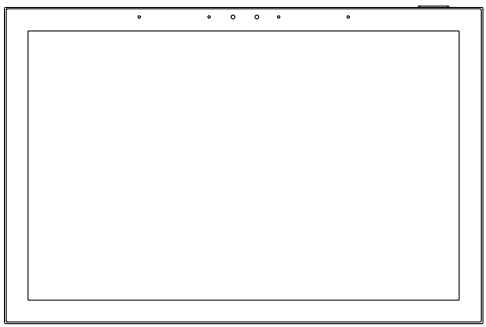
NØRDIS

INSTALLATION AND OWNER'S MANUAL

The Central Controller



IMPORTANT NOTE:

Thank you very much for purchasing our central controller.

Before using your central controller, please read this manual carefully and keep it for future reference.

CONTENTS

Dear user:

Thank you for selecting the our Central Controller! We appreciate your trust in our products. We are willing to create a comfortable and healthy living space for you through our sincere services and you are welcome to put forward valuable opinions on our work.

Before using this central controller, please carefully read this Manual and keep it properly after reading it.

This Company is committed to constant improvement of central controllers.

Specifications are subject to change without notice.

1 Introduction To The Central Controller

The central controller supports remote centralized control and management of VRF and LCAC air conditioning equipment. It primarily provides individual unit control, group control, full system control, schedule management, scene management, fault analysis, and group management. Users may optionally connect an electricity meter; if connected, it supports equipment energy consumption statistics.

Primary Service Targets: Users requiring centralized management, remote monitoring, or energy consumption statistics for air conditioning systems.

2 Precautions

Important Matters

- This Company is committed to constant improvement of central controllers and will have no further notice in case of any change of this central controller.
- This Company bears no responsibility for any damage accident of this equipment due to being in any specific environment.
- It is prohibited to duplicate any part of this Manual without authorization.
- The signal words (such as“Danger”,“Warning”and“Notice”) are use for indicating the degree of danger. Here are the signal words and the corresponding definitions of their degrees of danger.

⚠ **DANGER**	Any dangerous or unsafe circumstance which can cause any serious personal injury and even death.
⚠ **WARNING**	Any dangerous or unsafe circumstance which may cause any serious personal injury and even death.

⚠ **NOTICE**	Any dangerous or unsafe circumstance which may cause any minor personal injury or damage any product or property.
NOTE	Any prompt or instruction for operation, maintenance or repair.

- The installation, maintenance and repair of this central controller should be done by the qualified professional personnel.
- If you have any question, please contact any of our distributor or service center designated by this Company.
- This Manual should be deemed to be one part of a central controller and thus should be kept properly.

Inspection After the Arrival of Goods

- After receiving the equipment, it is necessary to check whether or not the central controller suffers transportation damage.
- Please check whether or not the accessories are complete as per the packing list. Check the central controller model, electrical parameters (power supply, voltage and frequency) as well as accessories and then determine whether or not they meet the corresponding requirements.
- The standard usage of this central controller is seen in this Manual. Therefore, we suggest not using this central controller in any other condition not specified in this Manual.
- The installation and service works must conform to the corresponding local standards, laws and regulations.
- In case of any problem, please contact the local agent.

⚠ **DANGER**

- Before installing or disassembling this product, the main power supply must be cut off to prevent short circuit and pay attention to electrical safety.
- Do not attempt to install this product yourself. Please entrust professional personnel or authorized distributor for installation. If you install this central controller by yourself and your installation is improper, an electric shock or fire accident may occur.
- It is prohibited to operate this central controller with wet hand(s) or submerge it in water. otherwise, a serious electric shock or short circuit may occur.
- It is prohibited to touch or adjust the safety device in the equipment. Otherwise, a serious accident may occur.

- It is prohibited to open the shell of the central controller for repair when the power supply of main circuit is not cut off.
- It is necessary to use the specification-designated cables for wiring and reliably connect the cables in order to prevent them from being clamped by the shell.
- At the time of installation, please use the accompanying or designated components and parts. Otherwise, such accidents as electric shock and fire may occur.
- The central controller needs to be kept away from fire and water sources during installation and use.
- It is necessary to power the central controller on and detect its electric leakage after installing it.

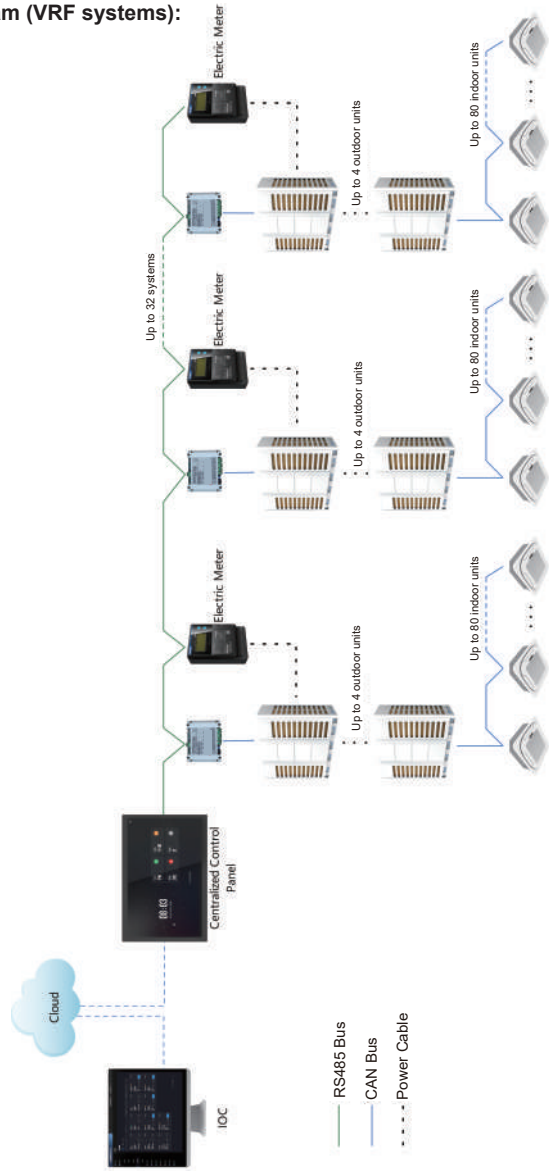
⚠ WARNING

- Please don ' t install this central controller in any of the following places. Otherwise, such installation may cause fire, machine deformation or going wrong.
- The central controller cannot be used in humid environments (such as bathrooms).
- Any place splashing oil (including the machine oil) or any site with any inflammable gas.
- Any site with any sulfurous gas environments (e.g., hot springs) or hypersaline or highly acidic or basic site in coastal areas.
- Any place at high temperature or with open fire. Otherwise, heat or fire may occur.
- Any place close to any electromagnetic wave machine. The electromagnetic wave may affect the remote control system and result in failure of the controller to run normally.
- Any place with much moisture or possibly soaked in water. Once water enters the central controller, the water not only may cause a electric shock but also may result in failure of internal electronic components.
- Please do not commence installation and wire connection before reading the Manual.

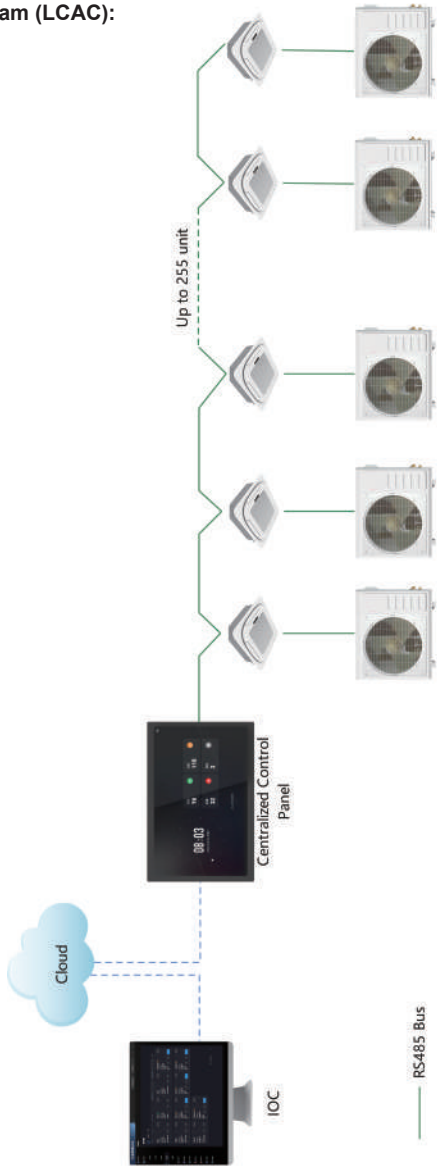
3 System Architecture

1. The central controller supports T-Ling Control App for network configuration and IOC platform integration.
2. The system supports connectivity with 32 multi-split systems, 1024 indoor units, and 254 LCAC.

Architecture diagram (VRF systems):



Architecture diagram (LCAC):



4 Mounting Accessories

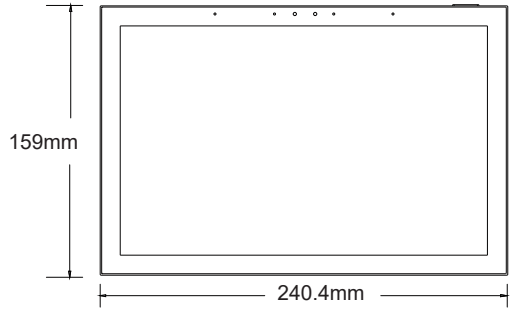
Please confirm whether the following components are complete.

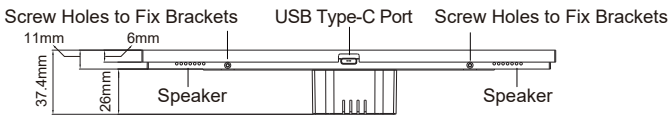
NO.	Name	Quantity	Remark
1	The Central Controller	1	
2	User & Installation manual	1	
3	Install screw package	1	
4	Power adapter	1	

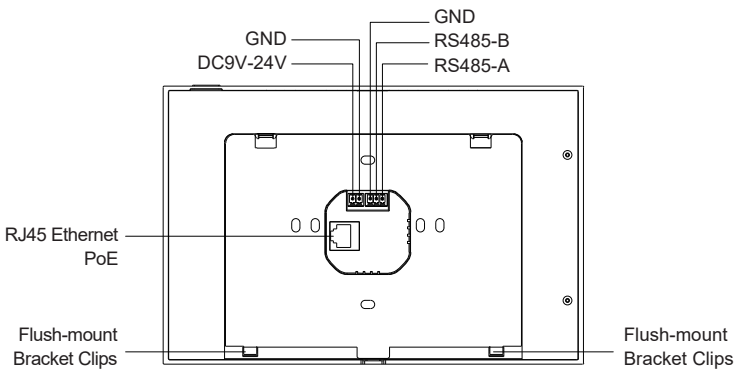
5 Product Specifications

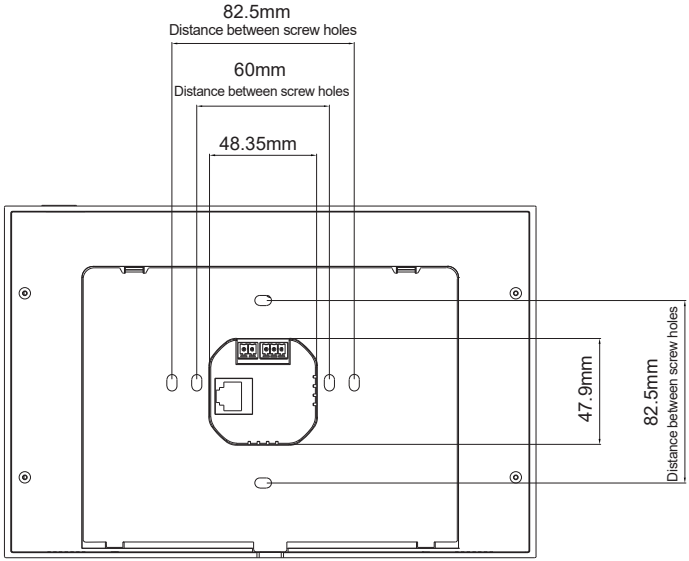
Functions	Specifications
Product Name	The Central Controller
Model	CCP-A10.00
Working Voltage	DC12V
WiFi	2.4GHz&5GHz&BT5.4
Support WiFi	Dual-band WiFi 6 11ax
WiFi encryption method	WEP/WPA/WPA2/WPA3‑SAE Personal, MFP
Network port	10/100Mbps
Working Temperature	0℃~48℃
Working Humidity	≤90% RH
Storage Temperature	-20℃~60℃

6 Product Interface And Ports





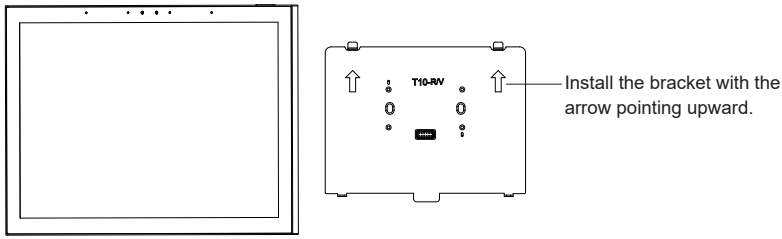




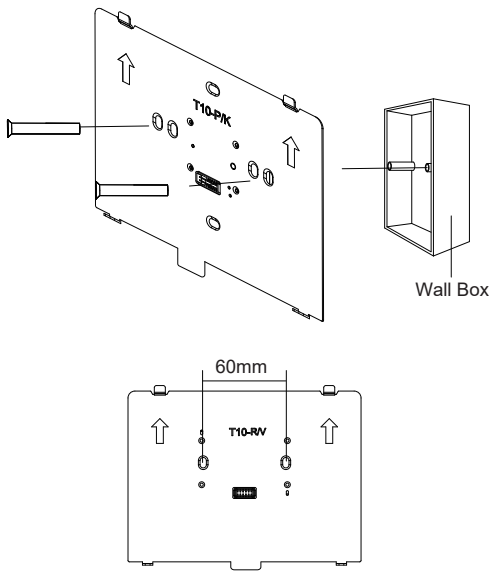
Interface	Instructions	Remark
DC9V-24V	Positive power supply, connected to power adapter DC12V output+	
GND	Negative pole of power supply, connected to power adapter DC12V output-	
RS485-A	RS485 communication A, connected to air conditioning or protocol converter RS485 A	
RS485-B	RS485 communication B, connected to air conditioning or protocol converter RS485 B	
GND	RS485 communication ground	
Ethernet port	10M/100M Ethernet interface, connected to terminal devices	

7 Installation

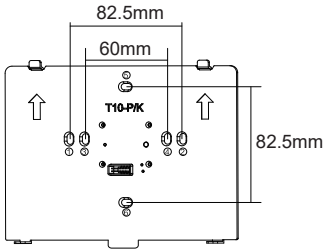
1.Separate the panel from the power base.



2.Install the power base into the wall box and fix it with screws.



T10-R.V(T10RE/T10VE)Wall box screw holes position diagram:
Suitable for 86*86mm standard in wall mount box.



T10-P/K(T10PE /T10KE) Wall box screw holes position diagram:

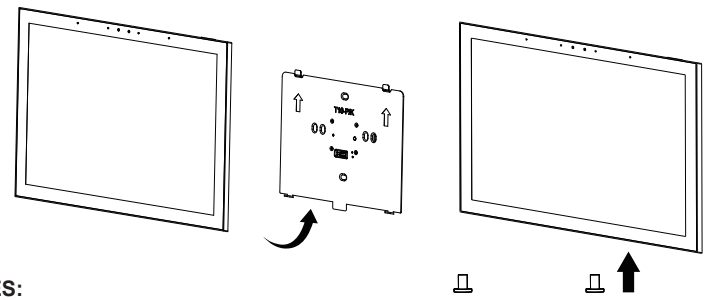
①② Suitable for US standard horizontally wall mount installation

③④ Suitable for standard and European wall mount installation

⑤⑥ Suitable for US standard vertically wall mount installation

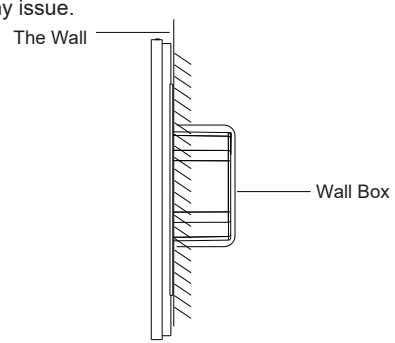
NOTE: Please use the screws in the installation screw pack for installation.

3. Mount the panel onto power bracket and secure with screws.



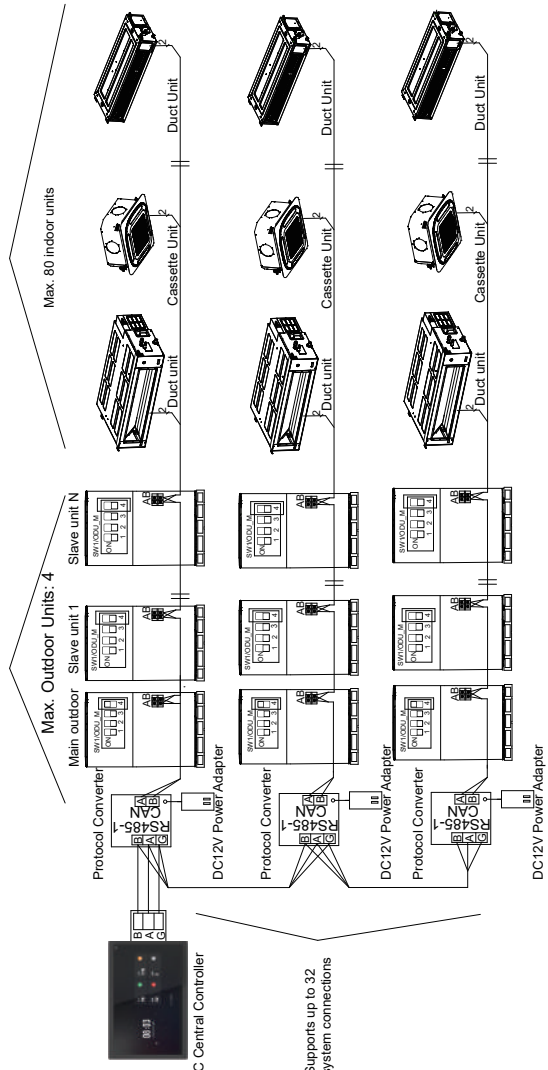
NOTES:

- Check and ensure that all wires are in good contact with the terminals.
- Avoid overtightening the screws to prevent deformation or damage to the screen and hardware.
- If any installation issue, do not apply excessive force to the screen. Instead, check the wall and bracket for any issue.



8 System Wiring Diagram

VRF System Wiring Diagram



Wiring requirements:

The network cable connecting the centralized control screen to the router or switch	
The network cable connecting the centralized control screen to the router or switch	RJ45
Router/Switch Communication Interface Type	RJ45
Type of wire	Shielded wires of CAT5 and above
Wire length	Not exceeding 50 meters

RS485 signal line between centralized control screen and protocol converter	
Type of communication interface for centralized control screen	RS485
Protocol Converter Communication Interface Type	RS485
Type of wire	Triple-core shielded cable
Wire length between nodes	Not exceeding 100 meters
RS485 bus length	Not exceeding 200 meters
Wire diameter	Greater than or equal to 0.75mm²

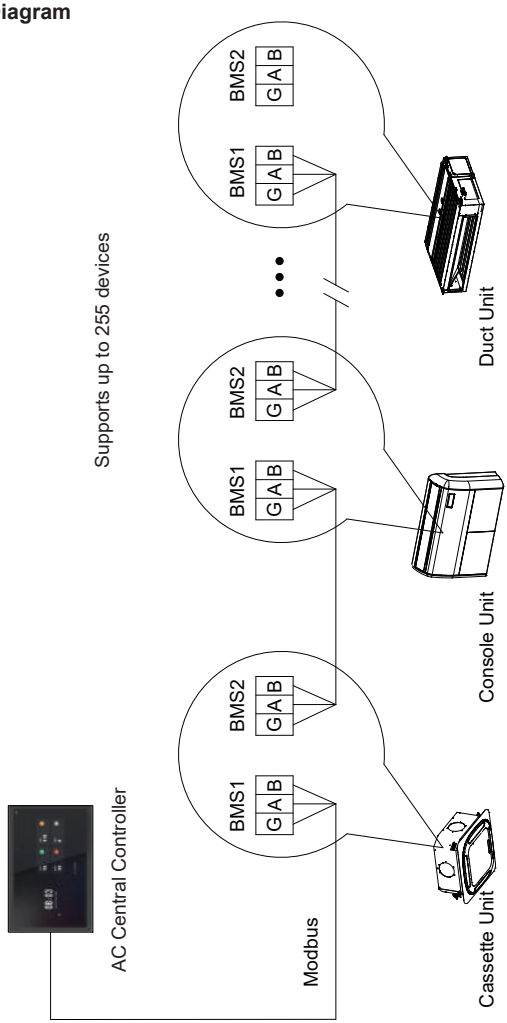
CAN signal line from protocol converter to unit	
Protocol Converter Communication Interface Type	CAN
Type of communication interface for air conditioning	CAN
Type of wire	Two core shielded wire
Wire length	Not exceeding 100 meters
Wire diameter	Greater than or equal to 0.75mm²

COMMUNICATION WIRING SPECIFICATIONS:

1. Controller Positioning: The centralized controller must be connected to either the first or the last protocol converter on the RS485 bus.
2. Wiring Specifications & Grounding: Always refer to the wire specifications defined in the provided table. Use of non-compliant wires may trigger signal interference and lead to malfunctions. During installation, ensure all copper conductors are securely fastened with excellent contact. The shielding meshes of all shielded cables must be interconnected and grounded at a single point to the sheet metal chassis.

3. Cable Isolation: It is strictly prohibited to bundle signal lines with refrigerant piping or power cables. When power cables and signal lines are routed in parallel, maintain a minimum clearance of 300 mm to prevent electromagnetic interference.
4. Loop Prevention: The signal communication lines must not form a closed loop.

LCAC Wiring Diagram



Wiring requirements:

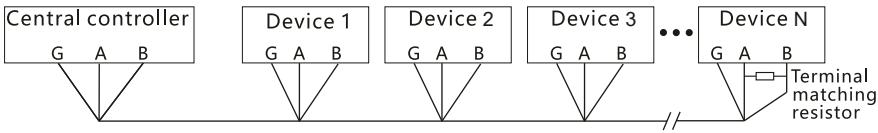
The network cable connecting the centralized control screen to the router or switch	
Communication Interface Type for centralized control screen	RJ45
Router/Switch Communication Interface Type	RJ45
Type of wire	Shielded wires of CAT5 and above
Wire length	Not exceeding 50 meters

The centralized control screen is connected to the RS485 signal line of the unit	
Type of communication interface for centralized control screen	RS485
Type of communication interface for air conditioning	RS485
Type of wire	Triple-core shielded cable
Wire length between nodes	Not exceeding 100 meters
RS485 bus length	Not exceeding 200 meters
Wire diameter	Greater than or equal to 0.75mm²

WIRING AND COMMUNICATION GUIDELINES:

1. Connection Topology: Units must be connected in a daisy chain (hand-in-hand) configuration. The centralized controller should be connected to either the first or the last unit on the communication bus.
2. Wiring Specifications & Grounding: Always adhere to the wire specifications defined in the provided table. Using non-compliant wires may result in signal interference and subsequent malfunctions. During wiring, ensure all conductors (copper cores) are securely connected with excellent contact. All shielding meshes of the shielded cables must be interconnected and grounded at a single point to the unit's sheet metal chassis.
3. Cable Routing & Clearance: Do not bundle signal lines together with refrigerant piping or power cables. When power cables and signal lines are routed in parallel, maintain a minimum clearance of 300 mm to prevent electromagnetic interference.
4. Loop Prevention: The signal communication line must not form a closed loop.

RS485 Wiring Considerations As illustrated, when the central controller communicates with multiple devices, terminating resistors must be connected to the terminal blocks of the end devices on the communication bus.



Installation Precautions for WiFi Communication Environment:

1. Signal Optimization: Certain installation environments can significantly impact WiFi signal strength. It is highly recommended to install the central controller in an open, unobstructed area and as close to the router as possible.
2. Frequency Interference: To prevent mutual interference, do not place other wireless communication devices operating on the same frequency bands (2.4GHz or 5GHz) near the central controller—such as other WiFi devices or Bluetooth electronics—with the exception of the router itself.
3. Metal Shielding: The central controller must not be installed within a metal enclosure (iron box). Additionally, ensure that no large metal objects or equipment are located in the immediate vicinity of the device.
4. Cable Routing: Avoid routing power cables or signal lines from other equipment adjacent to the central controller to minimize potential electromagnetic interference (EMI) with the WiFi signal.

9 Feature Overview

- **Home Page**

  View device status statistics and today's schedule execution status. When an electricity meter is installed, view energy consumption statistics for the past 7 days and energy management statistics.

- **Device Control**

  Supports individual device control, group control, global control, and device lock control.

- **Schedule Management**

  Schedule device power on/off times with multiple repeat rules (daily, weekdays, weekends, custom, holidays).

- **Scenario Management**

  Users can pre-set a group of control commands (power on/off, temperature, mode, fan speed, etc.) and the devices requiring execution. Clicking a scenario instantly executes the predefined control commands.

- **Energy Consumption Statistics**

  Requires integration with an electricity meter. View daily, monthly, and yearly energy consumption statistics and usage trends for each meter.

- **Device Grouping**

  Manage devices in groups based on requirements, supporting up to three levels of grouping.

- **Fault List**

  Device fault alerts and historical fault queries.

10 Setup Guide

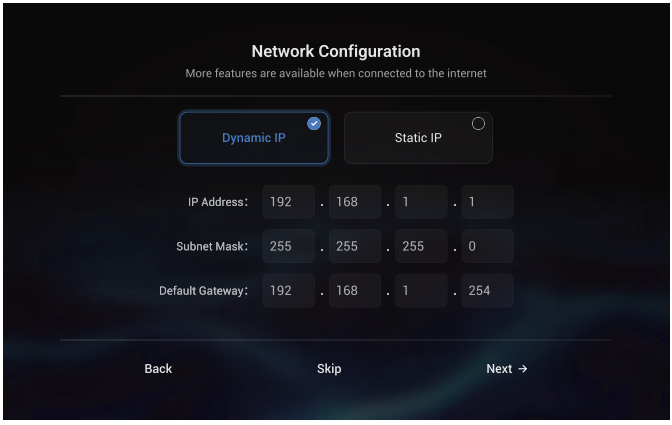
The central control screen will enter the boot screen during the first startup.

- **Step 1: Language selection**

  Currently supports Chinese and English.

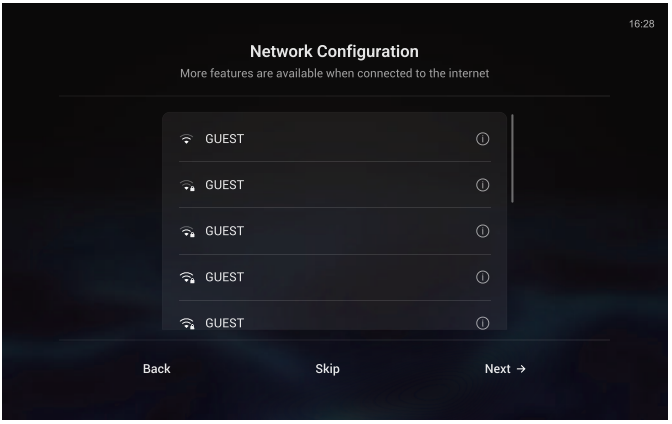
- **Step 2: Configure Network**

  Supports Ethernet connection, with options for Static IP and Dynamic IP.
  If no Ethernet cable is connected, this configuration item can be skipped. If a gateway is connected and Static IP is selected, manually configure the IP address, subnet mask, and default gateway.



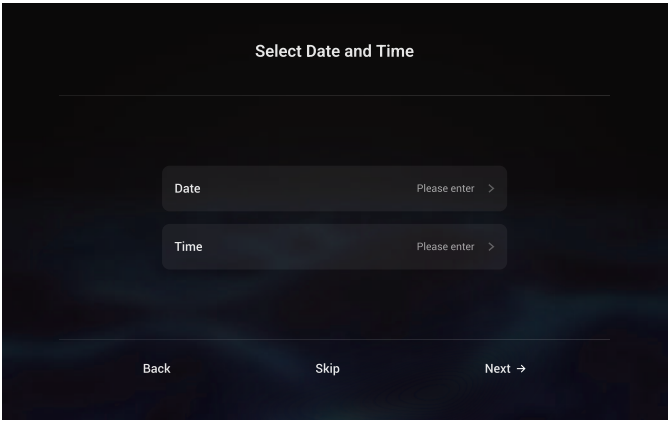
- **Step 3**

  If Step 2 was skipped due to no Ethernet cable connection, WiFi networking is available as an option in this step, and this step can also be skipped.



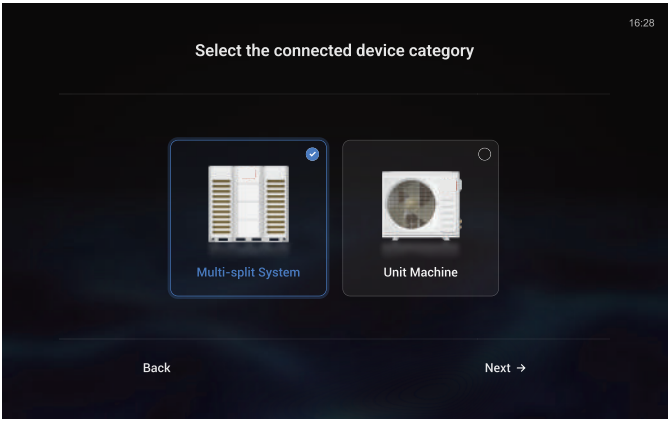
- **Step 4: Date and Time Selection**

  Select the date and time based on the local time.



- **Step 5: Select System Type**

  Choose based on the actual connected device category.



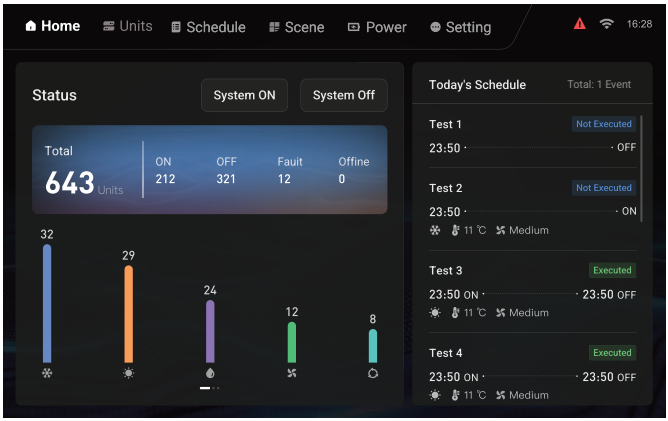
- **Step 6: Select Whether to Configure the Electric Meter**

  Choose "Need to Configure Electric Meter" if an electric meter is actually connected.

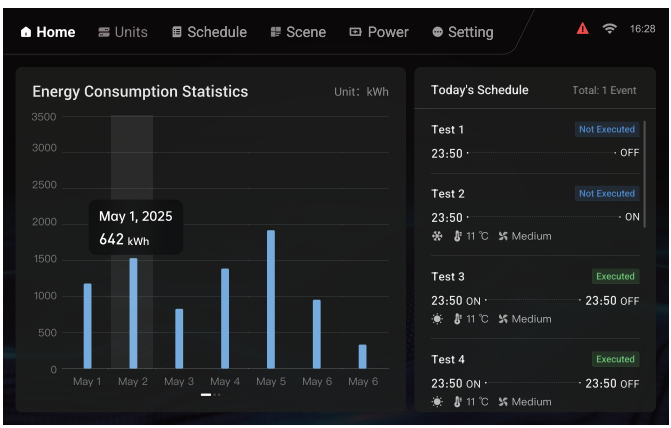
- **Step 7: Commissioning Completed**

11 Home Page

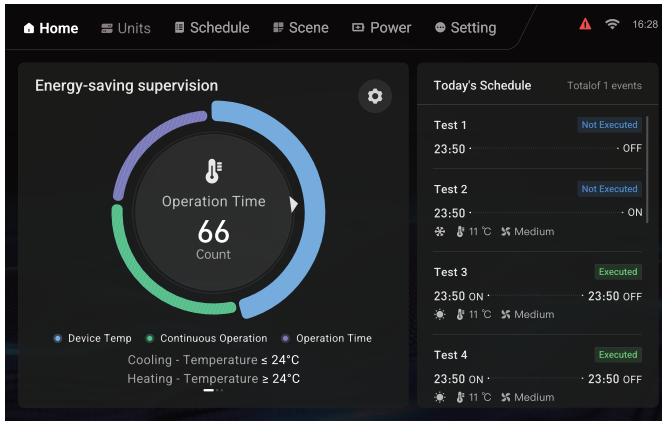
1. The home page displays equipment status statistics, quick buttons for fully turning on/off all devices, and today's scheduled tasks.



2. If electricity meters are connected to the centralized control screen, the home page shows a bar chart of the system's energy consumption statistics for the past 7 days.

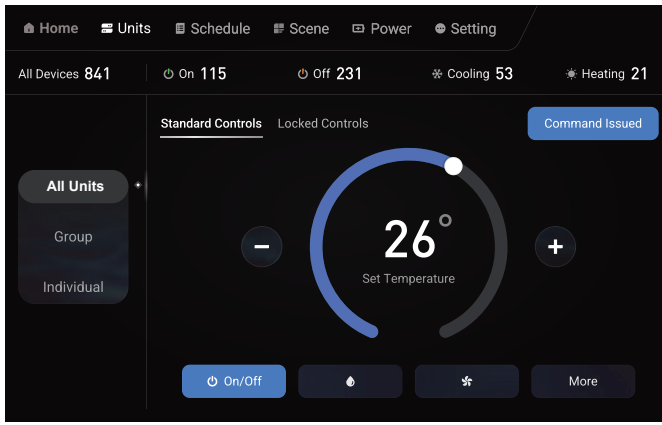


3. If the user has enabled energy-saving monitoring, the home page displays the number of devices under monitoring. Clicking opens the energy-saving monitoring settings interface.

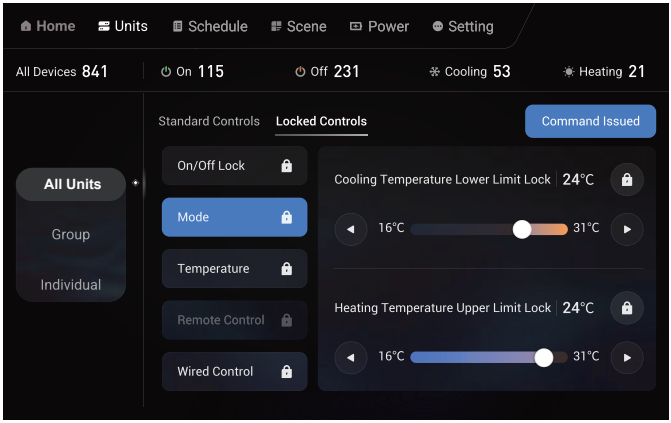


12 Devices

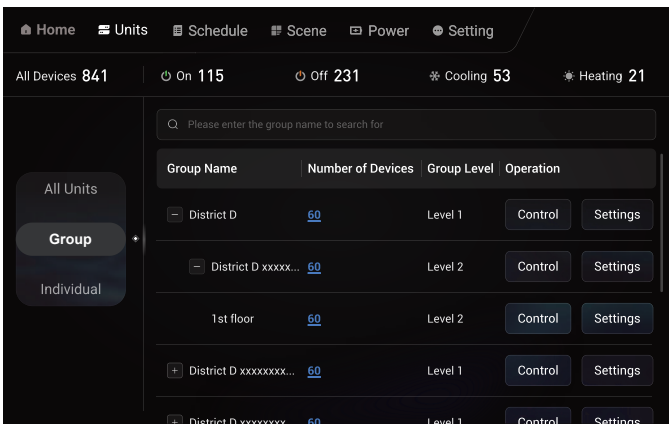
1. Device control defaults to the global control interface. Switch to group control or single-device control interfaces, supporting standard control and lock control.



2. Click “Lock Control” to enter the lock control interface, supporting power lock, mode lock, and temperature lock. After locking, devices become inaccessible via remote or wired controllers.



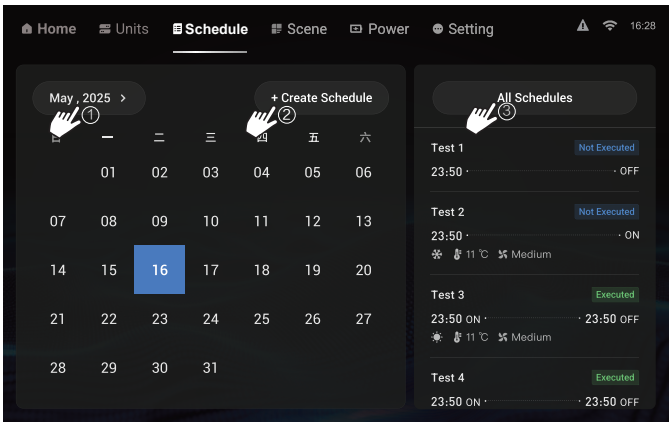
3. Click “Group Control” to enter the group control interface. View all device groups. Click the ‘Control’ button to manage devices within a group. Click the “Settings” button to enter the group settings interface for editing groups. Click the group's device count number to view the device list within that group. Enter a group name in the search box to quickly filter the corresponding group.



4. Click “Single Device Control” to enter the single device control interface. Tap the power icon on a device card to turn that specific device on or off. Tap the card to enter the device control interface for individual device management.

13 Schedule

The main schedule interface displays events scheduled for the current month. Tap ① to switch months and view schedules for other months. The interface shows events scheduled for the current day, labeled as “Not Executed” or “Executed.” Tap the New Schedule button (②) to create a new event. Tap the All Schedules button (③) to view details for all scheduled events.



1. Create Schedule: Enter the New Schedule interface.

(1) Enter Schedule Name

(2) Select Schedule Cycle

(3) Repeat Rules:

① Once Only: One-time execution;

② Daily: Executes every day within the cycle;

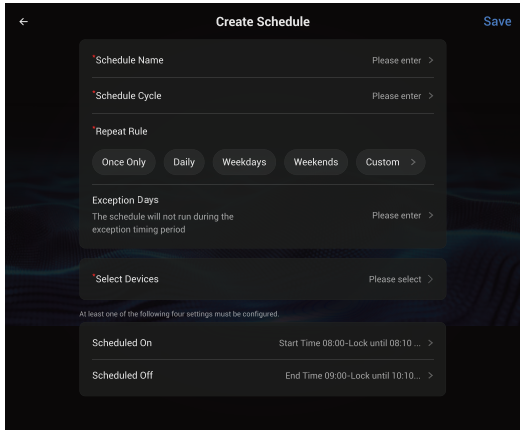
③ Weekdays: Executes Monday through Friday within the cycle;

④ Weekends: Executes Saturday and Sunday within the cycle;

⑤ Custom: Users can select any days from Monday to Sunday for schedule execution.

(4) Exception Schedule: Users can specify any days within the schedule cycle when the schedule will not run.

(5) Select Device: Choose the device where the schedule will take effect.



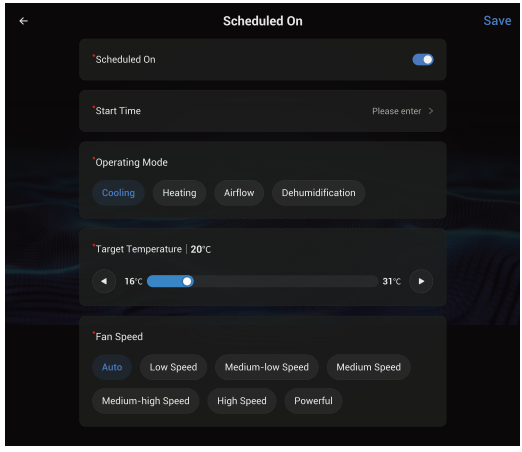
(6) Timed Power On

① Set the power-on time. Power-on lock is an optional configuration, allowing you to set the lock duration. The power-on lock will automatically release upon reaching the lock duration.

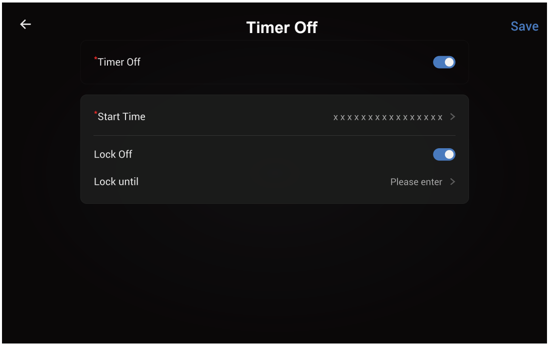
② Operating Mode: After selecting a mode, you can also set mode lock and the lock duration.

③ Target Temperature: After setting the temperature, you can configure temperature lock and the lock duration.

④ Fan Speed: Set the fan speed level.



(7) Scheduled Shutdown: Set the scheduled shutdown time. You can choose to lock the shutdown and specify the lock duration.



2. Enter the All Schedules interface to view detailed parameters for all schedules.

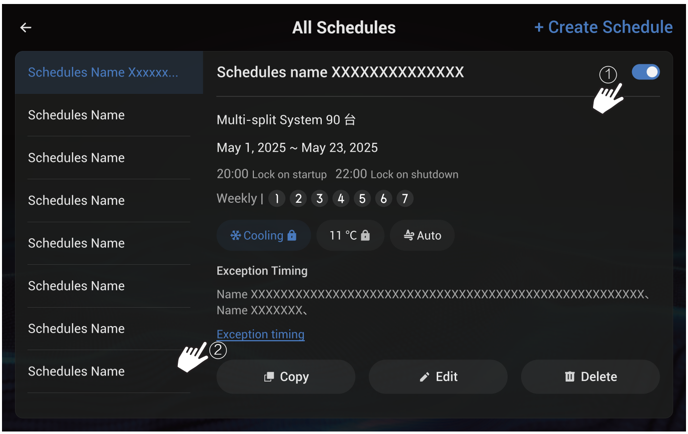
(1) Click switch ① in the image. When enabled, the schedule takes effect; when disabled, it is inactive.

(2) Click ② in the image to view all exception dates.

(3) Click the copy button to quickly duplicate the schedule and enter the duplicate schedule's editing interface. Modify the schedule name (as names cannot be duplicated), then adjust other settings as needed.

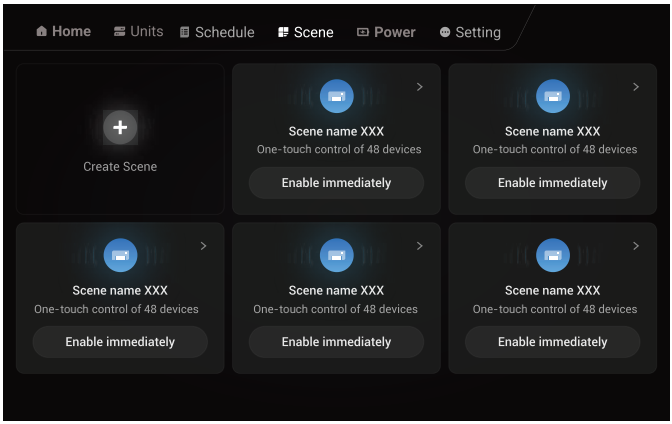
(4) Tap the Edit button to enter the current schedule's editing interface.

(5) Tap the Delete button to remove the current schedule.

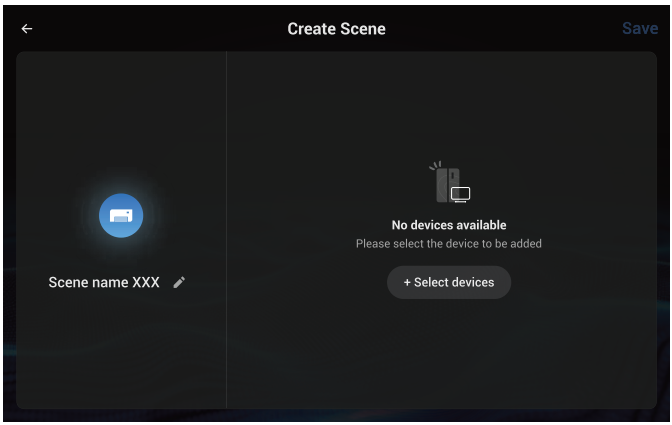


14 Scenes

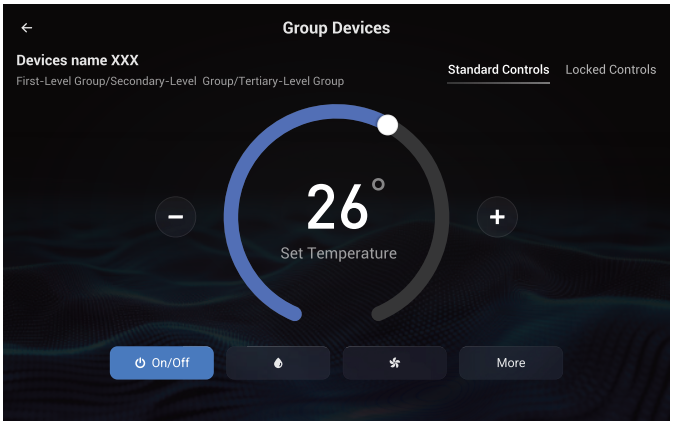
Configure general settings, lock control commands, and select devices requiring these commands. Supports single-device or multi-device settings. Tap the Enable Now button to instantly send preset control commands to designated devices for quick operation.



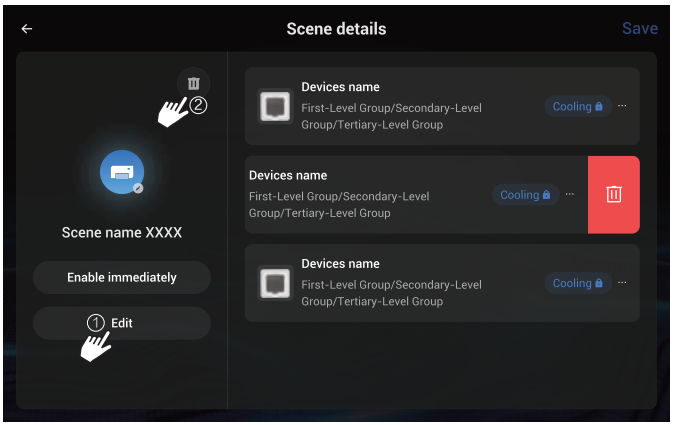
1. Create a scene: Tap the Create Scene card to enter the scene creation interface. Edit the scene name and select devices to add.



2. After selecting devices, enter the scene control command settings interface.
   Configure standard commands like power on/off, mode, temperature, and fan speed.
   Tap Lock Controls to enter the lock settings interface, where you can lock power on/off, temperature, and mode commands.
   Complete command setup and tap Save to finish scene creation.



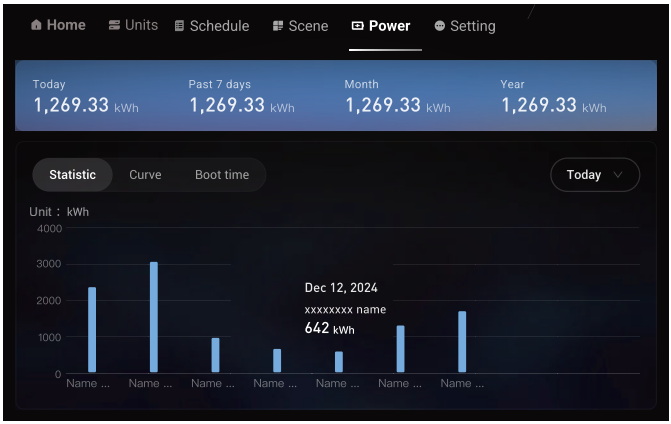
3. Edit a scene: Tap the scene card to access the scene details interface. Tap the edit button (①) to modify the scene name, scene devices, or preset commands. Tap the delete icon (②) to remove the scene.



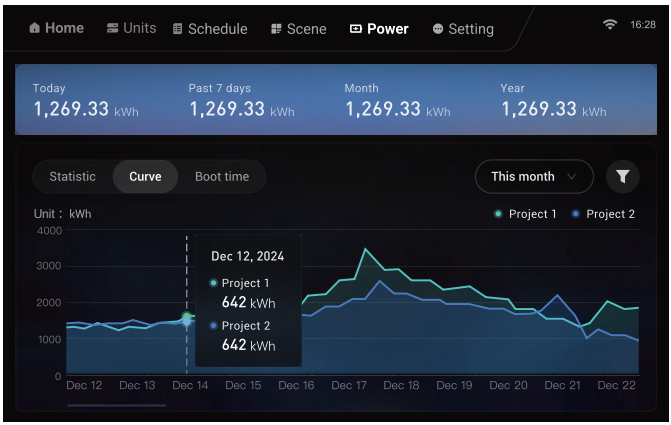
15 Energy Consumption

If an electricity meter is configured and connected, the system can collect meter readings to track power consumption data.

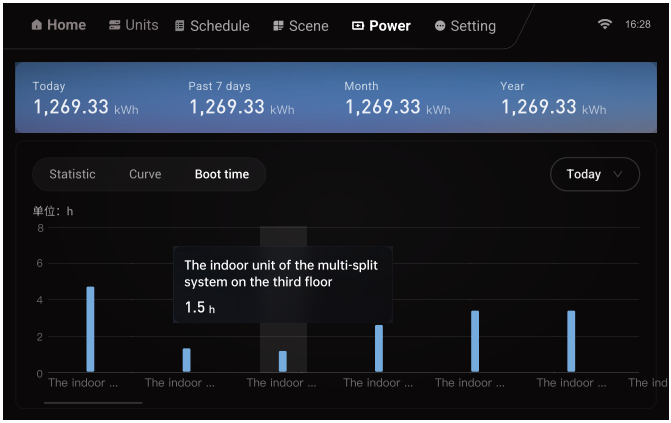
1. The Energy Consumption Statistics interface defaults to displaying bar charts showing daily, monthly, and yearly electricity consumption statistics for each system.



2. Click Power Consumption Trend to view line charts showing daily, monthly, and yearly power consumption trends for the system. Up to 5 systems can be filtered and displayed on the interface.

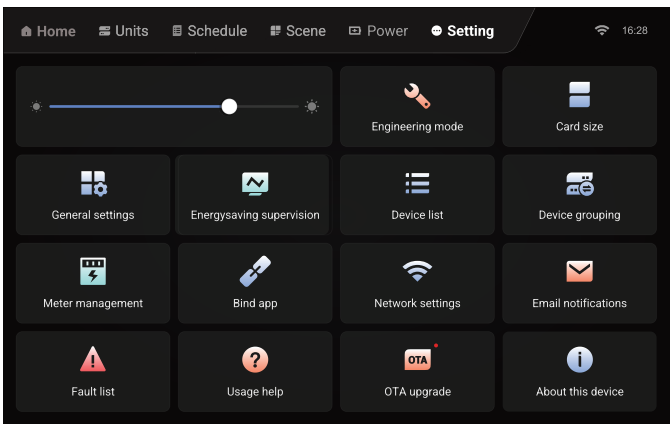


3. Click Operating Hours to view bar charts showing daily, monthly, and yearly operating hours statistics for the top 10 indoor units by operating duration.



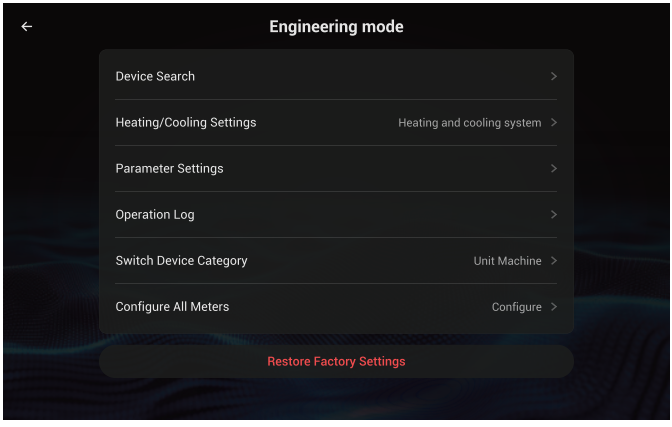
16 More

The More interface contains additional features, primarily including Installer Mode, Card Size, General Settings, Energy Conservation Monitoring, Device Grouping, Device List, Electricity Meter Management, App Binding, Network Settings, Email Notifications, Fault List, User Help, and OTA Updates.

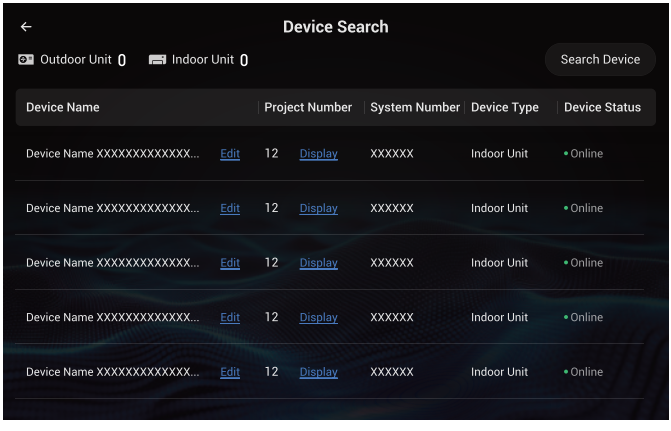


1. Engineering Mode

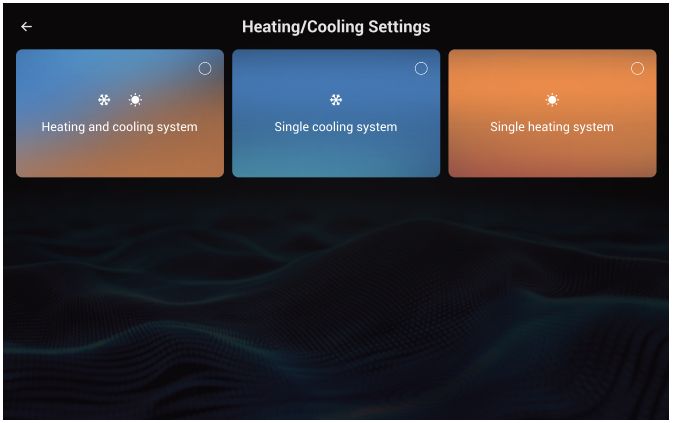
Requires password entry to access the settings interface. Includes Device Search, Heating/Cooling Settings, Parameter Settings, Operation Log, Device Category Switching, and Electricity Meter Configuration.



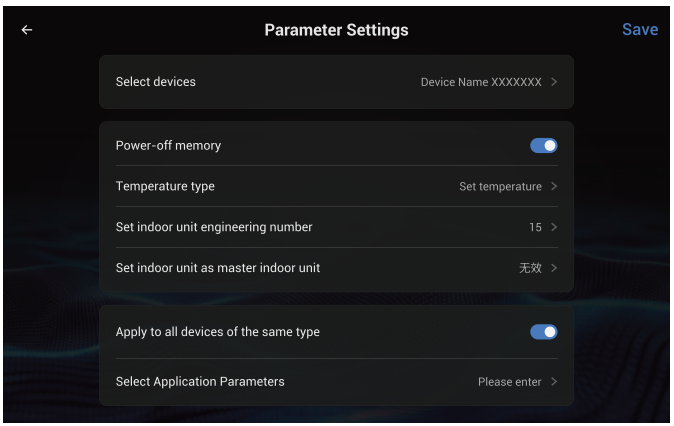
① Device Search: Clicking the search button re-scans connected devices. Edit device names via the edit button. Clicking to display the indoor unit's panel or wired controller causes the corresponding engineering ID to flash, aiding user identification of indoor unit locations. LCAC lack this ID display function.



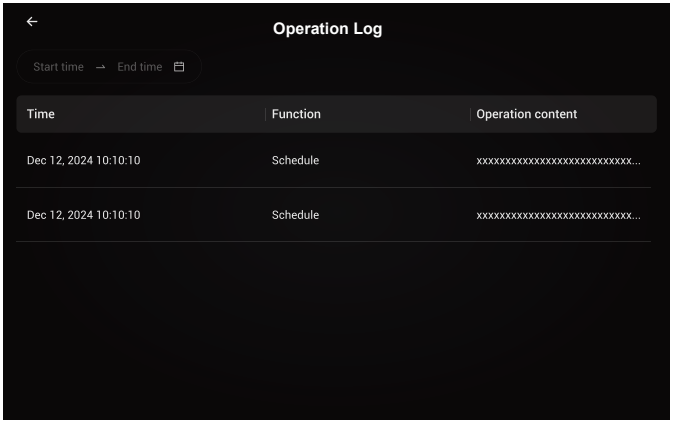
② Heating/Cooling Settings: The default is a heating/cooling system. This can be changed to a single-cooling system, in which case heating-related settings will not appear on the screen interface. Changing to a single-heating system will hide cooling and dehumidification-related settings on the screen interface.



③ Parameter Settings: Indoor unit parameters can be configured. Multi-split indoor units support setting power-off memory, temperature type, assigning an indoor unit project number, and designating an indoor unit as the master unit. Single-units support setting temperature type, power-off memory, mode restrictions, and temperature upper/lower limits. Certain parameters can be applied to all indoor units. After enabling “Apply to All Device Types” ,select the parameters to apply to all indoor units.



④ Operation Log: Records user operations including: device grouping, energy-saving monitoring, electricity meter management, device search, and other operation records.

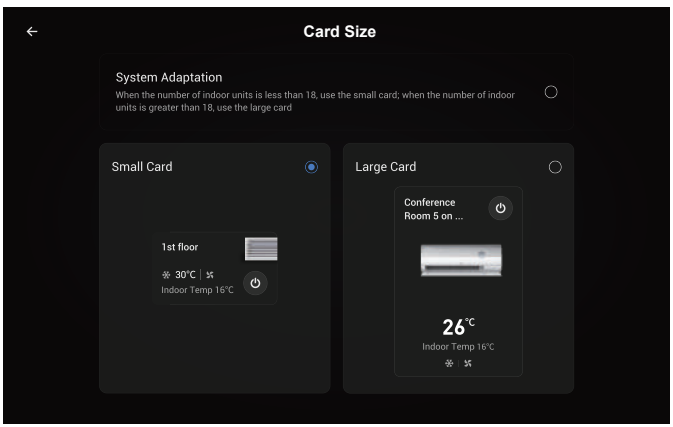


⑤ Category Switching: Toggle between unit-type or multi-split systems.

⑥ Electricity Meter Configuration: Enable meters to view energy consumption statistics; disable to hide consumption data.

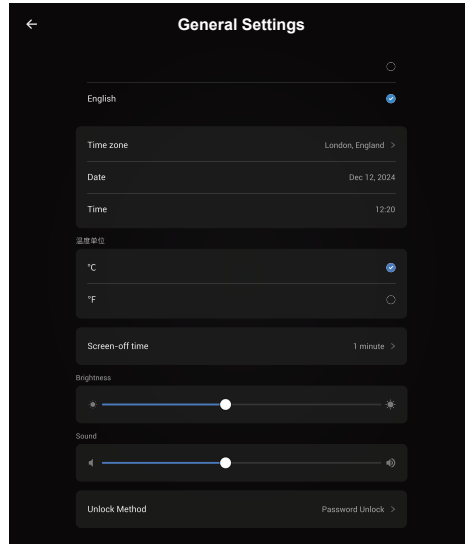
2. Card Size

System automatically adapts card dimensions. Displays large cards when fewer than 18 indoor units are connected; displays small cards when 18 or more indoor units are connected. Users can manually select either small or large cards.



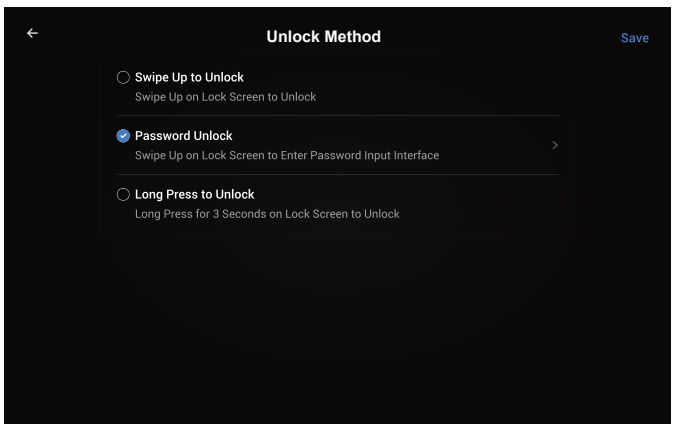
3. General Settings

Includes language switching (Chinese/English), where the interface language changes instantly upon selection. Also includes time zone selection, date/time settings, temperature unit conversion, screentime-out duration, brightness adjustment, and key/sound volume control.Tap “Unlock Method” to select theunlock-ing method for accessing the main interface.



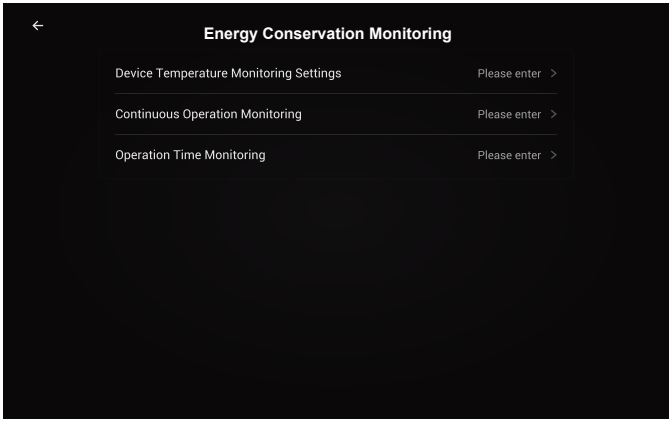
4. Three unlock methods are available:

- Default: Swipe Up to Unlock. Swipe upward as guided on the lock screen to access the main interface.
- Password Unlock: Switch to this mode and set a 4-digit lock screen password.
- Long Press Unlock: Switch to this mode and press and hold for 3 seconds as guided on the lock screen to access the main interface.

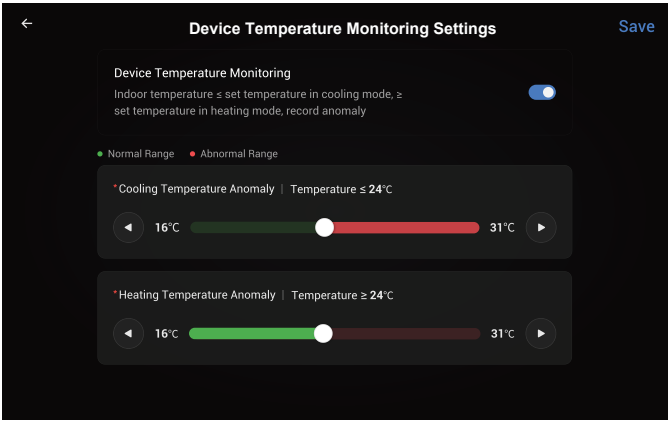


5. Energy-saving monitoring:

Energy-saving monitoring is disabled by default. Users can configure three distinct usage monitoring options: set temperature monitoring, continuous operation duration monitoring, and runtime monitoring. These track air conditioner usage to alert users about potential energy waste.

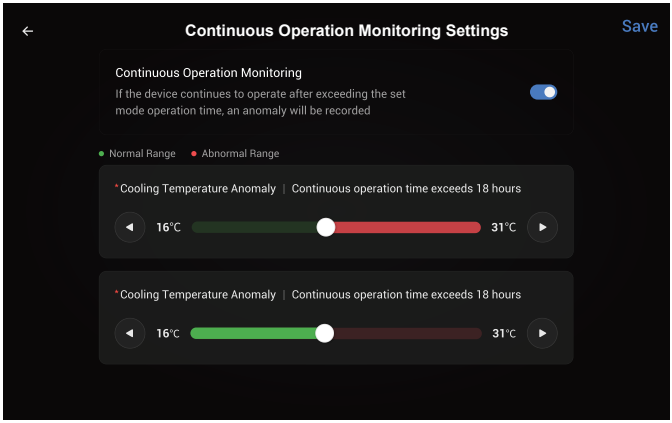


① Set Temperature Monitoring: Enables tracking of indoor units operating at set temperatures below a specified thresholdin cooling mode or above a specified threshold in heating mode.

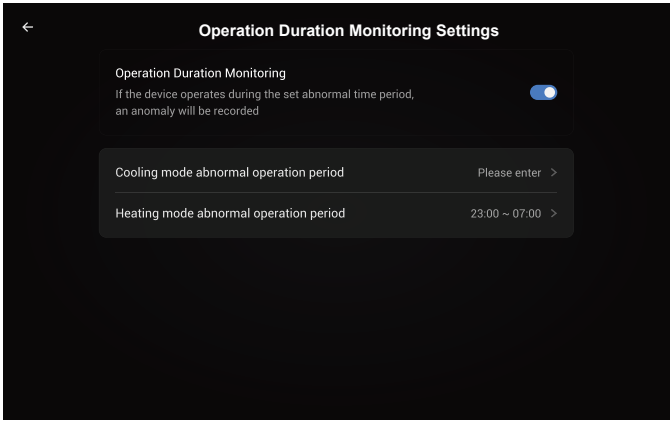


② Continuous Operation Duration Monitoring:

Set thresholds for continuous operation hours in cooling mode and heating mode. The system counts the number of units exceeding these durations.



③ Operating Time Monitoring: Define abnormal operating time windows for cooling and heating. The system counts the number of indoor units operating during these abnormal time periods.



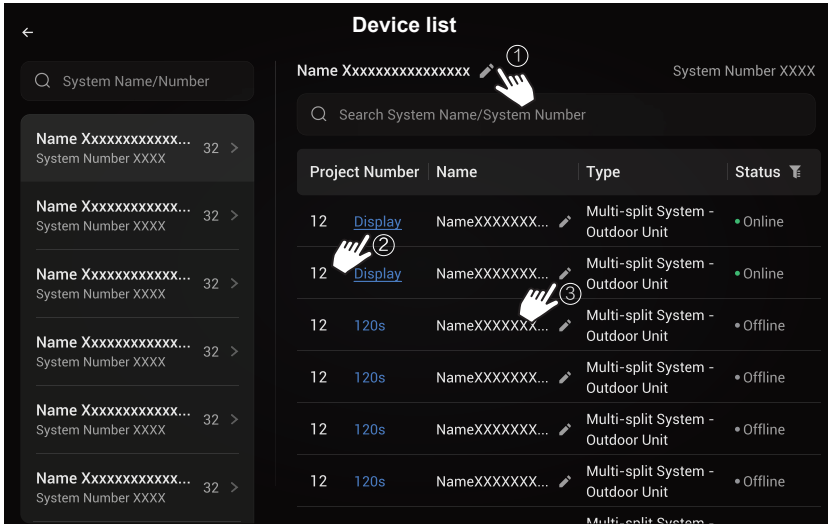
6. Equipment List:

The system column appears on the left side of the interface. Clicking a specific system displays the indoor units under that system on the right side.

(1) Clicking ① System Name allows modification of the system name;

(2) Clicking ② Display causes the corresponding indoor unit's light panel and wired controller panel to continuously flash the indoor unit's engineering number for 120 seconds;

(3) Clicking ③ Device Name allows modification of the indoor unit's name.



7. Device Grouping:

By default, all devices are ungrouped. Ungrouped devices cannot be edited or deleted. Supports creating three-level groupings (e.g., Building-Floor-Room). Devices can be added to each floor group.

(1) Click ① New Group Card to create a group;

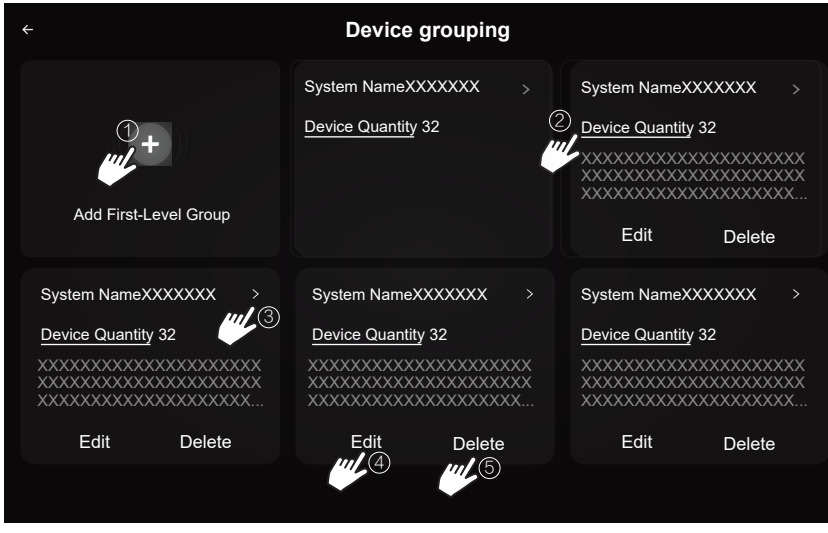
(2) Click ② Device Count to view the device list within the group;

(3) Click ③ Arrow to enter the group details interface;

(4) Click ④ Edit to modify the group name;

(5) Click ⑤ Delete to remove the group and all its sub-groups.

After deletion, devices originally associated with the group will be moved to the Ungrouped category by default.



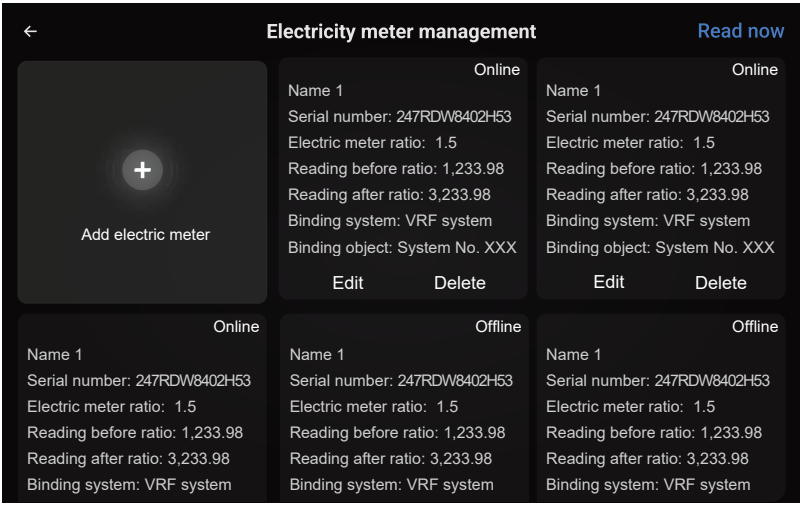
8. Electricity Meter Management:

If the user chooses to configure electricity meters, the meter management function entry will appear in the More interface. If the user declines to configure meters, this entry will not display. Entering the meter management interface allows viewing the current offline status of meters, along with each meter's serial number, transformation ratio, readings before and after transformation, and bound system.

Tap the “Add Meter” card to enter the meter addition interface. Enter the meter name, serial number, transformation ratio, and select the system to bind it to. One system supports binding multiple meters.

Tap the “Edit” button on a meter card to modify its name, transformation ratio, and bound system.

Tap the “Delete” button on a meter card to remove the corresponding meter information.

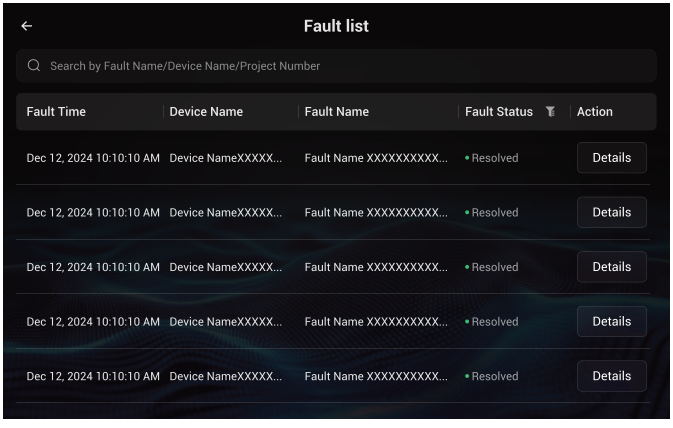


9. App Download And Binding:

Users can scan the QR code on the central controller's interface to download the App and follow the instructions to connect to the network.

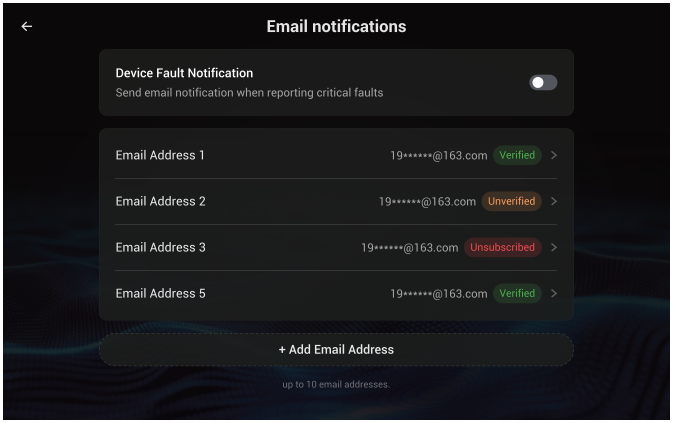
10. Fault List:

View device fault timestamps, fault-reporting device names, fault descriptions, and resolution statuses. Quickly filter the fault list by searching for fault names, device names, or Project ID. Click the Details button to view detailed fault codes, fault types, and severity levels.



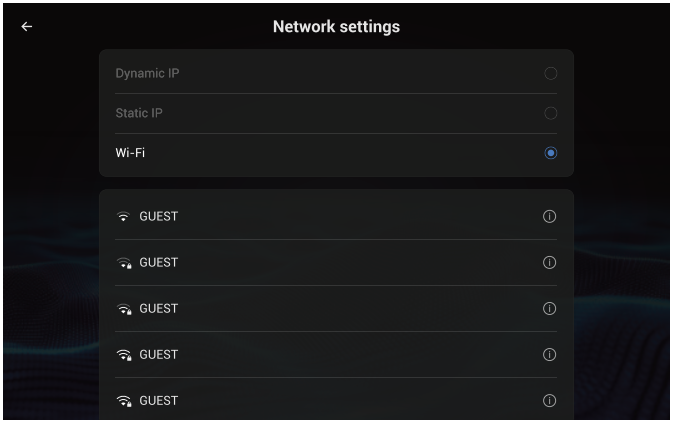
11. Email Notifications:

The Email Notification function supports adding up to 10 email addresses. When adding an email, a verification link is sent. Users must complete verification within 24 hours. Verified emails receive notifications for critical faults. Unverified emails will not receive notifications.



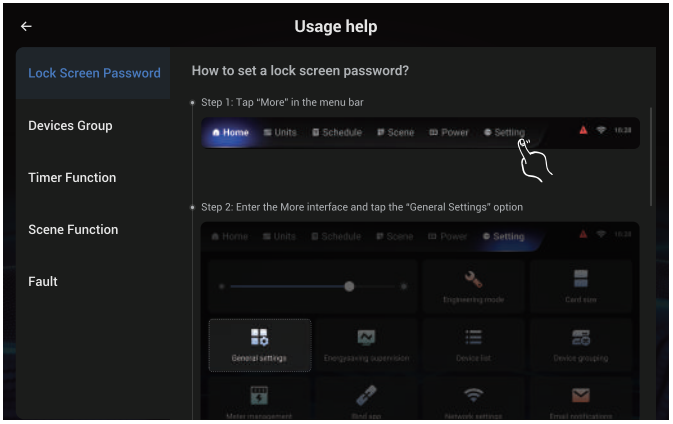
12. Network Settings:

Network Configuration supports selecting Dynamic IP, Static IP, or Wi-Fi settings. Dynamic and Static IP require Ethernet connection for configuration. When connecting via a gateway and selecting Static IP, manually configure the IP address, subnet mask, and default gateway.



13. Help & Support:

User Guide provides detailed instructions for common functions, including: setting screen lock passwords, configuring device groups, scheduling timers, setting up scenes, and troubleshooting device issues.



14. About This Device:

About Device displays the application version number, release date, system startup time, system load status, and memory usage.