

AWILCO

PORTABLE ENERGY SYSTEM ES-2500

USER MANUAL



Please be sure to read and save the entire manual before using the energy system. Misuse may result in damage to the unit and/or cause harm or serious injury.

**PLEASE KEEP THE MANUAL
FOR FUTURE REFERENCE**

SERVICE CONTACT INFORMATION

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Content

Disclaimer	1
APP	2
Sign up and log in	2
Sign up	2
Log in	3
Log in by third-party account	3
Connection setup	3-8
Bluetooth connection	7
Device's Wi-Fi hotspot connection	8
IoT connection	8
Device Control and Upgrade	8-9
Device Control	8
Firmware upgrade	8
Personal Settings and More	10
Modify avatar and nickname	10
Change Password	10
Product List	10
Product Description	11-14
Parameter Specifications	11-12
Function Description	13-14

LCD Screen Description	14
Instructions for use	14-16
Recharge Methods	16-21
AC Charging	16-17
Solar Charging	18-19
Car Charging	19
Expandable Battery Charging	20-21
Other Functions	21-23
EPS	21-22
Frequency Switching	22
Disconnection switch	23
FAQ	24-25
Fault Code and Trouble Shooting	26-27
Storage & Maintenance	28

Disclaimer

Read this user manual carefully before using the product to ensure that you completely understand the product and can correctly use it. After reading this user manual, keep it properly for future reference. Improper use of this product may cause serious injury to yourself or others, or cause product damage and property loss. Once you use this product, it is deemed that you understand, approve and accept all the terms and content in this document. The Company is not liable for any loss caused by the user's failure to use this product in compliance with this User Manual.

In compliance with laws and regulations, the Company reserves the right to final interpretation of this document and all documents related to this product. This document is subject to changes updates, revisions, or termination) without prior notice. Please visit the official website to obtain the latest product information.

- The Company is not responsible for any damage caused by force majeure (e.g. fire, typhoon, flood, earthquake or negligence, abuse or use under other abnormal circumstances by the customer).
- No compensation for losses caused by the use of non-standard connectors.
- The Company is not responsible for any damage caused by not following the instructions in the operating instructions.

APP



Control, monitor and customize your power station from afar with the App.

Download at:

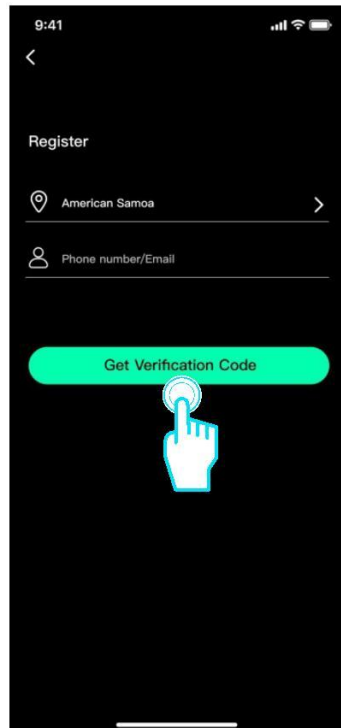
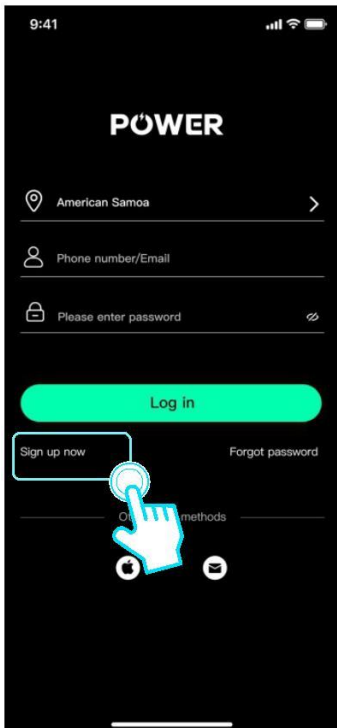
<https://wp2-us.doiting.com/release/wpoem/downLoad.html?param=1,JTEK3,0>

Scan the QR code to download the smart control APP.

Sign up and log in

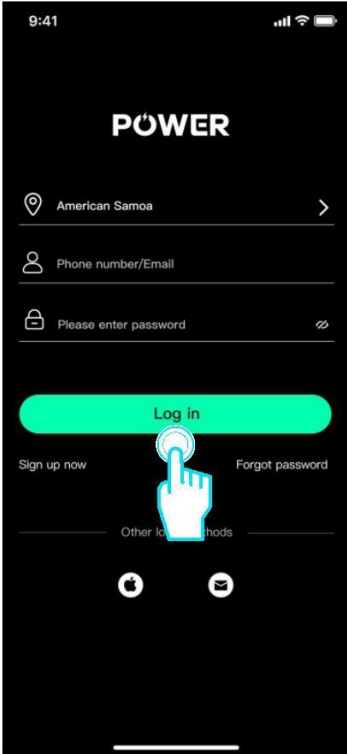
Sign up

Open the App, click "Sign up now" to sign up.



Log in

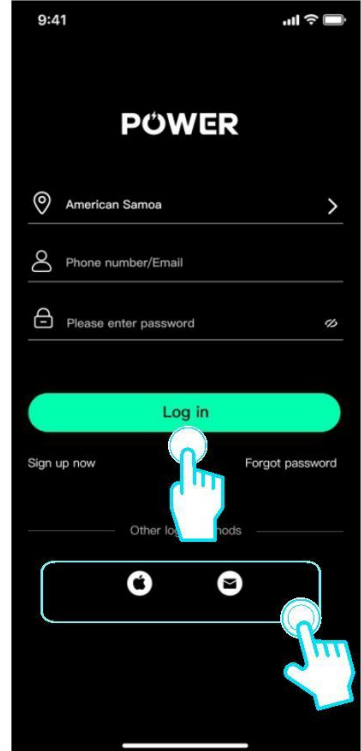
If you have an account already, tap "Log in" to enter your account name & password. If you forget your password, on the password login page, click "Forgot Password" and follow the steps to reset it.



Log in by third-party account

The Android version App supports users to log in through Google accounts. The IOS version app supports users to log in through Facebook, Google, and Apple ID.

Click the third-party platform icon at the bottom of the App login interface to log in using a third-party account.



Connection setup

There are three connection methods for the devices: Bluetooth, the device's Wi-Fi hotspot, and IoT.

When the App establishes a Bluetooth or a Wi-Fi hotspot connection with the device, you can view the real-time status of the device through the App, then control and manage the device wirelessly. We also provides users with an advanced way to connect devices: IoT connection. Based on establishing a Bluetooth or Wi-Fi hotspot connection between the mobile App and the

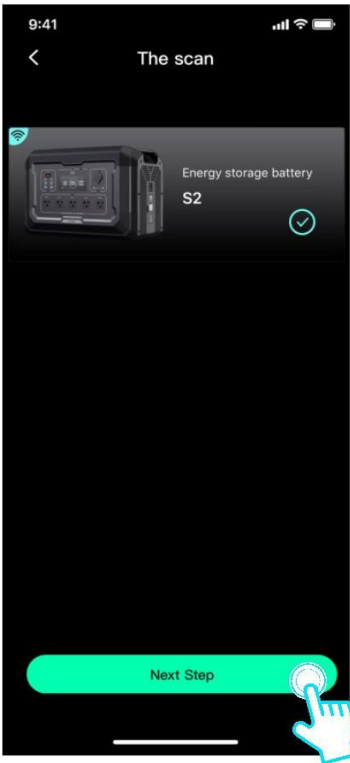
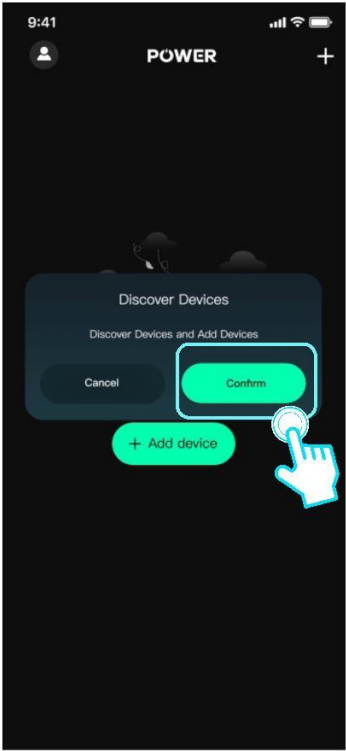
device, the device can be set up to connect to the Internet by joining your Wi-Fi, and the connection has changed to the IoT connection at the same time, then users can use the App to control and manage the device anytime and anywhere.

Bluetooth connection

Automatically discover Bluetooth devices

Turn on the "IoT" button on the device, the APP will automatically search and pop up "Discover Device", click to confirm to add the device.

Select the device to be link and click Next.



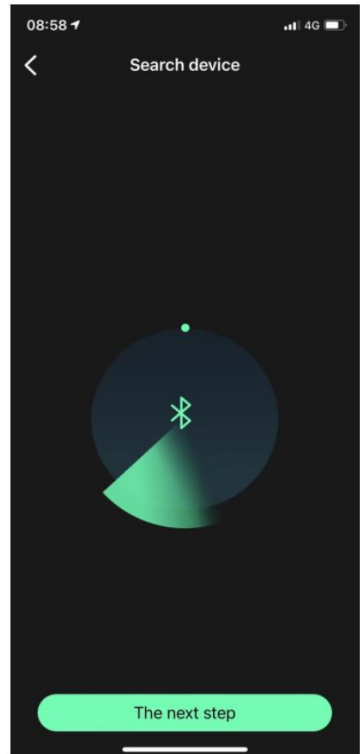
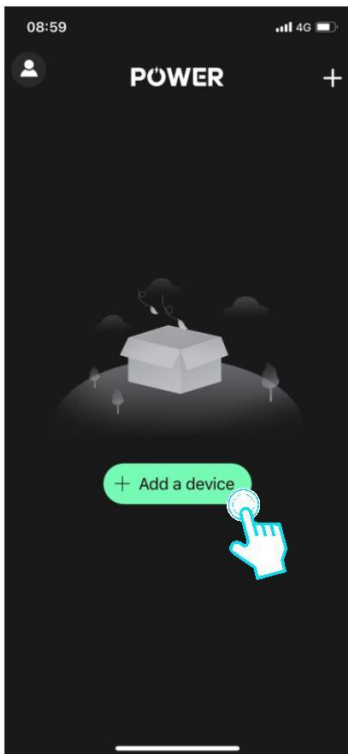
Click the pairing button and match the 2.4GHz frequency Wi-Fi signal, enter the password and click OK. After the Wi-Fi matching is successful, start to connect the device. After the loading is completed, the connection is successful.



Note: The device only supports 2.4GHz frequency Wi-Fi connection, please use 2.4GHz frequency Wi-Fi.

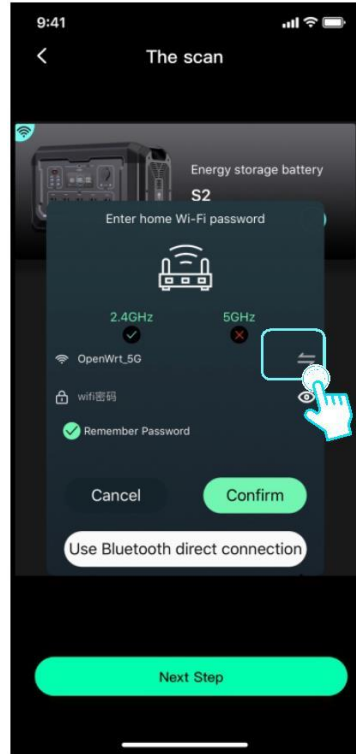
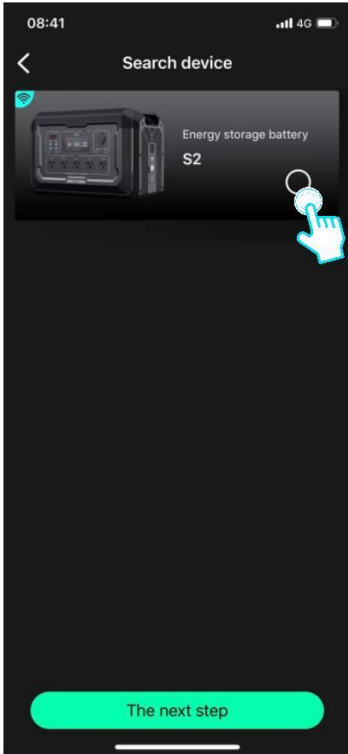
Automatically discover Bluetooth

If the "Discover devices" dialog does not appear on the home page of the App, you can click the "Add Device" button to search for nearby Bluetooth devices. If you click the "Add Device" button, the App does not scan the Bluetooth of the device to be added, you can manually select the corresponding device, and reset it according to the App guidelines, then connect the Bluetooth. If the Bluetooth cannot be found after the above steps, please check whether the device is powered on and try again. If you fail repeatedly, please contact the official customer service for technical support.



Device's Wi-Fi hotspot connection

Click the "Add Device" button on the home page of the App, you can select the corresponding device that supports a Wi-Fi hotspot connection in the manually added device list, and according to the instructions of the App, click the "IoT" button to reset the device and connect to Wi-Fi hot spot.



IoT connection

Before establishing a Bluetooth or a Wi-Fi hotspot connection between the App and the device, please ensure that the device is installed with App and connected to the internet. At this time, the device is connected to the IoT, and the device can be controlled by App anywhere with the Internet.

Device Control and Upgrade

Device Control

After the successful connection, the App will display the connected device. By clicking the corresponding device icon, you can enter the device details page to view the real-time status and data, and control it.

Device Control

When the App is connected to the device via Bluetooth, Wi-Fi hotspot, or IoT, it is online. You can view the device status and data in real-time on the App device details page, control the device, unbind the device, etc.

Device is Offline

When there is no Bluetooth, Wi-Fi hotspot, or IOT connection between the App and the device, is offline, and you cannot view the device status and data or control the device in the App.

Firmware upgrade

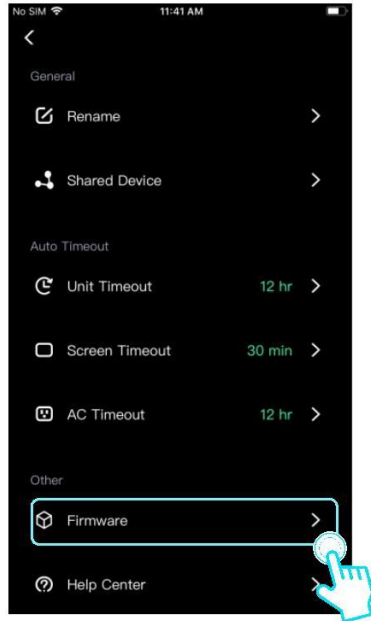
The firmware upgrade function is an essential feature of the App. A new firmware version will be released to fix known bugs, improve performance, and add new features.

Check for new firmware version

There are two methods to check whether the current device has a firmware version to be upgraded: automatic detection and manual checking.

Automatic detection: After the App enters the device details page, if an upgradeable firmware version is detected, a pop-up window will appear to remind you to upgrade it.

Manual checking: You can upgrade the firmware by selecting the "Firmware Upgrade" item from the Settings of App device details page.



Personal Settings and More

Modify avatar and nickname

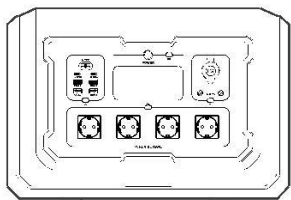
Enter the App, click the "A" button at the upper left to enter the homepage, and then click the avatar and nickname area at the top to enter the Personal Settings page.

On the Personal Settings page, click the avatar or nickname button, and follow the prompts on the page to modify the avatar or nickname.

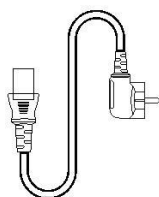
Change Password

On the Personal Settings page, click the "Set Password" button, enter the previous and the new password twice according to the page prompts, and click Finish.

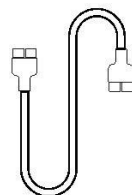
Product List



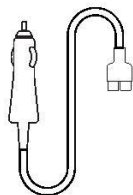
S2



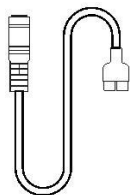
AC Charging Cable



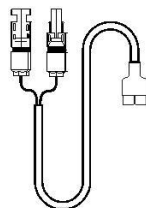
Anderson Cable



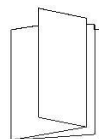
Anderson-Car
Charging Cable



Anderson-7909 Cable



Anderson-MC4 Cable



User Manual &
Warranty Card

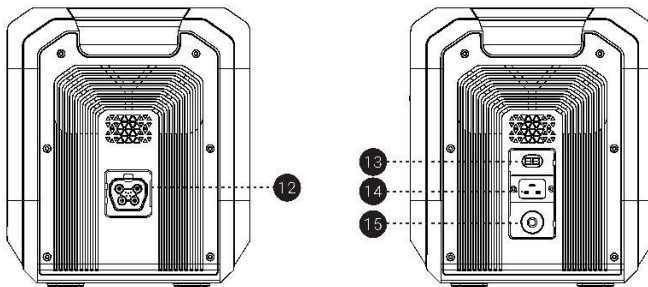
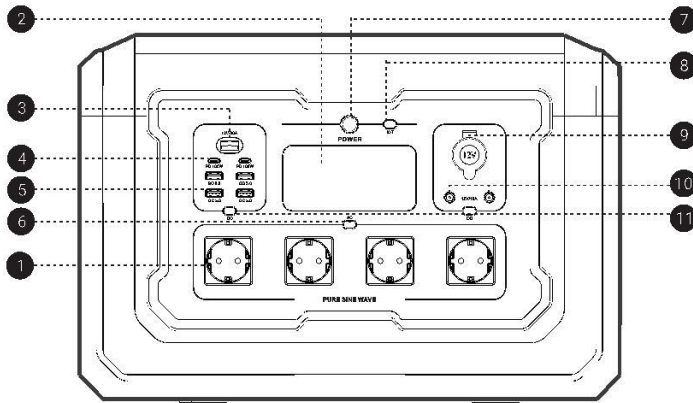
Product Description

Output Technical Parameters		
AC Output	Rated Voltage	220~240Vac
	Rated Power	2500W
	Peak Power	5400W
	Frequency	50Hz
DC 12V & Car lighter Output	Rated Voltage	12V
	Rated Power	10A
USB-A Output	5V/3A; 9V/2A; 12V/1.5A 【 18W Max 】	
USB-C Output	5V/3A; 9V/3A; 12V/3A; 15V/3A; 20V/5A 【 100W Max 】	
Anderson Output	12V/30A	
Input		
AC Charge Input	220~240Va.c 16A Max 1600W Max	
PV(Anderson)Input	12~150Vd.c MPPT:18V-140V 15A Max 2100W Max	
Battery		
Rated Capacity	2048Wh	
Rated Voltage	51.2V	
Battery Type	LiFePO ₄	

Common Information

IP Grade	Ip21
Working Temperature	0~40°C
Dimensions	18.1*10.6*12.0in (460*270*305mm)
Net Weight	48.5lb (22kg)

Function Description



1. AC Output Port (20A Max)

2. LCD Screen

3. Anderson Output Port

4. USB-C Output Port

5. USB-A Output Port

6. AC Output Power On/Off Switch

7. Main Power On/Off Switch

8. I/O On/Off Switch

9. 12V Car Charger Output Port

10. DC 5521 Output Port

11. DC Output Power On/Off Switch

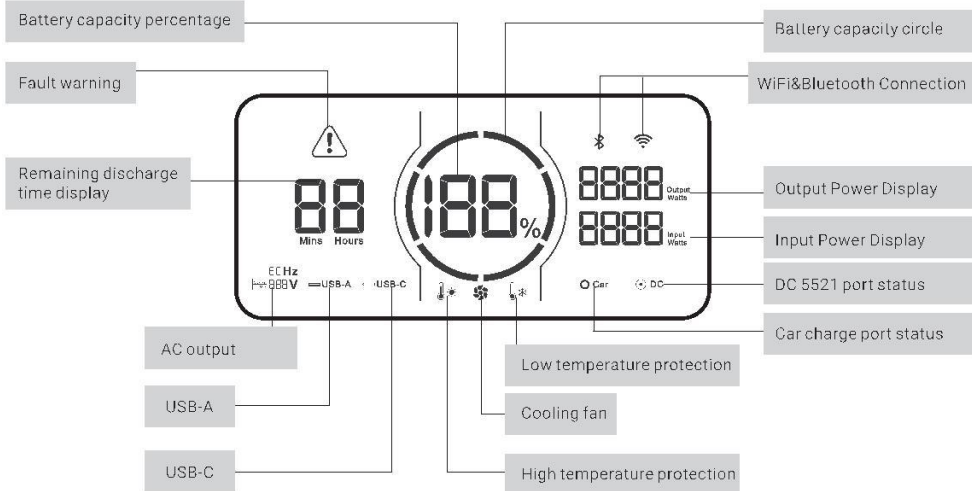
12. Power pack connection port

13. Anderson Input Port

14. AC Recharging Input Port

15. Circuit Breaker Protection

LCD Screen Description



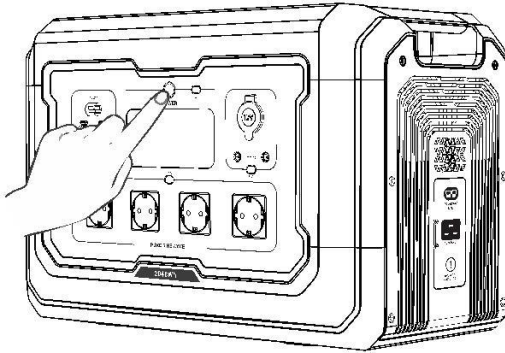
Instructions for use

The LCD Battery Capacity Circle indicates the remaining capacity. The capacity circle is divided into six segments, accounting for about 17% ~ 35% ~ 51% ~ 68% ~ 85% ~ 100% of the capacity. The LCD display will wake up automatically when used.

When discharging, the blue capacity segment goes off from the display, indicating the remaining capacity. When charging, the blue battery capacity circle flashes clockwise along the trajectory, which indicates that the current device is in the state of charging, the number on the right side of the energy circle shows the real-time input power at this time. When fully charged, all blue capacity segments will shine and remain stable. After charging, please unplug the charger.

Long press the main power button once to turn on the product, then the LCD screen lights up and the main power indicator becomes breathing white; Press and hold the main power button for at least 3 seconds to turn off the product, meanwhile, the LCD screen also goes off.

After turning on the main power, lightly press the separate button of each part, the LCD screen will light up the corresponding function icon and the function is on; lightly press the separate button again to close the corresponding function icon and the function stops.



Notice :

1. After main power turned on, short press the main power button once to turn off the LCD screen, but the product is still working.
2. If the product is not used for 5 minutes, it will enter hibernation state with the LCD screen gone off. When you start to use the product again, the LCD screen

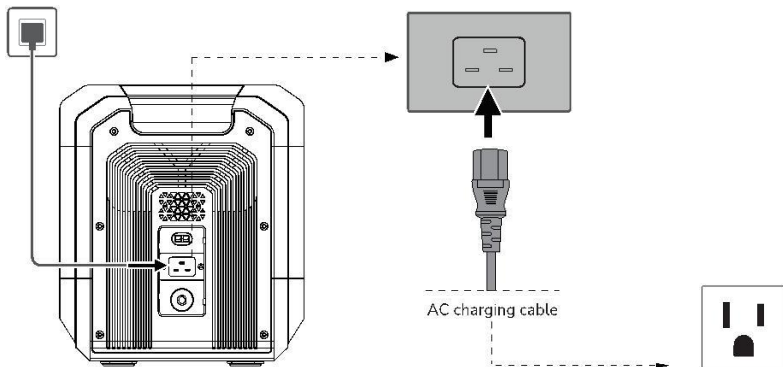
will turn on automatically.

3. The product defaults to 12 hours of standby time. With the output power buttons turned off and no other load for 12 hours, the product will shut off automatically. You can set the standby duration in the app.

Recharge Methods

AC Charging

Use the standard AC charging cable to charge the device, connect as shown in the figure, when the input power on the screen shows a reading, the device starts to charge. The maximum fast charge can be 1600W and the device can be fully charged in about 1.5 hours.

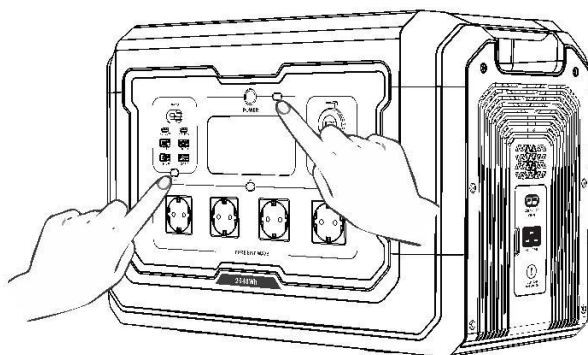


Note: Please use the AC Charging Cable included in the package for fast charging. Do not use other cables to charge. Plug directly into an AC wall outlet and make sure that the wall output current is more than 16A. Otherwise, reduce the unit charging speed with the AC Charge Speed Switch. The Company takes no responsibilities for any consequences caused by failures to follow instructions, including but not limited to charging with other AC charging cables.

Fast charge & Slow charge function Settings

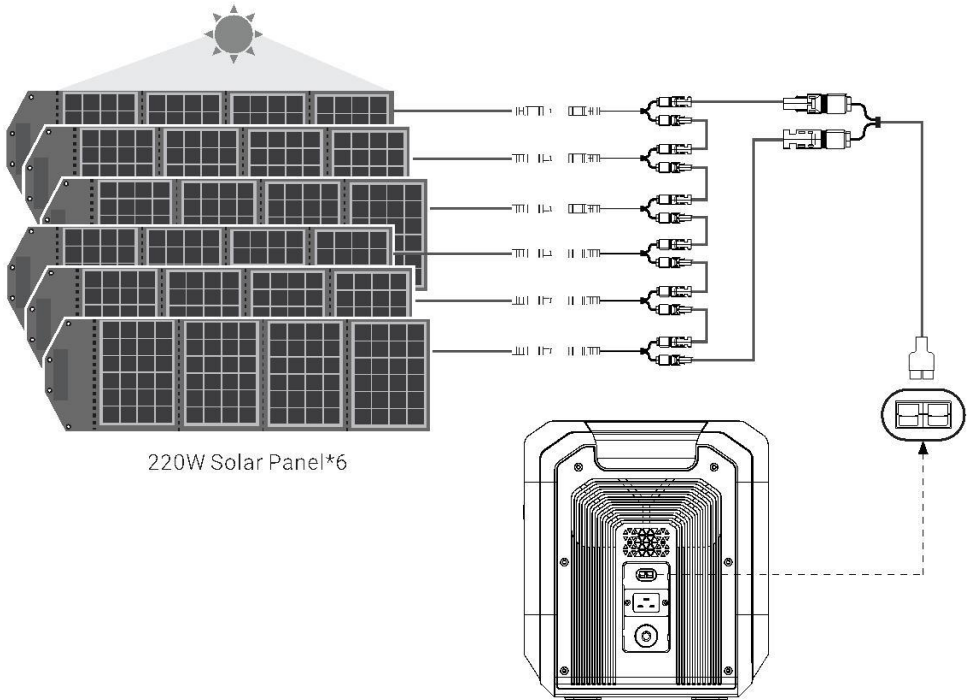
Note: The product must be turned on, and the input and output ports must be cut off.

1. Long press the DC button + IOT button and hold for 5 seconds, the screen flashes and shows the word "SET", the product enters the input power switching interface, then tap the IOT button to switch, L means slow charge (800W input), H means fast charge (1600W input);
2. After switching, hold down the POWER button for 3 to 5 seconds to confirm the setting. The screen stops flashing and the word "SUC" will be displayed, which indicating that the setting is successful.
3. Exiting the fast charge/Slow charge switch function, please press and hold the POWER button again for 3-5 seconds.



Solar Charging

Connect the standard solar panels to the device by using the fittings "Anderson to MC4 cable" ×1 and "MC4 to 7909 cable" ×6. Up to 6 standard solar panels can be connected to the device, which takes about 1.5 hours to be fully charged.



Notice :

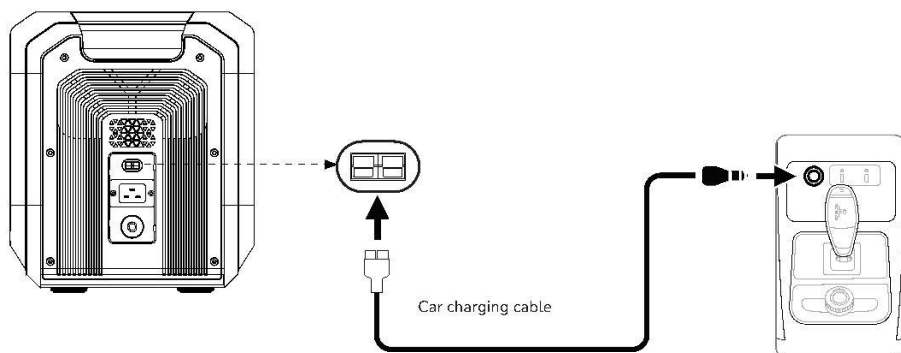
1. The solar charging cable (MC4-7909 cable) and solar panel need to be purchased separately.
2. When using the matching solar panel to charge this product, please connect it according to the user manual.

Notice :

3. Before connecting the solar panel, please confirm that the output open circuit voltage of the solar panel is within 150V to avoid damage to the product.

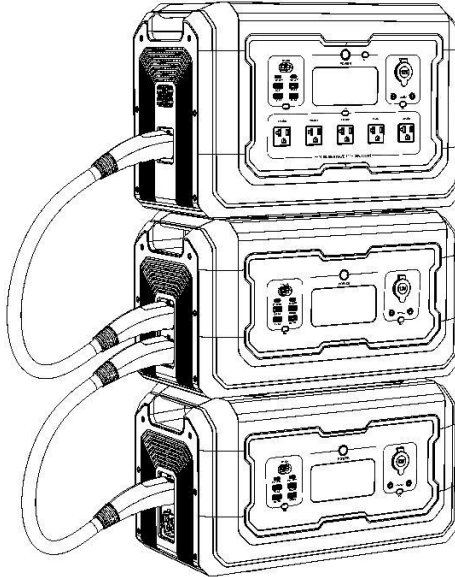
Car Charging

Use the car charger port of the car to charge this product, supporting 12V/8A car charging. For protecting the car battery from losing power and unable to start, it is necessary to use the car charger to charge after the car is started. At the same time, ensure that the car charger port and the cigarette lighter of the car charger input cable are in good connection. The company shall not be held responsible for any loss caused by non-compliance with the standard operation.



Expandable Battery Charging

Expandable Battery (up to 15pcs) can be connected to this product. Use the product-specific power pack cable to connect the product with the battery pack. When the input power is read on the screen, the device starts charging.



Notice :

1. Please make sure that both the product and the power pack are turned off before connecting.
2. After this product is connected to the power pack, press any of their power buttons, if both of them can be switched on at the same time, then they are connected successfully and can be normally used; if you are using the APP, it will also show the data of the power pack.
3. Do not connect or remove the power pack directly during the charging and

discharging process. If you need to connect or remove the power pack, please turn off the power before operating.

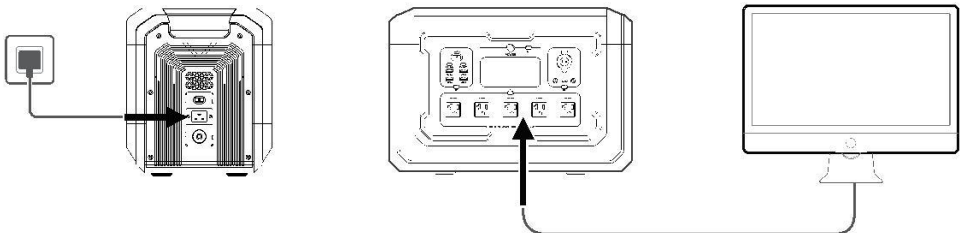
4. Do not use your hands or other objects to touch the metal terminals at the connection port of the power pack . If there are foreign objects attached to the metal terminals, please lightly wipe with a dry cloth.

5. Please connect this product with the specified power pack and cable in strict accordance with the operation specifications. The company is not responsible for equipment damage caused by improper operation

Other Functions

EPS(Emergency Power Supply)

The product supports EPS. When you connect the grid power to the AC Input Port of the product through an AC cable, you can power electrical devices through the AC Output Port (AC power will come from the grid and not the power station in this situation). In case of a sudden blackout, the product can automatically switch to the battery powered supply mode within 20ms.

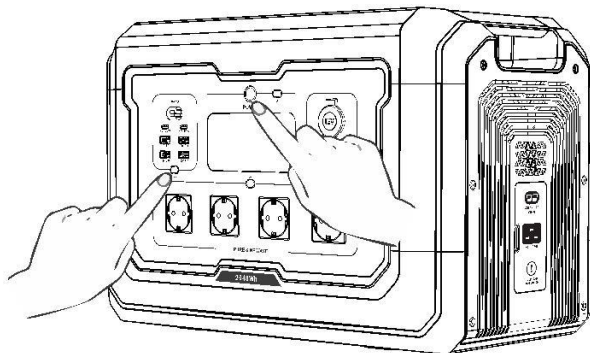


Notice :

This function is a non-professional UPS function and does not support 0ms switching. Please do not connect it to devices that require high uninterrupted power supply (such as data servers and workstations), or use it after multiple tests to confirm whether it is compatible. And it is recommended to use only one device during use, and the operating power of the device should not exceed 2500W (input + output). When the load and charging reach 2500W, the output will be turned off in one minute for overloading, and the output will be turned off in 1 second for more than 2500W. Do not use multiple devices at the same time to avoid overload protection of this product. If the device does not operate normally or data is lost due to failure to follow the instructions, the company will not bear the corresponding responsibility.

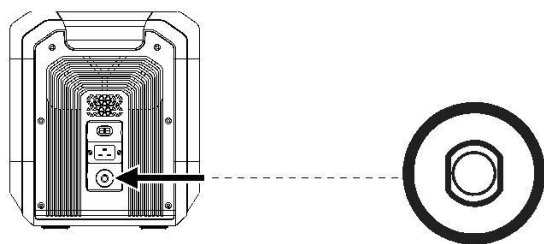
Frequency Switching

1. In the power-on state, turn off the AC output, and press the main power button & the DC button(USB output) at the same time to enter the switching frequency menu.
2. Press the AC output button to switch the frequency, the frequency to be set will continue to flash.
3. Long press the main power button to set the frequency, the word "SUC" will be displayed if the setting is successful, and then long press the main power button to exit the setting menu.



AC Input overload protection

When the AC input current is continuously more than 25A, the device charge input port will protect itself. The AC input overload protector button will pop up automatically. After confirming that the product is not faulty, press the AC input overload protector to resume charging.



FAQ

1. What battery does the product use?

It uses high-quality lithium iron phosphate batteries(LiFePO₄).

2. What devices can the product's AC output port power?

With 2500W rated power and 5400W peak power, the product's AC output port can power most household appliances. Before you use it, we recommend that you confirm the power of the appliances first and ensure the power sum of all loaded appliances is lower than the rated power.

3. How long can the product charge my devices?

The charging time is shown on the product's LCD Screen, which can be used to estimate the charging time of most appliances with stable power usage.

4. How can I know if the product is charging?

When it's charging, the remaining charging time will be shown on the LCD Screen. Meanwhile, the charging indicator icon begins to rotate with the remaining battery percentage and the input power shown on the right of the circle.

5. How to clean the product?

Please gently wipe it with a dry, soft, clean cloth or paper towel.

6. How to store the product?

Before storing, please turn off the product first, and then store it in a dry, ventilated place at room temperature. Do not place it near water sources. For long-term storage, please discharge and charge it every three months to extend its battery life.



















7. Can this product be taken on the plane?









No.

8. Is the actual output capacity of the product consistent with the capacity stated in the user manual?

The capacity indicated in the user manual is the rated capacity of the battery pack of this product. Since this product has a certain efficiency loss during the charging and discharging process, the actual output capacity of the product is lower than the capacity specified in the user manual.

Fault Code and Trouble Shooting

Code	Description	Performance	Trouble Shooting
E000	AC output short circuit protection	  flashing, no output	Press the AC output power on/off button for recovery
E001	Output overload protection	  flashing, no output	Flashing icons indicates which circuit overload. Overload protection needs to be restored manually, UPS function overload 2500W 1sec
E002	AC battery low power protection	The corresponding port has no output	After protection, restart corresponding function keys to restore functions, and recharge it timely
E003	AC output over-voltage and low voltage protection	 flashing, no output	You need to manually press the AC power button to recover
E004	Abnormal AC input frequency	 flashing, no output	Automatically recover when voltage is normal
E005	High and low bus voltage, over-current	 flashing, No output from each part	You need to manually press the AC power button to recover
E006	<ul style="list-style-type: none"> Inverter over-temperature charging over-temperature protection 	   flashing, no output	Temperature lower down to normal level, it will recover automatically
E007	PV input over-voltage and low voltage protection	No PV charging	It will recover automatically when input voltage adjust to the input voltage range
E008	12V30A overload short circuit protection	 flashing, no output	You need to manually press the DC power button to recover
E009	24V auxiliary power overload short circuit alarm	The DC board reports a fault, but does not turn off the output.	Reduce the load on the DC port
E010	Cigarette lighter port overload and short circuit	   flashing, no output	You need to manually press the DC power button to recover
E011	USB-A port overload and short circuit	  flashing, no output	You need to manually press the DC power button to recover
E012	USB-C port overload and short circuit	  flashing, no output	You need to manually press the DC power button to recover
E013	Battery low voltage protection when DC discharge	E013 code flashing, no output	After protection, restart corresponding function keys to restore functions, and recharge it timely

Code	Description	Performance	Trouble Shooting
E014	PV charging over-temperature	 PV charging off	After the temperature recovers, the fault disappears automatically, and charging resumes
E015	PV output over-temperature	 flashing, no output	Press the DC button on the left to troubleshoot
E020	BMS communication failure	 flashing, no output	Check BMS communication cable
E021	Set the device aside and wait for the battery voltage to recover automatically	E021 code flashing	Set the device aside and wait for the battery voltage to recover automatically
E022	Single cell of the battery low-voltage	E022 code flashing, turn off the output	Connect the AC charging cable and keep charging until the voltage is normal
E023	The total voltage of the battery is too high	E023 code flashing, but does not turn off the output	Set the device aside and wait for the battery voltage to recover automatically
E024	The total voltage of the battery is too low	 flashing, no output	Connect the AC charging cable and keep charging until the voltage is normal
E025	Battery cell over-temperature	 flashing, no output	Automatically recover when temperature cooling down
E026	Battery cell low-temperature	 flashing, no output	Automatically recover when temperature cooling down
E027	System overload	The AC icon flashes, AC output close, DC output is normal, the AC load is higher than 2600VA or AC+DC load is higher than 2600W	You need to manually press the AC power ON/OFF button to recover
E028	Charging over-temperature	 flashing, device stops input	Automatically recover when temperature cooling down
E029	MOS over-temperature	 flashing, no output	Automatically recover when temperature cooling down
E030	Power pack exceptions	Connect the wrong power pack	

Storage & Maintenance

1. Please store the product away from water, heat, and metal objects.
2. In order to prolong the service life of the battery, it is recommended to use or store this product in an environment temperature between 20°C to 30°C .
3. For long-term storage, please charge and discharge the product once every 3 months (discharge to 0% first, then fully charge, and then discharge to 60% for long-term storage). Products that have not been charged and discharged for more than 6 months will not be covered under warranty.
4. For safety, do not store this product in an environment temperature above 45°C or below -10°C for a long time.
5. If the product has been idle for too long and the battery is severely low, it will enter a deep sleep protection mode. In such case, please charge the product before using it again.
6. For long-term storage, please place it horizontally.

