

## INSTALLATION/ OWNER'S MANUAL

# AIR CONDITIONER

Please read this installation manual completely before installing the product.  
Installation work must be performed in accordance with the national wiring standards  
by authorized personnel only.  
Please retain this installation manual for future reference after reading it thoroughly.

***BECON*** HVAC Controller (ACP IV)  
PACP4B000, PACP4B001



P/NO : MFL68583904

[www.lg.com](http://www.lg.com)



# EXPLANATORY NOTES

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## Registered Trademarks

ACP IV is a registered trademark of LG Electronics. All other products and company names are trademarks of their respective owners and are used for illustrative purposes only.

# TIPS FOR SAVING ENERGY

Here are some tips that will help you minimize the power consumption when you use the air conditioner. You can use your air conditioner more efficiently by referring to the instructions below:

- Do not cool excessively indoors. This may be harmful for your health and may consume more electricity.
- Block sunlight with blinds or curtains while you are operating the air conditioner.
- Keep doors or windows closed tightly while you are operating the air conditioner.
- Adjust the direction of the air flow vertically or horizontally to circulate indoor air.
- Speed up the fan to cool or warm indoor air quickly, in a short period of time.
- Open windows regularly for ventilation as the indoor air quality may deteriorate if the air conditioner is used for many hours.
- Clean the air filter once every 2 weeks. Dust and impurities collected in the air filter may block the air flow or weaken the cooling / dehumidifying functions.



## NOTES

The product images and descriptions included in this manual are stated based on ACP IV-Free volt (Model Name: PACP4B000).

- ACP IV-Free volt (PACP4B000)
- ACP IV-24 V (PACP4B001)

### *For your records*

Staple your receipt to this page in case you need it to prove the date of purchase or for warranty purposes. Write the model number and the serial number here:

Model number : \_\_\_\_\_

Serial number : \_\_\_\_\_

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

Dealer's name : \_\_\_\_\_

Date of purchase : \_\_\_\_\_

# IMPORTANT SAFETY INSTRUCTIONS

## ***READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE.***

Always comply with the following precautions to avoid dangerous situations and ensure peak performance of your product



### **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 or repairs made by unqualified persons can result in hazards to you and others.
- Installation **MUST** conform with local building codes or, in the absence of local codes, with the National Electrical Code NFPA 70/ANSI C1-1003 or current edition and Canadian Electrical Code Part1 CSA C.22.1.
- The information contained in the manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

## **Installation**

- **Any question about the product installation should be asked to the service center or the professional installation agency.**
  - It may cause fire, electric shock, explosion or injury.
- **Consult the service center or the professional installation agency about reinstalling the installed product.**
  - It may cause fire, electric shock, explosion or injury.
- **Please use the standardized parts.**
  - It may cause fire, electric shock, explosion, injury, or failure.
- **Do not keep or use combustible gas or inflammable material near the product.**
  - IT may cause fire or electric shock.
- **Do not disassemble, repair or modify the product at random.**
  - It may cause failure of the product.
- **Do not install where raindrop can fall.**
  - It may cause failure of the product.

- **Do not install the product at wet place.**
  - It may cause failure of the product.
- **Provided product and adaptor shall only be installed and used inside a building.**
  - It may cause fire or failure of the product.  
\*Do not install or use outside.
- **Install stably in a place that can endure the weight of the ACP IV.**
  - If the installation place is not strong enough, the ACP IV may fall and damaged.
- **Make sure to enquire to the specialty store of the product purchase or service center for electric works.**
  - It may cause fire or electric shock.
- **Do not damage the power cord or bend it by force.**
  - It may cause fire or electric shock.
- **You need to use a safely insulated power supply which follows IEC61558-2-6 and NEC Class2**
  - If you do not follow, It may cause fire, electric shock, explosion or injury.
- **Do not connection 220 V power to 24 V products**
  - If you do not follow, It may cause fire, electric shock, explosion or injury.
- **Do not connect power cord to the control signal connector.**
  - It may cause fire or explosion.
- **Fix cables tightly when wiring power cord, communication wires and etc.**
  - Fire or electric shock accidents can occur if cables are loose.
- **Prepare adequate protection equipment for noise when carrying out installation in places like hospitals or communication base stations.**
  - The product can be broken or other products can work abnormally.

## Operation

- **Do not change or extend the power cord with your own discretion.**
  - It may cause fire or electric shock
- **Do not place any heating device near the product.**
  - It may cause fire.
- **Do not use any heating device near the power cord.**
  - It may cause fire or electric shock.
- **Do not let water flow into the product.**
  - It may cause electric shock or failure.
- **Do not put heavy weight on the power cord.**
  - It may cause fire or electric shock.

- **Do not put heavy weight on the product.**
  - It may cause the failure of the product.
- **If the product is flooded, consult the service center or the professional installation agency.**
  - It may cause fire or electric shock.
- **Do not give any shock to the product.**
  - Any shock to the product may cause failure.
- **Grab the head of the plug of the power cord to pull when disconnecting the plug, and do not click the plug with wet hands.**
  - It may cause fire or to deform the product.
- **Do not use the product in certain environments as follows.**
  - If the product is used in a place with oil, steam, or sulfuric acid gas, performance may be degraded or product may be damaged.
- **Do not press the switch or button with sharp objects.**
  - It may cause electric shock or failure of the product.
- **Please check the operation temperature.**
  - If the product is used in an environment with the temperature exceeding the operation boundary, it may cause a severe damage.  
Please check the usage temperature boundary in the manual. If there is no specified temperature, please use the product within the boundary of 0~40 °C.
- **Do not click the switch with wet hand.**
  - It may cause electric shock or failure of the product.
- **Please read installation and user manual for connection with PC or peripheral devices.**
  - It may cause fire or failure of the product.
- **If a warning window appears on PC, product stops, or it does not work, immediately stop the usage.**
  - It may cause fire or failure of the product.
- **Stop using the device if the product emits unusual sounds or smells.**
  - Fire or electric shock accident can occur.
- **Use the product under adult supervision to prevent children from hanging on to the product.**
  - The product could be damaged and children could be hurt if the installed product falls.
- **Do not spray water directly on to product. Do not clean the product with a soaking wet towel.**
  - Fire or electric shock accident can occur.
- **Do not use the product for special purposes such as preservation of animals and plants, precision instrument and art work.**
  - It can damage property.
- **Discard packing materials safely.**
  - Users can be injured by packing materials if they are not discarded safely.



## CAUTION

### Operation

- **Do not use strong detergent such as solvent, but a soft cloth.**
  - It may cause fire or to deform the product.
- **Please check the rated capacity of the power.**
  - It may cause fire or failure of the product.
- **Turn off the power when not in use for long periods of time or when there is thunder and lightning.**
  - This can be a cause of electric shock and fire.
- **Do not touch internal parts of the product.**
  - This can cause product failure.
- **Make sure to check the condition of the product after using the product for a long time.**
  - Using the product for a long time can damage the product state and users could be injured when using the product.

### According to IEC 60335-1

This appliance is not intended for use by person (including children) with reduced physical, 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.

### According to EN 60335-1

This appliance can be used by children aged from 8 years and above and person 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.

- Transformer selection:
  - Select an insulating product that complies with IEC61558-2-6 and NEC Class 2.
  - In addition, consider the combined power consumption of the modules, accessories, and field devices installed for the selection of an appropriate transformer.  
Main module current: 24 V~, 850 mA
  - Use the provided adaptor when using DC 12 V. The adaptor is not provided with the ACP IV package sold in the U.S.

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 MEMO

# ACP IV FUNCTIONS AND SPECIFICATION

ACP IV (Advanced Control Platform IV) is the central controller that can manage up to 256 units in one space individually or as combined. ACP IV can monitor or control the units installed in each room of the building from the places such as the management office of a building or the administration office of a school.

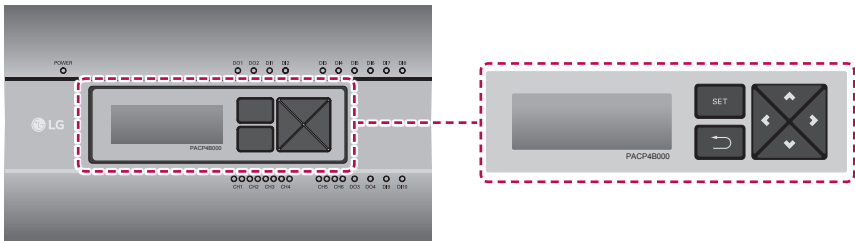
## ACP IV Functions

Major functions of the ACP IV are as follows.

### Environment setting function using the ACP IV external buttons

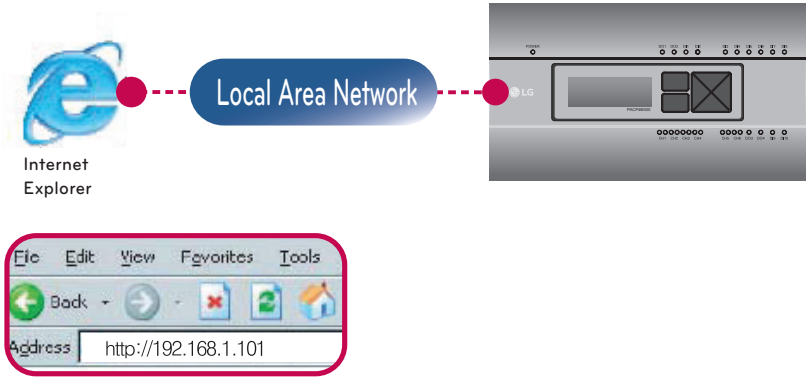
ACP IV can use the external buttons installed outside of the ACP IV to set the following functions.

- Set Network environment (IP address, Net mask, Gateway)
- Set ACP ID when demand linkage
- SW upgrade function
- Data backup function
- Data recovery function
- RS-485 communication logging function
- ACP IV-screen display language setup
- Check the network connection function



Embedded web server function

Without an installation of a separate PC program, when IP address of ACP IV is input in the address window using Internet Explorer, the central control program in ACP IV web server is automatically run, and the functions of various contents can be used.



Controlling of up to 256 air conditioner indoor units (ACS I/O Interlocking : Control up to 128 indoor units and 16 I/O modules)

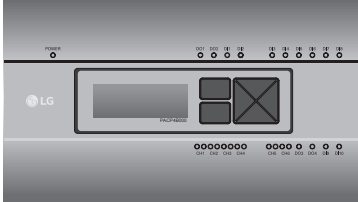
- Monitoring of error and operation status
- Controlling the peak power / demand power
- System setting function
- Up to 16 AHU can be interlocked

Devices that can interface with ACP IV

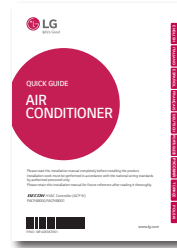
| Device                    | ACP IV                                 |
|---------------------------|----------------------------------------|
| AC Ez                     | o                                      |
| Simple Central Controller | o                                      |
| AC Smart IV               | o                                      |
| AC Manager IV             | o                                      |
| Air Conditioner           | o                                      |
| ERV                       | o                                      |
| AWHP                      | o                                      |
| Remote Shutdown           | o                                      |
| Demand Controller         | o                                      |
| Chiller                   | o<br>(with chiller option S/W applied) |
| AHU                       | o                                      |
| ACS I/O                   | o                                      |

## ACP IV Components

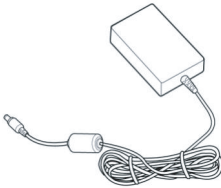
Inside the packaged box of the ACP IV, there are the components as in the following drawing. Open the packaged box of the ACP IV, and check if all of the corresponding components are included.



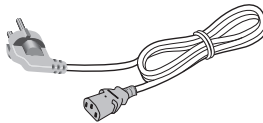
ACP IV



ACP IV Quick Guide



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



Power Cord  
250 V~, 3 A



ACP IV  
Installation/User Manual CD



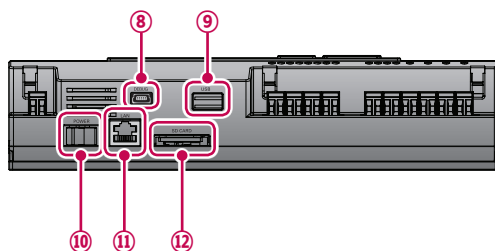
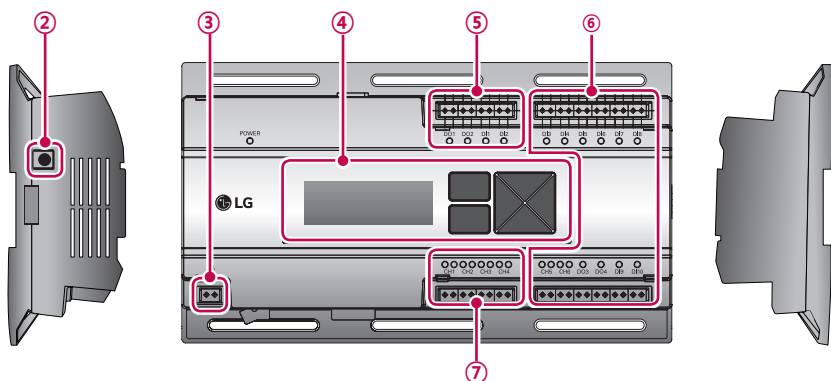
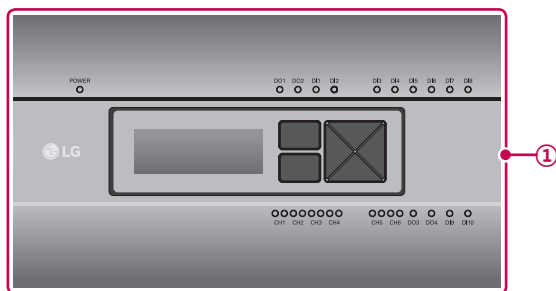
### NOTES

Components or options may differ from the actual product picture.

\*\*\* North America model requires 24 V~ external power supply.  
(Select an insulating transformer that complies with IEC61558-2-6 and NEC Class 2.)

## Names of each part of ACP IV

ACP IV is composed as follows.



| Number | Item                                                 | Description                                                                                           |
|--------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| ①      | Cover                                                | Front cover of the ACP IV                                                                             |
| ②      | Adaptor connection jack                              | Jack for DC 12 V to connect to the power supply adaptor                                               |
| ③      | Power port                                           | 24 V~ port for power connection (not supported by DC 12 V model)                                      |
| ④      | Buttons and LCD                                      | Buttons and LCD to set network environment and to display other information                           |
| ⑤      | Basic external input/output signal connectors        | Connection ports to connect to external input/output signals (DI:2, DO:2)                             |
| ⑥      | Optional input/output and RS-485 communication port. | 8 DI's & 2 DO's are available to connect external I/O. CH5 & CH6 are Modbus Channels (Not used in US) |
| ⑦      | RS-485 communication port                            | RS-485 communication ports to connect to air conditioner and ERV equipment (4 in total)               |
| ⑧      | Mini USB port                                        | USB to Serial port for software debugging                                                             |
| ⑨      | USB port                                             | For software update and data backup                                                                   |
| ⑩      | Power switch                                         | Switch to turn on or off the power of the ACP IV                                                      |
| ⑪      | Ethernet port                                        | Ethernet port to connect to internet and AC Manager IV                                                |
| ⑫      | SD card slot                                         | For RS-485 communication data backup.                                                                 |

# ACP IV Hardware specification

ACP IV hardware specification is as follows.

| Category                      | Description                                                                                                                                                                                                                                              |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Boundary of usage temperature | 0 °C ~ 40 °C (32 °F ~ 104 °F)                                                                                                                                                                                                                            |
| Rated Voltage                 | DC 12 V, 12VDC & 24 V~ Depending on Model                                                                                                                                                                                                                |
| Rated Current                 | Max 2.3 A                                                                                                                                                                                                                                                |
| Communication ports           | <ul style="list-style-type: none"><li>• Ethernet 10 / 100 BASE-T</li><li>• USB : USB Host (SW upgrade, data backup)<br/>mini USB Device (Debug)</li><li>• RS-485 communication ports 6EA</li><li>• SD card slot (RS-485 communication logging)</li></ul> |
| External input/output ports   | DI, DO                                                                                                                                                                                                                                                   |
| LED                           | 27EA (RS communication status, Ethernet communication status, power status, operation status)                                                                                                                                                            |
| LCD                           | 20 ×4 Character-LCD (network environment setting and information display)                                                                                                                                                                                |

!

NOTES

License policy

This product follows GPL (General Public License) for the use of Embedded Linux.

# Installing ACP IV

## Installing ACP IV

This chapter describes how to install the ACP IV to use.

In order to use the ACP IV, the installation should be performed by the following order.

### **STEP 1. Check the cautions during the ACP IV installation**

Before installing the ACP IV, check the cautions.

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

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

### **STEP 3. Set the indoor unit address**

Do not duplicate IDU addresses.

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

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

### **STEP 5. Install ACP IV and connect cables**

Install the ACP IV, and set network and other settings.

### **STEP 6. Set ACP IV network address**

Set the network address to be able to access the ACP IV via local ethernet subnet.

### **STEP 7. Set ACP IV functions**

Set language, peak/demand, whether to use schedule, whether to use power display, etc.

### **STEP 8. Set User Interface access environment**

Set the Network Environment.

### **STEP 9. Input indoor unit and ventilator information**

Create database of Indoor Units, etc.

### **STEP 10. Verify and check ACP IV installation**

Verify and check whether the ACP IV is properly installed.

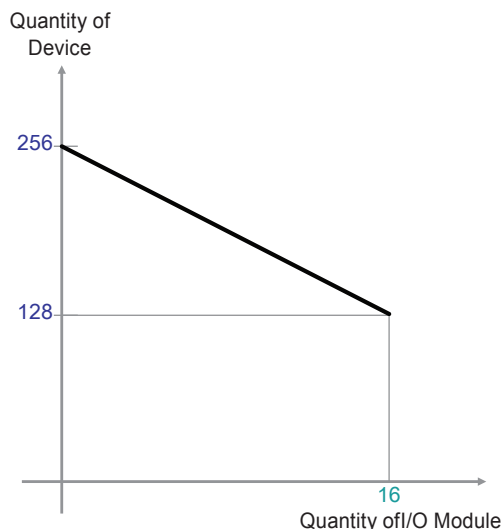
**CAUTION****Installing the ACP IV**

- The ACP IV installation should be performed by the certified installation professional.
- Consult the service center or the professional installation agency certified by us about any question or request related to the installation.

## Check points during the ACP IV installation

- The number of PI485 connected to one RS-485 communication line  
ACP IV provides 4 RS-485 ports for indoor unit connection. (CH 1~4)  
Up to 16 PI485 for outdoor unit can be connected to one RS-485 port, and up to 31 PI485 for SINGLE/ERV can be connected.
- The number of the indoor units that can be connected to one ACP IV  
One ACP IV can be connected up to 256 indoor units. With ACS I/O interlocking, you can connect 128 indoor units and 16 I/O modules. And with chiller interlocking, you can connect 128 indoor units and 10 chiller units.  
But, to improve the communication performance of RS-485, it is recommended to be divided and connected to 4 ports.  
To one RS-485 port, all of 256 indoor units, which is the maximum number that can be connected to the ACP IV, may be connected but communication latency will increase.

The maximum quantity of connected indoor unit is different depending on the quantity of connected I/O modules.



| Quantity of I/O Module | Quantity of Device |
|------------------------|--------------------|
| 0                      | 256                |
| 1                      | 248                |
| 2                      | 240                |
| 3                      | 232                |
| 4                      | 224                |
| 5                      | 216                |
| 6                      | 208                |
| 7                      | 200                |
| 8                      | 192                |
| 9                      | 184                |
| 10                     | 176                |
| 11                     | 168                |
| 12                     | 160                |
| 13                     | 152                |
| 14                     | 144                |
| 15                     | 136                |
| 16                     | 128                |

\* Devices: Indoor units, ERV, DI/DOs, DOKITs, AWHPs, AHUs

- RS-485 communication cable connection

There is a polarity in RS-485 communication cable connection, so be careful not to reverse the connection of the two cables.

Do not let the length of RS-485 communication cable exceed total of 1 Km.

RS-485 communication cable must be connected with BUS type.

- IP address of the ACP IV

IP address of the ACP IV, address of Gateway, and Net mask must be requested to the person in charge of the network of the corresponding site.



## CAUTION

### RS-485 Connection of the ERV equipment

To connect ERV equipment, it is recommended to use the ports other than RS-485 communication ports which are connected to air conditioners.

## Setting the indoor unit address

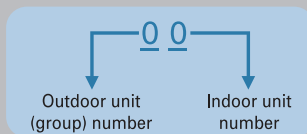
By considering the entire installation configuration connecting to one ACP IV, set the address to each indoor unit not to be overlapped. 00~FF in hexadecimal can be set to the indoor unit address. However, in case of I/O module, address 00 should not be set because address 00 is used as Broadcast in MODBUS communication.



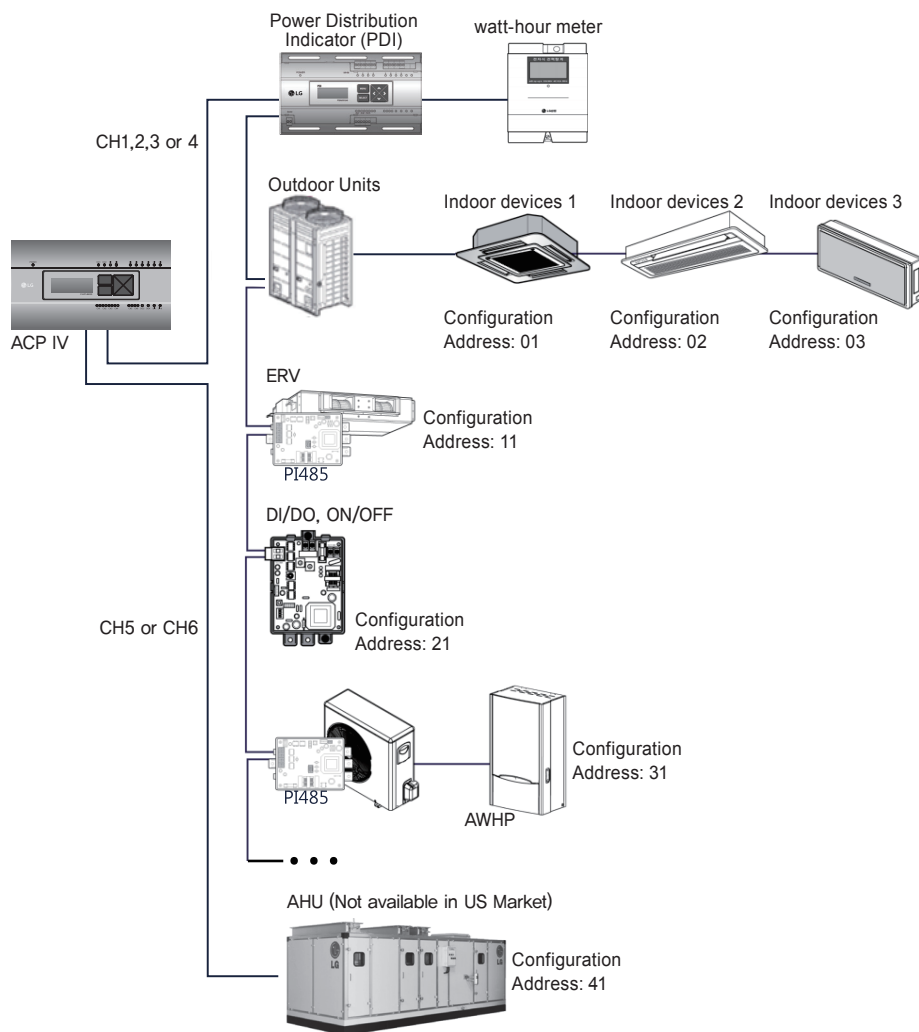
### NOTES

#### Assigning indoor and outdoor unit number

If the outdoor unit product is Multi V, it is recommended to assign the address by setting the first digit of the address as the number of the outdoor unit, and classifying the second digit as the number of the indoor unit, for easy composition and classification of the system.



Here is an example of configuring ACP IV and the device.



When the ACP IV is interconnected with the AC Manager IV, the ERV can be installed together and controlled. The above figure shows the example that sets the addresses of 11 to the ERV and connects to the ACP IV.



## NOTES

### How to set the central control address of the indoor unit

Please refer to the individual remote controller manual for function & address configuration.

## Setting the PI485 and connecting the cable

After setting the address of the indoor unit, install the PI485 and set the DIP switch.

And then, connect the RS485 cable for communication with the ACP IV.

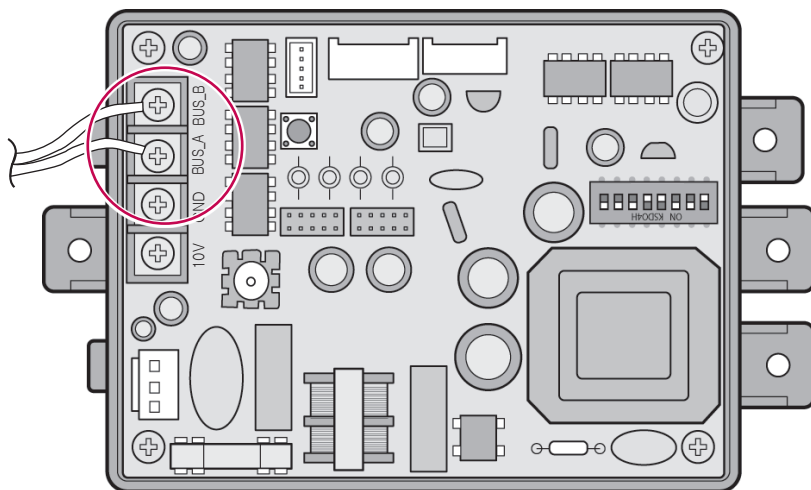


### Notes

#### Installing the PI485

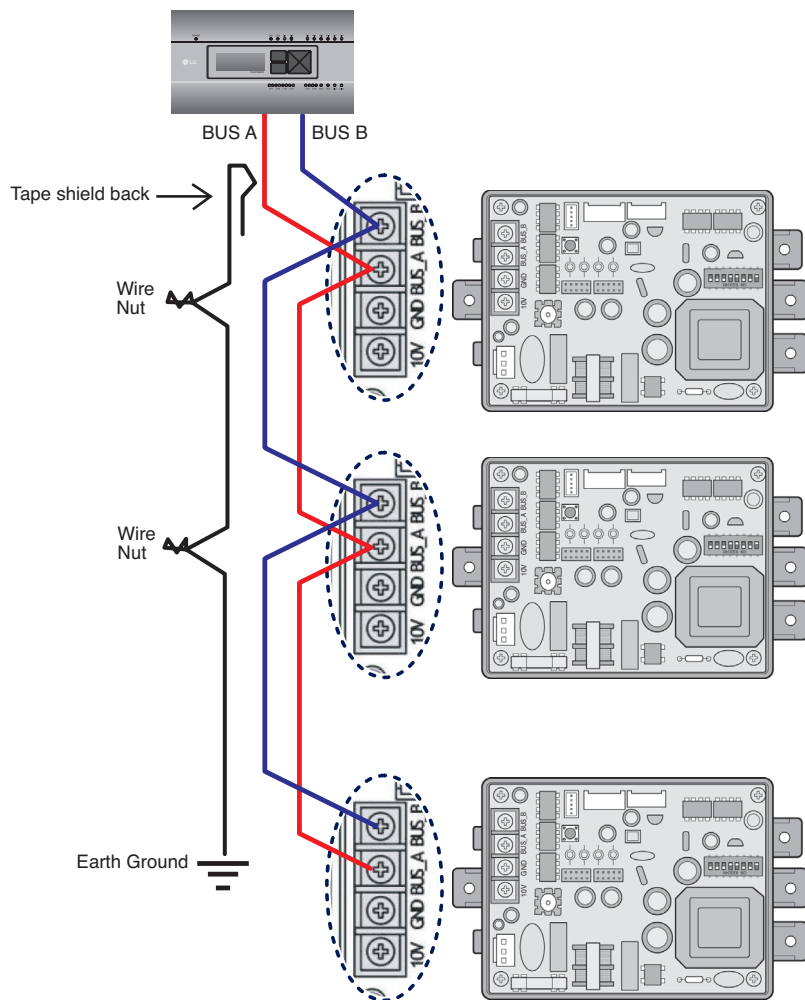
- Installing the PI485 depends on the outdoor unit.
- So, install the PI485 by referring to the PI485 manual or the installation technique information.

To connect PI485 and the ACP IV, two RS-485 cables need to be connected to BUS-A and BUS-B of PI485. Connect RS-485 cable by referring to the following figure.



If several PI485 are connected to each other to be connected to one ACP IV, connect each BUS-A and BUS-B of PI485 to be connected to BUS-A and BUS-B of another PI485.

The following figure is an example of connecting several PI485 with each other to connect to one ACP IV.



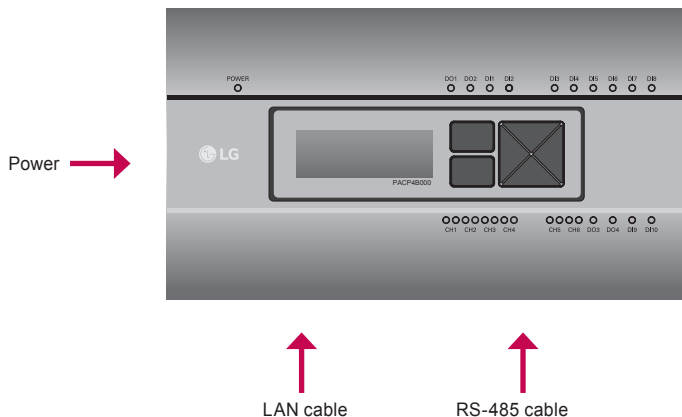
## Installing ACP IV and connecting cables

After setting PI485, the ACP IV shall be installed in an adequate place, and RS-485 cable shall be connected for the communication with PI485.

Ethernet cable (LAN cable) shall be connected for use with Local Area Network PC or AC Manager IV.

To fix the ACP IV, the following 2 methods may be used.

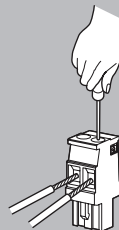
Install in DIN RAIL or fix to the wall considering the environment of the site.



### CAUTION

Use the designated parts when connected to a power source.

- Connector manufacturers: PHOENIX CONTACT  
PartNo: MVSTBR 2,5 / 2-ST-5, 08 2P 5.00 mm



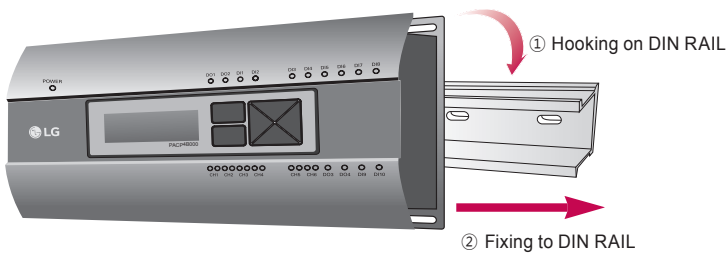
## Installing the ACP IV in DIN RAIL

ACP IV can be installed in DIN RAIL with width 35 mm and height 7.5 mm.

Proceed to install the ACP IV in an adequate place.

The installation example shows using DIN rail.

- Decide the space to install the ACP IV.
- Before installing the ACP IV, check if it is the adequate place to connect the ACP IV with the power, RS-485, and LAN cable.
- Install DIN RAIL.
- Hook the top part of the ACP IV on DIN RAIL.
- Push the main body of the ACP IV until you hear the sound of installation.
- Pull the ACP IV to check if it is fixed.



### CAUTION

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

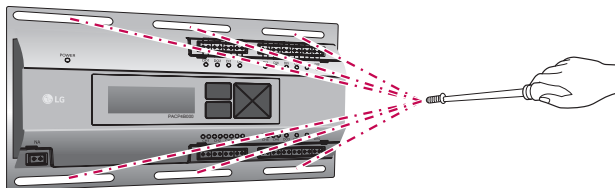
## Fixing the ACP IV to the wall

ACP IV can be installed on the wall.

- Decide the space to install the ACP IV.

Before installing the ACP IV, check if it is the adequate place to connect the ACP IV with the power, RS-485, and LAN cable.

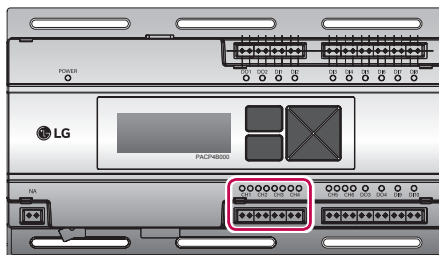
- Attach to the wall using the appropriate wall fasteners.



## Connecting RS-485 cable to the ACP IV

After securing ACP IV the RS-485 communications wiring should be terminated.

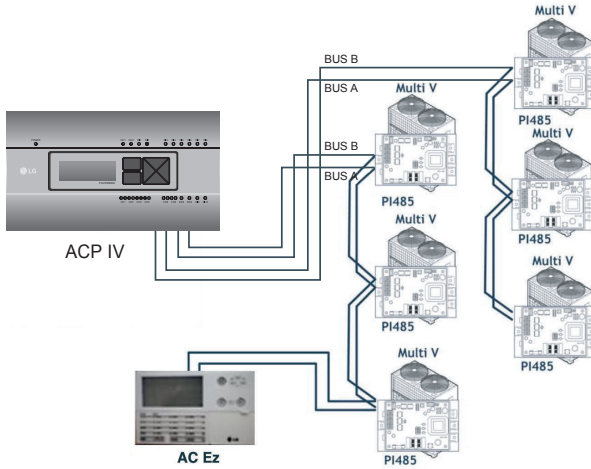
- Connect the RS-485 cable to BUS-A and BUS-B terminals.
- RS-485 cable that was connected to PI485 shall be connected to CH port (RS-485 port) of the ACP IV.
  - Plug the connector connecting RS-485 cable into one of CH1 ~ CH4 ports.
  - There are 1~6 CH ports, and it must be plugged into one of 1~4 ports for use.
  - For AHU, plug the connector connecting RS-485 cable into CH5 ports.
  - For chiller, plug the connector connecting RS-485 cable into CH6 ports. (with chiller option S/W applied)



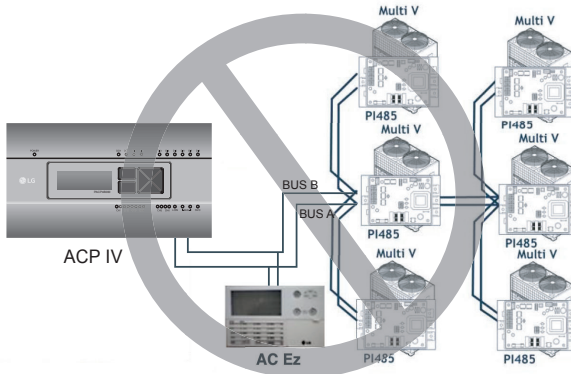
**Information: Connecting RS-485 of the ACP IV**

Up to 16 outdoor units can be connected to one RS-485 port of the ACP IV, and up to 256 indoor units can be connected to one ACP IV. If there are many outdoor units to connect, the outdoor unit connections shall be appropriately connected to CH1 to CH4 in BUS format. Otherwise, the ACP IV may malfunction.

The following is an example of dividing to CH1 and CH2 and connecting in BUS format.



The next shows the wrong example (STAR connection) of RS-485 connection of the ACP IV.

**CAUTION**

If a different type of connection is made other than BUS format as in the figure, the product may malfunction. So be careful during the installation.

## Connecting Ethernet cable (LAN cable) to the ACP IV

After connecting the ACP IV and RS-485 cable, Ethernet cable shall be connected to the ACP IV. ACP IV may be connected to hub through Ethernet cable, or directly to AC Manager IV.

### Connecting the ACP IV and hub

It is the case of connecting the ACP IV to the basic internet network installed at the site, and it is generally connected to the hub.

In such case, Ethernet cable shall be connected as a direct cable.

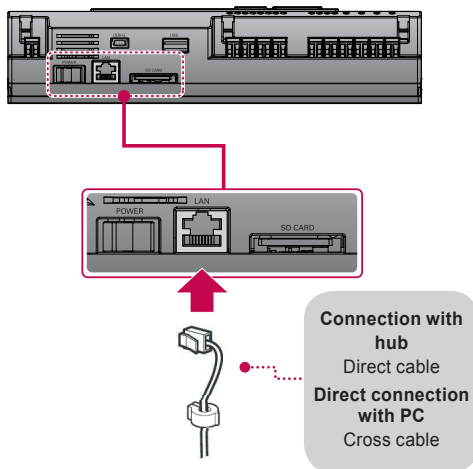
Use Ethernet cable (direct cable) to connect to LAN port of the ACP IV.

### Connecting ACP IV and PC

It is the case of installing AC Manager IV in a separate PC and connecting ACP IV and PC directly.

In such case, Ethernet cable shall be connected as a cross cable.

Use Ethernet cable (cross cable) to connect to LAN port of the ACP IV.



## CAUTION

### Ethernet cable types

- You must distinguish if the Ethernet cable to connect is a direct cable or a cross cable.
- Also, connect after checking the existence of problem in the cable using LAN tester.

## Setting the ACP IV network address

After connecting the ACP IV to various devices via the cable, the network environment of the ACP IV should be set by driving the ACP IV. The following information should be set for using the ACP IV.

- IP address of the ACP IV
- Gateway address
- Net mask



### CAUTION

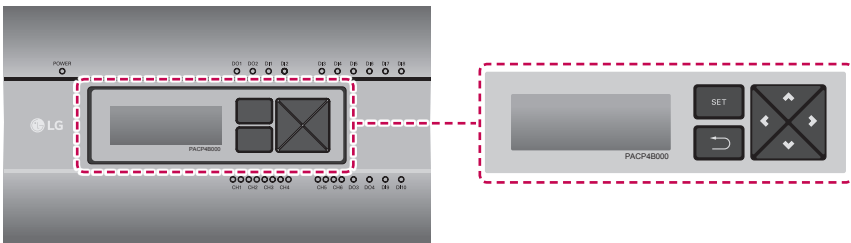
#### Setting the network environment information

Network environment settings must be entered correctly for proper operation. Please double-check settings after entering.

### Before configuring the ACP IV environment

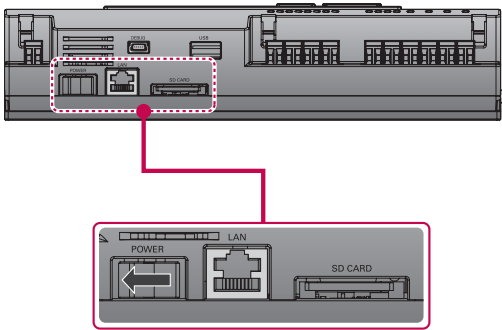
The network environment of the ACP IV can be set by the LCD and the buttons at the front side of the ACP IV.

The current ACP IV information and the menu are displayed on the LCD, and the menu can be changed and selected by pressing **SET** and **↶** button and Up/Down/Left/Right (▲, ▼, ◀, ▶) buttons.

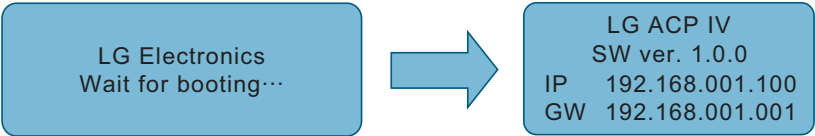


Turning on the ACP IV

Turn on the ACP IV to set the network environment of the ACP IV.



When the power switch is turned on, the ACP IV booting screen is displayed on the LCD as shown at the following figure, and when booting is completed, the initial ACP IV screen is displayed.

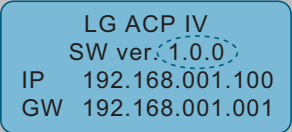


! NOTES

Software version

The software version of the current ACP IV is displayed at the initial ACP IV screen.

Also, the software version may be different according to the manufacturing date of the ACP IV.



## Entering into the environment setup mode

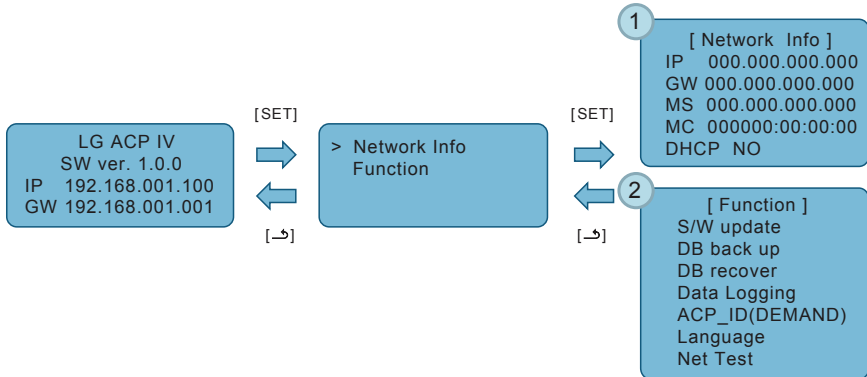
Press **[SET]** button of the ACP IV to enter into the environment setup mode of the ACP IV.

When the **[SET]** button is pressed for the first time, the menu to set the IP address is displayed as shown below.

> Network Info  
Function

Press up/down(▲, ▼) button to place the arrow on the desired function.

- When you select **[Network Info]** and press **[SET]** button, it enters the No. 1 menu in the following figure. In **[Network Info]** menu, input the network information such as IP address of the ACP IV.
- When you select **[Function]** and press **[SET]** button, it enters the No. 2 menu in the following figure. In **[Function]** menu, ACP IV software service function is supported.



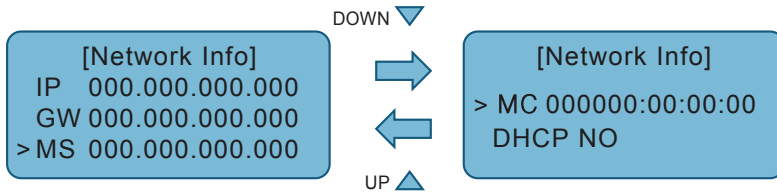
### Caution

- The Network & Function configuration settings should only be changed by service personnel.

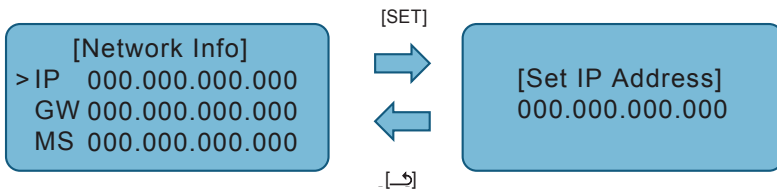
## How to set network address

In **[Network Info]** menu, use the category to set using “up” and “down” (▲, ▼) buttons.

IP, Gateway, and Net mask settings are displayed in the initial screen of **[Network Info]** menu, and you can check MAC address and DHCP setting using “down” (▼) button.



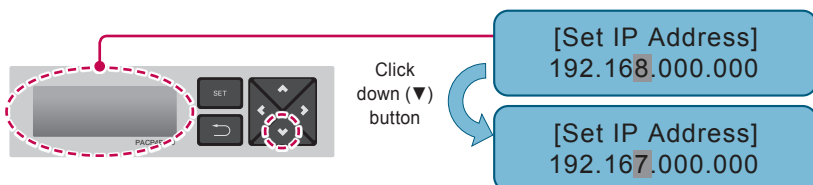
To change the network setting, locate the arrow on the corresponding setting position, and press **[SET]** button to enter the corresponding setting screen.



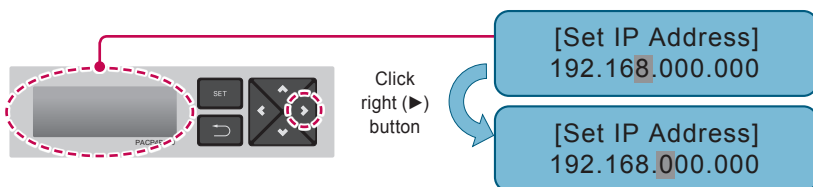
The network address consists of four 3-digit numbers. In case of setting the network address, the, name of the related address is displayed on the LCD of the ACP IV, and press Up/Down/Left/Right (▲, ▼, ◀, ▶) button to set.

Press Up/Down (▲, ▼) button to increase/decrease the number of the digit where the cursor is on, and press Left/Right (◀, ▶) button to move the digit of the network address to the left or right.

Example of pressing down (▼) button



Example of pressing right (▶) button



## CAUTION

### Setting the network address

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



## NOTES

### Assigning the network address

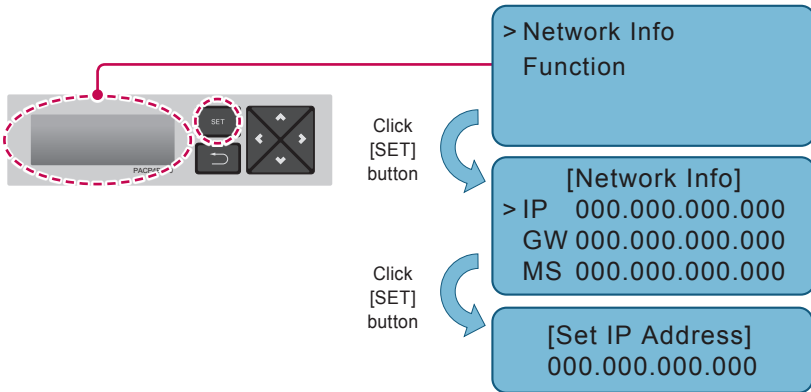
- Network address shall be assigned by the person in charge of the network of the corresponding site. (IP address, Gateway address, Net mask)
- ACP IV can use either fixed IP type or dynamic IP type, but fixed IP type is recommended.
- Please refer to "Using dynamic IP using DHCP" for details.

## Setting IP address

For user to use the functions of the ACP IV through the web, a unique IP address may be assigned to the ACP IV or dynamic IP setting may be used. The next is how to set fixed IP address.

Please proceed according to the order.

1. Press **[SET]** button of the ACP IV. The following menu screen will be displayed.
  - If you press **[SET]** button again, **[Network Info]** setting screen will be displayed.
  - While IP is selected, pressing **[SET]** button will display the screen to input IP address.



2. Use up, down, left, right (**▲**, **▼**, **◀**, **▶**) buttons to input the desired IP address.



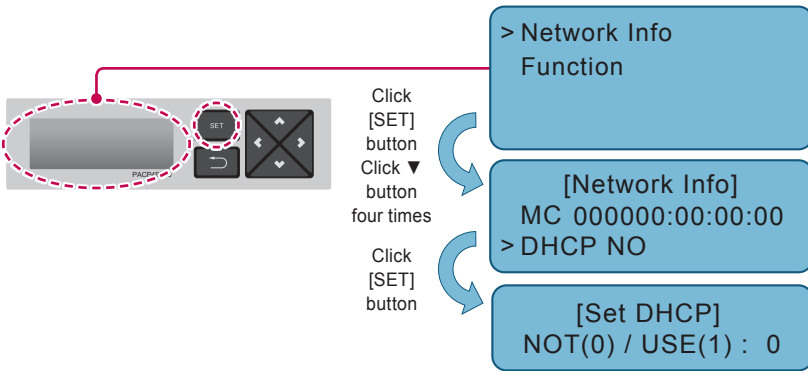
## Using dynamic IP using DHCP

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

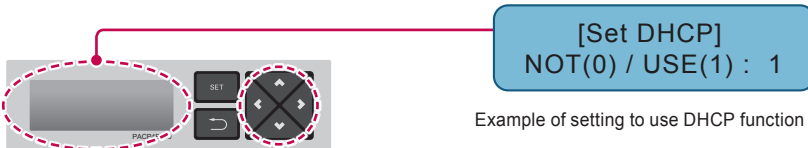
The next is how to set dynamic IP address.

Please proceed according to the order.

1. Press **[SET]** button of the ACP IV. The following menu screen will be displayed.
  - If you press **[SET]** button again, **[Network Info]** setting screen will be displayed.
  - While DHCP is selected, if you press **[SET]** button, you can input whether to use DHCP function.



2. Use up and down (▲, ▼) buttons to set whether to use DHCP function.
  - When you press up (▲) button, DHCP function is set to use, and if down (▼) button is pressed, DHCP is set for no-use.
3. To use dynamic IP, set to use DHCP function.



### CAUTION

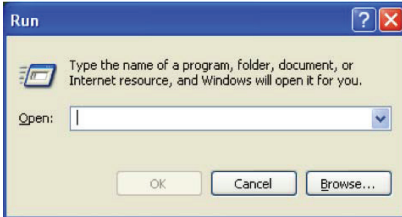
- The DHCP assigned IP address can be read in the front LCD .
- If you input the ACP IV IP address in the web browser, you can run the ACP IV program again.

## Checking ACP IV access

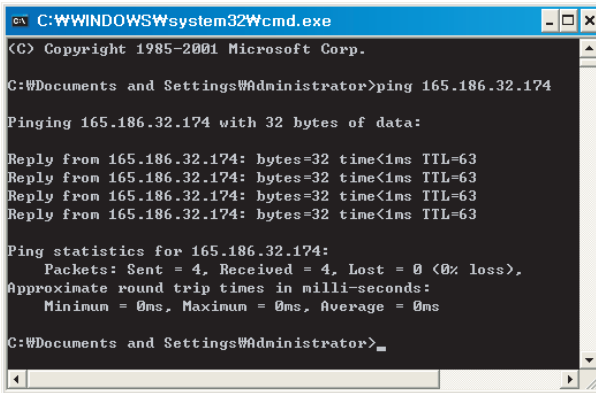
It checks whether the ACP IV network address setting is properly done.

You can check the possibility of accessing the ACP IV through PING test.

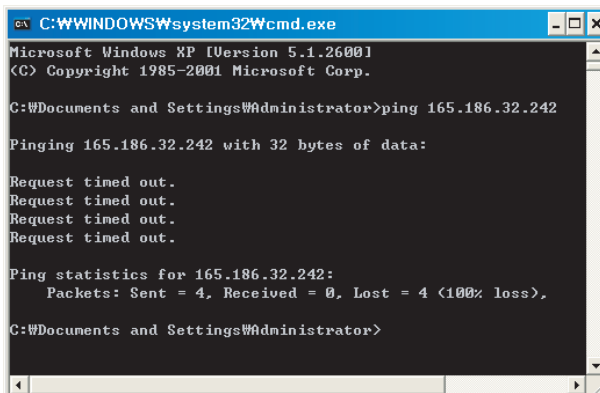
1. You can open the following DOS window through Windows "Start", "Run", "cmd" input.



2. In DOS screen, input "ping <ACP IV IP address>" as follows to run PING test.



When the network setting is properly done



When the network setting is not properly done



## NOTES

**When you connected the ACP IV and PC through a cross cable, but you cannot access the ACP IV**

- Check IP address of the ACP IV and IP address of the PC.  
Ex) If IP address of the ACP IV is 192.168.1.101 and Net mask is 255.255.255.0, check if the first three digits of the IP address of the PC is the same as the first three digits of the IP address of the ACP IV.  
In such case, the IP address of the PC shall start with 192.168.1, and it shall be different from the IP address of the ACP IV. Set as follows, and try again.
  - Setting of the ACP IV
    - IP address: 192.168.1.112
    - Gateway address: 192.168.1.1
    - Subnet Mask: 255.255.255.0
  - Setting of the PC
    - IP address: 192.168.1.113
    - Gateway address: 192.168.1.1
    - Subnet Mask: 255.255.255.0
- Check the status of the Ethernet cable (LAN cable).

**When PC and ACP IV are connected together in a hub or a switch hub, and you cannot access the ACP IV.**

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

```

C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Administrator>arp -a

Interface: 165.186.2.251 --- 0x2
Internet Address      Physical Address      Type
10.16.76.148          00-03-2e-05-08-b3     dynamic
165.186.2.129         00-13-c3-86-67-ff     dynamic
192.168.1.150         00-00-00-00-00-00     invalid
  
```

How to check ARP table

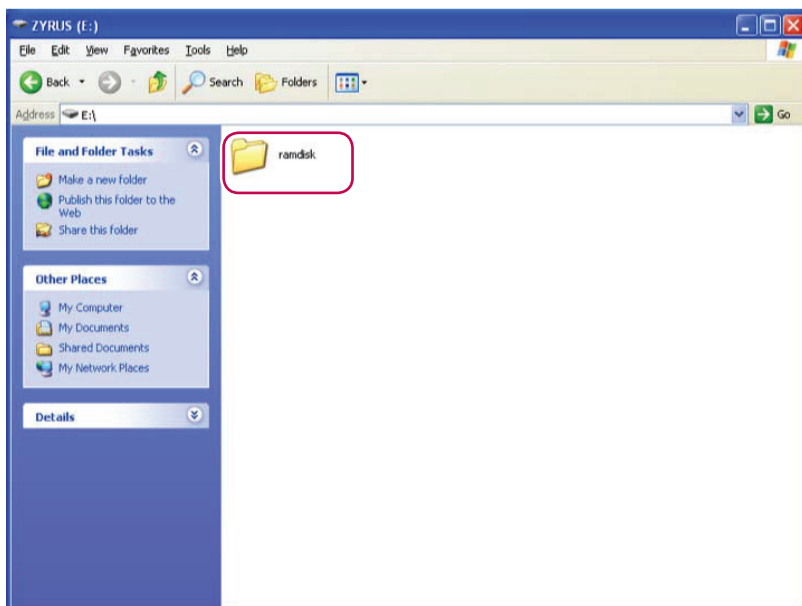
## Software update

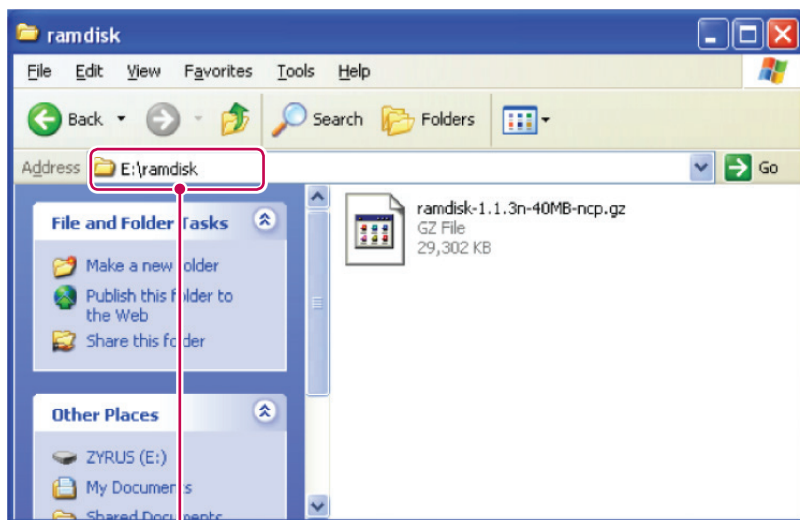
When it is necessary to update the ACP IV software, it must be carried out by the specialized service technician.

Software update can be done with USB memory.

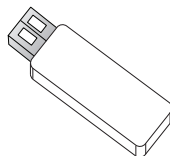
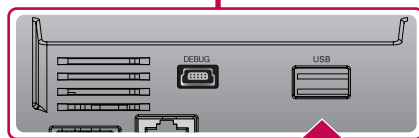
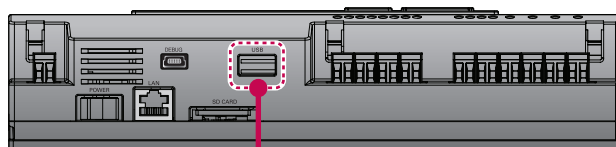
Proceed in the following order.

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

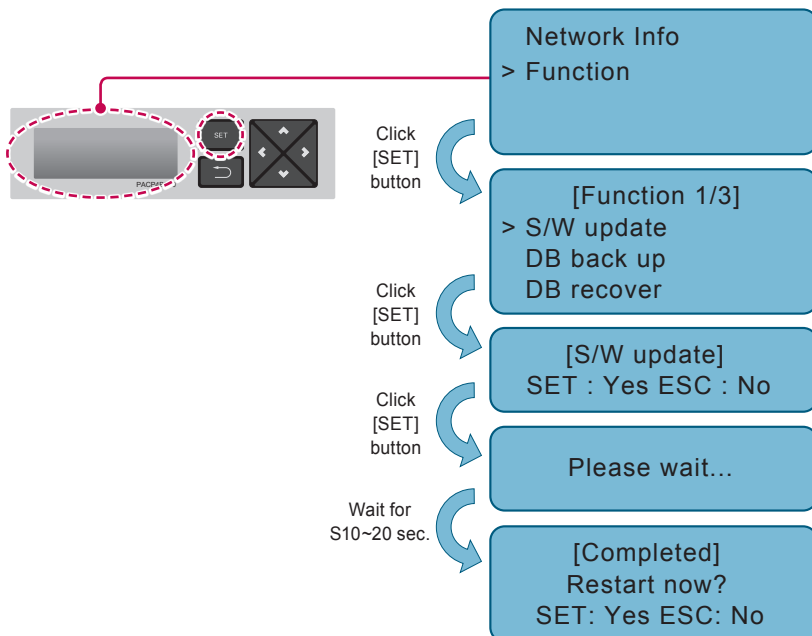




E: may be changed.



1. Press **[SET]** button of the ACP IV.
2. Select **[Function]** menu, and press **[SET]** button.
3. Select **[S/W update]** menu, and press **[SET]** button again.
4. To run the software update, press **[SET]** button again.
  - Wait while software is running.
5. After completing the update, press **[SET]** button to restart the ACP IV.
  - Even when you do not immediately restart, update will be applied only after rebooting the ACP IV in the future.



### CAUTION

While software update is in progress and while "Please wait..." is displayed, turning off the power of the ACP IV or removing USB memory may cause damage to the ACP IV.

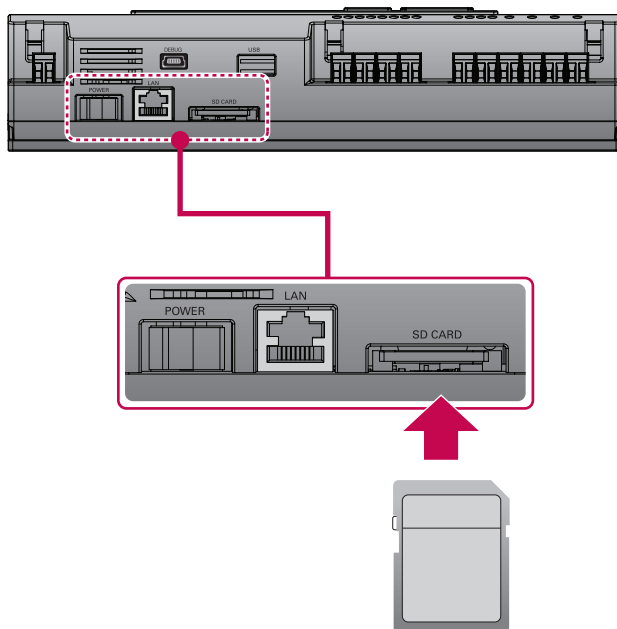
## Data backup

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

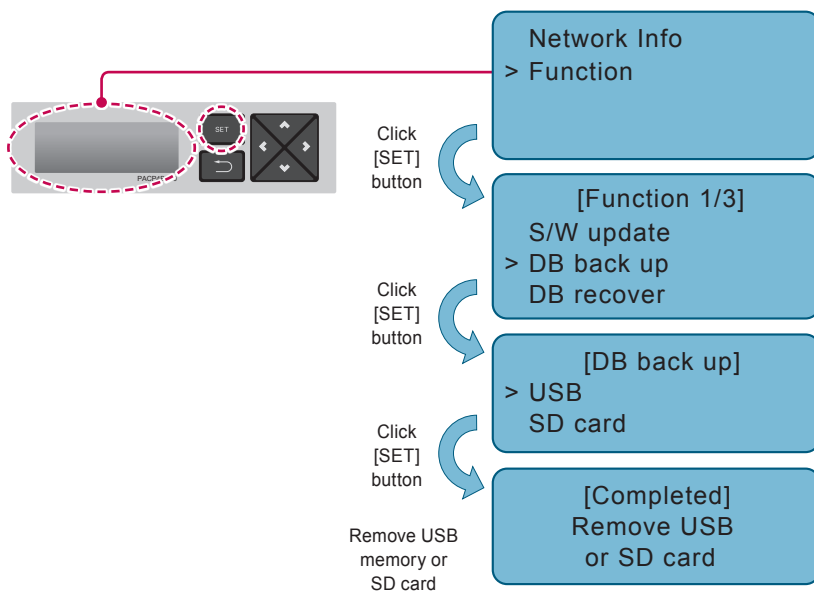
Data backup can be done with USB memory or SD card.

Proceed in the following or der.

1. Insert USB memory or SD card into the ACP IV.  
(Refer to software update for USB memory insertion.)



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



### CAUTION

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

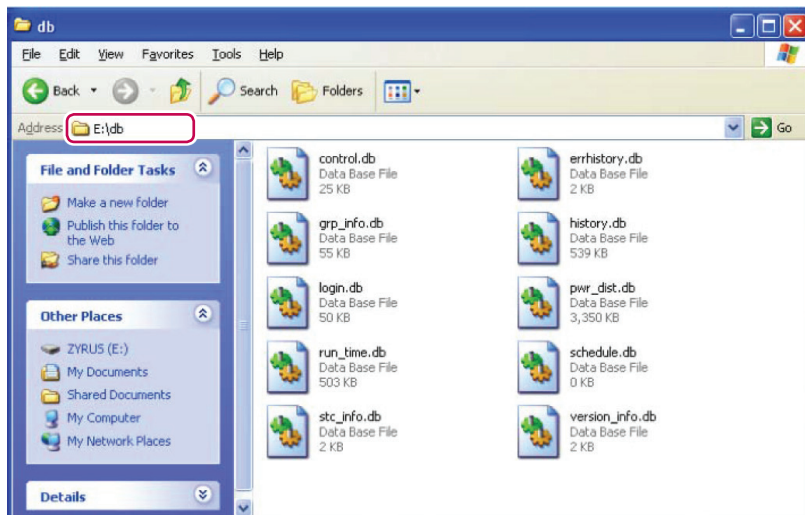
## Data recovery

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

Data recovery can be done with USB memory or SD card.

Proceed in the following order.

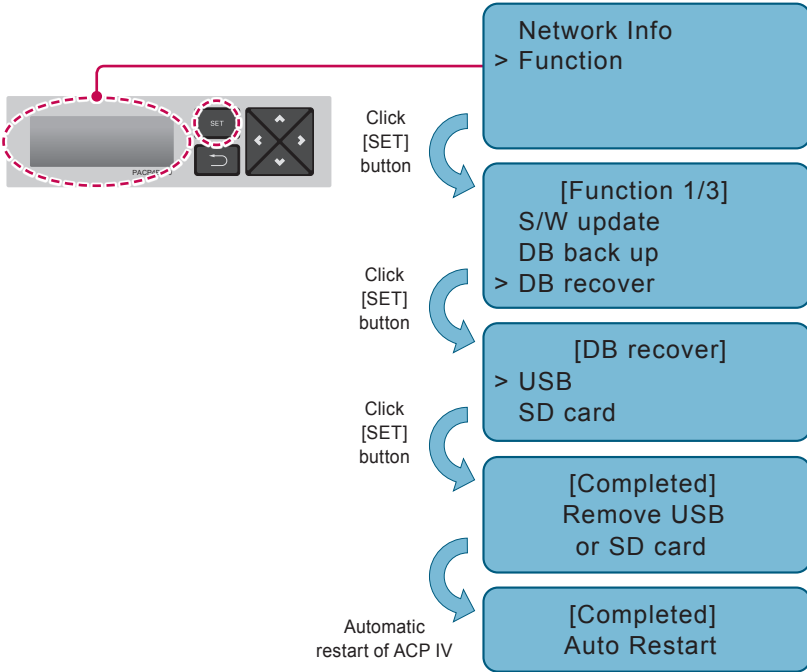
1. Save the database file to recover in USB memory or SD card.
  - Save the files in “db” folder as follows.



2. Insert USB memory or SD card into the ACP IV. (Refer to software update and data backup)
3. Press **[SET]** button of the ACP IV.
4. Select **[Function]** menu, and press **[SET]** button.
5. Select **[DB recover]** menu, and press **[SET]** button again.
6. Select **[USB]** or **[SD card]**, and press **[SET]** button.
7. Remove the USB memory or SD card after completing the data recovery.

8. ACP IV is automatically restarted for data recovery.

ENGLISH



**CAUTION**

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

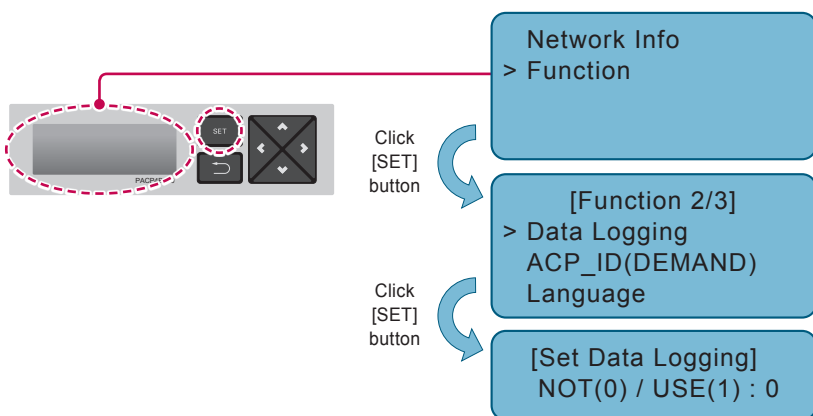
## RS-485 data logging

If ACP IV RS-485 data logging is necessary, it must be carried out by the specialized service technician.

Data logging can be done with SD card.

Proceed in the following order.

1. Insert SD card into the ACP IV. (Refer to data backup)
2. Press **[SET]** button of the ACP IV.
3. Select **[Function]** menu, and press **[SET]** button.
4. Select **[Data Logging]** menu, and press **[SET]** button again.
5. Select whether to set data logging.



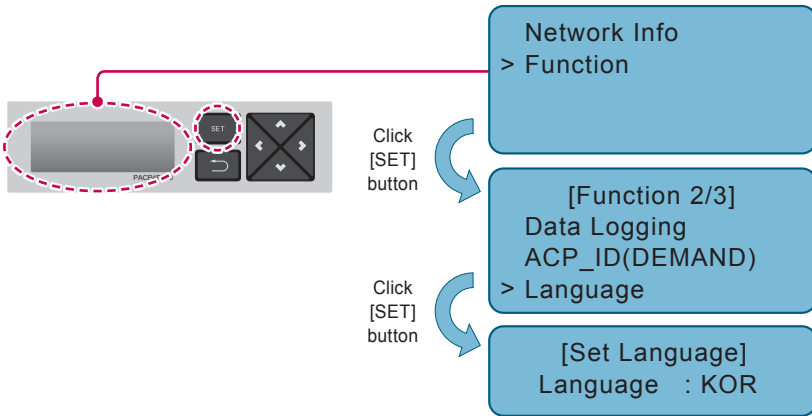
## ACP IV User Interface language setting

If using a PC connected to the ACP IV, User Interface, you can change the language.

Select your desired language from the supported languages.

Proceed in the following order.

1. ACP IV of **[SET]** button.
2. **[Function]** menu is selected, and then press **[SET]** button.
3. Select the Language menu again **[SET]** button.
4. **[Up]**, **[Down]** (▲, ▼) button to select it.

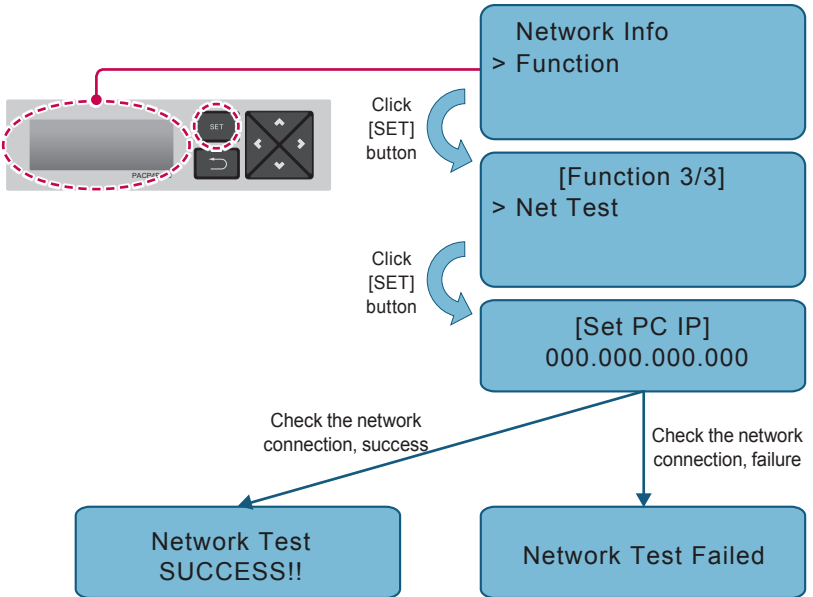


## Check the connection of ACP IV network

It is a function that allows you to check the status of the ACP IV network connection.

Please follow the steps below.

1. Please press the ACP IV the **[SET]** button.
2. Select the **[Function]** menu, please press the **[SET]** button.
3. Select the Net Test menu, please press the **[SET]** button.
4. When you press the **[SET]** button in the selected state of IP, the screen to enter the IP address is displayed.
5. Enter the IP address of the connecting PC, please press the **[SET]** button.

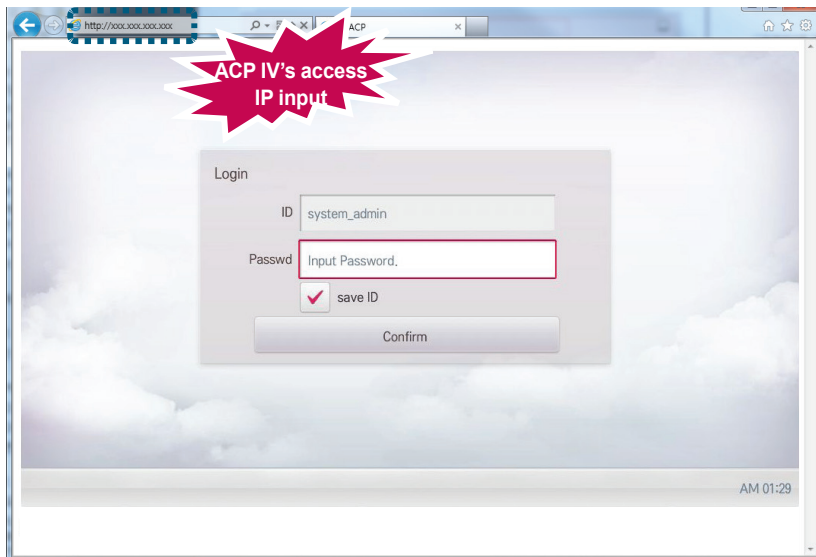


## Accessing ACP IV

User may control and monitor the functions of the ACP IV using a web based User Interface. User Interface is the ACP IV function control program developed in Java language. When the user accesses the ACP IV using Internet Explorer, User Interface is automatically run.

1. It runs Internet Explorer in the PC connected to the ACP IV through internet or internal network.

Input IP address set in the ACP IV in the address window, and press **[Enter]** key. When the address is input correctly, the following screen is displayed.



### CAUTION

In order to connect with PC User Interface, you must install the Adobe Flash Player.  
(Recommended specification : Adobe Flash Player 11)

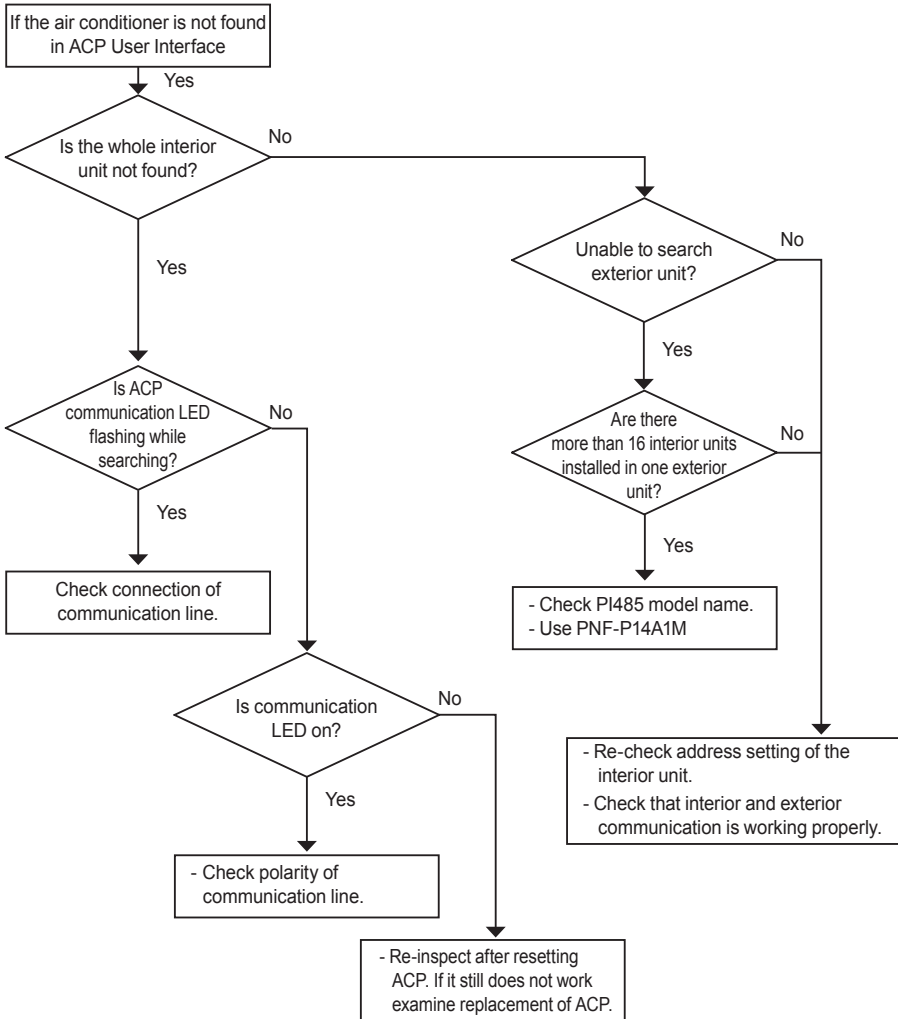
## Verifying and checking the ACP IV installation

After installing the ACP IV, you can check the status of the ACP IV according to the following flowchart.

### Check the connection of indoor unit air conditioner

First, you need to check if the indoor unit air conditioner is connected by running User Interface of the ACP IV.

Check the ACP IV status according to the following flowchart.

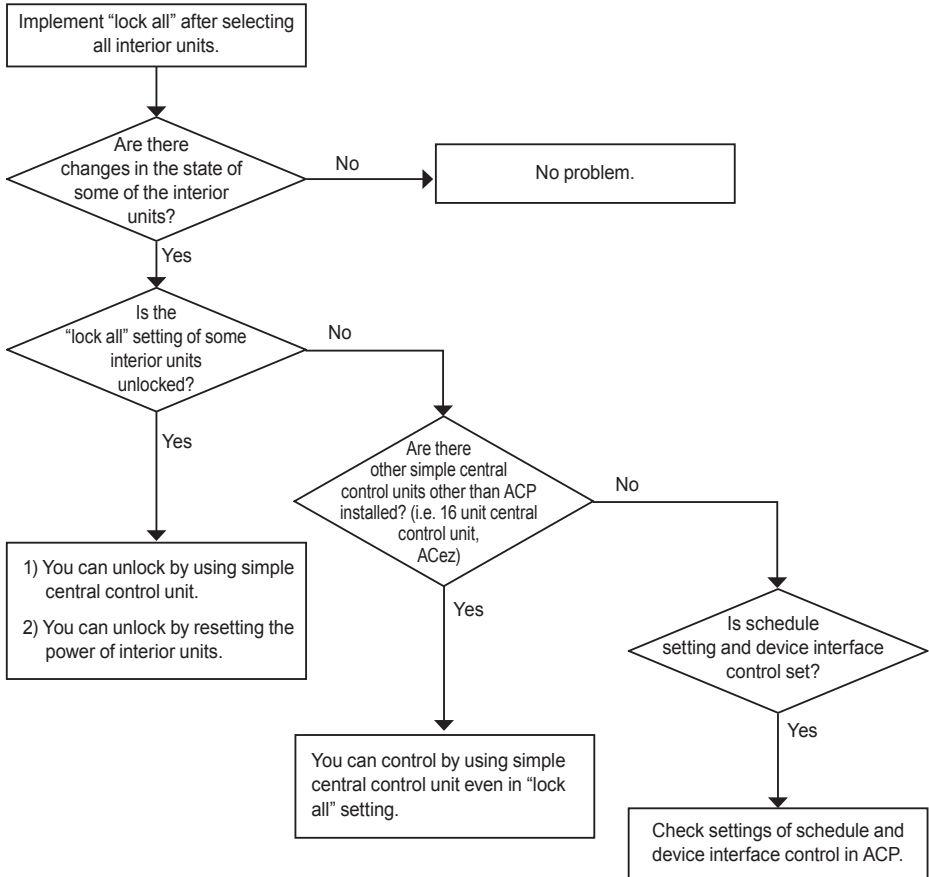


**ACP IV status monitoring after executing lock all**

Run User Interface of the ACP IV to select all indoor units, and execute lock all function.

Afterwards, monitor the status of the ACP IV.

Check the status of the ACP IV according to the following flowchart.

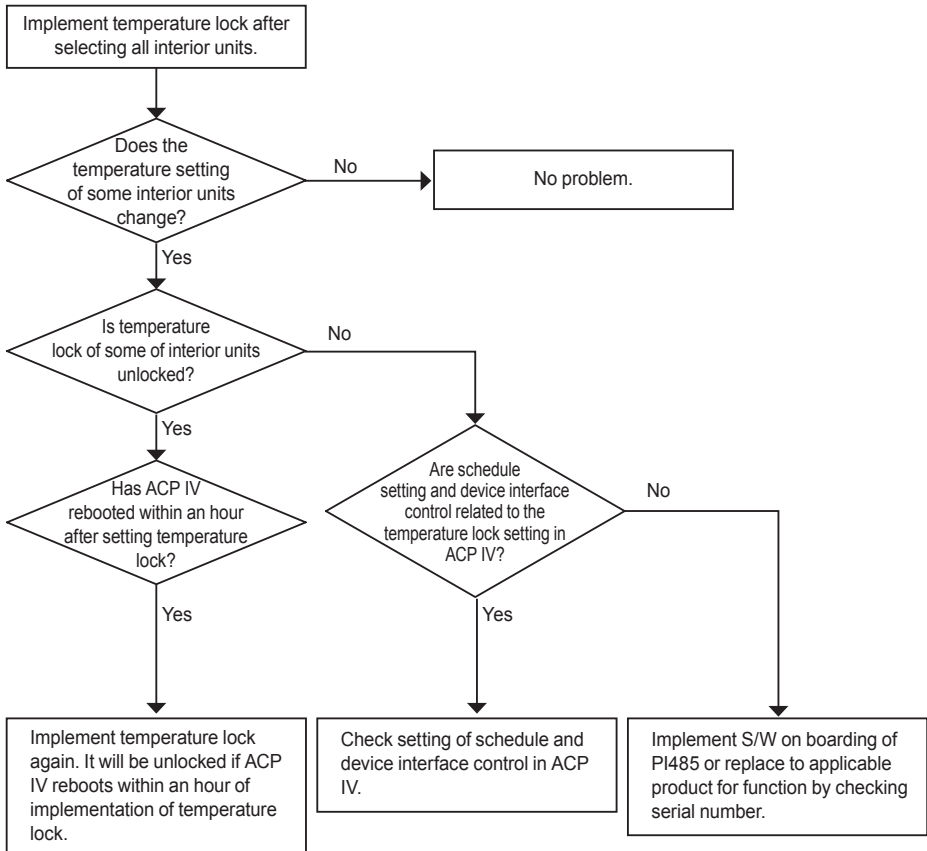


### ACP IV status monitoring after executing temperature lock

Run User Interface of the ACP IV to select all indoor units, and execute temperature lock function.

Afterwards, monitor the status of the ACP IV.

Check the status of the ACP IV according to the following flowchart.



## Troubleshooting

During the use of the ACP IV, if unexpected problem occurs, please find the solution by studying the following list.

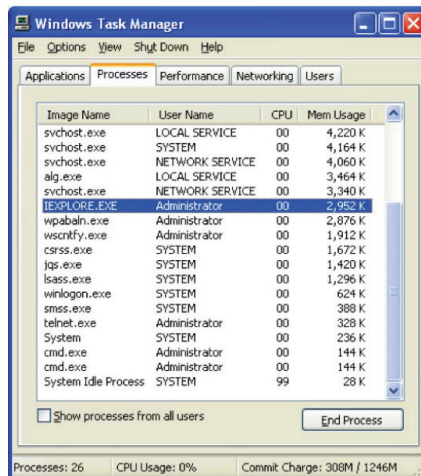
### When BUS-A or BUS-B LED of CH1~4 port is not blinking during the product installation

When BUS-A or BUS-B LED of CH1~4 port is not blinking during the product installation, run it after setting the indoor and outdoor unit groups.

### When user is unable to access the User Interface.

When GUI cannot be operated in User Interface, which is the operation program of the ACP IV, close Explorer window, and run new Explorer to access again.

Close all iexplorer.exe process in Task Manager, and access to the ACP IV again.



After running Task Manager, you can select 'Task Manager' in the popup menu window displayed by clicking the right button of the mouse on the menu bar of the window.

## When the ERV equipment is displayed as a network error state (code 242) in User Interface of the ACP IV

When the ERV equipment is displayed as a network error state (code 242) as followed, in User Interface,

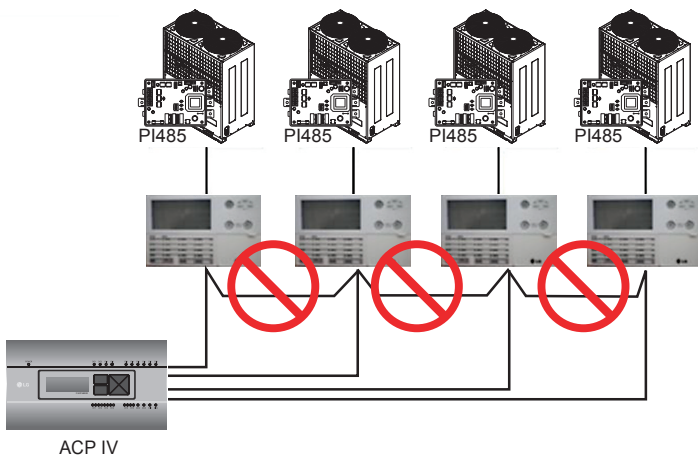
which is the web server program of the ACP IV, please check the following categories.

- Check if the BUS-A and BUS-B of RS-485 cable are incorrectly connected.
- Check if there is a communication defect between the remote controller and the indoor unit.
- Check if the PI485 DIP switch is incorrectly set.
- Check if the indoor unit address for the central control is not set.

## The CH242 (network error) keeps occurring and disappearing in the ACP IV controller.

### Case of incorrect connection of RS-485 communication line

If each communication line is connected altogether as in the following figure, the communication line must be separated.

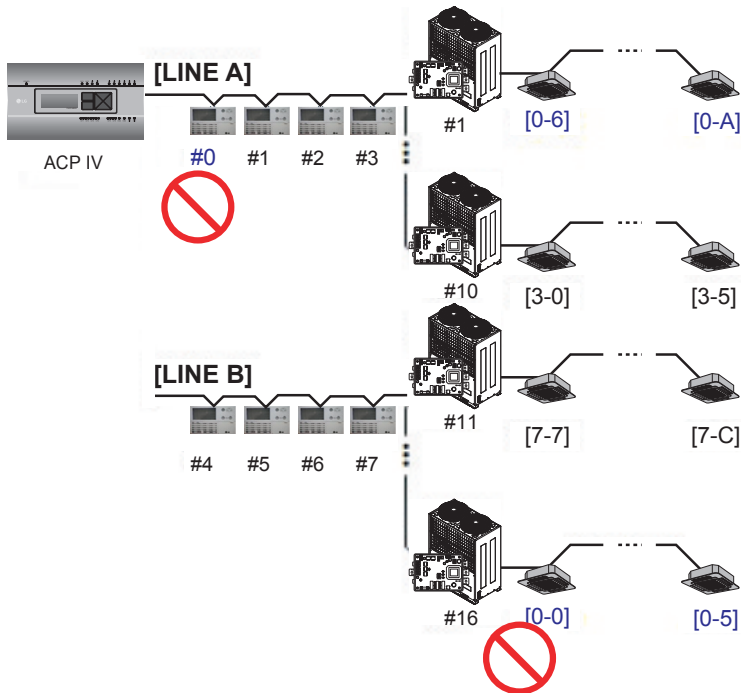


Duplicate setting of the indoor unit address

It is the case of two or more indoor units are set with the same address. It may be the case of several indoor units having the default address 00 by not setting the central control address from the beginning for some indoor units. In such case, assign unique address to each indoor unit not to have indoor unit with a duplicate address.

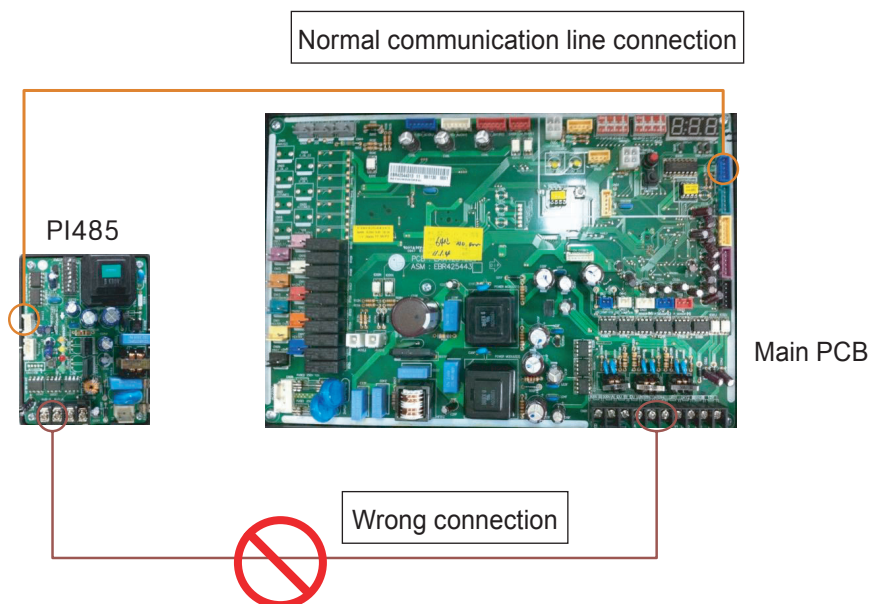
### It is installed by interfacing AC Ez and the ACP IV, but some indoor units are not recognized, or not properly performing the central control commands

- It is the case of incorrect setting of the AC Ez, set all AC Ez to Slave mode, and reset the power.
- If the indoor unit to control with AC Ez is in another physical line as in the following figure, the AC Ez cannot recognize the corresponding indoor unit. Therefore, the connections need to be modified to have the AC Ez to be in the same RS-485 communication line with the indoor unit to control.



**When the outdoor unit is Multi V Super II, and central control is not well performed with 16 room central controller or ACP IV, and the indoor units malfunction such as some indoor units automatically becoming locked state or automatically converting to cooling during heating operation**

PI485 and outdoor unit may not be doubly connected. Please refer to the following picture to check the connection status of the communication line.



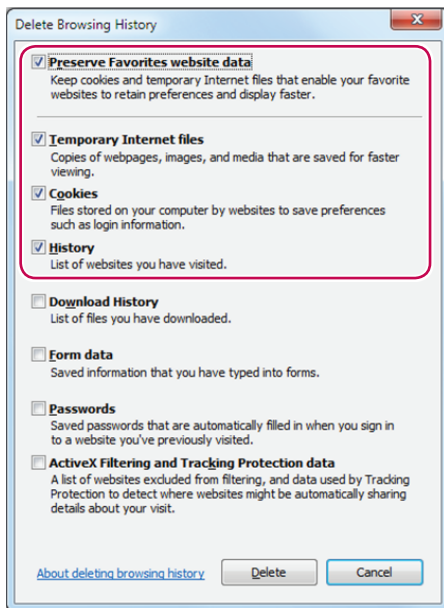
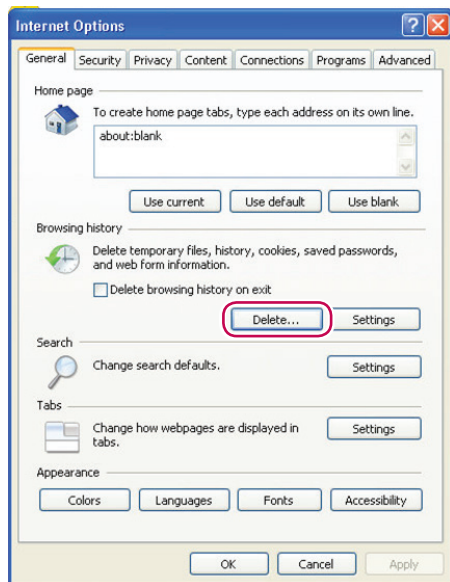
**Number of devices registered and number of devices displayed on current operating state in the home display are different.**

1. It will be displayed correctly within 5 minutes if you reboot ACP IV.

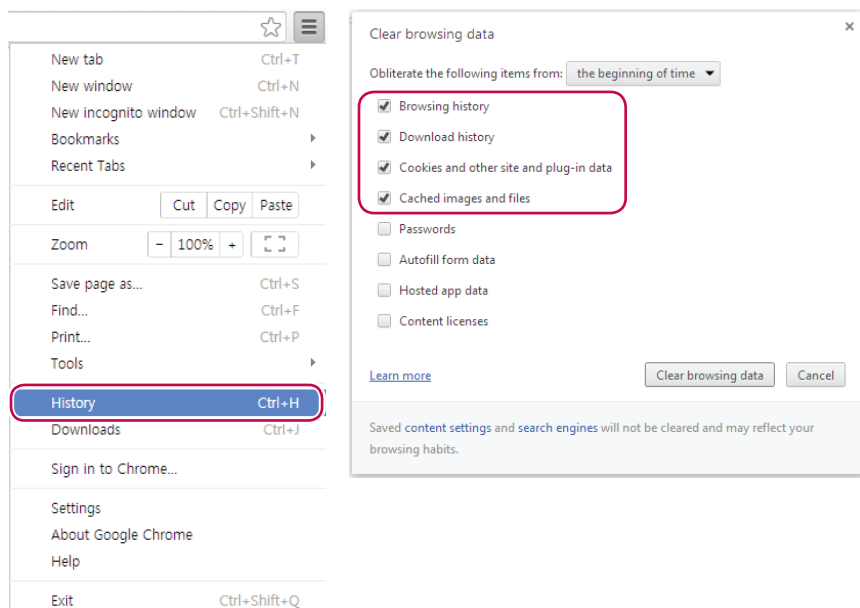
## User Interface problems (not reflecting settings/not displaying on the screen) occur.

Delete search history (visit history).

- When using Internet Explorer:  
Tools – Internet option – Delete search history



- When using Google Chrome:  
Visit history – delete internet usage information



- When using Firefox:  
Visit history – Delete Internet usage information



## CAUTION

- If PC is used for a long period of time, or several application programs are used at the same time, PC performance may be degraded and may affect the ACP IV UI.
- When you use User Interface, it is recommended to close other application programs.
- It is recommended to use User Interface only during the control and monitoring. Maximum of 3 hours of usage is recommended according to the PC environment.

**Class A device****NOTES**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**CAUTION**

Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

**Disposal of your old appliance**

1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of 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 appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

## OPEN SOURCE SOFTWARE NOTICE

To obtain the source code under GPL, LGPL, MPL and other open source licenses, that is contained in this product, please visit <http://opensource.lge.com>.

In addition to the source code, all referred license terms, warranty disclaimers and copyright notices are available for download.

LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping and handling) upon email request to [opensource@lge.com](mailto:opensource@lge.com). This offer is valid for three (3) years from the date on which you purchased the product.

Please check the following points before requesting assistance from the service center.

| Symptom                                                               | Measures                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Because there is no icon on the desktop, it is impossible to control. | Please refer to the connection guide.                                                                                                                                                                                                 |
| Although running on the desktop icon, User Interface does not run.    | Please check LAN cable and the power supply of Hub.                                                                                                                                                                                   |
| Indoor remote control does not work.                                  | ACP IV in the lock feature is enabled, the remote control function is not set. Peak control state must function setting from the remote control at the indoor unit. If the function is active, set the time schedule may be disabled. |
| I would like to change the name of the indoor unit.                   | Log in as Administrator → System Settings → After select the device you want to change, modify the name of or the device → Apply → Complete group settings                                                                            |



