

INSTALLATION MANUAL

AIR CONDITIONER

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

AC Smart 5
PACS5A000



MFL70206503
Rev.06_060724

www.lghvac.com
www.lg.com

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SAFETY INSTRUCTIONS

This product must be installed by an installation professional from an LG authorised service center.

Any issues stemming from an installation by an unauthorised person is the responsibility of the user and will not be covered by warranty.

The following safety guidelines are intended to prevent unforeseen risks or damage from unsafe or incorrect operation of the appliance.

The guidelines are separated into 'WARNING' and 'CAUTION' as described below.

This product has been designed for commercial purposes. This product has successfully cleared the EMI test.



This symbol is displayed to indicate matters and operations that can cause risk. Read the part with this symbol carefully and follow the instructions in order to avoid risk.



WARNING

This indicates that the failure to follow the instructions can cause serious injury or death.



CAUTION

This indicates that the failure to follow the instructions can cause the minor injury or damage to the product.



WARNING

Installation

- To reinstall the product, please contact the dealer from where you purchased the product, or a service center.
 - Installation of the product by an unauthorised person may result in fire, electric shock, explosion, injury, or a malfunctioning of the product.
- Do NOT twist or damage the power cord.
 - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- For electrical work, please contact the dealer from where you purchased the product, or a service center.
 - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- Install the product in an area shielded from rain.
 - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- Do NOT install the product in a humid area.
 - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- For installation of the product, please contact the dealer from where you purchased the product, or a service center.
 - Installation of the product by an unauthorised person may result in fire, electric shock, explosion, injury, or a malfunctioning of the product.
- For electrical work, it is advisable for the electrician to refer the installation manual and specified circuit diagram.
 - Using an unsuitable cord, or having a non-professional work on the electricals may result in fire or electrical shock.

- Do NOT place the product near a fire source.
 - It may result in combustion.
- If the product is installed in a hospital or a communication base station, shield the product from electrical noise by providing sufficient protective equipment.
 - Protective equipment prevents the product from malfunctioning.
- Securely install the product.
 - If the product is not secured during installation, it may fall or malfunction.
- Read the manual thoroughly to correctly install the product.
 - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- When wiring the product, do not use a non-standard cable, nor extend the cable excessively.
 - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- Securely install the power cord and communication cable.
 - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- Do NOT connect the power cord to the communication terminal.
 - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.
- Do NOT install the product in an area near combustible gases.
 - Follow the below precautions properly; else it might result in a fire disaster, risk of incurring electric shock injuries or product malfunctioning.

Operation

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

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



CAUTION

Installation

- Securely install the product in an area where the weight of the product can be supported.
 - The product may fall and be destroyed.
- Do NOT use the product where there is oil, steam, or sulfuric gas.
 - It may affect the product's performance, or damage it.
- Check the rated power capacity.
 - It may cause a fire, or a product malfunction.

- Use the adapter provided with the product or power from a class 2 24 V~ transformer, depending on the product model.
 - If a non-standard adapter is used, the product may malfunction. The adaptor is not provided with the AC Smart 5 package sold in the U.S.
- Be careful not to drop or damage the product when moving it.
 - The product may malfunction or the person may sustain an injury.
- Ensure that the cord is connected securely to protect the product from dew, water, or insects.
 - If a foreign substance gets inside, it may cause an electric shock or the product may malfunction.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.
- This equipment shall be provided with a supply conductor complying with the national regulation.
- The appliance is only to be used with the power supply unit provided with the appliance.
- The appliance must only be supplied at safety extra low voltage corresponding to the marking on the appliance.

Operation

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

Class A device**NOTE**

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

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

**CAUTION**

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

• Selection of Transformer.

- Select an insulating product that complies with IEC61558-2-6 and NEC Class 2.
- In addition, consider the combined power consumption of the modules, accessories, and field devices installed for the selection of an appropriate transformer.

Main module current : 24 V~, 850 mA.

- 40 VA transformer is recommended.

- Use the provided adaptor when using 12 V $\overline{\text{---}}$. The adaptor is not provided with the AC Smart 5 package sold in the U.S.

AN ARBITRATION PROVISION

By using this product, you agree that all disputes between you and LG arising out of or relating in any way to this product (including but not limited to warranty disputes) shall be resolved exclusively through binding arbitration on an individual basis.

The terms of the arbitration agreement (including details on the procedure for resolving disputes) is available at www.lg.com/us/arbitration (USA) or www.lg.com/ca_en/arbitration (Canada) and/or your owner's manual or warranty.

PREPARATION

The Installation Manual provides the necessary information regarding the components, installation and setting method of AC Smart 5 which the user should have a fair understanding/be aware of.

AC Smart 5 Overview

AC Smart 5 is a central controller installed in management room of a building or administration room of a school, which can monitor or control the operation of the IDU, ventilation, DI/DO, DOKIT, system boiler, AHU, and I/O module installed in each room of the building individually or by integration through touch screen.

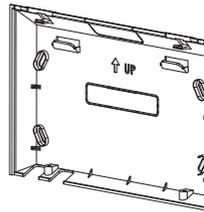
AC Smart 5 is a single machine and can be connected to up to 128 devices (indoor unit, ventilation, DI/DO, DOKIT, system boiler, AHU). Or up to 64 devices (indoor unit, ventilation, DI/DO, DOKIT, system boiler, AHU) and 9 I/O modules.

Components

The following components are included in the package box. Open the box and verify that all components are included.



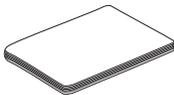
AC Smart 5



Wall installation plate



Screw



Manual



SD Card 8 GB

⚠ CAUTION

SD Card provided by LG is for the data backup and recovery when specialized service technician supports the service, so be careful not to lose it by using it for other purposes.

NOTE

The schematics of the components and optionally purchased products shown may differ from the actual components and products.

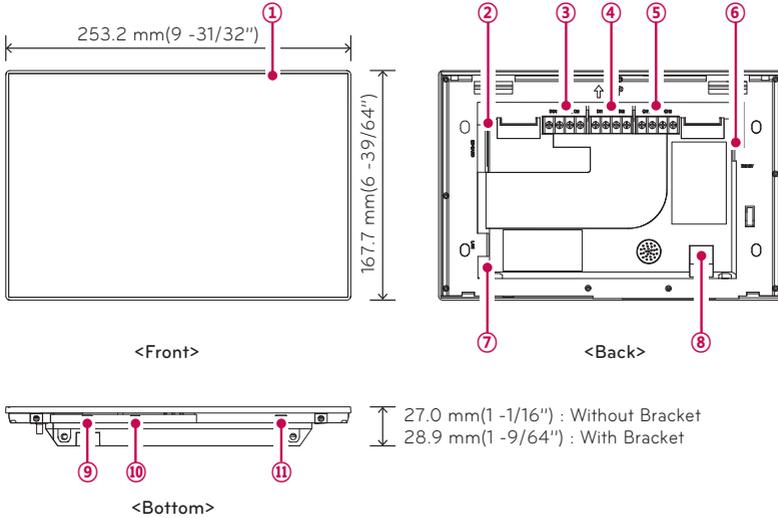
PRODUCT SPECIFICATION

AC Smart 5 hardware product specification is as follows.

Number	Category	Specification
①	CPU	ARM Cortex A9 1 GHz Dual Core
②	MEMORY	2 GB
③	Storage	16 GB
④	LCD	10 inch type(1024 x 600) TFT LCD
⑤	Speaker	Mono
⑥	RS-485	2 Port
⑦	USB/SD	Micro USB 1EA (for external USB memory connection, for service) Mini USB 1EA SD Card 1EA
⑧	Ethernet	10 / 100 BASE-T
⑨	DI	2 Port
⑩	DO	2 Port
⑪	Touch Screen	C-Type Touch Panel
⑫	Button Key	Less than 9 seconds (LCD Power On/Off), 10 seconds (System reset)
⑬	POWER	12 V $\overline{\text{---}}$ (3.33 A), 24 V~
⑭	Operating temperature	0 °C(32 °F) ~ 40 °C(104 °F).
⑮	Protection class	IP20

Features and Functions

The features and functions of AC Smart 5 are as follows.



Number	Item	Description
①	Touch Screen	10 inch type LCD control panel AC Smart 5 Premium control and information display
②	SD Memory Slot	SD card memory slot
③	DO Port	2CH DO port
④	DI Port	2CH DI port
⑤	RS-485 Port	2CH 485 port (CH1: AHU, CH2: devices other than AHU) CH1 default setting : MODBUS / CH2 default setting : LGAP I To change default setting, refer to 'Device Setting (AC Smart 5) - AC Smart 5 Editing' section in the user manual provided in [Help] category.
⑥	12 V $\overline{\text{---}}$ Input Port	12 V $\overline{\text{---}}$ power input port (Not used in the US)
⑦	LAN Port	LAN cable port for Ethernet connection (100Mbps/10Mbps)
⑧	24 V~ Input Port	24 V~ Input Port
⑨	Micro USB Port (for service)	Port for upgrading software and reports, statistics, etc. (Requires cable to connect the USB memory sticks, supporting USB 2.0 or later)
⑩	Mini USB Port	PC port for debugging software
⑪	Power ON/OFF	If you press for less than 9 seconds, AC Smart 5 LCD backlight control is enabled. Push 10 seconds or more to reset AC Smart 5. If unused for a lengthy period of time, it is recommended that the product be turned OFF to prolong the LCD backlight's life.

Installation

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

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

STEP 1. Installation environment inspection and device address setting

Before installing AC Smart 5, check the network for any interfacing devices and assign non-overlapping addresses to the connected devices.

STEP 2. PI485 setting

Install PI485 and set the DIP switch accordingly.

STEP 3. Connections

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

STEP 4. Access and Device Registration

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



CAUTION

Consult a qualified engineer/ technician for the installation of AC Smart 5. If you have any installation queries, contact the LG service center or LG Electronics.

NOTE

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

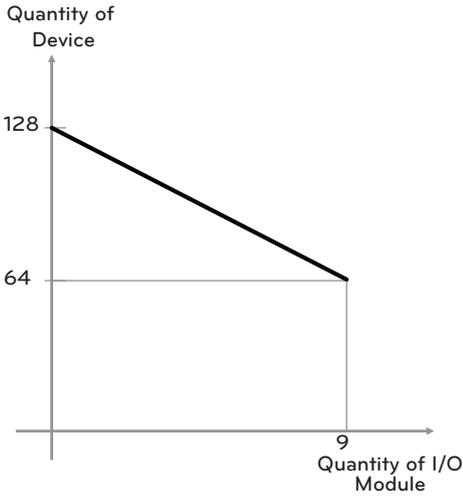
- **Multi V**
Maximum of 16 nodes can be connected to 1 RS485 line.
- **Multi/Single**
Maximum of 32 nodes can be connected to 1 RS485 line.
- **ERV**
Maximum of 32 nodes can be connected to 1 RS485 line.

Check the installation environment and configure the device address

AC Smart 5 can connect up to 128 devices (including indoor units, ERV, DI/DOs, DOKITs, AWHPs, AHUs) or 64 devices (including indoor units, ERV, DI/DOs, DOKITs, AWHPs and AHUs) and 9 I/O Modules. And with chiller interlocking, you can connect 64 indoor units and 5 chiller units.

For optimal communication performance, it is recommended to connect up to 64 units to one RS-485 port.

The following shows an example of connecting AC Smart 5 with such devices.



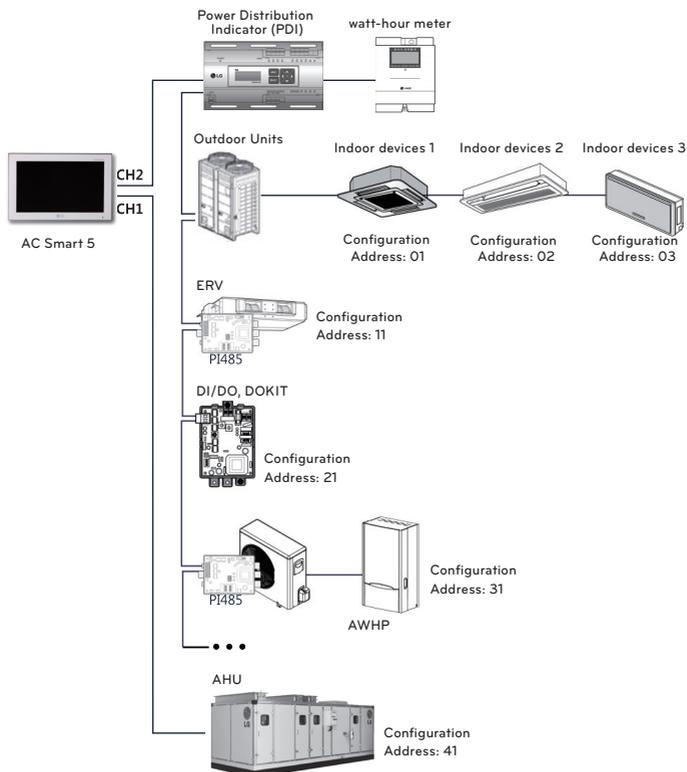
Quantity of I/O Module	Quantity of Device
0	128
1	121
2	114
3	107
4	100
5	93
6	86
7	79
8	72
9	64

* Dispositivos : unidades internas, ERV, DI/DO, DOKIT, AWHP, UTA

AC Smart 5 connects with PI485 and uses RS485 to communicate and exchange information. Allocate unique addresses to those devices (internal units, ERV, DI/DOs, DOKITs, AWHPs, AHUs, I/O Modules) that shall connect with AC Smart 5.

The addresses are hexadecimal numbers that can be chosen from 00 to FF.

In order to control all indoor units with the central controller and use the TMS function, both the master and slave indoor units need to set the central control address. Slave indoor units must set the central control address in the master state before setting them as slaves.



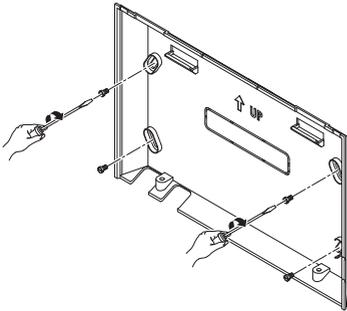
NOTE

- The maximum allowed communication distance guaranteed by LG Electronics is 1 000 m (3 280"). It means that the distance between AC Smart 5 and the farthest device should NOT exceed 1 000 m (3 280"). For the RS-485 communication line, shield cable with a core area of 1.0 ~ 1.5 mm² must be used.
- For indoor units, ERV, DI/DOs, DOKITs, AWHPs, AHUs and I/O Modules, you can allocate different but NOT identical addresses amongst devices of the same type. (the indoor unit and DOKIT cannot use the same address.)
- Each device which can be used with PDI must be set to a unique address when connected with PDI. For further information about the devices can be used with PDI, please refer to the PDI manual.
- Connecting I/O Module, address setting should not be 00 as 00 is used to Broadcast in MODBUS communication.
- CH1 is set as MODBUS and CH2 is set as LGAP by default. To change default setting, refer to the contents of 'Device Setting (AC Smart 5) - AC Smart 5 Editing' in the user manual provided (Section 'Help').

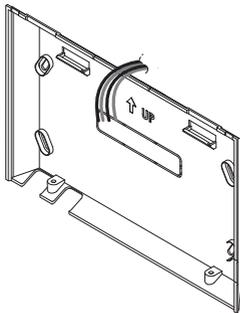
Connect AC Smart 5

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

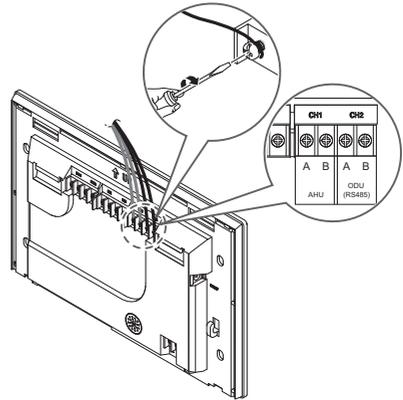
- 1 Select an installation area for AC Smart 5.
 - Prior to securing AC Smart 5, check if the space is suitable for installing AC Smart 5, an RS485 cable, power cord, and an Ethernet cable.
- 2 Secure the back panel of AC Smart 5 to the wall under which the RS485 cable is located.



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



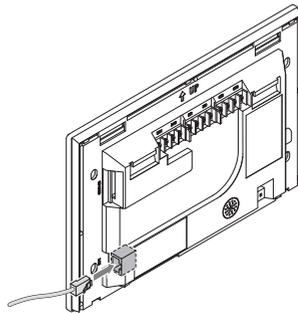
- 4 Connect the RS485 cable, which is located behind the AC Smart 5, to the RS485 terminal.



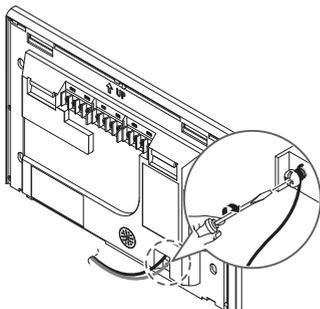
CAUTION

Connect the +VE and -VE terminals of the cables to the respective terminals of the RS485 cable ensuring accurate electrical polarity.

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



- 6 Establish a power connection:
- At the bottom of AC Smart 5, connect the power cord to the power port.



⚠ CAUTION

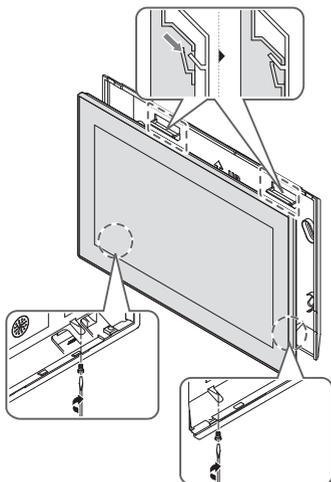
Remove 2 screws from the bottom of the unit to prevent the AC Smart 5 from falling.

NOTE

Product removal

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

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



INITIAL SETUP

It describes about how to access the system before completely using the AC Smart 5.

Login and logout

The following explains how to log in and out of AC Smart 5.

AC Smart 5, can be controlled either by the equipment or the web. If you enter the IP address of the AC Smart 5 in the address bar of the command window of web browser (Run>cmd>ipconfig) without the installation of another program, the central control program AC Smart 5 Web server is executed automatically.

NOTE

- Special characters (^), (!), (!), (,), (|), (\) cannot be used.
- Default IP address – 192.168.1.101

Login

You can login as follows.

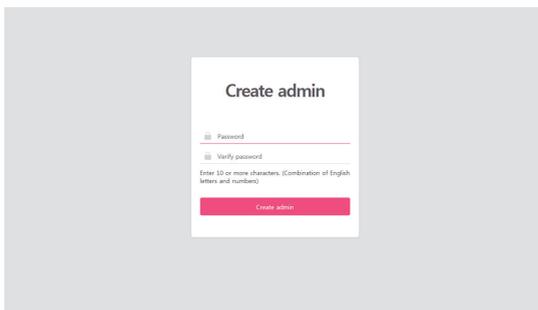
- 1 Run AC Smart 5.
- 2 Input ID and password in log-in window and touch [Log in] button.



Log-in (for first time access)

In case of initially accessing, set password for the manager account (ID : admin).

- 1 Run AC Smart 5.
- 2 Input password of manager account to use in the account creation window and touch [Create admin] button.



⚠ CAUTION

- Do NOT disclose account related info to unauthorised personnel.
- In case you have forgotten your password, contact the installer.

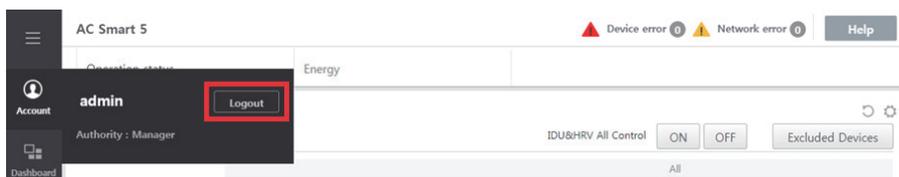
NOTE

- To maintain confidentiality, change the password once in every 90 days (as prompted by the pop-up window).

Logout

You can logout as follows.

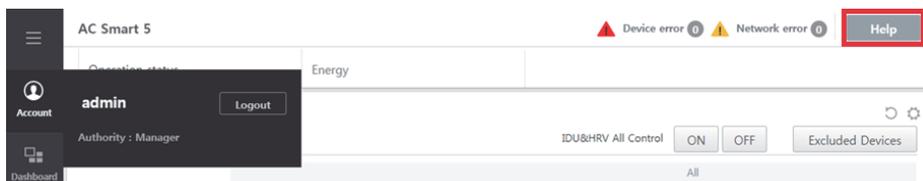
- 1 In AC Smart 5 menu, choose the sub-menu 'Account'.
- 2 From the list of options as displayed by the 'Account' sub-menu press 'Log Out'.



User manual

You can view the user manual as follows.

- 1 In AC Smart 5 log-in screen, input ID and password and touch [Log in] button.
- 2 Press 'Help' at the top right side of AC Smart 5 screen.
 - The user manual is displayed.



HINT

Pre-Tech Support Checklist

If the product malfunctions, please check the following before calling the service center.

Issue	Check	Actions
The alarm sound does not stop.	Is the demand controller working normally? Is the LAN cable connected to the product?	Check if the demand controller is normal. Check if the LAN cable is connected to the device properly.
All products remain in the disabled mode.	Is DI1 CH short-circuited?	Check if DI1 CH is open or short circuited. (DI1 CH should always be open except when an emergency occurs.)
The product was reset at midnight.	The product is automatically reset daily morning at 02:05 am.	
The device is not controlled.	Is the device you want to control unlocked?	Check if the lock is enabled and if so, disable the lock.
The device icon has an error mark.	Are the devices properly connected?	If devices are not connected, the error sign is displayed. Check the connection status of the devices.

⚠ WARNING

- **INGESTION HAZARD:** This product contains a button cell or coin battery.
* The icon 1) means the above warning text.
- **DEATH** or serious injury can occur if ingested. A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH OF CHILDREN**.
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.



The product contains non-replaceable batteries.

- a) Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.
- b) Even used batteries may cause severe injury or death.
- c) Call a local poison control center for treatment information.
- d) Compatible battery type is ML2032.
- e) Nominal battery voltage is 3.3 V.
- f) Non-rechargeable batteries are not to be recharged.
- g) Do not force discharge, recharge, disassemble, heat above 104 °F or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.

LIMITED WARRANTY (USA)

The product's full Limited Warranty terms and conditions and arbitration requirements are available at <https://www.lghvac.com>

WARRANTY (CANADA)

ARBITRATION NOTICE: THIS LIMITED WARRANTY CONTAINS AN ARBITRATION PROVISION THAT REQUIRES YOU AND LG TO RESOLVE DISPUTES BY BINDING ARBITRATION INSTEAD OF IN COURT, UNLESS THE LAWS OF YOUR PROVINCE OR TERRITORY DO NOT PERMIT THAT, OR, IN OTHER JURISDICTIONS, IF YOU CHOOSE TO OPT OUT. IN ARBITRATION, CLASS ACTIONS AND JURY TRIALS ARE NOT PERMITTED. PLEASE SEE THE SECTION TITLED "PROCEDURE FOR RESOLVING DISPUTES" BELOW.

PROCEDURE FOR RESOLVING DISPUTES(FOR CANADIAN PRODUCTS):

EXCEPT WHERE PROHIBITED AT LAW, ALL DISPUTES BETWEEN YOU AND LG ARISING OUT OF OR RELATING IN ANY WAY TO THIS LIMITED WARRANTY OR THE PRODUCT SHALL BE RESOLVED EXCLUSIVELY THROUGH BINDING ARBITRATION, AND NOT IN A COURT OF GENERAL JURISDICTION. EXCEPT WHERE PROHIBITED AT LAW, YOU AND LG BOTH IRREVOCABLY AGREE TO WAIVE THE RIGHT TO A JURY TRIAL AND TO BRING OR PARTICIPATE IN A CLASS ACTION.

Definitions. For the purposes of this section, references to "LG" mean LG Electronics Canada, Inc., its parents, subsidiaries and affiliates, and each of their officers, directors, employees, agents, beneficiaries, predecessors in interest, successors, assigns and suppliers; references to "dispute" or "claim" shall include any dispute, claim or controversy of any kind whatsoever (whether based in contract, tort, statute, regulation, ordinance, fraud, misrepresentation or any other legal or equitable theory) arising out of or relating in any way to the sale, condition or performance of the product or this Limited Warranty.

Notice of Dispute. In the event you intend to commence an arbitration proceeding, you must first notify LG in writing at least 30 days in advance of initiating the arbitration by sending a letter to LGECI Legal Team at 20 Norelco Drive, North York, Ontario, Canada M9L 2X6 (the "Notice of Dispute"). You and LG agree to engage in good faith discussions in an attempt to amicably resolve your claim. The notice must provide your name, address, and telephone number; identify the product that is the subject of the claim; and describe the nature of the claim and the relief being sought. If you and LG are unable to resolve the dispute within 30 days of LG's receipt of the Notice of Dispute, the dispute shall be resolved by binding arbitration in accordance with the procedure set out herein. You and LG both agree that, during the arbitration proceeding, the terms (including any amount) of any settlement offer made by either you or LG will not be disclosed to the arbitrator until the arbitrator determines the dispute.

Agreement to Binding Arbitration and Class Action Waiver. Upon failure to resolve the dispute during the 30 day period after LG's receipt of the Notice of Dispute, you and LG agree to resolve any claims between you and LG only by binding arbitration on an individual basis, unless you opt out as provided below, or you reside in a jurisdiction that prevents full application of this clause in the circumstances of the claims at issue (in which case if you are a consumer, this clause will only apply if you expressly agree to the arbitration). To the extent permitted by applicable law, any dispute between you and LG shall not be combined or consolidated with a dispute involving any other person's or entity's product or claim. More specifically, without limitation of the foregoing, except to the extent such a prohibition is not permitted at law, any dispute between you and LG shall not under any circumstances proceed as part of a class or representative action. Instead of arbitration, either party may bring an individual action in small claims court, but that small claims court action may not be brought on a class or representative basis except to the extent this prohibition is not permitted at law in your province or territory of jurisdiction as it relates to the claims at issue between you and LG.

Arbitration Rules and Procedures. To begin arbitration of a claim, either you or LG must make a written demand for arbitration. The arbitration will be private and confidential, and conducted on a simplified and expedited basis before a single arbitrator chosen by the parties under the provincial or territorial commercial arbitration law and rules of the province or territory of your residence. You must also send a copy of your written demand to LG at LG Electronics, Canada, Inc., Attn: Legal Department- Arbitration, 20 Norelco Drive, North York, Ontario M9L 2X6. This arbitration provision is governed by your applicable provincial or territorial commercial arbitration legislation. Judgment may be entered on the arbitrator's award in any court of competent jurisdiction. All issues are for the arbitrator to decide, except that, issues relating to the scope and enforceability of the arbitration provision and to the arbitrability of the dispute are for the court to decide. The arbitrator is bound by the terms of this provision.

Governing Law. The law of the province or territory of your purchase shall govern this Limited Warranty and any disputes between you and LG except to the extent that such law is preempted by or inconsistent with applicable federal or provincial/territorial law. Should arbitration not be permitted for any claim, action, dispute or controversy between you and LG, you and LG attorn to the exclusive jurisdiction of the courts of the province or territory of your purchase for the resolution of the claim, action, dispute or controversy between you and LG.

Fees/Costs. You do not need to pay any fee to begin an arbitration. Upon receipt of your written demand for arbitration, LG will promptly pay all arbitration filing fees unless you seek more than \$25,000 in damages, in which case the payment of these fees will be governed by the applicable arbitration rules. Except as otherwise provided for herein, LG will pay all filing, administration and arbitrator fees for any arbitration initiated in accordance with the applicable arbitration rules and this arbitration provision. If you prevail in the arbitration, LG will pay your attorneys' fees and expenses as long as they are reasonable, by considering factors including, but not limited to, the purchase amount and claim amount. Notwithstanding the foregoing, if applicable law allows for an award of reasonable attorneys' fees and expenses, an arbitrator can award them to the same extent that a court would. If the arbitrator finds either the substance of your claim or the relief sought in the demand is frivolous or brought for an improper purpose (as measured by the applicable laws), then the payment of all arbitration fees will be governed by the applicable arbitration rules. In such a situation, you agree to reimburse LG for all monies previously disbursed by it that are otherwise your obligation to pay under the applicable arbitration rules. Except as otherwise provided for, LG waives any rights it may have to seek attorneys' fees and expenses from you if LG prevails in the arbitration.

Hearings and Location. If your claim is for \$25,000 or less, you may choose to have the arbitration conducted solely (1) on the basis of documents submitted to the arbitrator, (2) through a telephonic hearing, or (3) by an in-person hearing as established by the applicable arbitration rules. If your claim exceeds \$25,000, the right to a hearing will be determined by the applicable arbitration rules. Any in-person arbitration hearings will be held at the nearest, most mutually-convenient arbitration location available within the province or territory in which you reside unless you and LG both agree to another location or agree to a telephonic arbitration.

Severability and Waiver. If any portion of this Limited Warranty (including these arbitration procedures) is unenforceable, the remaining provisions will continue in full force and effect to the maximum extent permitted by applicable law. Should LG fail to enforce strict performance of any provision of this Limited Warranty (including these arbitration procedures), it does not mean that LG intends to waive or has waived any provision or part of this Limited Warranty.

Opt Out. You may opt out of this dispute resolution procedure. If you opt out, neither you nor LG can require the other to participate in an arbitration proceeding. To opt out, you must send notice to LG no later than 30 calendar days from the date of the first consumer purchaser's purchase of the product by either (i) sending an e-mail to optout@lge.com, with the subject line: "Arbitration Opt Out;" or (ii) calling 1-800-980-2973. You must include in the opt out e-mail or provide by telephone: (a) your name and address; (b) the date on which the product was purchased; (c) the product model name or model number; and (d) the serial number (the serial number can be found (i) on the product; or (ii) online by accessing https://www.lg.com/ca_en/support/repair-service/schedule-repair and clicking on "Find My Model & Serial Number").

In the event that you "Opt Out", the law of the province or territory of your residence shall govern this Limited Warranty and any disputes between you and LG except to the extent that such law is preempted by or inconsistent with applicable federal or provincial/territorial law. Should arbitration not be permitted for any claim, action, dispute or controversy between you and LG, you and LG agree to attorn to the exclusive jurisdiction of the courts of the province or territory of your residence for the resolution of the claim, action, dispute or controversy between you and LG.

You may only opt out of the dispute resolution procedure in the manner described above (that is, by e-mail or telephone); no other form of notice will be effective to opt out of this dispute resolution procedure. Opting out of this dispute resolution procedure will not affect the coverage of the Limited Warranty in any way, and you will continue to enjoy the full benefits of the Limited Warranty. If you keep this product and do not opt out, then you accept all terms and conditions of the arbitration provision described above.

Conflict of Terms. In the event of a conflict or inconsistency between the terms of this Limited Warranty and the End User License Agreement ("EULA") in regards to dispute resolution, the terms of this Limited Warranty shall control and govern the rights and obligations of the parties and shall take precedence over the EULA.