

242 - 315

CONTROL SOLUTIONS

INDIVIDUAL CONTROL / CENTRALIZED CONTROL / INTEGRATION DEVICE



The perfect choice for innovative building management

LG BECON HVAC SOLUTION

Innovative building management solution in your hands.
 Our optimized solutions provide integrated control for customers configuration of various equipment in building and intuitive interface to maximize efficiency of operations.



ENERGY SAVING



SMART MANAGEMENT



EASY EXPANDABILITY

SMART MANAGEMENT



Standard III Remote Controller



Premium Remote Controller



Wi-Fi Modem (with LG ThinQ)

EASY EXPANDABILITY



Modbus Gateway



ACP LonWorks



Dry Contact



ACP 5



ACS IO Module



ACU IO Module

ENERGY SAVING



PDI



AC Smart 5



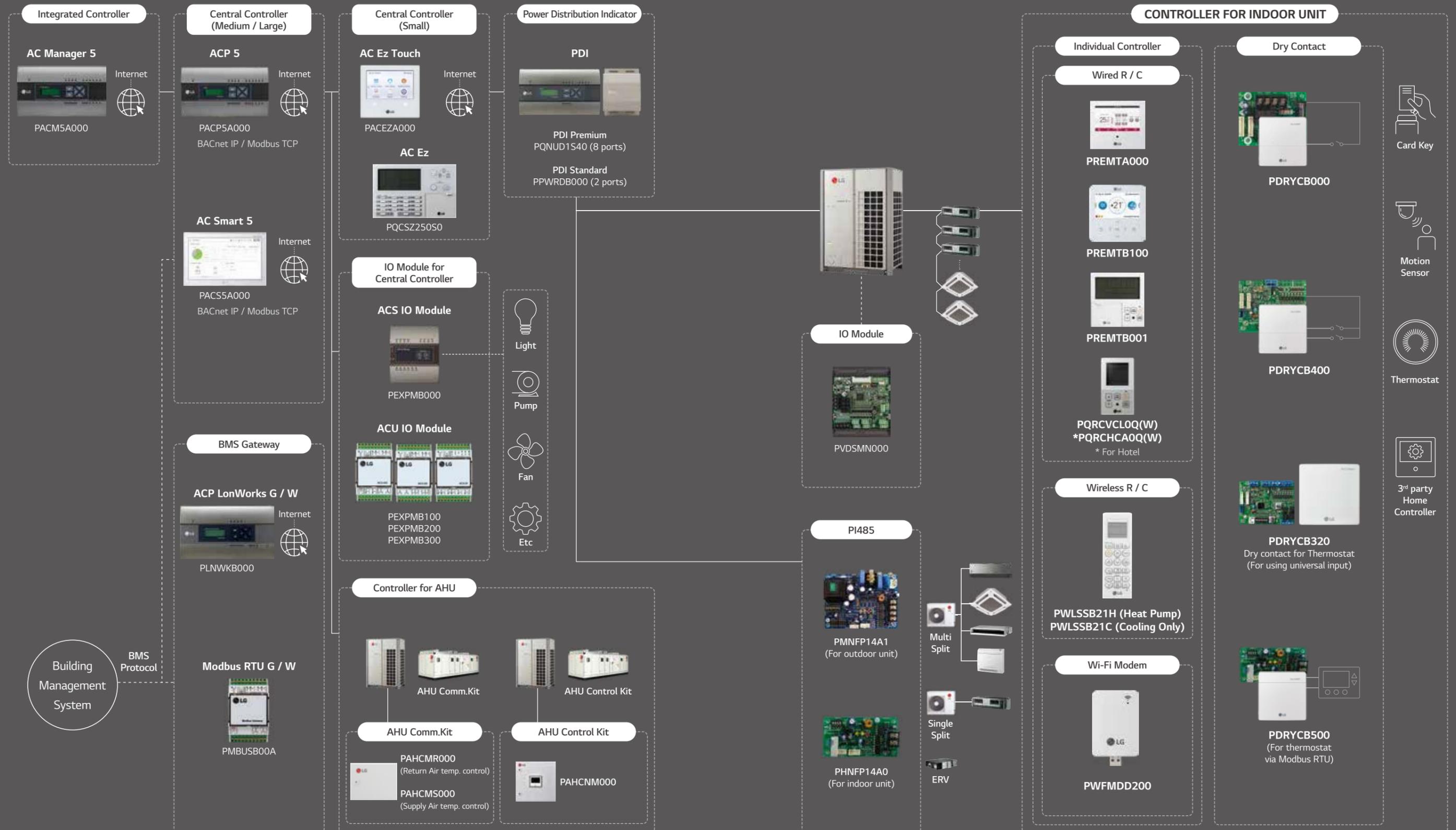
AC Manager 5



AC Ez Touch

CONTROL SYSTEM ARCHITECTURE

LG BECON HVAC SOLUTION offers a diverse range of effective control solutions that satisfy specific needs of each building and its user scene. These control systems are equipped with user-friendly interface, flexible interlocking environment, energy management and smart individual controller for optimized controlling conditions and smart building management.





Feature Functions

| Controller Name | Wired Remote Controller | | | | | Wireless Remote Controller | Wi-Fi Modem | |
|-----------------------------|---|------------------------|------------------------|-------------------------|-------------------------|------------------------------------|---------------|--------------|
| | Premium | Standard III | Standard II | Simple | Simple (Hotel) | | | |
| Model Name | | | | | | | | |
| | PREMTA000 PREMTA000A PREMTA000B | PREMTB100 PREMTBB10 | PREMTB001 PREMTBB01 | PQRCVCL0Q PQRCVCL0QW | PQRCHCA0Q PQRCHCA0QW | PWLSSB21H (H/P) PWLSSB21C (C/O) | PWFMDD200 | |
| Basic | On / Off | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Fan Speed Control | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Temperature Setting | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Mode | ○ | ○ | ○ | ○ | - | ○ | |
| | Auto Swing | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Vane Control (Louver Angle) | ○ | ○ | ○ | ○ | ○ | ○ | |
| | E.S.P (External Static Pressure) | ○ | ○ | ○ | ○ | ○ | - | |
| | Electric Failure Compensation | ○ | ○ | ○ | ○ | ○ | - | |
| | Indoor Temperature Display | ○ | ○ | ○ | ○ | ○ | ○ | |
| | All Button Lock (Child Lock) | ○ | ○ | ○ | ○ | ○ | - | |
| Schedule / Timer | Weekly - Yearly | Weekly - Yearly | Weekly | - | - | Sleep / On / Off | Weekly | |
| Wi-Fi AP Mode Setting | ○ | ○ | ○ | ○ | ○ | ○ | - | |
| Advanced | Additional Mode Setting ¹⁾ | ○ | ○ | ○ | - | - | - | |
| | Time Display | ○ | ○ | ○ | - | - | ○ | |
| | Humidity Display | ○ | ○ | - | - | - | - | |
| | Advanced Lock (Mode, Set point, Set point range, On / Off Lock) | Advanced Lock | Advanced Lock | - | - | - | - | |
| | Filter Sign | ○ | ○ | ○ | - | - | - | |
| | Energy Management ²⁾ | ○ | ○ | ○ | - | - | - | |
| | Dual Set Point | ○ | ○ | - | - | - | - | |
| | Human Detection | - | ○ | - | - | - | - | |
| | Temp. Humidity Compensation | ○ | ○ | - | - | - | - | |
| | Air Purify Control | - | ○ | - | - | - | ○ | |
| Air Quality Level | - | ○ | - | - | - | - | | |
| Dual Vane (6 Airflows mode) | - | ○ | - | - | - | ○ | | |
| ETC | Operation Status LED | ○ | ○ | ○ | ○ | ○ | - | |
| | Wireless Remote Controller Receiver | ○ ³⁾ | - | ○ ³⁾ | ○ ³⁾ | ○ ³⁾ | - | |
| | Display | 5 inch Color | 4.3 inch Color | 4.3 inch mono | 2.6 inch mono | 2.6 inch mono | 2 inch mono | |
| | Size (W x H x D, mm) | 137 x 121 x 16.5 | 120 x 120 x 16 | 120 x 121 x 16 | 70 x 121 x 16 | 70 x 121 x 16 | 51 x 153 x 26 | 48 x 68 x 14 |
| | Black Control for Screen Saver | ○ | ○ | - | - | - | - | |

※ ○ : Applied, - : Not Applied
 1) It might not be indicated or operated at the partial product.
 2) Centralized control (PACEZA000 / PACS5A000 / PACP5A000 / PLNWK000) and PDI (PQNUD1S40 / PPWRDB000) should be installed for this function.
 3) For ceiling type duct
 Note :
 1. Indoor unit should have functions requested by the controller.
 2. If you need more detail, please refer to the manual of product. (<http://partnerlge.com> : Home > Doc.Library > Manual)



Design

- 4.3 inch color LCD / Intuitive GUI
- Seamless design / Touch button
- Humidity sensor embedded

Comfort & Air Purification

- CO₂ level monitoring (For ERV)
- Air quality level monitoring
- Air purify control

Energy Contents

- Power consumption monitoring
- Operation time monitoring
- Temperature setback
- Time limit control

Advanced Functions

- Comfort cooling setting
- Smart Load Control setting
- Outdoor unit low noise setting
- Defrost noise setting
- ODU capacity control
- Schedule functions



Touch Button



Comfort Level

Energy Contents



Error History

Standard III Wired Remote Controller

PREMTB100 (White) / PREMTBB10 (Black)

4.3 inch colored screen with modern design.



New Modern Design



Comfort & Reliability (Air Purify)



Schedule



Convenience



Energy Management



Interlocking

| MODEL NAME | PREMTB100 / PREMTBB10 |
|--|--|
| On / Off | ○ |
| Fan Speed Control | ○ |
| Temperature Setting | ○ |
| Mode | Cool / Heat / Dry / Fan / Auto |
| Additional Mode Setting ¹⁾ | Energy-Saving Cooling / Robot Cleaning / Heater / Humidification / Comfort Cooling |
| Auto Swing | ○ |
| Vane Control (Louver direction) | ○ |
| E.S.P (External Static Pressure) ²⁾ | ○ |
| Reservation | Simple / Sleep / On & Off timer / Weekly / Yearly / Holiday |
| Time Display | ○ |
| Electric Failure Compensation | ○ |
| Lock | All / On & Off / Mode / Set temperature range |
| Filter Sign | ○ (Remain time + Alarm) |
| Energy Management | Check Energy Usage ³⁾ / Check Operation Time / Target Setting (Energy, Operation Time) / Time Limit Operation / Alarm Popup / Initialization Usage Data |
| Operation Status LED | ○ |
| Air Purify Control ⁴⁾ | ○ |
| Air Quality Level ⁴⁾ | ○ |
| Indoor Temperature Display | ○ |
| Indoor Humidity Display | ○ |
| Human Detection | ○ |
| Display | 4.3 inch TFT color LCD (480 x 272) |
| Size (W x H x D, mm) | 120 x 120 x 16 |
| Black Light for Screen Saver | ○ |
| Home Leave | 2 set points control |

※ ○ : Applied, - : Not Applied
 1) The function is available in some product. (Refer to the product data Book).
 2) This function is available for duct type.
 3) This function requires PDI (PQNUD1S40 / PPWRDB000) to be installed.
 4) This function is available for indoor units that provide corresponding function.
 Note:
 1. Indoor unit needs to have functions requested by the controller.
 2. 2 set points control works normally with MULTI V Heat Recovery and Single Split Heat Pump. But in case of MULTI V Heat Pump, It may not work properly.

Standard III Wired Remote Controller

Air Quality Level Display

Easy check for indoor air quality

· PM10 / PM2.5 / PM1.0 · Status / Monitoring



| CLASSIFICATION | GOOD | MODERATE | UNHEALTHY | POOR |
|-------------------|--------|----------|-----------|-------|
| * PM10 (µg / m3) | 0 - 54 | 55 - 154 | 155 - 254 | 255 - |
| * PM2.5 (µg / m3) | 0 - 12 | 13 - 35 | 36 - 55 | 56 - |
| * PM1.0 (µg / m3) | 0 - 12 | 13 - 35 | 36 - 55 | 56 - |

Note : Display color may change depending on the region / country.
 This function is available for indoor units that provide corresponding function.
 * PM (Particulate matter)
 - PM10 : Coarse Particulate matter / PM2.5 : Fine Particulate matter / PM1.0 : Ultra Fine Particulate matter
 - PM designated as a carcinogen as like an asbestos, widely known as carcinogen.
 - If the dust diameter is under 10 micrometers, it is PM10. And under 2.5 micrometers, it's PM2.5.

Environment Display

Displaying environment information for the more user comfort

Temperature / Humidity / Comfort level / CO₂ concentration



Dual Set Point

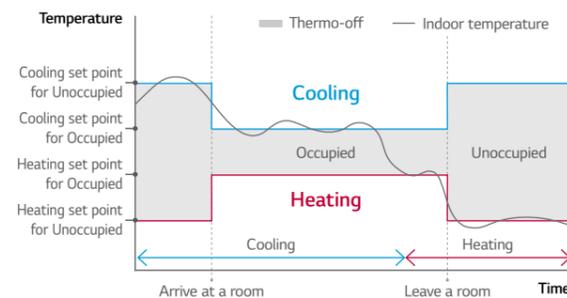
Auto changeover for convenience

- Indoor unit will keep the indoor temperature within the range of dual set point by automatically switching the unit operation.

Setback for energy savings and comfort

- In the user's absence, the room temperature will remain between two set points rather than switching off, providing quick comfort when the mode is changed to 'occupied'.

* This function is for Heat Recovery system or Single heat pump. Otherwise it is not guaranteed.

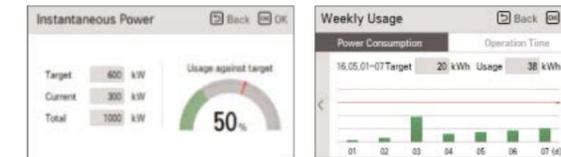


Energy Savings

Energy Management

- Energy Monitoring & Alarm
 Real-time and day / week / month / year energy usage monitoring is possible. In addition, it can set target for energy usage and operation time, and alarm will be displayed when exceeded.

* PDI (PQNUD1S40 / PPWRDB000) is required.



Instantaneous Power Check Energy Usage Target Setting

Time Limit Control

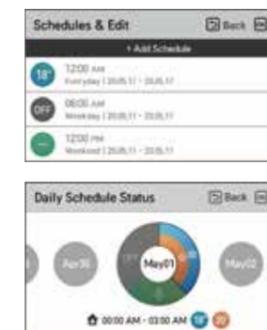
- Monitoring the unit's continuous running time.
 And prevent the wasting energy by turning the unit off automatically.



Schedule Function

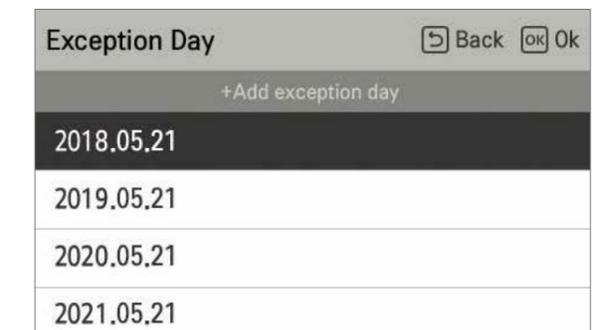
Simple Schedule Status

Standard III remote controller provides clock type daily schedule.



Exception Day Settings

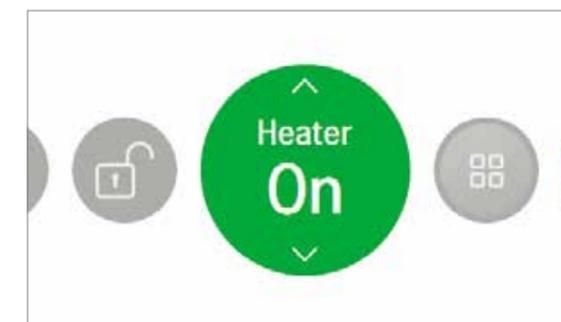
Possible to set up exceptional date on regular schedule.



External Device On / Off

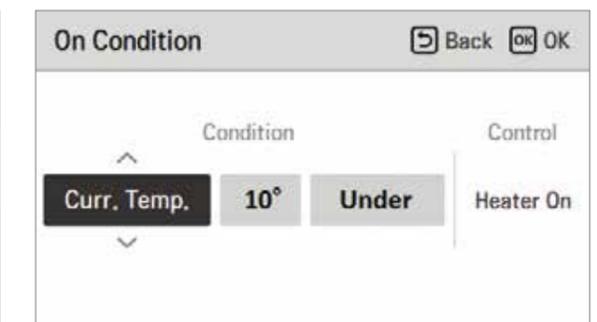
External Equipment Control

User can control the external equipment through additional contact signal output.



Customized Interlocking Control

User can create a automatic control pattern. For example, turning the temperature drops below or rises above a certain temperature.



Premium Wired Remote Controller



Full Touch Screen



PREMTA000 ¹⁾ / PREMTA000A ²⁾ / PREMTA000B ³⁾

5 inch full touch screen with a premium design.



* Supported languages list
 1) English / Portuguese / Spanish / French
 2) English / Italian / Russian / Chinese
 3) English / German / Polish / Czech

| MODEL NAME | PREMTA000 / PREMTA000A / PREMTA000B |
|--|--|
| On / Off | ○ |
| Fan Speed Control | ○ |
| Temperature Setting | ○ |
| Mode | Cool / Heat / Dry / Fan / Auto |
| Additional Mode Setting ¹⁾ | Energy-Saving Cooling / Robot Cleaning / Heater / Humidification |
| Auto Swing | ○ |
| Vane Control (Louver direction) | ○ |
| E.S.P (External Static Pressure) ²⁾ | ○ |
| Reservation | Simple / Sleep / On / Off / Weekly / Yearly / Holiday |
| Time Display | ○ |
| Electric Failure Compensation | ○ |
| Child Lock | ○ |
| Filter Sign | ○ (Remain time + Alarm) |
| Energy Management | Check Energy Usage ³⁾ / Check Operation Time / Target Setting (Energy, Operation Time) / Time Limit Operation / Alarm Popup / Initialization Usage Data |
| Operation Status LED | ○ |
| Indoor Temperature Display | ○ |
| Wireless Remote Controller Receiver | ○ ⁴⁾ |
| Display | 5 inch TFT color LCD (480 x 272) |
| Size (W x H x D, mm) | 137 x 121 x 16.5 |
| Black Light for Screen Saver | ○ |
| Home Leave | 2 set points control |

※ ○ : Applied, - : Not Applied
 1) It might not be indicated or operated at the partial product.
 2) This function is available for duct type.
 3) This function requires PDI (PQNUD1S40 / PPWRDB000) to be installed.
 4) For ceiling type ducted unit
 Note : 1. Indoor unit needs to have functions requested by the controller
 2. 2 set points control works normally with MULTI V Heat Recovery and Single Split Heat Pump. But in case of MULTI V Heat Pump, It may not work properly

Easy Energy Management

- Check the operation hour or electricity usage
- Comparison of usage by year
- Set the target usage and time



Easy Scheduling

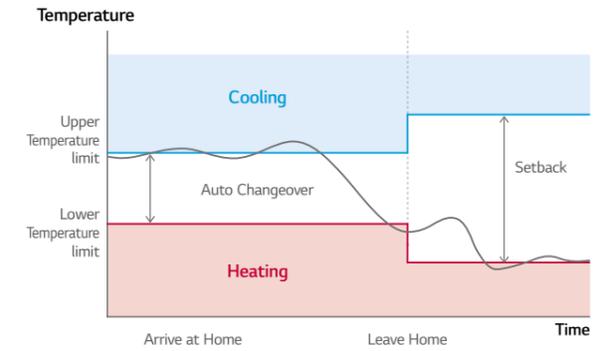
- Daily, Weekly, Yearly schedule function
- Schedule pattern setting
- Schedule copy



Dual Set Point

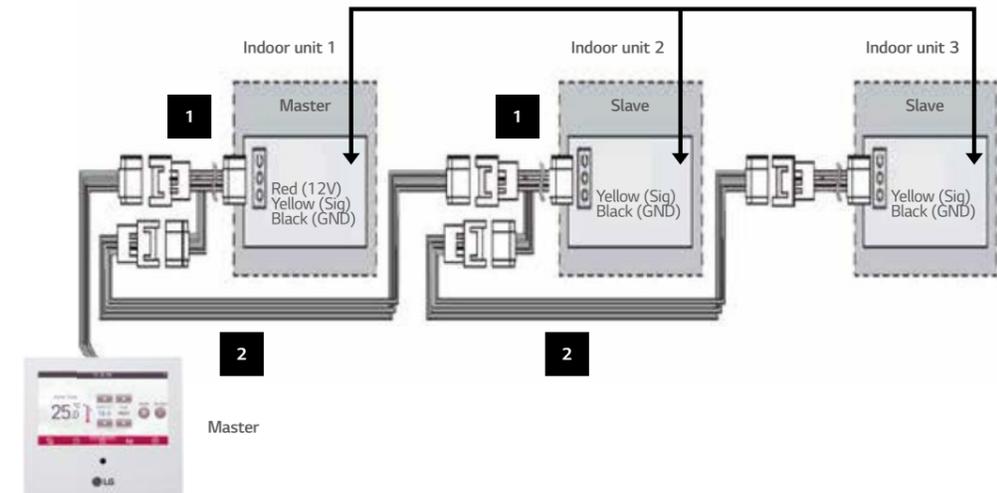
- Auto changeover switching the operation mode automatically
- Setback (Leave Home) Changing status by occupied / unoccupied

* This function is only for Heat Recovery system and Single heat pump.



Group Control

- Max. 16 Indoor units by one remote controller



Standard II Wired Remote Controller

PREMTB001 / PREMTBB01

Providing easy control of one or a group of indoor units with various functions.



Features & Benefits

- Wired remote controller that can implement various functions such as scheduling or filter alert.

| MODEL NAME | PREMTB001 / PREMTBB01 |
|-------------------------------------|--|
| On / Off | ○ |
| Fan Speed Control | ○ |
| Temperature Setting | ○ |
| Mode | Cool / Heat / Dry / Fan / Auto |
| Additional Mode Setting | Energy-Saving Cooling / Robot Cleaning / Heater / Humidification |
| Auto Swing | ○ |
| Vane Control (Louver direction) | ○ |
| E.S.P (External Static Pressure) | ○ |
| Reservation | Simple / Sleep / On / Off / Weekly / Holiday |
| Time Display | ○ |
| Electric Failure Compensation | ○ |
| Child Lock | ○ |
| Filter Sign | ○ (Remain time + Alarm) |
| Operation Status LED | ○ |
| Indoor Temperature Display | ○ |
| Wireless Remote Controller Receiver | ○ ¹⁾ |
| Size (W x H x D, mm) | 120 x 121 x 16 |
| Black Light | ○ |
| Power Consumption Monitoring | ○ ²⁾ |
| Check Model Information | ○ |

※ ○ : Applied, - : Not Applied
 1) For ceiling type ducted unit
 2) This function requires PDI (PQNUD1S40 / PPWRDB000) to be installed.
 Note : Indoor unit needs to have functions requested by the controller.

Simple Wired Remote Controller

PQRCVLOQW (White) / PQRCVLOQ (Black) / PQRCHCA0QW (White) / PQRCHCA0Q (Black)

A simple way to control office or hotel systems in a compact design.



Features & Benefits

- Small remote control with minimal functionality.

| MODEL NAME | PQRCVLOQW / PQRCVLOQ | PQRCHCA0QW / PQRCHCA0Q |
|-------------------------------------|--------------------------------|------------------------|
| On / Off | ○ | ○ |
| Fan Speed Control | ○ | ○ |
| Temperature Setting | ○ | ○ |
| Mode | Cool / Heat / Dry / Fan / Auto | - |
| Auto Swing | ○ | ○ |
| Vane Control (Louver direction) | ○ | ○ |
| E.S.P (External Static Pressure) | ○ | ○ |
| Electric Failure Compensation | ○ | ○ |
| Child Lock | ○ | ○ |
| Indoor Temperature Display | ○ | ○ |
| Wireless Remote Controller Receiver | ○ ¹⁾ | ○ ¹⁾ |
| Size (W x H x D, mm) | 70 x 121 x 16 | 70 x 121 x 16 |
| Black Light | ○ | ○ |

※ ○ : Applied, - : Not Applied
 1) For ceiling type ducted unit
 Note : Indoor unit needs to have functions requested by the controller.

Wireless Remote Controller

PWLSSB21H (Heat Pump), PWLSSB21C (Cooling Only)

Handy and portable wireless type.



Features & Benefits

- Easy to use while moving.
- Main functions are available.

| MODEL NAME | PWLSSB21H (H/P), PWLSSB21C (C/O) |
|---------------------------------|--|
| On / Off | ○ |
| Fan Speed Control | ○ ¹⁾ |
| Temperature Setting | ○ |
| Mode | Cool / Heat / Dry / Fan / Auto |
| Additional Mode Setting | Air Purification / Energy-Saving Cooling / Robot Cleaning / Auto Dry |
| Auto Swing | ○ |
| Vane Control (Louver direction) | ○ |
| Reservation | Sleep / On / Off |
| Time Display | ○ |
| Indoor Temperature Display | ○ |
| Sleep Mode Auto | Max. 7 hours |
| Size (W x H x D, mm) | 51 x 153 x 26 |

※ ○ : Applied, - : Not Applied
 1) For some products, you can use "slow" fan speed function.

Wi-Fi Modem



※ Search "LG ThinQ" on Google play or Appstore then download the app.
 ※ Internet service with Wi-Fi connection has to be available.

PWFMDD200

Control conditioners by using internet devices as Android or iOS smartphones.



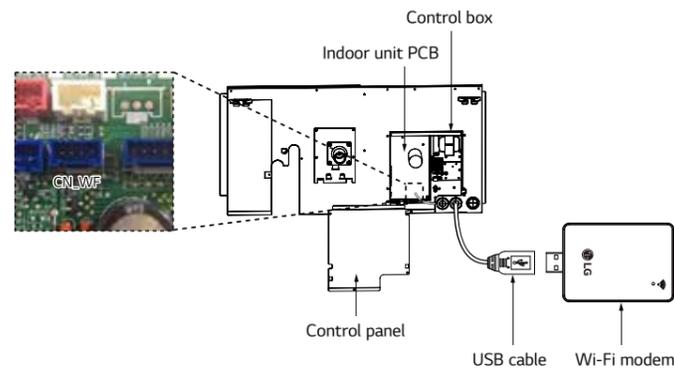
Features & Benefits

- User can enjoy anytime, anywhere access with Wi-Fi equipped device through LG's ThinQ mobile app.
 - This allows the user to access the unit remotely to switch unit on or off before or after leaving the vicinity.
 - LG's exclusive Home Appliances control app (LG ThinQ) is available.
 - Simple operation for various functions.
- On / Off
 - Operation Mode
 - Current / Set Temperature
 - Fan Speed
 - Vane Control ¹⁾
 - Reservation (Sleep, Weekly On / Off)
 - Energy Monitoring ²⁾
 - Filter Management
 - Error Check
 - Air Purify ³⁾

| MODEL NAME | PWFMDD200 |
|--------------------------|--|
| Size (W x H x D, mm) | 48 x 68 x 14 |
| Interfaceable Products | System Air Conditioner ³⁾ |
| Connection Type | Indoor unit 1:1 |
| Communication Frequency | 2.4 GHz |
| Wireless Standards | IEEE 802.11b / g / n |
| Mobile Application | LG ThinQ (Android v4.1(Jellybean) or higher, iPhone iOS 9.0 or higher) |
| Optional Extension Cable | PWYREW000 (10m extension) |

1) Vane Control may not be possible according to the type of Indoor unit.
 2) LG Centralized controller and PDI installation is required for this function.
 3) For the compatibility with Indoor unit, please contact regional LG office.
 Note :
 1. Functionality may be different according to each IDU model.
 2. User interface of application shall be revised for its design and contents improvement.
 3. Application is optimized for smartphone use, so it may not be well functioning with tablet devices.

Installation Scene



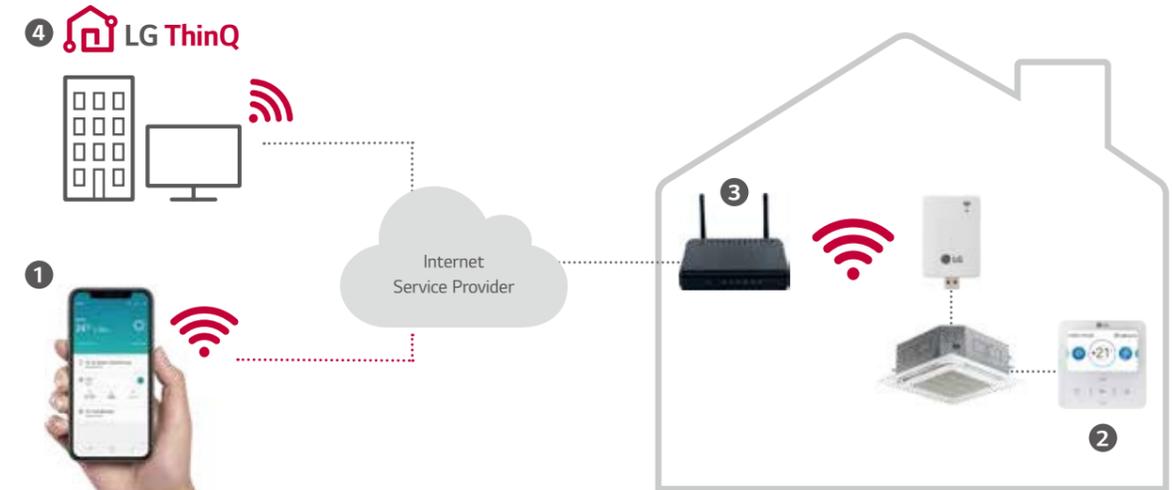
※ The Wi-Fi communication distance and reliability may vary due to the type of Wi-Fi router and the installation environment, Please refer to the manual.

LG ThinQ Connectivity

Connection (Pairing) Order

- 1 Make LG account on LG ThinQ (Application) and login.
- 2 Select the installed product and set AP (Access Point) mode by wired / wireless remote controller.
- 3 Select the Wi-Fi network that will be used and insert the passwords.
- 4 Product registration progress is completed.

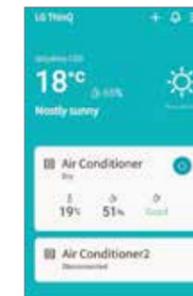
* 5GHz networks may not be supported.



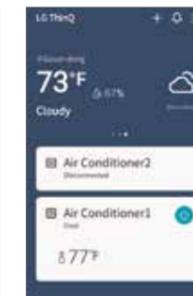
LG ThinQ Mobile App

Simple operation for various functions

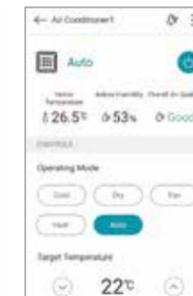
On, Off, Current Temp., Mode, Set Temp.



<Day>



<Night>



Vane Control

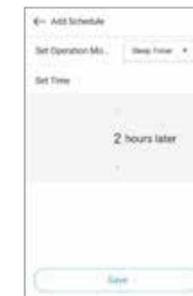


Air Purify



Easy Management

Reservation



Energy Monitoring

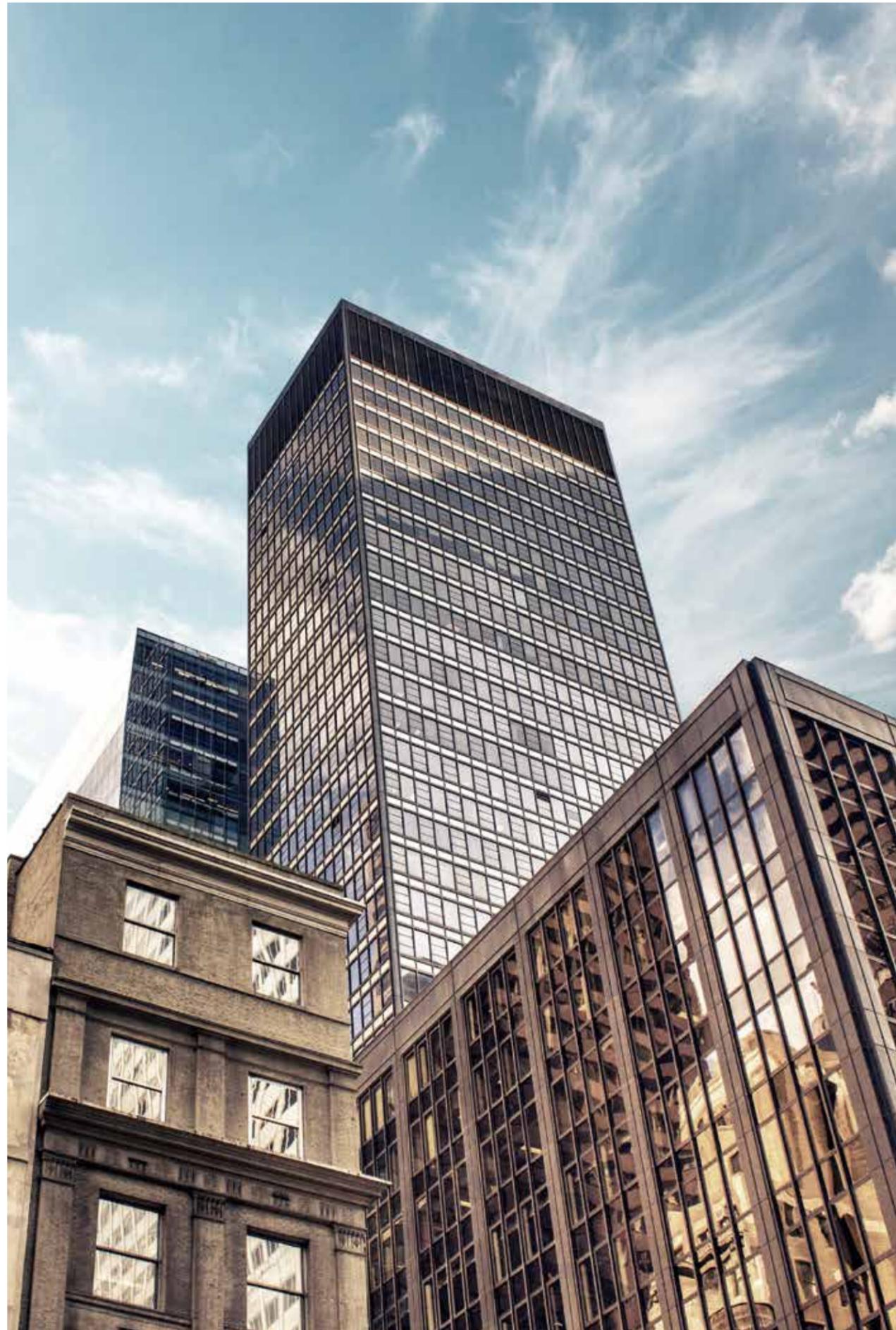


Smart Diagnosis



Filter Management



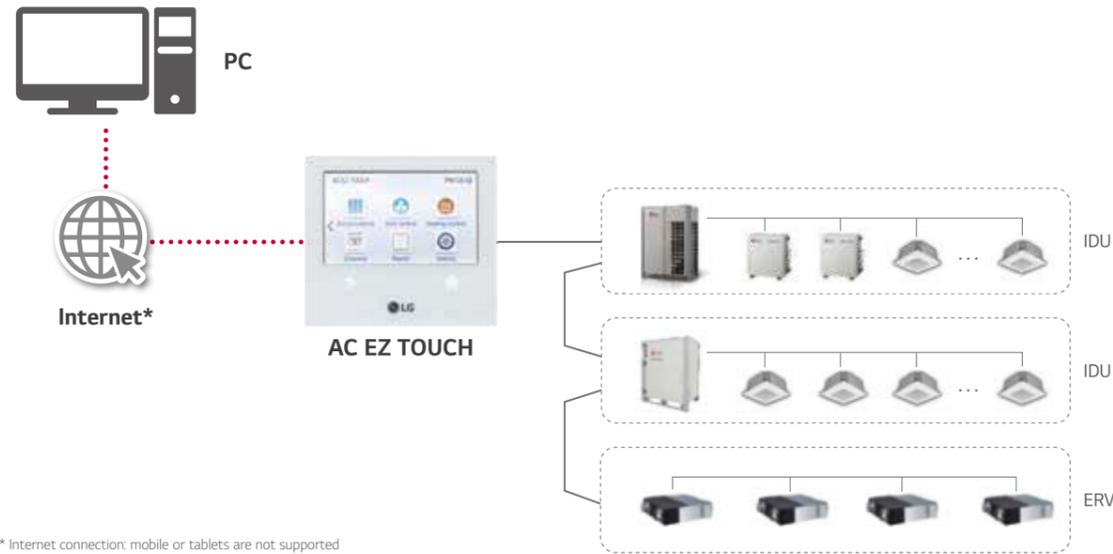


Feature Functions

| Controller Name | | AC Ez | AC Ez Touch | AC Smart 5 ⁶⁾ | ACP 5 ⁶⁾ | ACP LonWorks | AC Manager 5 ⁷⁾ | |
|---------------------------------------|---------------------------------------|-------------------------------|-----------------|--------------------------|--------------------------|---------------------------|----------------------------|---------|
| Model Name | | | | | | | | |
| | | PQCSZ250S0 | PACEZA000 | PACS5A000 | PACP5A000 | PLNWKB000 | PACM5A000 | |
| Product | DO | - | - | 2 | 4 | 2 | - | |
| | DI | - | 1 | 2 | 10 | 2 | - | |
| | Max. Connectable No. | IDUs | 32 | 64 | 128 | 256 | 64 | 8,192 |
| | | ERV | 32 | 64 | 128 | 256 | 64 | 8,192 |
| | | A / C + ERV | 32 | 64 | 128 | 256 | 64 | 8,192 |
| | | AHU | - | - | 16 | 16 | 16 ⁵⁾ | 16 x 32 |
| | | Chiller | - | - | 5 Optional ⁴⁾ | 10 Optional ⁴⁾ | - | 10 x 32 |
| Commercial Air Purifier ¹⁾ | - | - | 64 | 128 | - | 128 x 32 | | |
| Compatibility | Air Conditioner | ○ ³⁾ | ○ | ○ | ○ | ○ | ○ | |
| | Ventilation (ERV / ERV DX) | ○ ⁴⁾ | ○ | ○ | ○ | ○ | ○ | |
| | Heating | - | ○ | ○ | ○ | ○ | ○ | |
| | AHU | - | - | ○ | ○ | ○ | ○ | |
| | Chiller | - | - | ○ ⁵⁾ | ○ ⁵⁾ | - | ○ | |
| | Commercial Air Purifier ¹⁾ | - | - | ○ ⁵⁾ | ○ ⁵⁾ | - | ○ | |
| | ACS IO | - | - | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| Additional Function | Add Drawing | - | - | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| | Group Management | - | ○ | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| | Auto Changer Over | - | ○ | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| | Set Back | - | ○ | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| | Dual Setpoint | - | ○ | ○ | ○ | ○ ⁵⁾ | ○ | |
| | Change Alarm | - | Filter | Filter | Filter | Filter | Filter | |
| | Indoor Unit Lock | ○ ⁸⁾ | ○ | ○ | ○ | ○ ⁵⁾ | - | |
| | Cycle Monitoring | - | - | ○ | ○ | ○ ⁵⁾ | ○ | |
| | Air Purify | - | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | - | ○ | |
| | Schedule | ○ | ○ | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| Auto Control | Peak Control | Energy & Priority Control | - | ○ | ○ | ○ ⁵⁾ | ○ | |
| | | Outdoor Unit Capacity Control | - | - | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ |
| | Time limit control | - | - | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| | Interlocking | - | - | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| Energy Navigation | Power | - | ○ | ○ | ○ | ○ ⁵⁾ | ○ | |
| | Gas | - | - | ○ | ○ | ○ ⁵⁾ | ○ | |
| | Run time | - | - | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| | Save to PC / USB (Excel) | - | - | PC / USB ⁵⁾ | PC | PC | PC | |
| Trend Reporting | Report (Control / Error) | - | Error | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| | Send Email | - | - | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| | Save to PC / USB (Excel) | - | - | PC / USB ²⁾ | PC ²⁾ | ○ ⁵⁾ | PC ²⁾ | |
| etc | Summer Time | - | ○ | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| | Outdoor Unit Oil-Return Operation | - | - | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | - | |
| | User Authority | - | Password | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |
| | PC Access | - | ○ | ○ ⁵⁾ | ○ ⁵⁾ | ○ ⁵⁾ | ○ | |

※ ○ : Applied, - : Not Applied
 1) The Commercial Air purifier must additionally install PI485 (PHNFP14A0).
 2) Save to PC / USB function will be available from 2021.
 3) Except for some feature (Individual lock, Limit temp, etc.)
 4) Except for some feature (User mode, additional function, etc.)
 5) This function is not applied for BMS points.
 6) Without additional device, ACP 5 and AC Smart 5 provide BACnet IP and Modbus TCP interface for BMS.
 7) ACP 5 or AC Smart 5 is required.
 8) Hard Lock

AC EZ Touch



* Internet connection: mobile or tablets are not supported

PACEZA000

Smart management with 5 inch touch screen for small site.



| MODEL NAME | PACEZA000 |
|--|---|
| Size (W x H x D, mm) | 137 x 121 x 25 |
| Interfaceable Products | MULTI V / ERV / ERV DX / Hydro Kit / THERMA V |
| Maximum number of units | 64 |
| Individual / Group Control | On & Off / Mode / Temperature / Fan speed |
| Individual Controller Lock | Temperature / Mode / Fan speed / All |
| Error Check | ○ |
| Slave Mode (Interlocking with higher level controller) | ○ |
| Schedule | Weekly / Monthly / Yearly / Exception day |
| Remote Access | By client S/W (Neither Android nor IOS are supported) |
| Emergency Stop & Alarm Display | ○ |
| Power Consumption Monitoring (with PDI) | ○ |
| Auto Changeover / Setback | ○ |
| Temperature Limit | ○ |
| Operation History | Error record |
| ODU Low Noise ¹⁾ | ○ |
| Daylight Saving Time | ○ |
| External IO Port | DI 1 |
| IPv6 Support | ○ |
| Air Purify Control | ○ |
| Air Quality Level | ○ |

※ ○ : Applied, - : Not Applied
 1) It is only available in some products.

PC Access

Users can control each space efficiently through PC access.



* IPv6 supported
 - Open port 80 & 9300
 - Fix public IP is mandatory. Router configuration of NAT is required.

Energy Statistics (with PDI)

Statistics of operational status (Time, Power consumption) are provided to help make intelligent system operation decisions.

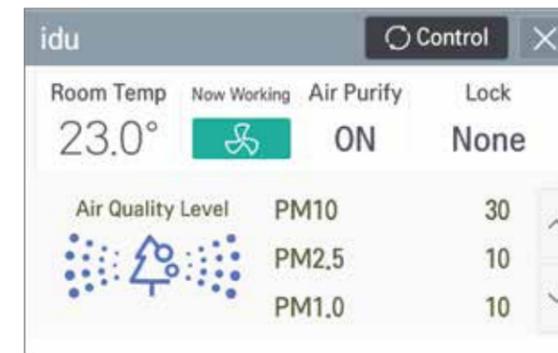
| Energy | | |
|----------------------|------------|------------------|
| 2020.2.8 ~ 2020.3.19 | | |
| Today Week Month | | |
| Name | Usage(kWh) | Accumulated(kWh) |
| Group1 | 110 | 3021 |
| Group2 | 150 | 6186 |
| Group3 | 130 | 4267 |
| Group4 | 120 | 7614 |

Energy Mode

When using energy mode function, operation Modes from cooling to fan or heating to off mode by force. (It is available only for operating indoor unit)



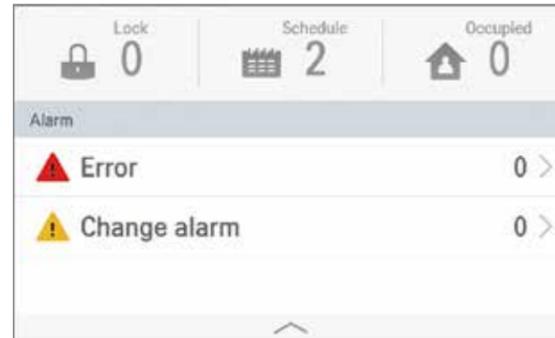
Air Purify Control & Monitoring



AC EZ Touch

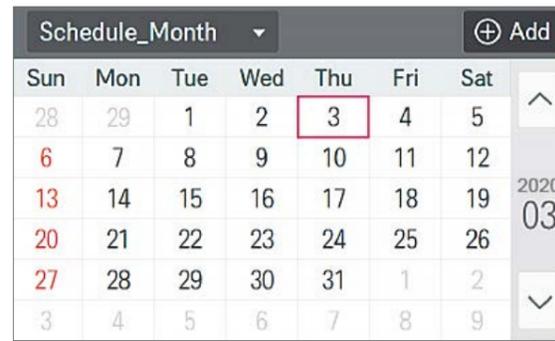
Alarm Indicator

It shows errors and alarm information. Users can respond immediately according to alarm indicator therefore HVAC system is monitored consistently.



Schedule

Schedule control allows user to set the events in advance to maximize system performance. Also, by blocking unnecessary operation, it prevents a waste of energy.

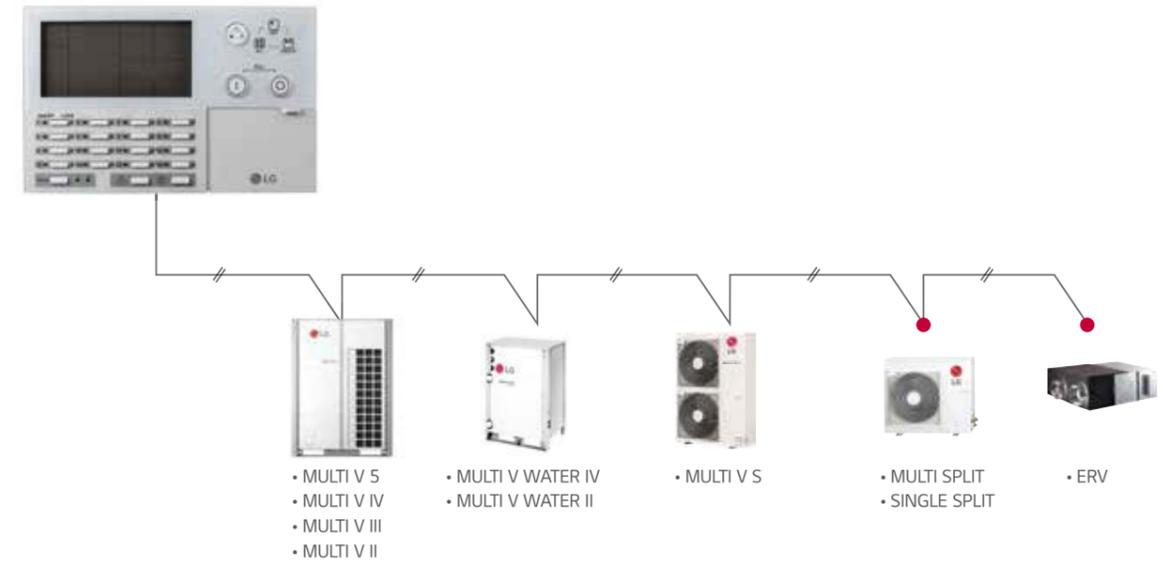


Group / Individual Control

User can control each indoor unit individually or by group by simply clicking each unit on control screen.



AC EZ



• Appropriate PI485 should be used according to PDB.

PQCSZ250S0

Easy to manage up to 32 indoor units, including ERV with simple interface.

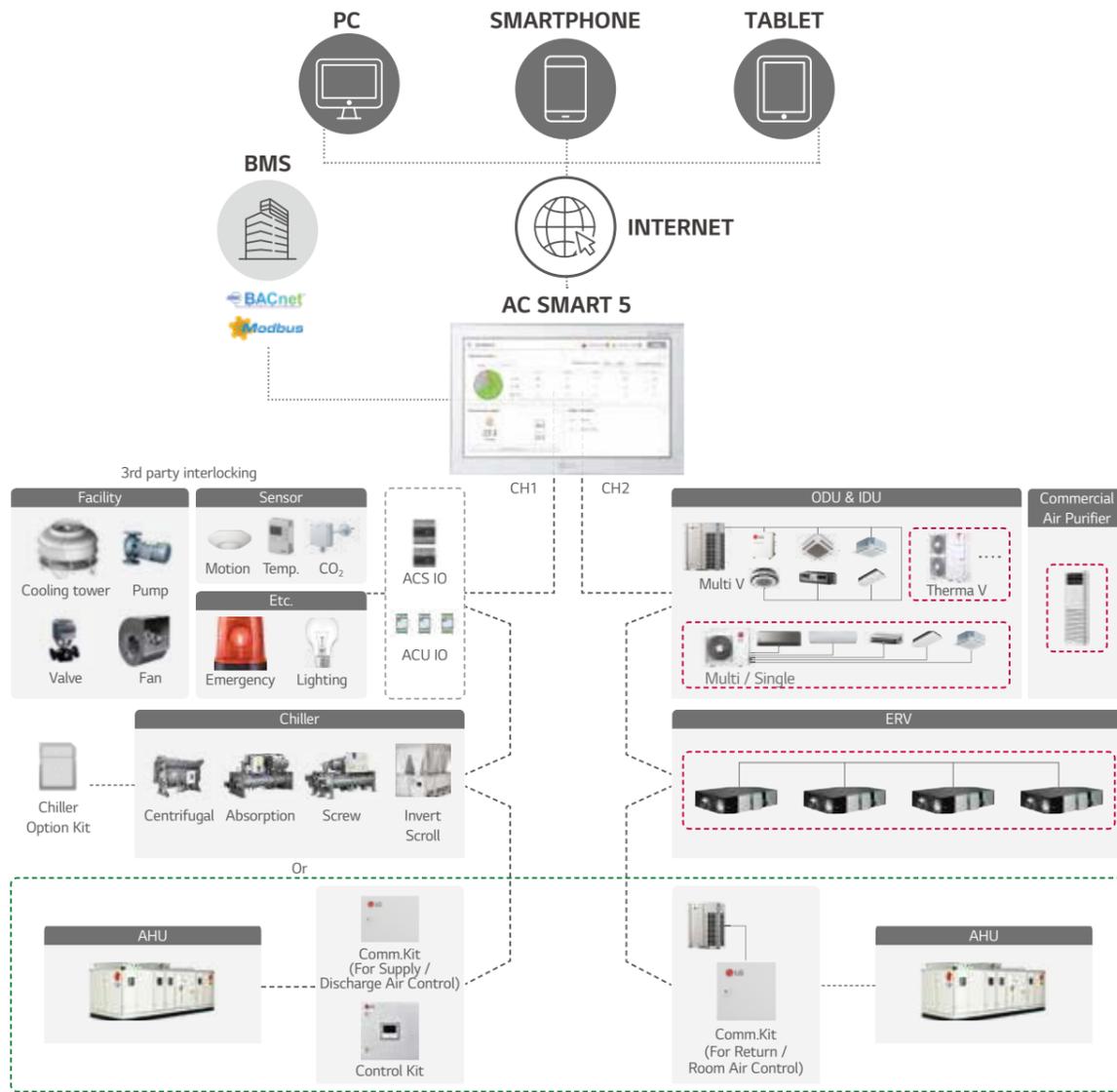


Features & Benefits

- 32 indoor units control
- Weekly Schedule
- Individual / Group Control

| MODEL NAME | PQCSZ250S0 |
|--|---|
| Size (W x H x D, mm) | 190 x 120 x 20 |
| Interfaceable Products | MULTI V / ERV / ERV DX |
| Display | LED / LCD Display |
| Power | DC12V, 1A |
| Maximum number of units | 32 |
| Individual / Group Control | On & Off / Mode / Temperature / Fan speed |
| Individual Controller Lock | All |
| Error Check | ○ |
| Slave Mode (Interlocking with higher level controller) | ○ |
| Schedule | Weekly |

※ ○ : Applied, - : Not Applied



⚡ According to CH1 setting, normal ODU can be connected to CH1.
 (Flexible wiring design with 2 ports)
 ⚡ Appropriate P1485 should be used according to PDB (Product Data Book).
 ⚡ For details, refer to the product PDB or manual.

AC Smart 5

PACSSA000

10-inch touch screen with HTML5 GUI (Graphic User Interface) for easy control.

| MODEL NAME | PACSSA000 |
|--|--|
| Size (W x H x D, mm) | 253.2 x 167.7 x 28.9 |
| Interfaceable Products | MULTI V / ERV / ERV DX / Hydro kit / THERMA V / AHU Kit / LG Chiller ¹⁾ / Commercial Air Purifier |
| Maximum number of units | 128 |
| Individual / Group Control | On & Off / Mode / Temperature / Fan speed |
| Individual Controller Lock | Temperature / Mode / Fan speed / All |
| Advanced Function Setting and Display ²⁾ | Comfort Cooling / ODU Low Noise / ODU Defrost Mode / Comfort Level display / CO2 Level display (for ERV / ERV DX) / Night Time Free Cooling (for ERV / ERV DX) |
| Error Check | ○ |
| Slave Mode (Interlocking with higher level controller) | ○ |
| Schedule | Weekly / Monthly / Yearly / Exception day |
| Web Access | ○ |
| Emergency Stop & Alarm Display | ○ |
| Power Consumption Monitoring (with PDI) | ○ |
| Auto Changeover / Setback | ○ |
| Temperature Limit | ○ |
| Operation Time Limit | ○ |
| Visual Navigation | ○ |
| Operation Trend | ○ |
| Air Purify Control | ○ |
| Air Quality Level | ○ |
| Interlock Control | ○ |
| Virtual Group Control | ○ |
| ODU Capacity Control | ○ |
| Energy Navigation (with PDI) | ○ |
| Daylight Saving Time | ○ |
| External IO Port | DI 2 / DO 2 |
| BMS Integration ³⁾ | BACnet IP / Modbus TCP |
| IPv6 Support | ○ |

※ ○ : Applied, - : Not Applied
 1) Chiller Option Kit (PCHLLN000) is required.
 2) It is only available in some products.
 3) For the detail point list, please refer to the installation manual.

AC Smart 5

Air Purify Total Solution

Air Purify Control

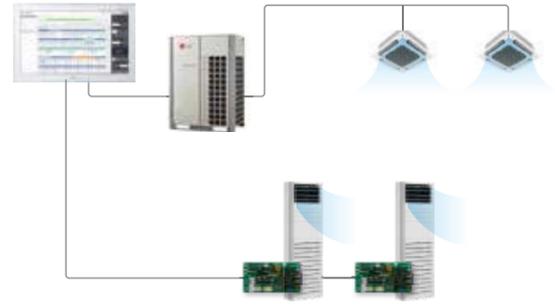


Air Quality Level Monitoring



System Air Conditioner

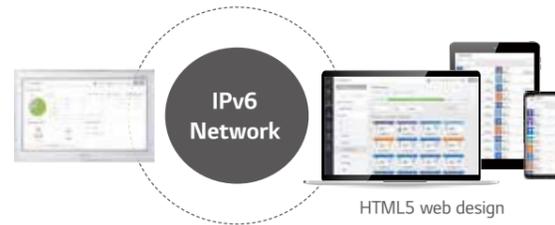
Commercial Air Purifier



* The Commercial Air purifier must additionally install PI485(PHNFP14A0).

Advanced Network Accessibility

AC Smart 5 reflects the state of the art of network technology trend. IPv6 (Internet Protocol version 6), which is the most recent version of the Internet Protocol provides accessibility to the IPv6 compatible network environment. In addition, HTML5 allows you to easily control LG HVAC system on a variety of platforms (PC, Mobile, Tablet), at any time and from any location, not just on the touch screen.



Visualized Control

Visual navigation enables controlling and monitoring the unit on floor, plan view for the intuitive management.



Multi Level Group Composition

User can make frequent and multi level group to control and monitor the device easily.



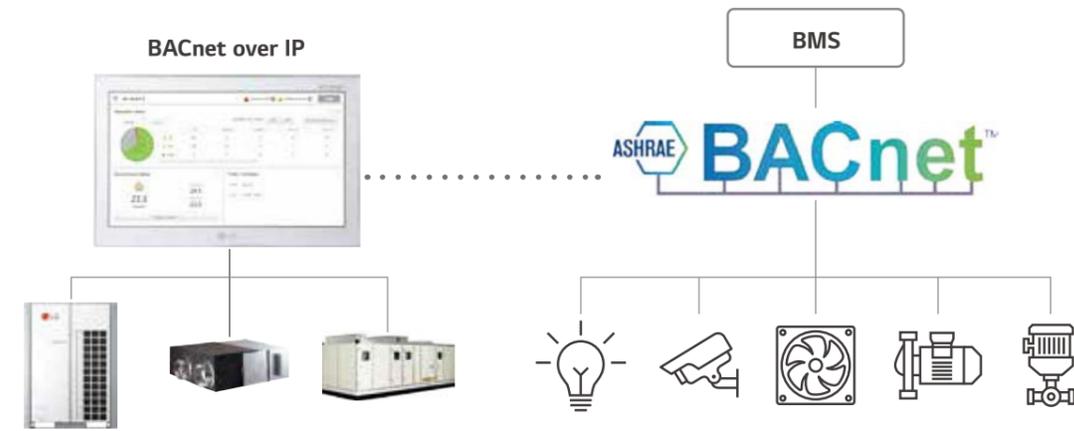
Energy Management

The energy navigation function allows the air conditioner's operational energy usage to be managed monthly, weekly and yearly. By analyzing present energy consumption and comparing with the plan, overuse of system operational costs can be prevented.



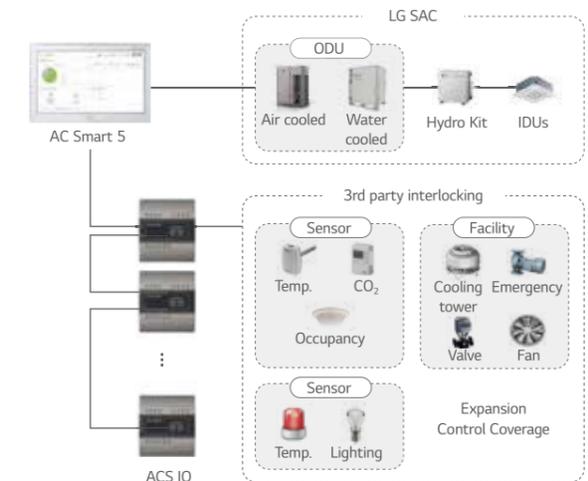
Building Management System (BMS) Integration

Without additional device, AC Smart 5 provides BACnet IP & Modbus TCP interface for BMS integration as well as its own management function.

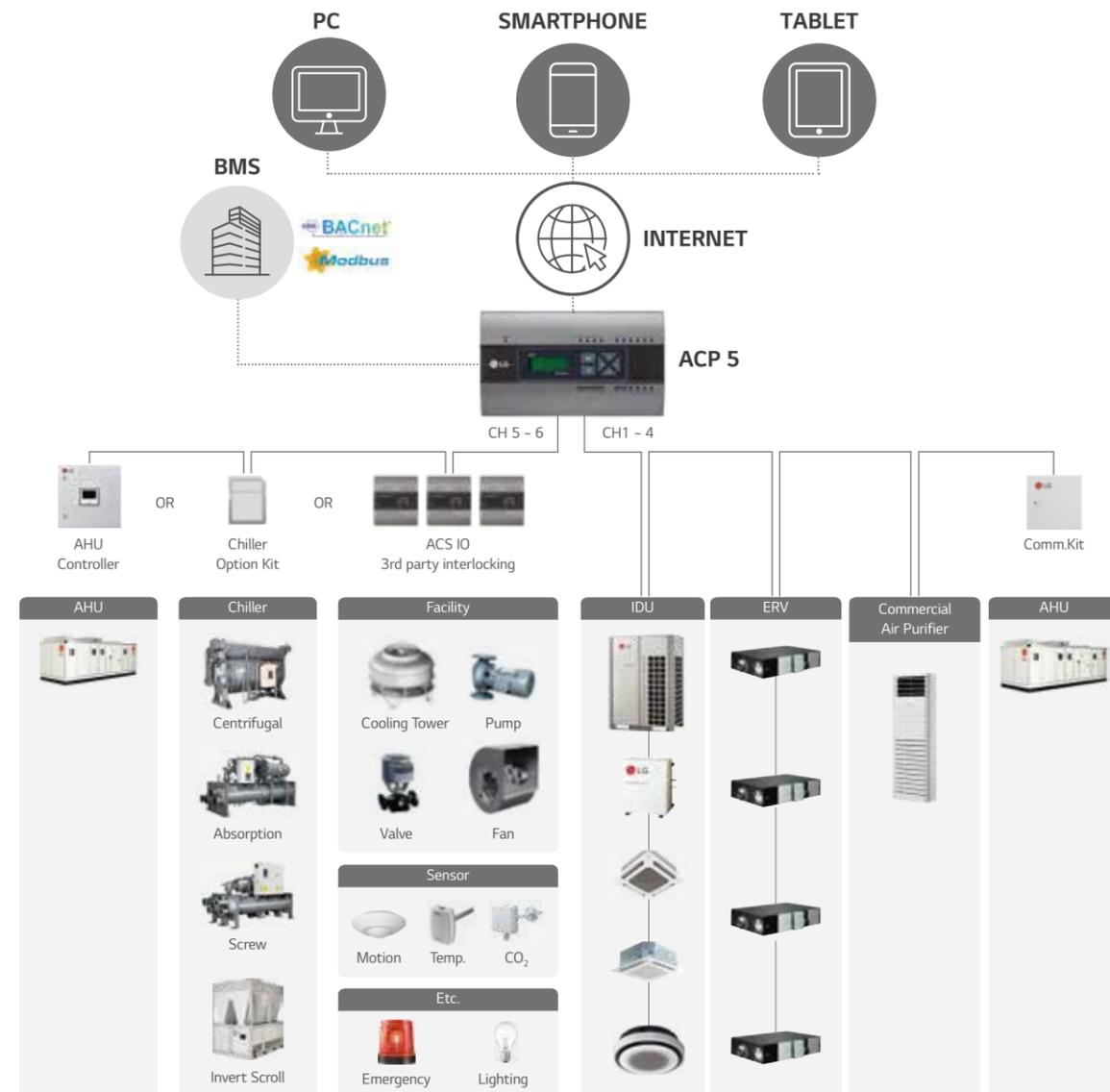


Interlocking with 3rd Party Equipment

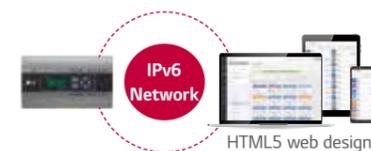
AC Smart 5 can make operation scenario with 3rd party equipment by ACS IO Module. Control coverage is expanded. (Air conditioner only → Sensors, Fans, Pumps, Switches...)



ACP 5

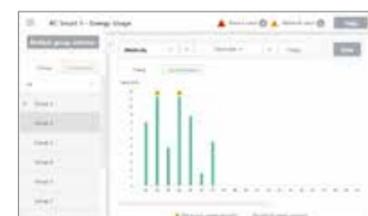


Advanced Network Accessibility

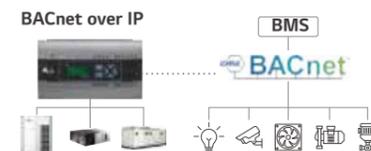


* Fix Public IP is mandatory.
* Router's Configuration of NAT is mandatory. Open port 80 & 9300.

Energy Navigation



BACnet IP & Modbus TCP



PACP5A000

Advanced solution for BMS integration up to 256 units via BACnet and Modbus protocol as well as its own smart management function with web server interface.



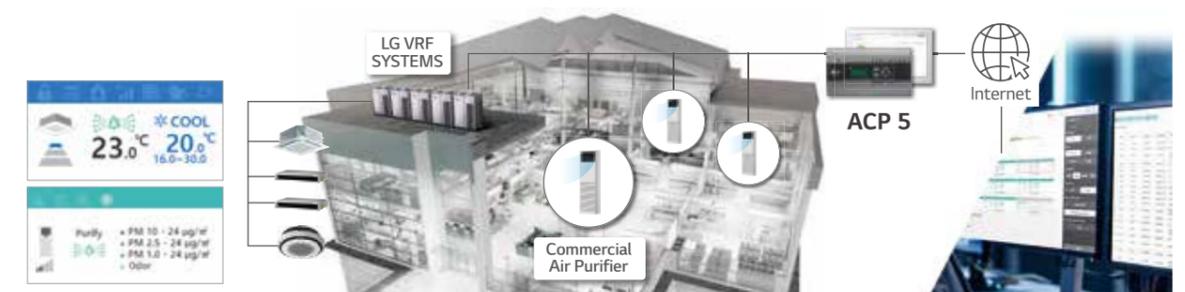
| MODEL NAME | PACP5A000 |
|---|--|
| Size (W x H x D, mm) | 270 x 155 x 65 |
| Interfaceable Products | MULTI V / ERV / ERV DX / Hydro kit / THERMA V / AHU Kit / LG Chiller ¹⁾ / Commercial Air Purifier |
| Maximum number of units | 256 |
| Individual / Group Control | On & Off / Mode / Temperature / Fan speed |
| Individual Controller Lock | Temperature / Mode / Fan speed / All |
| Advanced Function Setting and Display ²⁾ | Comfort Cooling / ODU Low Noise / ODU Defrost Mode / Comfort Level display / CO ₂ Level display (for ERV / ERV DX) / Night Time Free Cooling (for ERV / ERV DX) |
| Error Check | ○ |
| Schedule | Weekly / Monthly / Yearly / Exception day |
| Web Access | ○ |
| Emergency Stop & Alarm Display | ○ |
| Power Consumption Monitoring (with PDI) | ○ |
| Auto Changeover / Setback | ○ |
| Temperature Limit | ○ |
| Operation Time Limit | ○ |
| Visual Navigation | ○ |
| Operation Trend | ○ |
| Air Purify Control | ○ |
| Air Quality Level | ○ |
| Interlock Control | ○ |
| Virtual Group Control | ○ |
| ODU Capacity Control | ○ |
| Energy Navigation (with PDI) | ○ |
| Daylight Saving Time | ○ |
| External IO Port | DI 10 / DO 4 |
| BMS Integration ³⁾ | BACnet IP / Modbus TCP |
| IPv6 Support | ○ |

※ ○ : Applied, - : Not Applied
 1) Chiller Option Kit (PCHLLN000) is required.
 2) It is only available in some products.
 3) For the detail point list, please refer to the installation manual.

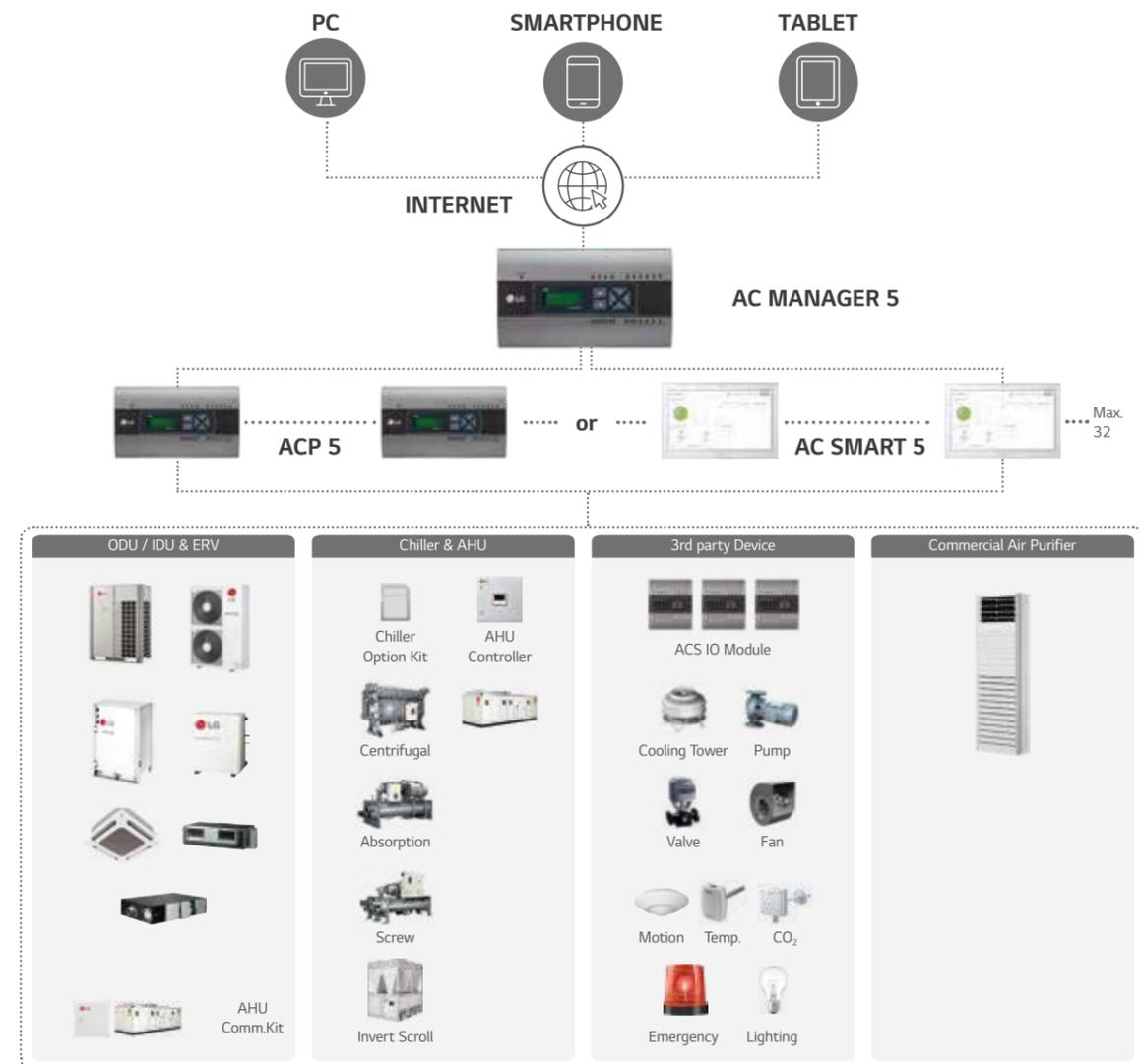
Air Purify Control / Monitoring

Integrated Management

The Commercial Air Purifier can be used with LG central controller to monitor and control.



AC MANAGER 5



PACM5A000

Multiple ACP and AC Smart integration solution to manage multi sites up to 8,192 units as a single system.



| MODEL NAME | PACM5A000 |
|---|--|
| Size (W x H x D, mm) | 270 x 155 x 65 |
| Interfaceable Products | MULTI V / ERV / ERV DX / Hydro kit / THERMA V / AHU Kit / LG Chiller ¹⁾ / Commercial Air Purifier |
| Maximum number of units | 8,192 (Supports 32 ACP 5 or AC Smart 5) |
| Individual / Group Control | On & Off / Mode / Temperature / Fan speed |
| Individual Controller Lock | Temperature / Mode / Fan speed / All |
| Error Check | ○ |
| Schedule | Weekly / Monthly / Yearly / Exception day |
| Web Access | ○ |
| Emergency Alarm Display | ○ |
| Power Consumption Monitoring (with PDI) | ○ |
| Auto Changeover / Setback | ○ |
| Temperature Limit | ○ |
| Operation Time Limit | ○ |
| Visual Navigation | ○ |
| Operation Trend | ○ |
| Air Purify Control | ○ |
| Air Quality Level | ○ |
| Interlock Control | ○ |
| Virtual Group Control | ○ |
| ODU Capacity Control | ○ |
| Energy Navigation (with PDI) | ○ |

※ ○ : Applied, - : Not Applied
 1) Chiller Option Kit (PCHLLN000) is required for ACP 5 or AC Smart 5.
 Note : AC Manager 5 required for ACP 5 or AC Smart 5

Up to 8,192 Connections for Indoor Units

Administrators can easily and conveniently manage a variety of LG HVAC equipment. Also, it is available to manage many buildings or areas at one place via AC Manager 5.



AC MANAGER 5

Smart Air Purify Solution

Total management of air purify function creates clean environment everyday.

Air Quality Multi Status view



Air Quality Summary Widget



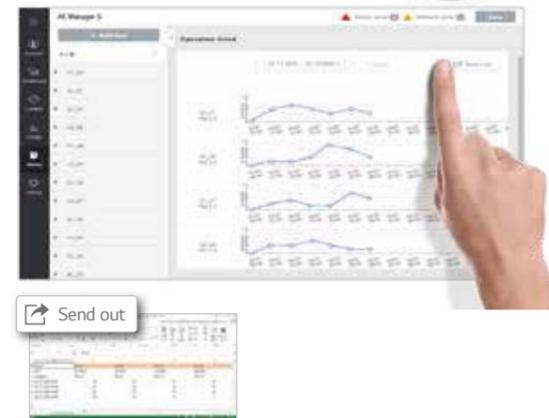
- Average Value
- View by Device (Name, Air Quality value, Status)

Air Purify Control



- Easy setting of Air Purify function (Set / Clear)

View Air Quality Trends



- Daily (per hour), period (30 days) shows trends
- Excel output / easy to manage

Advanced Network Accessibility & User Friendly GUI

As an advanced central controller, AC Manager 5 offers flexible interface for each user by assessing the device screen and automatically customizing the layout to provide the most optimized interface.



Energy Navigation & Energy Usage Graph

Energy navigation is the function to set the target usage amount to limit the monthly power consumption and to control so that the total accumulated power consumption does not exceed the target usage amount. It performs total of 7 control levels with the estimated / actual usage amount exceeding ratio compared to the monthly target usage amount. For the control method, there are indoor unit operation ratio, outdoor unit capacity control, and indoor unit operation control.



Peak Control

This function can reduce electricity use. There are two kinds of control logic. Energy saving effect by indoor unit operation rate control. Load management effect by outdoor unit capacity control.

Operation ratio (IDUs) Control



ODU Capacity Control



Multi Level Group Composition

User can make frequent and multi level group to control and monitor the device easily.



ACP LonWorks Gateway

PLNWKB000

LonWorks easily link LG Air conditioners and other existing building systems.
By including ACP control function, the controlling continues even when error occurs with BMS.

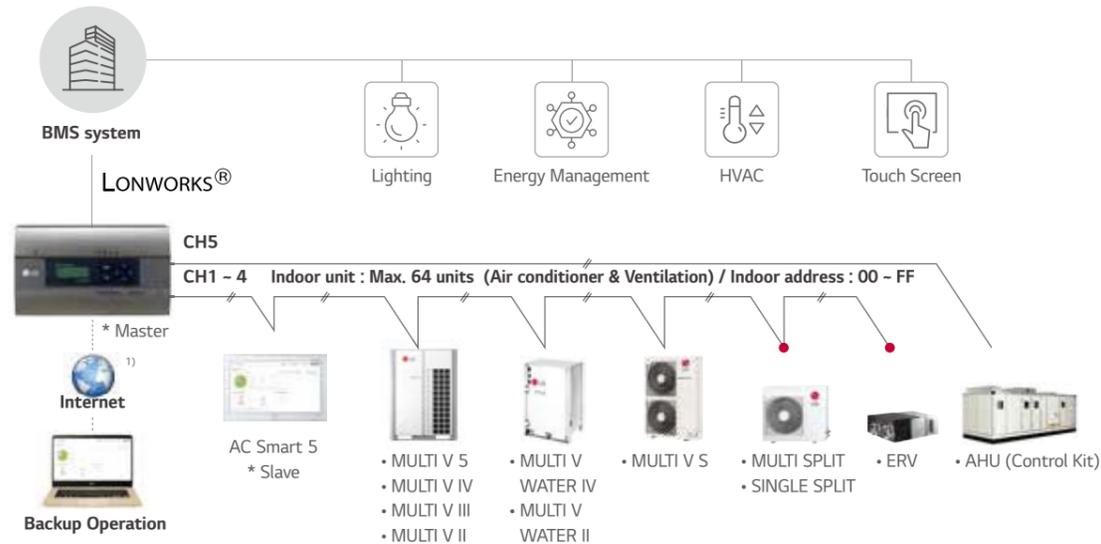


Features & Benefits

- Connect to use LonWorks protocol and LG Air conditioner protocol.
- Process ability (Max. connection) : Indoor unit 64EA, AHU Control Kit : Max. 16EA
- Self installation verification using internet (Web Server Included)
- Diagnosis of communication status on LG Air conditioner network
- It offers a variety of functions as ACP which allows the customer to efficiently control various types of equipment from the customer's own Integration.

| CONTROL | MONITORING |
|--------------------------|--------------------------------|
| On / Off Command | On / Off |
| Operation Mode Setting | Operation Mode |
| Lock | Lock |
| Temperature | Temperature |
| Fan Level | Fan Level |
| Fan Direction Auto | Fan Direction Auto |
| Mode Lock | Mode Lock |
| Fan Level Lock | Fan Level Lock |
| Temperature Lock | Temperature Lock |
| Temperature Lower Limit | Temperature Lower Limit |
| Temperature Higher Limit | Temperature Higher Limit |
| Peak Convert Cycle | Peak Convert Cycle |
| Peak Setting | Peak Setting |
| Temperature Unit | Temperature Unit |
| Total Temperature Lock | - |
| Total On / Off | - |
| Total Temperature | - |
| - | Product Type |
| - | Product Address |
| - | Current Temperature |
| - | Alarm |
| - | Power |
| - | Error Code |
| - | Peak Current Operating Percent |
| - | Total Accumulate Power |

※ ○ : Applied, - : Not Applied



1) Assignment of public IP address is required to access central controller through internet. ● Appropriate PI485 should be used according to PDB (Product Data Book).

PI485

PI485 converts LG Air conditioners protocol to the RS485 protocol for the central controller.

PMNFP14A1

Easy to manage up to 64 indoor units, including ERV with simple interface.



- Power : Single phase AC 220V 50 / 60Hz
- **1 for Each Outdoor Unit**
- Multi V MINI (ARUN40GS2A / ARUV40GS2A Only needs PI485)
- Single Split
- Multi Split
- Therma V

PHNFP14A0



- Power : Connected with the Indoor Units
- **1 for Each Indoor Unit**
- Indoor Unit (ERV)

MODBUS RTU Gateway

PMBUS00A

Providing Modbus RTU connection between LG Air conditioners and BMS.



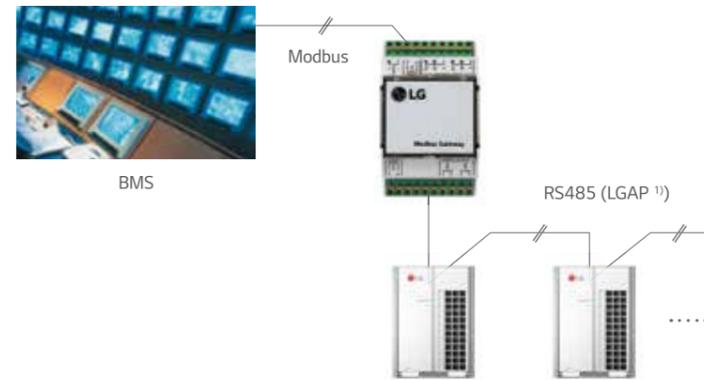
Features & Benefits

- Function
- Modbus RTU communication with Modbus master controller
- Modbus RTU slave (RS485) / 9,600 bps
- Applicable for MULTI V 5, ERV, Heating
- Size (W x H x D, mm) : 53.6 x 89.7 x 60.7
- Max. 16 IDUs with single module / Max. 64 IDUs with 4 modules
- Power : DC 12V
- No slave allowed in LGAP

Installation Scene

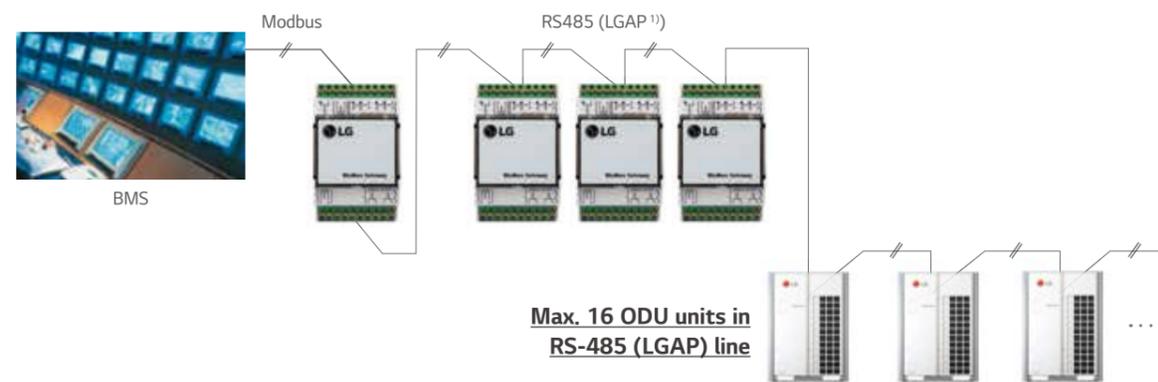
Single Module

Max. 16 indoor units with a single module



Multiple Module

Max. 64 indoor units with 4 modules in one Modbus communication line



1) LGAP is LG Protocol.
Max. 16 ODU units in RS-485

Modbus Gateway Memory Map

Baud Rate : 9,600 bps, Stop Bit : 1 stop bit, Parity : None Parity, Byte size : 8 bits

Coil Register (0 x 01)

| NO. | DATA BIT | | | FUNCTION | REGISTER |
|-----|------------------------|------------------------------------|---------------------------|--------------------------------|--|
| | AIR CONDITIONER | ERV / DX ERV | HYDR0 KIT & THERMA V | | |
| 1 | Operate (On / Off) | Operate (On / Off) | Operate (On / Off) | 0 : Stop / 1 : Run | Register = N X 16 + ① (N = Indoor Unit Central Address) |
| 2 | Auto Swing | Aircon Operate (On / Off) | Hot Water Mode (On / Off) | 0 : Disable / 1 : Enable | |
| 3 | Filter Alarm Release | Filter Alarm Release ¹⁾ | Reserved | 0 : Normal / 1 : Alarm Release | |
| 4 | Lock Remote Controller | Lock Remote Controller | Lock Remote Controller | 0 : UnLock / 1 : Lock | |
| 5 | Lock Operate Mode | Lock Operate Mode ¹⁾ | Reserved | 0 : UnLock / 1 : Lock | |
| 6 | Lock Fan Speed | Lock Fan Speed ¹⁾ | Reserved | 0 : UnLock / 1 : Lock | |
| 7 | Lock Target Temp. | Lock Target Temp. ¹⁾ | Reserved | 0 : UnLock / 1 : Lock | |
| 8 | Lock IDU Address | Lock IDU Address ¹⁾ | Reserved | 0 : UnLock / 1 : Lock | |
| 9 | Reserved | Quick Ventilate | Reserved | 0 : Disable / 1 : Enable | |
| 10 | Reserved | Energy Save | Reserved | 0 : Disable / 1 : Enable | |

1) : This register value is applied 'DX Ventilator' ONLY.

Discrete Register (0 x 02)

| NO. | DATA BIT | | | FUNCTION | REGISTER |
|-----|-----------------|----------------------------|------------------------------|---|--|
| | AIR CONDITIONER | ERV / DX ERV | HYDR0 KIT & THERMA V | | |
| 1 | Connected IDU | Connected IDU | Connected IDU | 0 : Disconnected / 1 : Connected | Register = N X 16 + ① (N = Indoor Unit Central Address) |
| 2 | Alarm | Alarm | Alarm | 0 : Normal / 1 : Alarm | |
| 3 | Filter Alarm | Filter Alarm ¹⁾ | Hot Water Only ²⁾ | • 0 : Normal / 1 : Alarm Hydro Kit • 0 : Normal / 1 : Hot Water Only | |
| 4 | Reserved | Reserved | Target Temp. Select | 0 : Air / 1 : Water | |
| 5 | Reserved | Reserved | Error Division ²⁾ | 0 : CH type error / 1 : BC type error | |

1) : This register value is applied 'DX Ventilator' ONLY.

2) : This register value is applied 'Hydro Kit' ONLY.

Holding Register (0 x 03)

| NO. | DATA BIT | | | FUNCTION | REGISTER |
|-----|----------------------------|--|--------------------------------|---|--|
| | AIR CONDITIONER | ERV / DX ERV | HYDR0 KIT & THERMA V | | |
| 1 | Operate Mode | Operate Mode | Operate Mode | • 0 : Cooling, 1 : Dehumidifying, 2 : Fan, 3 : Auto, 4 : Heating Hydro Kit (Middle Temp. DHW) / AWHP • 0 : Cooling, 3 : Auto, 4 : Heating Hydro Kit (High Temp. DHW) | Register = N X 20 + ① (N = Indoor Unit Central Address) |
| 2 | Fan Speed | Fan Speed | Target Temp. DHW ²⁾ | 1 : Low, 2 : Mid, 3 : High, 4 : Auto | |
| 3 | Target Temp. | Target Temp. ¹⁾ | Target Temp. ²⁾ | 16.0 ~ 30.0 [°C] x 10 | |
| 4 | Target Temp. Limit (Upper) | Target Temp. Limit ¹⁾ (Upper) | Reserved | 16.0 ~ 30.0 [°C] x 10 | |
| 5 | Target Temp. Limit (Lower) | Target Temp. Limit ¹⁾ (Lower) | Reserved | 16.0 ~ 30.0 [°C] x 10 | |
| 6 | Reserved | Vent. Operate Mode | Reserved | 0 : HEX, 1 : Auto, 2 : Normal | |

1) : This register value is applied 'DX Ventilator' ONLY.

2) : This value range can be between 0 - 127 [°C]. And it would be limited by upper & lower value according to the setting of remote controller.

Input Register (0 x 04)

| NO. | DATA BIT | | | FUNCTION | REGISTER |
|-----|-----------------|------------------------------|---------------------------|---|--|
| | AIR CONDITIONER | ERV / DX ERV | HYDR0 KIT & THERMA V | | |
| 1 | Error Code | Error Code | Error Code | 0 ~ 255 ※ Please refer to the product error table. | Register = N X 20 + ① (N = Indoor Unit Central Address) |
| 2 | Room Temp. | RA Temp. | Room Temp. | -99.0 ~ 99.0 [°C] x 10 | |
| 3 | Pipe In Temp. | OA Temp. ¹⁾ | Water Inlet Temp. | -99.0 ~ 99.0 [°C] x 10 | |
| 4 | Pipe Out Temp. | SA Temp. ¹⁾ | Water Outlet Temp. | -99.0 ~ 99.0 [°C] x 10 | |
| 5 | Reserved | Pipe In Temp. ¹⁾ | Sanitary Tank Temp. | -99.0 ~ 99.0 [°C] x 10 | |
| 6 | Reserved | Pipe Out Temp. ¹⁾ | Solar Temp. ²⁾ | -99.0 ~ 99.0 [°C] x 10 | |

1) : This register value is applied 'DX Ventilator' ONLY.

2) : This register value is applied 'AWHP' ONLY.

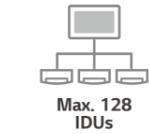




PDI (Power Distribution Indicator)

PQNUD1S40 (Premium, 8 ports) / PPWRDB000 (Standard, 2 ports)

PDI shows distributed power consumption of up to 128 indoor units.

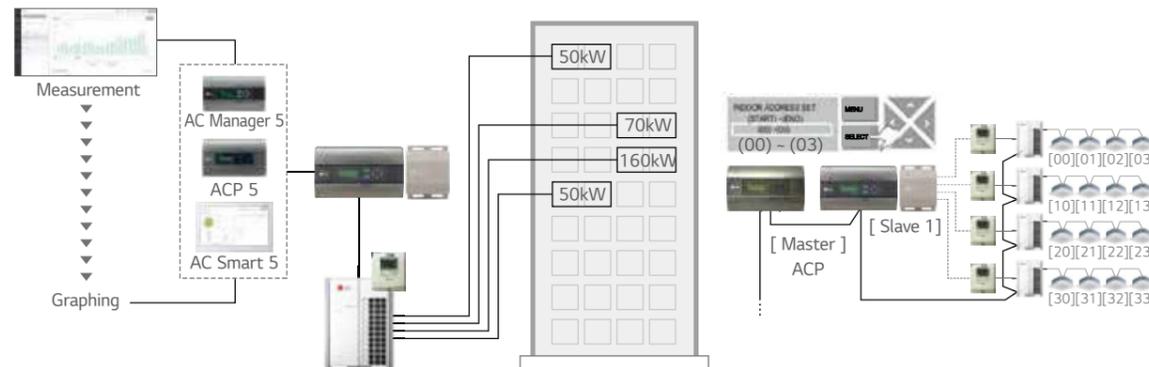
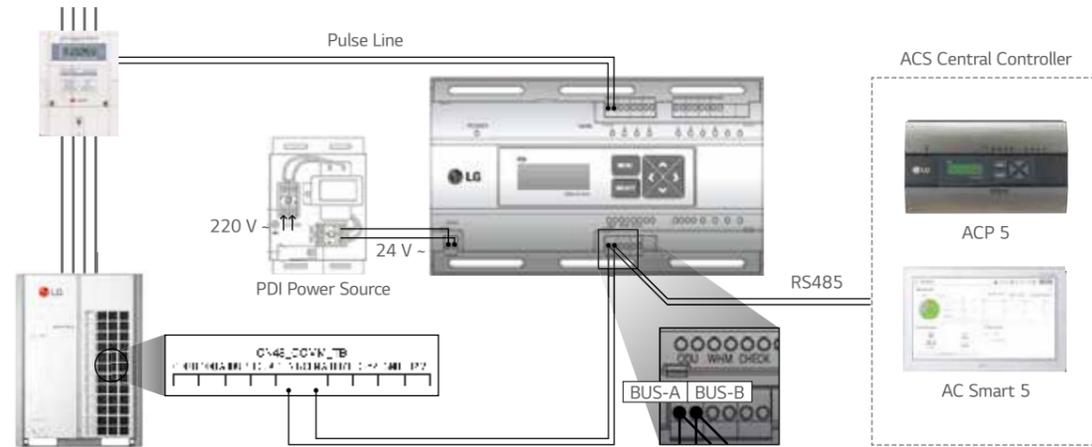


Features & Benefits

- Enables total and indoor power consumption monitoring.
- With LG central control connectivity, energy monitoring, energy savings operations and target usage setting functions are enabled.
- Enables gas consumption and electricity distribution.

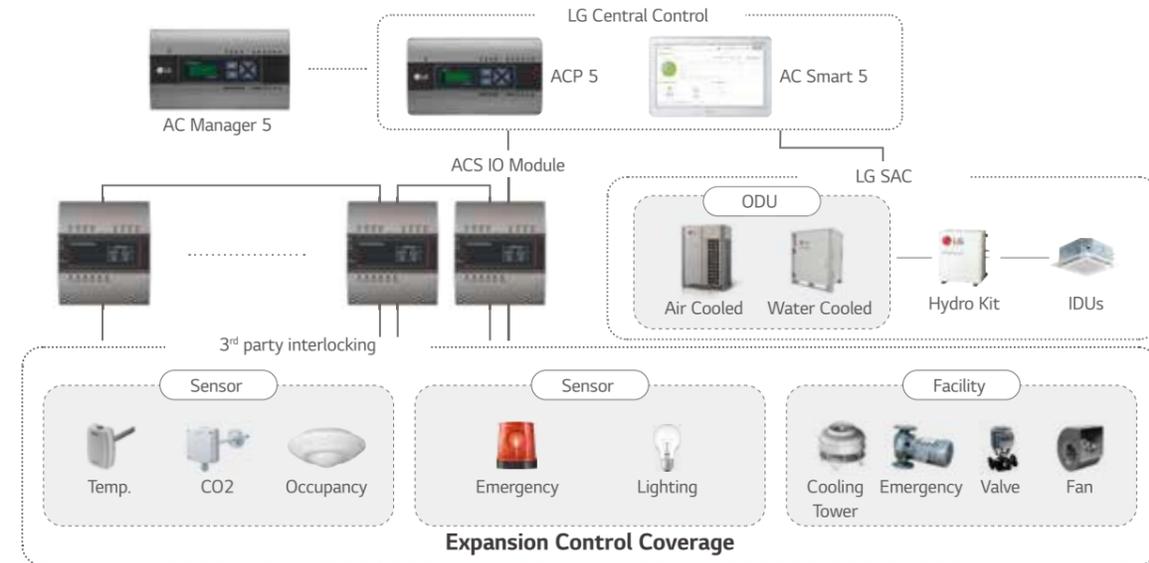
| MODEL NAME | PQNUD1S40 | PPWRDB000 |
|--------------------------------|--|--|
| Size (W x H x D, mm) | 270 x 155 x 65 | |
| Interfaceable Products | Air conditioner, ERV DX | |
| Maximum Number of Power Meters | EHP : 8 Watt meter GHP : 4 Watt meter / 4 Gas meter | EHP : 2 Watt meter GHP : 1 Watt meter / 1 Gas meter |
| Maximum Number of Indoor Units | Multi V : 128 | |
| Data Backup When Power Outage | ○ | |
| Power Input | PDI : AC 24V, Transformer : AC 220V | |

※ ○ : Applied, - : Not Applied



Note:
 1. Power cable and type could be different from this scene depending on the Outdoor unit's specification.
 2. Measured power consumption could be different between PDI and Watt meter.
 3. Applicable Central Controller : ACP 5, ACP LonWorks, AC Smart 5, AC Ez Touch
 (Combination : we recommend to connect separated watt meter for Outdoor units to have correct power distribution value)

ACS IO Module

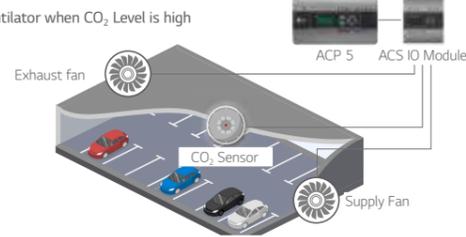


※ DI : Digital Input, DO : Digital Output, UI : Universal Input, AO : Analog Output

Case. 1

Parking Lot Ventilation

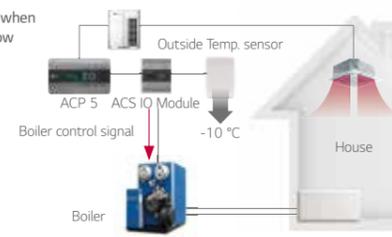
Turning on ventilator when CO₂ Level is high



Case. 1

Auxiliary Heater

Turning on aux. heater when outside temp. is very low



PEXPMB000

This module can be connected with ACP 5 or AC Smart 5 controller if additional I / O points such as DI / DO and AI / AO for 3rd party devices control and monitoring are needed.



Features & Benefits

- Interlocking with 3rd party equipment, LG Central controller can make operation scenario with 3rd party equipment by ACS IO Module.
- Control coverage is expanded. (Air conditioner only → Sensors, Fans, Pumps, Switches ...)

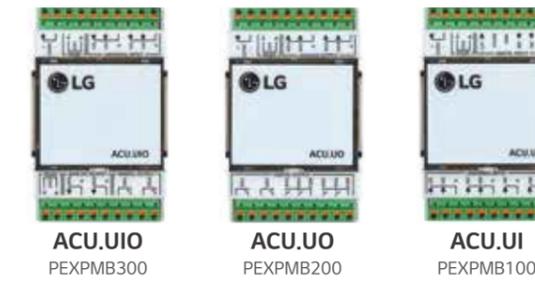
| MODEL NAME | | PEXPMB000 | |
|-------------------|-------------------------------|----------------------|-------------------|
| Linkable Products | | PAC55A000, PACP5A000 | |
| Communication | RS-485 | 1 ch | |
| I / O | Digital Input | 3 ports | |
| | Digital Output | 3 ports | |
| | Universal Input ¹⁾ | 4 ports | |
| | Analog Output | 4 ports | |
| VALUE SPEC | | MIN. | MAX. |
| Analog Input | NTC 10k | 0.68kΩ | 177kΩ |
| | PT 1000 | 803Ω | 1,573Ω |
| | Ni 1000 | 871.7Ω | 1,675.2Ω |
| | DC (Voltage) | 0V | 10V |
| Analog Output | - | 0V | 10V |
| Digital Input | Binary Input (Non Voltage) | - | - |
| Digital Output | Normal open | - | 30VAC / 30VDC, 2A |

※ ○ : Applied, - : Not Applied
 1) The type of UI (Universal Input) is selectable among Digital Input and Analog Input.
 Note: ACS IO & ACU IO are not a replacement for Direct Digital Controller(DDC) or PLC.

ACU IO Module

PEXPMB300, PEXPMB200, PEXPMB100

This module can be connected with ACP 5 or AC Smart 5 controller if additional I / O points such as UIO / UI / UO for 3rd party devices control and monitoring are needed.



Features & Benefits

- Interlocking with 3rd party equipment LG Central controller can make operation scenario with 3rd party equipment by ACU IO Module.
- Applicable devices are expanded. (Air conditioner only → Sensors, Fans, Pumps, Switches ...)

| MODULE NAME | PEXPMB300 | PEXPMB200 | PEXPMB100 |
|-------------------------------|----------------------|-----------|-----------|
| Linkable Products | PAC55A000, PACP5A000 | | |
| Communication RS-485 | 1 ch | 1 ch | 1 ch |
| Digital Input | - | - | 3 ports |
| Digital Output | 2 ports | 6 ports | - |
| Universal Input ¹⁾ | 4 ports | - | 6 ports |
| Analog Output | 2 ports | 4 ports | - |

| VALUE SPEC | | MIN. | MAX. |
|----------------|----------------------------|------|-----------|
| Analog Input | DC (Voltage) | 0V | 10V |
| Analog Output | DC (Voltage) | 0V | 10V |
| Digital Input | Binary Input (Non Voltage) | - | - |
| Digital Output | Normal Open | - | 30VDC, 1A |

※ ○ : Applied, - : Not Applied
 1) The type of UI (Universal Input) is selectable among Digital Input and Analog Input.

Chiller Option Kit

PCHLLN000

LG central controller 5 series with Chiller Option Kit can provide LG chiller remote control and cycle monitoring.



| MODEL NAME | PCHLLN000 |
|------------------------|---|
| Monitoring Points | Evaporator status / Compressor status (Scroll, Screw, Centrifugal chiller only) / Condenser status / Generator status (Abs. chiller only) |
| On / Off | ○ |
| Target Temp. setting | ○ |
| Mode | Scroll chiller only |
| Schedule | ○ |
| Interfaceable Products | Scroll, Screw, Centrifugal, Absorption (LG Only) |

※ ○ : Applied, - : Not Applied

Installation Scene

- Chiller Option Kit installation of ACP, AC Smart should be conducted by a specialized installation service engineer.
- Chiller Option Kit installation can be achieved with a SD Card.
- The SD Card can install Chiller Option Kit in one ACP, AC Smart. Insert the SD Card in the ACP, AC Smart. If a backup SD Card is inserted, replace it with a Chiller Option Kit SD Card.

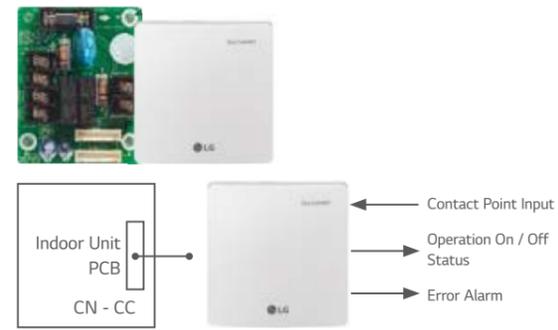


Cycle Display Example



DRY CONTACT

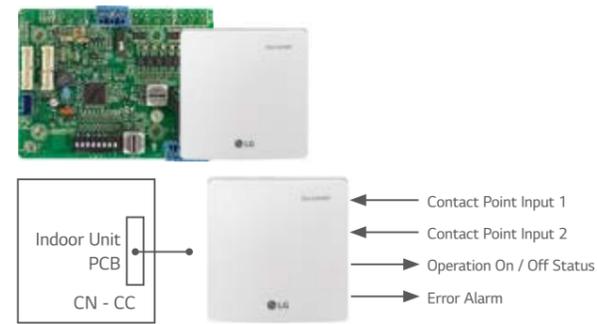
PDRYCB000



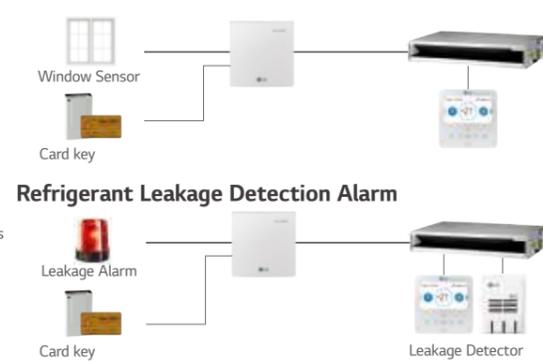
Simple Dry Contact (1 input)



PDRYCB400



Dry Contact for 2 Input



PDRYCB320

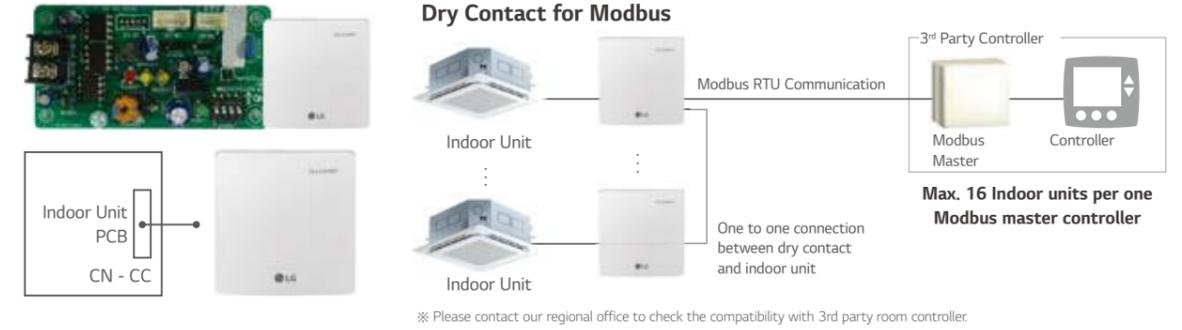


Dry Contact for Thermostat



※ Please contact our regional office to have full compatible room controller list.

PDRYCB500



※ Please contact our regional office to check the compatibility with 3rd party room controller.

Specification

Connection between an indoor unit and external devices to control various functions.

| MODEL NAME | | PDRYCB000 | PDRYCB400 | PDRYCB320 | PDRYCB500 |
|----------------------|------------------|-----------|---|----------------|------------|
| | | | | | |
| Case | | ○ | ○ | ○ | ○ |
| Input Port | | 1 | 2 | 8 | - |
| Universal Input port | | - | - | 1 | - |
| Comm. Protocol | | - | - | - | Modbus RTU |
| Power | | AC 220V | Connect to Indoor unit PCB (CN_CC) : DC 12V | | |
| IDU | On / Off | ○ | ○ | ○ | ○ |
| | Operation Mode | - | ○ | ○ | ○ |
| | Set Temp. | - | (Select & Fix) | (Select & Fix) | ○ |
| | Fan Speed | - | - | ○ | ○ |
| | Thermo-Off | - | (Select & Fix) | ○ | - |
| | Energy Saving | - | (Select & Fix) | - | - |
| | Lock / Unlock | - | (Select & Fix) | - | - |
| | Control | On / Off | ○ | - | ○ |
| Heating | DHW On / Off | - | - | ○ | - |
| | Thermo-Off | - | - | ○ | - |
| | Operation Mode | - | - | ○ | - |
| | Silent Mode | - | - | ○ | - |
| ERV | Emergency Mode | - | - | ○ | - |
| | On / Off | ○ | - | - | ○ |
| | Operation Mode | - | - | - | ○ |
| | Aircon Mode | - | - | - | ○ |
| Output | Additional Mode | - | - | - | ○ |
| | Fan Speed | - | - | - | ○ |
| | Operation Status | ○ | ○ | ○ | ○ |
| | Error | ○ | ○ | ○ | ○ |
| | Room Temp. | - | - | - | ○ |

※ ○ : Applied, - : Not Applied
Note :

- Compatibility of PDRYCB320
 - Can use with all types of aircon indoor units after 2010. (Cassette, Ducted, Convertible, Applied PAC, Wall mounted, Console)
 - Can use with new single package AK-W model after 2020. 1Q (The previous version Single package is not compatible)
 - Can not use with AWHP, Hydro Kit models.
- Heating : 3 series AWHP split and Monobloc models 4 generation Hydro Kit

- Compatibility of PDRYCB400
 - Can use with all types of air conditioner indoor units after 2010. (Cassette, Ducted, Convertible, Applied PAC, Wall mounted, Console)
 - Can use with new single package AK-W model after 2020. 1Q (The previous version Single package is not compatible)
 - Can not use with AWHP, Hydro Kit models.
- (Select & Fix) : This function is preset by rotary switch.

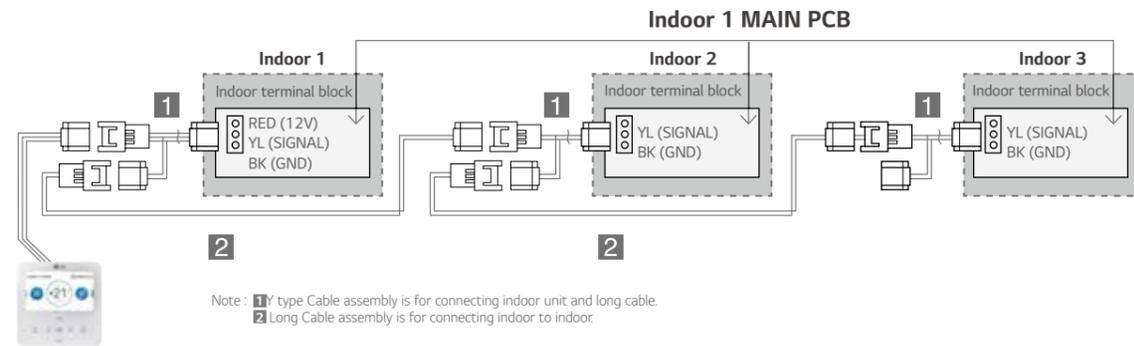
Group Control Wire

PZCWRCG3



| MODEL NAME | PZCWRCG3 |
|----------------|--------------|
| 1 Y-type Cable | 0.25m Length |
| 2 Long Cable | 9.6m Length |

Installation Scene



Remote Temperature Sensor

PQRSTAO

Sensor for detecting the room temperature.

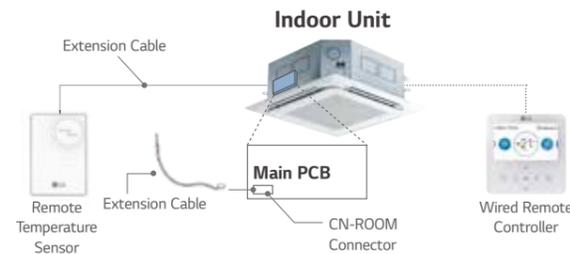


Features & Benefits

- It detects the exact room temperature instead of indoor unit's air temperature sensor.
- Applied to Ceiling Mounted Cassette, Ceiling Concealed Duct, THERMA V and Hydro Kit.
- Extension cable (15m) is included.

Installation Scene

1. Wire to the control box in the indoor unit by removing the existing thermistor and connect the extension cable its place.
2. Cut the extension cable to the appropriate length and connect the screw terminal of the remote sensor.



Zone Controller

ABZCA

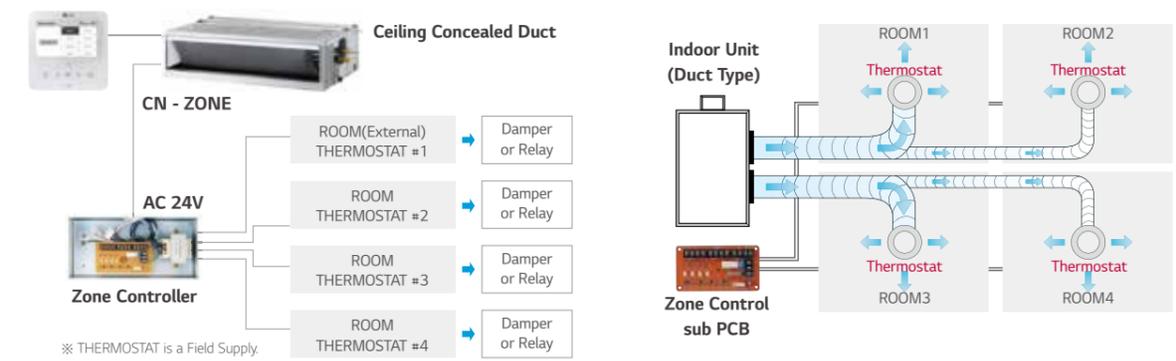
Controls air conditioning in up to 4 zones by external thermostat.



Features & Benefits

- Controls different zones (up to 4 zones) by external thermostat (AC 24V)
- Maintain proper air volume of each zone
- Auto variation of dampers
- Auto control of fan speed and On / Off operation

Installation Scene



IO Module

PVDSMN000

Interface module between the outdoor unit of system air conditioner and the external device.



Features & Benefits

- Function
- Demand control
 - Low noise operation
 - Output outdoor or indoor unit operation status
 - Output error status

Description

- IO Module is communication interface module for connection between MULTI V 5 and external IO (Input / Output Module) devices.

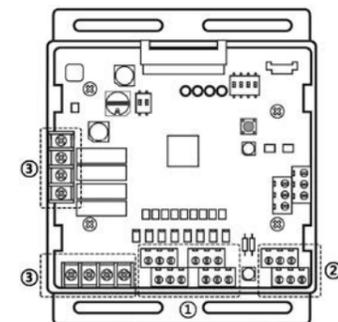
Models Applied

- MULTI V IV, 5
- MULTI V WATER IV
- MULTI V S

Note : IO Module is not compatible for Multi V III and Multi V S R32.

Part Description

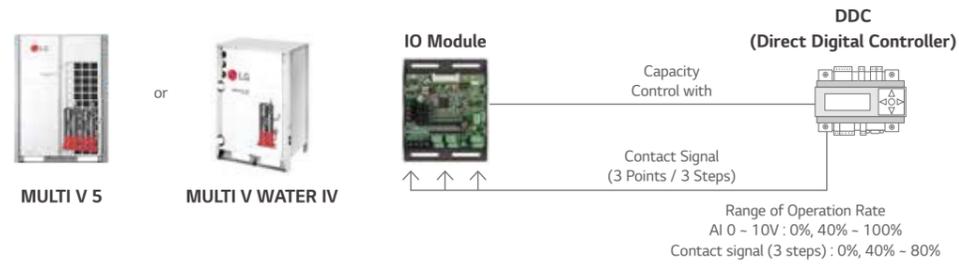
- 1) Digital Input Part (DI : Dry Contact Input)
 - Demand control by contact input (3 Step)
 - Low Noise Operation input
 - Priority Setting input : Setting the priority of demand control command (Capacity control for external signal from DDC vs Peak control by LG Central controller)
 - Open : External signal has priority to central controller (Default)
 - Close : Central controller has priority to external signal
- 2) Analog Input Part (AI : DC 0 ~ 10V)
 - Demand control by analog input (10 Step)
- 3) Digital Output Part (DO : AC 250V, Max. 1A)
 - Error status relay output
 - Operation status relay output
 - Valve control



IO Module

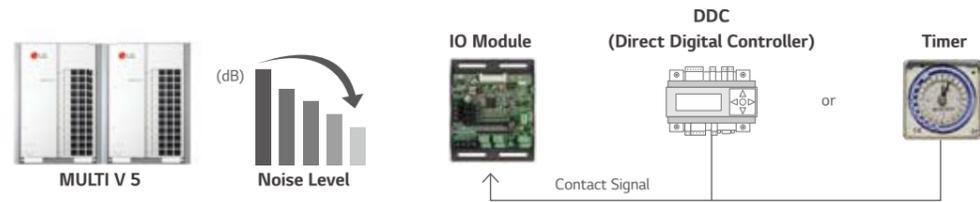
ODU Capacity Control

Provides variable settings for ODU Capacity Control according to input method to reduce the power consumption. IO Module supports 2 types of input signal : Analog Inputs (0 - 10V, 10 steps) and contact signals (3 steps)



Low Noise Operation

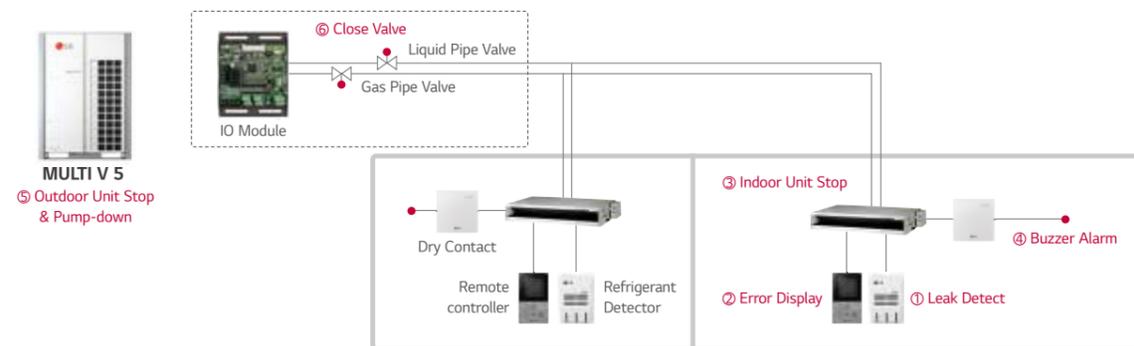
To reduce noise level, control outdoor unit's fan speed by dry contact input.



※ 8 HP (22.4kW) model, Sound power level can be changed by outdoor unit operation status and low noise operation input signal.

Refrigerant Leakage Detection with Pump-down

For safety, IO module closes refrigerant valve during Pump-down operation.



※ If the concentration of the refrigerant in the air exceeds 6,000 ppm more than 5 seconds, the function will be activated. (Refer to operation sequence which written in red, 1-6)

Variable Water Flow Control Kit

PWFCKN000 (MULTI V WATER IV)

Accessory for controlling the water flow.



Features

Function

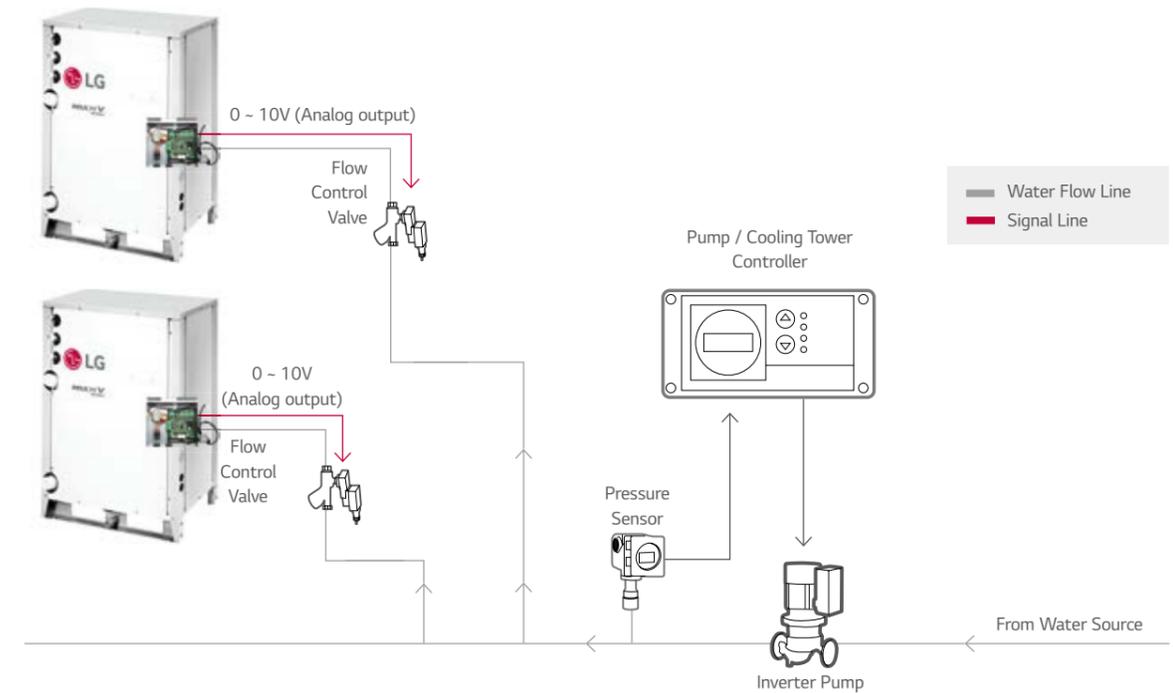
- Water pump or valve control (0 - 10V)
- Minimum output voltage setting available
- Operation, error output (AC 250V, Max. 1A)
- Dry contact input and analog output for demand control
- Digital output for operation, error status (AC 250V, Max. 1A)

Description

- Water flow consumption reduction
- Pump electricity consumption reduction
- Including IO Module (Dry contact input, Analog input / output, Digital output)
- Using Dry contact and variable water flow control function simultaneously.

Installation Scene

- Flow Control Valve : Regulates the flow or pressure of a fluid, normally responding to signals generated by independent devices.
- Flow Meter : Measures mass flow rate of a fluid traveling through a tube. (The mass flow rate is the mass of the fluid traveling past a fixed point per unit time.)
- Pressure Sensor : Measures the pressure.



Low Ambient Kit

PRVC2

External integration module for cooling operation with -25 °C low ambient temperature.



Features

Function

- 25 °C Low ambient cooling operation by Low ambient kit and hood with damper (Analog output 0 ~ 10V)
- Demand control
- Low noise operation
- Output outdoor or indoor unit operation status (AC 250V, Max. 1A)
- Output error status (AC 250V, Max. 1A)

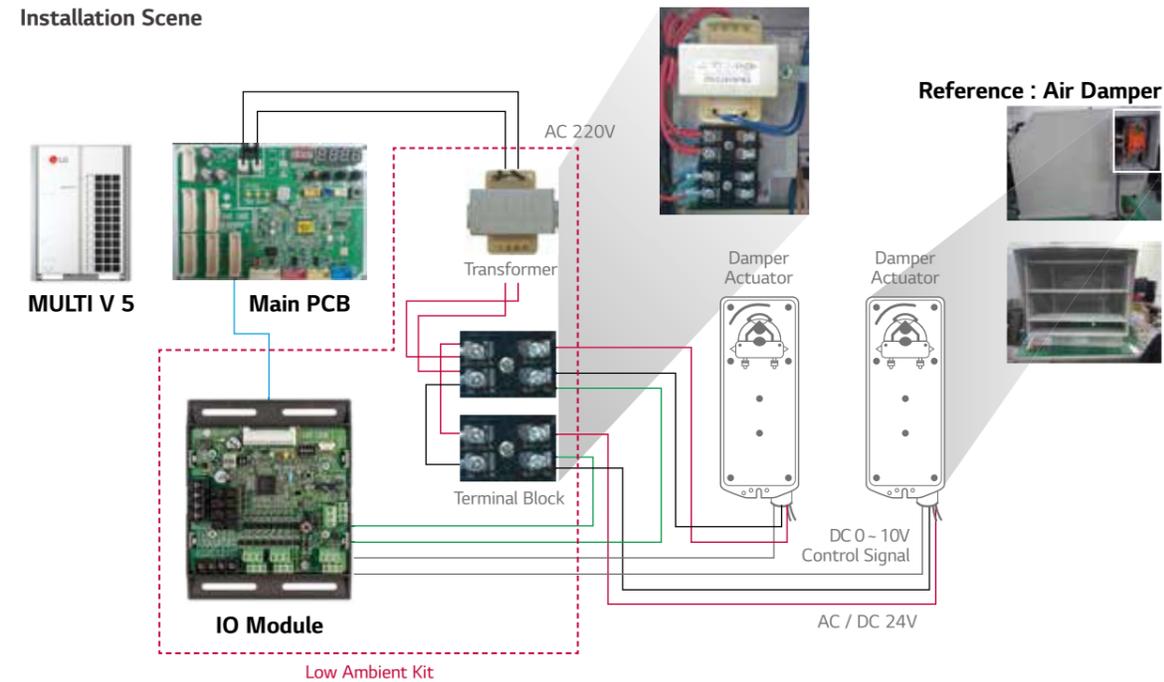
Description

- Low ambient kit supports -25 °C cooling operation by making stable condensing pressure with reducing air flow rate from hood and damper control given 0 ~ 10V proportional to condensing pressure.
- Low ambient kit provides IO Module function.
- External snow hood and air damper are required for this item.
- Transformer and terminal block are included.

Models Applied

- MULTI V 5

Installation Scene

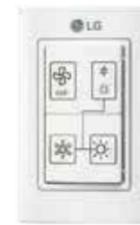


- Note
- Damper Actuator can accept only DC 24V power input.
 - Do not input AC power. Otherwise it will cause a serious damage.
 - The IO Module can control maximum three actuators.
 - Case of one valve, the slave signal connector must not use.
 - The power (AC / DC 24V) and signal (DC 0 ~ 10V) line is recommended by AWG22 (1/32 in, (0.644 mm), 0.016 Ω / ft (0.053 Ω / m)).

Cool / Heat Selector

PRDSBM

Cooling only, heating only, and fan mode can be selected.



Features

- Indoor unit mode control without central controller.
- Select operation mode : Cooling, Heating, Fan mode
- Mode lock for cooling & heating mixing error-proof during the change of season.

Models Applied

- MULTI V 5
- MULTI V IV
- MULTI V WATER S
- MULTI V WATER II
- MULTI V S
- MULTI V WATER IV
- MULTI V PLUS II, MULTI V PLUS

Fan Mode

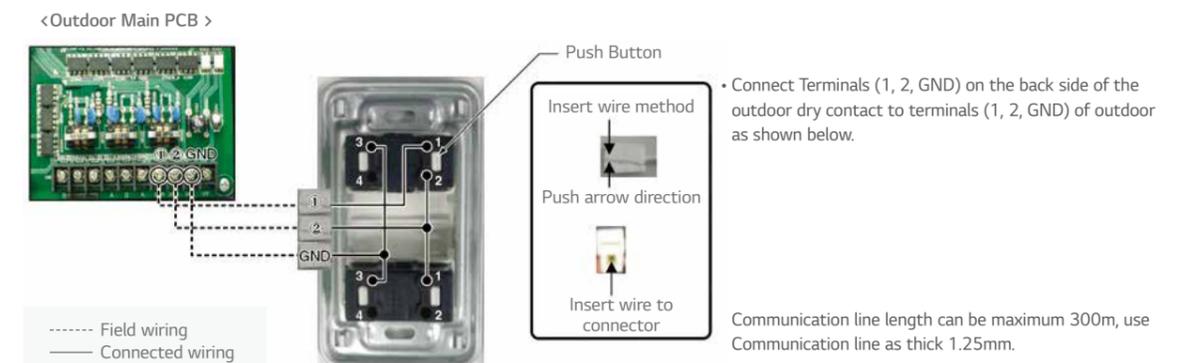
Cooling only

Mode

Heating only



Installation Scene



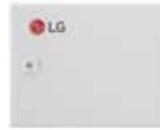
AHU Kit

A solution to connect LG's high efficiency system to the DX coil of an air handling unit for maximum energy savings.

COMMUNICATION KIT



PAHCMR000



PAHCMS000

CONTROL KIT



PAHCNM000

EEV KIT



PRLK048A0
PRLK096A0

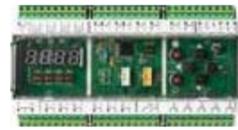


PRLK396A0

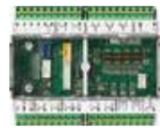


PRLK594A0

CONTROLLER MODULE



PAHCMM000



PAHCMC000

Specification

Control Application Kit

| TYPE | MODEL | DIMENSIONS (MM) | | | POWER SUPPLY | IP RATING | DESCRIPTION |
|-------------------|-----------|-----------------|-----|-----|-----------------------------|-----------|---|
| | | W | H | D | | | |
| Communication Kit | PAHCMR000 | 300 | 300 | 155 | 1Ø, 220 ~ 240 V, 50 / 60 Hz | IP66 | Return / Room air temperature control by DDC or LG individual / centralized controller. |
| | PAHCMS000 | 380 | 300 | 155 | 1Ø, 220 ~ 240 V, 50 / 60 Hz | IP66 | Discharge air / Supply air temperature control by DDC or LG individual / centralized controller |
| Controller Module | PAHCMM000 | 162 | 90 | 61 | DC 12V | IP20 | Main Controller module |
| | PAHCMC000 | 108 | 90 | 61 | DC 12V | IP20 | Communication Controller module |
| Control Kit | PAHCNM000 | 500 | 500 | 210 | 1Ø, 220 ~ 240 V, 50 / 60 Hz | | Various AHU control functions with multiple DX coils (Maximum connectable ODU is 3 units) |

Expansion Application Kit

| TYPE | MODEL | DIMENSIONS (MM) | | | PIPE DIAMETER (MM) | CAPACITY INDEX RANGE |
|---------|-----------|-----------------|-------|-----|--------------------|----------------------|
| | | W | H | D | LIQUID | |
| EEV Kit | PRLK048A0 | 217 | 404 | 83 | 12.7 | 3.6 ~ 28 kW |
| | PRLK096A0 | 217 | 404 | 83 | 12.7 | 28.1 ~ 56 kW |
| | PRLK396A0 | 349.5 | 345.5 | 180 | 19.05 | 56.1 ~ 112 kW |
| | PRLK594A0 | 409.5 | 345.5 | 180 | 19.05 | 112.1 ~ 168 kW |

Communication Kit

High Energy Efficiency

LG's DX AHU solutions' superior performance provides a highly efficient heat source system.

- High energy efficiency inverter system
- Large range of expansion application Kit : Max. 168 kW EEV Kit 1)
- Connected to various heat sources : MULTI V, MULTI V WATER, MULTI V S, SINGLE SPLIT

1) Maximum connectable EEV capacity for PAHCMR000, PAHCMC000 is 112 kW.



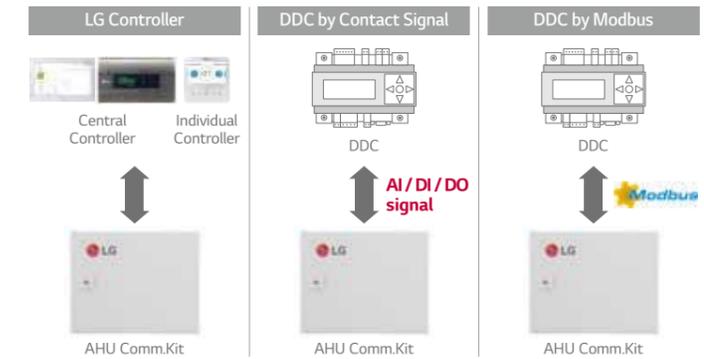
Diverse Options for Control

AHU communication kit can be connected to various control systems such as LG individual / central controller and DDC.¹⁾

It can be directly connected to DDC without separated controller, so DDC can receive product control and monitor information through contact signal or Modbus protocol.

- LG Individual / Central controller supported
 - LG controller stand alone or combination with DDC
- Direct wiring between DDC and AHU communication kit
 - Embedded Digital I / O and Analog Input
 - Modbus RTU protocol supported

1) DDC : Direct Digital Controller



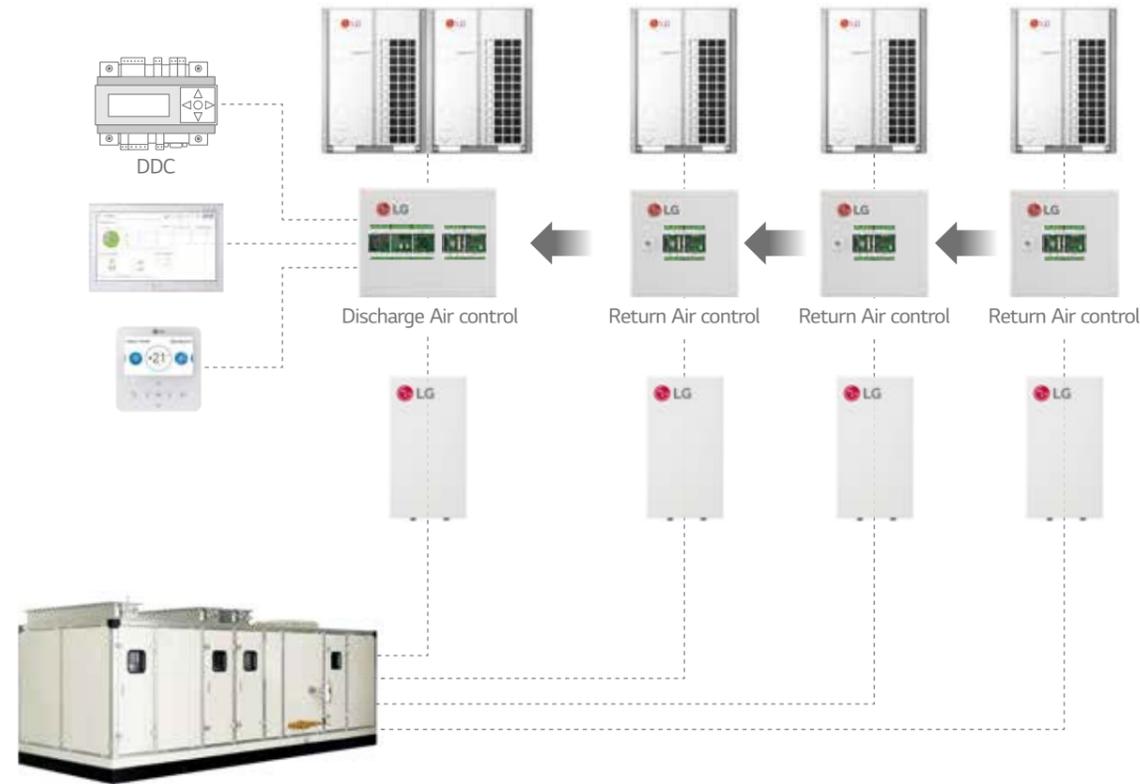
AHU Kit

Communication Kit

Expandable System Design

LG AHU system can be a suitable solution for various sites due to its application flexibility and wide range of line up with large capacity models. According to the required capacity, a single or multiple module combination is possible due to the AHU communication kit's modular design.

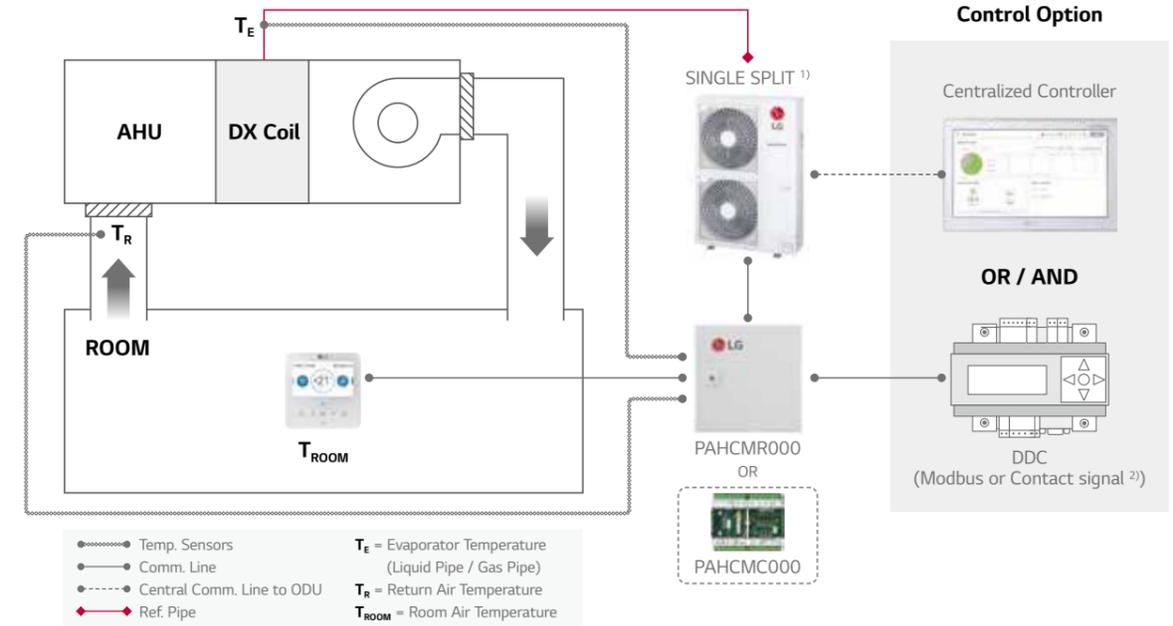
- Multiple module combination for large capacity AHU



Communication Kit & Controller Module

Single Split Application

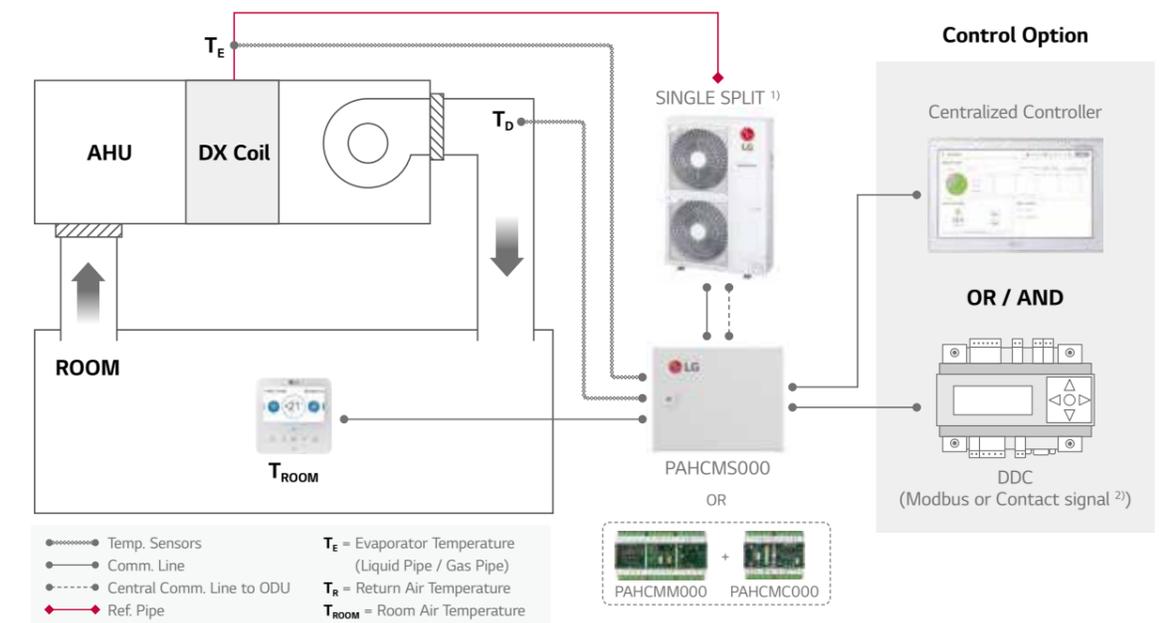
Single Split + Return / Room Air Temperature Control



1) PI485 (PMNFP14A1) is required for centralized controller.
 2) In case of applying DDC with contact signal, discharge air temperature should be measured and controlled by DDC.
 Note : For more detail, please refer to the PDB.

Single Split Application

Single Split + Discharge Air Temperature Control



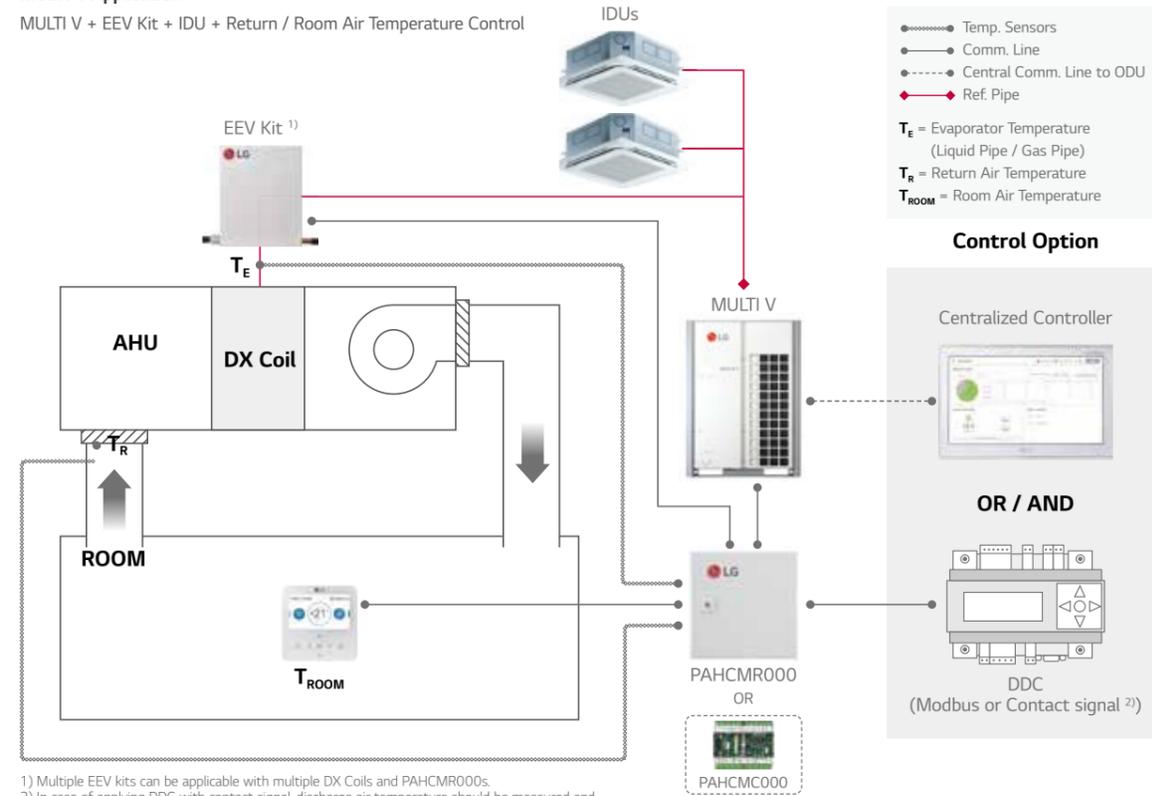
1) PI485 (PMNFP14A1) is required for centralized controller.
 2) In case of applying DDC with contact signal, discharge air temperature should be measured and controlled by DDC.
 Note : For more detail, please refer to the PDB.

AHU Kit

Communication Kit & Controller Module

MULTI V Application

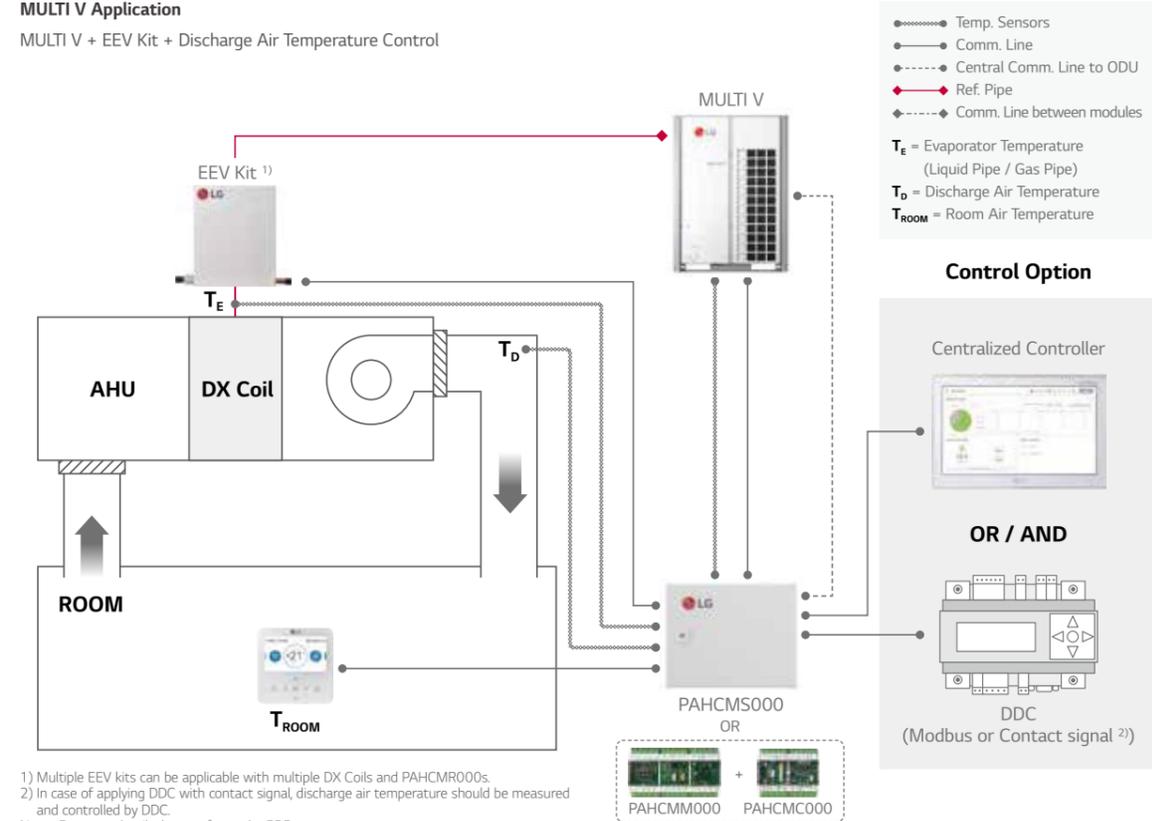
MULTI V + EEV Kit + IDU + Return / Room Air Temperature Control



1) Multiple EEV kits can be applicable with multiple DX Coils and PAHCMR000s.
 2) In case of applying DDC with contact signal, discharge air temperature should be measured and controlled by DDC.
 Note : For more detail, please refer to the PDB.

MULTI V Application

MULTI V + EEV Kit + Discharge Air Temperature Control



1) Multiple EEV kits can be applicable with multiple DX Coils and PAHCMR000s.
 2) In case of applying DDC with contact signal, discharge air temperature should be measured and controlled by DDC.
 Note : For more detail, please refer to the PDB.

Communication Kit Function

Communication with DDC via Contact Signal

| FUNCTION LIST | PAHCMR000 (PAHCMC000) | PAHCMS000 (PAHCMM000 + PAHCMC000) | TYPE | NOTE |
|--|-----------------------|-----------------------------------|---|--|
| Operation On / Off | On / Off | On / Off | Digital Input (Non Voltage) | - |
| Operation Mode | Cooling / Heating | Cooling / Heating | Digital Input (Non Voltage) | Available operation mode can vary depending on the settings of Communication Kit |
| Return (Room) Air Temperature ²⁾ | 16 ~ 30 °C | - | Analog Input (DC 0 ~ 10 V / 20mA) | - |
| Control ¹⁾ Discharge Air Temperature ²⁾ | - | - | - | Discharge air temperature should be controller directly by DDC using 'ODU Capacity Control' |
| Fan Speed ³⁾ | - | High / Middle / Low | Digital Input (Non Voltage) | - |
| Forced Thermal | On / Off | - | Digital Input (Non Voltage) | - |
| ODU Capacity | - | 10 ~ 100% | Analog Input (DC 0 ~ 10 V / 20mA) | - |
| Emergency Stop | - | Stop / Normal | Digital Input (Non Voltage) | - |
| Monitor Operation | On / Off | On / Off | Digital Output (Max. : DC 30 V / 1 A, AC 250V / 1 A) | For PACHMR000, dip sw1-3 DO Type should be set 'Off' (Status), In this case, 'fan speed' cannot be monitored by DO ports |
| Operation Mode | - | - | - | It needs to be checked through control signal |
| Fan Speed | High / Middle / Low | High / Middle / Low | Digital Output (Max. : DC 30 V / 1 A, AC 250V / 1 A) | For PACHMR000, dip sw1-3 DO Type should be set 'On' (Fan Mode) In this case, 'On / Off, defrost, error Status' cannot be monitored by DO ports |
| Defrost Operation | Defrost / Normal | Defrost / Normal | Digital Output (Max. : DC 30 V / 1 A, AC 250V / 1 A) | For PACHMR000, dip sw1-3 DO Type should be set 'OFF' (Status), In this case, 'fan speed' cannot be monitored by DO ports |
| Error Alarm | Error / Normal | Error / Normal | Digital Output, Relay C contact (Max. : DC 30 V / 1 A, AC 250V / 1 A) | - |
| Compressor On / Off | - | On / Off | Digital Output, (Max. : DC 30 V / 1 A, AC 250V / 1 A) | - |

1) Control functions for LG individual and central controller are not available in case of using together with DDC via contact signal.
 2) The range of temp. is differ depending on the type of the controller.
 3) To control fan speeds, DO port of the fan speed status should be connected to the fan control panel.
 Note : For more detail information, please refer to the product data book.

Communication with DDC via Modbus protocol

| FUNCTION LIST | PAHCMR000 (PAHCMC000) | PAHCMS000 (PAHCMM000 + PAHCMC000) | NOTE |
|--|----------------------------|-----------------------------------|--|
| Operation On / Off | On / Off | On / Off | |
| Operation Mode | Cooling / Heating / Fan | Cooling / Heating / Fan | |
| Return (Room) Air Temperature | 16 ~ 30 °C | - | |
| Control ¹⁾ Discharge Air Temperature ²⁾ | - | ○ | Dip SW1-2 Discharge Temp. Control Type should be set 'On' Standard II : 16 ~ 30 °C Standard III ⁴⁾ : 12 ~ 50 °C |
| Fan Speed ³⁾ | High / Middle / Low | - | |
| Forced Thermal On / Off | - | - | |
| ODU Capacity Control ²⁾ | - | 10 ~ 100% | Dip SW1-2 Discharge Temp. Control Type should be set 'On' |
| Emergency Stop | - | - | |
| Operation | On / Off | On / Off | |
| Operation Mode | Cooling / Heating / Fan | Cooling / Heating / Fan | |
| Return (Room) Air Temperature | ○ | - | Corresponding air temperature sensor connected to AHU Comm.Kit is required |
| Discharge Air Temperature | - | ○ | |
| Fan Speed | High / Middle / Low | High / Middle / Low | |
| Defrost Operation | Defrost / Normal | Defrost / Normal | |
| Error Alarm | Error / Normal, Error code | Error / Normal, Error code | |
| Compressor On / Off | On / Off | On / Off | |

※ ○ : Applied, - : Not Applied
 1) Control functions for LG individual and central controller are not available in case of using together with DDC via contact signal.
 2) In case of PAHCMS000, control type between "Discharge Air Temperature" and "ODU Capacity Control" is selectable.
 3) To control fan speeds, DO port of the fan speed status should be connected to the fan control panel.
 4) Standard III wired remote controller after version 2.10.5a.
 Note : For the Modbus memory map and more detail information, please refer to the product data book.

AHU Kit

Communication Kit Function

With LG Control System (Individual & Centralized Controller)

| FUNCTION LIST | PAHCMR000 (PAHCMC000) | PAHCMS000 (PAHCMM000 + PAHCMC000) | NOTE |
|---|-------------------------|-----------------------------------|---|
| Operation On / Off | On / Off | On / Off | - |
| Operation Mode | Cooling / Heating / Fan | Cooling / Heating / Fan | Available operation mode can vary depending on the settings of Communication Kit |
| Return (Room) Air Temperature ²⁾ | 16 ~ 30 °C | - | - |
| Discharge Air Temperature ²⁾ | - | ○ | Standard II : 16 ~ 30 °C Standard III ⁴⁾ : 12 ~ 50 °C Central Controllers : 12 ~ 50 °C |
| Fan Speed ³⁾ | High / Mid / Low | High / Mid / Low | To control the AHU fan, dip switch 1-3 'DO type' should be set 'On (Fan Speed)' (PAHCMR000) |
| Operation | On / Off | On / Off | - |
| Operation Mode | Cooling / Heating / Fan | Cooling / Heating / Fan | - |
| Return (Room) Air Temperature | ○ | - | - |
| Discharge Air Temperature | - | ○ | Standard II : 11 ~ 39.5 °C Standard III ⁴⁾ : 0 ~ 100.0 °C Central : -50.0 ~ 100.0 °C |
| Fan Speed | High / Middle / Low | High / Middle / Low | - |
| Defrost Operation | On / Off | On / Off | Only with Individual Controller |
| Error Alarm | Error Code | Error Code | Error code will be displayed on the screen |
| Compressor On / Off | On / Off | On / Off | Only with Individual Controller |

※ ○ : Applied, - : Not Applied

- Control functions for LG individual and central controller are not available in case of using together with DDC via contact signal.
- The range of setting temperature is different depending on the type of the controllers. And operation may different from setting range.
- To control fan speeds, DO port of the fan speed status should be connected to the fan control panel.
- Standard III wired remote controller after version 2.10.5a.

Note : For more detail information, please refer to the product data book.

Compatibility with LG HVAC Controllers

| CONTROLLER | INDIVIDUAL CONTROLLER | | | CENTRALIZED CONTROLLER | | | | | BMS GATEWAY | PDI |
|------------|---------------------------------------|------------------------|-------------|------------------------|-------------|------------|-----------|----------------------------|--------------|------------------------|
| | PREMIUM | STANDARD III | STANDARD II | AC EZ | AC EZ TOUCH | AC SMART 5 | ACP 5 | AC MANAGER 5 ¹⁾ | ACP LONWORKS | PREMIUM STANDARD |
| | | | | | | | | | | |
| Model no. | PREMTA000 PREMTA000A PREMTA000B | PREMTB100 PREMTBB10 | PREMTB001 | PQCSZ250S0 | PACEZA000 | PACSSA000 | PACPSA000 | PACMSA000 | PLNWKB000 | PQNUD1S40 PPWRDB000 |
| PAHCMR000 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| PAHCMS000 | - | ○ ²⁾ | ○ | - | - | ○ | ○ | ○ | - | - |

※ ○ : Applied, - : Not Applied

- AC Manager 5 is an integrator, so the installation with AC Smart 5 or ACP 5 is required.
 - Set temperature range of this model shall be extended April, 2020.
- Note : 1. Dry contact for indoor unit (PDRYCB000 / 400 / 300 / 500) is not applied.
2. For more details, please refer to the product data book.

Outdoor Unit Compatibility

For Small Size Application (~ 15kW) - Single Split

| TYPE | MODEL | UUA1 (2.5 ~ 5.0 KW) ¹⁾ | UUB1 (5.0 ~ 8.0 KW) ¹⁾ | UUC1 (7.1 ~ 10.0 KW) ¹⁾ | UUD1 / UUD3 (10.0 ~ 15.0 KW) ¹⁾ |
|---------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|--|
| Communication Kit (Controller Module) | PAHCMR000 (PAHCMC000) | - | ○ | ○ | ○ |
| | PAHCMS000 (PAHCMM000 + PAHCMC000) | - | ○ | ○ | ○ |
| Control Kit | PAHCNM000 | - | - | - | - |

1) When connecting to Single Split outdoor unit, please check the compatibility to the regional sales office.

For Medium-Large Size Application (~ 672 kW) - MULTI V

| TYPE | MODEL | MULTI V | | | | MULTI V WATER | |
|---------------------------------------|-----------------------------------|---------|----|-----|---|---------------|----|
| | | 5 | IV | III | S | IV | II |
| Communication Kit (Controller Module) | PAHCMR000 (PAHCMC000) | ○ | ○ | ○ | ○ | ○ | ○ |
| | PAHCMS000 (PAHCMM000 + PAHCMC000) | ○ | ○ | ○ | ○ | ○ | ○ |
| Control Kit | PAHCNM000 | ○ | ○ | ○ | ○ | ○ | ○ |

EEV Kit Compatibility

| EEV KIT MODEL | CAPACITY INDEX (kW) | | AHU APPLICATION KITS (MAXIMUM CONNECTABLE EEV KITS) | | | CONNECTION BY ODU SYSTEM | | |
|---------------|---------------------|------|---|-----------------------------------|-----------|--------------------------|------------------|--------------|
| | MIN. | MAX. | PAHCMR000 (PAHCMC000) | PAHCMS000 (PAHCMM000 + PAHCMC000) | PAHCNM000 | MULTI V | | SINGLE SPLIT |
| | | | | | HEAT PUMP | | HEAT RECOVERY | |
| PRLK048A0 | 3.6 | 28 | ○ (1) | ○ (1) | ○ (6) | ○ | ○ | - |
| PRLK096A0 | 28.1 | 56 | ○ (1) | ○ (1) | ○ (6) | ○ | ○ (Max. 33.7 kW) | - |
| PRLK396A0 | 56.1 | 112 | ○ (1) | ○ (1) | ○ (6) | ○ | - | - |
| PRLK594A0 | 112.1 | 168 | - | ○ (1) | ○ (3) | ○ | - | - |

※ ○ : Applied, - : Not applied

- Note 1. Table of the outdoor unit compatibility is based on European regional model.
2. When connecting outdoor units in other areas, please check whether they are compatible or not.
3. Expansion application kit compatibility is based on capacity index of the system, it may changed according to system design condition.

AHU Kit

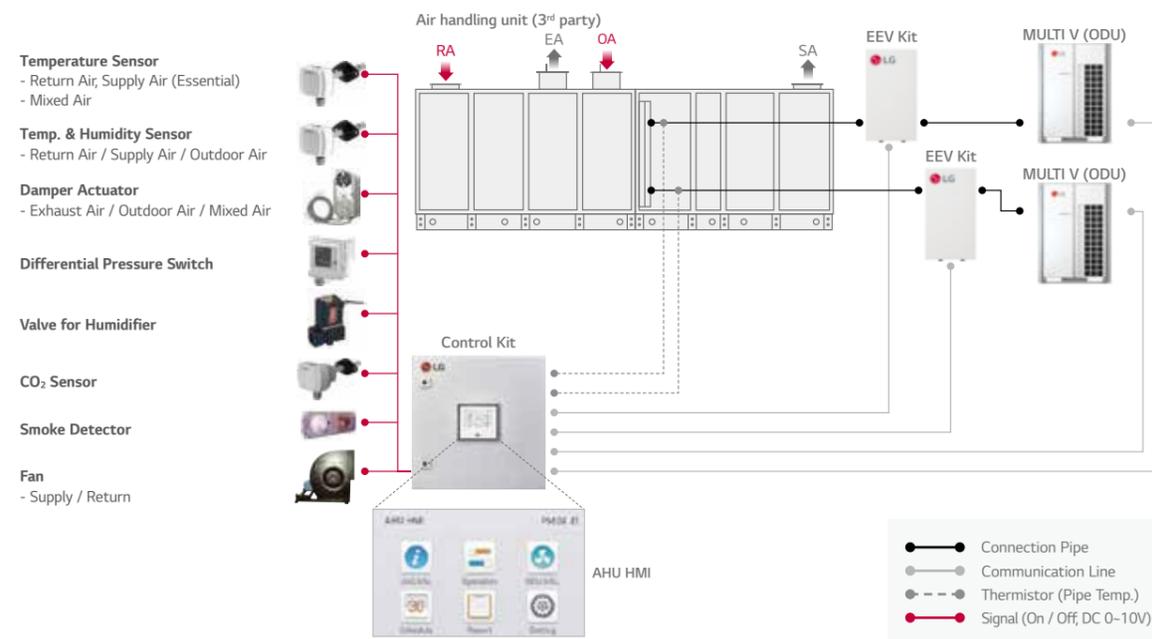
Control Kit

Field Supplied Item

| LIST | REQUIRED SPECIFICATION | APPLY LOCATION |
|-------------------------------------|---|--|
| Temperature / Humidity Sensor | - Power : AC 24 V - Output signal : DC 0 ~ 10 V - Temperature range : -40 °C ~ 70 °C - Humidity range : 0 ~ 95 % RH | Supply air duct, Return air duct, Outdoor air duct |
| Temperature Sensor | - Power : AC 24 V - Output signal : DC 0 ~ 10 V - Temperature range : -50 °C ~ 50 °C | Supply air duct, Return air duct, Mixed air duct |
| Damper Actuator | - Power : AC 24 V - Input / output signal : DC 0 ~ 10 V - Torque : 15 N·m - Operation time : 150 s - Rotation Angle : 90° | Outdoor air damper, Exhaust air damper, Mixed damper |
| Filter Differential Pressure Sensor | - Power : AC 24 V - Output signal : DC 0 ~ 10 V - Range: 0 ~ 1,000 Pa - Switch type : Relay open / close | Filter |
| Static Pressure Sensor | - Power : AC 24 V - Output signal : DC 0 ~ 10 V - Range : 0 ~ 1,000 Pa | Supply air duct |
| CO2 Sensor | - Power : AC 24 V - Output signal : DC 0 ~ 10 V - Range : 0 ~ 2,000 ppm | Return air duct |
| Smoke Detector | - Power : AC 24 V - Type : Contact | Return air duct |

Various Control with Control Kit – Multiple MULTI V + EEV Kits

Field Supplied Item



Water Communication Module

PAHCMW000

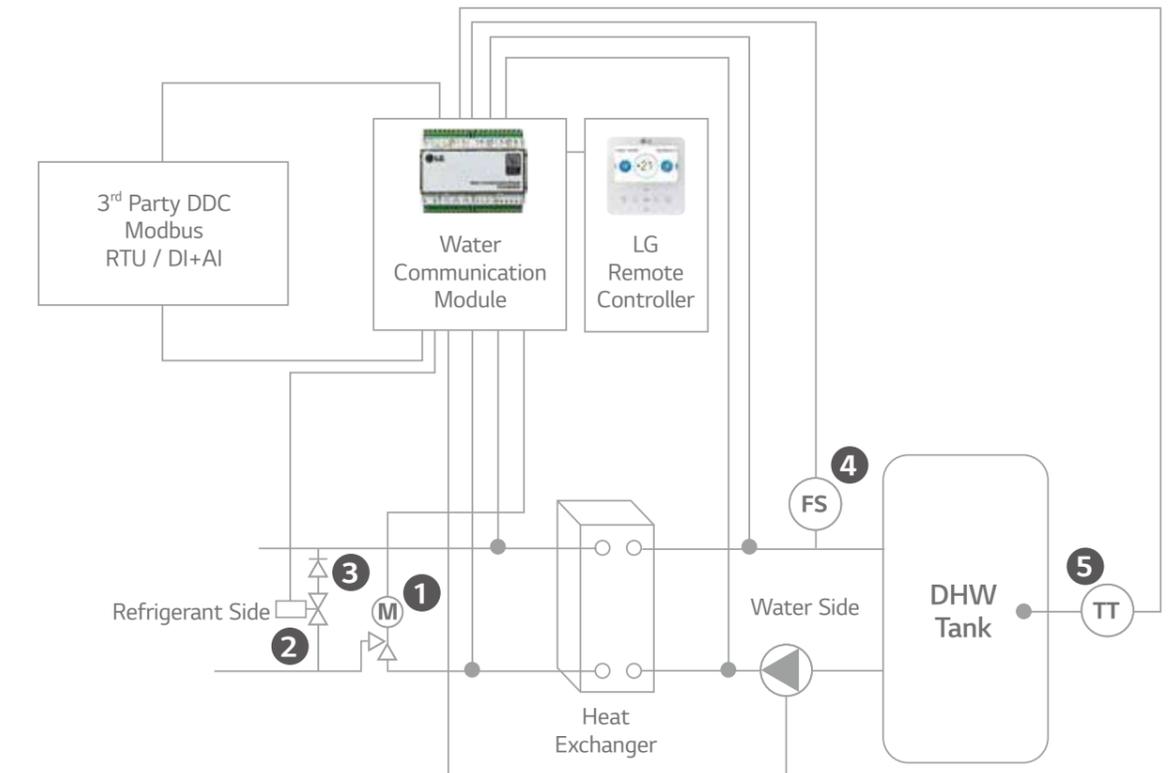
This module is intended to connect 3rd party plate heat exchanger to LG outdoor unit with the ability to control water temperature from 3rd party DDC or LG remote controller.



Overview

Interlocking with 3rd parties can make various solution with LG Multi V outdoor unit.

1. EEV
2. Solenoid Valve (NC)
3. Non-Return Valve
4. FS : Flow Switch
5. TT : DHW Temperature Transmitter



• 3rd party solenoid, non-return valve, heat exchanger, flow switch and DHW temperature transmitter (Optional) must be purchased separately. (Field supplied items)

Water Communication Module

Features & Benefits

Interlocking with 3rd parties can make various solution with LG MULTI V outdoor unit.

Interlocking with 3rd Party Equipment

| CONTENTS | CONNECTION PORT | FUNCTION |
|--|----------------------|--|
| RS485 | CH1 (A+ / B-) | Module Comm. Port Communication Port Modbus |
| | CH2 (A+ / B-) | IDU Comm. Port Communication with Multi V Outdoor |
| UNIVERSAL INPUT (Cooling / Heating Setting) | UI1 | Flow Switch Flow Switch Input by 3rd party |
| | UI2 | 0 ~ 10V Set Temp. Target Temp. Setting |
| | UI3 | Cooling Thermostat Signal Thermostat Cooling Signal |
| | UI4 | Heating Thermostat Signal Thermostat Heating Signal |
| UNIVERSAL INPUT (DHW Only) | UI1 | Flow Switch Flow Switch Input by 3rd party |
| | UI2 | 0-10V Set Temp. Target Temp. Setting |
| | UI3 | DHW Temperature Transmitter 0 ~ 10V Measured Water Temp. Input by 3rd party 0 ~ 10 V sensor |
| | UI4 | DHW Thermostat Signal DHW Heating Signal |
| NTC | RI1 | Water Inlet Sensor PHEX Water Inlet Sensor |
| | RI2 | Water Outlet Sensor PHEX Water Outlet Sensor |
| REMO | +12V / SIG / GND | LG Remote Controller |
| SINGLE | Reserved | - |
| DIGITAL OUTPUT | DO1 | Defrost / Mode Output for defrost signal and / or cool mode |
| | DO2 | Pump Output signal for pump on / off |
| | DO3 | Bypass Output signal for PHEX Bypass Valve |
| NTC | RI3 | Thermistor Pipe In PHEX Ref. Inlet Pipe Sensor |
| | RI4 | Thermistor Pipe Out PHEX Ref. Outlet Pipe Sensor |
| EEV | +12V / 1 / 2 / 3 / 4 | Expansion Valve EEV Control |

Compatibility & Accessory

EEV (LG MODEL)

| MODEL | CAPACITY (KW) | | PAHCMW000 |
|-----------|---------------|------|-----------|
| | MIN. | MAX. | |
| PAEEVC000 | 3.6 | 28 | HP / HR |
| PRLK048A0 | 3.6 | 28 | HP / HR |
| PRLK096A0 | 28.1 | 56 | HP |

Note :
Water communication module can accept plate heat exchangers from 3, 6 to 112 kW for combination with Multi V Outdoor units.

LG Controllers

| CONTROLLER | INDIVIDUAL CONTROLLER | CENTRALIZED CONTROLLER | | DRY CONTACT |
|------------|-----------------------|------------------------|------------|-------------|
| | HEATING STANDARD III | AC EZ TOUCH | AC SMART 5 | |
| | PREMTW101 | PACEZA000 | PACSSA000 | PDRYCB000 |

Specification for Field supply item

- The 3rd party can select the for best usable version

Solenoid valve for Bypass

| CAPACITY (KW) | | EEV TYPE | SYSTEM | KV VALUE OF SOLENOID AND NON-RETURN VALVE | PIPE SIZE |
|---------------|------|-----------|---------|---|-----------------|
| MIN. | MAX. | | | | |
| 3.6 | 28 | PAEEVC000 | HP / HR | 0.95 | 3 / 8" / 9.52mm |
| | | PRLK048A0 | | | |
| 28 | 56 | PRLK096A0 | HP | 1.9 | 1 / 2" / 12.7mm |

Flow switch

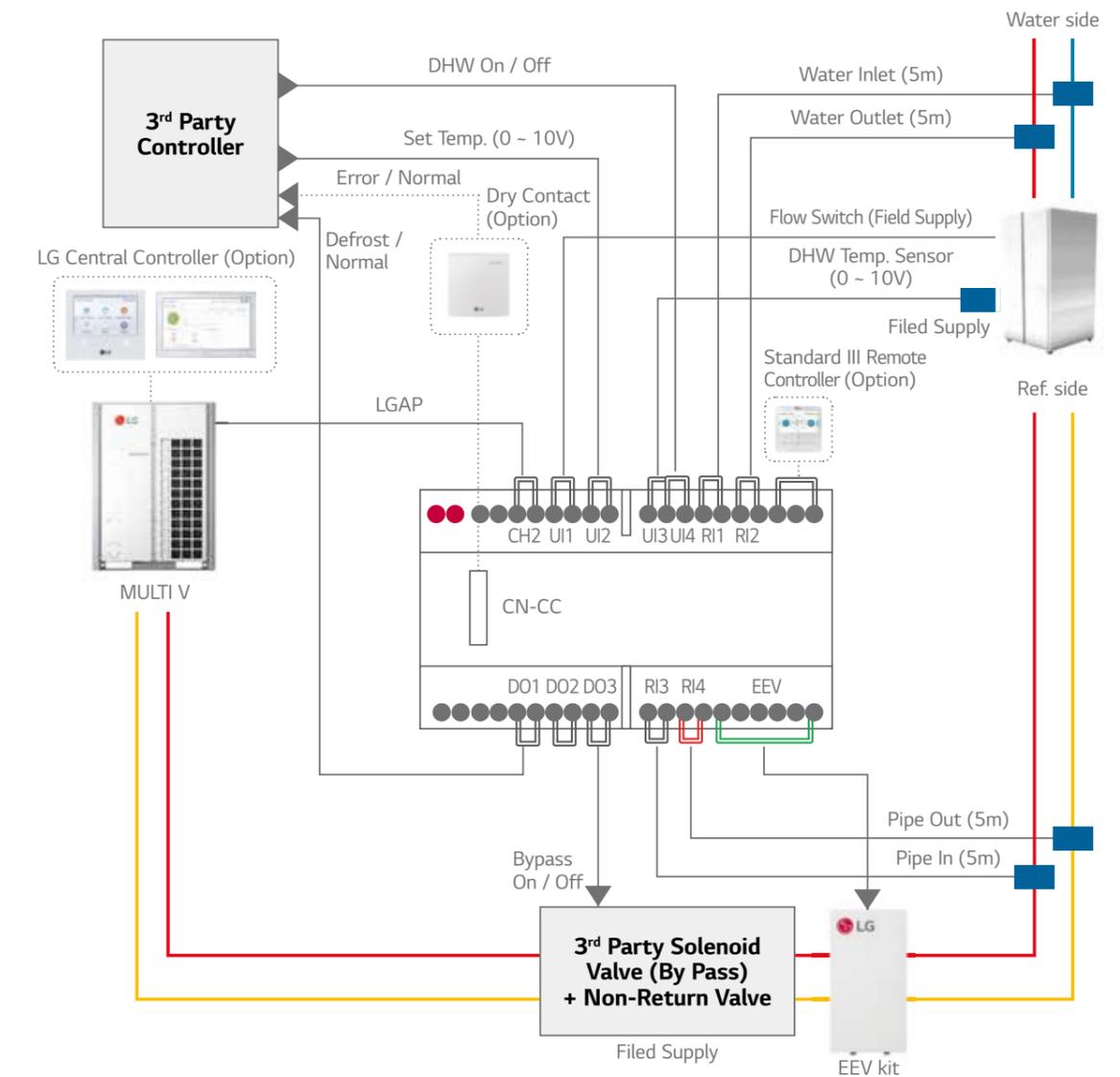
- The nominal flow and cut of flow can be calculated using the values below.

| CONTROLLER | NOMINAL FLOW | FLOW SWITCH CUT OFF |
|------------|--------------|---------------------|
| L / min*kW | 3.29 | 1.23 |

* Example : ODU nominal Cooling Capacity 28 kW, 28 x 3.29 = 92.12 L / min. nominal flow, 28 x 1.23 = 34.44 L / min. flow switch cut off

Installation Scene with Contact Connection

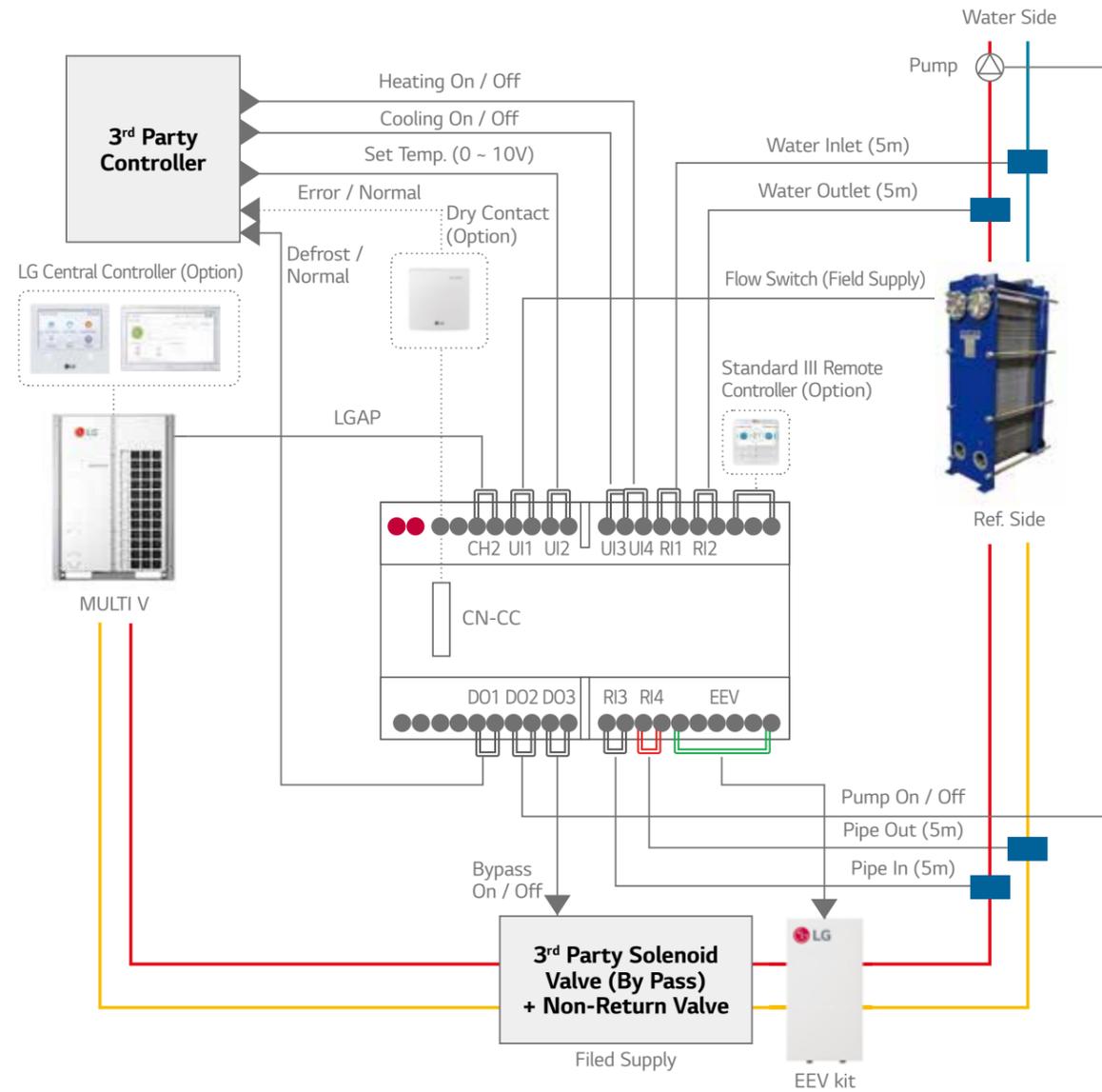
Contact signal + DHW Only Setting



Water Communication Module

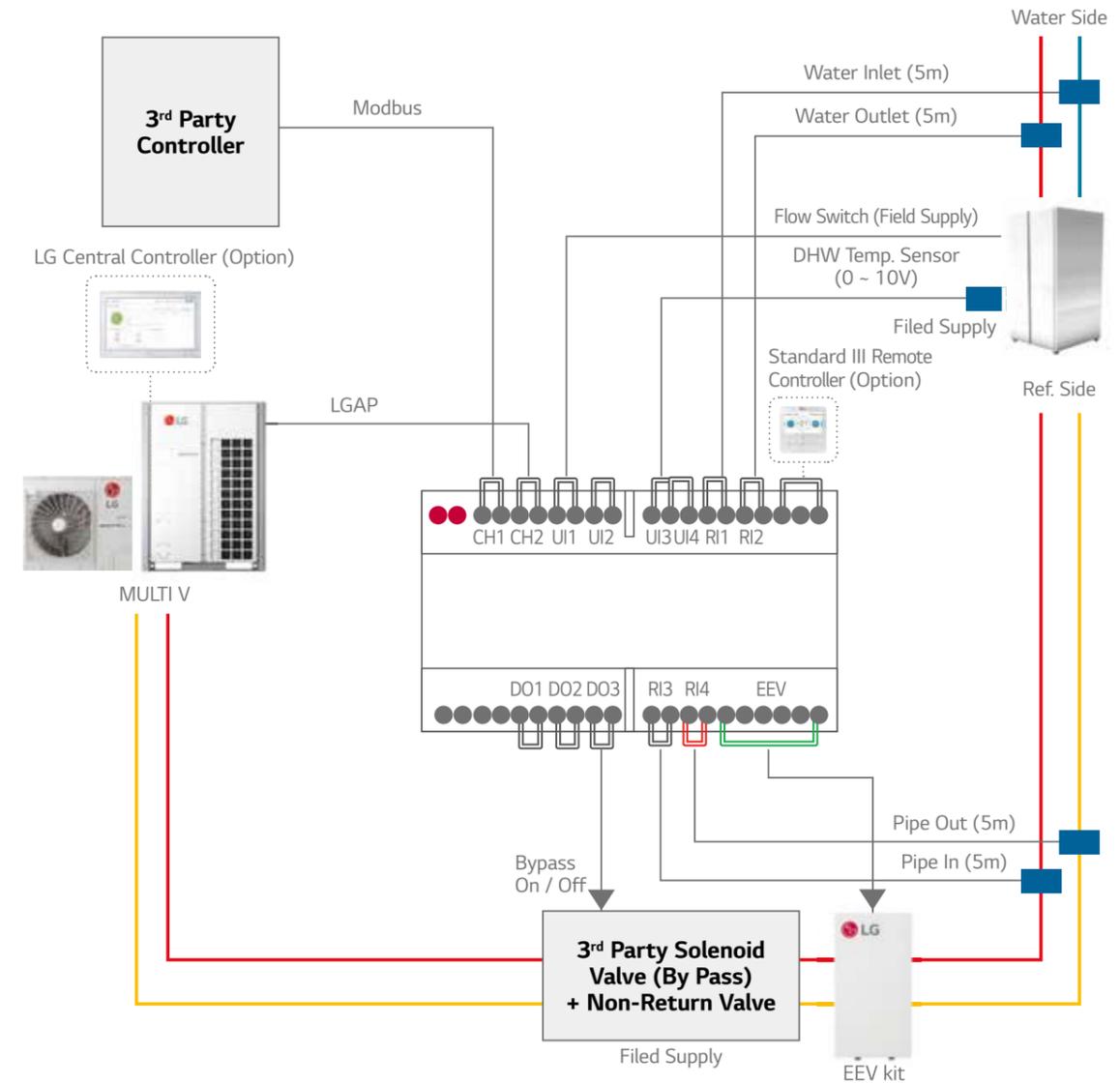
Installation Scene with Contact Connection

Contact signal + Heating / Cooling Setting



Installation Scene with Modbus / LG Control (Optional) Connection

Modbus + DHW Only Setting

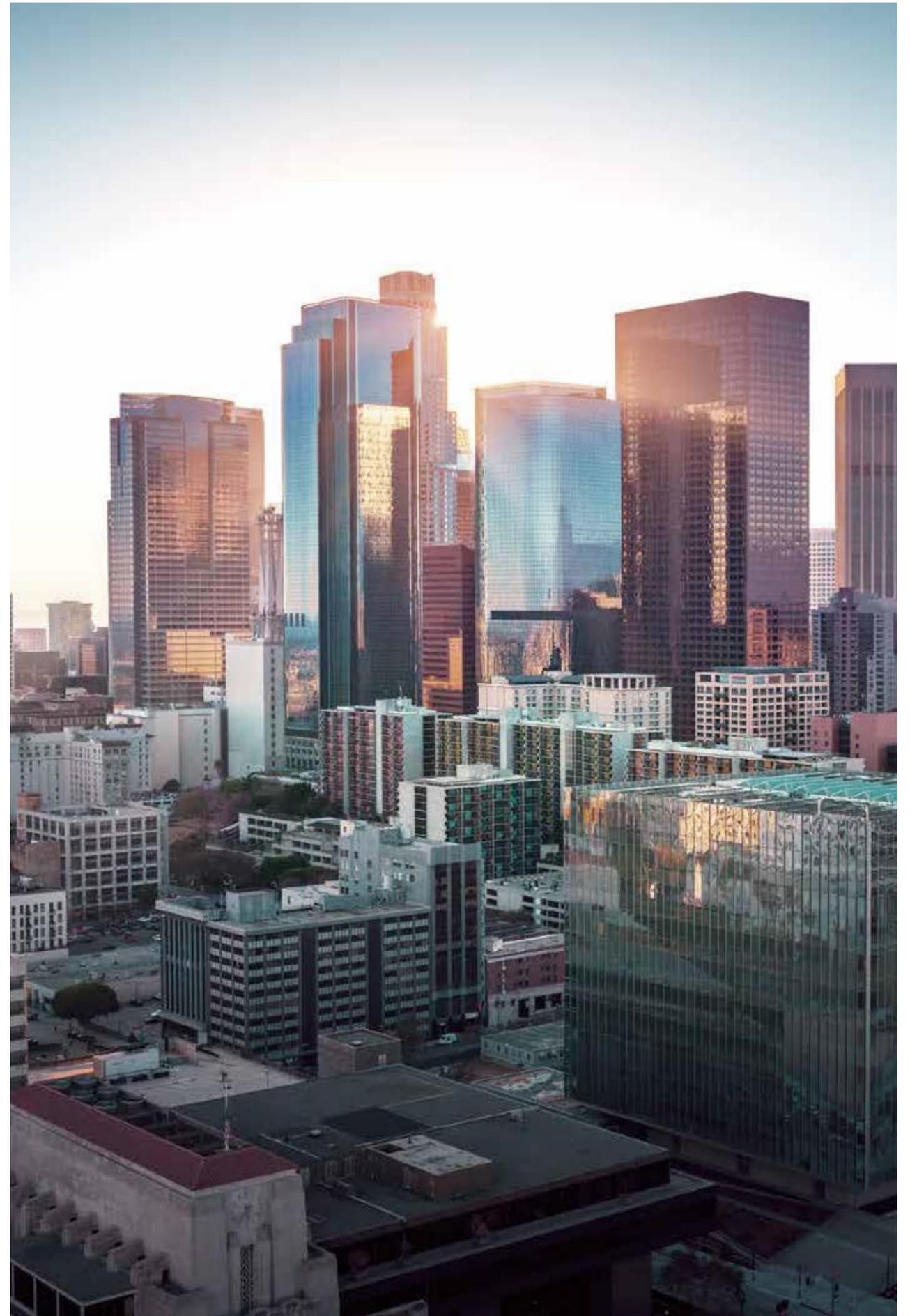
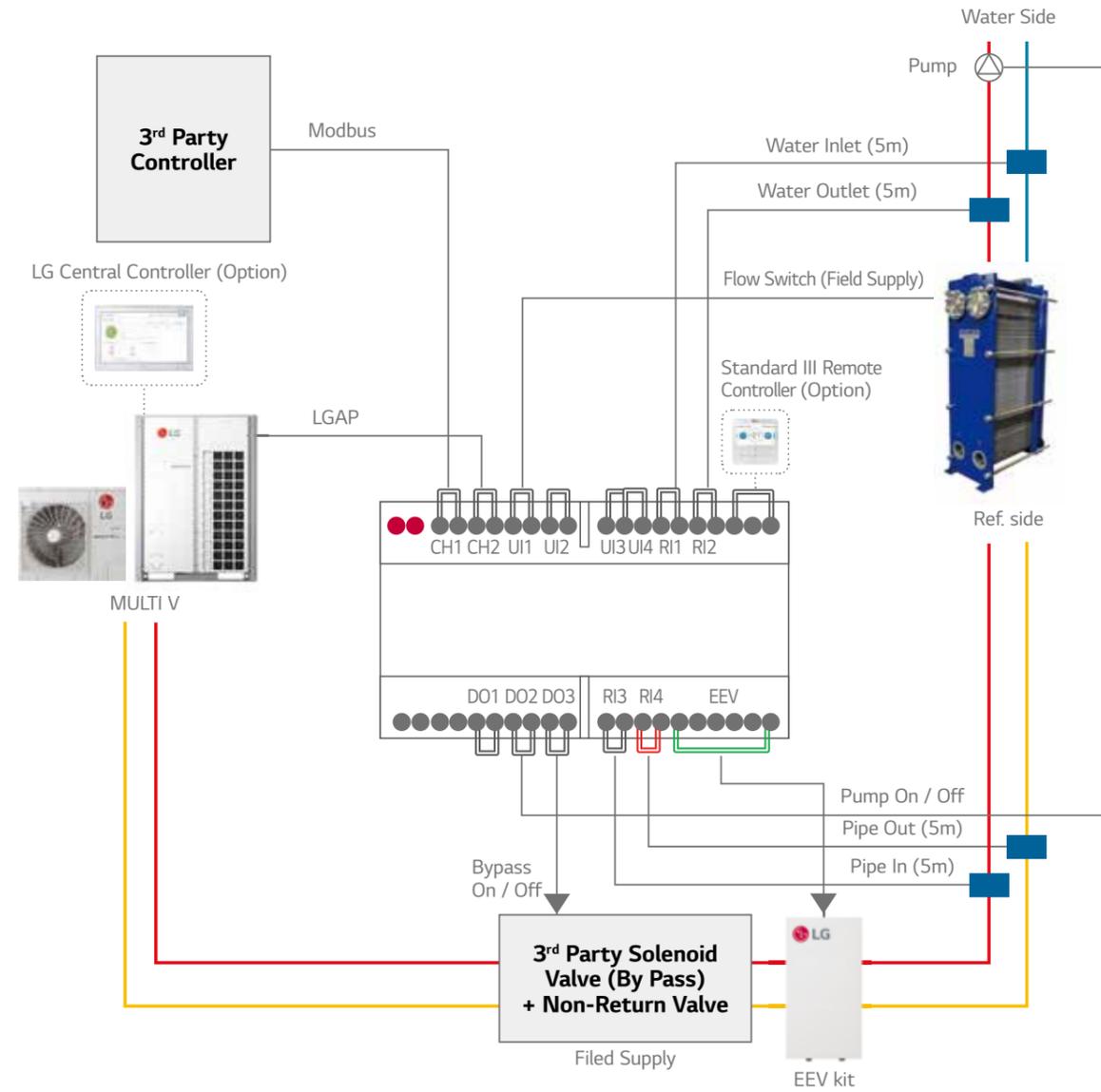


※ In case of Contact control, LG controllers can only support monitoring functions.

Water Communication Module

Installation Scene with Modbus / LG Control (Optional) Connection

Modbus + Heating / Cooling Setting



Hotel Control Solution

Guest Room
Air conditioner automatically switches off when guests depart

Integrated control of air conditioner with the hotel room controller

Air conditioner can be controlled with existing hotel thermostat

Prioritizes guest safety with refrigerant leak detection

Reception
Air conditioner control in conjunction with check-in or check out

Public Areas
Centralized management of the public areas

Design Proposal

| GUEST ROOM | | | | LOBBY |
|---|---|---|---|---|
| The air conditioner automatically turns off when guests leave | Integrated control of air conditioner with the hotel room controller | Control with existing hotel thermostat | Guest safety is the first priority | Air conditioner control in conjunction with check-in or check out |
| | | | | |
| PDRYCB400 2 contact point | PDRYCB500 Modbus RTU (9,600bps) | PDRYCB320 8 contact point | PRLDNV50 Refrigerant leakage detector • 6,000ppm | PACSSA000 AC Smart 5 • BMS Integration (BACnet IP, Modbus TCP) |
| Input • Operation On / Off | Function • Operation • Indoor temperature • Error alarm • Set run mode • Set temperature • Set fan speed | Input • Universal Input • Operation On / Off • Thermo On / Off • Operation mode (Fan / Heat / Cool) • Fan speed (Low / Middle / High) | PREMTB100 Wired remote controller • 4.3 inch color LCD • Touch button | PACP5A000 ACP 5 • BMS Integration (BACnet IP, Modbus TCP) |
| Output • Operation On / Off status • Error alarm | | Output • Operation On / Off status • Error alarm | | |

Shopping Mall Control Solution

Retail
Proportionally distribute and manage the power consumption by tenants

Real-time system issue detection and alarms

Maintenance Office
Reduces energy by checking operational trends

Atrium
Integrated management of AHU applied to large spaces

Chiller and VRF integrated control

Design Proposal

| RETAIL | MAINTENANCE OFFICE | ATRIUM | |
|--|---|--|---|
| Proportionally distribute and manage power consumption by the tenant | Fast problem detection and alarms | Integrated management of AHU applied to large spaces | Chiller and VRF integrated control |
| | | | |
| PPWRDB000 PDI Standard (2 ports) • Max. 128 IDU | PACSSA000 AC Smart 5 • BMS Integration (BACnet IP, Modbus TCP) | PAHCMR000 AHU Comm.Kit • Return air | PCHLLN000 Chiller Option Kit (S / W) + PACP5A000 ACP 5 + PACSSA000 AC Smart 5 |
| PQNUD1S40 PDI Premium (8 ports) • Max. 128 IDU | PACP5A000 ACP 5 • BMS Integration (BACnet IP, Modbus TCP) | PAHCMS000 AHU Comm.Kit • Discharge air | |

Hospital Control Solution

Hospital Ward
Proper airflow management for patients

Monitor the comfort level for each hospital ward

Control fan speed and air volume

Service Zone
Energy savings based on flexible scheduling

Lobby
Centralized management of AHU for large spaces

Design Proposal

| HOSPITAL WARD | | | SERVICE ZONE | LOBBY |
|---|--|--|--|--|
| Proper airflow management for patients | Monitor the comfort level for each hospital ward | External device interlock control | Energy savings based on flexible scheduling | Centralized management of AHU for large space |
| | | | | |
| PTVSM A0 Human detection sensor | PACSS A000 AC Smart 5 • BMS Integration (BACnet IP, Modbus TCP) | PDRYCB400 2 contact point Input • Operation On / Off Output • Operation On / Off status • Error alarm | PACSS A000 AC Smart 5 • BMS Integration (BACnet IP, Modbus TCP) | PAHCMR000 AHU Comm.Kit • Return air |
| | | | | |
| PREMTB100 Wired remote controller • 4.3 inch color LCD • Touch button | PACP5 A000 ACP 5 • BMS Integration (BACnet IP, Modbus TCP) | | PACP5 A000 ACP 5 • BMS Integration (BACnet IP, Modbus TCP) | PAHCM S000 AHU Comm.Kit • Discharge air |

Academic Institution Control Solution

Class Room
Automatically save energy in the absence of students

Central controls prevent students from arbitrary control

Lecture Hall
Schedule management according to academic plan

Maintenance Office
Integrated management of distributed buildings

Centralized management with multiple interfaces

Design Proposal

| CLASS ROOM | LECTURE HALL | MAINTENANCE OFFICE | |
|---|--|--|--|
| Automatically save energy in the absence of students | Central controls prevent students from arbitrary control | Integrated management of distributed buildings | Centralized management with multiple interfaces |
| | | | |
| PTVSM A0 Human detection sensor | PACSS A000 AC Smart 5 • BMS Integration (BACnet IP, Modbus TCP) | PACM5 A000 AC Manager 5 • BMS Integration (BACnet IP, Modbus TCP) | PACM5 A000 AC Manager 5 • BMS Integration (BACnet IP, Modbus TCP) |
| | | | |
| PREMTB100 Wired remote controller • 4.3 inch color LCD • Touch button | PACP5 A000 ACP 5 • BMS Integration (BACnet IP, Modbus TCP) | | |

