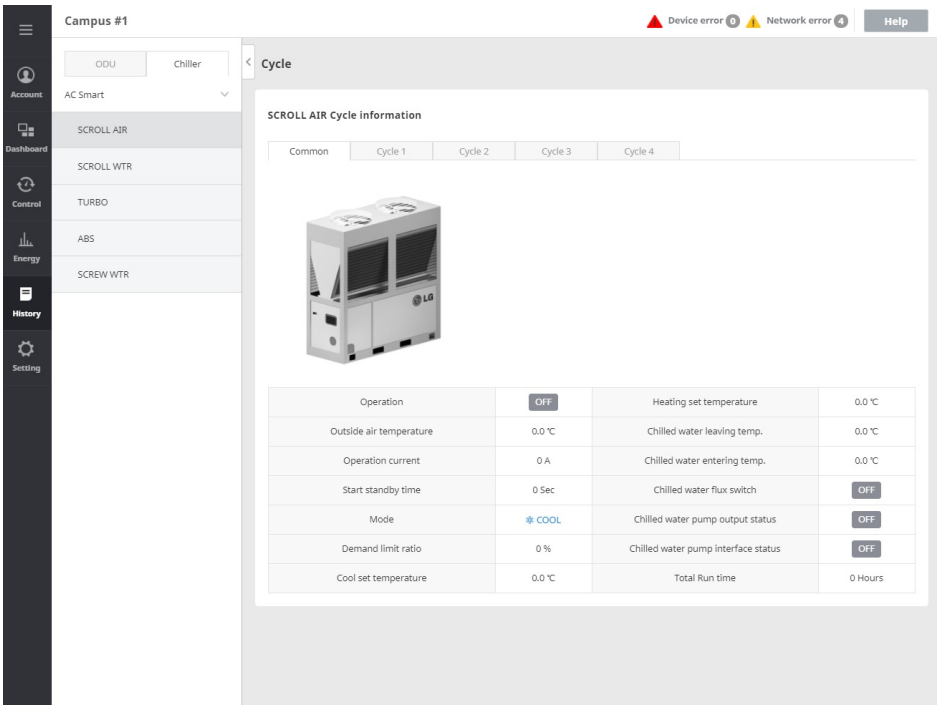
Note

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.


Campus #1
Device error 0
Network error 4
Help
Account
Dashboard
Control
Energy
History
Setting
ODU
Chiller
AC Smart
SCROLL AIR
SCROLL WTR
TURBO
ABS
SCREW WTR
Cycle
SCROLL AIR Cycle information
Common
Cycle 1
Cycle 2
Cycle 3
Cycle 4
Operation
OFF
Heating set temperature
0.0 ℃
Outside air temperature
0.0 ℃
Chilled water leaving temp.
0.0 ℃
Operation current
0 A
Chilled water entering temp.
0.0 ℃
Start standby time
0 Sec
Chilled water flux switch
OFF
Mode
COOL
Chilled water pump output status
OFF
Demand limit ratio
0 %
Chilled water pump interface status
OFF
Cool set temperature
0.0 ℃
Total Run time
0 Hours

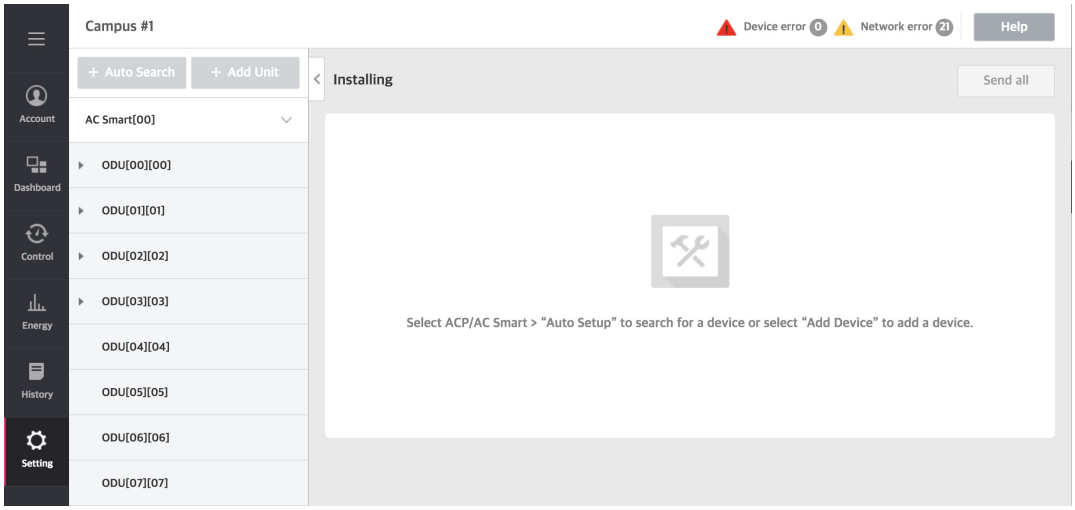
Device setting

You can change AC Smart setting, add device, and change registered device's setting.

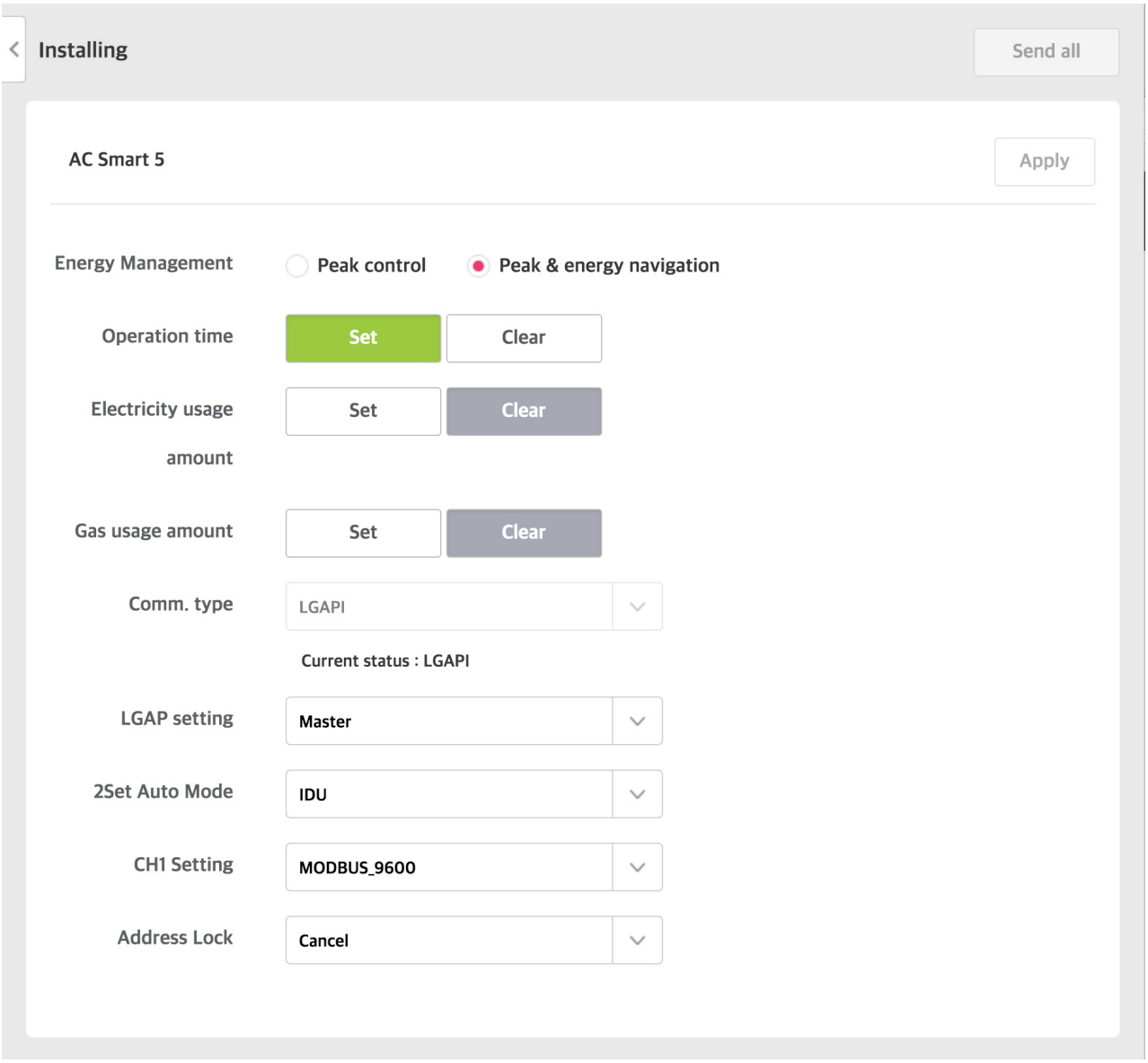
AC Smart 5 edit

You can change AC Smart setting.

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



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



Category	Description
Energy Management	Select among peak control / peak control and energy navigation
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
2Set automatic mode	Press [▼] button to select main agent of 2Set automatic mode • Central controller / indoor unit
CH1 setting	Press [▼] button to select communication type of the device to connect to CH1 port • LGAP: for indoor unit, ventilation, direct cooling type ventilation, and system boiler connection • LGAP_AHU: for AHU (general, all fresh air, waste heat recovery) connection • 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 ventilation remote controller

Note

Some models do not support LGAPII.

When the controller is set as slave, register the IDU or other devices to be controlled by the corresponding controller. At this time, it should not be registered in duplicate with other slave controllers.

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

Automatic setting

You can automatically search device connected to AC Smart and register.

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

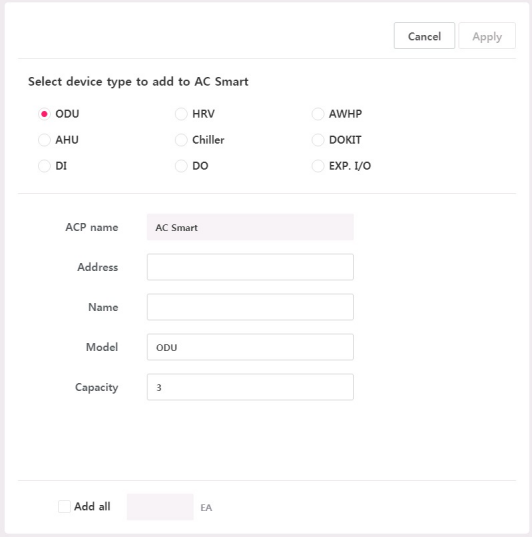
Note

- **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 AC Smart in device list, you can add outdoor unit, ventilation, system boiler, 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.

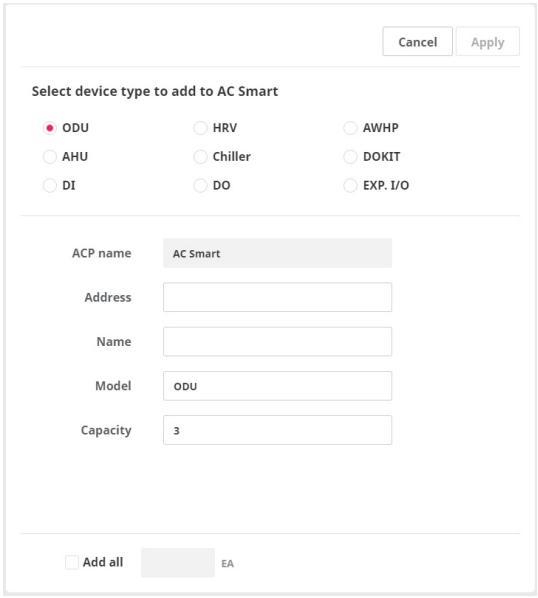
1. In the left menu tab, click **[Setting] > [Installing]** menu.
   - Device setting screen is displayed.
2. In device list, select device to delete, and click **[Delete]** button.
3. When device delete popup window appears, click **[Yes]** button.
   - In device list, selected item is deleted.
4. To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

Setting information of each device

Setting information of each device is as follows.

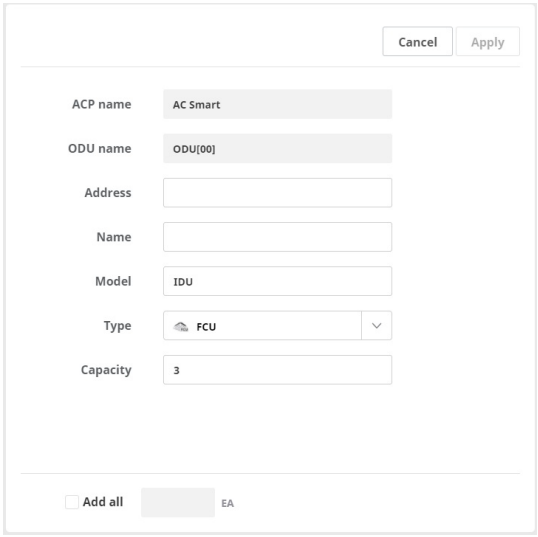
- Outdoor Unit
- IDU
- HRV
- AWHP
- AHU
- Chiller
- DOKIT
- DI/DO
- Exp.I/O
- Exp.I/O's lower level setting

Outdoor Unit



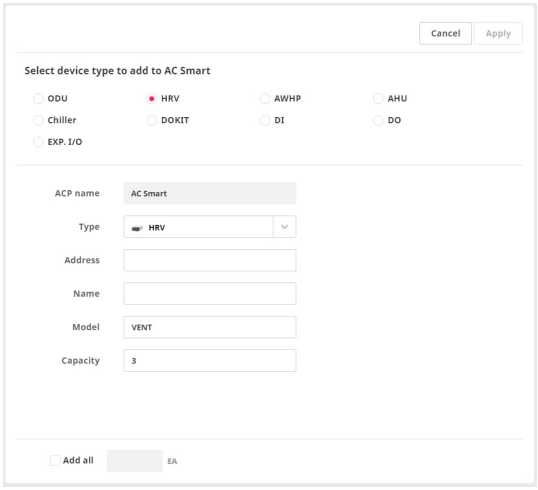
Category	Description
ACP name	The corresponding device's upper level ACP name
Address	Device address
Name	Device name to be displayed in the system ● For batch add, it is displayed as “Name_device address” form
Model	Product model name
Capacity	Product capacity
Add All	When checkboxes are selected, all selected devices are added

IDU



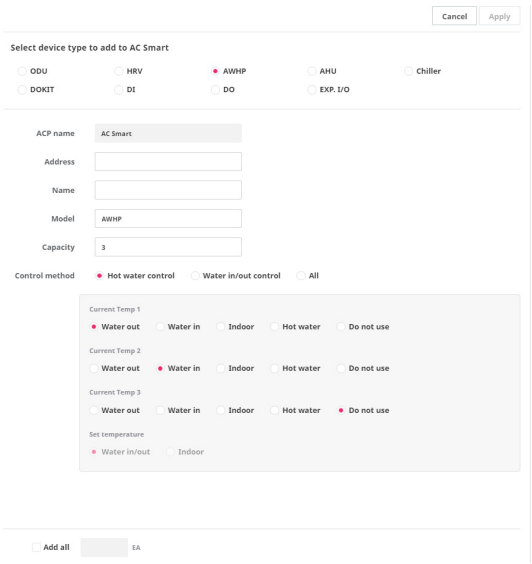
Category	Description
ACP name	The corresponding device's upper level ACP name
ODU name	Name of the outdoor unit connected to the corresponding device
Address	Device address
Name	Device name to be displayed in the system ● For batch add, it is displayed as “Name_device address” form
Model	Product model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

HRV



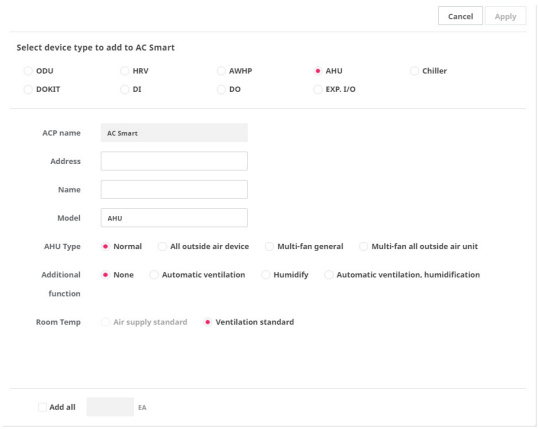
Category	Description
ACP name	The corresponding device's upper level ACP name
Type	Ventilation type selection
Address	Device address
Name	Device name to be displayed in the system ● For batch add, it is displayed as “Name_device address” form
Model	Product model name
Capacity	Product capacity
Add All	When checkboxes are selected, all selected devices are added

AWHP



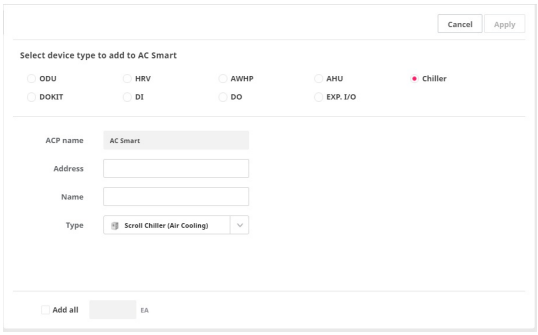
Category	Description
ACP name	The corresponding device's upper level ACP name
Address	Device address
Name	Device name to be displayed in the system • For batch add, it is displayed as “Name_device address” form
Model	Product model name
Capacity	Product capacity
Control method	Select control method
Current 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



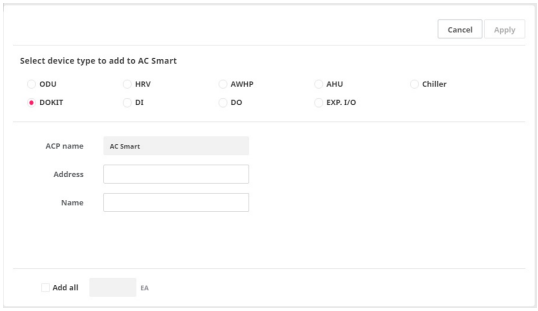
Category	Description
ACP name	The corresponding device's upper level ACP name
Address	Device address
Name	Device name to be displayed in the system • For batch add, it is displayed as “Name_device address” form
Model	Product model name
AHU type	Select AHU type
Additional function	Select function to add
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

Chiller



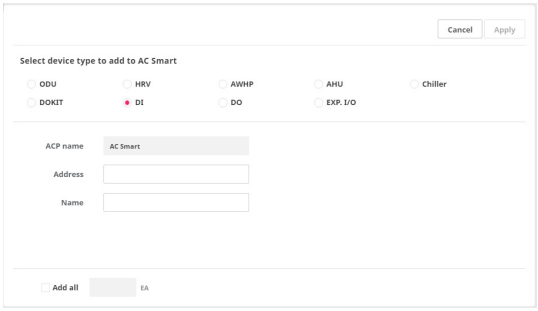
Category	Description
ACP name	The corresponding device's upper level ACP name
Address	Device address
Name	Device name to be displayed in the system • For batch add, it is displayed as “Name_device address” form
Type	Select chiller type
Add All	When checkboxes are selected, all selected devices are added

DOKIT



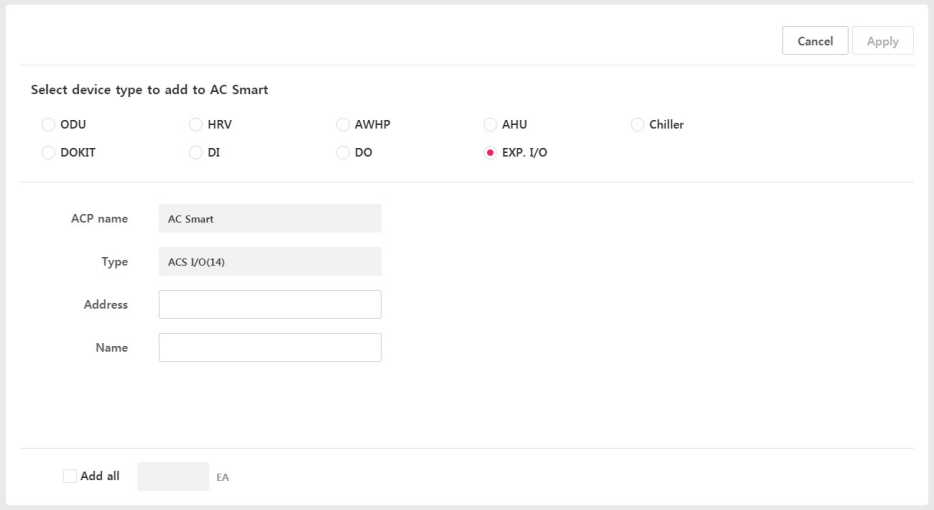
Category	Description
ACP name	The corresponding device's upper level ACP name
Address	Device address
Name	Device name to be displayed in the system ● For batch add, it is displayed as “Name_device address” form
Add All	When checkboxes are selected, all selected devices are added

DI/DO



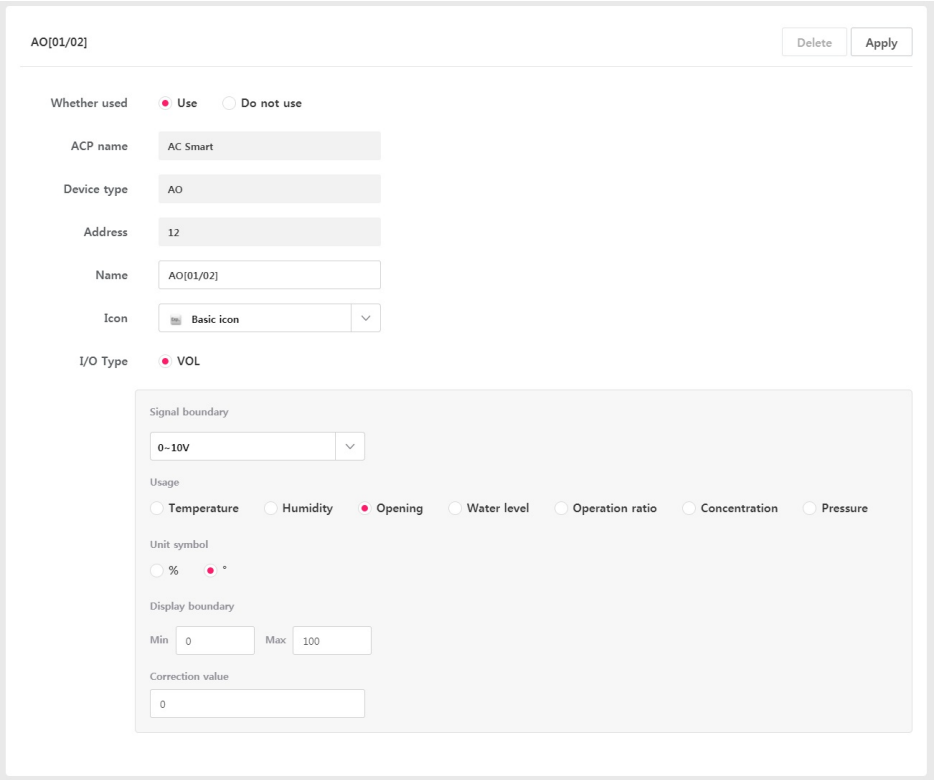
Category	Description
ACP name	The corresponding device's upper level ACP name
Address	Device address
Name	Device name to be displayed in the system ● For batch add, it is displayed as “Name_device address” form
Add All	When checkboxes are selected, all selected devices are added

Exp.I/O



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

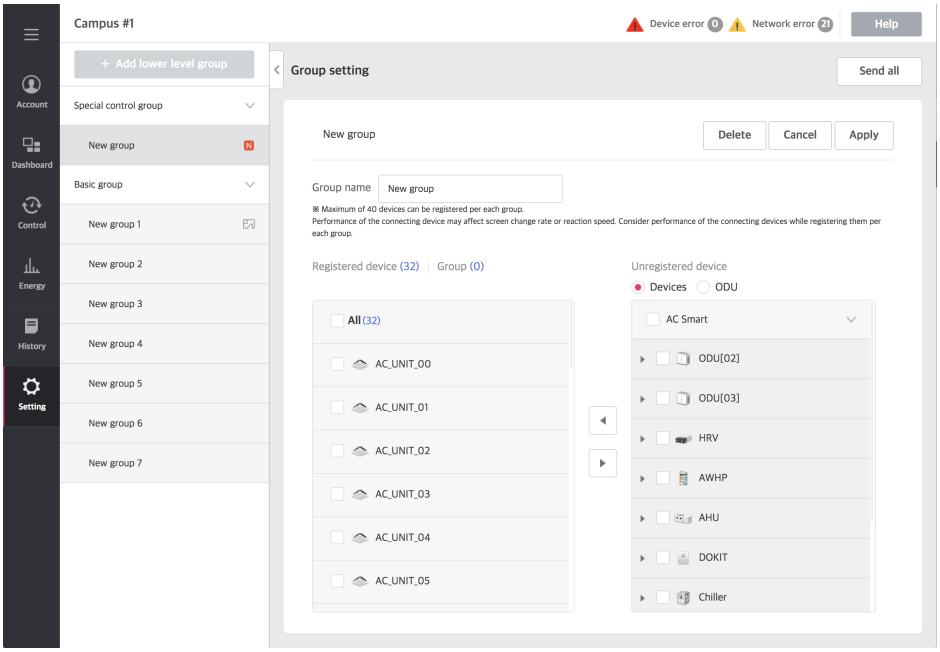
Exp.I/O's lower level setting



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 • AO: VOL(0~10V, 2~10V) • UI: BI, VOL(0~10V, 2~10V), CUR(0~20mA, 4~20mA), PT1000, NTC10K, NI1000 • DO: BI • DI: BI
Signal boundary	Select signal boundary
Usage	Select usage of the device (Usage selection is different according to I/O type) • Status information: On/Off, short/Open, Warning/Normal, Close/Open, On/Off, Occupied/Unoccupied, 1/0 • Value information: Temperature, Humidity, Opening, Water level, Operation ratio, Concentration, Pressure
Unit Symbol	Select unit symbol 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 group and click **[+ Add lower level group]** button.
   - New group is created.
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.

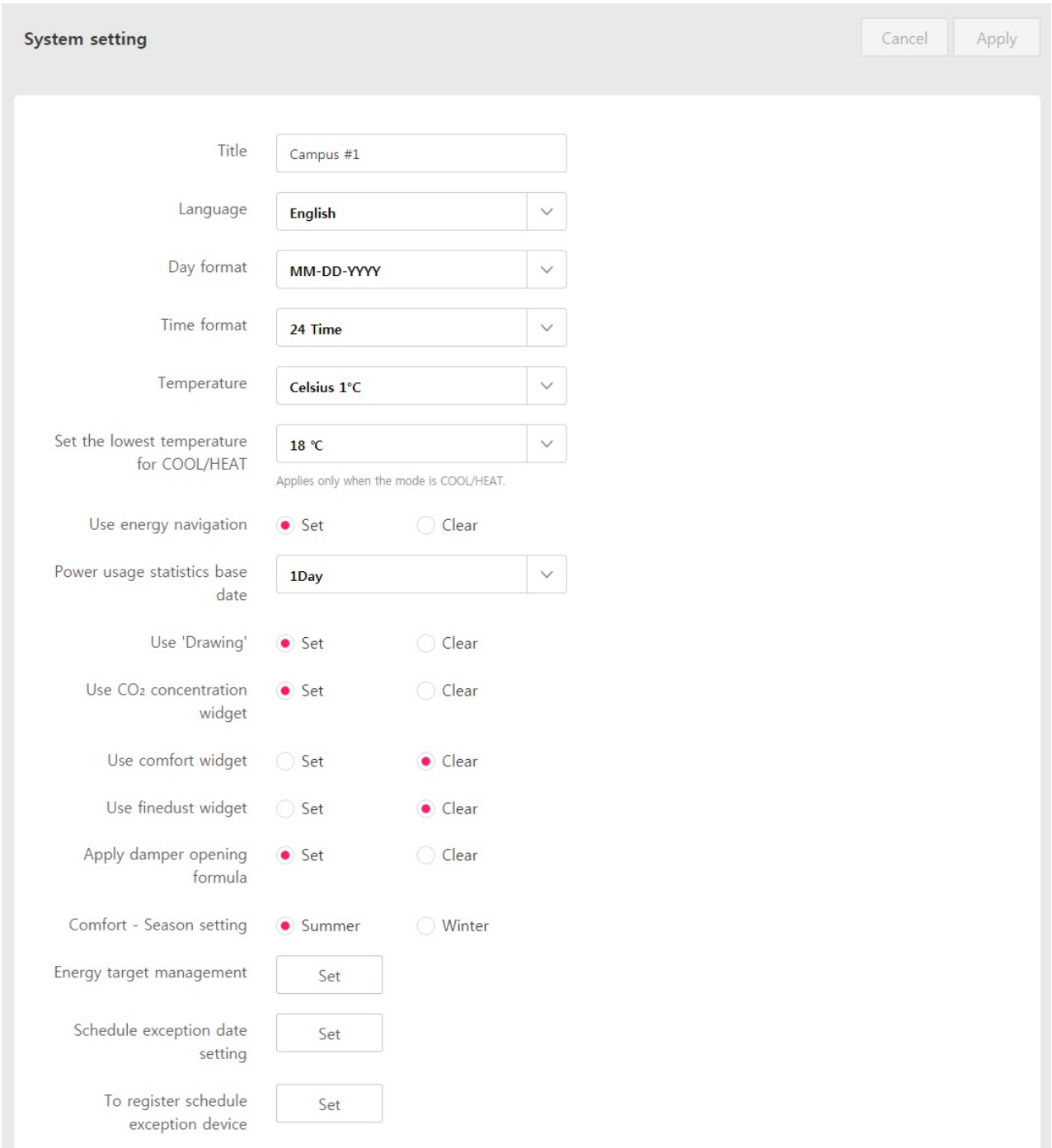
- In the group list, select the group to delete and click **[Delete]** button.

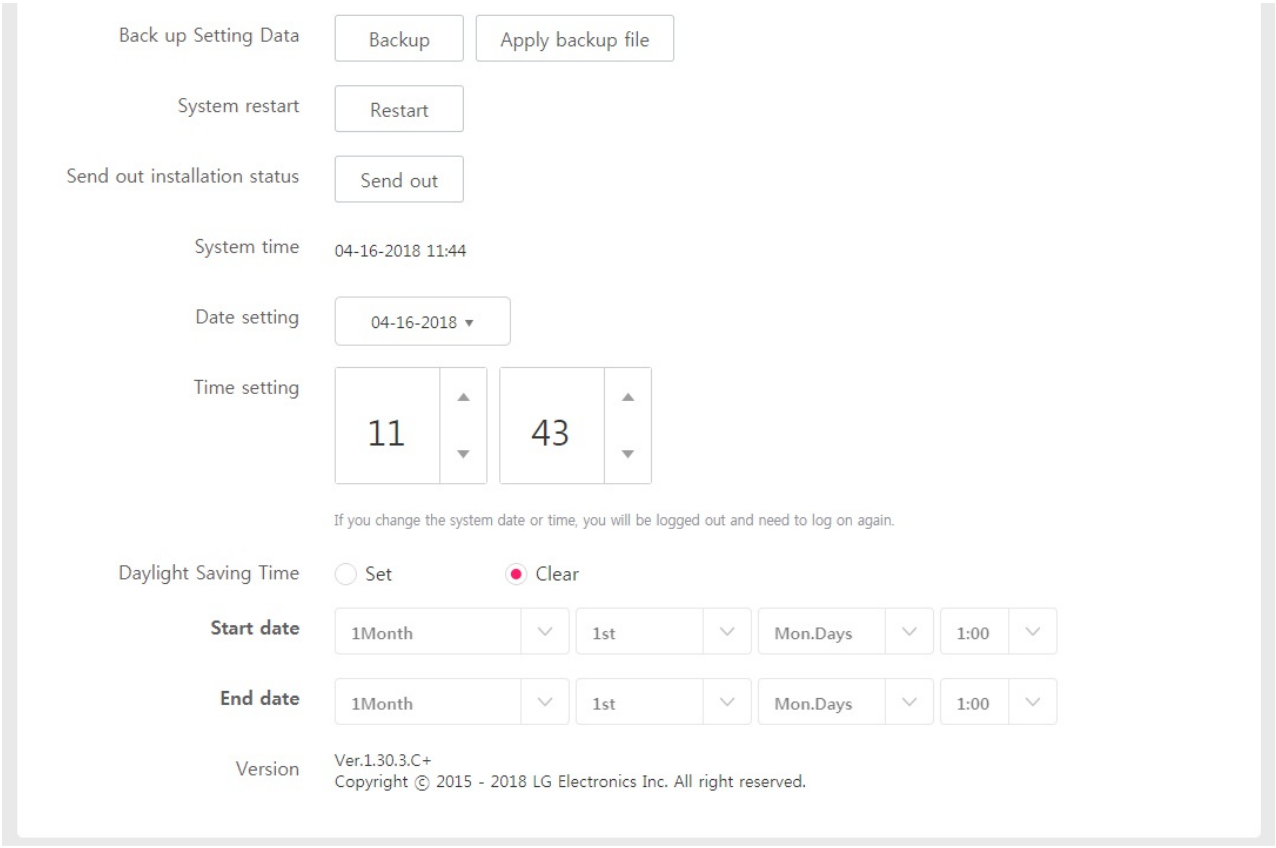
2. When Delete group popup window appears, click **[Yes]** button.
   - The selected group is deleted.
3. To complete group deletion, click **[Send All]** button.

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 (한국어/ English/ Español/ Português/ Italiano/ Deutsch/ Türkçe/ Polski/ русский/ Français/ 中文/ Čeština)
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°C / Celsius 1°C / Fahrenheit 1°F)
Set the lowest temperature for COOL/HEAT	Press **[▼]** button to select the desired cooling/heating lower limit temperature (16°C / 18°C)
Use Energy Navigation	Select wehther to use Energy Navigation
Energy navigation base date	Press **[▼]** button to select the desired date • Energy navigation monthly power usage amount base date setting • Calculate the days to the one day before in the next month from the set date
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
Apply damper opening formula	• Select whether to apply damper opening formula • When damper opening is set, it operates at OA=EA and OA+MIX=90
Pleasantness season setting	Winter/summer setting for pleasantness calculation When summer is set, pleasantness range is formed in lower temperature
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.) • 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 (In AC Smart 5 Device, it is stored in USB.)

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

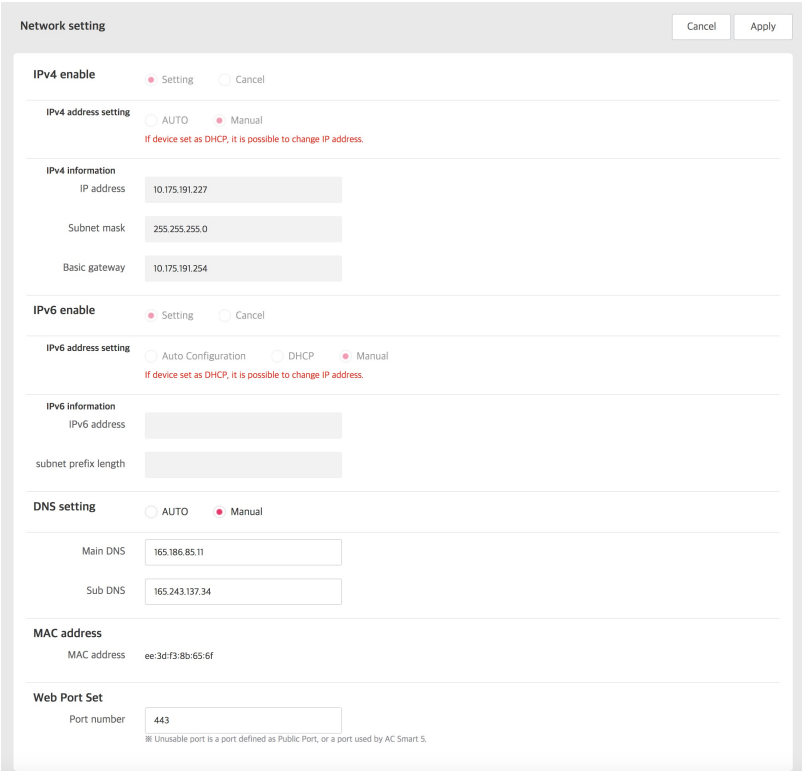
Note

- **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 **DHCP/Manual**
IPv4 information	Check IPv4 address
IPv6 enable	IPv6 usage address **Set/Clear**
IPv6 address setting	Check IPv6 address setting **Auto Configuration/DHCP/manual**
IPv6 information	Check IPv6 address
DNS setting	**[AUTO]**: Automatically sets main DNS and secondary DNS **[Manual]**: User sets main DNS and secondary DNS
MAC address	Check MAC address
HTTP Port setting	Port setting (range: 2~65535)

Note

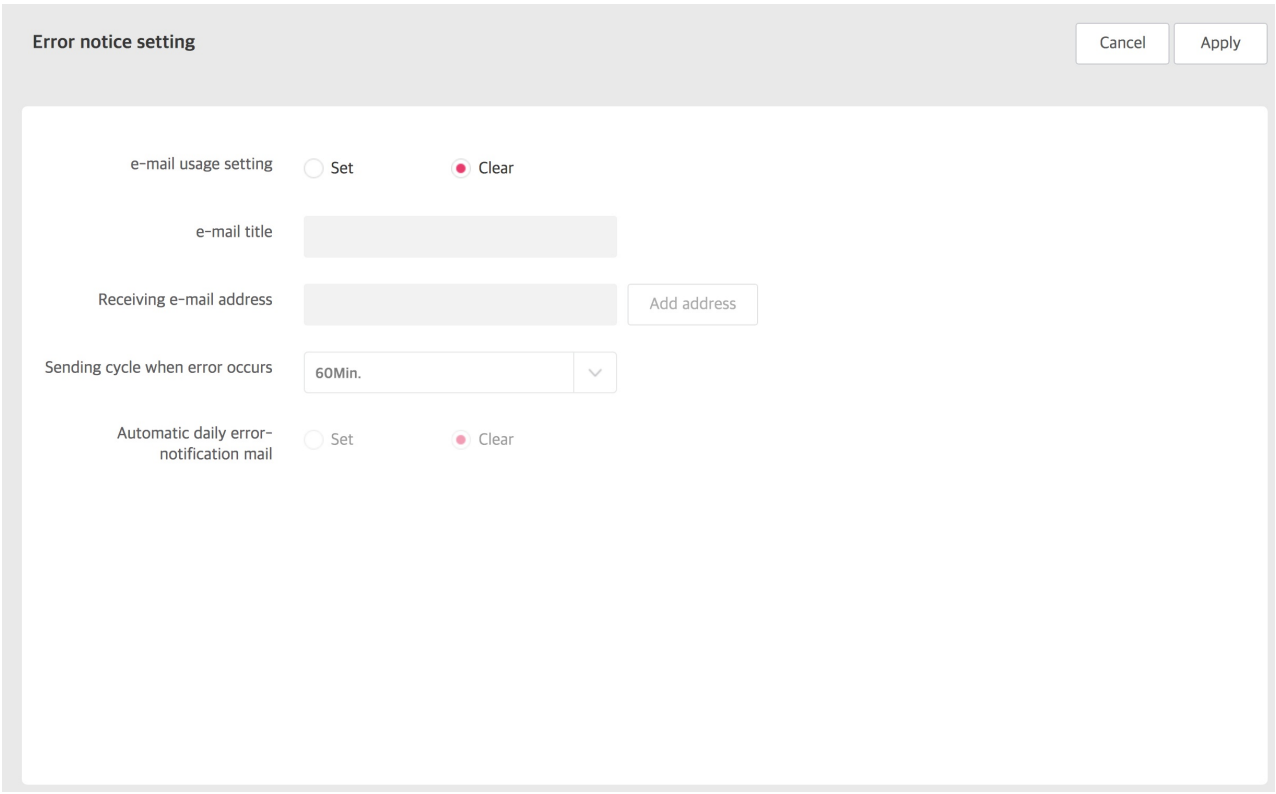
Network setting can be set in Device, and only some settings may be changed in Web.

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

Error Notice Setting

You can set or change error notice.

1. In the left menu tab, click **[Setting] > [Error Notice Setting]** menu.
   - Error notice setting 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.)
Automatic daily error-notification mail	Set to send mail at 0:00 every day even if error does not occur

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

Note

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

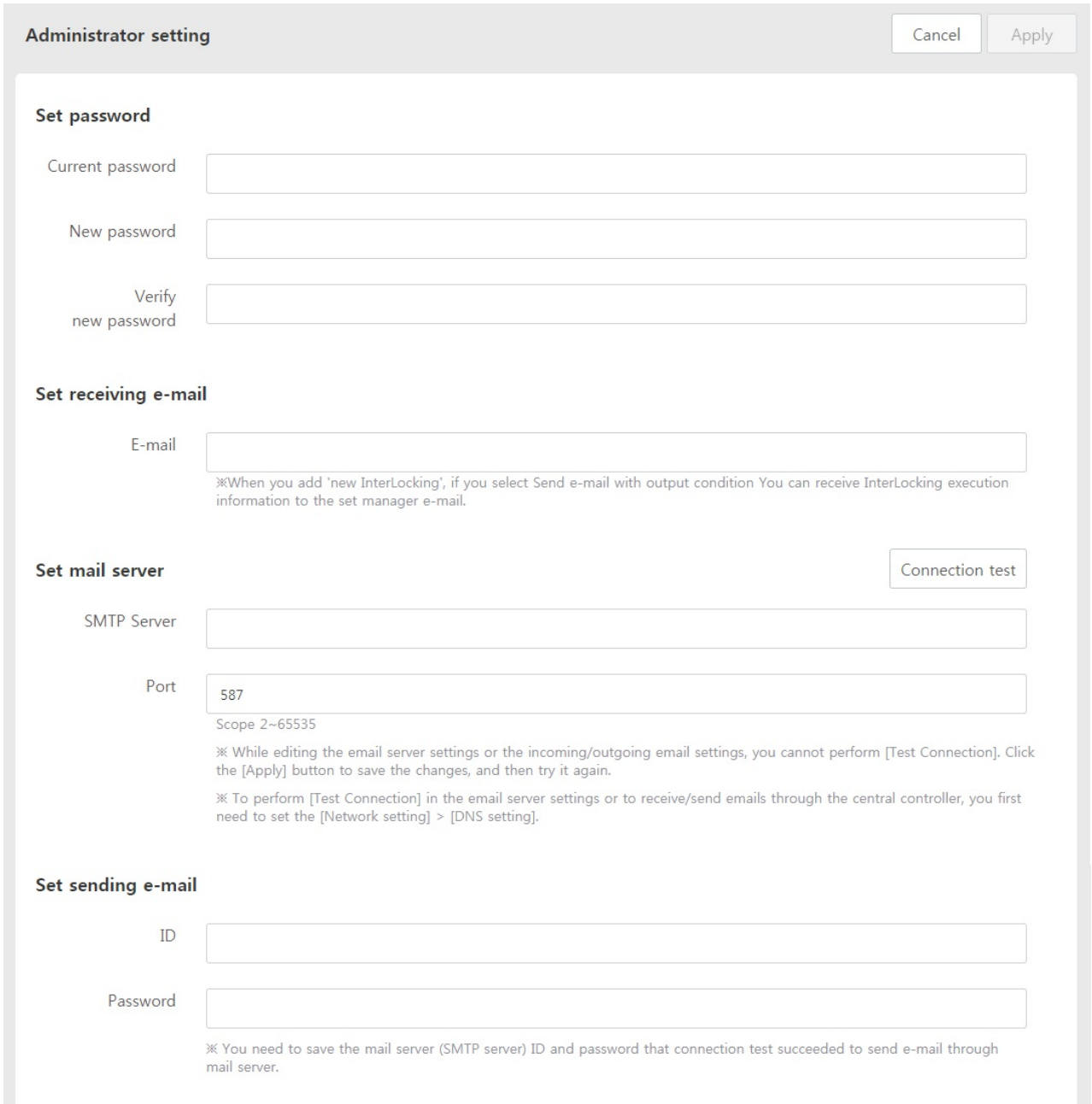
- **[Setting] > [Network setting]'s DNS server shall be set.**
- **[Setting] > [Administrator setting]'s mail server and sending e-mail shall be set.**

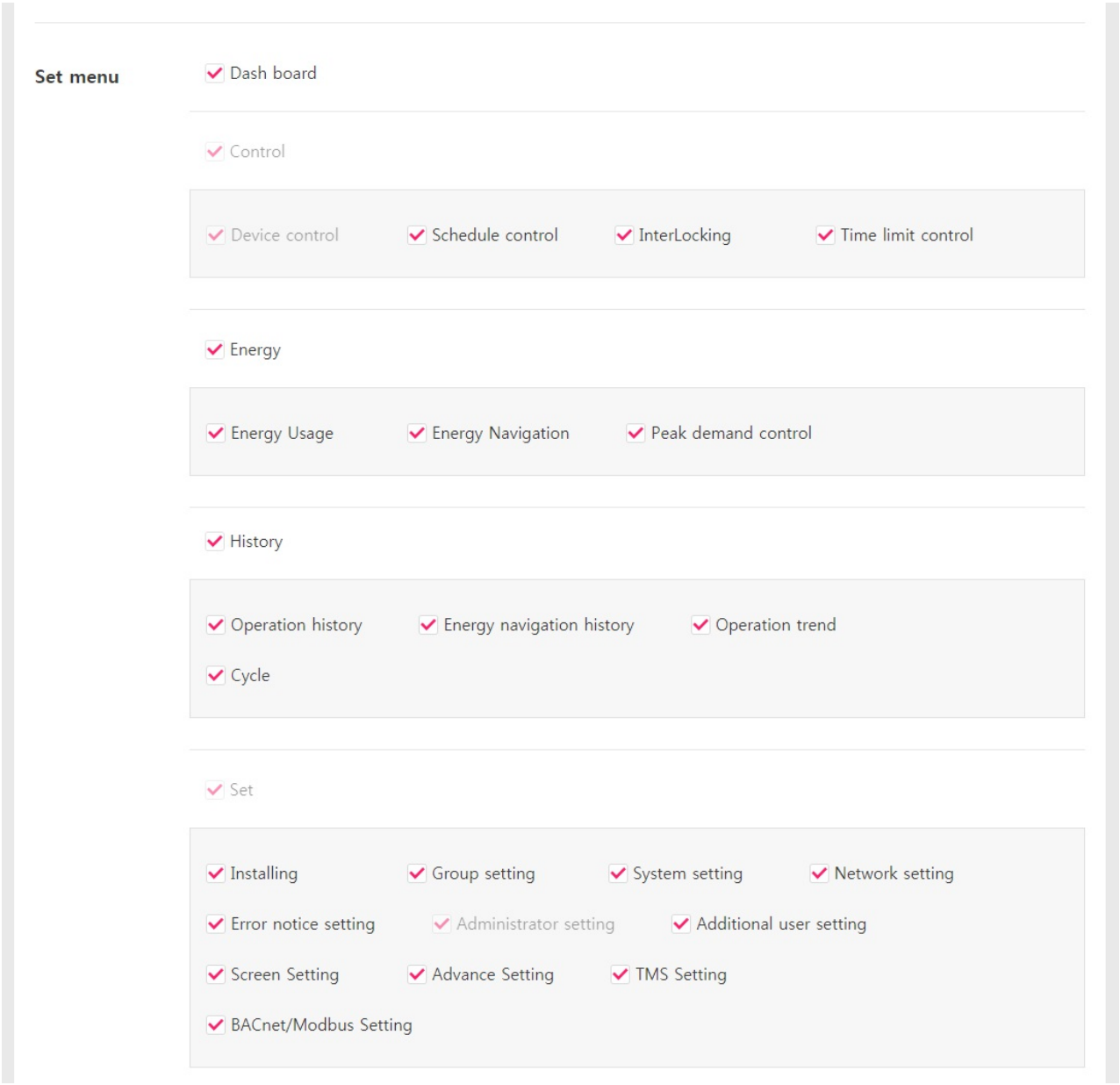
Administrator Setting

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.





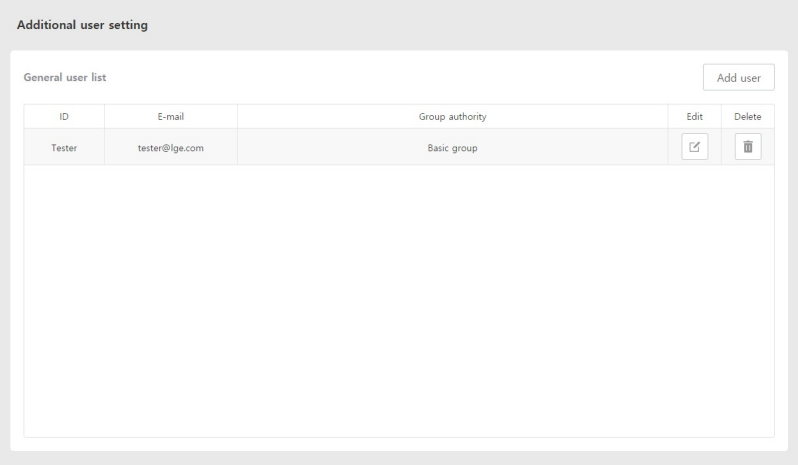
Category	Description
Set password	Set the password to use during login • Current password: Input password used currently for login • New password: Input new password • New password verification: Input the same new password one more time
Set receiving e-mail	Input e-mail address
Set Mail server	Manager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

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.

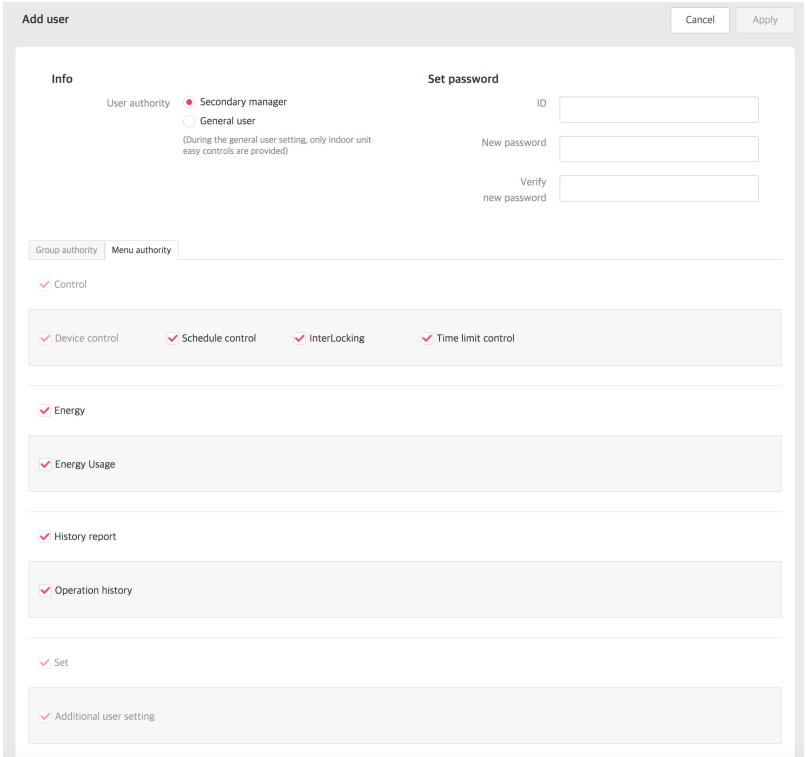
1. In the left menu tab, click **[Setting] > [Additional User Setting]** menu.
   - Additional user setting screen is displayed. You can add user or edit or delete registered user information.



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
	[User authority]

Info	• Secondary manager: Provides authority assigned menu • General user: Provides only indoor unit simple controls
Set password	**[ID]**: input ID to use **[password]**: input password to use **[Verify password]**: input password to use again
Group Authority	Assign additional user's group authority • When group is selected, only the corresponding group can control
Menu Authority	ASssign menu authority used by additional user • 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

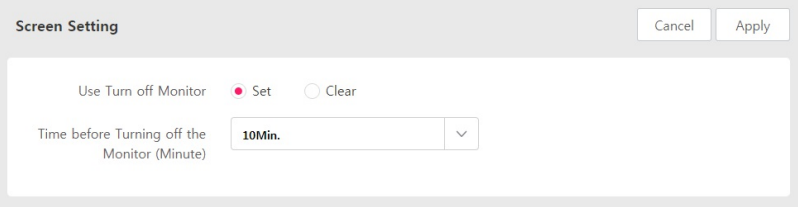
You can delete registered user.

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.



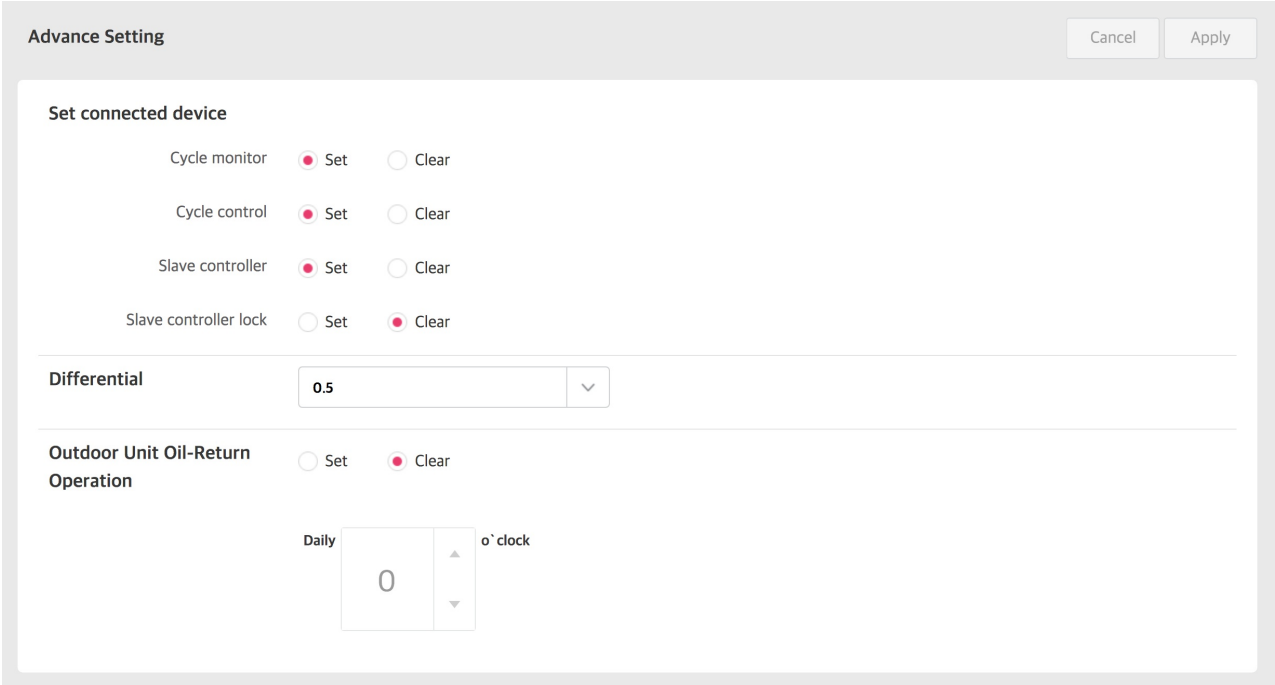
Category	Description
Screen saver setting	• Monitor OFF usage: use of monitor power OFF function **Set/Clear** • Monitor OFF standby time (min.): set standby time until monitor power OFF (10/20/30/40/50/60 min.)

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.



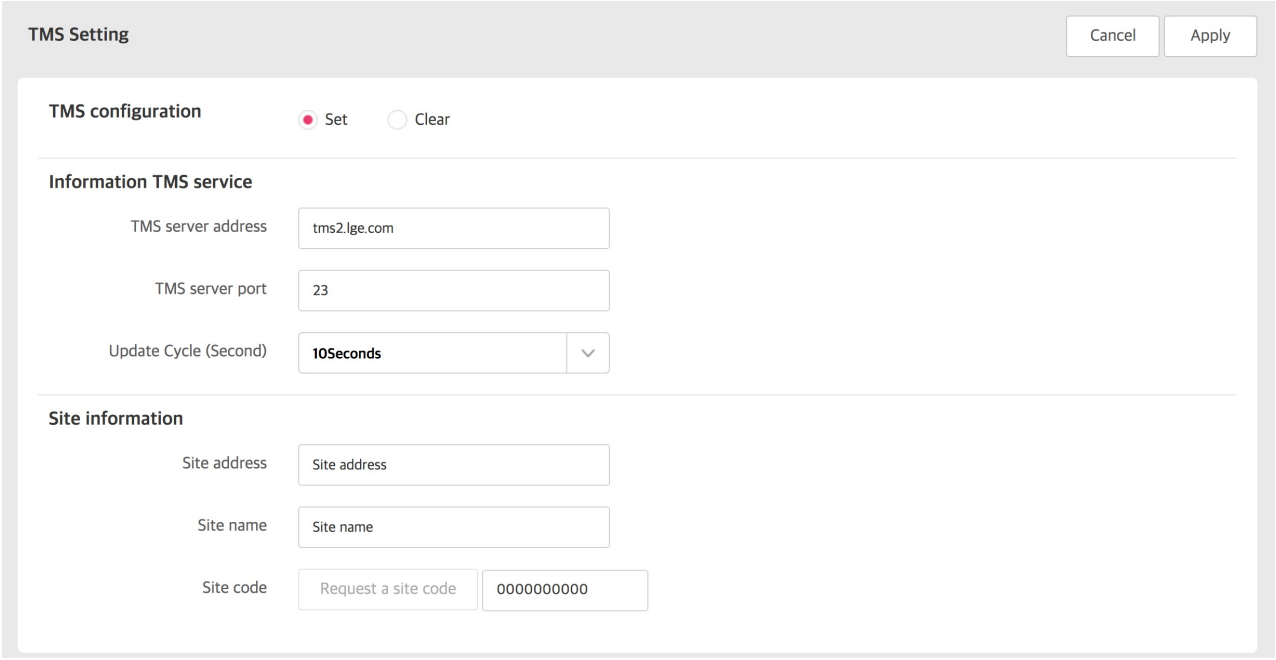
Category	Description
Set connected device	• Outdoor unit cycle monitoring: set whether to use cycle information monitoring • Outdoor unit cycle control: set whether to run cycle control • Slave controller: set whether slave controller control is possible • Slave controller lock: set whether slave controller control is possible for indoor unit with all lock set (Use: Slave controller control is not possible)
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 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.



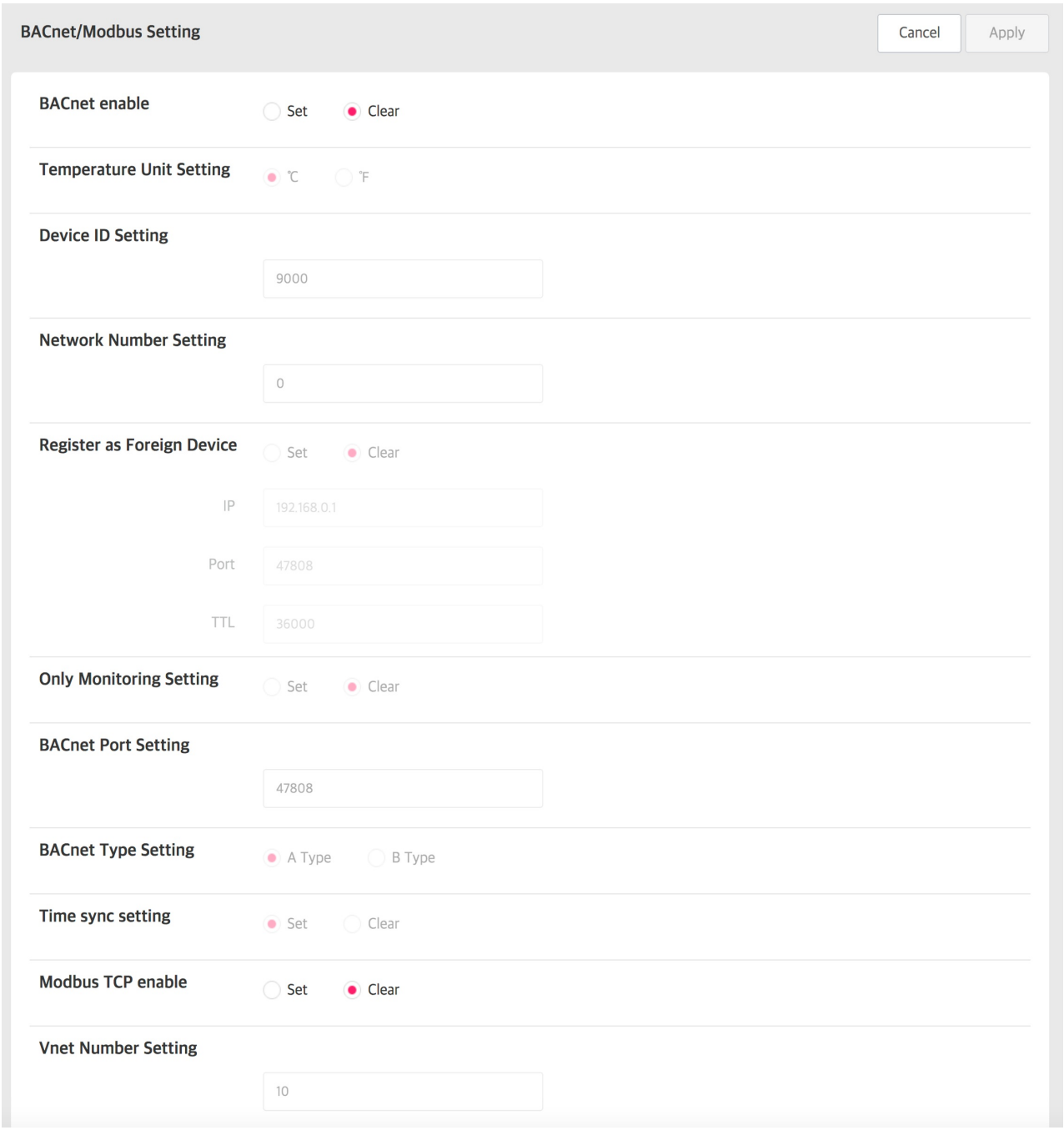
Category	Description
TMS configuration	Set whether to use remote service
Information TMS service	• Service server address: input remote service server address • Service server port: input remote service server port number • Update cycle (sec.):Press **[▼]** button to select remote service update cycle 10 / 30 / 60 / 90 / 120 seconds
Site information	• Site address: remote site address input • Site name: input remote site name • Site code: Press **[Request a site code]** button to input site code

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

BACnet/Modbus setting

You can change BACnet/Modbus setting

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



Category	Description
BACnet enable	BACnet enable **Set/Clear**
Temperature unit setting	Select temperature unit type (°C/°F)
Device ID setting	Device ID setting to designate Device Instance Number • Air conditioner: Device ID • Ventilation: Device ID + 1 • AHU: Device ID + 2 • Outdoor unit cycle information: Device ID + 3 • System boiler: Device ID + 4

	• 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)
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 Set Vnet Number value operates as Modbus TCP's Slave ID Address

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

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

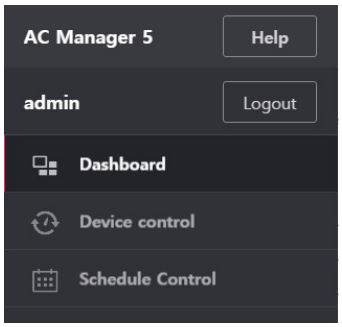
Login method is as follows.

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.

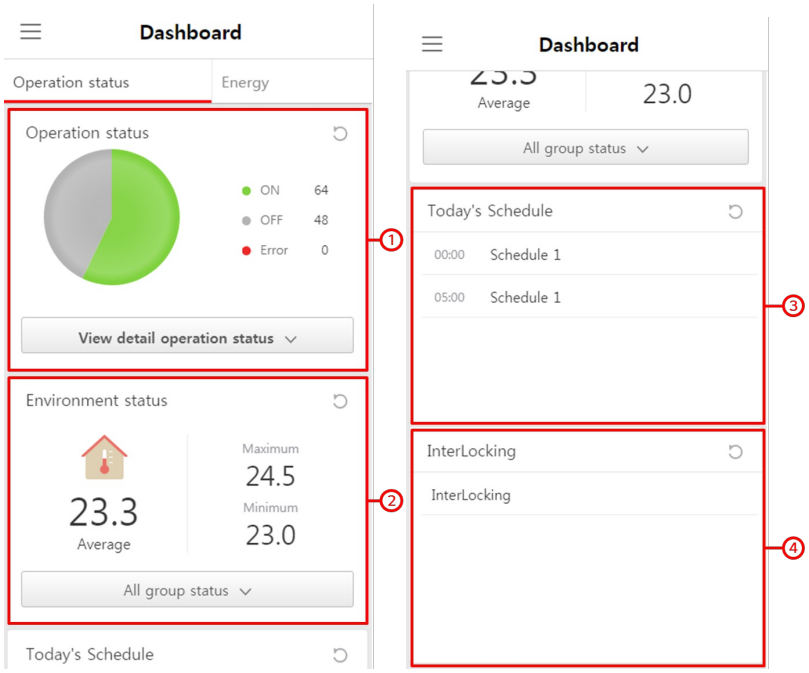


User Manual

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

Operation status

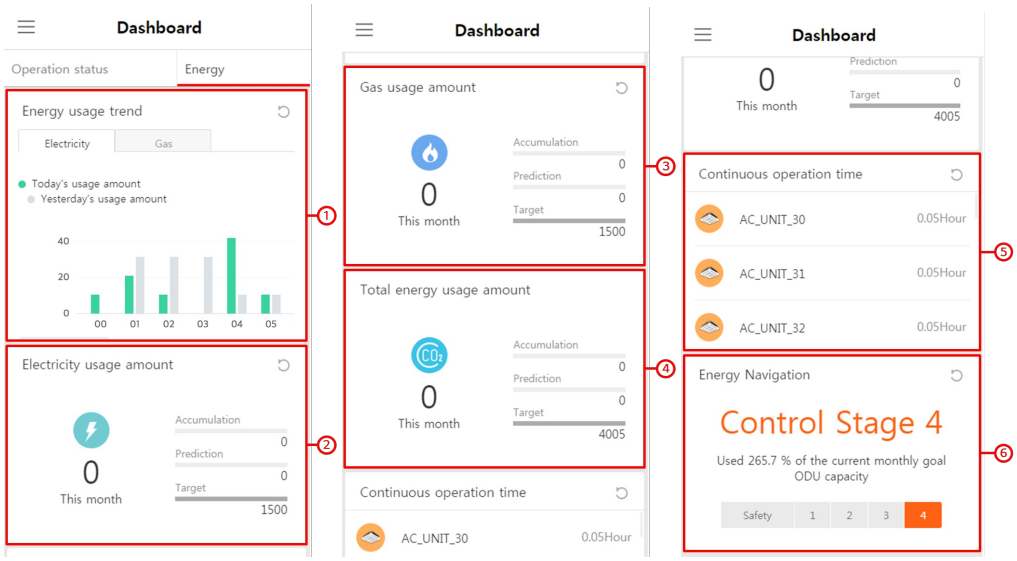
It describes the dash board's current operation status tab composition and functions.



No.	Category	Contents
①	Operation status	Check operation status (start/stop/error) of the equipment installed in the product [group] • Checking of operation status of each management group designated by user [device] • 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

Energy

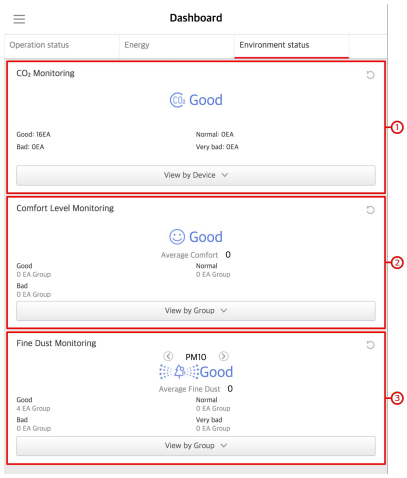
It describes the dash board's energy tab composition and functions.



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 ventilation
②	Comfort Level Monitoring	Check registered indoor unit's pleasantness status
③	Fine dust monitoring	Check registered indoor unit's fine dust status Fine dust is classified to PM10, PM2.5, and PM1.0, and it indicates each status and concentration

Device Control

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

[Screen]

- Screen Structure and Function

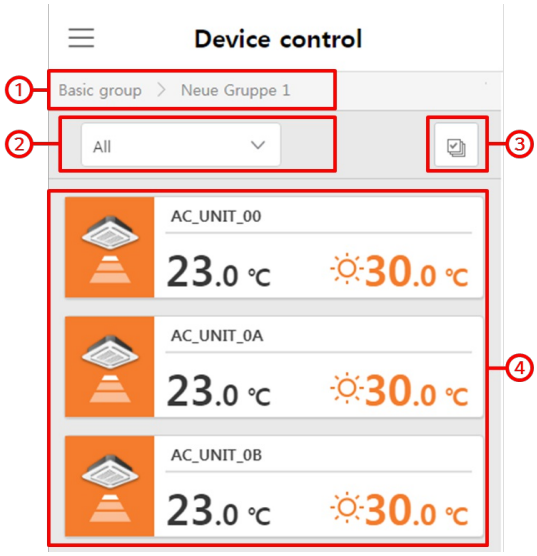
[Control Window]

- Control of Each Device
- Device Information

Screen Structure and Function

1. In the left menu tab, click **[Control] > [Device Control]** menu.

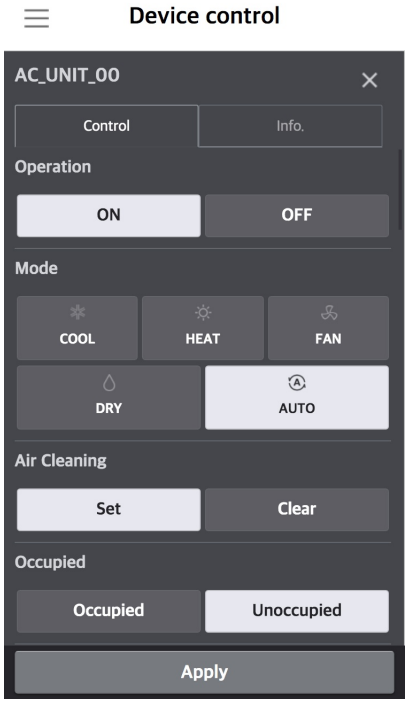
- The device control screen is displayed.



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.



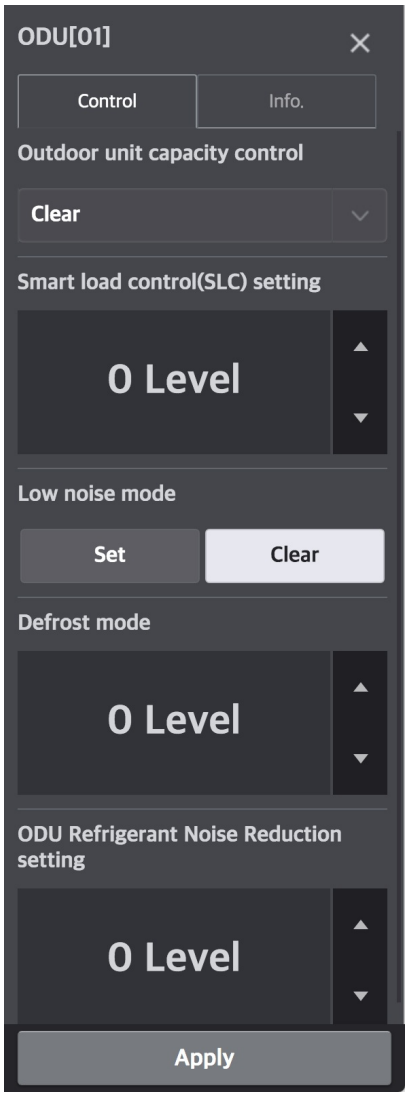
Note

- **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.**
- **Chiller interface is an optional function, and you need to separately purchase the option for chiller interface.**
- **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)
- HRV
- DXHRV
- AWHP
- AHU
- Scroll chiller
- Screw chiller
- Turbo chiller
- Absorption Chiller
- DOKIT
- DO
- AO

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 • **[OFF]** button: Stops the device operation
Mode	• **[COOL]** button: Swtiches to cooling mode • **[HEAT]** button: Switches to heating mode • **[FAN]** button: Air purification operation. When FAN is selected, set temperature is not applied to the device • **[DRY]** button: Removes moisture during rainy season or when humidity is high. When DRY is selected, set temperature is not applied to the device • **[AUTO]** button: Switches to automatic mode
Air cleaning	Air cleaning control only for air cleaning function supporting indoor unit • Air cleaning single operation 1) In indoor unit stop state, in case of air cleaning **[Set]**, air cleaning single operation with wind only (automatic wind) (During air cleaning single operation, mode lock and wind amount lock are not checked) 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 (But, in case of mode or wind amount control together, control is done with controlled mode and wind amount) • Air cleaning additional operation 1) In indoor unit stop state, in case of operation status **[ON]** and air cleaning **[Set]**, in current mode, air cleaning additional operation 2) In indoor unit operation state, in case of air cleaning **[Set]**, in current mode, air cleaning additional operation 3) During air cleaning additional operation, in case of operation **[OFF]**, operation stops 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 • **[LOW]** button: Set the fan speed to slow • **[MED]** button: Set the fan speed to normal • **[HIGH]** button: Set the fan speed to fast • **[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 power saving	Only for human detection mode - supporting indoor unit, human detection mode - control • **[Set/Clear]** button: human detection mode - ON/OFF power saving Set/Clear
Human detection mode - Temperature power saving	Only for human detection mode - supporting indoor unit, human detection mode - control • **[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 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 • **[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 • **[Set/Clear]** button: human detection mode - indirect wind Set/Clear
Comfortable Power Saving	• **[Set/Clear]** button: Comfortable Power Saving function Set/Clear • You can press **[▲]/[▼]** button to set stage Only when indoor unit is in cooling operation, Comfortable Power Saving control is possible
Filter replacement alarm	• **[Clear]** button: in case of filter replacement alarm, it cancels 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) • **[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 • **[LOW]** button: Set the fan speed to slow • **[MED]** button: Set the fan speed to normal • **[HIGH]** button: Set the fan speed to fast • **[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) • **[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)

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 • **[OFF]** button: Stops the device operation
Mode	• **[COOL]** button: Swtiches to cooling mode • **[HEAT]** button: Switches to heating mode • **[FAN]** button: Air purification operation. When FAN is selected, set temperature is not applied to the device • **[DRY]** button: Removes moisture during rainy season or when humidity is high. When DRY is selected, set temperature is not applied to the device • **[AUTO]** button: Switches to automatic mode
Air cleaning	Air cleaning control only for air cleaning function supporting indoor unit • Air cleaning single operation 1) In indoor unit stop state, in case of air cleaning **[Set]**, air cleaning single operation with wind only (automatic wind) (During air cleaning single operation, mode lock and wind amount lock are not checked) 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 (But, in case of mode or wind amount control together, control is done with controlled mode and wind amount) • Air cleaning additional operation 1) In indoor unit stop state, in case of operation status **[ON]** and air cleaning **[Set]**, in current mode, air cleaning additional operation 2) In indoor unit operation state, in case of air cleaning **[Set]**, in current mode, air cleaning additional operation 3) During air cleaning additional operation, in case of operation **[OFF]**, operation stops

	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 • **[Occupied]** button: occupied setting • **[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 • **[LOW]** button: Set the fan speed to slow • **[MED]** button: Set the fan speed to normal • **[HIGH]** button: Set the fan speed to fast • **[AUTO]** button: **[LOW]**-**[MED]**-**[HIGH]** automatic switching
Swing	• **[Set/Clear]** button: Set/Clear the Swing function
Human detection mode - ON/OFF power saving	Only for human detection mode - supporting indoor unit, human detection mode - control • **[Set/Clear]** button: human detection mode - ON/OFF power saving Set/Clear
Human detection mode - Temperature power saving	Only for human detection mode - supporting indoor unit, human detection mode - control • **[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 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 • **[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 • **[Set/Clear]** button: human detection mode - indirect wind Set/Clear
Comfortable Power Saving	• **[Set/Clear]** button: Comfortable Power Saving function Set/Clear • You can press **[▲]/[▼]** button to set stage Only when indoor unit is in cooling operation, Comfortable Power Saving control is possible
Filter replacement alarm	• **[Clear]** button: in case of filter replacement alarm, it cancels 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

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.**

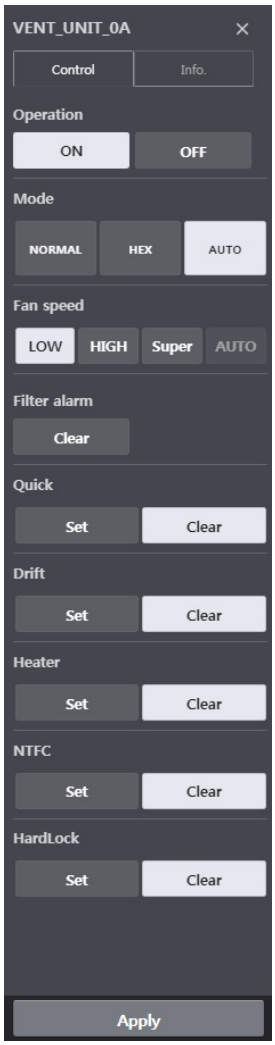
Occupancy

- **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.

HRV



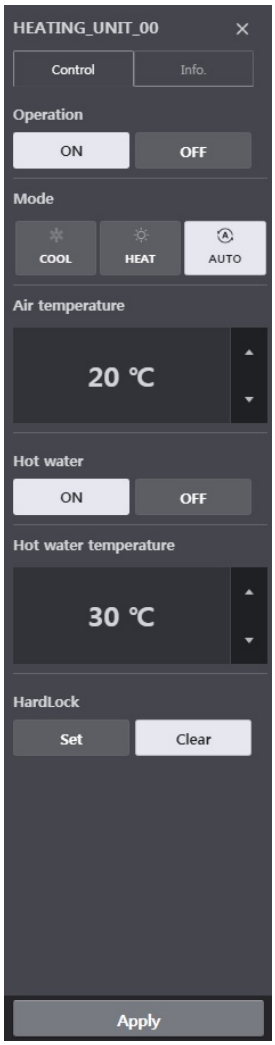
Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	• **[NORMAL]** button: Discharged air ventilates without going trough the electric heat exchanger • **[HEX]** button: Both air supply/discharge ventilates through the electric heat exchanger • **[AUTO]** button: Switches to four seasons mode
Fan speed	Wind strength setting • **[LOW]** button: Set the fan speed to slow • **[HIGH]** button: Set the fan speed to fast • **[SUPER]** button: Set the fan speed to Max. speed • **[AUTO]** button: **[LOW]**-**[HIGH]**-**[SUPER]** automatic switching - User setting is impossible - When Drift/Quick is set, **[AUTO]** Fan speed is selected - When Drift/Quick is cleared, **[HIGH]** Fan speed is selected - 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) • Drift **[Set/Clear]** button: Set/clear Drift function (When Drift function is selected, Quick function is cleared) • 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

DXHRV

Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	• **[NORMAL]** button: Discharged air ventilates without going trough the electric heat exchanger • **[HEX]** button: Both air supply/discharge ventilates through the electric heat exchanger • **[AUTO]** button: Switches to four seasons mode
Set temperature	Press **[▲]/[▼]** button to set the desired temperature
Fan speed	Wind strength setting • **[LOW]** button: Set the fan speed to slow • **[HIGH]** button: Set the fan speed to fast • **[SUPER]** button: Set the fan speed to Max. speed • **[AUTO]** button: **[LOW]**-**[HIGH]**-**[SUPER]** automatic switching - User setting is impossible - When Drift/Quick is set, **[AUTO]** Fan speed is selected - When Drift/Quick is cleared, **[HIGH]** Fan speed is selected - During **[AUTO]** operation, when **[LOW]/[HIGH]/[SUPER]** is selected, Drift/Quick function in operation is cleared
Air conditioner	• **[COOL]** button: Operates the direct cooling type ventilation in cooling mode • **[AUTO]** button: Automatically operates the direct cooling type ventilation by deciding the indoor condition • **[HEAT]** button: Operates the direct cooling type ventilation as heating mode • **[OFF]** button: Stops the air conditioner of the direct cooling type ventilation
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) • Drift **[Set/Clear]** button: Set/clear Drift function (When Drift function is selected, Quick function is cleared) • Heater **[Set/Clear]** button: Set/clear heater function • 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

AWHP



Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	• **[COOL]** button: Swtiches to cooling mode • **[HEAT]** button: Switches to heating mode • **[AUTO]** button: Switches to automatic mode
Air/Water in/out temperature	Press **[▲]/[▼]** button to set Air/Water in/out temperature It is displayed based on the set temperature selected in **[Setting]-[Installing]** • When **[Water in/out]** is selected, it is displayed as water in/out temperature • When **[indoor]** is selected, it is displayed as air temperature
Hot water	• **[ON]** button: Starts hot water operation - 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 - If hot water is operated while the device is stopped, the icon in the contents display section is enabled, and hot water is displayed • **[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

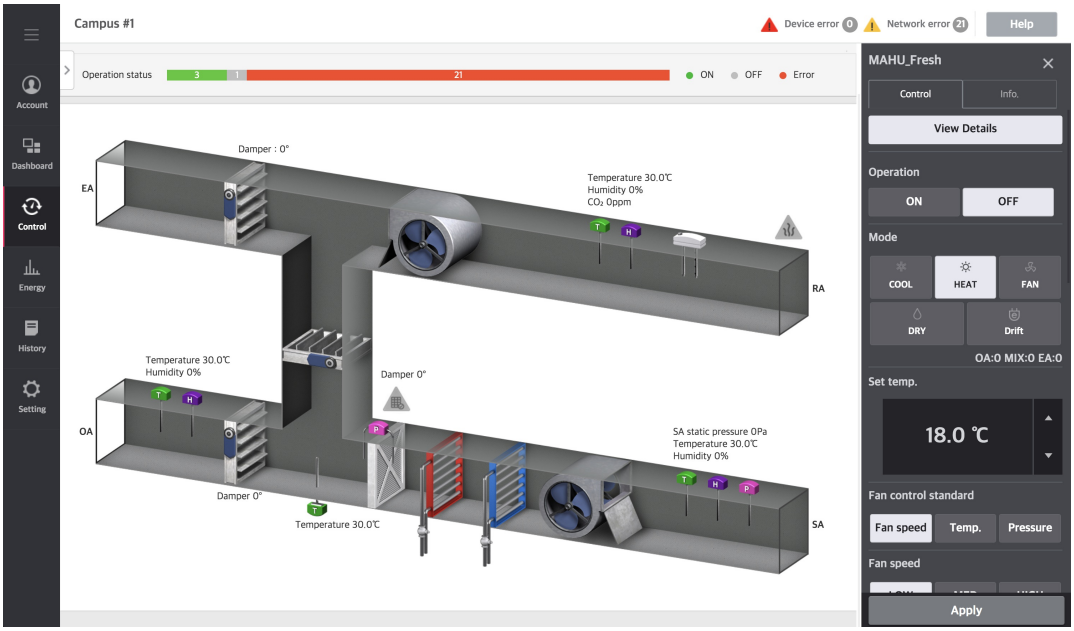
AHU

Category	Contents
View Details	Press **[View Details]** button to check detail information (But, mobile is excluded)
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	• **[COOL]** button: Swtiches to cooling mode • **[HEAT]** button: Switches to heating mode • **[FAN]** button: Air purification operation. When FAN is selected, you cannot set the desired temperature • **[DRY]** button: Removes moisture in rainy season or when humidity is high. When DRY is selected, you cannot set the desired temperature • **[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
Set temperature	Press **[▲]/[▼]** button to set the temperature
Fan control standard	• **[Fan speed]** button: Controls the fan based on Fan speed status • **[Temp]** button: Controls the fan based on temperature status • **[Pressure]** button: Controls the fan based on Pressure status
Fan speed	It is displayed only when fan control standard is Fan speed • **[LOW]** button: Set the fan speed to slow • **[MED]** button: Set the fan speed to normal • **[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 • Automatic ventilation **[Set/Clear]** button: Starts/stops automatic ventilation

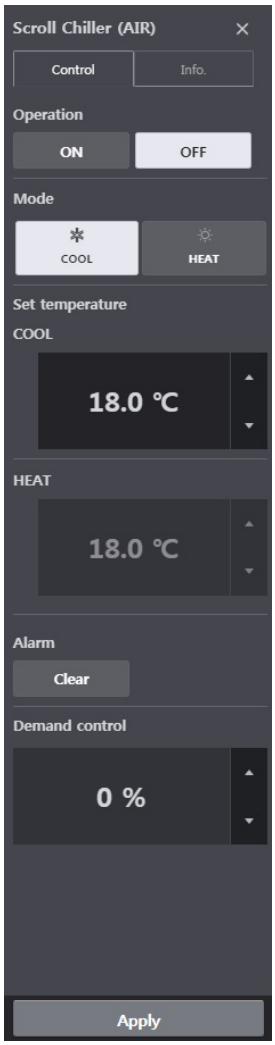
Set CO_2	It is enabled only when automatic ventilation function is set Press **[▲]/[▼]** button to set in the unit of 100ppm within 100 ppm ~ 2 000 ppm range
Humidify	It is displayed only when the addtitional function's Humidify or automatic ventilation and Humidify are selected during AHU device registration • Humidify **[Set/Clear]** button: Starts/stops Humidify function
Humidity	It is enabled only when Humidify function is set 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 ° within 0 ° ~ 90 ° range • Press **[MIX Damper]** : **[▲]/[▼]** button to set the mixer damper opening value in the unit of 1 ° within 0 ° ~ 90 ° range • Press **[EA Damper]** : **[▲]/[▼]** button to set the air discharge damper opening value in the unit of 1 ° within 0 ° ~ 90 ° range 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.

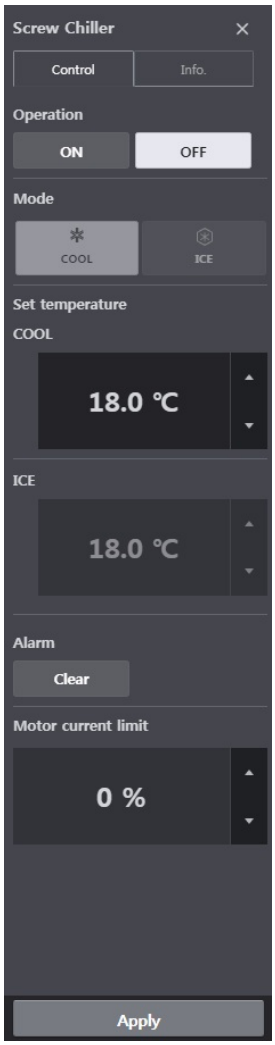


Scroll chiller



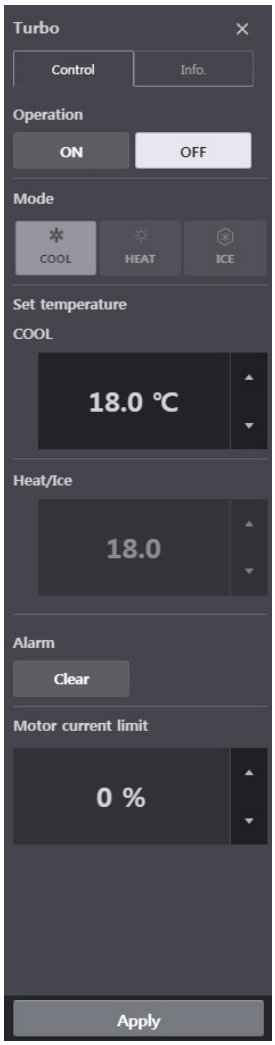
Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	(It is displayed only when device supports the corresponding mode) • **[COOL]** button: Swtiches to cooling mode • **[HEAT]** button: Switches to heating mode
Set temperature	Set the load water out temperature for indoor cooling/heating 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



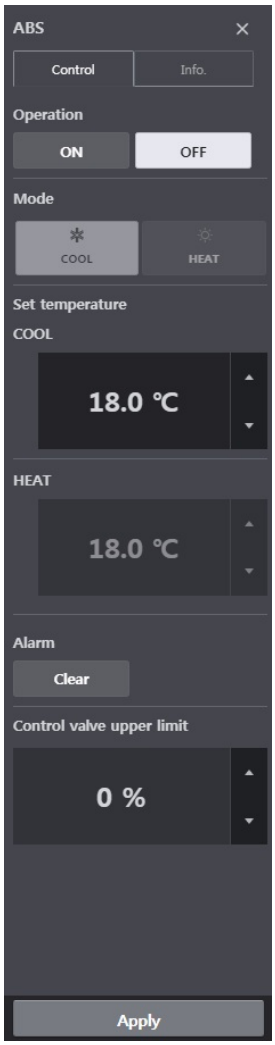
Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	Mode control is impossible. Controls monitored operation mode's set temperature
Set temperature	Set the load water out temperature for indoor cooling/ice making Press **[▲]/[▼]** 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 • **[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 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

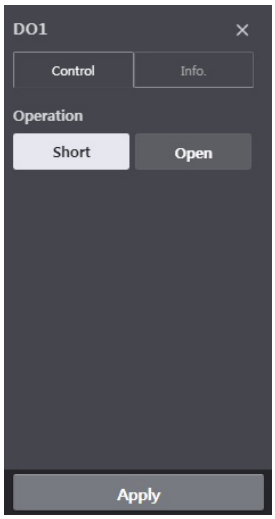


Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation
Mode	Mode control is impossible. Controls monitored operation mode's set temperature
Set temperature	Set the load water out temperature for indoor cooling/heating Press **[▲]/[▼]** 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

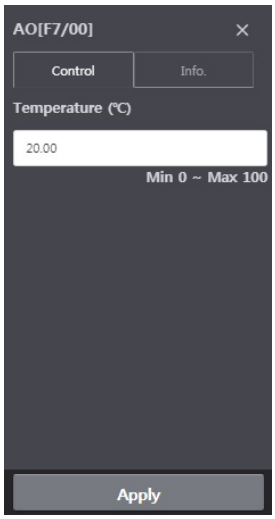
Category	Contents
Operation	• **[ON]** button: starts the device operation • **[OFF]** button: Stops the device operation

DO



Category	Contents
Operation	• **[Short]** button: Short signal output • **[Open]** button: Open signal output

AO



Category	Contents
Temperature	Set temperature value

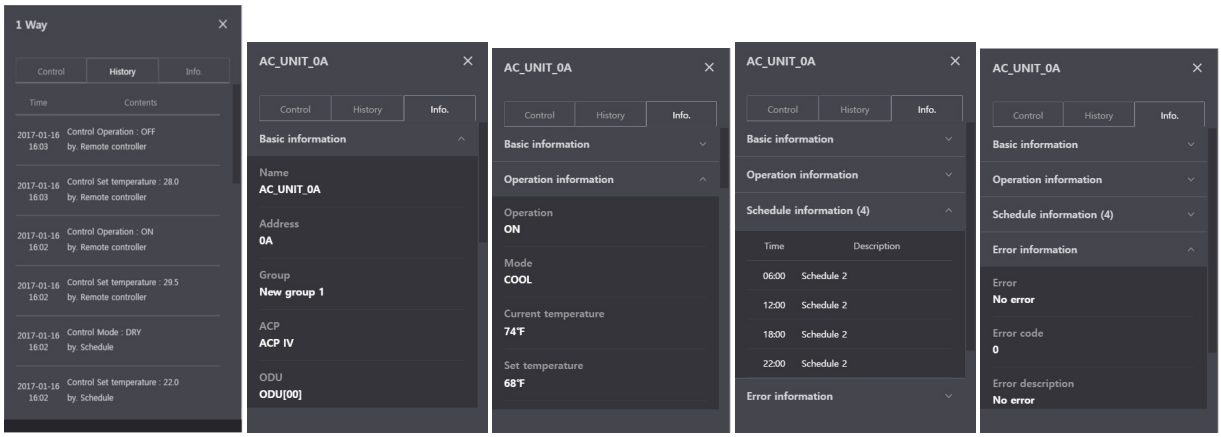
Note

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

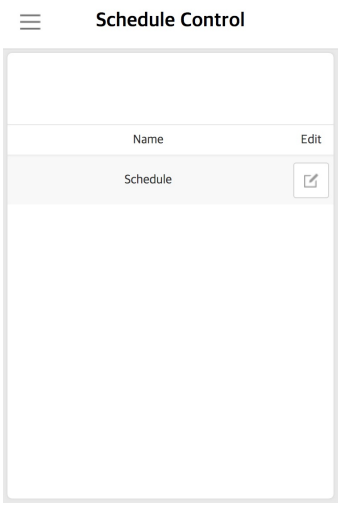
Schedule is a function for device to perform reserved operation at certain time by designating device operation in advance. When this function is used, device operation can be managed in time unit efficiently and energy saving effect is excellent.

[Schedule]

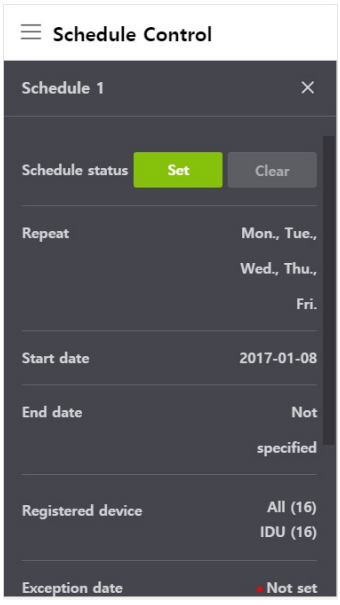
- Check schedule

Check schedule

You can see all set schedules.



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



BACnet/Modbus Protocol

AC Smart 5 can be linked with the BMS (Building Management System) that supports the BACnet IP/Modbus TCP 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

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 AC Smart 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 Setting] > [BACnet enable]** as **Set**.
- In case of installing 2 or more AC Smart 5, you must change **[Settings] > [BACnet/Modbus Setting] > [Device ID Setting]** so that the Device IDs are not duplicate among AC Smart 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 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 AC Smart 5 and BMS are located on different networks, BBMD (BACnet/IP Broadcast Management Device) is needed.
- As AC Smart 5 does not support the BBMD function, a separate BBMD is required. You can register AC Smart 5 as a foreign device in BBMD using **[Settings] > [BACnet/Modbus Setting] > [Register as Foreign Device]** function.

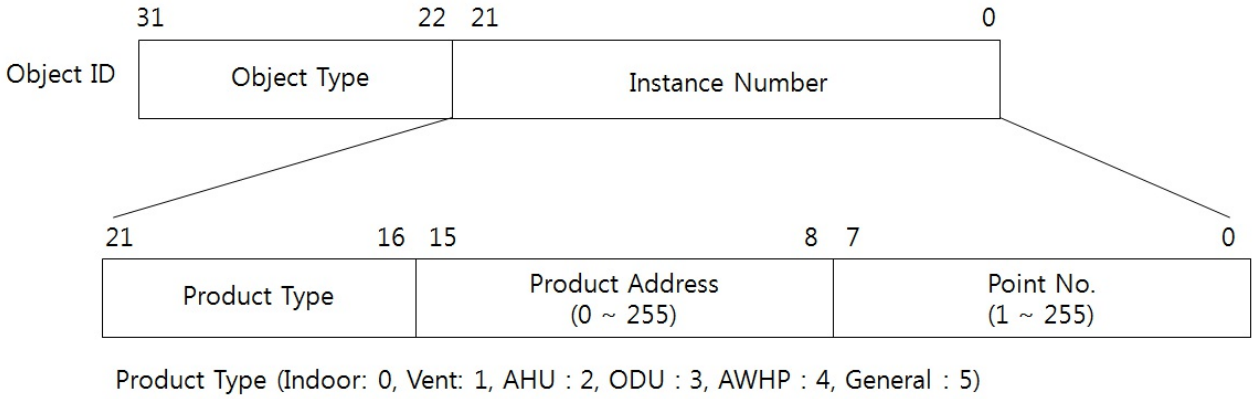
BACnet Object List

It describes the BACnet object list provided by AC Smart 5.

- Instance Number
- Indoor Unit Object List
- Ventilation Object List
- AHU Object List
- Outdoor Unit Object List
- AWHP Object List
- General 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, AWHP : 4, General : 5)

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
Vent Address 0x00, On/Off (Setting)	1	0	1	65537
Vent Address 0x00, Operation Mode (Setting)	1	0	7	65543
Vent Address 0x1B, On/Off (Setting)	1	27	1	72449
Vent 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 Status	3	0	1	196609
ODU Address 0x00, Operation Mode	3	0	14	196622
ODU Address 0x0F, Compressor Operation Status	3	15	1	200449
ODU Address 0x0F, Operation Mode	3	15	14	200462
AWHP Address 0x00, On/Off (Setting)	4	0	1	262145
AWHP Address 0x00, Operation Mode (Setting)	4	0	5	262149
AWHP Address 0x0F, On/Off (Setting)	4	15	1	265985
AWHP Address 0x0F, Operation Mode (Setting)	4	15	5	265989
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	°C(°F)	16 °C ~ 30 °C (60 °F ~ 86 °F)						
14	Set Temperature (Status)	RoomTemp_XXX	AI	°C(°F)							
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	Room Temperature	SetTempStatus_XXX	AI	°C(°F)	16 °C ~ 30 °C (60 °F ~ 86 °F)						
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	°C(°F)	18 °C ~ 30 °C (64 °F ~ 86 °F)						
28	Set Upper Tempaerature (Status)	TempRangeLowerLimitCommand_XXX	AV	°C(°F)	16 °C ~ 30 °C (60 °F ~ 86 °F)						

29	Set Lower Temperature (Setting)	TempRangeUpperLimitStatus_XXX	AI	°C(°F)	18 °C ~ 30 °C (64 °F ~ 86 °F)							
30	Set Lower Temperature (Status)	TempRangeLowerLimitStatus_XXX	AI	°C(°F)	16 °C ~ 30 °C (60 °F ~ 86 °F)							
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	°C(°F)	10 °C ~ 37.5 °C (50 °F ~ 99 °F)							
38	2Set Cooling Set Temperature (Status)	2SetCoolingTempStatus_XXX	AI	°C(°F)	10 °C ~ 37.5 °C (50 °F ~ 99 °F)							
39	2Set Heating Set Temperature (Setting)	2SetHeatingTempCommand_XXX	AV	°C(°F)	4 °C ~ 32 °C (40 °F ~ 90 °F)							
40	2Set Heating Set Temperature (Status)	2SetHeatingTempStatus_XXX	AI	°C(°F)	4 °C ~ 32 °C (40 °F ~ 90 °F)							
41	2Set Cooling Upper Temperature (Setting)	2SetCoolingUpperLimitCommand_XXX	AV	°C(°F)	10 °C ~ 37.5 °C (50 °F ~ 99 °F)							
42	2Set Cooling Upper Temperature (Status)	2SetCoolingUpperLimitStatus_XXX	AI	°C(°F)	10 °C ~ 37.5 °C (50 °F ~ 99 °F)							
43	2Set Cooling Lower Temperature (Setting)	2SetHeatingUpperLimitCommand_XXX	AV	°C(°F)	4 °C ~ 32 °C (40 °F ~ 90 °F)							
44	2Set Cooling Lower Temperature (Status)	2SetHeatingUpperLimitStatus_XXX	AI	°C(°F)	4 °C ~ 32 °C (40 °F ~ 90 °F)							
45	2Set Heating Upper Temperature (Setting)	2SetCoolingLowerLimitCommand_XXX	AV	°C(°F)	10 °C ~ 37.5 °C (50 °F ~ 99 °F)							
46	2Set Heating Upper Temperature (Status)	2SetCoolingLowerLimitStatus_XXX	AI	°C(°F)	10 °C ~ 37.5 °C (50 °F ~ 99 °F)							
47	2Set Heating Lower Temperature (Setting)	2SetHeatingLowerLimitCommand_XXX	AV	°C(°F)	4 °C ~ 32 °C (40 °F ~ 90 °F)							
48	2Set Heating Lower Temperature	2SetHeatingLowerLimitStatus_XXX	AI	°C(°F)	4 °C ~ 32 °C (40 °F ~ 90 °F)							

	(Status)										
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	Fine Dust (Status)	FineDustStatus_XXX	AI	$\mu g/m^3$							
55	Ultra Fine Dust (Status)	UltraFineDustStatus_XXX	AI	$\mu g/m^3$							
56	Super Ultra Fine Dust (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)

Ventilation Object List

One ventilation 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	°C(°F)	16 °C ~ 30 °C (60 °F ~ 86 °F)						
14	Set Temperature (Status)	RoomTemp_XXX	AI	°C(°F)							
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	Room Temperature	SetTempStatus_XXX	AI	°C(°F)	16 °C ~ 30 °C (60 °F ~ 86 °F)						
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	°C(°F)	18 °C ~ 30 °C (64 °F ~ 86 °F)						
	Set Upper Tempaerature										

29	(Status)	TempRangeLowerLimitCommand_XXX	AV	°C(°F)	16 °C ~ 30 °C (60 °F ~ 86 °F)							
30	Set Lower Temperature (Setting)	TempRangeUpperLimitStatus_XXX	AI	°C(°F)	18 °C ~ 30 °C (64 °F ~ 86 °F)							
31	Set Lower Temperature (Status)	TempRangeLowerLimitStatus_XXX	AI	°C(°F)	16 °C ~ 30 °C (60 °F ~ 86 °F)							
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)	-	-	-	-	-	

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	°C (°F)	18 °C ~ 30 °C (64 °F ~ 86 °F)						
14	Set Temperature (Status)	RoomTemp_XXX	AI	°C (°F)							
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	Room Temperature	SetTempStatus_XXX	AI	°C (°F)	18 °C ~ 30 °C (64 °F ~ 86 °F)						
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	°C (°F)							
29	Outdoor Unit Temperature (Status)	OutdoorTempStatus_XXX	AI	°C (°F)							

30	Mix Unit Temperature (Status)	MixTempStatus_XXX	AI	℃ (°F)							
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_2ValueStatus_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 Status	CompOperStatus_XXX	BI	-	Stop (0)	Start (1)	-	-	-	-	-
2	Refrigent Type	RefrigentType_XXX	MI	-	-	R407C (1)	R22 (2)	R410A (3)	-	-	-
3	Inverter Fan 1 frequency	InverterFanFreq_XXX	AI	rpm							
4	High Pressure	HighPressure_XXX	AI	kPa							
5	Low Pressure	LowPressure_XXX	AI	kPa							
6	Suction Temperature	SuctionTemp_XXX	AI	°C(°F)							
7	Liquid Pipe Temperature	LiquidPipeTemp_XXX	AI	°C(°F)							
8	Heat Exchanger Temperature	HexTemp_XXX	AI	°C(°F)							
9	Outdoor EEV	OutdoorEEV_XXX	AI	-							
10	Subcool EEV	SubCoolEEV_XXX	AI	-							
11	Hot Gas Valve	HotgasValue_XXX	BI	-	Stop (0)	Start (1)	-	-	-	-	-
12	Inverter Discharge Temperature	InverterDischargeTemp_XXX	AI	°C(°F)							
13	Outdoor Temperature	OutdoorTemp_XXX	AI	°C(°F)							
14	Operation Mode	OperationMode_XXX	MI	-	-	Stop (1)	Cool (2)	Heat (3)	-	-	-
15-32	Additional Point for Master Outdoor Unit										
33	(Slave1) Compressor Operation Status	CompOperStatus_XXX	BI	-	Stop (0)	Start (1)	-	-	-	-	-
34	(Slave1) Refrigent Type	RefrigentType_XXX	MI	-	-	R407C (1)	R22 (2)	R410A (3)	-	-	-
35	(Slave1) Inverter Fan 1 frequency	InverterFanFreq_XXX	AI	rpm							
36	(Slave1) High Pressure	HighPressure_XXX	AI	kPa							
37	(Slave1) Low Pressure	LowPressure_XXX	AI	kPa							
38	(Slave1) Suction Temperature	SuctionTemp_XXX	AI	°C(°F)							
39	(Slave1) Liquid Pipe Temperature	LiquidPipeTemp_XXX	AI	°C(°F)							
40	(Slave1) Heat Exchanger Temperature	HexTemp_XXX	AI	°C(°F)							
41	(Slave1) Outdoor EEV	OutdoorEEV_XXX	AI	-							
42	(Slave1) Subcool EEV	SubCoolEEV_XXX	AI	-							
43	(Slave1) Hot Gas Valve	HotgasValue_XXX	BI	-	Stop (0)	Start (1)	-	-	-	-	-
44	(Slave1) Inverter Discharge Temperature	InverterDischargeTemp_XXX	AI	°C(°F)							
45	(Slave1) Outdoor Temperature	OutdoorTemp_XXX	AI	°C(°F)							
46	(Slave1) Operation Mode	OperationMode_XXX	MI	-	-	Stop (1)	Cool (2)	Heat (3)	-	-	-
47-64	Additional Point for Slave1 Outdoor Unit										
65	(Slave2) Compressor Operation Status	CompOperStatus_XXX	BI	-	Stop (0)	Start (1)	-	-	-	-	-
66	(Slave2) Refrigent Type	RefrigentType_XXX	MI	-	-	R407C (1)	R22 (2)	R410A (3)	-	-	-
67	(Slave2) Inverter Fan 1 frequency	InverterFanFreq_XXX	AI	rpm							
68	(Slave2) High Pressure	HighPressure_XXX	AI	kPa							
69	(Slave2) Low Pressure	LowPressure_XXX	AI	kPa							
70	(Slave2) Suction Temperature	SuctionTemp_XXX	AI	°C(°F)							

71	(Slave2) Liquid Pipe Temperature	LiquidPipeTemp_XXX	AI	°C(°F)								
72	(Slave2) Heat Exchanger Temperature	HexTemp_XXX	AI	°C(°F)								
73	(Slave2) Outdoor EEV	OutdoorEEV_XXX	AI	-								
74	(Slave2) Subcool EEV	SubCoolEEV_XXX	AI	-								
75	(Slave2) Hot Gas Valve	HotgasValue_XXX	BI	-	Stop (0)	Start (1)	-	-	-	-	-	
76	(Slave2) Inverter Discharge Temperature	InverterDischargeTemp_XXX	AI	°C(°F)								
77	(Slave2) Outdoor Temperature	OutdoorTemp_XXX	AI	°C(°F)								
78	(Slave2) Operation Mode	OperationMode_XXX	MI	-	-	Stop (1)	Cool (2)	Heat (3)	-	-	-	
79-96	Additional Point for Slave2 Outdoor Unit											
97	(Slave3) Compressor Operation Status	CompOperStatus_XXX	BI	-	Stop (0)	Start (1)	-	-	-	-	-	
98	(Slave3) Refrigent Type	RefrigentType_XXX	MI	-	-	R407C (1)	R22 (2)	R410A (3)	-	-	-	
99	(Slave3) Inverter Fan 1 frequency	InverterFanFreq_XXX	AI	rpm								
100	(Slave3) High Pressure	HighPressure_XXX	AI	kPa								
101	(Slave3) Low Pressure	LowPressure_XXX	AI	kPa								
102	(Slave3) Suction Temperature	SuctionTemp_XXX	AI	°C(°F)								
103	(Slave3) Liquid Pipe Temperature	LiquidPipeTemp_XXX	AI	°C(°F)								
104	(Slave3) Heat Exchanger Temperature	HexTemp_XXX	AI	°C(°F)								
105	(Slave3) Outdoor EEV	OutdoorEEV_XXX	AI	-								
106	(Slave3) Subcool EEV	SubCoolEEV_XXX	AI	-								
107	(Slave3) Hot Gas Valve	HotgasValue_XXX	BI	-	Stop (0)	Start (1)	-	-	-	-	-	
108	(Slave3) Inverter Discharge Temperature	InverterDischargeTemp_XXX	AI	°C(°F)								
109	(Slave3) Outdoor Temperature	OutdoorTemp_XXX	AI	°C(°F)								
110	(Slave3) Operation Mode	OperationMode_XXX	MI	-	-	Stop (1)	Cool (2)	Heat (3)	-	-	-	
111-128	Additional Point for Slave3 Outdoor Unit											

AWHP Object List

One AWHP 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	°C(°F)	16 °C ~ 30 °C (60 °F ~ 86 °F)						
8	Set Room Temperature (Status)	SetRoomTempStatus_XXX	AI	°C(°F)	16 °C ~ 30 °C (60 °F ~ 86 °F)						
9	Set Hot Water Temperature (Setting)	SetHotWaterTempCommand_XXX	AV	°C(°F)	30 °C ~ 80 °C (86 °F ~ 176 °F)						
10	Set Hot Water Temperature (Status)	SetHotWaterTempStatus_XXX	AI	°C(°F)	30 °C ~ 80 °C (86 °F ~ 176 °F)						
11	Set PipeOut Water Temperature (Setting)	SetPipeOutWaterTempCommand_XXX	AV	°C(°F)	6 °C ~ 80 °C (42 °F ~ 176 °F)						
12	Set PipeOut Water Temperature (Status)	SetPipeOutWaterTempStatus_XXX	AI	°C(°F)	6 °C ~ 80 °C (42 °F ~ 176 °F)						
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	Set Temperature (Status)	RoomTemp_XXX	AI	°C(°F)							
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	°C(°F)							
21	Water Tank Temperature Status	TankTempStatus_XXX	AI	°C(°F)							
22	Solar Temperature Status	SolarTempStatus_XXX	AI	°C(°F)							
23	Pipe Outlet Temperature tatus	PipeOutTempStatus_XXX	AI	°C(°F)							
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	°C(°F)	18 °C ~ 30 °C (64 °F ~ 86 °F)						
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	-	°C (0)	°F (1)	-	-	-	-	-
14	Temperature Unit Setting (Status)	TempUnitStatus	BI	-	°C (0)	°F (1)	-	-	-	-	-

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

AC Smart 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 AC Smart 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 Setting] > [Modbus TCP enable]** as **Set**.
- In case of installing 2 or more AC Smart 5, you must change **[Settings] > [BACnet/Modbus Setting] > [Vnet Number Setting]** so that the Vnet Numbers are not duplicate among AC Smart 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 AC Smart 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

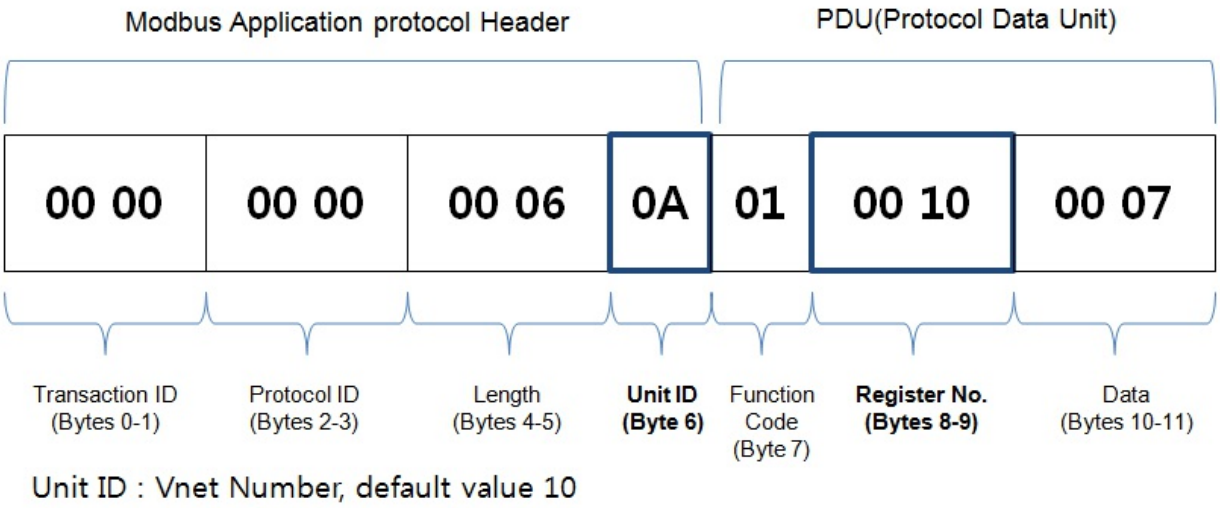
It describes the Modbus Register List provided by AC Smart 5.

- Definition of Register Address
- Indoor Unit Register List
- Ventilation Register List
- AHU Register List
- AWHP 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
Vent Address 0x00, On/Off	0x4	0x00	0x1	0x1 / 0x5	0x4000
Vent Address 0x00, Operation Mode	0x4	0x00	0x1	0x3 / 0x6	0x4000
Vent Address 0x1B, On/Off	0x4	0x1B	0x1	0x1 / 0x5	0x41B0
Vent 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
AWHP Address 0x00, On/Off	0xC	0x00	0x1	0x1 / 0x5	0xC000
AWHP Address 0x00, Operation Mode	0xC	0x00	0x1	0x3 / 0x6	0xC000
AWHP Address 0x0F, On/Off	0xC	0x0F	0x1	0x1 / 0x5	0xC0F0
AWHP 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 °F ~ 86 °F)						
4	Set Upper Temperature	03/06	℃	18 ℃ ~ 30 ℃ (64 °F ~ 86 °F)						
5	Set Lower Temperature	03/06	℃	16 ℃ ~ 30 ℃ (60 °F ~ 86 °F)						
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	-							

Ventilation 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 °F ~ 86 °F)						

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 °F ~ 86 °F)						
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	°							
2	Current EA Damper	03	°							
3	Current Mix Damper	03	°							
4	Cooling OA Damper	03/06	°	0 ° ~ 90 °						
5	Cooling EA Damper	03/06	°	0 ° ~ 90 °						
6	Cooling Mix Damper	03/06	°	0 ° ~ 90 °						
7	Heating OA Damper	03/06	°	0 ° ~ 90 °						
8	Heating EA Damper	03/06	°	0 ° ~ 90 °						
9	Heating Mix Damper	03/06	°	0 ° ~ 90 °						
10	FAN OA Damper	03/06	°	0 ° ~ 90 °						
11	FAN EA Damper	03/06	°	0 ° ~ 90 °						
12	FAN Mix Damper	03/06	°	0 ° ~ 90 °						

AWHP Register List

One AWHP 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 °F ~ 86 °F)						
3	Hot Water Only Mode	03/06	℃	30 ℃ ~ 80 ℃ (86 °F ~ 176 °F)						
4	Set PipeOut Water Temperature	03/06	℃	6 ℃ ~ 80 ℃ (42 °F ~ 176 °F)						
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	℃							

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Version 2.1, February 1999

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Julian Seward, jseward@bzip.org bzip2/libbzip2 version 1.0.6 of 6 September 2010

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