

Manual

YouthPOWER 5KW Trolley Power Station



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1. Safety Precautions

- It is very important and necessary to read the user manual carefully before installing or using the battery. Failure to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, death, or may damage the battery and the whole system.
- If the battery is stored for a prolonged time, it is requirement that they are charged every three to six months, and the SOC should be no less than 80%.
- The battery needs to be recharged within 12 hours, after fully discharging.
- Do not expose cable outside.
- All battery terminals must be disconnected before maintenance.
- Do not use cleaning solvents to clean the battery.
- Do not expose the battery to flammable or harsh chemicals or vapors.
- Do not paint any part of the battery, include any internal or external components.
- Do not connect battery with PV solar wiring directly.
- Any foreign object is prohibited to be inserted into any part of the battery.
- Any warranty claims are excluded for direct or indirect damage due to items above.

1.1. Before Connecting

- After unpacking, please check the battery and packing list first, if the battery is damaged or spare parts are missing, Please contact the dealer.
- Before installation, be sure to cut off the grid power and make sure the battery is in the turned-off mode;
- Wiring must be correct, do not mix-connect the positive and negative cables, and ensure no short circuit with the external device;
- It is prohibited to connect the battery with AC power directly;
- The embedded BMS in the battery is designed for 48VDC, please DO NOT connect battery in series;
- It is prohibited to connect the battery with different type of battery;
- Please ensure the electrical parameters of battery system are compatible to inverter;
- Keep the battery away from fire or water.

1.2. During Operation

- If the battery system needs to be moved or repaired, the power must be cut off first and the battery is completely shutdown;
- It is prohibited to connect the battery with different type of battery;
- It is prohibited to put the batteries working with faulty or incompatible inverter;
- In case of fire, only dry powder fire extinguisher can be used, liquid fire extinguishers are prohibited;
- Please do not open, repair or disassemble the battery. We do not undertake any consequences or

related responsibility due to violation of safety operation or violating of design, production and equipment safety standards.

2. Battery Introduction

This document describes the parameters, features, operation methods, and precautions of 5kWh draw-bar box lithium iron phosphate battery storage system.

Please read this manual carefully before installing the battery, and follow the instructions strictly during the installation. If you have any questions, please contact customer service immediately for advice and assistance.

2.1 Main Features

- LiFePO4 components - for superior safety and service life;
- High safety and reliability;
- 3500 cycles ;
- Consistent performance over a wide temperature range;
- Plug and play, easy to install;
- Integrates advanced BMS for managing and monitoring battery information, including voltage, current and temperature, as well as balancing battery charge/discharge rates.

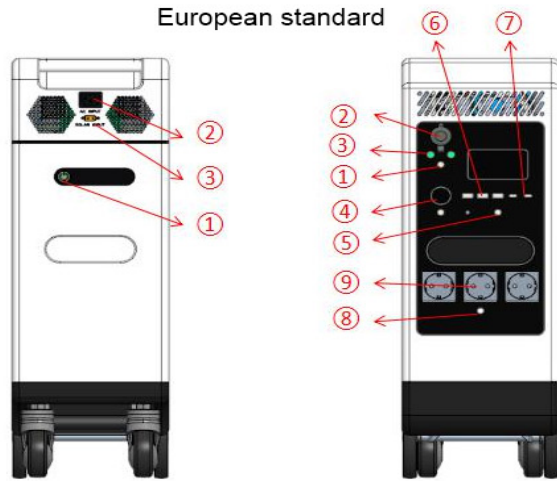
2.2 Battery System Specifications

Battery System Specifications		
Nominal Parameters		
Model No	4.8kWh Battery Energy Storage System	
Battery type	lithium iron phosphate battery	
Area of use	European standard	American standard
Voltage	48V	48V
Capacity	100AH	100AH
Energy	4.8kWh	4.8kWh
Operation voltage	40.5-54 Vdc	40.5-54 Vdc
AC Standard charging current	7.5A	15A
AC Maximum continuous charging current	8A	16A

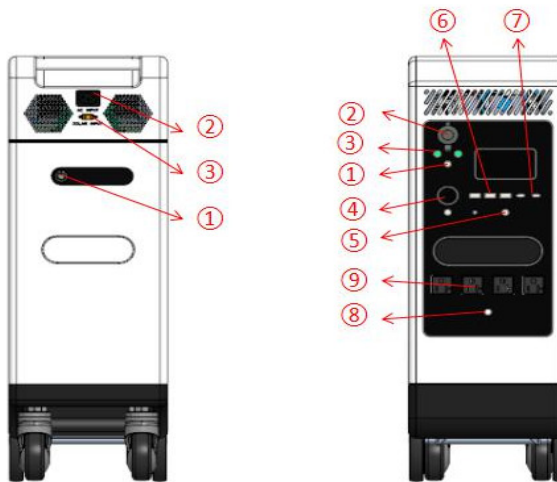
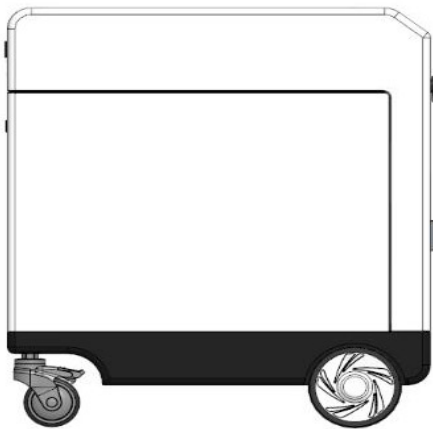
Charging protection voltage	54.75V	54.75V
Standard discharge power	2000W	2000W
Discharge cut-off voltage	40.5V	40.5V
Scalability	up to 16 parallel	up to 16 parallel
Discharge depth (DOD)	80%	80%
Life cycles	3000 Cycles	3000 Cycles
Communication port	RS485, CAN	RS485, CAN
Display	LED indicator	LED indicator
Charging temperature	0C~50°C	0C~50°C
Discharge temperature	-10C~50°C	-10C~50°C
Relative humidity	5%-90%	5%-90%
dissipation thermique	Smart cooling	Smart cooling
Install	Floor type	Floor type
Warranty	3 years(wheel 1 years)	3 years(wheel 1 years)
Dimensions (L x W x H)	560x208x632mm	560x208x632mm
Weight	54 ± 3kg	54 ± 3kg
Inverter power	2000W	2000W
MPPT voltage range	12-50V	12-50V
AC input voltage	230V	110V

3. Interface area

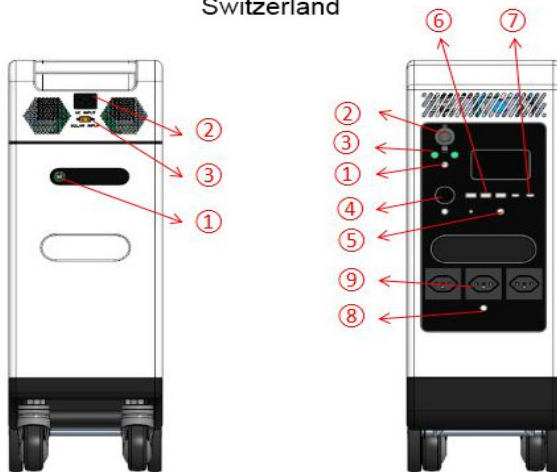
European standard



American standard









Switzerland












NO.	Definition	NO.	Definition
1	Battery ON/OFF	1	DC ON/OFF
2	AC Input	2	Cigarette Opening
3	Solar Input	3	120W DC
		4	Light And SOS
		5	DC ON/OFF
		6	USB Fast Charge
		7	PD Fast Charge
		8	AC ON/OFF
		9	AC Output

3.1 Battery status indicator






system state	Normal / Warnings / Protection	RUN	ALM	Capacity LED				Note
								
Power off	power off	Off	Off	Off	Off	Off	Off	All Off
Standby	Normal	Flash	Off	Off	Off	Off	Off	Standby
Recharge	Normal	On	Off	The charging status is displayed according to the power level				High single section voltage, high overall voltage...
	Warnings	On	Flash					
	Protection	On	On					
Discharge	normal	On	Off	The discharge state is displayed according to the amount of electricity				
	Warnings	On	Flash					
	Protection	Off	On	Off	Off	Off	Off	Low capacity, overall low voltage...
Fault	Protection	Off	On	Off	Off	Off	Off	Stop charging and generating electricity

3.2 Battery Capacity Indicator

Stat		Charging				Discharging			
Capacity LED Indicator		L4 	L3 	L2 	L1 	L4 	L3 	L2 	L1 
Capacity	0~25%	OFF	OFF	OFF	Flash	ON	OFF	OFF	ON
	25~50%	OFF	OFF	Flash	Flash	OFF	OFF	ON	ON
	50~75%	OFF	Flash	Flash	Flash	OFF	ON	ON	ON
	75~100%	Flash	Flash	Flash	Flash	ON	ON	ON	ON
RUN Status 		ON				ON			

4. Installation

4.1 Tools



Tool			
Tool	ESD gloves 	eye protector 	Dust breathing apparatus 
	safety shoe 	Levelling instrument 	

Pay attention:

- Use well-insulated tools to prevent accidental electric shock or short circuit.
- If there is no insulating tool, the exposed metal surfaces (except tips) shall be covered with electrical tape.

4.2 List of items

Check the packaging thoroughly after receiving the goods. If any items are missing, or if there is any damage to the external packaging or the equipment itself when the packaging is opened, contact the manufacturer immediately.

NO	Project	Quantity	Picture	Specifications
A	Draw-bar Box Battery	1		5kWh
B	Connection wire	1		Black wire, 1500mm in length

4.3 Installation Location

Make sure that the installation location meets the following conditions:

- The installation site must be suitable for the size and weight of the battery.
- Must be installed on a firm surface to sustain the weight of battery.
- The area is water proof.
- There are no flammable or explosive materials in proximity
- The ambient temperature is within the range from 0°C to 45°C.
- The temperature and humidity is maintained at a constant level.
- There is minimal dust and dirt in the area.
- Installation must be vertical or tilted backwards by maximum 15° - avoid forward or sideways stilt.

CAUTION

If the ambient temperature is outside the operating range, the battery pack stops operating to protect itself. The optimal temperature range for the battery pack to operate is 0°C to 45°C. Frequent exposure to harsh temperatures may deteriorate the performance and life of the battery pack.

4.4 Installing the Battery Pack

WARNING

In order to avoid electrical shock or other injury, inspect existing electronic or plumbing installations before drilling holes.

The battery is heavy, please handle with care to avoid damage to the product or injury to the installer.

4.5 Function description of the front panel

1. Control button:

1) POWER button:

①. Press and hold for 3S to power on the device. After the device is powered on, the display lights up, displays information such as power supply and remaining time, and the buzzer buzzes 1. Press and hold 3S again to shut down. If there is a charging input, long press can not shut down, first unplug the charging device can shut down normally.

②. Press the POWER button to switch the display on/off.

③. Hold down the AC+POWER key for 3S to switch between 50/60 Hz.

2)AC Out button:

①. Press once to turn on AC output, AC LED indicator light (white), AC icon display;

②. Press once again to turn off the AC output, the AC LED indicator is off, and the AC icon on the display screen is not displayed;

③. Short press twice to enable or disable constant power mode; When this function is enabled, the constant power icon is displayed.

④. Press and hold for 3S continuously to enter the silent charging mode, and the silent charging icon is displayed. Press and hold for 3S again to cancel the silent charging mode.

⑤. Hold down the AC and power buttons for more than 3s at the same time to switch 50/60Hz.

3) DC Out button:

①. Press once to turn on the DC output, the DC LED indicator lights up and the icon displays.

②. Press once again to turn off the DC output, the DC LED indicator is off, and the DC icon on the display is not displayed.

③. Press 10 times continuously to test whether the fan works normally.

④. Press and hold to view the software version number of the machine.

4) USB output:

①. After the screen wakes up, the USB port has an output.

5) TYPE-C output:

①. When the machine sleeps or the screen is on, connect the TYPE-C port to output.

6) LED and other buttons:

①. Click dark once - click Full again - click SOS again. In any state where the LED is on, you can turn off the light by holding down the key.

2. The display screen is as follows:



The upper left part is the wifi icon, photovoltaic access indicator, AC access indicator, 5525/ cigarette lighter output indicator, AC input power display and photovoltaic input voltage display. The middle part is the battery power and remaining time. The upper right corner is the discharge power display, discharge voltage display, discharge frequency display and type-c, USB port and DC output display; Fault status ICONS and function ICONS are displayed in the lower row. After no operation is performed on the device for 30 minutes, the screen goes to sleep.

3. Directly connected to the mains, the machine can adjust the frequency.

4. The machine does not charge, no end port output, no operation, will automatically shut down after 30 minutes.

4.6 Bluetooth APP usage instructions

1. Connect Bluetooth

Open APP

Click Connect and select the corresponding Bluetooth

Check "Monitor" to display BMS real-time date

Bluetooth Connection Successful

BMS program upgrade

Upgrade

Upgrade

Uncheck the box to read the PCS protocol

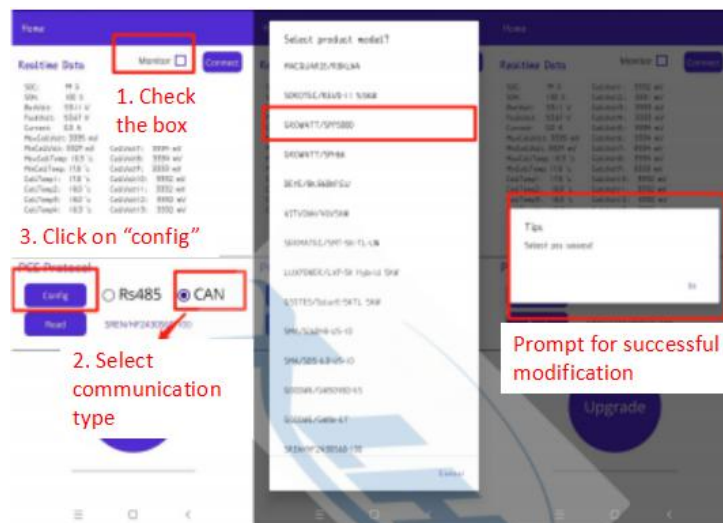
Type of communication

communication protocol

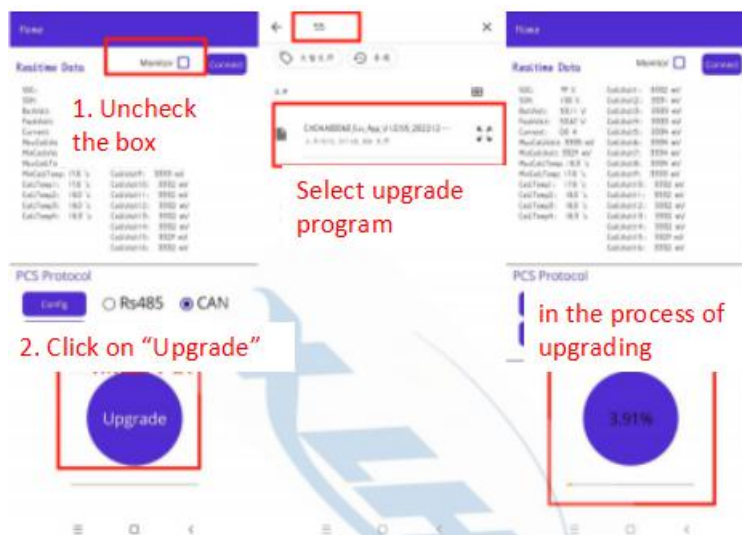
Upgrade

Upgra

2. Modify the inverter communication protocol



3. Upgrade Program



4.7 APP usage instructions

1. 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. We are 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, we 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 our official website to obtain the latest product information.

2. Registration and Login

2.1 APP installation

IOS users, open App Store, search Wonderfree in the app store, after downloading and installing the APP, click the Wonderfree APP and enter the login interface, as shown in Figure 2.1.

Android User: Open the Google Play store, search for Wonderfree in the app store, download and install the APP, click the icon to open the APP and enter the login interface, as shown in Figure 2.1.

2.2 APP account registration and login

To log in the APP for the first time, you need to register through the email, click "Register" in the upper right corner to start registration. Select the region according to the actual country and enter the email for registration. After registration, return to the login screen (the default login location is Austria, select the region according to the actual country), use the registered account and password to enter the APP, and display the device list interface, as shown in Figure 2.2.

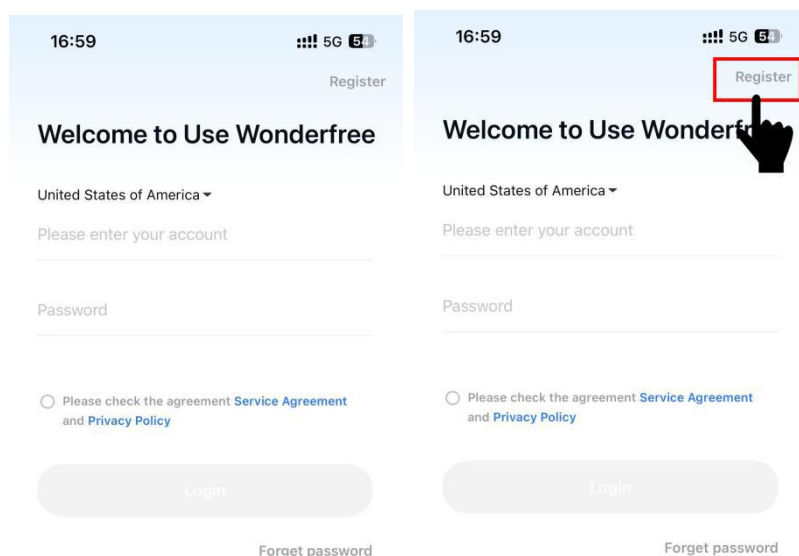


Figure 2.1

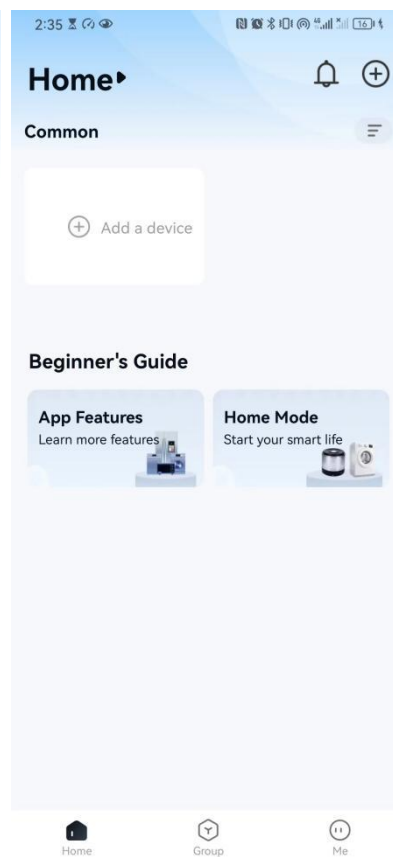


Figure 2.2

3. The APP connects to the distribution network

3.1 Allocation of the APP and the equipment

Turn on Bluetooth and set Wonderfree on your phone to use location services while using the app.

In the portable power station power-on state, long press the "IOT" button on the portable power station, until hear "drop" sound(at this time, the WiFi image flashes on the LCD screen), click "+" in the upper right corner of the APP device list interface, select "Detect Nearby Devices" (Figure 3.1), wait for a time after APP pop up "add a device", click the "+" (Figure 3.11), pop up "Select a WIFI and enter the password", enter WiFi account and password, wait for progress bar load full device configuration, the interface is shown in Figure 3.12.

Click the device icon to enter the main interface of the APP (Figure 3.13)

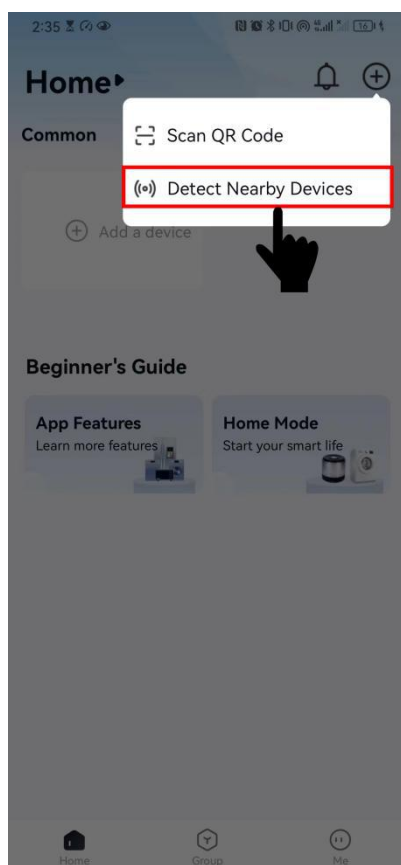
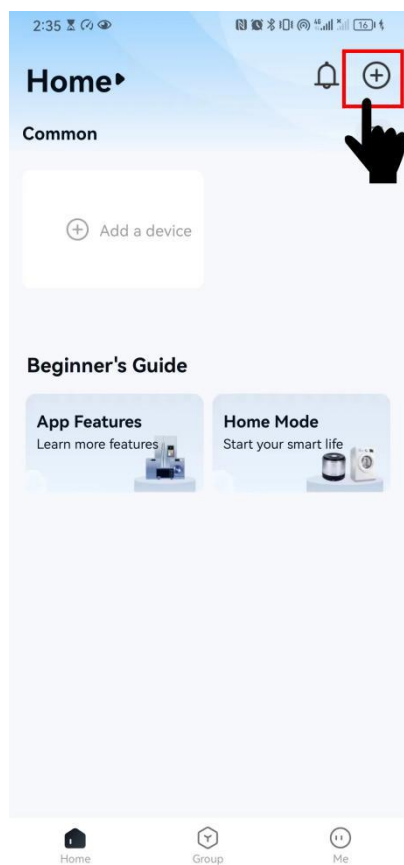


Figure 3.1

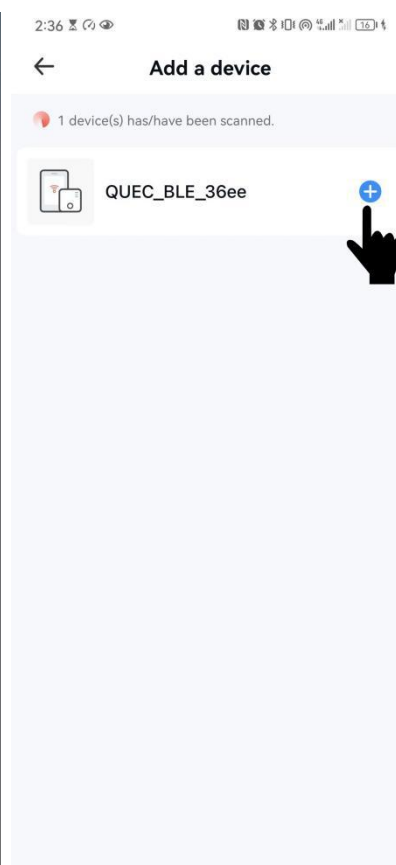


Figure 3.11



Figure 3.12

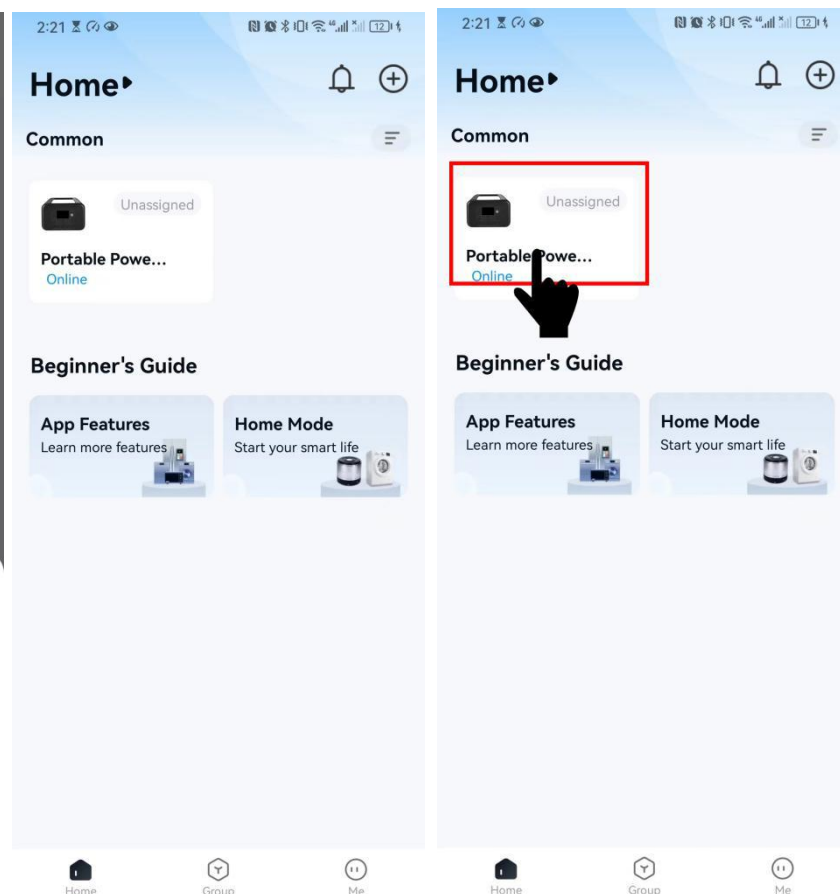


Figure 3.13

3.2 Equipment control and main functions

After clicking the icon of the connected device to enter the main panel, you can see the following parameters / function display on the main panel (input port), as shown in Figure 3.2

WiFi / Bluetooth switch	The first network configuration of the device needs to be configured through WIFI, and you can choose to switch to Bluetooth connection later
Remaining power	Percentage of remaining charge on the device's battery
Remaining charge time	The rechargeable time under the current remaining power and the current output power output
Battery temperature	Battery cell temperature
Input power	The total power to charge the battery , and AC charging power and DC charging power can be observed respectively

Click the main panel (output port), and the following parameters / functions are displayed, as shown in Figure 3.21.

Output power	The output power is the total power of the battery discharging to the external equipment, including four powers: AC, USB, TypeC and DC
AC info	AC output switch button, display the output power of AC
USB info	Displays the output power of each of the 3 USB ports
TypeC info	Display the respective output power of the 2 TypeC ports
DC info	DC output switch button, display the output power of DC
LED	Select 3 different light modes with the LED light switch



Figure 3.2

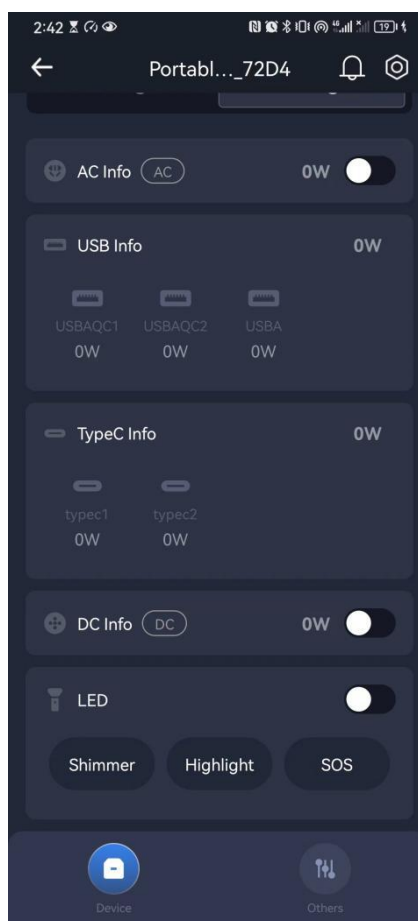


Figure 3.21

5. Product responsibility and consulting

- 1) We shall not be liable for accidents caused by operation violation of this specification and user manual.
- 2) If the content of this specification changes due to improved product quality or technical upgrade, we will not notify us separately; if you want the latest information about the product, please contact us.
- 3) The shelf life of the product is 3 years after delivery; If there is any quality problem within the specified scope of operation, we will maintain the products within the warranty period free of charge; If we are unable to maintain them, we may replace the relevant parts for sustainable use without compromising performance; Our after-sales service personnel will propose specific maintenance and troubleshooting methods.

6. WARNING

1. Do not disassemble or alter the battery in any way.
Ne pas démonter ou modifier la batterie de quelque manière que ce soit.
2. Do not use the battery for purposes not described in its documentation.
Ne pas utiliser la batterie à des fins non décrites dans sa documentation.
3. Do not drop, strike, puncture, or step on the battery.
Ne pas faire tomber, heurter, percer ou marcher sur la batterie.
4. In case of electrolyte leakage, keep leaked electrolyte away from contact with eyes or skin, immediately clean with water and seek help from a doctor.
En cas de fuite d'électrolyte, éviter tout contact avec les yeux ou la peau, nettoyer immédiatement avec de l'eau et consulter un médecin.
5. Do not put the battery into a fire. Do not use it or leave it in a place near fire, heater or high temperature sources.
Ne mettez pas la batterie au feu. Ne l'utilisez pas et ne la laissez pas à proximité d'un feu, d'un appareil de chauffage ou d'une source de haute température.
6. Do not submerge the battery in water, or expose it to moisture.
Ne pas immerger la batterie dans l'eau, ni l'exposer à l'humidité.
7. Do not allow the terminals to contact exposed wire or metal.
Ne pas laisser les bornes entrer en contact avec des fils ou des métaux exposés.
8. The battery is heavy and can cause injury if not handled safely.
La batterie est lourde et peut provoquer des blessures si elle n'est pas manipulée avec précaution.
9. Keep out of reach of children or animals.
Tenir hors de portée des enfants et des animaux.