Guide for Solar Battery Hybrid Controller

REV 1.0.0 2025-04-07

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1. Introduction

EMA App is an energy monitoring application for smart phones, designed for end users of APstorage Products. Users can check the real-time performance, historical energy data, and environmental benefits of their APstorage.

1.1 About this Guide

This document introduces the Solar Battery Hybrid Controller.

1.2 Need to Know

Before using the EMA APP to assist in configuring the device, please ensure that the device has been correctly assembled and connected to the power source. It takes time for the device to respond to the APP settings. For the actual situation, please refer to the LCD display on the device.

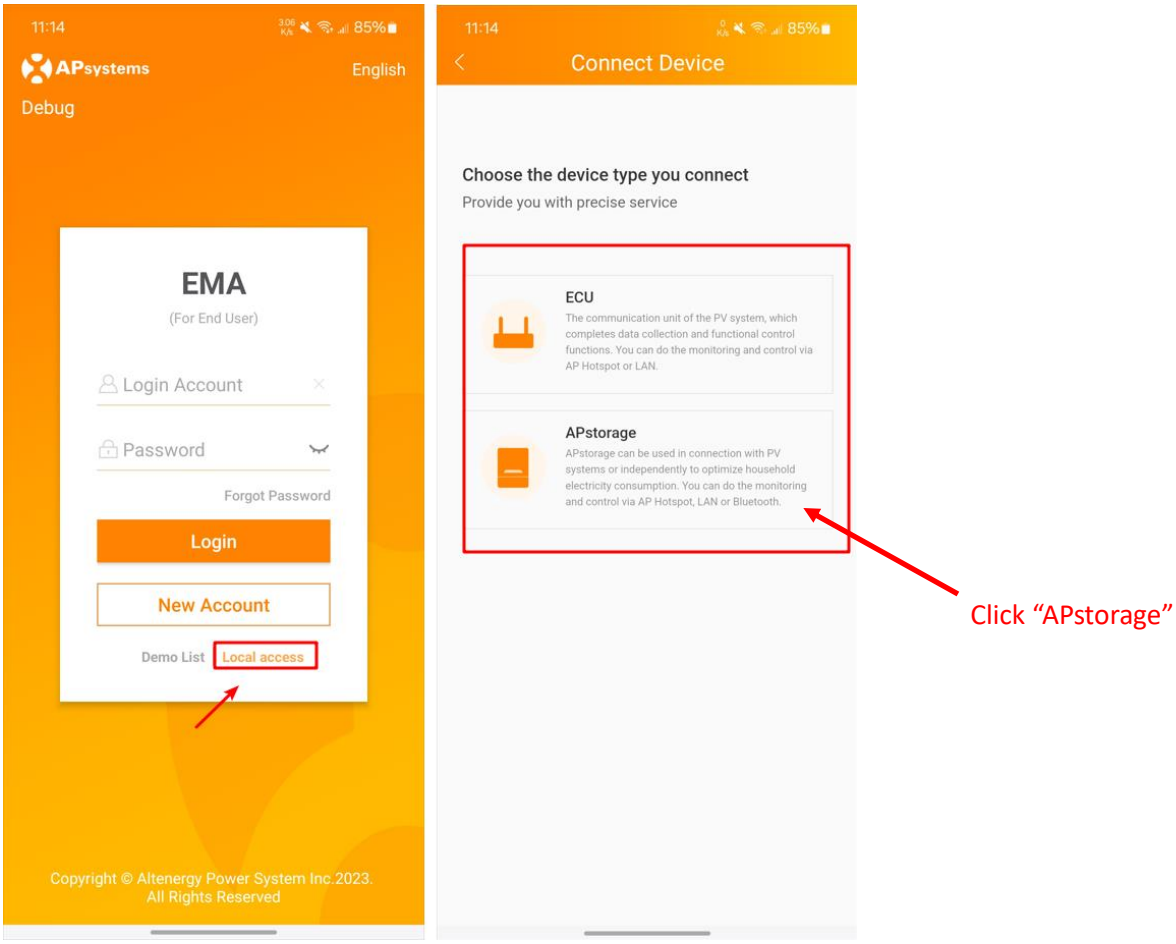
2. Local Control

The Solar Battery Hybrid Controller AHS-6.3 model has been designed with local connection and management functionality. You can access this local functionality through EMA APP.

2.1 Connect Device

Click ***"Local access"*** to enter this function.

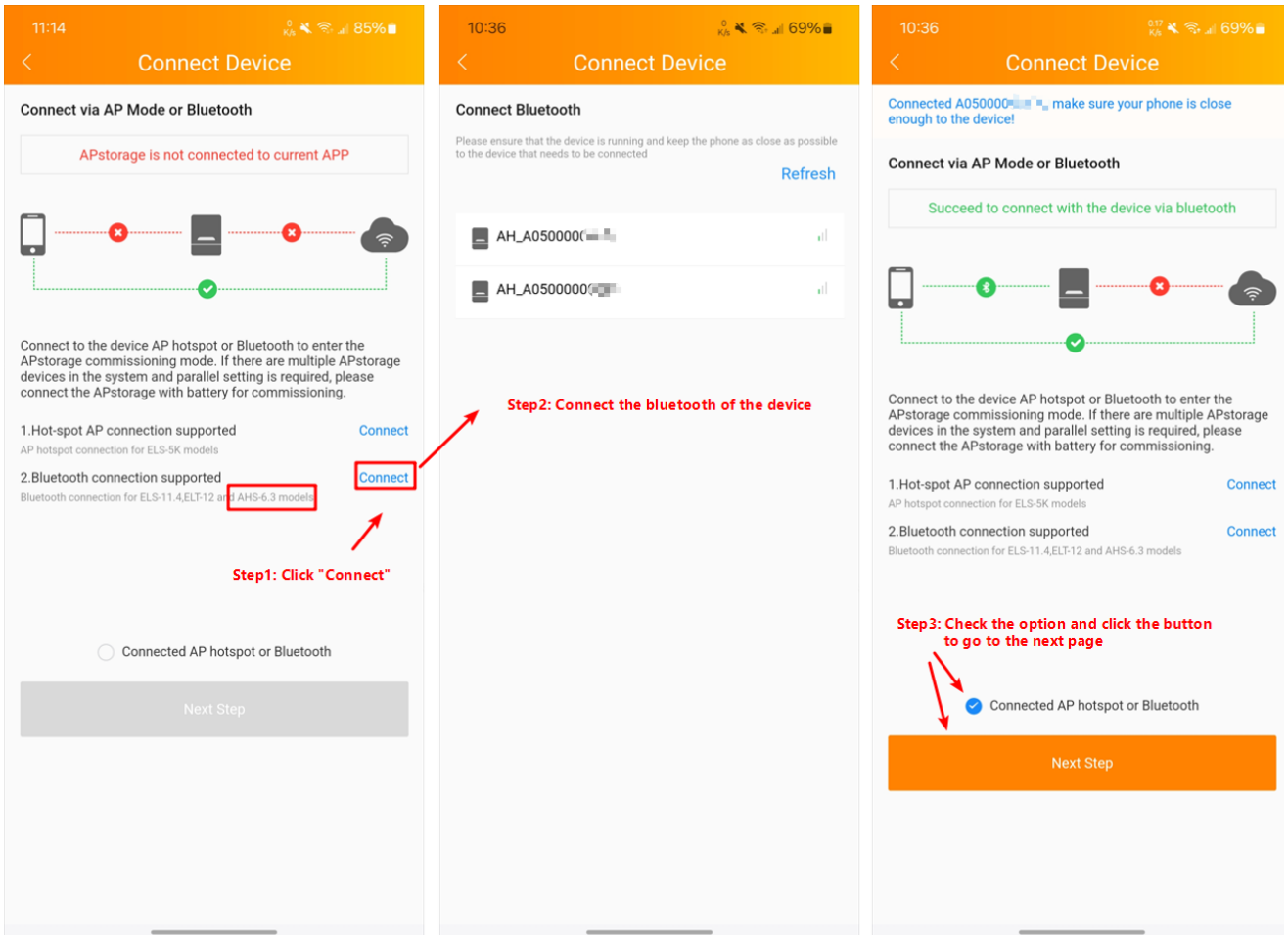
On the **[Connect Device]** page, you can see two entrances for connecting devices, which respectively correspond to devices of ECU and devices of APstorage. Here, please click on the ***"APstorage"*** to connect APstorage devices.



2.1.1 Bluetooth connection supported

- Step 1: Click ***"Connect"*** as indicated in the picture to enter the device's Bluetooth list.
- Step 2: Choose the Bluetooth of the APstorage device to connect to, the format of the Bluetooth is AH_A05XXXXXXXXX, A05XXXXXXXXX being the device ID.
- Step 3: Wait for the device connection status to be updated. Once successful, check the option ***"Connected AP hotspot or Bluetooth"*** and then you can click ***"Next Step"*** to the **[Home]** page.

- **Note:** If the device fails to connect, please check whether the device is working properly and then repeat the above operation.



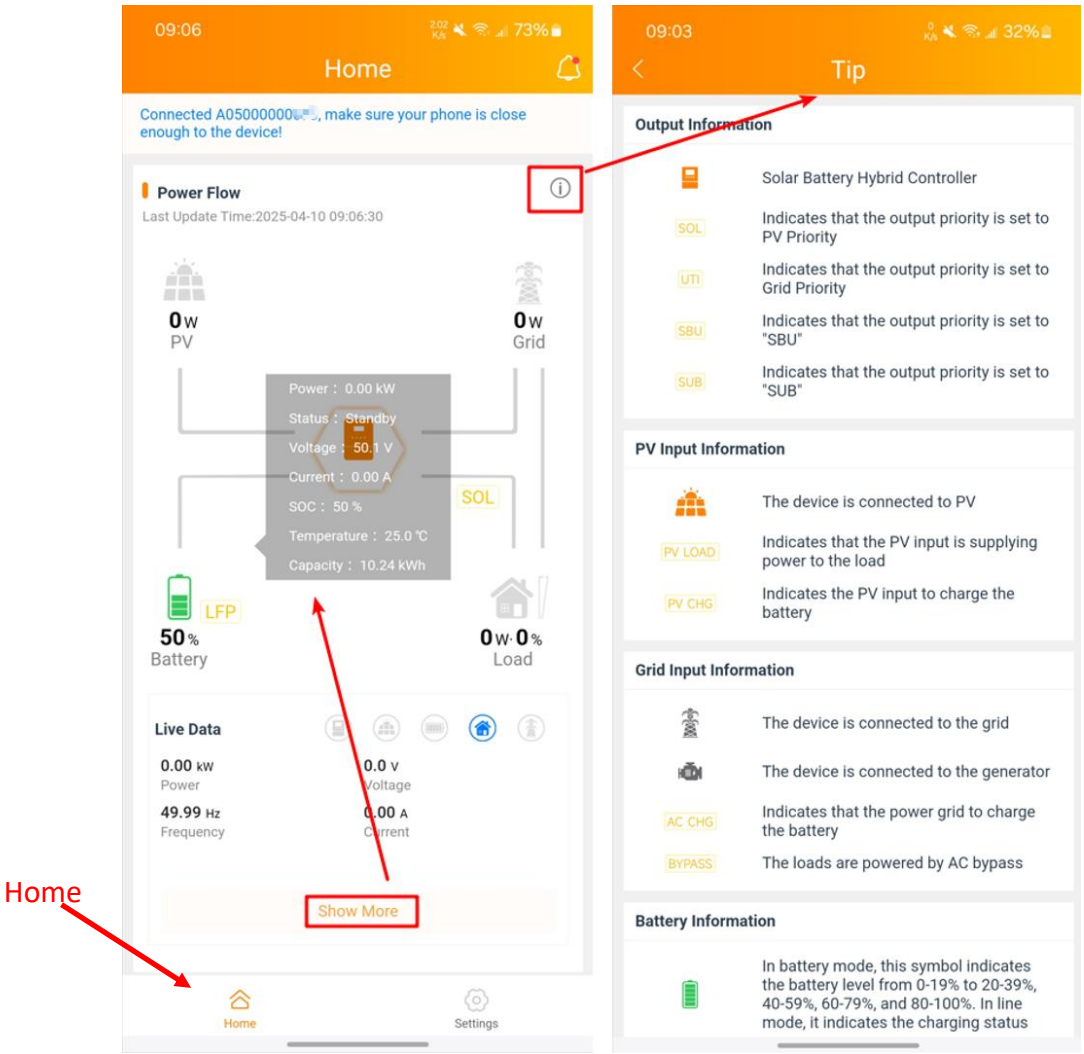
3. Home Page (Local Control)

On the **[Home]** page, you can visualize:

- The connection situation between the mobile phone and APstorage.
- Power flow of the system with AHS-6.3 model.
- Live data of the system.
- Total energy including consumption, production, grid or generator, charge and discharge.

Note

- There is a **[Tip]** page entered by clicking the icon "ⓘ", which displays the meanings of each icon on the **[Power Flow]**.
- Within the **[Live Data]** area, after clicking the button ***"Show More"***, you will see more relevant data in the **[Power Flow]** area.

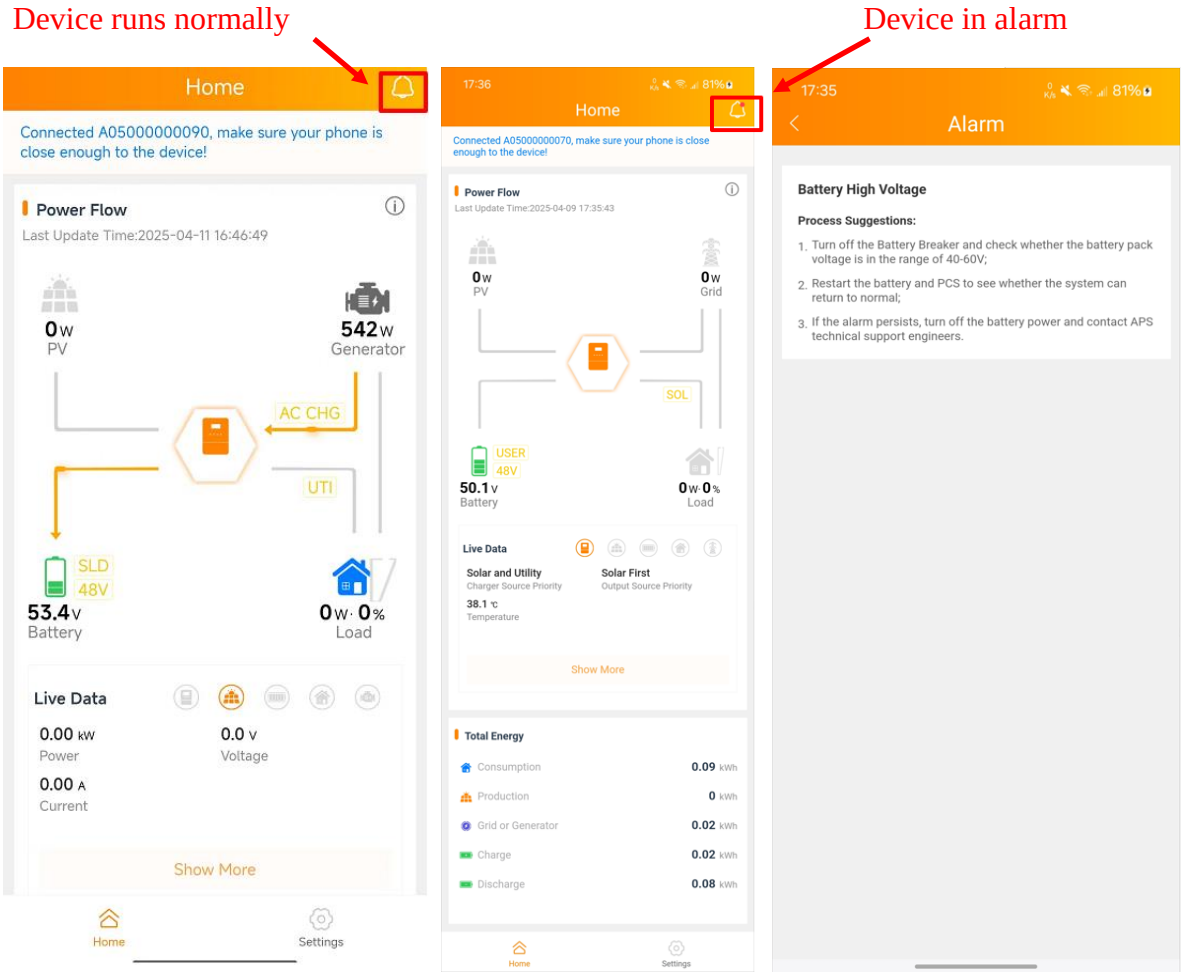


3.1 Alarm

Note

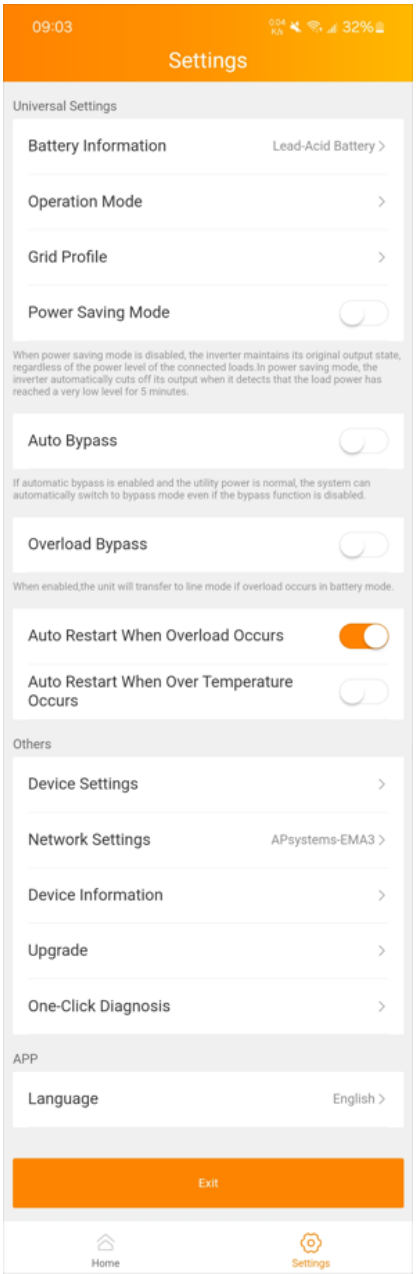
- Click on the icon "🔔" to enter the **[Alarm]** page, which displays the detailed alarm list and process suggestions.

This page displays the current alarm information of the device. If the actual alarm of the device has disappeared, the page will be updated accordingly. If the device is operating normally, the alarm indicator will be shown as "🔔" without the red dot.



4. Settings Page (Local Control)

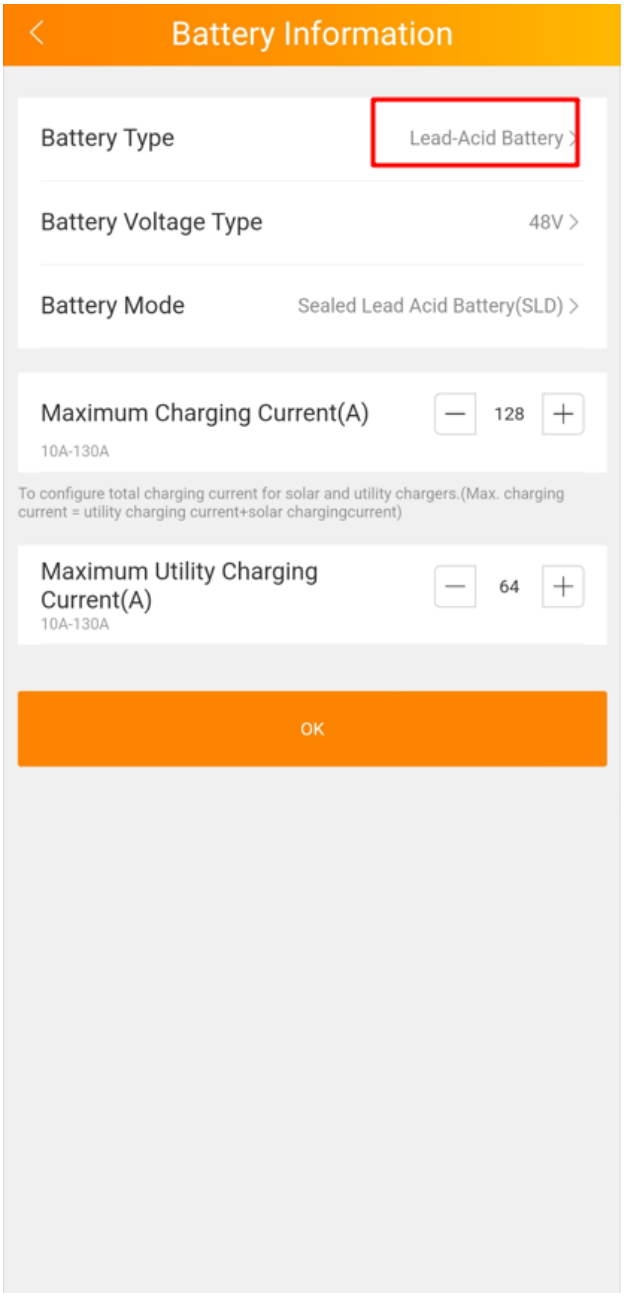
In this view, you can manage the AHS-6.3' system information.

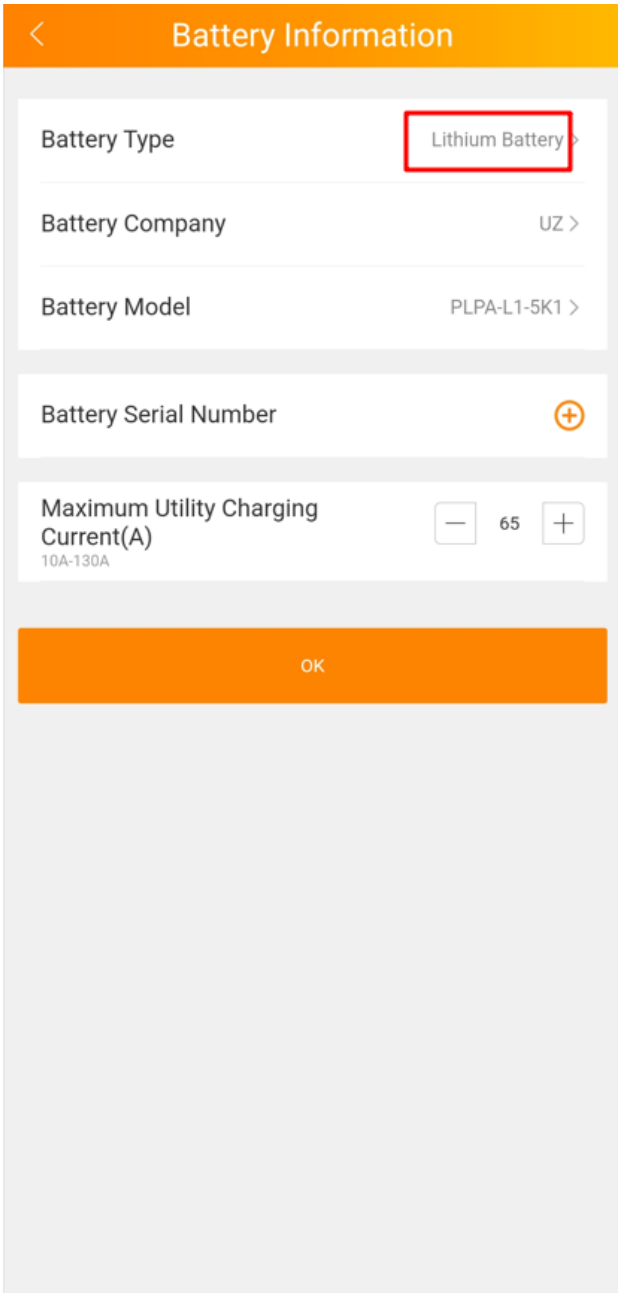


4.1 Battery Information

Note

- In the ***"Battery Type"*** option, selecting the ***"Lead-Acid Battery"*** type battery and the ***"Lithium Battery"*** type battery will result in different categories of interface settings.

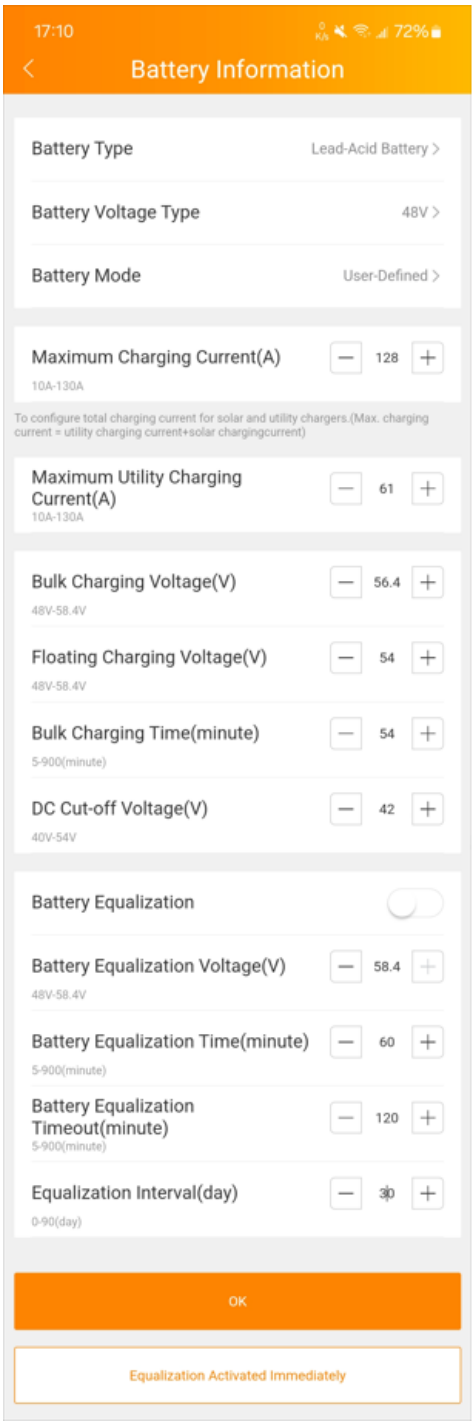


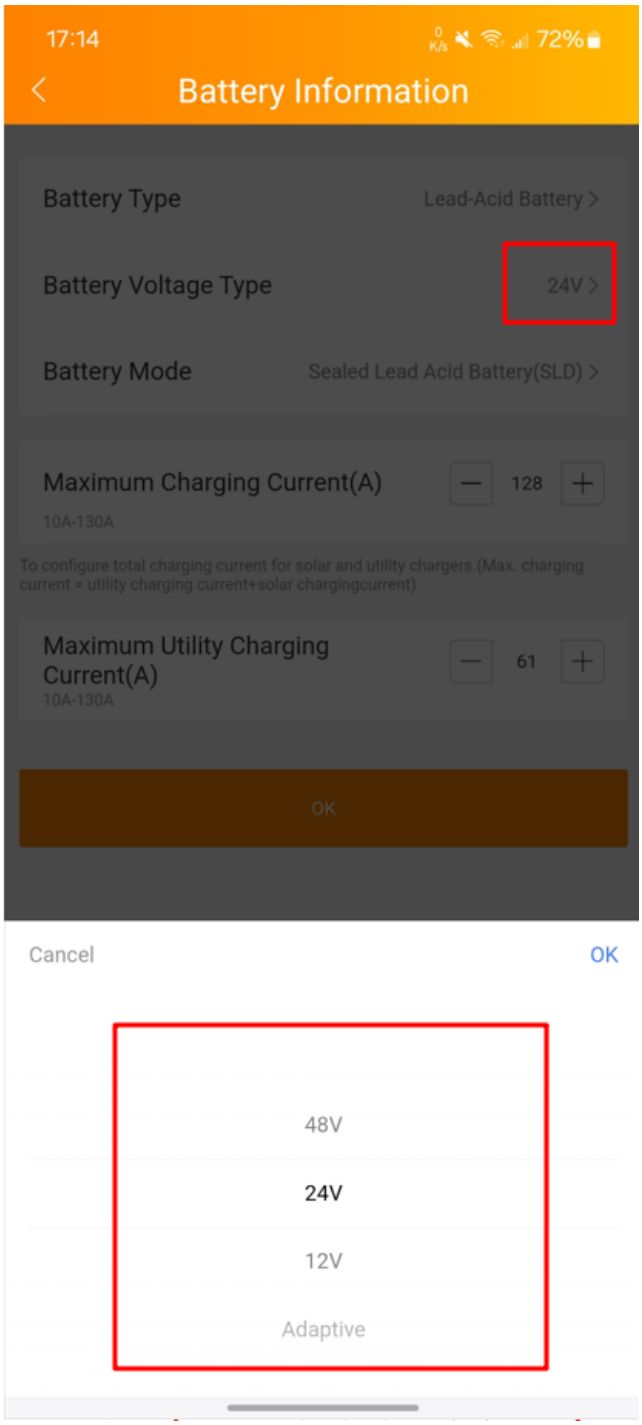


4.1.1 Battery Type: Lead-Acid Battery

➢ Battery Voltage Type

This option determines the input range of the settable items in the graph.



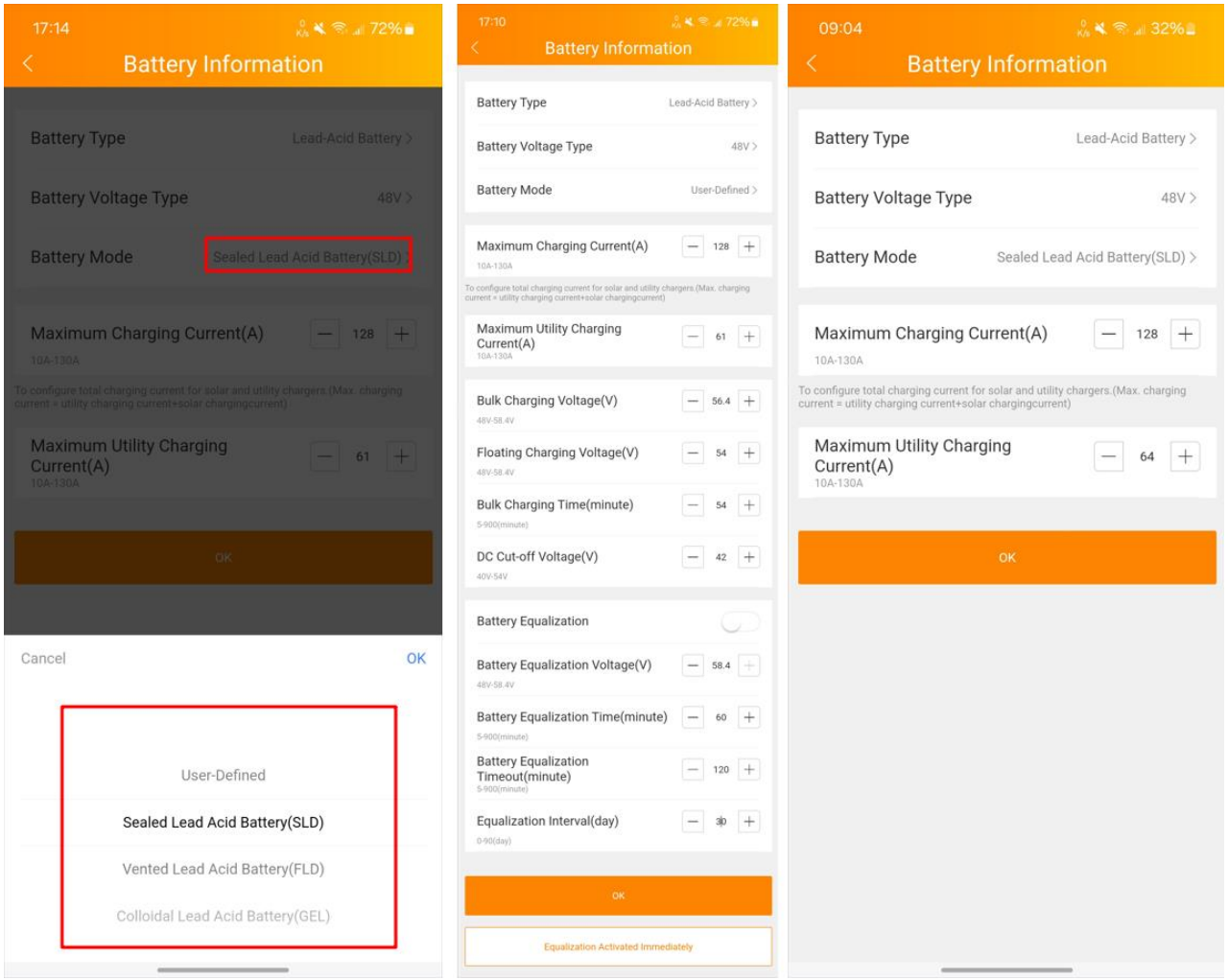


The options you can choose from are:

- 48V (default)
- 24V

- 12V
- Adaptive: If this option is selected, the inverter can automatically recognize the voltage type of the connected lead-acid battery and set all default parameters accordingly, while the user-defined setting range is also adjusted simultaneously.

➢ Battery Mode



The options you can choose from are:

- User-Defined(User)
- Sealed lead acid battery(SLD) (default)
- Vented lead acid battery(FLD)
- Colloidal lead acid battery(GEL)

➢ Maximum Charging Current

Default value: 130 A. Value range: 10 to 130 A.

➢ Maximum Utility Charging Current

Default value: 130 A. Value range: 10 to 130 A.

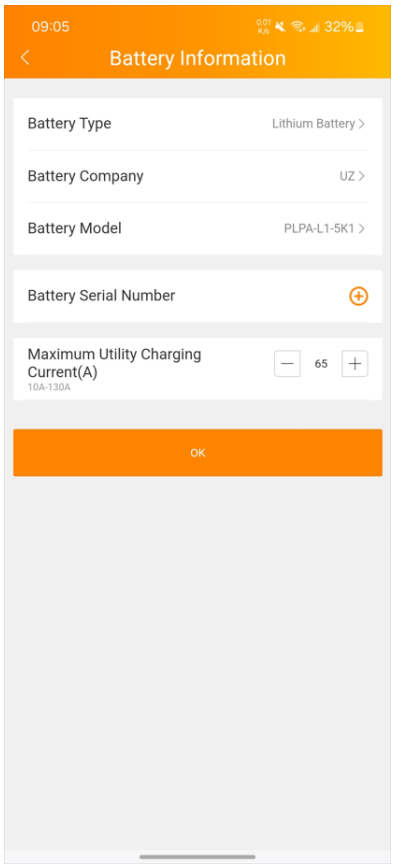
Note: If the setting value in ***"Maximum Charging Current"*** is less than 130 A, the current program setting maximum value is the setting value of ***"Maximum Charging Current"***.

4.1.2 Battery Type: Lithium Battery

Select ***"Lithium Battery"*** to obtain the detailed configuration of the battery in terms of company, model and serial number.

Note

- There are two ways to add the serial number, namely manual input and scanning the Barcode or QR code.
- Only 16 batteries can be added at most.

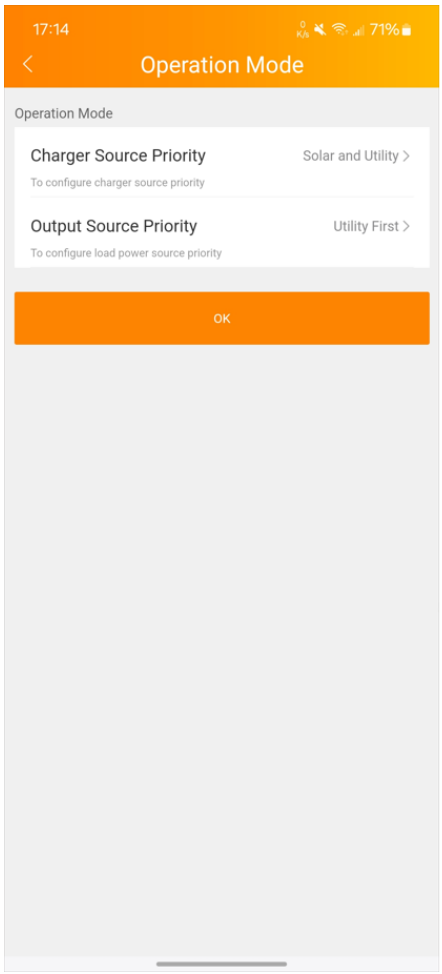


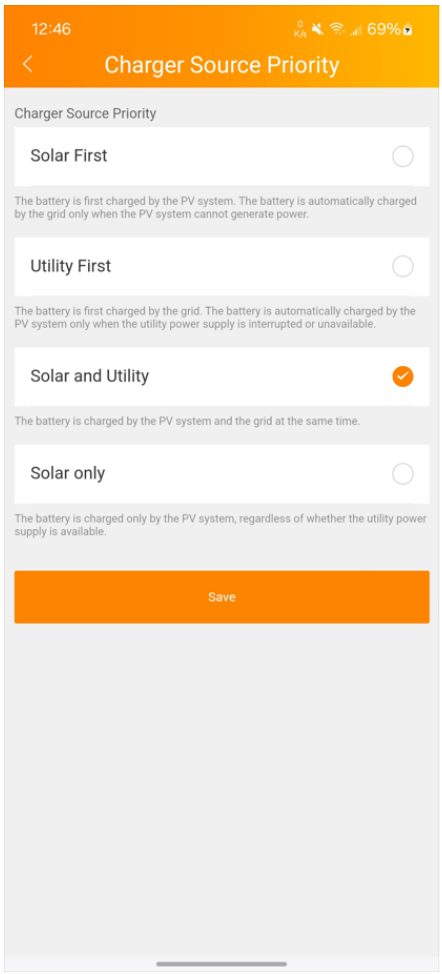
- Select ***"Battery Company"***,
- Select ***"Battery Model"***,
- Click "⊕" to add battery serial number by scanning or manual input,
- Click ***"OK"*** to complete.
- Maximum Utility Charging Current
  Default value: 130 A. Value range: 10 to 130 A.

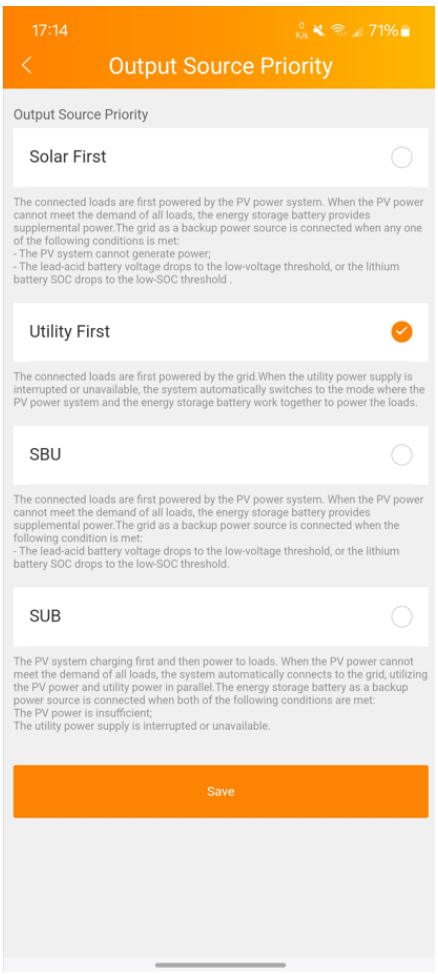
4.2 Operation Mode

Note

- In the ***"Output Source Priority"*** function option, if ***"Solar First"*** or ***"SBU"*** is selected, different options will be displayed depending on the previously selected battery type.

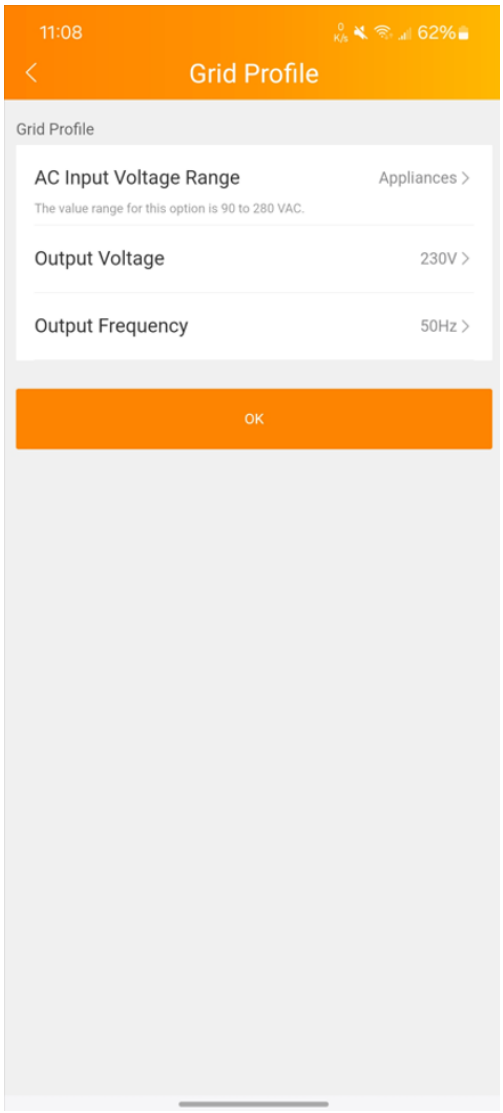






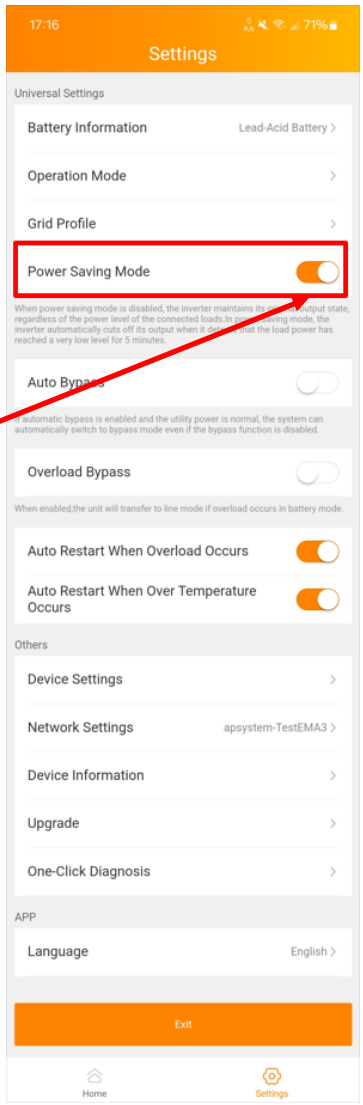
- Charge Source Priority: To configure charger source priority
  - Solar First
  - Utility First
  - Solar and Utility (default)
  - Solar only
- Output Source Priority: To configure load power source priority
  - Solar First
  - Utility First (default)
  - SBU
  - SUB

4.3 Grid Profile



- AC input voltage range
  - Appliances (default)
  - UPS
  - Generator
- Output Voltage
  - 220V
  - 230V (default)
  - 240V
- Output Frequency
  - 50Hz (default)
  - 60Hz

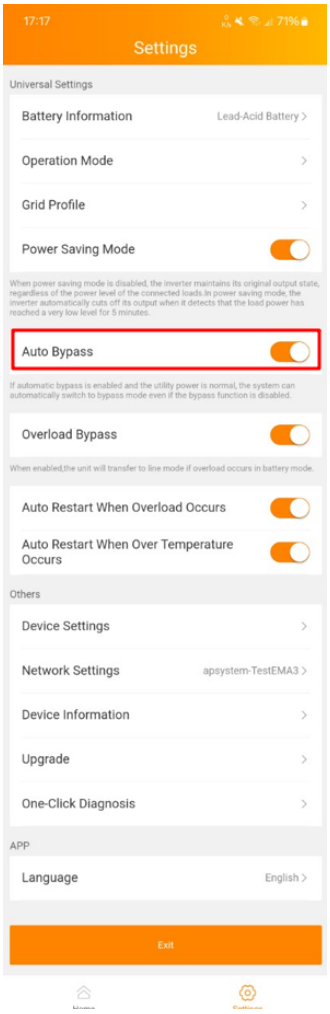
4.4 Power Saving Mode



Switch on

- Switch off ***"Power Saving Profile"*** (default):
  - When power saving mode is disabled, the inverter maintains its original output state, regardless of the power level of the connected loads.
- Switch on ***"Power Saving Profile"***:
  - When the device is actually in power saving mode, the inverter automatically cuts off its output when it detects that the load power has reached a very low level, or that the PV input has been interrupted for 5 minutes.
  - There will be an **"ECO"** logo within the **[Power Flow]** area on the **[Home]** page.

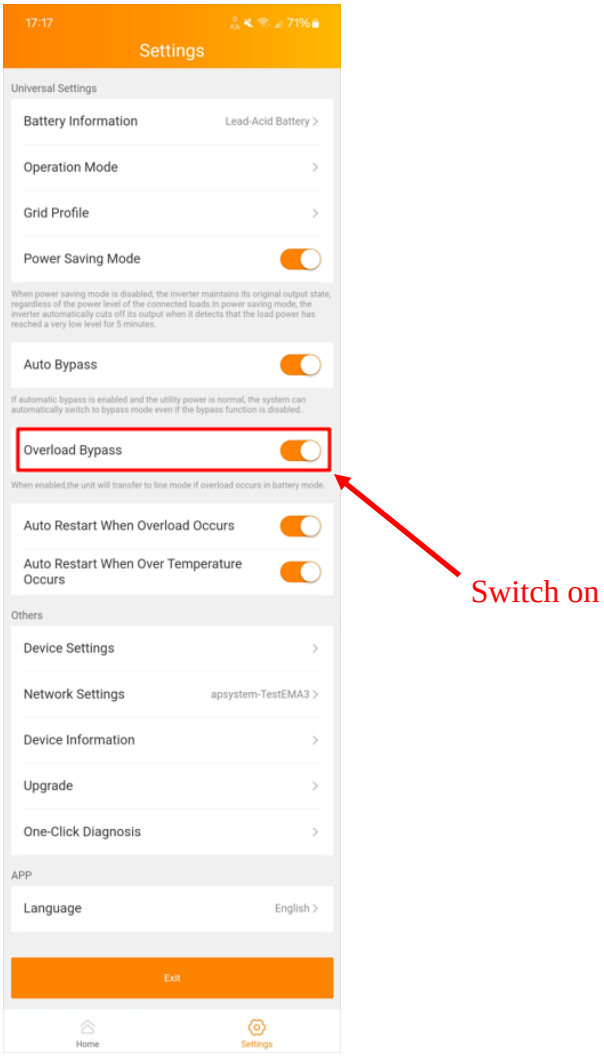
4.5 Auto Bypass



- Switch off (default): Manual.
- Switch on: Automatic.

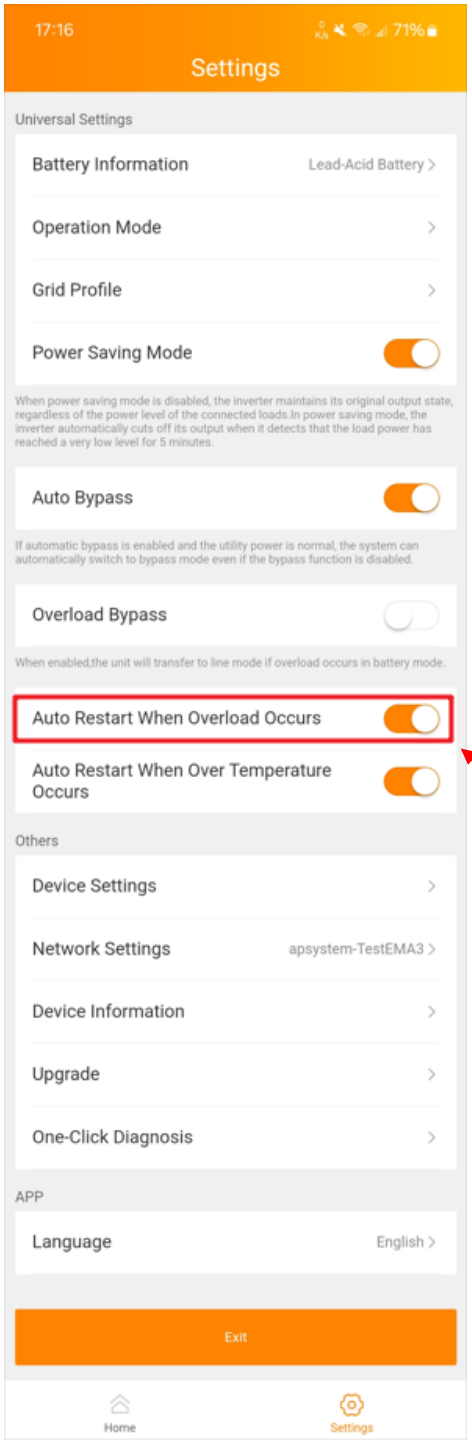
Note: If automatic bypass is enabled and the utility power is normal, the system can automatically switch to bypass mode even if the bypass function is disabled.

4.6 Overload Bypass



- Switch off (default): Overload bypass disabled.
- Switch on: Overload bypass enabled, when enabled, the unit will transfer to line mode if overload occurs in battery mode.

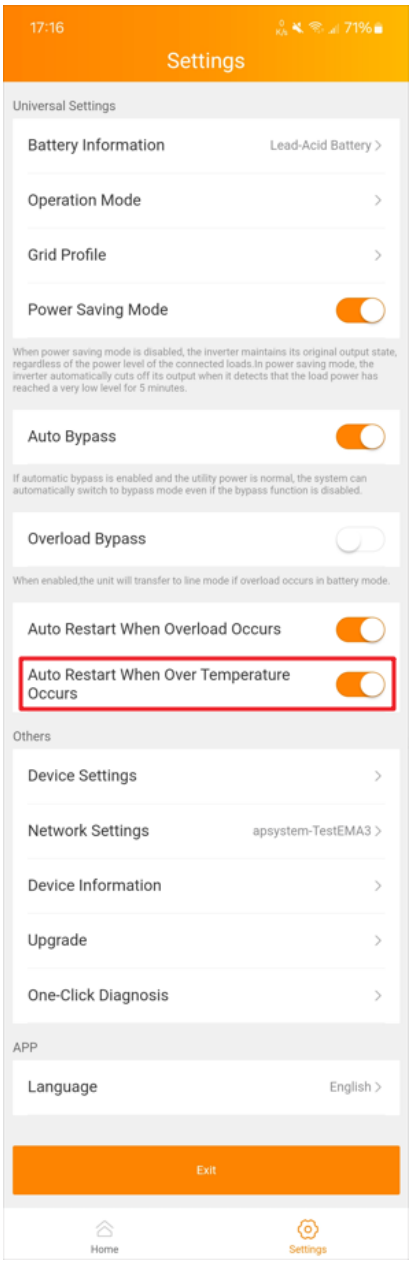
4.7 Auto Restart When Overload Occurs



Switch on

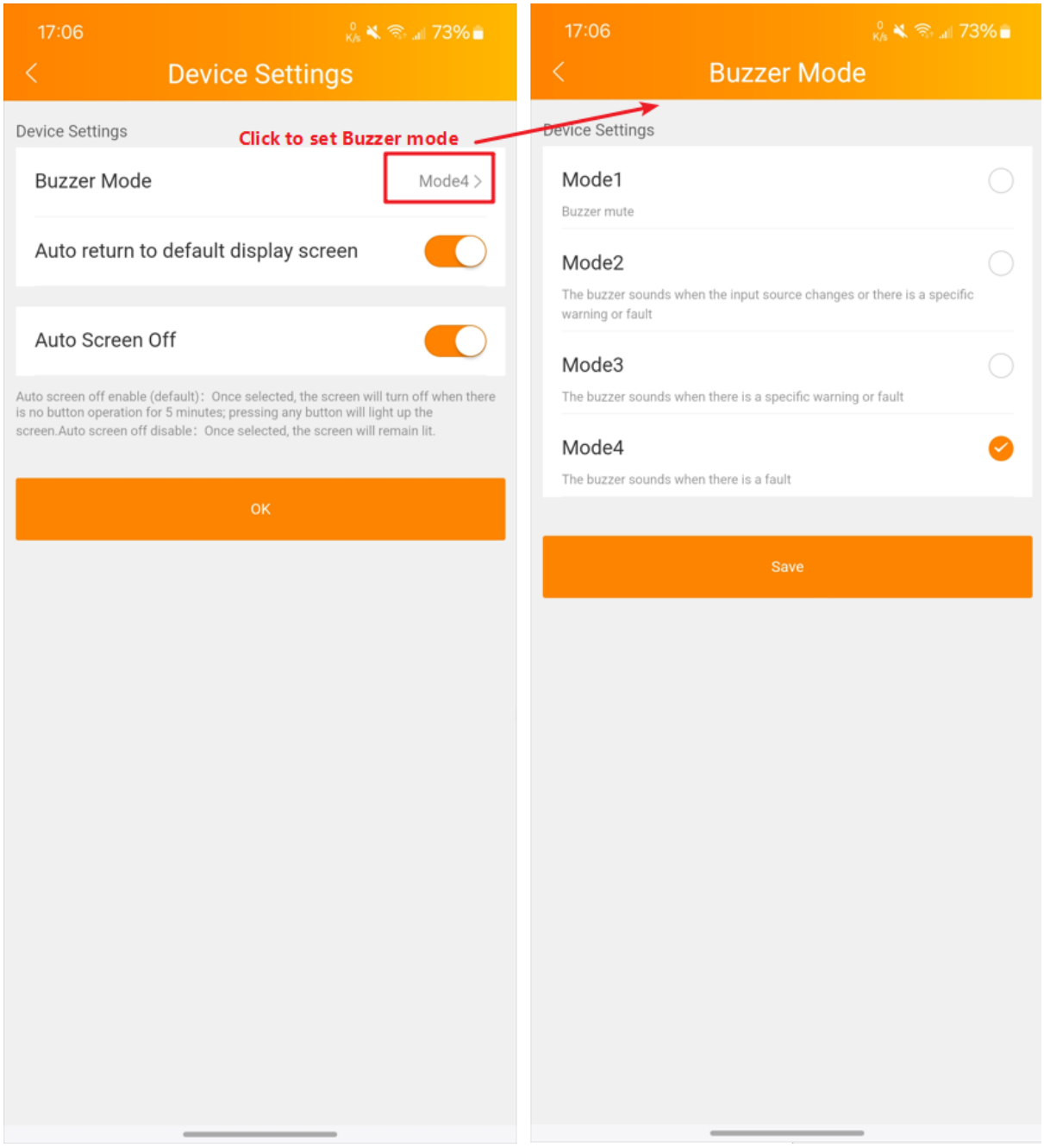
- Switch off: Disabled.
- Switch on (default): Enabled.

4.8 Auto Restart When Over Temperature Occurs



- Switch off: Disabled.
- Switch on (default): Enabled.

4.9 Device Settings



- Buzzer Mode
  - Mode1: Buzzer mute.
  - Mode2: The buzzer sounds when the input source changes or there is a specific warning or fault.
  - Mode3: The buzzer sounds when there is a specific warning or fault.
  - Mode4(default): The buzzer sounds when there is a fault.
- Auto return to default display screen

- Switch off: Stay on the current page. If this option is selected, the system stays on the page of the last operation.
- Switch on (default): Back to home. If this option is selected and the screen is not tapped for 1 minute, the system automatically returns to the home page.

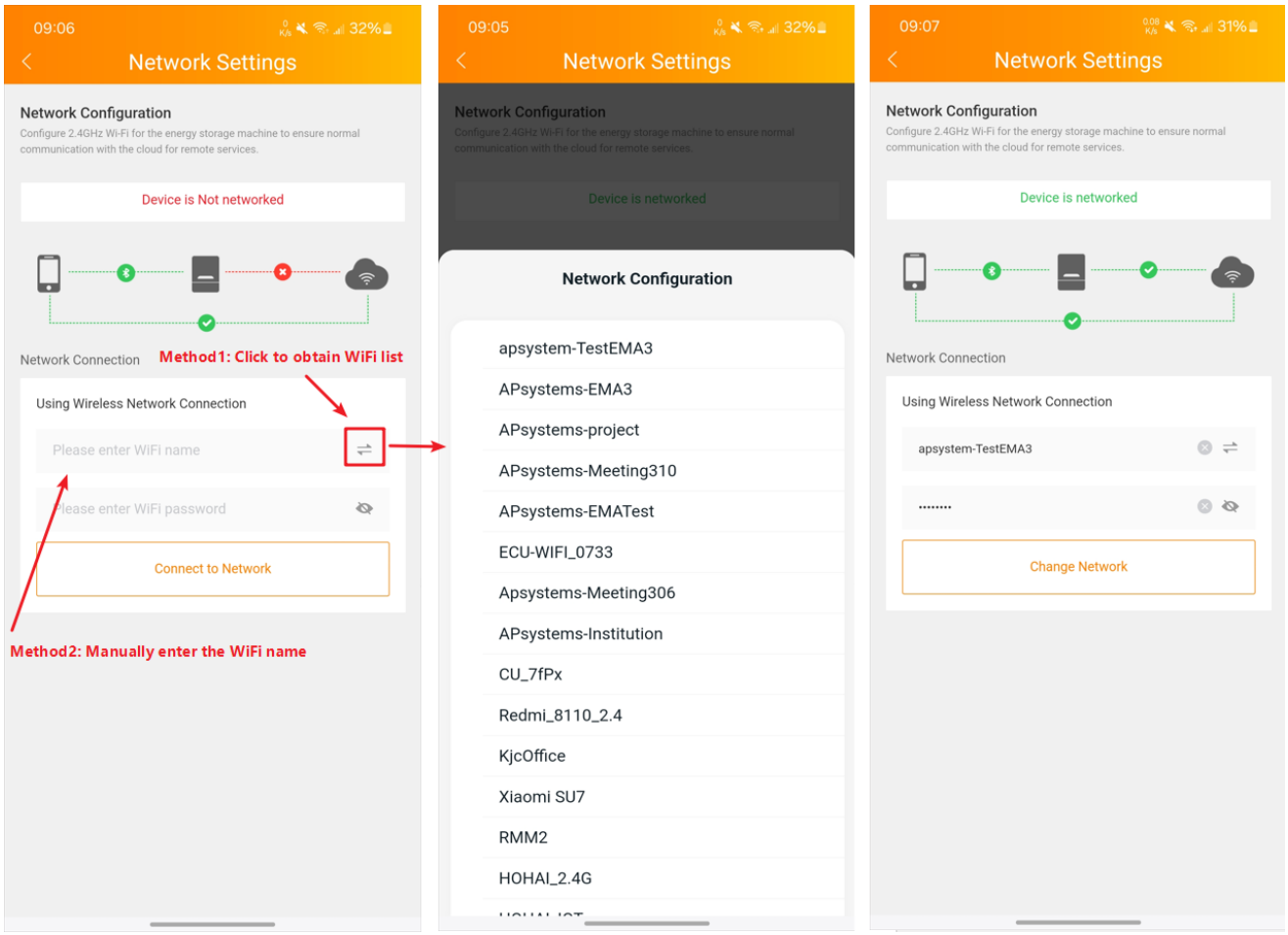
➢ Auto Screen Off:

- Switch off: Auto screen off disable. Once selected, the screen will remain lit.
- Switch on (default): Auto screen off enable. If this option is selected, the system stays on the page of the last operation. Once selected, the screen will turn off when there is no button operation for 5 minutes; pressing any button will light up the screen.

4.10 Network Settings

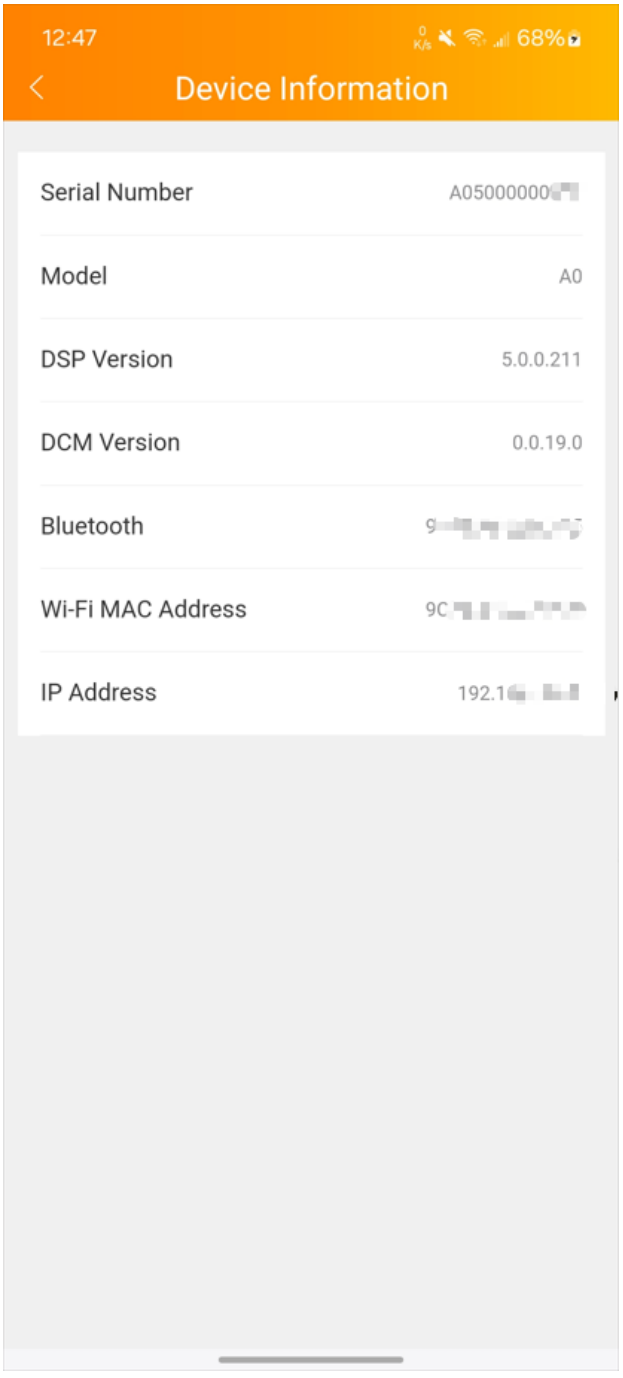
The page will show up APstorage's wireless connection status. Click the " ⇌ " and choose the available Wi-Fi to connect, also, you can manually input the Wi-Fi name.

- Step1: Enter the Wi-Fi name.
- Step2: Enter the password.
- Step3: Click "***Connect to Network***".



4.11 Device Information

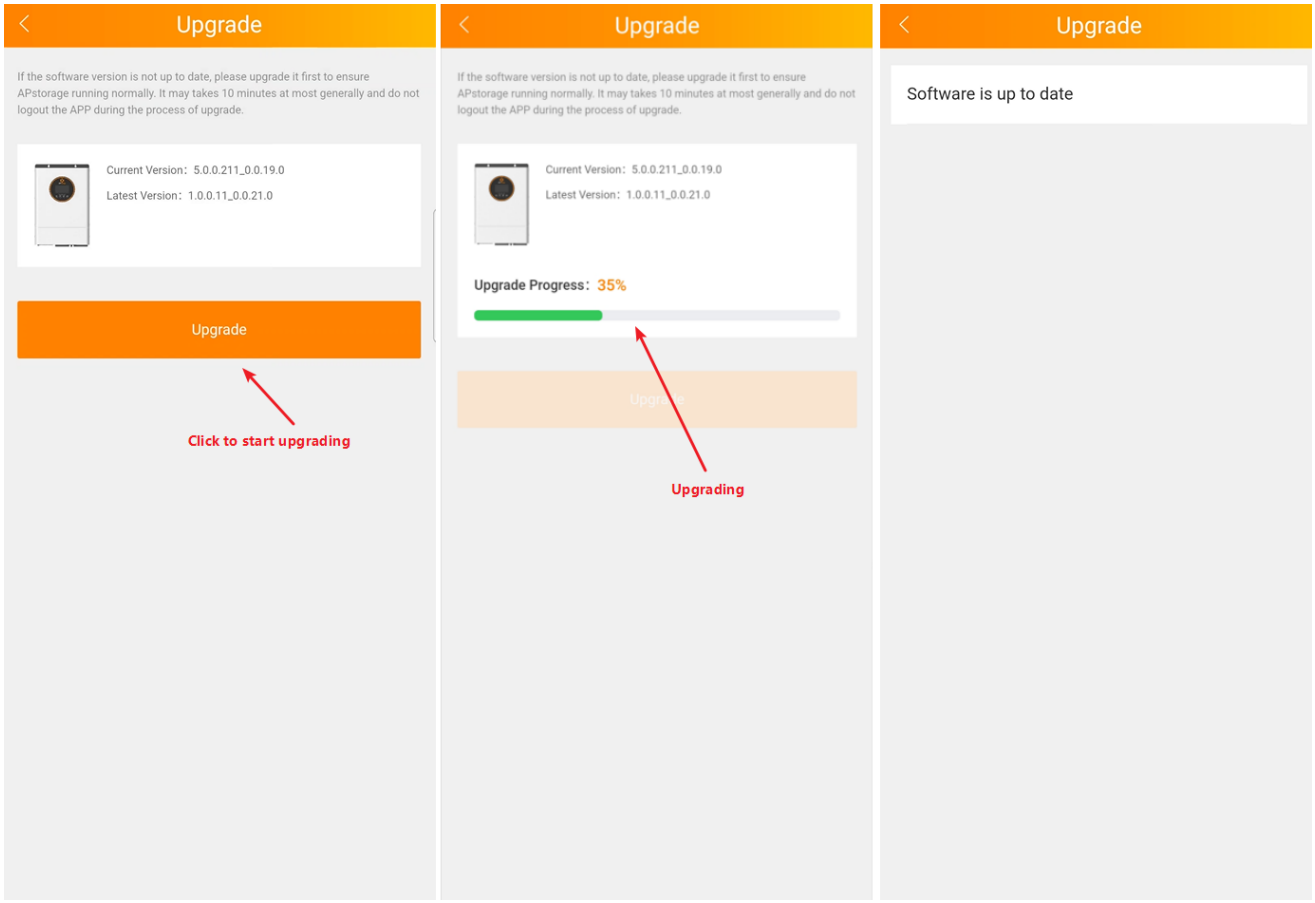
The device information page displays the serial number, model, DSP version, DCM version, bluetooth, Wi-Fi MAC address,and currently connected IP address.



4.12 Upgrade

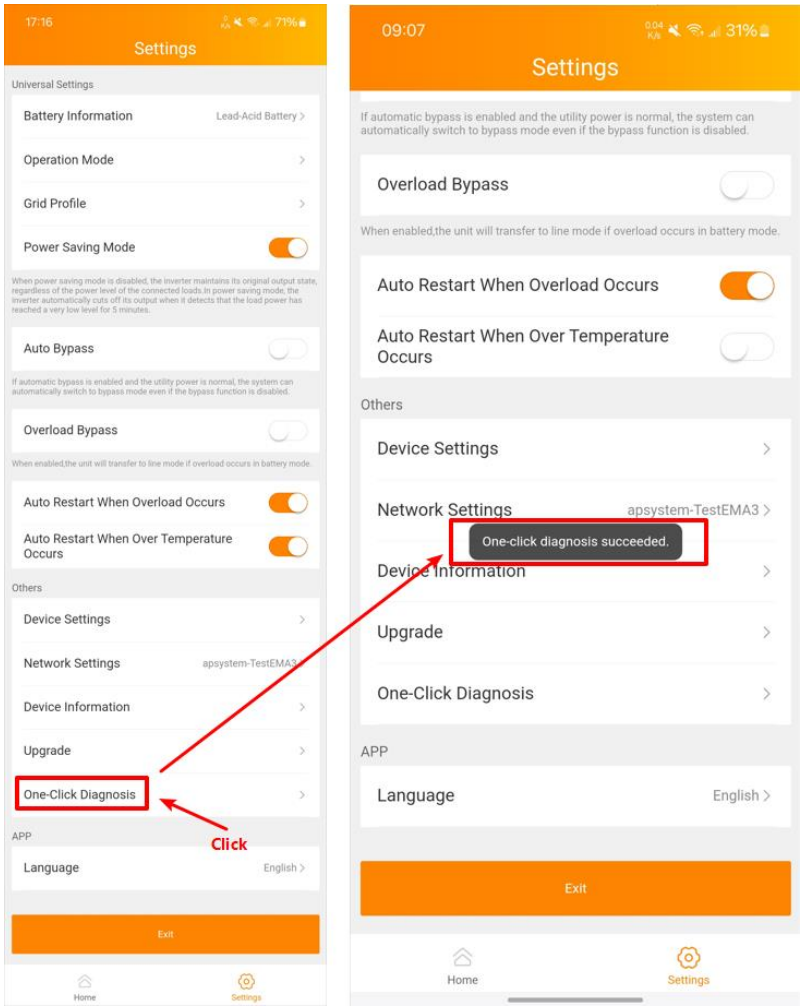
When an update is available, you can click the ***"Upgrade"*** button to upgrade.

Note: You need to reconnect your smart phone to the APstorage's Bluetooth if the connections fail once the signals disappeared during upgrading.



4.13 One-Click Diagnosis

Click to upload the diagnostic information of the device to the server.



4.14 Language

Select ***"Language"*** to set the APP language.