CENTRALIZED CONTROL

CENTRALIZED CONTROLLER FEATURE LIST

Controller Name			AC Ez	AC Ez Touch	AC Smart 5 [5]	ACP 5 [5]	ACP Lonworks	AC Manager 5 [3]
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 [4]	16x32
		Chiller	-	-	5 Optional [2]	10 Optional [2]	-	10x32
Compatibility	Air Conditioner		○ [1]	○	○	○	○	○
	Ventilation (ERV / ERV DX)		○ [2]	○	○	○	○	○
	Heating		-	○	○	○	○	○
	AHU		-	-	○	○	○	○
	Chiller		-	-	○ [4]	○ [4]	-	○
	ACS IO		-	-	○ [4]	○ [4]	○ [4]	○
Additional Function	Add Drawing		-	-	○ [4]	○ [4]	○ [4]	○
	Group Management		-	-	○ [4]	○ [4]	○ [4]	○
	Auto Changer Over		-	○	○ [4]	○ [4]	○ [4]	○
	Set Back		-	○	○ [4]	○ [4]	○ [4]	○
	2 Set		-	○	○	○	○ [4]	○
	Change Alarm		-	Filter	Filter	Filter	Filter	Filter
	Indoor Unit Lock		-	○	○	○	○ [4]	-
	Cycle		-	-	○	○	○ [4]	○
Schedule			○	○	○ [4]	○ [4]	○ [4]	○
Auto Control	Peak Control	Priority Control	-	○	○	○	○ [4]	○
		Outdoor Unit Capacity Control	-	-	○ [4]	○ [4]	○ [4]	○
	Time limit control		-	-	○ [4]	○ [4]	○ [4]	○
	InterLocking		-	-	○ [4]	○ [4]	○ [4]	○
Energy Navigation			-	-	○ [4]	○ [4]	-	○
Energy Report	Power		-	-	○	○	○ [4]	○
	Gas		-	-	○	○	○ [4]	○
	Run time		-	-	○ [4]	○ [4]	○ [4]	○
	Email		-	-	-	-	○ [4]	-
	PC / USB		-	-	○ [4]	PC	PC	PC
Trend Reporting			-	-	-	-	-	○
History	Report (Control / Error)		-	Error	○ [4]	○ [4]	○ [4]	○
	Send Email		-	-	○ [4]	○ [4]	○ [4]	○
	Save to PC / USB [6]		-	-	-	-	○ [4]	-
etc	Summer Time		-	○	○ [4]	○ [4]	○ [4]	○
	Outdoor Unit Oil-Return Operation		-	-	○ [4]	○ [4]	○ [4]	-
	User Authority		-	Password	○ [4]	○ [4]	○ [4]	○
	PC Access		-	○	○ [4]	○ [4]	○ [4]	○

※ ○ : Applied, - : Not Applied
1) Except for some feature (individual lock, limit, temp., etc.)
2) Except for some feature (user mode, additional function, etc)
3) ACP 5 or AC Smart 5 is required
4) This function is possible to use in Web Only (BMS Point is not applied)
5) Without additional device, ACP 5 and AC Smart 5 provide BACnet IP and Modbus TCP interface for BMS
6) ACS, ACP, ACM 5 Expected to 4Q, 2020

CONTROL SOLUTION

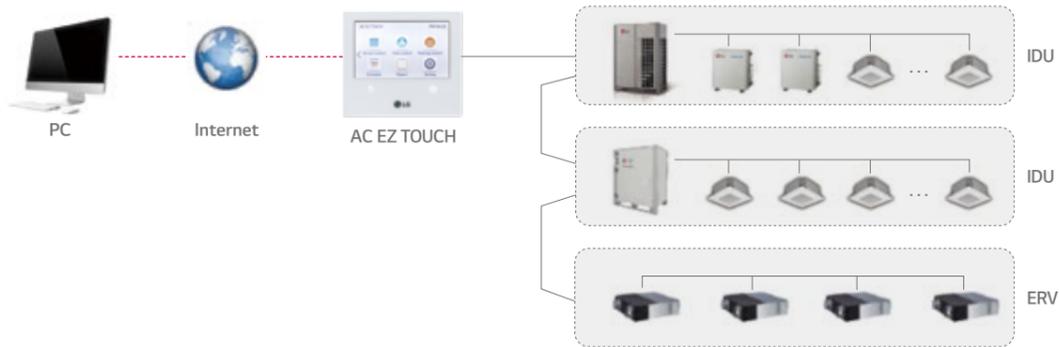# AC EZ TOUCH

Smart management with 5 inch touch screen for small site.

PACEZA000

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
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	○

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

Features & Benefits

• User friendly control by graphical access
• Total 200 schedule events
• Energy saving mode
• Energy monitoring (with PDI)
• 2 set point function (Upper / Lower temperature setting)
• Temperature set points range limit
• Remote controller lock (All, Temp, Mode, Fan Speed)
• Operation history
• Filter cleansing or changing alarm
• Emergency stop

Overview

PC   Internet   AC EZ TOUCH

IDU

IDU

ERV

Feature

PC Access
Users can control each space efficiently through PC access.

* IPv6 supported

Internet

Energy Statistics (with PDI)
Statistics of operational status (time, power consumption) are provided to help make intelligent system operation decisions.

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 mode changes from cooling to fan or heating to off mode by force.
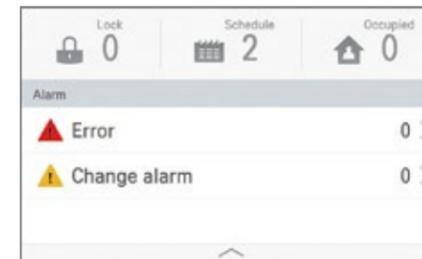(It is available only for operating indoor unit)

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.

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

Group / Individual Control
By clicking each indoor units on screen, user controls them individually or by group. It is useful to monitor or control for the best fit of request.

AC EZ

Easy to manage up to 32 indoor units, including ERV with simple interface.
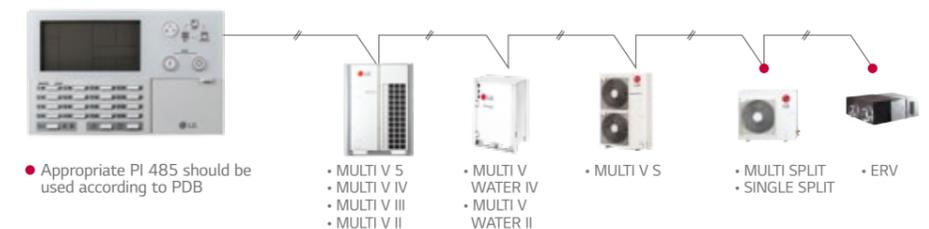
PQCSZ250S0

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	DC 12V
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

Features & Benefits

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

● Appropriate PI 485 should be used according to PDB

• MULTI V 5
• MULTI V IV
• MULTI V III
• MULTI V II

• MULTI V WATER IV
• MULTI V WATER II

• MULTI V S

• MULTI SPLIT
• SINGLE SPLIT

• ERV

AC SMART 5

Large 10 inch type touch screen with HTML5 GUI(Graphic User Interface) fitted with a screen resolution allows easy control.
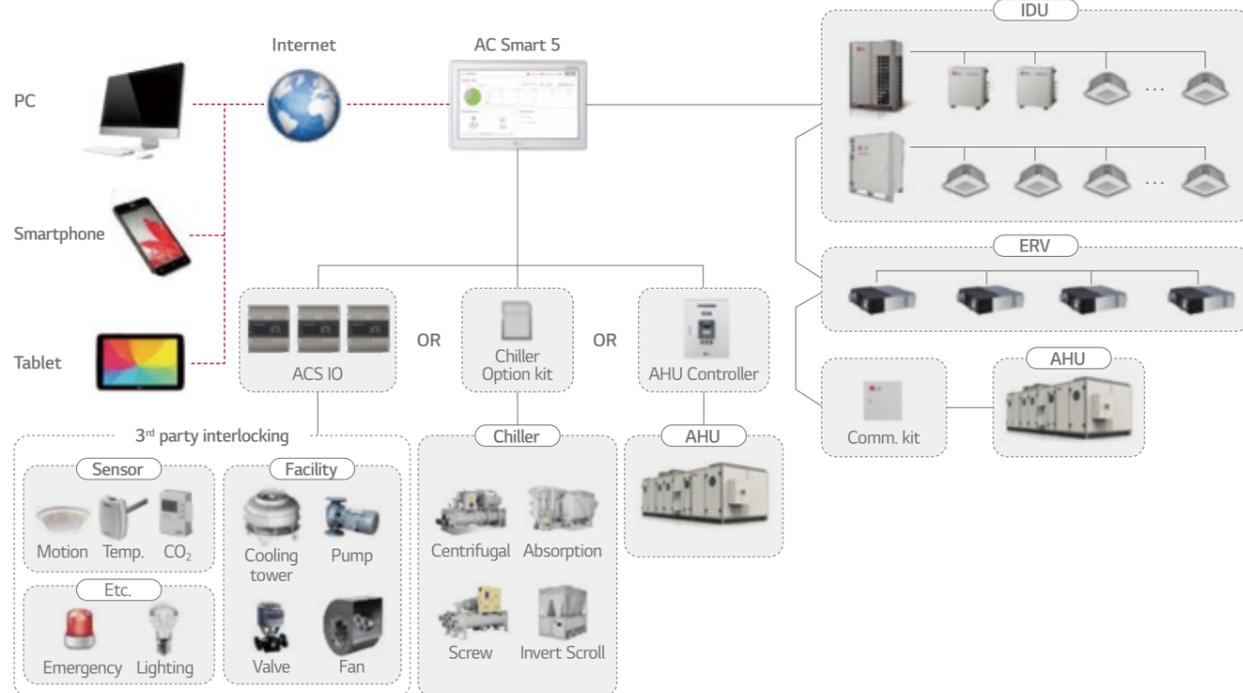
PACS5A000

Features & Benefits

- The central controller allows control of the LG HVAC system to various platforms.
  (Touch screen, PC, Smartphone, Tablet)
  - DI : 2 / DO : 2
  - Max. 128 IDU control
  - BACnet IP/Modbus TCP
  - Schedule
  - Map view (Visual navigation)
  - Time limit control / Auto change over
  - Energy monitoring
  - History / Operation trend
  - Interlock with 3rd party equipment
    (ACS IO, ACU IO Module is needed)
  - Multi level grouping
  - Emergency stop & alarm
  - Error alarm by e-mail

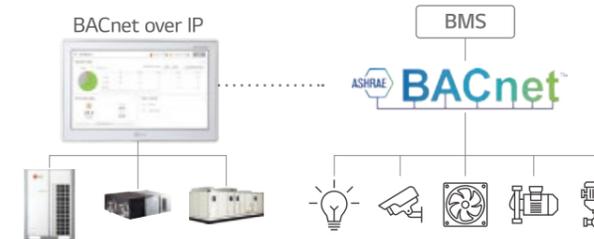| Model Name	PACS5A000
Size (W x H x D, mm)	253.2 x 167.7 x 28.9
Interfaceable Products	MULTI V / ERV / ERV DX / HYDRO KIT / THERMA V / AHU kit / LG Chiller [1)]
Maximum number of units	128
Individual / Group Control	On & Off / Mode / Temperature / Fan speed
Individual Controller Lock	Temperature / Mode / Fan speed / All
Advanced Function Setting and Display [2)]	Comfort Cooling / ODU Low Noise / ODU Defrost Mode / Comfort Level display / CO_2 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	○
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

Overview

BMS Integration

Without additional device, AC Smart 5 provides BACnet IP / Modbus TCP interface for BMS (Building Management System) integration as well as its own management function.
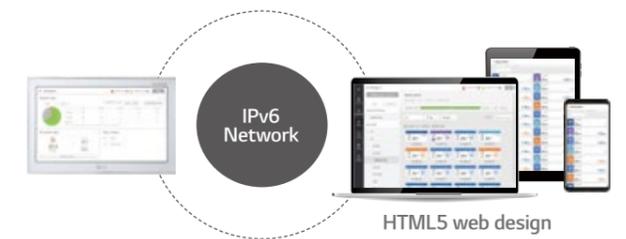
Energy Management / Operation Trend

Energy navigation function allows air conditioners operation to be managed under the monthly (Weekly / Yearly) plan of energy usage. By analyzing present energy consumption and comparing with the plan, overuse of system operational costs can be prevented.

Multi Level Group Composition

You can freely apply layer structure such as building, floor, zone, etc. and set the group as the same as the site composition to control and monitor the devices. If you have special control group, you can additionally compose frequently used groups such as VIP Room, executive room, etc. regardless of the building structure.
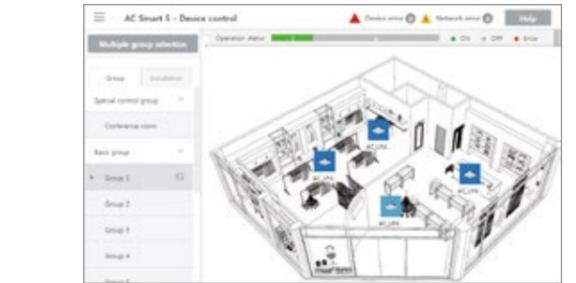
Advanced Network Accessibility

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.
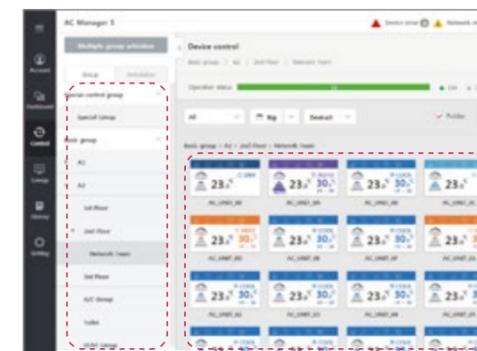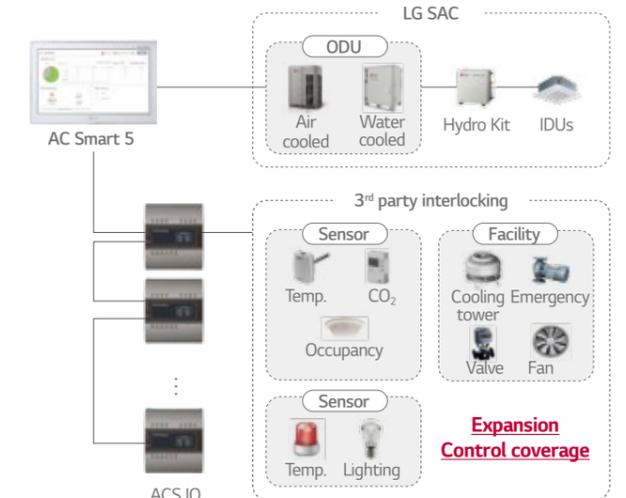
HTML5 web design

Visualized Control

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

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…)

Expansion Control coverage

CONTROL SOLUTION

ACP 5

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.

PACP5A000

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]
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	○
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
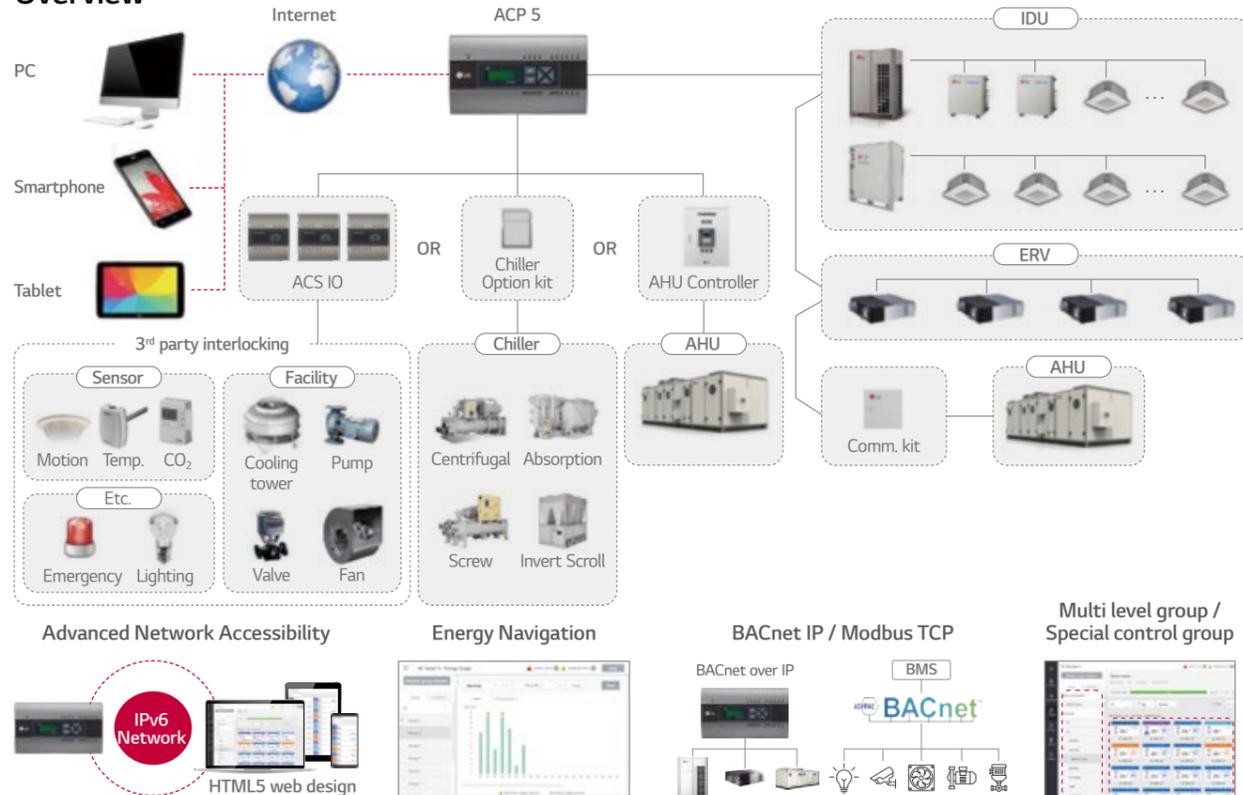
Features & Benefits

- The central controller allows control of the LG HVAC system by various platforms. (PC, Smartphone, Tablet)
  - DI :10 / DO : 4
  - Max. 256 IDU control
  - BACnet IP/Modbus TCP
  - Schedule
  - Map view (Visual navigation)
  - Time limit control / Auto change over
  - Energy monitoring
  - History / Operation trend
  - Interlock with 3rd party equipment (ACS IO, ACU IO Module is needed)
  - Multi level grouping
  - Emergency stop & alarm
  - Error alarm by e-mail

Overview

Advanced Network Accessibility

IPv6 Network

HTML5 web design

Energy Navigation

BACnet IP / Modbus TCP

BACnet over IP

BMS

Multi level group / Special control group

ACP LONWORKS GATEWAY

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.

PLNWKB000

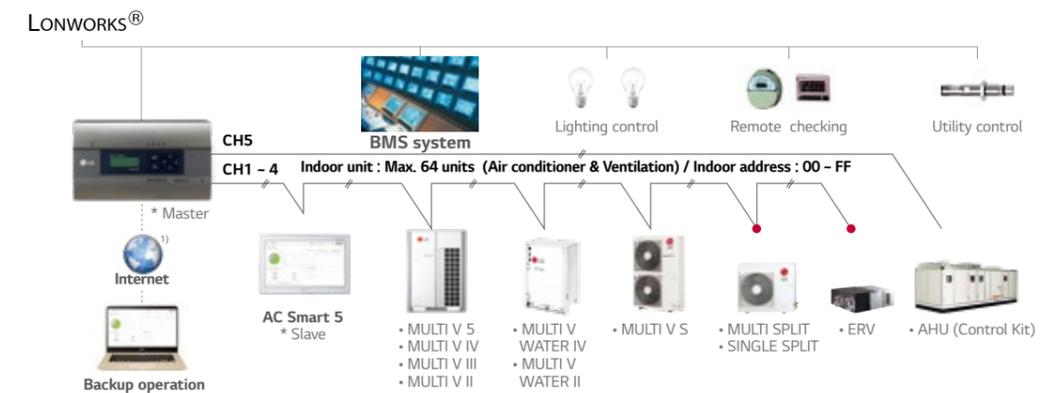| Control	Monitoring
On / Off Command	On / Off
Operation Mode Setting	Operation Mode
Lock	Lock
Temperature	Temperature
Fan Level	Fan Level
Fan Direction Auto	Fan Direction Auto
Mode Lock	Mode Lock
Fan Level Lock	Fan Level Lock
Temperature Lock	Temperature Lock
Temperature Lower Limit	Temperature Lower 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

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.

Overview

LONWORKS®

1) Assignment of public IP address is required to access central controller through internet.   ● Appropriate PI 485 should be used according to PDB (Product Data Book)

PI 485

PI 485 converts LG air conditioner's protocol to the RS485 protocol for the central controller

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

PHNFP14A0

AC MANAGER 5

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

PACM5A000

reddot award
User Interface Design

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)
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	○
Interlock Control	○
Virtual Group Control	○
ODU Capacity Control	○
Energy Navigation (with PDI)	○

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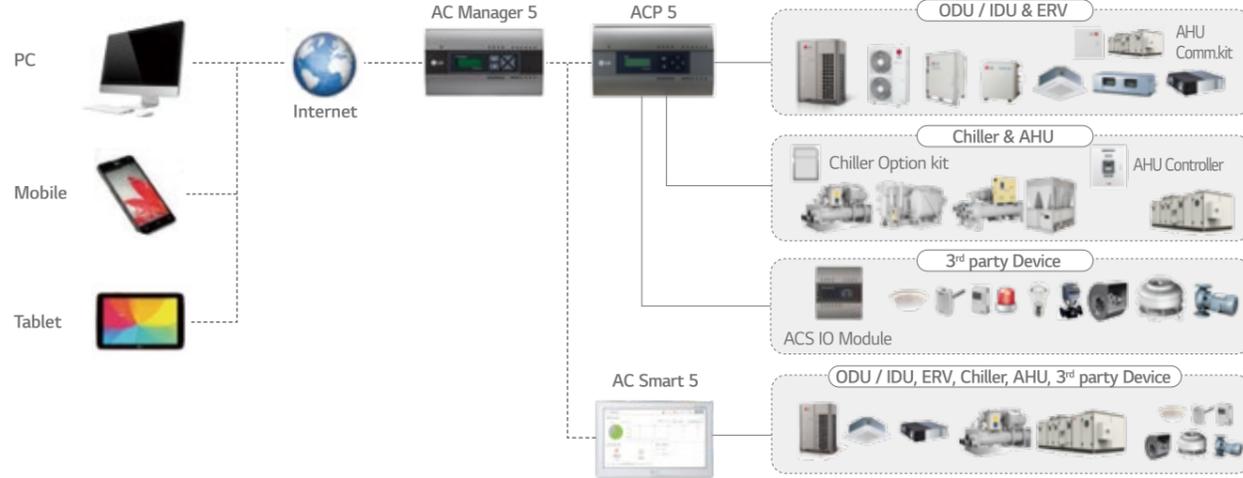Note : AC Manager 5 requires ACP 5 or AC Smart 5

Features & Benefits

• Consol Type : No needs software installation and lock-key
• Max 8,192 IDU Control
• Schedule
• Map View (Visual Navigation)
• Time limit control / Auto change over
• Energy Monitoring / Navigation
• History / Operation Trend
• Emergency stop & alarm
• Error alarm by E-mail
• Multi Language
  (Eng, Ita, Spa, Por, Rus, Fra, Ger, Tur, Pol, Chi, Kor)
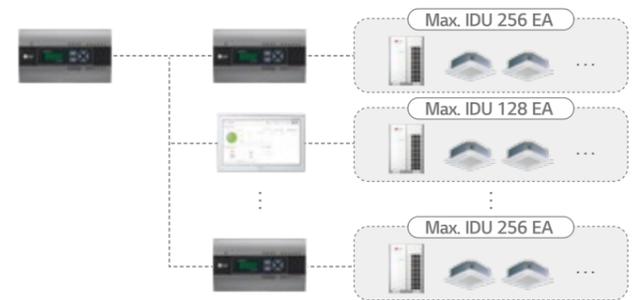
Overview

Stand-alone

Integrated with S/W program and Hardware platform, it is convenient to install since users no longer need to install program with lock-key on PC.

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.

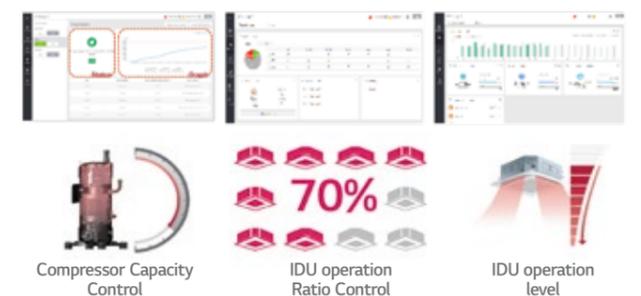Max. IDU 256 EA
Max. IDU 128 EA
Max. IDU 256 EA

Advanced Network Accessibility & User Friendly GUI (reddot award)

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.

reddot award
User Interface Design

Energy Navigation & Energy Usage Trend

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.

Compressor Capacity Control
IDU operation Ratio Control
IDU operation level

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
Indoor unit Priority Control gradually stop depending on importance of room.
Robby ‹ Office ‹ VIP room

ODU Capacity Control
9 Step Operation rate (%)
[0, 40, 45, 50, 60, 70, 80, 90, 100]
Compressor Hz Control

Multi Level Group Composition

You can freely apply layer structure such as building, floor, zone, etc. and set the group as the same as the site composition to control and monitor the devices. Special control group You can additionally compose frequently used groups such as VIP Room, executive room, etc. regardless of the building structure.