User Manual for ST2000 Series Portable Power Station -110V

EASTAR
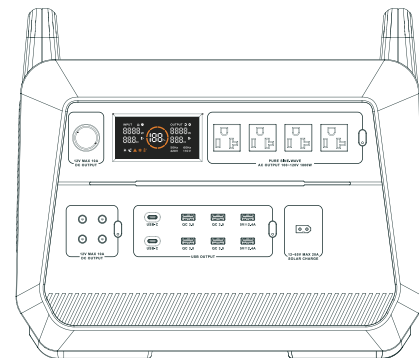
2 Hours Super fast
charge   Portable Power Station

ST2000 Series User Manual

Important notices

1. Before using this product, please read this user manual carefully to familiar with the characteristics of this product.
2. Please following the instructions provided by Eastar for our portable power station, do not use electrical equipment that is incompatible with this product or change the product in any way.
3. Failure to operate this product correctly may result in damage to the product or personal property, resulting in serious personal injury.
4. These safety guidelines include instructions for safety, operation, and maintenance.
5. In order to operate the product correctly and avoid product damage or serious injury, you must carefully read and follow all instructions and warnings in the user manual before installation or use.

⚠ Warnings

1. Do not short-circuit the product. To avoid short circuits, keep away from all metal objects.
2. Do not heat or incinerate this product, or put it in fire, water, or other liquids. Keep away from high temperature environment. Do not expose the product to direct sunlight.
3. Keep the product away from damp, rain, and dusty environments.
4. Do not disassemble or reassemble this product, otherwise it may damage the equipment and endanger the safety of life.
5. Do not drop, place heavy objects, or subject the product to strong impact.
6. Please keep this product out of reach of children and pets.
7. Please do not cover the product with towels, clothes, and other items.
8. Do not overcharge the product, do not leave it unattended when charging, and disconnect the power immediately after it is fully charged.
9. Please stay away from TV, radio and other equipment when charging to avoid radio wave interference.
10. Do not over-discharge the product. Please charge it in time when the low-voltage warning reminds you to extend the battery life.
11. Please use the charging cable provided by Eastar to charge the product to ensure safe operation.

   *The specifications and pictures in this manual are for reference only.

12. If you do not use the product for a long time, please disconnect the cable before storing it in idle, and charge the battery once every 3 months.
13. Do not dispose of this product and garbage together, please recycle and dispose of this product according to local regulations.
14. Pay attention to safety during operation, and don't be smashed to your feet by this product.
15. Please refer to the user manual of the corresponding device for confirmation.

Product Features
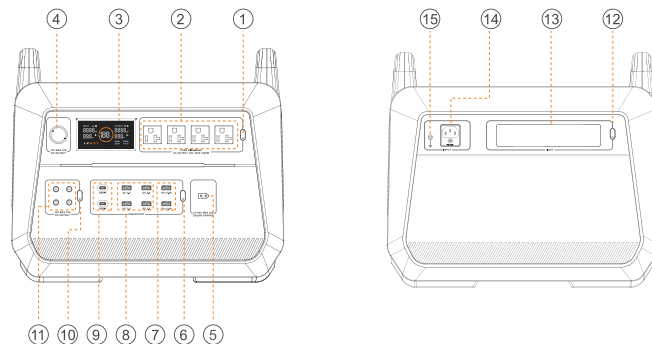
1. AC switch button	**9.** USB-C output port
2. AC output socket	**10.** DC switch button
3. LED display	**11.** DC output port
4. DC cigarette lighter output port	**12.** LED light switch button
5. XT60 input port (solar and car charger input)	**13.** LED lights
6. USB switch button	**14.** Charging port with protector
7. USB output port	**15.** Grounding port
8. QC3.0 output port	

Super fast charging technology

- Support fast charge, fully charge in 2 hours
- Support big power solar charging (500W)
- Support automatic frequency switching (manual setting is required for off-grid)
- Support UPS
- Intelligent inverter system

LED display
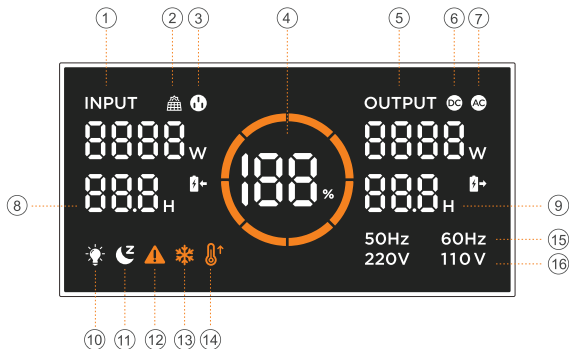
1.Input power icon: ⌷⌷⌷⌷w

When charging, the total input power of charging is displayed. Otherwise, 0W is displayed.

2. Solar charging icon: ▦

Indicates that the solar panel is currently charging the product

3. AC charging icon: ◐

Indicates the current AC charging status.

4. Battery level icon: ⏹

Indicates the current AC charging status.

5. Output power icon: ⌷⌷⌷⌷w

After turning on and connecting the appliance, the input power to the appliance is displayed.

6. DC output power icon: ◖ᴅᴄ◗

When the icon is lit, it means that the current total output power of DC, USB and LED light board.

7. AC output power icon:

◖ᴀᴄ◗ When the icon is on, it means that the current power is the AC inverter output power.

◖ᴀᴄ◗ ◖ᴅᴄ◗ When the two icons are lit at the same time, it indicates the total output power.

8. Remaining charging time icon: ⌷⌷⌷.ₕ

The remaining charging time is displayed.

9. Discharge remaining time icon: ⌷⌷⌷.ₕ

Display battery available time.

10. Illumination lamp status display icon: ☀

When it is on, it means the light is on, otherwise it will not be displayed.

11. No load automatic shutdown status display icon: ☾

This icon means that it is currently in hibernation mode

12. Abnormal display icon: ⚠

When it is on, it means that the current working status is abnormal, otherwise it will not be displayed.

For example: When the electric quantity ≤5%, the alarm icon ⚠ will be displayed, and when the electric quantity ≥5%, the alarm icon ⚠ will be automatically eliminated.

13. Low temperature warning icon: ❄

When it is always on, it means charging is prohibited at low temperature, and when it is flashing, it means discharging is prohibited at low temperature. Normally, it does not display.

14. High temperature warning icon: 🌡️↑

When it is always on, it means charging is prohibited at high temperature, and when it is flashing, it means discharging is prohibited at high temperature. Normally, it does not display.

15. Inverter frequency display icon: 50Hz 60Hz

After the inverter is turned on, the current inverter output frequency is displayed as 50Hz or 60HZ, otherwise it will not be displayed.

16. Inverter voltage display icon: 220V 110V

After the inverter is turned on, it will display 110v or 220v, otherwise it will not display.

General error code explanations:

dCOC: DC Over current or short circuit Fault, Abnormal USB output will not display the abnormal code；
inOV: input overvoltage fault;
inUV: input undervoltage fault;

B other abnormal display:

E+abnormal source+code number.

Abnormal source: 0 means DC fault, 1 means AC (inverter) fault (If the product is shut down because of AC abnormal, there is no fault code to be displayed.);

Code number: 1/2 means output short circuit or over current, 3/4 means over temperature, 5 means input over voltage, 6 means input under voltage, 9 means abnormal fan, a indicates that the AC power-on or power-off status is not confirmed (automatically cleared).

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switch button

AC switch button

Turn on: Long press the AC switch button for 2S to power on, the LED screen and the AC indicator light up at the same time, ⒶⒸ The icon lights up, indicating that the AC output is normal.

Turn off: When DC, USB, LED Switch buttons are all turn off, click the AC switch button to turn off the AC output. At the same time, the AC indicator flashes, and the AC port enters the turn-off state. After 5 seconds (the AC indicator will turn off), a prompt sound is issued to turn off the AC output;

DC switch button

Turn on: Long press DC Switch button for 2S, ⒹⒸ The icon lights up, indicating DC(4*5521) output port and car cigarette lighter are working at the same time.

Turn off: When USB, AC, LED light are all turn off, short press DC Switch button to turn off the portable power station totally.

DC(4*5521) output port and car cigarette lighter share the same DC switch button.

USB switch button

Turn on: Long press the USB switch button for 2S to turn on, at this time,the LED screen and the USB indicator light up at the same time. ⒹⒸ The icon lights up, indicating that the USB output is working normal.

Turn off: When DC, AC, LED Switch buttons are all turned off, short press the USB switch button to turn off the host.

LED light switch button

Long press for 1S to turn on the LED light, 💡 The icon lights up automatically, and then Long press 3S to open SOS Flashing mode, short press to turn off the LED light.

AC Input port

Connect AC cable(15Max) to AC socket to charge the product. The display will light up to show the charging power and duration, and at the same time the AC output is turned on, means you can charge and discharge at the same time. When the input current is continuously greater than 20A during charging, the AC charging port will be protected (shown as a button pop up). After confirming that the machine is not malfunctioning, press the protection switch to reset to resume charging.

• **Mains fast charge within 2 hours**

The product has an entry-level UPS function that supports simultaneous charging and discharging. When the main power grid is suddenly cut off, it can automatically switch to supply power from the product host within 15ms. (This function is a non-professional UPS function, and does not support 0ms switching. Please do not connect it to equipment that requires high level uninterrupted power supply, or please check compatibility after multiple tests, such as data services and workstations).
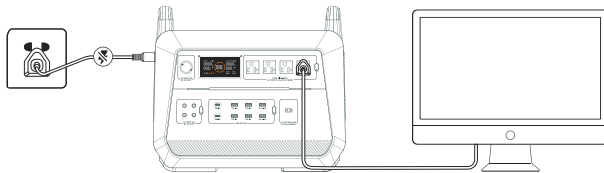
• **UPS function**

mportant hint: When product is in UPS working mode, AC The output power cannot exceed 1600W, Otherwise AC output will be disconnected within 3S – 10S. Under this situation, you need to remove the load and restart our product and re-connect AC.

When product is in UPS working mode, AC The total input power shall be controlled between 1650W to 1750W. (The priority is to ensure that the electrical appliances work normally, and the excess power is then charged to the product host. As the output power increases, the host charging gradually decreases).

When charging and discharging at the same time: The output power on display is the electrical power, and the input power will change with the change of the output power.

1. When the input power is higher than the output power, the input value showing on the screen is the total input power minus the total output power. The output value showing on the screen is the power of household electric appliance.

2. When the input power is lower or equal to the output power, the input value showing on the screen is 0. The output value showing on the screen is the power of household electric appliance.
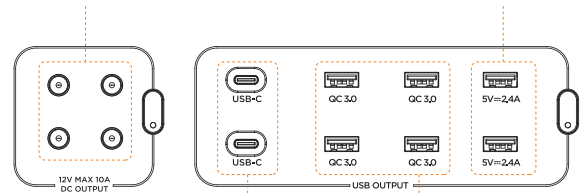
DC5521 output ports

he output port DC is used to charge the device adapted to the DC5521. When the DC output port is working, the icon will light up automatically, and the support maximum 10A (120W)

• DC/USB-C/QC3.0/USB

4xDC5521,12V⎓10A(120W Max)   2xUSB2.0,5V⎓2.4A(12W Max)

2xUSB-C,5V⎓3A,9V⎓3A,12V⎓3A,   4xQC3.0,5V⎓3.6A,9V⎓2.5A,
15V⎓3A,20V⎓3A(60W Max)   12V⎓2A(24W Max)

DC car cigarette lighter output port

Turn on: Long press DC Switch button for 2S, <img> The icon lights up, indicating DC(4*5521) output port and car cigarette lighter are working at the same time.

Turn off: When USB, AC, LED light are all turn off, short press DC Switch button to turn off the portable power station totally.

DC(4*5521) output port and car cigarette lighter share the same DC switch button.

QC3.0 output port

It is QC Fast charging port when use alone, support QC2.0/3.0, FCP, AFC, BC1.2, Apple,SAMSUNG,VOOC protocol. when used at the same time, support 5V/2.4A. When used, <img> DC icon lights up automatically.

USB-C output port

Support PD60W output. Compatible with PD2.0/3.0, QC2.0/3.0, MTK PE+1.1, FCP, compatible with BC1.2/APPLE/SAMSUNG Charging agreement. This interface can automatically awaked the DC board by plugging and unplugging . USB-C1 support DC board firmware upgrade. TYPE-C port is not controlled by the switch

USB output port

Ordinary USB port, support BC1.2, Apple protocol. Support 5V/2.4A, when used, <img> DC icon is on.

XT60 input port

XT60 interface, this is input port for car charging or solar photovoltaic panel charging. The input voltage range is 12-65V, the maximum input current is 20A, and the maximum input power is 500W. When using solar photovoltaic panels alone, <img> The icon will automatically light up.

● **Charging method one:** Car charge through XT60 port
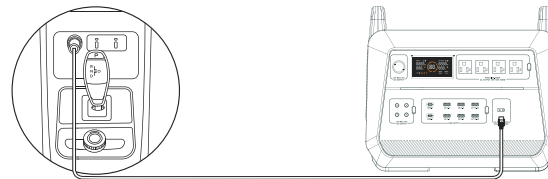
● **Charging method two:** Solar panel charge through XT60 port
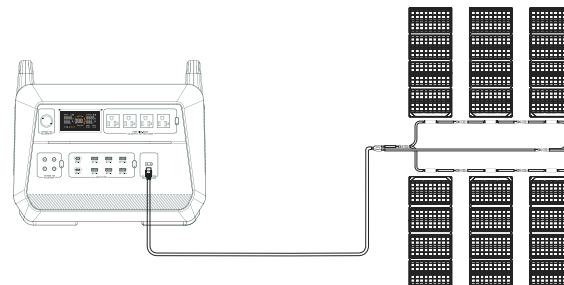
Reminder: The actual charging efficiency of solar energy will vary greatly due to weather, ambient temperature, sunlight intensity, the angle of the solar panel facing the sunlight, and other factors. The actual charging efficiency shall prevail.

MPPT technology

This product has built-in MPPT (Maximum Power Point Tracking) technology, which can be charged efficiently through solar panels. MPPT technology is designed for use in wind turbines and photovoltaic (PV) solar systems to maximize power extraction under all conditions. Through the MPPT technology, the product can compare the output voltage of the solar panel and the battery voltage in real time, and then intelligently identify the best power output for charging to maximize the battery charging efficiency.

Combination button function

The USB switch, LED switch, and DC switch can form a combination button. The combination button is effective for a long time after setting. It needs to be set when the machine is turned on.

Hibernation mode switch: Press and hold the USB switch button, click the DC switch button at the same time and loose DC switch button immediately, the hibernation icon lights on/off, which means the product enters to or out of the hibernation mode.

Under the hibernation mode: When the AC load is lower than 5W, the AC output icon will turn off after 8 hours, AC output turned off.
If the DC and USB interface is without any loading(or the current is lower than 200mA), and the AC icon is turned off at the same time, the product will be shut down after 8 hours.

Under Non-hibernation mode: Once the AC is turned on, even without any loading, the AC icon will always lights up, and the AC output is turning on, until it is turned off manually.
The DC icon will always lights up, even without any loading, it will not turn off automatically.

AC frequency switch: Press and hold the USB switch button, and long press the DC switch button for 3 seconds, then release the DC switch button firstly, the corresponding frequency icon on the screen flashes, it will always light on after switching successfully, you are able to switch 50Hz or 60Hz. 50Hz is defaulted.

Restart combination button: Press and hold the LED switch while pressing the DC switch, release the DC switch firstly, and then release the LED switch. The screen will refresh, full screen will lightup, 3S later the light will be off, the screen will go into the current mode, display the current status.

Product parameters

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Product number	ST2000 Super Fast Charge Version
Cell type	Lithium iron phosphate (LiFePO4) batteries
Cycle life	Remaining capacity above 80% after 2000+ cycles
battery capacity	648000mAh
Battery energy	2073.6Wh (25.6V/81Ah)
USB2.0 (Output x2)	5V═2.4A(12W Max)
QC3.0 (Output x4)	5V═3.6A, 9V═2.5A, 12V═2A(24W Max)
USB-C (Output x2)	5V═3A, 9V═3A, 12V═3A, 15V═3A, 20V 3A (60W Max)
Car cigarette lighter (Output x1)	12V═10A(120W MAX)
DC5521 (Output x4)	12V═10A(120W MAX)
AC (Output x4)	total power 1800W, 100-120Vac (50Hz/60Hz)
Peak power	3000W (soft start technology)
AC output waveform	Pure sine wave output (no harm to electrical appliances)
AC Charge Input Voltage	100-120Vac (50Hz/60Hz)
AC Charge Input Power	Y shape interface 1200W Max
Solar Charge Input	XT60 interface / 500W 12-65V DC 20A Max
Car Charger (Example 2)	12V / 24V DC 10A Max
Charging time	About 2h(mains charging, super fast charging technology)
UPS switching time	≦15ms
Charging and discharging method	UPS function, supports simultaneous charging and discharging

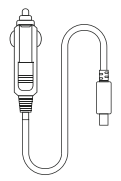|	
Weight	32.5kg (net weight 28.5kg)
Product Size	411×260×355mm
Package dimensions	560×370×457mm
Charging temperature	(32～104°F)0～40℃
Discharge temperature	(14～104°F)-10～40℃
Storage temperature	(14～104°F)-10～40℃
Idle life	It is recommended to charge the product every 3 months

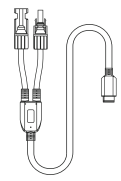## Output Input port
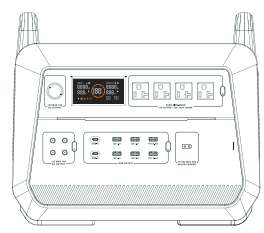
Portable power station×1
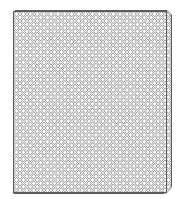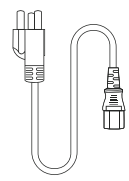

Storage bag x1

User manual×1

Car charging cable x1

Photovoltaic charging cable x1

Mains AC charging cable×1

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