

INSTALLATION/USER MANUAL

BECON HVAC controller

- Make sure to read the cautions for safety before installation and use, and use it correctly.
- It is intended to keep protect the safety of the installer and user and to prevent the property damage, etc.
- After reading the user manual, please keep it at a place where user can access any time.

Type: ACP IV

Model No.: PACP4B000



P/NO : MFL68583904

www.lg.com

EXPLANATORY NOTES

Copyrights

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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.

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 Nation 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.

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.

- **Let the children or the old and the weak be controlled by the guardian to use.**
 - It may cause accident or failure.
- **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 put a container, etc. with water on the product.**
 - It may cause fire or electric shock.
- **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.



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.

 MEMO

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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 equipments in one space individually or as combined. ACP IV can monitor or control the equipments 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.

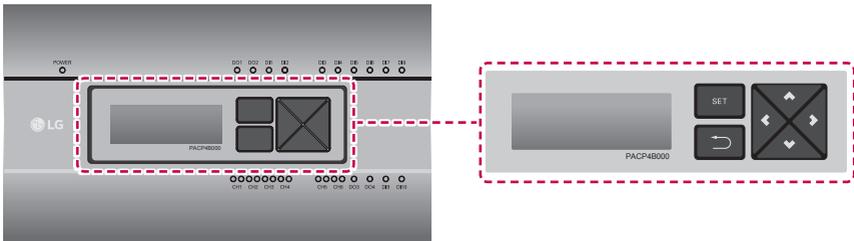
ACP IV Functions

Major functions of the ACP IV are as follows.

Environment setting function using the ACP IV external buttons

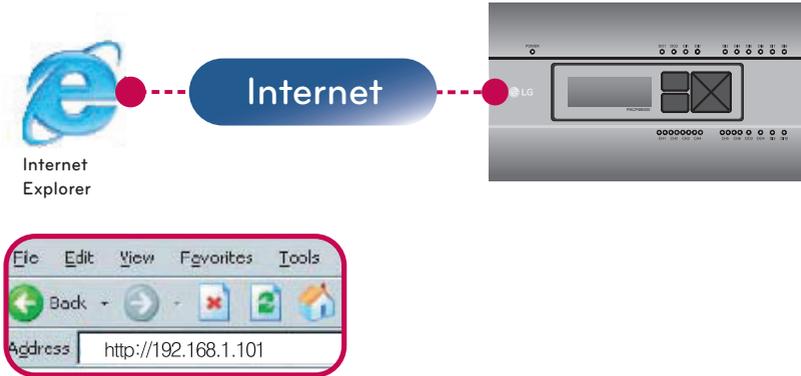
ACP IV can use the external buttons installed outside of the ACP IV to set the following functions.

- 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)

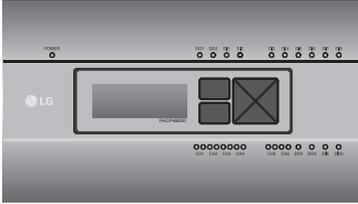
- Monitoring of error and operation status
- Controlling the peak power / demand power
- System setting function
- Up to 16 AHU can be interlocked

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 (with chiller option S/W applied)
AHU	o
ACS I/O	o

ACP IV Components

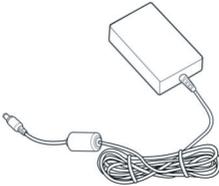
Inside the packaged box of the ACP IV, there are the components as in the following drawing. Open the packaged box of the ACP IV, and check if all of the corresponding components are included.



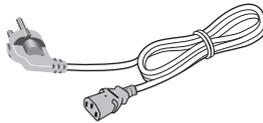
ACP IV



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~, 3A



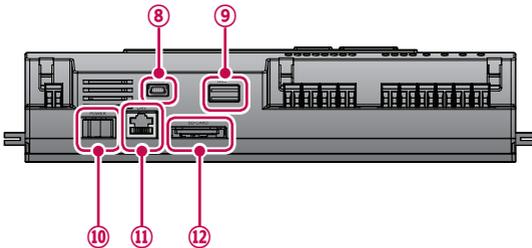
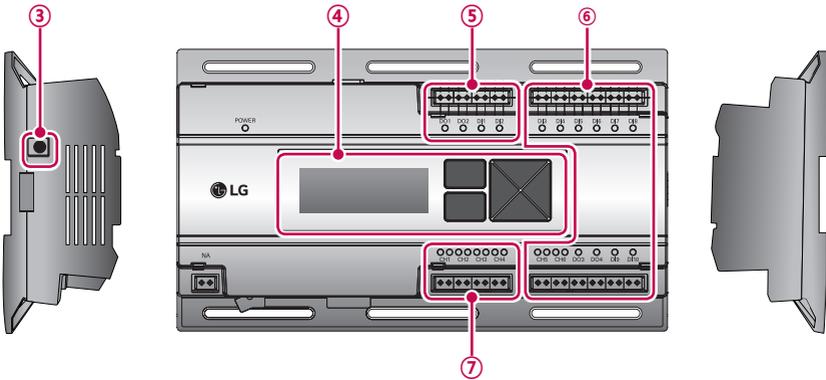
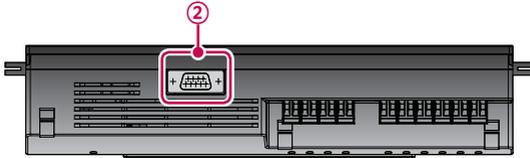
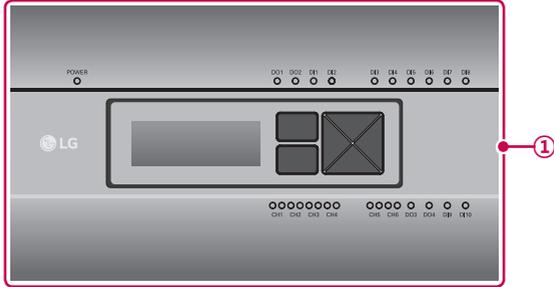
ACP IV
 Installation/User Manual CD

NOTES

Components or options may differ from the actual product picture.

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	RS-232 console port	Reserved communication port
③	Adaptor connection jack	Jack for DC 12 V to connect to the power supply adaptor
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 (not supported in Standard.)	Connection port to connect to external input/output signals and RS-485 communication port for external expansion. (8 DI's, 2 DO's, 2 RS-485 communication ports)
⑦	RS-485 communication port	RS-485 communication ports to connect to air conditioner and ERV equipment (4 in total)
⑧	Mini USB port	USB to Serial port for software debugging
⑨	USB port	For software update and data backup
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
CPU	i.MX515 32Bit 800 MHz speed
RAM	128MB DDR2 SDRAM * 2EA
ROM	4GB i-NAND Flash
Communication ports	<ul style="list-style-type: none"> • Ethernet 10 / 100 BASE-T • USB : USB Host (SW upgrade, data backup) mini USB Device (Debug) • RS-485 communication ports 6EA • SD card slot (RS-485 communication logging) • RS-232 Console Port (HMI)
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

Set the address of the ACP IV not to be overlapped with the connecting indoor unit.

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 through internet.

STEP 7. Set ACP IV functions

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

STEP 8. Set web GUI access environment

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

STEP 9. Input indoor unit and ventilator information

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

STEP 10. Verify and check ACP IV installation

Verify and check whether the ACP IV is properly installed.

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

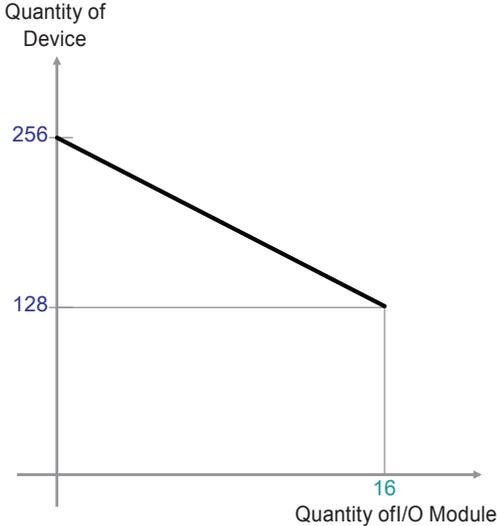
- The ACP IV installation work needs the professional technique. Therefore, the installation described in this chapter should be performed by the certified installation professional.
- Consult the service center or the professional installation agency certified by us about any question or request related 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.

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

Please refer to following information related to product connection quantity.



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

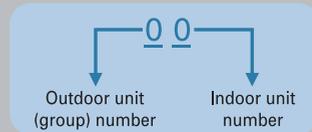
By considering the entire installation configuration connecting to one ACP IV, set the address to each indoor unit not to be overlapped. 00~FF in hexadecimal can be set to the indoor unit address. However, in case of I/O module, address 00 should not be set because address 00 is used as Broadcast in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



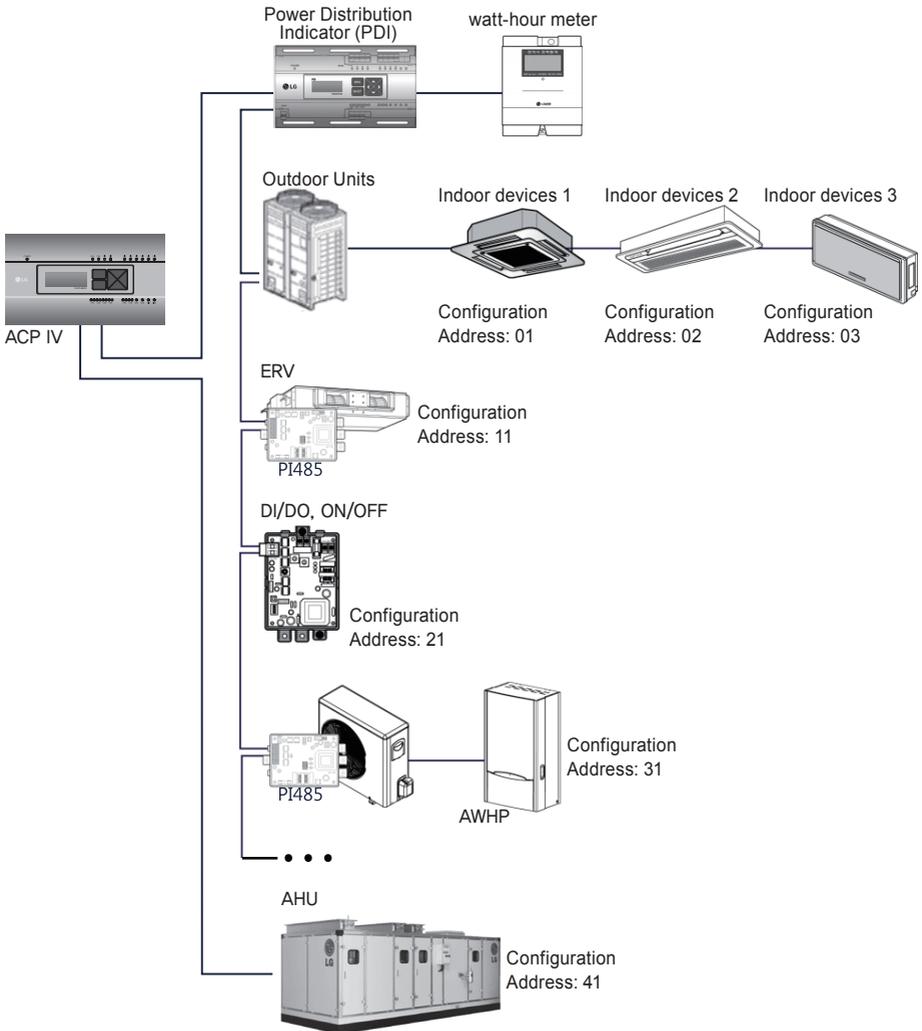
NOTES

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 30 and 31 to the ERV and connects to the ACP IV.



NOTES

How to set the central control address of the indoor unit

The central control address setting method may be different for each indoor unit product or remote control type, so set the address by referring to the manual of the indoor unit product or wired remote controller.

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.

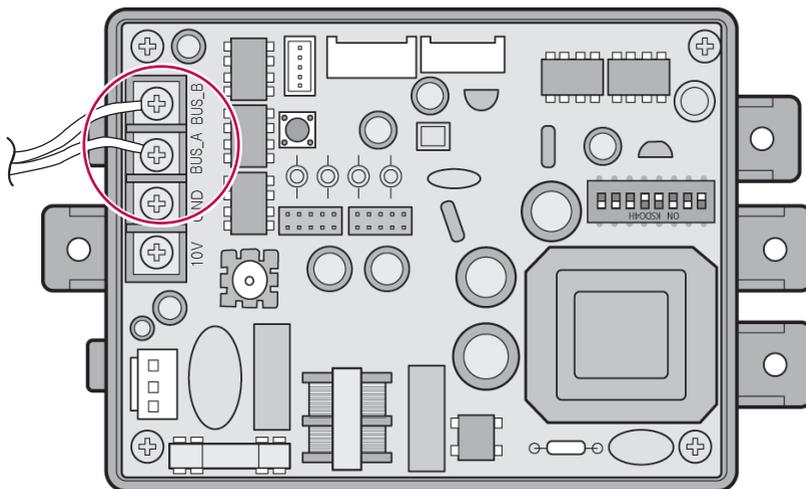


Notes

Installing the PI485

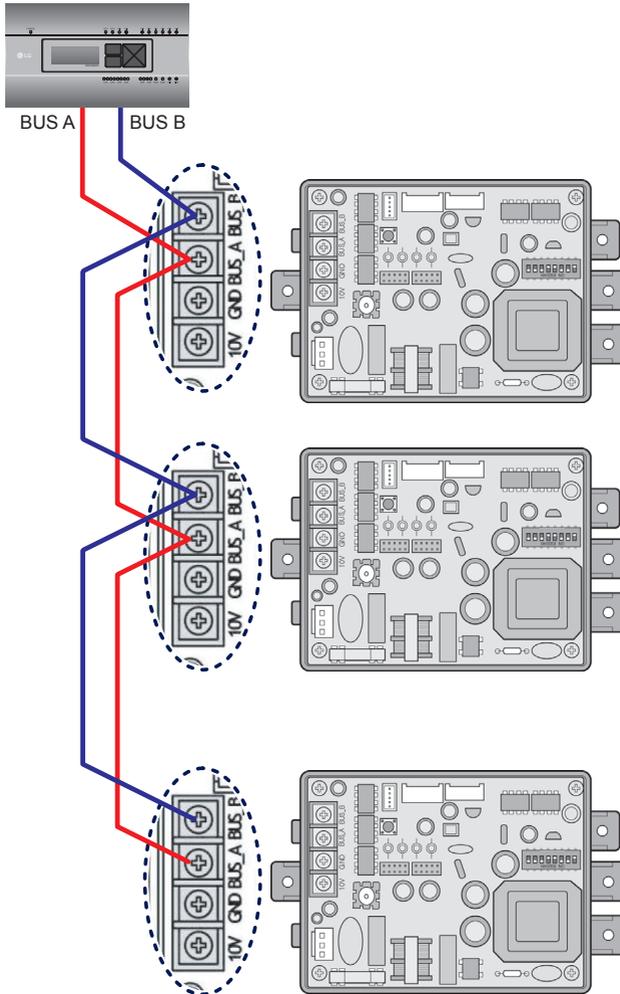
- Installing the PI485 depends on the outdoor unit.
- So, install the PI485 by referring to the PI485 manual or the installation technique information.

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.



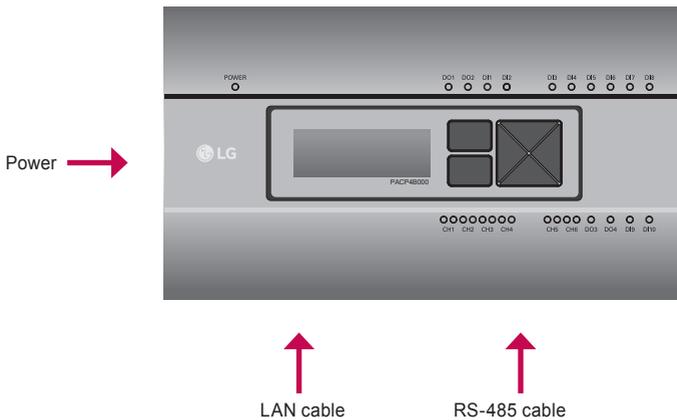
Installing ACP IV and connecting cables

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.

And, Ethernet cable (LAN cable) shall be connected for the connection with internet 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

If four times the power connector for the connection, as shown by using the right connection, but please note that an electric shock.

Use the designated parts must be connected to a power source.

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



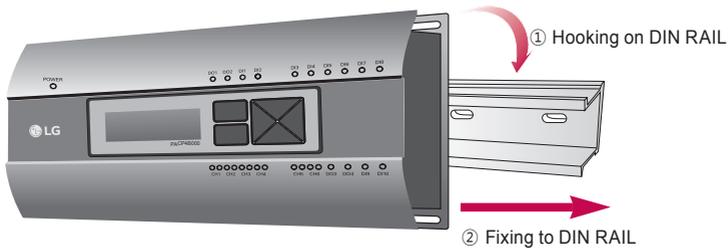
Installing the ACP IV in DIN RAIL

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

Proceed as the follows to install the ACP IV in an adequate place.

The installation method of the ACP IV is explained here with the example of installing the ACP IV in 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

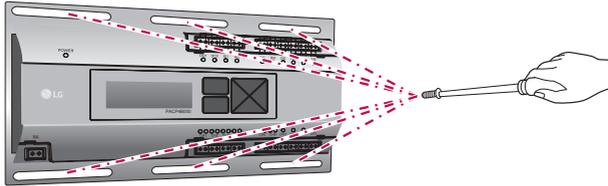
Fixing the ACP IV to the wall

ACP IV can be installed by fixing to the wall. To install the ACP IV in an adequate place, proceed according to the following explanation. It explains here on how to install the ACP IV with the example of installing the ACP IV 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.

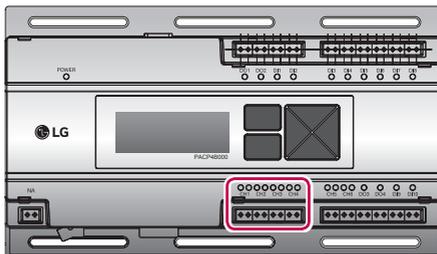
- Fix to the wall using the driver. It can be fixed as in the following figure according to the location to install



Connecting RS-485 cable to the ACP IV

After fixing the ACP IV in the installation place, RS-485 cable that was connected to PI485 shall be connected to the ACP IV. To connect RS-485 cable to the ACP IV, proceed as the following order.

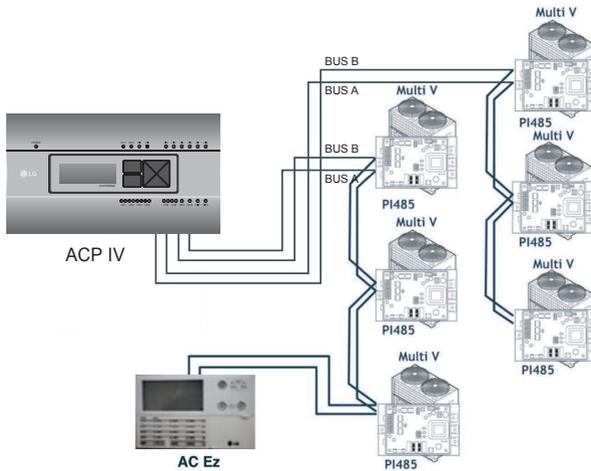
- First, among the connectors that can be connected to the ACP IV, connect the end of RS-485 cable connected to BUS-A of PI485 to Tx part. Next, connect the end of RS-485 cable connected to BUS-B of PI485 to Rx part.
- RS-485 cable that was connected to PI485 shall be connected to CH port (RS-485 port) 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)



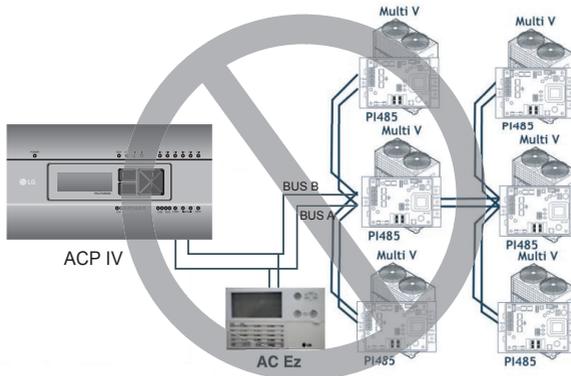
Information: Connecting RS-485 of the ACP IV

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.

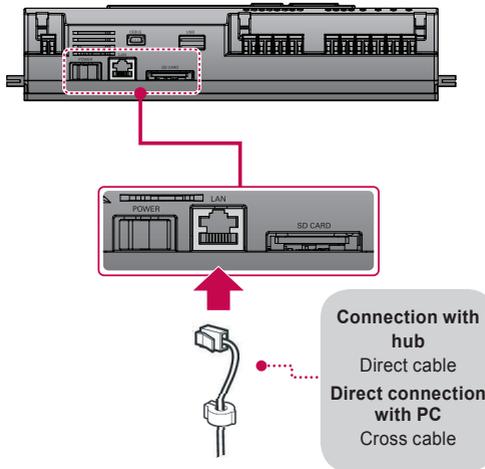
Use Ethernet cable (direct cable) to connect to LAN port of the ACP IV.

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

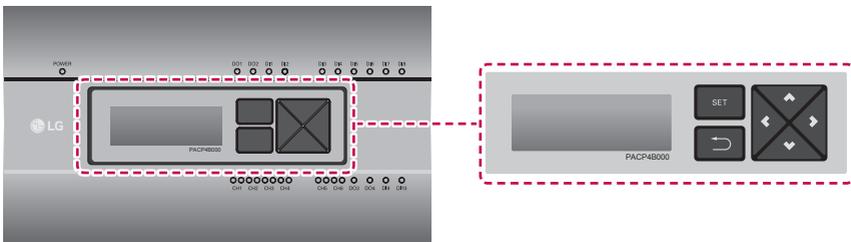
Setting the network environment information

If the above information is not entered, the communication error may be occurred or it may be impossible to control by the ACP IV. So, be careful to correctly input.

Before configuring the ACP IV environment

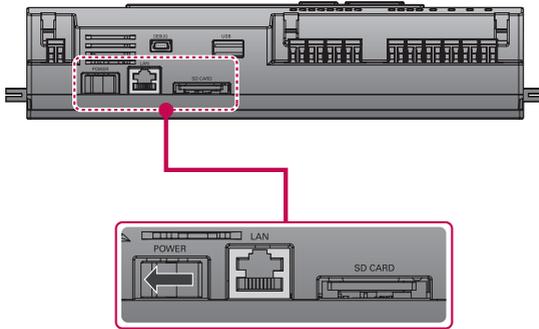
The network environment of the ACP IV can be set by the LCD and the buttons at the front side of the ACP IV.

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

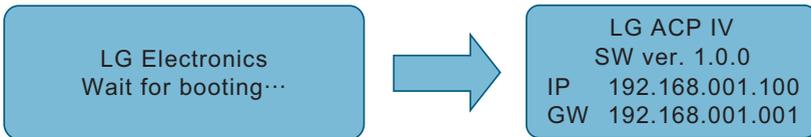


Turning on the ACP IV

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.

```

    LG ACP IV
    SW ver. 1.0.0
    IP 192.168.001.100
    GW 192.168.001.001
  
```

Entering into the environment setup mode

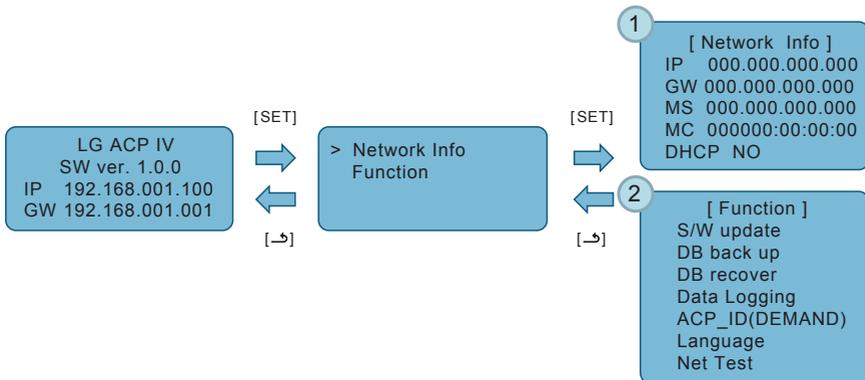
Press **[SET]** button of the ACP IV to enter into the environment setup mode of the ACP IV.

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.



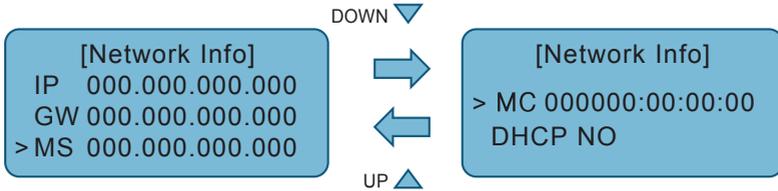
Caution

- **[Function]** menu is used by the system air conditioner service technician, so user shall never use this function.
- If this function is incorrectly used, it may cause disorder of the ACP IV.

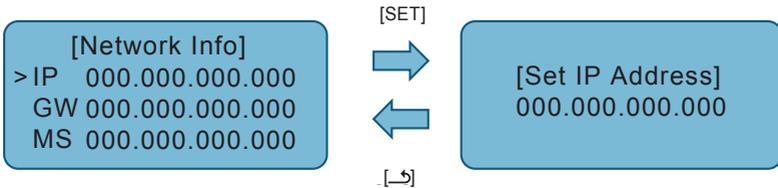
How to set network address

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.



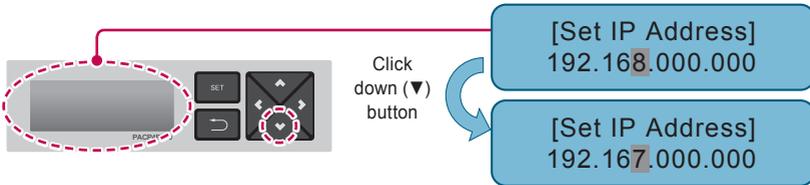
To change the network setting, locate the arrow on the corresponding setting position, and press **[SET]** button to enter the corresponding setting screen.



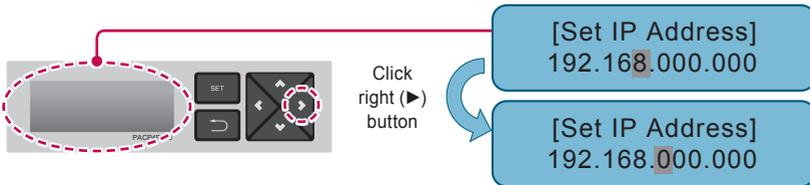
The network address consists of four 3-digit numbers. In case of setting the network address, the, name of the related address is displayed on the LCD of the ACP IV, and press Up/Down/Left/Right (▲, ▼, ◀, ▶) button to set.

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 digits based on ., and each number shall be 255 or less.
- Number exceeding 255 may not be input.



NOTES

Assigning the network address

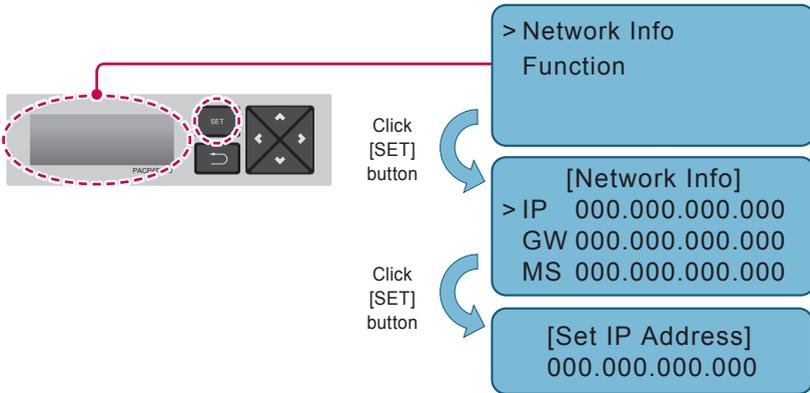
- Network address shall be assigned by the person in charge of the network of the corresponding site. (IP address, Gateway address, Net mask)
- ACP IV can use both fixed IP type and dynamic IP type, but fixed IP type is recommended, and if dynamic IP type is used, it may cause inconvenience of the customer.
- Please refer to "Using dynamic IP using DHCP" for details.
- If fixed IP type is used, network address (IP address, Gateway address, and Net mask) shall be assigned by the person in charge of the network of the corresponding site.

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.



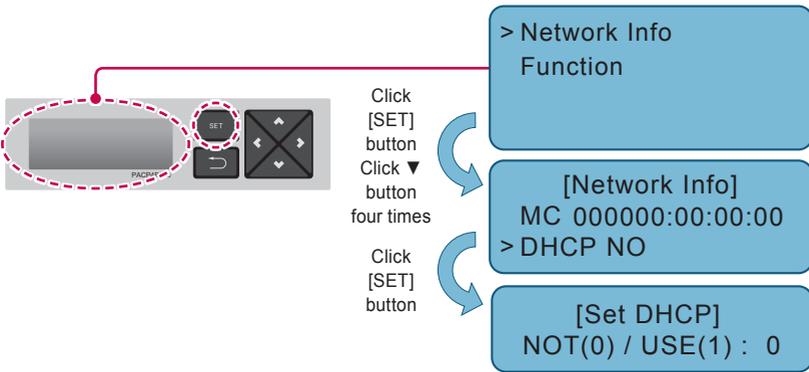
Using dynamic IP using DHCP

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

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

```

C:\WINDOWS\system32\cmd.exe
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>ping 165.186.32.174

Pinging 165.186.32.174 with 32 bytes of data:

Reply from 165.186.32.174: bytes=32 time<1ms TTL=63

Ping statistics for 165.186.32.174:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Documents and Settings\Administrator>_

```

When the network setting is properly done

```

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>ping 165.186.32.242

Pinging 165.186.32.242 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 165.186.32.242:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Documents and Settings\Administrator>

```

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.

```

ex 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

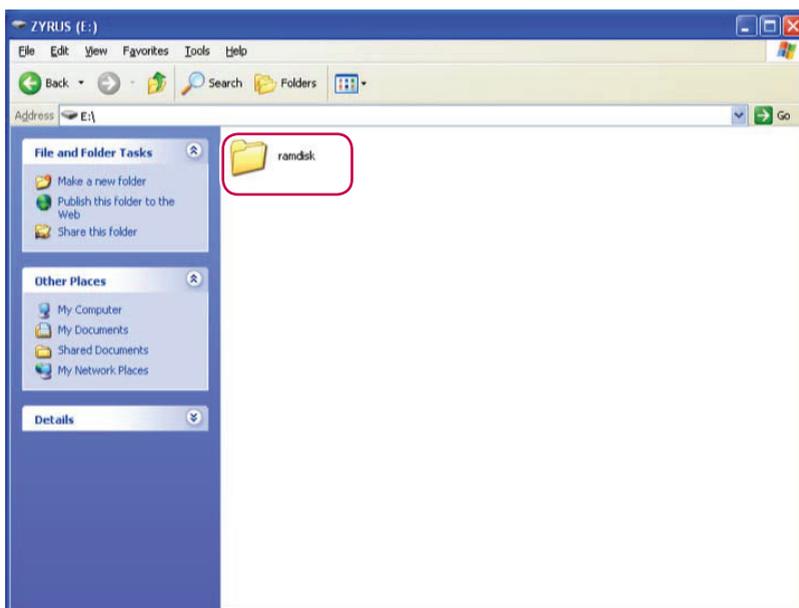
Software update

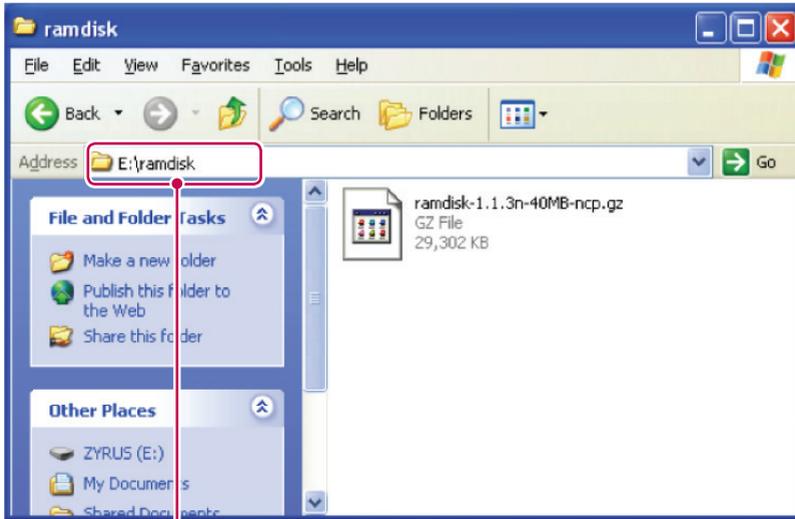
When it is necessary to update the ACP IV software, it must be carried out by the specialized service technician.

Software update can be done with USB memory.

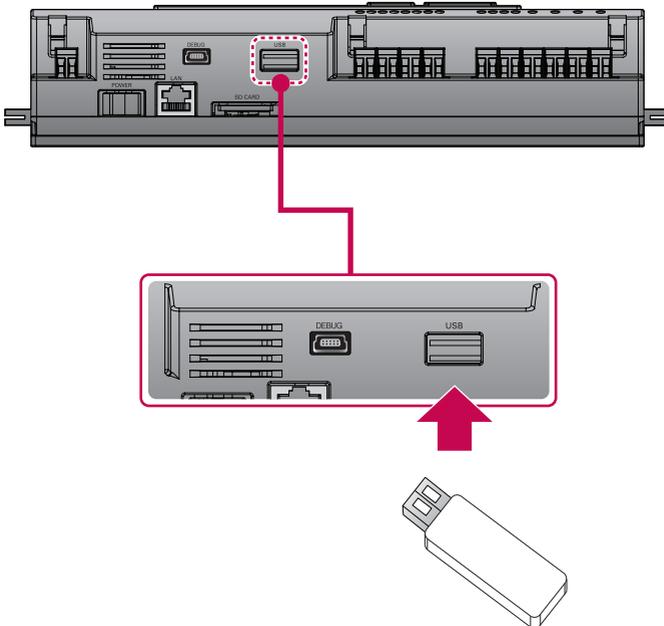
Proceed in the following order.

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.)

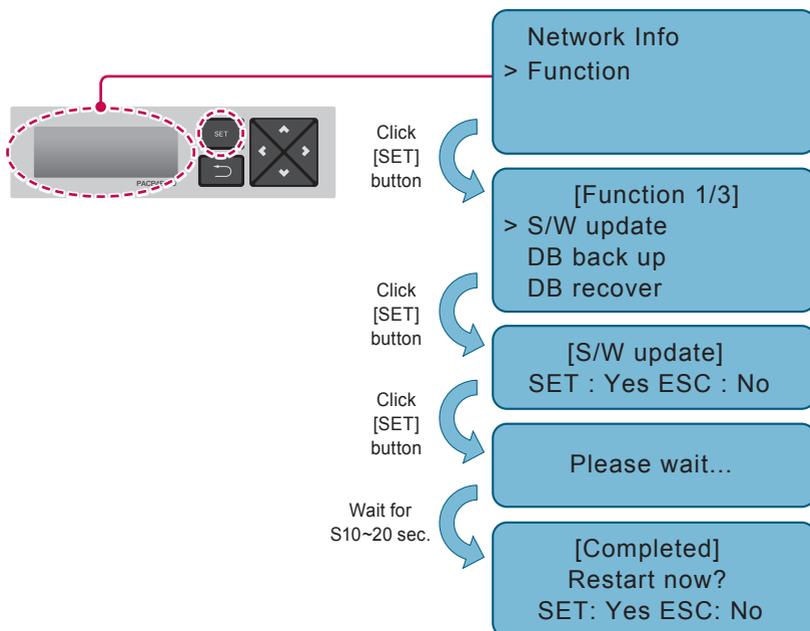




E: may be changed.



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 severe disorder of the ACP IV.

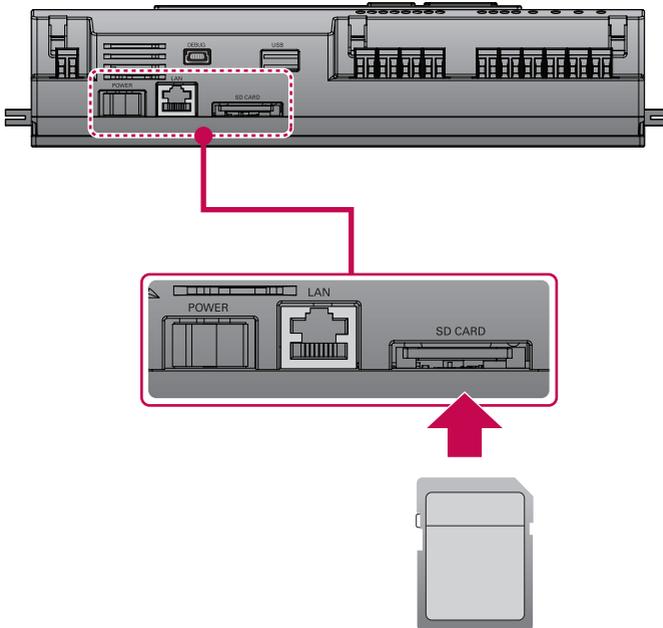
Data backup

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

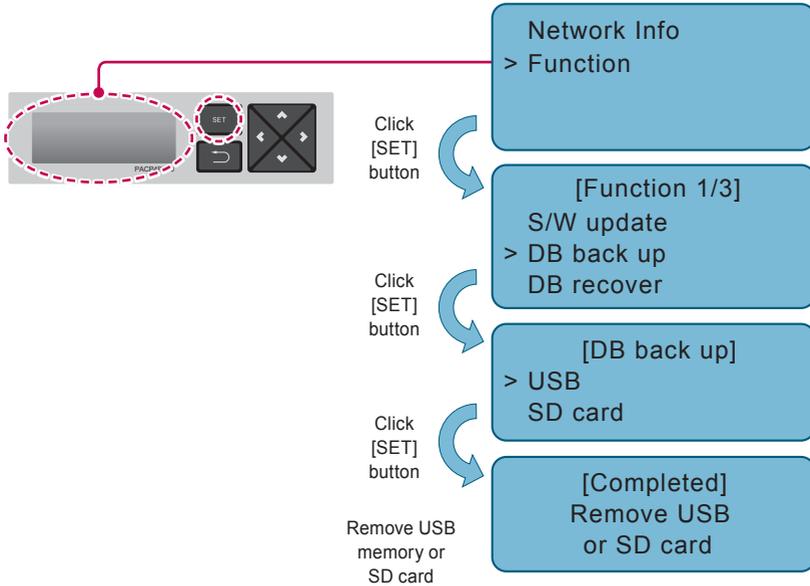
Data backup can be done with USB memory or SD card.

Proceed in the following order.

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 backup, remove USB memory.



CAUTION

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

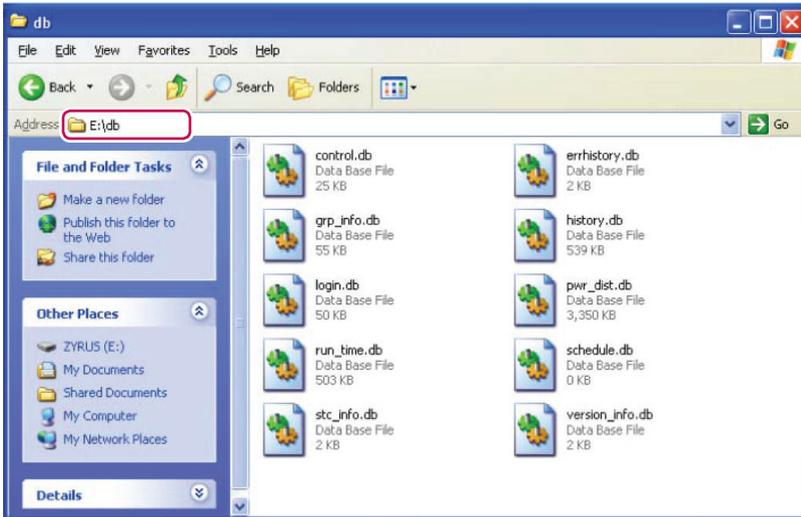
Data recovery

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.

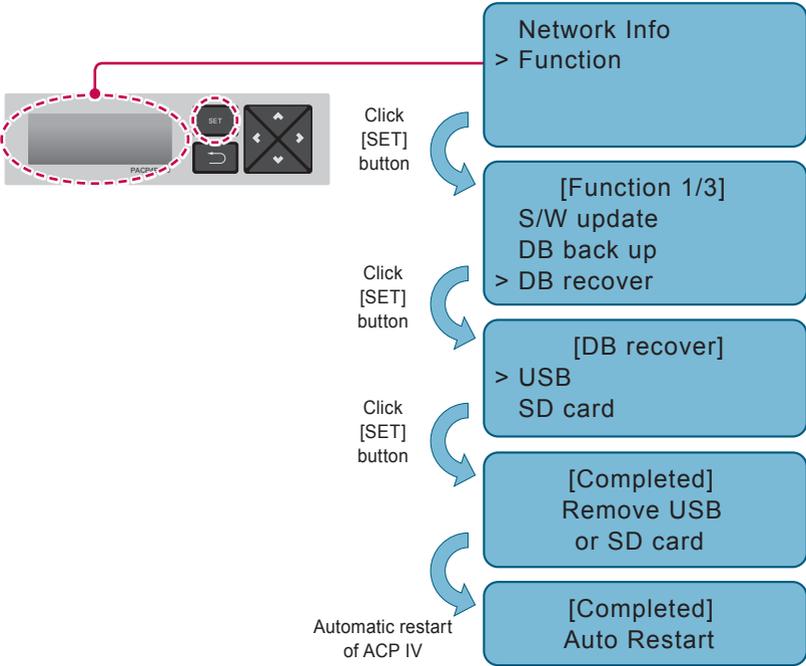
1. Save the database file to recover in USB memory or SD card.
 - Save the files in “db” folder as follows.



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 USB memory 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 severe disorder of the ACP IV.

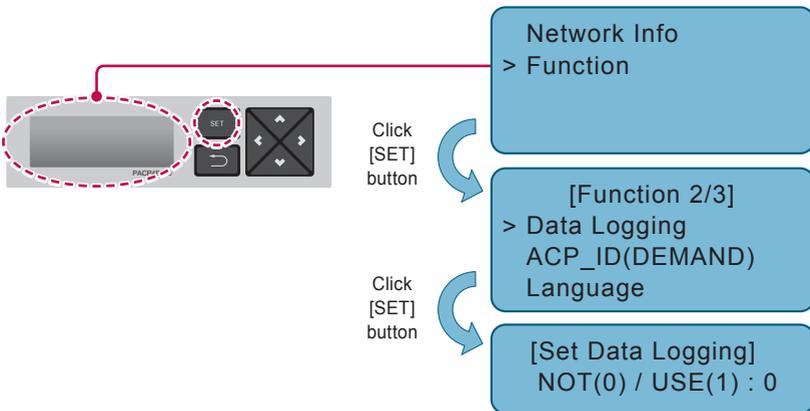
RS-485 data logging

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.



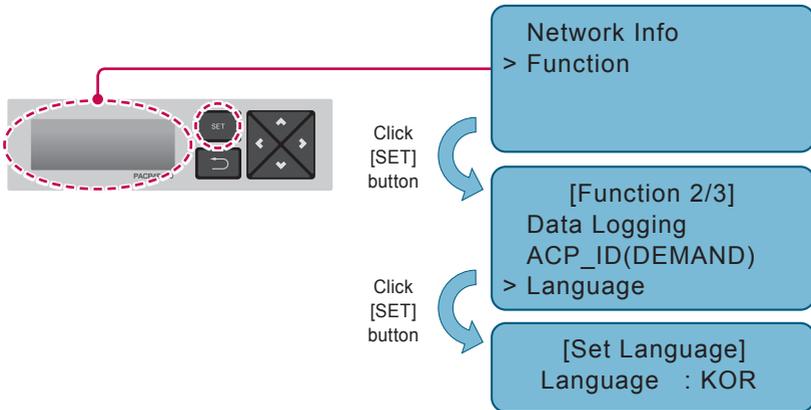
ACP IV web GUI language setting

If using a PC connected to the ACP IV, web GUI, you can change the language.

A total of 11 languages , select the language of your choice, please use the. KOR (Korean), ENG (English), ITA (Italian), ESP (Spanish), POR (Portuguese), RUS (Russian), FRA (French), GER (German), TUR (Turkish), POL (Polish), CHN (Chinese)

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.

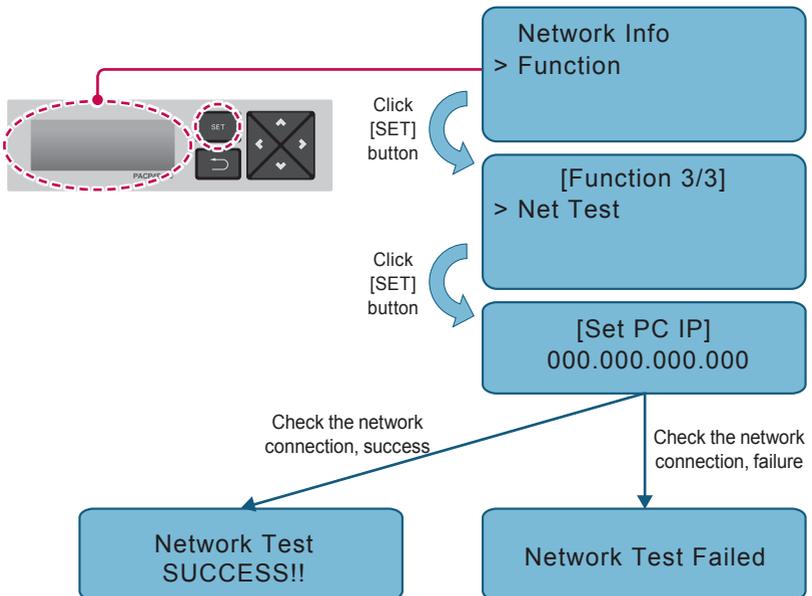


Check the connection of ACP IV network

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.



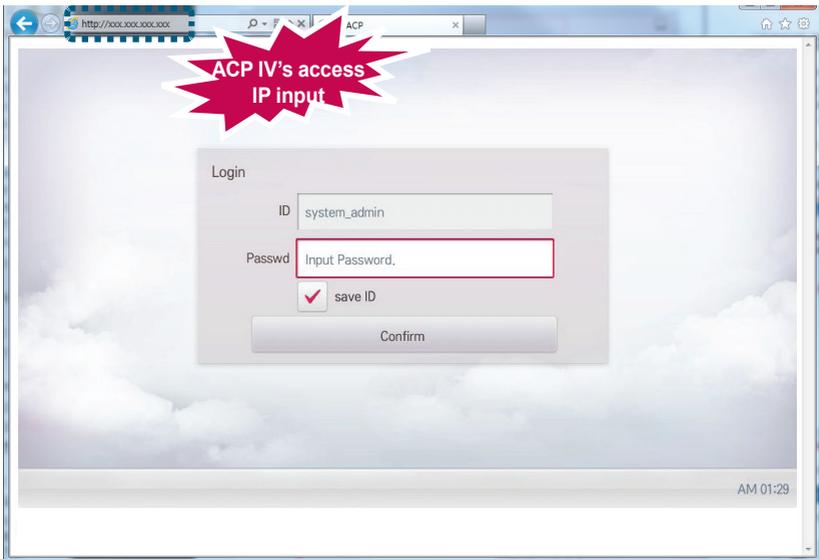
NOTES

Please contact us to an article in the professional services when there is no abnormality by checking the status of the router and LAN line failure in network connection test.

Accessing ACP IV

User may control the functions of the ACP IV using web GUI program of the ACP IV in the computer connected to the ACP IV through network. web GUI is the ACP IV function control program developed in Java language. When the user accesses the ACP IV using Internet Explorer, web GUI 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 web GUI, you must install the Adobe Flash Player.
(Recommended specification : Adobe Flash Player 11)

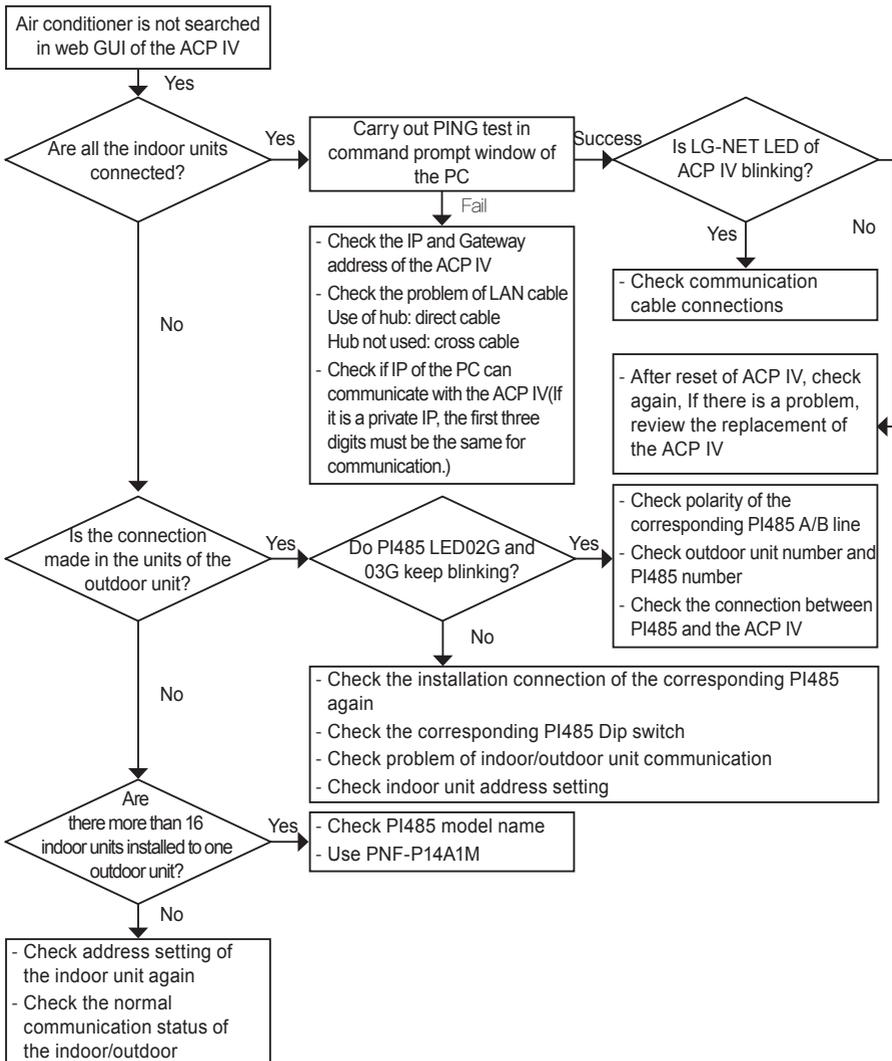
Verifying and checking the ACP IV installation

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 web GUI of the ACP IV.

Check the ACP IV status according to the following flowchart.

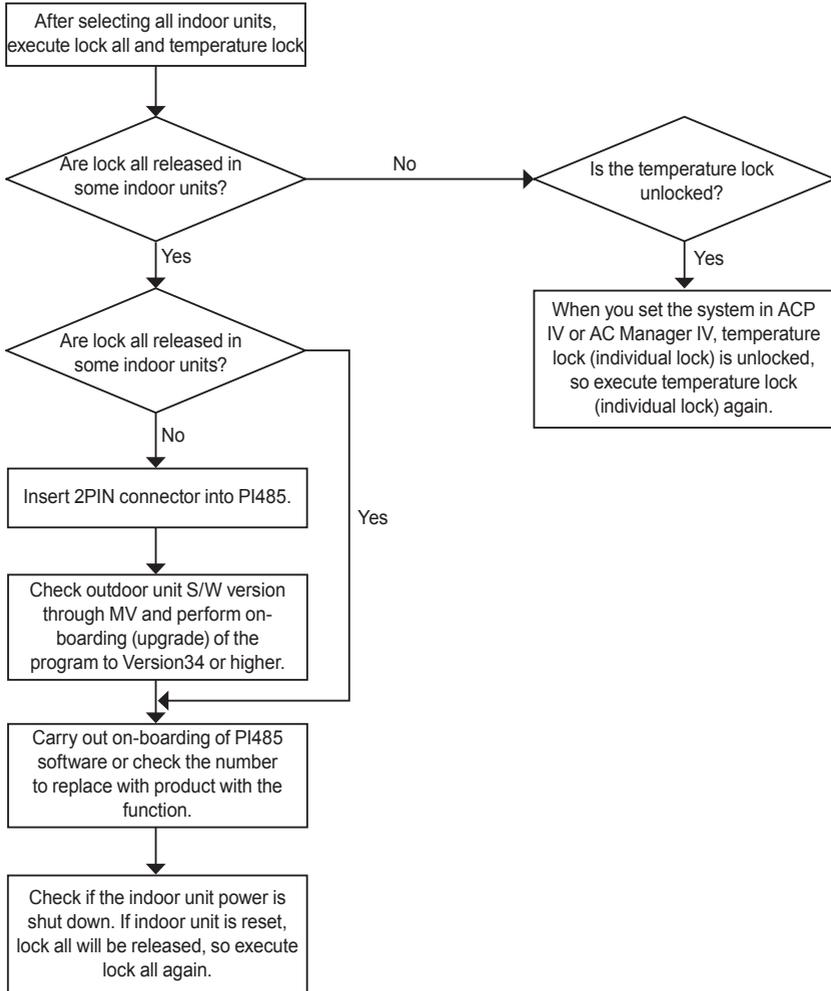


ACP IV status monitoring after executing lock all and temperature lock

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

Afterwards, execute temperature lock function again, and 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.

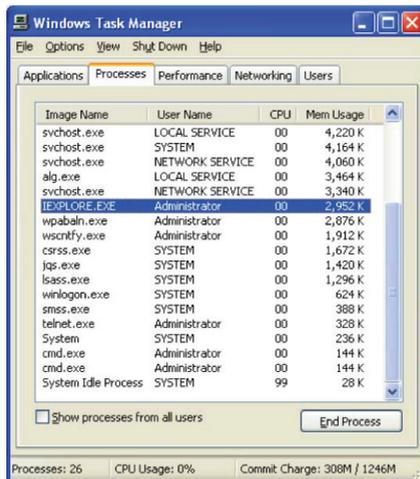
When BUS-A or BUS-B LED of CH1~4 port is not blinking during the product installation

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 GUI cannot be operated in web GUI, which is the operation program of the ACP IV

When GUI cannot be operated in web GUI, 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 web GUI of the ACP IV

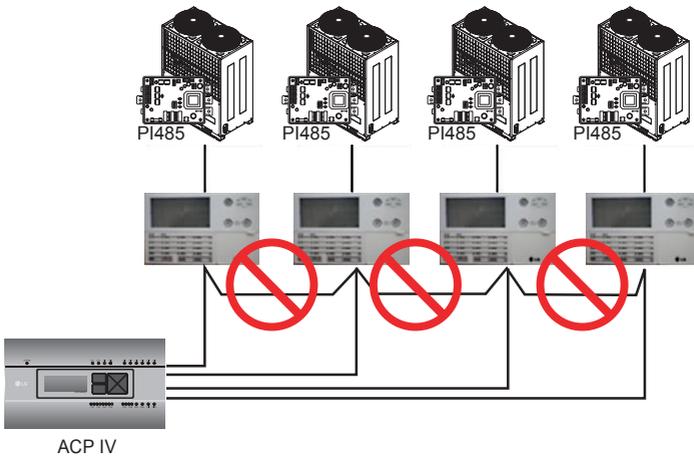
When the ERV equipment is displayed as a network error state (code 242) as followed, in web GUI, which is the web server program of the ACP IV, please check the following categories.

- 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.

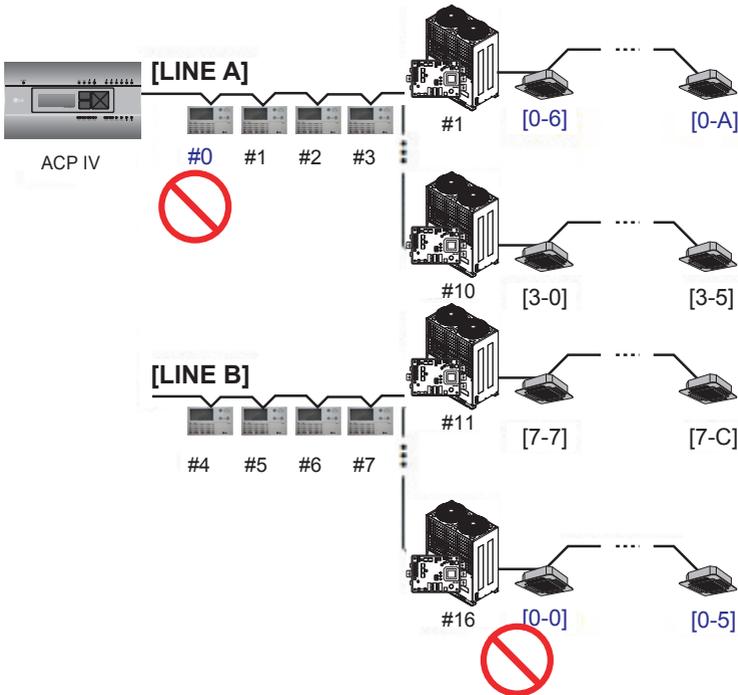


Duplicate setting of the indoor unit address

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.

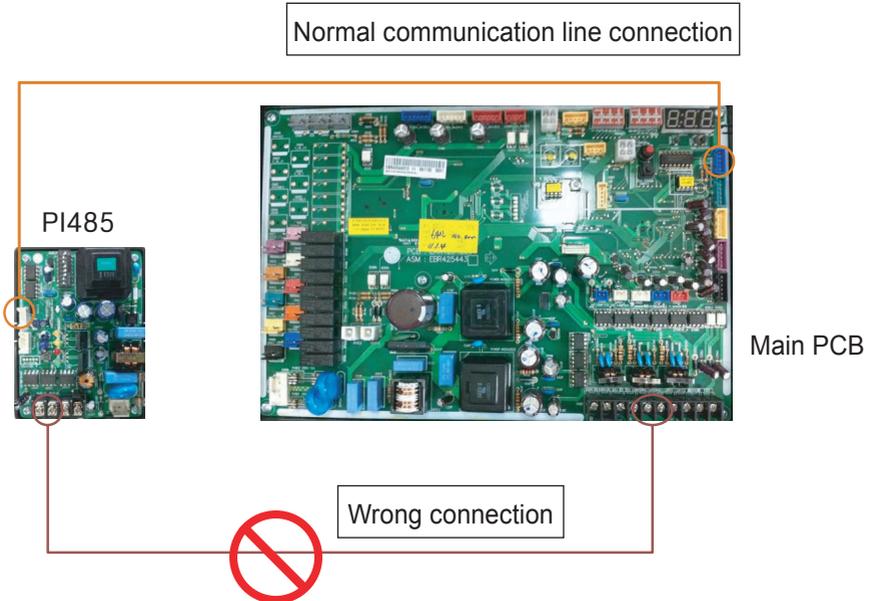
It is installed by interfacing AC Ez and the ACP IV, but some indoor units are not recognized, or not properly performing the central control commands

- 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.



When the image of web GUI is broken and you cannot see the screen such as the temperature well

Close web GUI, and rerun.



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 web GUI, it is recommended to close other application programs.
- It is recommended to use web GUI 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.

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. This offer is valid for three (3) years from the date on which you purchased the product.

If the abnormality occurs in products, please first check the following points before requesting to 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, Web GUI 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 superuser → System Settings → After select the device you want to change, modify the name of or the device → Apply → Complete group settings

