

# Specifications

## Portable Power Station

Model : PE1K0S024045NUS

Desc : 1000W Portable Power Station

Rev : V00

Date : 2023-02-21

# PE-1000 Series Portable Power Station

**SOSEN**  
INNOVATION



Portable Power Station

PE series



## Features:

- EV-Class battery cells
- Long cycle life: >2500 times
- Bidirectional inverter technology charging 80% < 1 h
- ECO mode (control in APP)
- 8 safety BMS protections modes
- 4 recharging ways
- 4 output modes
- 10 output ports
- 1000W High power output
- Battery capacity expansion technology
- Ergonomically designed, easy to carry
- Pure sine wave, appliances friendly
- 24 months guaranty

**FC PSE UN38.3**



C US

TUV(UL2743)



MIC



# PE-1000 Series Portable Power Station

## Electrical Performance Specifications

### Solar/Car input Specifications

Item	Mini value	Standard value	Max value	Remark
Input voltage range	11V	18V	55V	Battery can be charged within this voltage range
Input undervoltage protection	—	—	10V	The battery cannot be charged under voltage
Input charging current	—	—	10V	Limit charging current $\leq 10A$
Input charging power	—	—	300W	Limit charging power $\leq 300W$
Input reverse connection protection	—	support	—	If input reverse, it will shutdown system to stop output
Input short-circuit protection	—	support	—	If Input short-circuit, it will shutdown system to stop output

\* Note : The voltage standard is the voltage collected from the input terminal. In actual use, please try to choose the standard input cable (charging cable) with a larger diameter to reduce the abnormal charging and use of energy storage power supply caused by wire voltage drop.

### Extra battery pack interface specification

Item	Mini value	Standard value	Max value	Remark
The voltage of extra battery pack	18.9V	22.4V	25.2V	7-series LiFePo4
The capacity of extra battery pack	—	1008Wh	—	15AH cell , 7P3S
The current protection point of extra battery pack	55A	60A	65A	

\* Note: The extra battery pack must be matching, otherwise there will be danger of huge current mutual charge.

# PE-1000 Series Portable Power Station

## Electrical Performance Specifications

Item	Mini value	Standard value	Max value	Remark
Input voltage range	90V	120V	140V	Battery can be charged within this voltage range
Input undervoltage protection	4.75V	5V	90V	The battery cannot be charged under voltage
Input charging current	—	—	10A	Limit charging current $\leq 5A$
Input charging power	—	1000W	1050W	
Charge conversion efficiency	—	—	90%	
Input over load protection	—	Support	—	When the input is overloaded, the overload protector works and needs to be reset manually

## Multiple input Specifications

Item	Remark
AC input + Car outlet input AC input + Solar panel input	Can be combine charge/single charge switch, the maximum charging power < 1300W
AC input + Type-C input	AC charging is priority, Type-C charging will be shut down, simultaneous charging is not supported
Type-C + Car outlet input Type-C + Solar panel input	Can be combine charge/single charge switch, the maximum input power < 400W

# PE-1000 Series Portable Power Station

## USB-A Output Specification

Item	Mini value	Standard value	Max value	Remark
Interface type	—	A type	—	USB-Ax2pcs
Output voltage range	4.75V	5V	5.25V	Test the output voltage of USB1 and USB2 within the rated load (cable length is 30cm)
D+ voltage	—	2.7V	—	USB-A output D+ voltage when no-load
D- voltage	—	2.7V	—	USB-A output D- voltage when no-load
Automatic recognition	—	Support	—	Automatically identify the output current according to different load terminals
Port output ripple	—	—	120mV	The rated input and rated load oscilloscope bandwidth is set at 20MHz, Parallel connection of 0.1uF ceramic and 10uF electrolytic capacitor
Rated current output	0	—	2.4A	The load below 2.4A can work stable for a long time
Single-port efficiency	85%	—	—	Rated input, rated load, test requirements is the current on load average efficiency of 25%, 50%, 75% and 100%.
Over current protection	2.5A	—	3.2A	The output over current enters the intermittent mode, and the alarm logo on the display is long bright /USB indicator icon flashes, and returns to normal after releasing the load
Short circuit protection	—	Support	—	The output short-circuit enters the intermittent mode, and the alarm sign on the display screen is long bright /USB indicator icon flashes, and returns to normal after releasing the load
Plug and play	—	No support	—	You need to manually press the USB ON/OFF button

# PE-1000 Series Portable Power Station

## QC3.0 Output Specification

Item	Mini value	Standard value	Max value	Remark
Interface Type	—	A type	—	Fast charge port x2 pcs
Protocol	—	QC3.0	—	Supports the DCP/QC2.0/QC3.0/FCP/AFC protocol, and the discharge is 18W Max
Output voltage range	4.75V	5V	5.25V	Within the rated input range, the output will automatically adjust the output voltage and current according to the identified fast charge protocol, typical output voltage and current are 5V3.4A, 9V2A, 12V1.5A
	8.55V	9V	9.45V	
	11.4V	12V	12.6V	
D+ voltage	—	2.7V	—	Fast charge output D+ voltage when no-load
D- voltage	2.6V	2.7V	2.75V	Fast charge output D+ voltage when no-load
Automatic recognition	—	Support	—	Automatically identify the output current according to different load terminals
output Port ripple	—	—	120mV	The rated input and rated load oscilloscope bandwidth is set at 20MHz, Parallel connection of 0.1uF ceramic and 10uF electrolytic capacitor
5V Rated current output	—	5V3A	—	Below 3A can work stable for a long time
9V Rated current output	—	9V2A	—	Below 2A can work stable for a long time
12V Rated current output	—	12V1.5A	—	Below 1.5A can work stable for a long time
Single-port efficiency	85%	—	—	Rated input, rated load, test requirements is the current on load average efficiency of 25%, 50%, 75% and 100%.
Over current protection	3.5A	—	3.9A	The output over current enters the intermittent mode, and the alarm logo on the display is long bright /USB indicator icon flashes, and returns to normal after releasing the load
	2.1A	—	2.8A	
	1.6A	—	2.1A	
Short circuit protection	—	Support	—	The output short-circuit enters the intermittent mode, and the alarm sign on the display screen is long bright /USB indicator icon flashes, and returns to normal after releasing the load
Plug and play	—	No Support	—	You need to manually press the USB ON/OFF button

# PE-1000 Series Portable Power Station

## TYPE-C Output Specifications

Item	Mini value	Standard value	Max value	Remark
Interface Type	—	C type	—	Support Output/Input
Protocol	—	PD100W	—	Support PD3.0 protocol, charge and discharge 100W max
Output voltage range	4.75V	5V	5.25V	Within the rated input range, the output will automatically adjust the output voltage and current according to the identified fast charge protocol, typical output voltage and current are 5V3.4A, 9V2A, 12V1.5A
	8.55V	9V	9.45V	
	11.4V	12V	12.6V	
	14.25V	15V	15.75V	
	19V	20V	21V	
D+ voltage	—	Automatic	—	USB-C output D+ voltage when no-load
D- voltage	—		—	USB-C output D- voltage when no-load
Automatic recognition	—	Support	—	Automatically identify the output current according to different load terminals
5V/9V/12V/15V output Port ripple	—	—	200mVp-p	The rated input and rated load oscilloscope bandwidth is set at 20MHz, Parallel connection of 0.1uF ceramic and 10uF electrolytic capacitor
20V output Port ripple	—	—	200mVp-p	
5V Rated current output	—	3A	—	Below 3A can work stable for a long time
9V Rated current output	—	3A	—	
12V Rated current output	—	3A	—	
15V Rated current output	—	3A	—	
20V Rated current output	—	5A	—	Below 5A can work stable for a long time
Single-port efficiency	85%	—	—	Rated input, rated load, test requirements is the current on load average efficiency of 25%, 50%, 75% and 100%.
5V/9V/12V/15V over current protection	3.1A	—	4A	The output over current enters the intermittent mode, and the alarm logo on the display is long bright /USB indicator icon flashes, and returns to normal after releasing the load
20V over current protection	5.1A	—	5.5A	
Short circuit protection	—	Support	—	The output short-circuit enters the intermittent mode, and the alarm sign on the display screen is long bright /USB indicator icon flashes, and returns to normal after releasing the load
Plug and play	—	Support	—	

# PE-1000 Series Portable Power Station

## AC Output Specifications

Item	Mini value	Standard value	Max value	Remark
Output voltage	110V	120V	125V	Vin=18~25.2Vdc@Rated resistive load
Input voltage	110V	120V	125V	Vin=18~25.2Vdc@Rate RCD load
Output current	0	8.33A	10A	Vin=18~25.2Vdc@Rated resistive load
Output power	0	1000W	—	Vin=18~25.2Vdc@Rated resistive load
Output power factor	0.99	—	—	Vin=18~25.6Vdc@Rated resistive load
Rated output frequency	—	50/60Hz	—	
Current peak factor	3	—	—	Vin=18~25.2Vdc@Rate RCD load
Output waveform distortion	—	—	3%	Vin=18~25.2Vdc@Rated resistive load
	—	—	8%	Vin=18~25.2Vdc@Rate RCD load
Capacitive load	—	—	180uF	Vout=120Vac/60Hz
Inductive load	38mH	—	—	Vout=120Vac/60Hz
Output dynamic response	—	—	10%	Load is R load, transient range: 0~100%
Transient response recovery time	—	—	60mS	
Overload protection	1000W	—	1200W	Over power protection point: 1000-1200W/60S, 1200-1500W/5S, power limit for load above 1500W, shut down output after 50mS



# PE-1000 Series Portable Power Station

## DC Output Specifications

Item	Mini value	Standard value	Max value	Remark
Interface type	—	DC 5521	—	Dc5521x3pcs
Output voltage range	13.2V	13.6V	14V	Test the output voltage of DC5521 within the rated load
Output voltage ripple	—	—	150mVp-p	The rated input and rated load oscilloscope bandwidth is set at 20MHz, Parallel connection of 0.1uF ceramic and 10uF electrolytic capacitor
Rated output current	0	5A	—	The load below 10A can work stable for a long time
Rated output efficiency	90%	—	—	Rated input, rated load, test requirements is the current on load average efficiency of 25%, 50%, 75% and 100%.
Over current protection	10.1A	—	13A	The output over current enters the intermittent mode, and the alarm logo on the display is long bright /DC indicator icon flashes, and returns to normal after releasing the load
Short circuit protection	—	Support	—	The output short-circuit enters the intermittent mode, and the alarm sign on the display screen is long bright /DC indicator icon flashes, and returns to normal after releasing the load
Cigarette lighter	—	Support	—	Shared DC5521 interface, external adapter

## Charge and Discharge SOC

Charge current(C) Charge battery temp(°C)	SOC(%)				
	10%	70%	80%	90%	100%
-5°C	0	0	0	0	0
0°C	0.033	0.033	0.033	0	0
5°C	0.1	0.1	0.1	0	0
10°C	0.2	0.2	0.1	0.1	0.033
15°C	0.5	0.5	0.5	0.3	0.2
20°C	0.7	1	1	0.3	0.2
25°C	0.7	1	1	1	0.2
30°C	0.7	1	1	1	0.2
35°C	0.7	1	1	1	0.2
40°C	0.7	1	1	1	0.2
45°C	0.7	1	1	0.5	0.2
50°C	0.5	0.5	0.5	0.5	0.2
55°C	0.1	0.1	0.1	0.1	0.1
60°C	0	0	0	0	0

Discharge current(C) Discharge battery temp(°C)	SOC(%)							
	0%	10%	20%	30%	40%	50%	60%	100%
-10°C	0	0.3	0.5	0.5	0.5	0.5	0.5	0.5
-5°C	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
0°C	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5°C	0	0.5	0.5	1	1	1	1	1
10°C	0	0.5	1	1	1	1	1	1
15°C	0	0.5	1	1	1	1	1	1
20°C	0	0.5	1	1	1	1	1	1
25°C	0	0.5	1	1	1	1	1	1
30°C	0	0.5	1	1	1	1	1	1
35°C	0	0.5	1	1	1	1	1	1
40°C	0	0.5	1	1	1	1	1	1
45°C	0	0.5	1	1	1	1	1	1
50°C	0	0.5	1	1	1	1	1	1
55°C	0	0.5	1	1	1	1	1	1
55°C	0	0	0	0	0	0	0	0

# PE-1000 Series Portable Power Station

## Battery Protection BMS Specifications

Item	Mini value	Standard value	Max value	Remark
Battery cell	—	7S3P	—	32140-3.2V15Ah
Battery capacity	—	1008Wh	—	The actual machine can be used about rated capacity *95%, with the highest discharge efficiency measured
Rated power	—	1000W	—	Actual continuous output power $\geq$ 1000W
SOC accuracy of estimation	—	—	10%	The maximum error of SOC is 10%
Over charge voltage protection	3.5V	3.6V	3.65V	Single cell overcharge protection voltage
Over discharge voltage protection	2.7V	2.8V	2.9V	Single cell overdischarge protection voltage
Discharge over temperature	55°C	60°C	65°C	When the battery is discharging, the output is turned off when the continuous temperature is above 75°C
Charge over temperature	55°C	60°C	65°C	When the battery is charging, the input is turned off when the continuous temperature is above 75°C
Full battery charge voltage protection	25.15V	25.2V	25.25V	Shelve the battery voltage after 1 hour
Output over current protection	65A	70A	75A	When the BMS detects overcurrent, the protection is disabled. When the current is lower than the protection value, the BMS automatically recovers or restarts
Internal resistance	—	—	18m $\Omega$	18m $\Omega$ , single cell maximum 7.5m $\Omega$ (Internal resistance between B+ and B-)
Dormant current	—	—	250uA	Current consumption after the system is fully shut down and hibernated

## System environment requirements and other parameters

Item	Mini value	Standard value	Max value	Remark
Netweight	—	13.6kg	—	
Grossweight	—	16.0kg	—	
IP protection level	—	—	—	Ip20
Cooling way	—	—	—	Smart cooling

# PE-1000 Series Portable Power Station

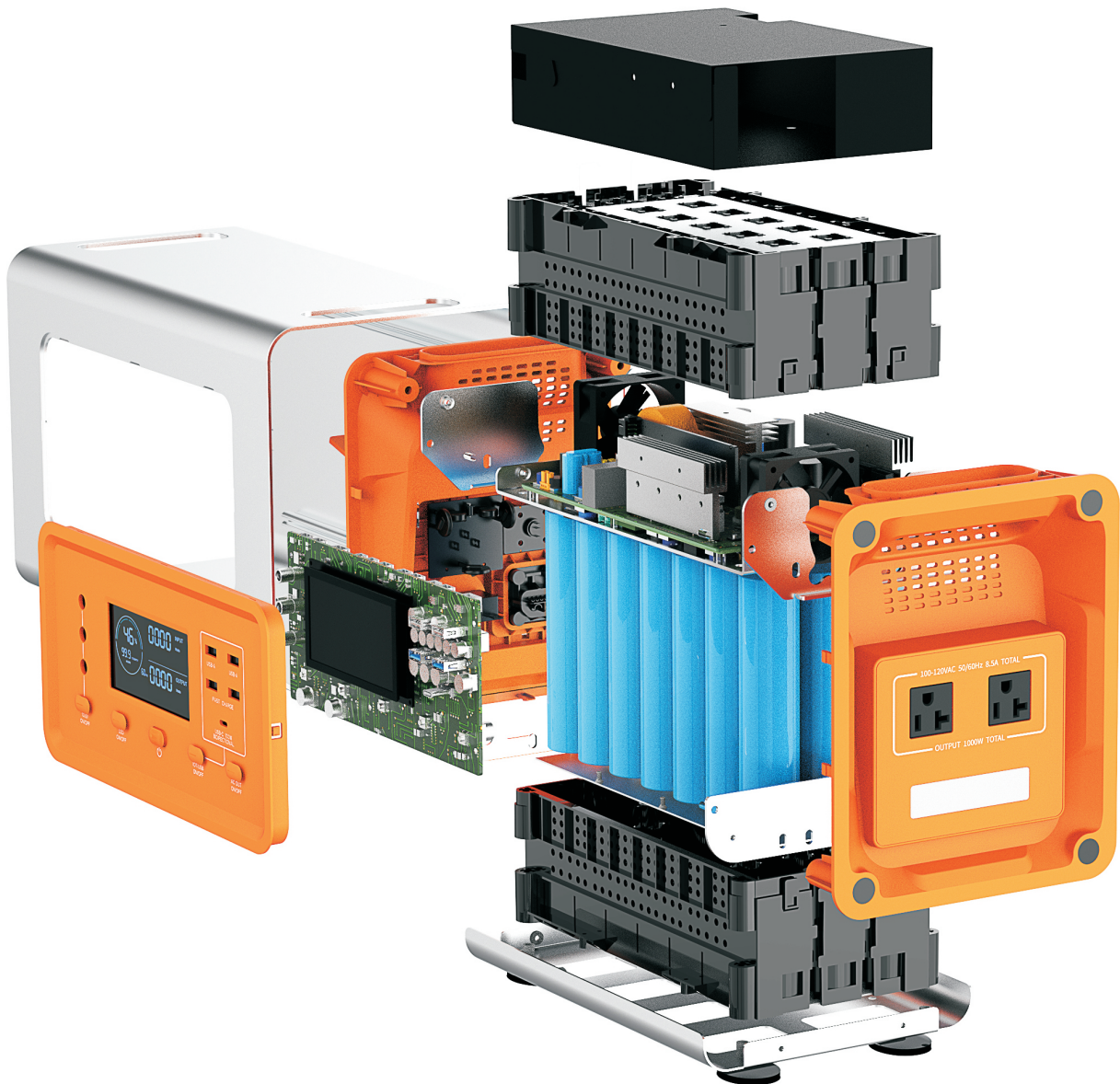
## Temperature Requirement and Other Specifications

Item	Mini value	Standard value	Max value	Remark
Discharging over temp protection	55°C	60°C	65°C	When the battery cell temperature is higher than this value, then shutdown output
Discharging over temp release	48°C	50°C	52°C	Temperature go down to normal, recover output
Storage temperature	-20°C	---	60°C	Storage temperature
Storage humidity	5%	---	95%	Storage humidity
Working Temperature (charging)	0°C	---	45°C	Normal working temperature
Working Temperature (discharging)	-20°C	---	45°C	Normal working temperature
Working humidity	5%	—	95%	Normal working humidity
altitude	—	2000m	—	The product is designed to meet the requirements for normal use in tropical and temperate regions with altitudes less than 2000m. Derating is required when altitudes greater than 2000m.
Special request	—	—	—	Product storage and working environment should not be acidic, alkaline or other chemical corrosive gases.
Fan ON Temperature	45°C	50°C	55°C	Inverter temp over the standard value Fan start working
Fan OFF Temperature	40°C	45°C	50%	Inverter temp down to the standard value Fan stop working
Fan ON power	50%	—	—	
Fan OFF power	—	—	50%	
LED power	—	—	4W	Mode: Strong/Medium/Low/Flash/SOS
Eco mode	—	support	—	AC power < 5W --- 2H USB power < 1W --- 1H DC power < 2W --- 1H System enter eco mode Shutdown automatic
Standby total power	—	—	≤2W	System not working total power
Noise control	—	—	≤40dB	Maximum fan noise, refer to the test CNS8753/ISO3744 noise standard
Total output power	≥1000W	—	—	
Charging and Discharging simultaneous	—	—	—	AC and Type-C can not recharge simultaneous Charging and discharging work at the same time load power ≤800W
Charged when shut down	—	—	—	AC recharge, solar recharge, car recharge, Type-C recharge
Low battery mode	—	—	250uA	When battery voltage < 18V , shutdown all output

# PE-1000 Series Portable Power Station

## Product Structure Characteristics

### Structural Explosion Pattern



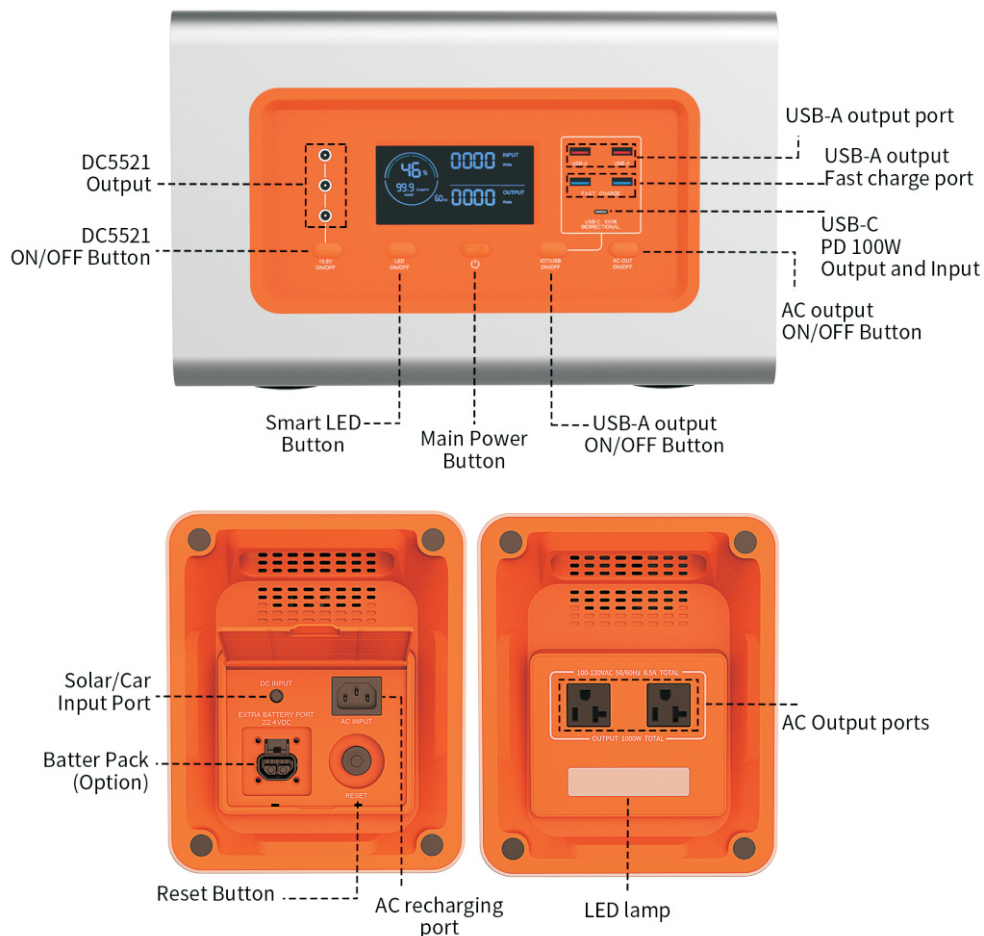
# PE-1000 Series Portable Power Station

## Product Structure Features

### Product Size

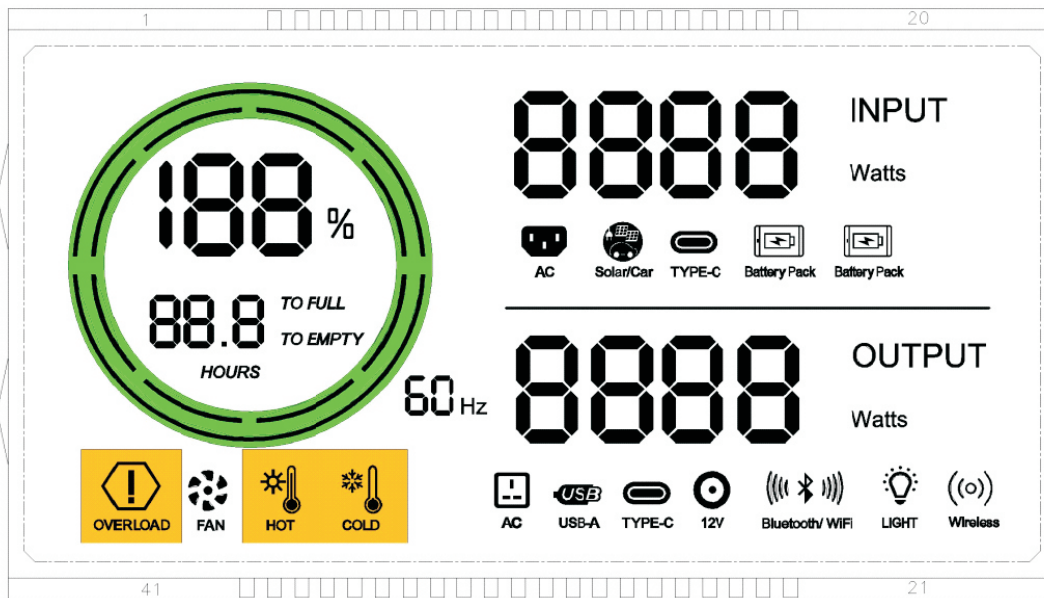


### Structure diagram







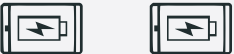







# PE-1000 Series Portable Power Station

## LCD Screen Introduction: LCD Screen



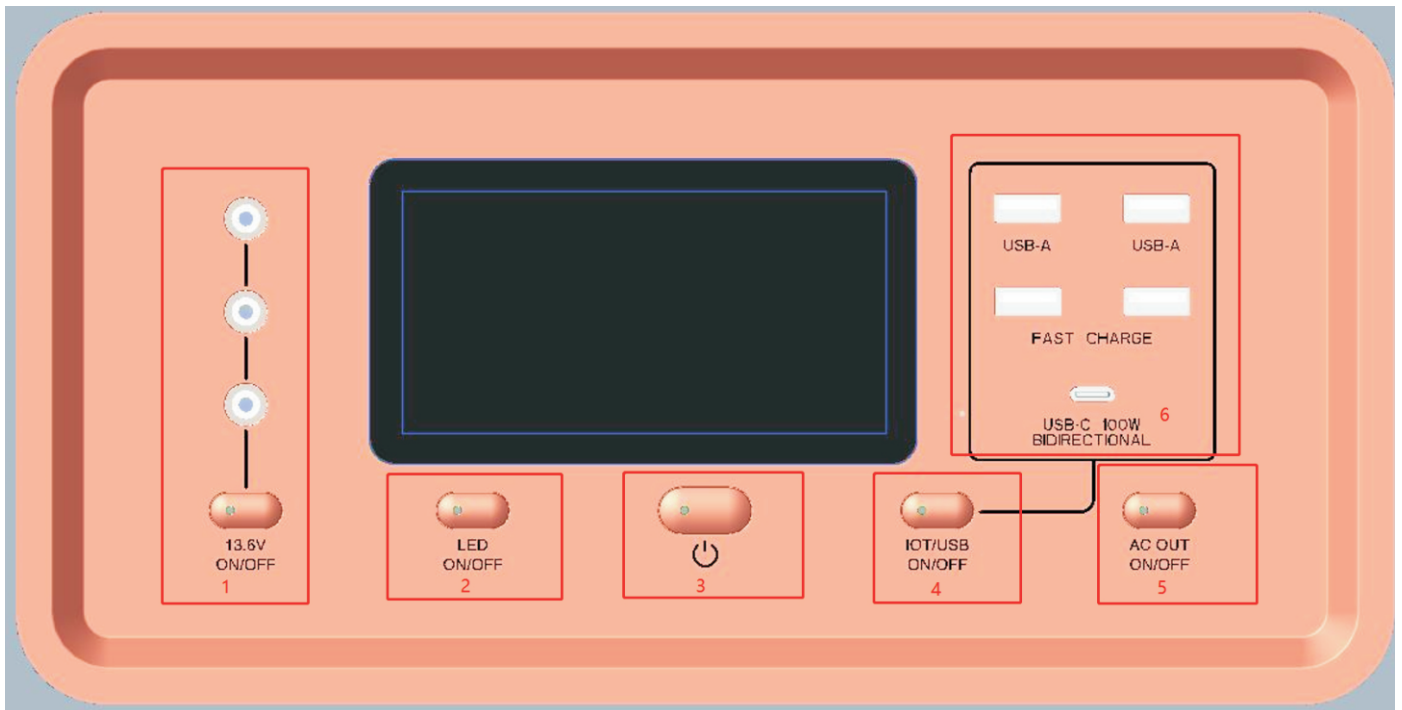
Icon	Name	Description
100%	Battery Capacity	Display Battery Capacity Percent
TO FULL	Battery is Recharging	Display Battery is Recharging
TO EMPTY	Battery is Charging	Display Battery is Charging
88.8 HOURS	Time	Recharging ;Display Recharging Time Charging ;Display Charging Time
OVERLOAD	Overload Mark	Display Overload Mark
FAN	Fan Error Mark	Display Fan Error/Faulty Mark
HOT	High Temperature Mark	Display Over Heat Temperature Mark
COLD	Low Temperature Mark	Display Sub cold Temperature Mark

# PE-1000 Series Portable Power Station

Icon	Name	Description
	Recharging Power Mark	Display Recharging Power Mark
	AC Recharging Mark	Display AC Recharging Mark
 Solar/Car	Car/Solar Recharging Mark	Display Car/Solar Recharging Mark
	USB-C Recharging and Charging Mark	Display USB-C Recharging and Charging Mark
 Battery Pack Battery Pack	Battery Pack Plug in Mark	Display Battery Pack Plug in Mark
	Output Power Mark	Display Output Power Mark
	AC Charging Mark	Display AC Charging Mark
	USB-A Charging Mark	Display USB-A is Charging Mark
	Car Charging Mark	Display Car is Charging Mark
 Bluetooth/WiFi	Bluetooth/WiFi Mark	Display Bluetooth or WiFi is Connect Mark
	LED Lamp Mark	Display LED lamp is ON Mark
	Wireless Charging Mark (optional)	Display Wireless Charging Mark

# PE-1000 Series Portable Power Station

## Front Panel



(1)DC5521 Output ports + Dc5521 Button

(2)Smart LED Button

(3)Main Power Button

(4)USB-A Output Button

(5)AC Output Button

(6)USB-A Output Ports、USB-A Fast Charge Output PortS、USB-C Input/Output Port



# PE-1000 Series Portable Power Station

## Standard for Inspection of Product Packaging

Icon	Description	Criterion
	Size: 444x266x378mm Double corrugated paper with screen print	Subject to the actual size
UN carton	UN box inspection: 1.The UN sealing tape is transparent tape 2.Whether the stickers on the UN carton are correct and whether there is any missing stickers 3.Whether the content, quantity, color and other contents of UN carton silkscreen are correct 4.Check whether the UN carton is damaged, damp and other undesirable phenomena	Screen printing content is correct , no oil stain , no damage Quantity : N=1
EPE Inner support	1.Top cover: case foam, 420x245x140mm,EPE, white 2.Bottom cover: Under case foam, 420x245x90mm,EPE, white 3.The spare parts box is left in the middle of the upper cover, and the upper and lower covers sink 55mm for the main engine Reserve 25mm pearl-cotton (EPE) on each side.	Subject to the actual size
Flat card paper	Size: 420x245x5mm ,Double corrugated paper	Quantity : N=1
Accessories	Dc7909 car recharging cable	Quantity : N=1
	DC 5521 to red and black clamp	Quantity : N=1
	AC recharging cable,15A,125V,with one end 3PIN male head(USA), One end female head; length :1.8 meters	Quantity : N=1
	User manual	Quantity : N=1
	Warranty card	Quantity : N=1
Packing bag	PE Bag, 760x520x0.1mm, Transparent white	Quantity : N=1
Outer carton	Size: 425x247x344mm Double corrugated paper with screen print and buckle hand position	Subject to the actual size
	1.The sealing tape for the outer carton is transparent tape 2.Whether the content, quantity and color of the screen printing of the outer box are correct 3.Check whether the outer box is damaged, damp and other undesirable phenomena	Screen printing content is correct , no oil stain , no damage Quantity : N=1

# PE-1000 Series Portable Power Station

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## Revision History

Version	Description of changes	Date of	Remarks
V00	First edition	2023/02/21	