

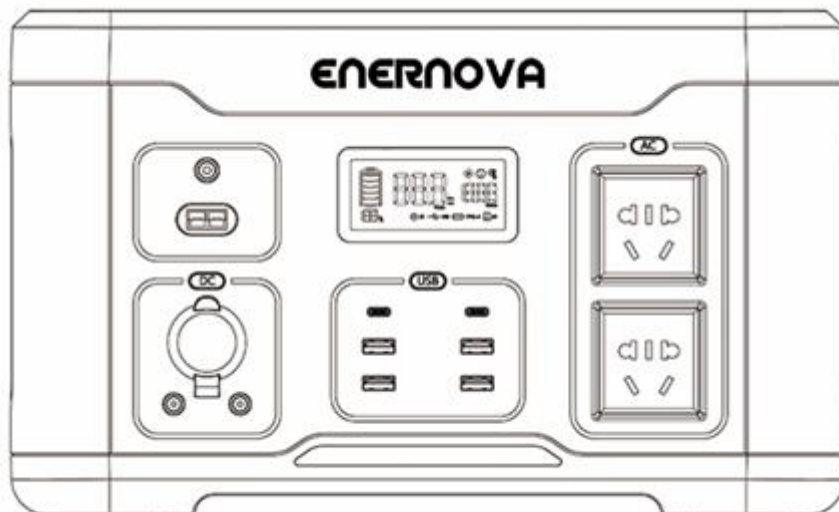
ENERNOVA

PORTABLE POWER STATION

User Manual

(SMART SERIES)

(PEP-S300/PEP-S500/PEP-S1000)



Shandong Enernova New Energy Technology Co.,Ltd.

Precautions

Please pay attention to read the precautions, which are divided into "Danger", "Warning" and "Caution" levels.

The "Danger" level is the level that may cause personal injury or even death.



The "Warning" level may cause dangerous things happen



The "Caution" level may cause damage to the product or reduce the cycle life of the product.



- The product contains high voltage AC output, please do not put your hand or handheld metal conductor into the AC outlet.
- Do not disassemble the product if you are not professionals because internal battery and circuit of the product have dangerous high energy which is able to cause electric shock, short circuit and other dangerous things to happen.
- Do not put the product in high temperature environment (more than 50 degrees Celsius) or near the fire to avoid the product from explosion or catching fire.
- The product is not a toy. Keep the product out of the reach of children
- Do not use it in a damp environment.
- Please do not knock or hit the product.



- Please read the specific battery charger manual before use.
- It is strictly forbidden to disassemble the product.
- It is strictly forbidden to use products with obvious damage.
- Please charge with the original adapter or with an adapter that conforms to the electrical parameters specified by the manufacturer.

- Please select the solar panel in accordance with the electrical parameters specified by the manufacturer. It is forbidden to charge with solar panels whose voltage is higher than 30V.
- Please charge the battery within the temperature range of 0~45°C. Charging at too low temperature will shorten the cycle life of the battery.
- For long term storage (more than 3 months), it should be stored in a low humidity environment without corrosive gas at -10~50°C in a semi-electric state.
- If the product emits abnormalities such as odor and overheat during charging or storage, please stop charging immediately and place it in an open place for observation from a distance to confirm safety, and contact the manufacturer or distributor after it.
- The product has a wireless charging function. If the USB switch is turned on, the wireless charging function will be turned on. Please note that the charging part on the back of the phone cannot be made of metal (such as a bracelet). If there is metal, it will cause heat. Do not put metal objects or radio-sensitive items on the top of the power supply. Otherwise, it may cause abnormal heat or even damage!



- This product is a power station, please select the corresponding model according to the electrical equipment. The use of this product with excessive power and load is prohibited.
- When the short-circuit protection occurs after the product is connected to the device, if it is still protected after restarting, please do not restart it again. You should find the reason for the protection of the connected device, and then continue to use the product after troubleshooting.
- This product is factory set according to the voltage standards of different countries. Please consult the dealer or check the product instruction manual before purchase and use.
- When the product runs out of power, please charge it in time.
- The mesh holes on both sides of the power supply are heat dissipation holes, which are strictly prohibited to be blocked and a certain space should be reserved to ensure the heat dissipation effect.
- All parts of the product are environmental friendly and recyclable, please recycle according to local regulations.
- In order to preserve the power of the product, please turn off the product in time after using so as to avoid running out of the battery power (the device will have no-load loss as long as it is turned on).
- In order to extend the cycle life of the battery, please charge and discharge the product 1-2 times before store it for more than 6 months.

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1. Accessories List



① 图示: PEP-S1000



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No.	Name	Accessory Description
1	Power Station	PEP-S300, PEP-S500 and PEP-S1000 Stations are different, the picture shows the PEP-S1000 Station.
2	Adapter	Use wall power to charge the product.
3	Power cable	Connected to the adapter to access the wall power.
4	Car charging cable	Car charging.
5	User Manual	Operation guide and warranty card.

2. Product Introduction

This product is a portable multi-functional power station with built-in high-efficiency lithium-ion battery, safe lithium-ion battery management system (BMS) and high-efficiency energy conversion circuit. It has been repeatedly tested and verified by the company's R & D team for a long time, obtained CE\FCC\ROHS\PSE\UN38.3 and other international certifications. With mature design and complete production control, its safety and reliability are granted. The product can be charged in three ways: solar panels, car generators and wall power. It also has the advantages like light weight, small size, high power station and etc., only to provide customers with convenient mobile energy. The main features of the product are:

- AC100V~240V/50~60HZ pure sine wave output (already set according to the power standard of each country or region)
- Solar energy MPPT charging system
- Adapter wall power charging
- Car charging
- 12V10A Car cigar lighter output
- 12V5ADC5521output port

- USB 5V/2.4A output port
- USB-A QC3.0 output port
- Type-C output port
- Use special accessories (purchased separately) to charge the car starter battery to assist in starting the car
- LED high brightness display (real-time output power, remaining power percentage, remaining time (for reference only) indication and etc.)
- LED high brightness light (low brightness, high brightness, SOS three modes, PEP-S1000 does not have this function)
- BMS multi-level protection system
- Over-charge, over-discharge, high and low temperature, multi-stage overcurrent, short circuit protections and other protection functions
- Super long cycle life with more than 1000 cycles
- Foldable handle makes it more convenient to carry
- High energy conversion efficiency
- 10W wireless charging(Compatible with Qi standard)

The products can meet the needs of most household electrical devices:

USB port: smart phone, iPad, smart watch, digital camera, kindle etc.

12V standard car charger output port: car charger.

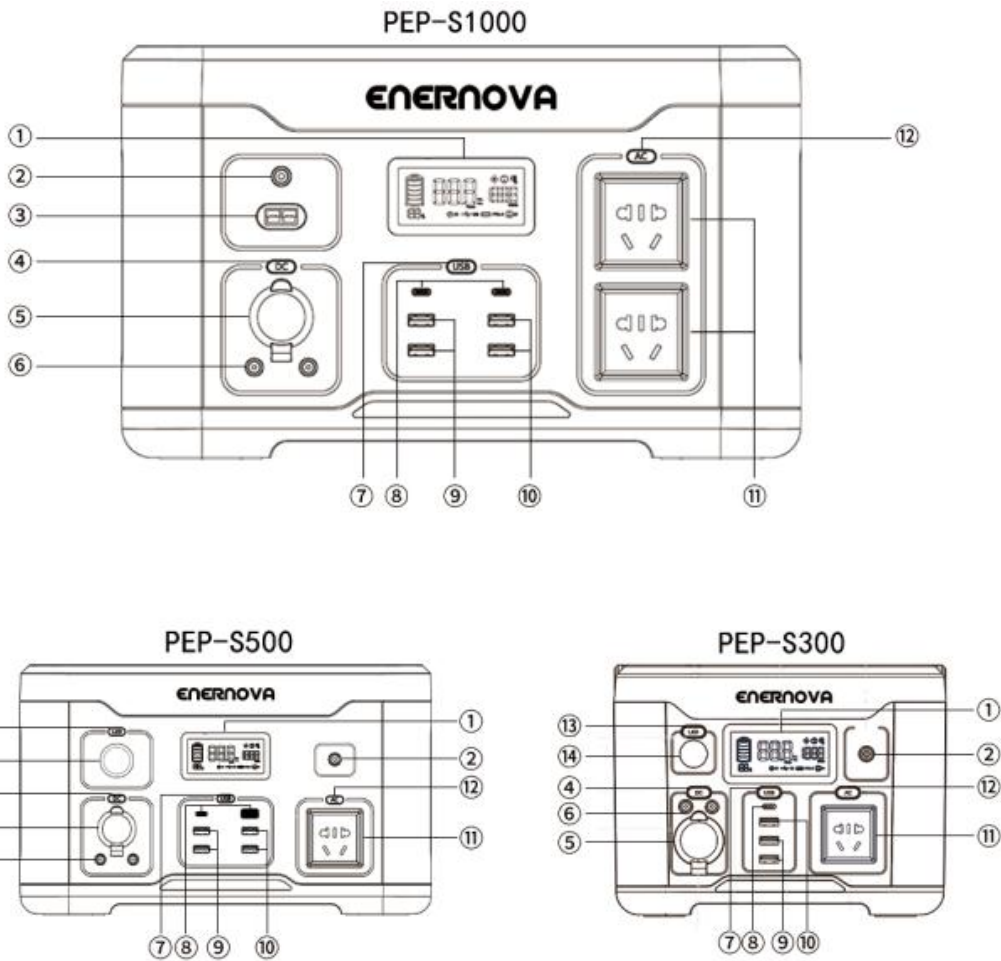
12V DC output DC5521 port: drone, router, car refrigerator etc., and other devices which use 12VDC ports to charge.

AC output: laptop, monitor and other AC appliances.

Our products cover a very wide range of application fields, such as: disaster relief, emergency rescue, first aid, excavation, decoration, construction, tourism, camping, solar power generation and others.

3. Product Diagram

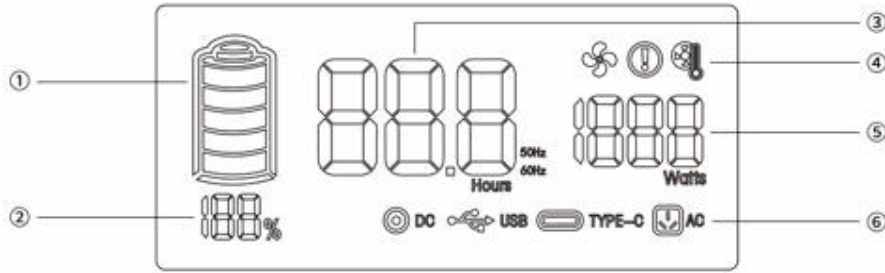
3.1 Product Panel Function Introduction



No.	Function Description	No.	Function Description
1	LCD display screen	8	Type-C output port
2	DC input port/ Solar charging port	9	USB5V2.4A output port
3	Dedicated high power solar charging port	10	QC3.0 output port
4	DC Switch	11	AC output port (varies according to standards)
5	Cigar lighter port	12	AC Switch
6	DC5521 output port	13	LED switch
7	USB switch	14	LED lights

Wireless charging: located at the top of the product (with a rectangular logo)

3.2 Display Screen Introduction



No.	Name	Function
1	Power icon	The battery level is displayed with 5 cells, while charging, it will show that the battery is increasing.
2	Power indicator	Displays the battery level by percentage, from 0% to 100%.
3	Remaining time indicator	Display the remaining time to fully charge or empty (minimum unit is hour, if it is less than 1 hour, please refer to the remaining power indicator)
4	Special indicator	From left to right: Indicator for fan to start working Overload warning indicator Inverter(AC output) temperature warning indicator
5	output power indicator	Display the current output power (1000W model can display the charging power when charging). Please note that there is still a power display without device connection when open the AC switch, which is the no-load loss power of the device
6	Interface status indicator	DC: Lights up to indicate that all ports of DC are open USB: Lights up to indicate that all USB ports are open, including wireless charging TYPE-C: same as USB AC: Lights up to indicate that the AC port is open When the above icons are flashing, it means that the connected load is overloaded or short-circuit protected, and the output has stopped. It is necessary to eliminate the fault of the connected equipment and turn it on again to output.

4. Product Parameters

Projects	Parameters	PEP-S300	PEP-S500	PEP-S1000
Battery	Battery type	Lithium-ion battery		
	Rated battery storage capacity	296Wh	515Wh	1166.4Wh
	Battery total ampere hours	20 Ah	34.8 Ah	54 Ah
	Battery total voltage	14.8V	14.8V	21.6V
	Cycle life	1000 times	1000times	1000times
	BMS protection	Over-voltage, under-voltage, high and low temperature, three-stage over-current and short-circuit protection		
AC output	Output Voltage	100-240V (It has been factory set according to the standards of each country of region and cannot be changed, Marked on the product nameplate)		
	Output Frequency	50-60HZ(already set, Marked on the product nameplate)		
	Rated output power	300W	500W	1000W
	Overload protection	380W±20W	580W±20W	1150W±20W
	Output waveform	Pure sine wave		
	Conversion efficiency	70% load: >90%		
DC output	DC5.5 port	DC12V5A		
	Cigar lighter port	DC12V10A		
USB output	USB	5V2.4A (Each model has 2 USB ports)		
	QC3.0	5-12V, 18W(MAX) (PEP-S1000 with two ports, other models with one port)		
USB-C output	Type-C	PD3.0,5-20V, 60W(MAX)	PD3.0,5-20V, 60W(MAX)	PD3.0,5-20V, 100W(MAX), PD3.0,5-20V, 27W(MAX)
Lighting	LED	Three levels, 1W(MAX), 2W(MAX), SOS		None
Wireless charging	Power	10W, Distance 3-8mm		
Charging	Adapter charging	19V3.78A about 5h	19V3.78A about 8h	24V5A about 10h
	Solar charging	12-30V, Maximum 5A	12-30V, Maximum 5A	12-30V, Maximum 7A
Product weight	Net weight	3.35kg	5.2kg	11.2kg
Product volume	Host volume	215*160*162mm	260*170*172mm	340*231*206mm
Operating temperature	Charging temperature	0~45°C (32-113°F)		
	Discharge temperature	-10-45°C (14-113°F)		
Storage temperature		-10~50°C (14-122°F)		

5. Product Use Instructions

5.1 How to Charge

The product is designed with two charging ports, including a conventional adapter charging port (which can also be connected to a solar panel) and a PD port. At the same time, the battery level indicator will show that it is increasing.

The product has a charging protection function, once the product is fully charged, it will automatically stop charging. It is recommended to disconnect the charging connection in time after the product shows that it is fully charged.

The battery in the power station will have self-discharge phenomenon, so even if the power station is not in use, it needs to be charged regularly. Generally, it needs to be recharged to 100% every 3-6 months.

If the battery in the power station cannot be charged as soon as possible after discharge, it will have a certain impact on the capacity and life of the battery. Therefore, after the power station is discharged, especially after the battery is discharged to the cut-off voltage, it should be charged as soon as possible when there is commercial power.

During the charging process (adapter or solar charging), the PEP-S1000 will display the charging power and remaining charging time (PEP-S300 and PEP-S500 do not have this function, you can judge by the battery percentage). If the plug is inserted or unplugged or accidentally interrupted for a short time during the charging process, the power station will no longer display the charging power. At this time, you need to wait for the battery percentage to stop flashing and then plug it in again, and the power station can resume normal charging.

5.1.1 Solar Charging

The adapter charging ports of the three specifications can be connected to the solar panel for charging (PEP-S1000 needs to use the adapter DC5521/DC6430 in the accessory). This port can be connected to the 100W charging panel using the cable in the accessory. In addition, the PEP-S1000 product is also equipped with a high-current solar charging Anderson interface below the adapter port. The rated power of the solar charging port of the 1000W power station is 120W. Therefore, if you need to charge at full power through this port, considering that the output power of the solar panel under normal lighting conditions is about 40-60% of the rated output power, it is recommended to use two 100W solar panels. In this case, a dedicated parallel cable is required. .

The product is equipped with MPPT system inside, the product will start to charge automatically when connected to an adapter or solar panel, the battery icon will scroll and the battery percentage will be displayed at the same time. The power of the solar panel is greatly affected by the light, so there may be a fluctuation of input power, which is normal.

5.1.2 Adapter Charging

Insert the AC input of the adapter into the wall power. Insert the DC output of the adapter into the adapter charging interface, the battery icon scrolls, and the battery percentage is displayed at the same time.

5.2 Product Output (Power Consumption)

The product has high and low voltage, high and low temperature, multiple overcurrent, short circuit protection and other protection circuits. If the output is suddenly interrupted (except for normal automatic shutdown and normal battery discharge cut-off

shutdown), please first check whether the peripheral electrical appliances exceed the power or whether there is a short circuit, and then restart to check whether there is power. Please turn off the product after use in order to save energy.

This product is designed with 4 areas of functional output, namely DC area, USB area, AC area and Light area (PEP-S1000 does not have this function). Each zone is provided with a corresponding button for turning on or off the output of all interfaces or functions of the corresponding zone. Press the button of the corresponding area to open all interfaces in the corresponding area. Press the button again to close all interfaces in the corresponding area.

5.2.1 AC Output

Press the AC button in the AC area, and the AC output will be turned on, the AC icon and the current frequency will be displayed in the screen. In this case, press the AC button will turn off the AC output. It should be noted that if the load is not connected, please turn off the output in time, because the inverter (AC output) has losses even it is no-load, in case of urgent need of electric energy, the unnecessary power consumption should be minimized..

When AC output, the battery power indicator will flash and sound alarm (the buzzer sounds 7 times) when the remaining power is 10%, reminding the user to turn off the important connected equipment as soon as possible. The product will automatically shut down when the remaining power is 5-7%. The remaining power can still be used for DC and USB parts.

5.2.2 DC Output

Pressing the DC button in the DC area will turn on the DC5521 and CigaretteLighter outputs, the DC icon will be displayed on the screen. Pressing the DC button in this case will turn off the DC5521 and CigaretteLighter outputs.

5.2.3 USB Output

Pressing the USB button in the USB area, the USB outputs will be turned on, and the USB icon will be displayed in the screen. In this case, pressing the USB button will turn off the USB outputs.

TYPE-C output: Since the TYPE-C output is bidirectional and can be charged, the TYPE-C icon will light up when the dedicated line is plugged in and the other end is connected to the corresponding device. If a powered device is connected, the product will display the output power. If it is connected to a power station device, the product will display charging.

5.2.4 LED Lighting(PEP-S1000 does not have this function)

Click the LED button in the LED area to turn on the LED lighting, and click the buttons in turn to enter the normal mode, high brightness mode, and SOS mode. Clicking the LED button in SOS mode will turn off the LED lighting.

5.2.5 Wireless charging

There is a wireless charging mark on the top of the power station (the circle in the middle is the center of the wireless charging), turn on the USB switch, and the wireless charging will be turned on. Please place the phone in the center, wait for a few seconds for the power station to connect with the phone, and then start wireless charging. At this time, the phone will show that it is charging.

6、 Other instructions

6.1 Power Reserve

The storage capacity of the power station marked in the industry is the rated value. The rated power storage capacity of the power station is indicated in the power station manual. Generally, *Wh will be directly marked, and the rated voltage (V) and rated capacity (mAh) will also be marked according to the marking method of the power bank in the past. Power storage capacity (Wh) = rated voltage *rated capacity (mAh)/1000.

6.2 The Amount of Power Actually Released by the Power Station

The amount of power actually released by the power station is related to the following parameters:

6.2.1 Ambient Temperature

The ambient temperature has a great influence on the power discharged by the battery. When the electric vehicle is used in a cold area, the battery life will be shortened. Generally speaking, based on the rated 25 degrees Celsius (77 degrees Fahrenheit), the power released will be reduced by 10-15% for every 10 degrees higher than 0 degrees. For every 10 degrees lower than 0 degrees, the released power will be reduced by 30%.

6.2.2 Efficiency

In the process of discharge, the need of the battery voltage changing inevitably leads to the loss of energy, which especially exists in the inverter(AC output) part. The general loss of the energy is about 10%. Therefore, under full load, the measured power released on the output is only 90% of the rated capacity.

6.2.3 The Magnitude of the Discharge Current

The discharge process of all batteries is essentially chemical reaction process, and the magnitude of the discharge current is equivalent to the intensity of the chemical reaction. Generally speaking, more capacity can be released with the battery discharging at a small current (in fact, the capacity of the battery is also measured under the current conditions specified by an industry or national standard). So when the power station is fully loaded, the released capacity is about 90% of the stored power under current conditions.

Based on the above analysis, the capacity released by the power station in the industry is obtained by multiplying the rated power storage capacity by the corresponding coefficient. In extreme cases, such as winter and full load, the released capacity may be much lower than the rated storage capacity. This is similar to the situation of electric vehicle, whose cruising range is affected by many factors, and the mileage marked is the test data under standard conditions.

For example:

PEP-S300, rated power storage 296Wh (nominal power storage at 25 degrees Celsius)

If the load is small and the ambient temperature is the rated value, the theoretically calculated actual output power is

$$296 \times 0.95 = 281.2 \text{ Wh (Equation 1)}$$

If the load is small and the current temperature is 10 degrees Celsius, the theoretically calculated amount of electricity that can be released is

$$296 \times 0.95 \times 0.9 = 266.4 \text{ Wh (Formula 2)}$$

If it is fully loaded and the current temperature is 10 degrees Celsius, the theoretically calculated amount of electricity that can be released is

$$296 \times 0.9 \times 0.9 \times 0.9 = 215.8 \text{ Wh (Formula 3)}$$

The above is a theoretical calculation, considering some small losses., the actual value is generally slightly lower than the theoretical calculation value.

6.3 Power Load Time

Divide the data in Equation 1 by the nominal power (W) of the electrical appliance to obtain the actual use time (h), which can be converted to minutes (min) by multiplying by 60.

Example calculation:

Under the working conditions of the above Equation 1, the calculated storage capacity is 281.2 Wh in formula 1. If the battery configured in the mobile phone is 3100mAh as an example, the theoretically calculated number of charging times is $281.2 / (3.8 \times 3100 \text{mAh} / 1000) = 23.8$ times, about 24 times.

Under the working conditions of Equation 2 above, the calculated power storage is 266.4Wh in Equation 2, if it is connected by a laptop. In general, the laptop consumes about 30W, and the theoretically calculated power supply time is $266.4/30=8.88$ hours.

Under the working conditions of Equation 3 above, the calculated power storage is 215.8 Wh in Equation 3. If the load power is 300W, the discharge time is about $215.8/300*60=43$ minutes.

6.4 Output Power of the Power Station

6.4.1 Definition of Rated Power

The rated output power of the power station refers to the rated output power of the inverter(AC output) part, and the power of the rest parts of station is generally not marked because their power are relatively small compared to the inverter's(AC output).

The power station can output the full power of the ac part and the other full power at the same time.

6.4.2 Precautions for Choosing the Power of Power Station:

Some electrical appliances, such as hair curlers, laser printers, and non-inverter loads with motors(air conditioners, fans, etc.), have a large starting current(3-5 times the nominal power) and a long starting time about 10S, therefore, it is normal for the power output to exceed a lot during this period. Pay special attention to the rated power of the power station should be greater than the rated power of these appliances multiplies the multiple of their starting current.

6.4.3 Displayed Power Description:

Some electrical appliances may be marked with their rated power, which can also be slightly different from the actual number depending on the computational method and output voltage. Therefore, if the power displayed by the power station is not much different from the rated power of the device (for example, 20%), generally speaking, it should be taken as a normal phenomenon. If the number exceeds a lot, it is necessary to verify the power station capacity or to confirm whether the power station or load is faulty.

6.5 Remaining Percentage of Power Storage Capacity and Available Time

Due to the non-linearity of battery discharge, there will be a certain inaccuracy in the percentage of remaining capacity of the power station. But when the remaining 10% is displayed, the remaining battery icon will start to flash, reminding you to turn off the relevant load as soon as possible. When the remaining power is displayed between 5-7%, the power will automatically turn off. At this time, the AC output can no longer be used, but the remaining power is available for DC and USB output until discharged to 0%, which mainly considers the emergency use of important equipment such as mobile phones.

The remaining time is in hours, so when the usable time is shorter than 1h, please refer to the remaining battery percentage value to judge the remaining discharge time.

6.6 Adapter Charging

The battery percentage will be displayed when you use adapter to charge. Please note that due to the characteristics of the battery itself, after the charging is completed, the voltage will drop. There is often a phenomenon that the displayed value of the charged power is different from the actual value, especially in the middle stage of charging. It is recommended that the battery be fully charged before use, in consideration of the practical application of the station.

6.7 Solar Panel Charging

When the solar panel is used with the portable power station, due to the limitation of the charging circuit of the power station itself, the charging power often cannot reach the rated power of the solar panel, which is a normal phenomenon.

The rated power of the solar panel is obtained by testing with a standard light source in the laboratory, however, in actual use, it is closely related to the intensity of sunlight, the position of the solar panel and other factors. Therefore, when the power station is charged by the solar panel, the displayed charging power and the rated power of solar panels are quite different.

When using the portable folding bag, each piece of the solar panel in the bag is connected in parallel, but even so, if sunlight of a certain piece of solar panel is blocked, at the moment when the shadow first appears, because of the default of the computation of MPPT algorithm, the output power of the portable power station will be 0 in a short time, which is a normal phenomenon. After a short time, it will output the power according to the actual received energy at this time.

6.8 Storage of Power

For transportation and storage safety, the initial power of the power station is generally between 30-60% when it leaves the factory, and it can generally be stored for 3-6 months. It is recommended to fully charge the product after receiving it, and then charge and activate it every three months.

6.9 Fast charging

The power station can be charged at the same time with the conventional charging port and the PD port, in which way, the charging speed will be improved.

Regular charging time: rated power storage/adaptor power*1.5

Fast charging time: rated power storage / (adaptor power + power of the adaptor connected to the PD port) * 1.5

Note: Please use the original adapter. The interface of other power adapters may not match. In addition, due to the limitation of the internal circuit of the power station, the charging power will not increase with the increase of the power of the external charger.

6.10 Discharging and Charging at the Same Time

This product supports discharging and charging at the same time. When the output power is greater than the input charging power, the battery power will be gradually reduced, and when it is reduced to the protection voltage, the output will be turned off. When the output power is less than the charging power, it will keep charging the battery, but the charging time will be longer.

6.11 Automatic Shut-down

Product loading :After the product is discharged to the protection voltage, it will automatically shut down.

Product not loaded :Generally speaking, after the output is turned on, if the load is not connected for a long time, the power station will automatically shut down to avoid running out of power. If you need to use it, you can start it again. See the table below for automatic shutdown time:

List of automatic shutdown time of each port

Specifications	AC output	DC output	USB port
PEP-S300	30-45minutes	8hours	8hours
PEP-S500	30-45minutes	8hours	8hours
PEP-S1000	25-35minutes	2hours	55-65seconds

Under normal working conditions, if the power of the equipment exceeds the specified value, the power station will shut down. You can use a device with a slightly lower power for testing. If it can work normally, it means that the power of the current device exceeds the rated power of the power station.

There are various abnormal protections inside the product. If the appliance device is not faulty and the power station automatically shut down, please refer to 7 Product Troubleshooting for further details or repair.

6.12 Fan

The product fan is temperature controlled, but when the AC is turned on, the fan will also run for a few seconds and then stop. Then, according to the conditions of the connected appliance,

when the internal inverter(AC output) heats up to the set temperature, it will be turned on to dissipate heat. Therefore, it is normal for the fan to run suddenly during use(The fan icon in 4 of the 3.2 display will rotate). The fan will stop running when the temperature drops. By doing so, when the power of the connected device is small, the fan will be turned off in order to keep quiet, and prolongs the life of the fan.

6.13 Output voltage and frequency of the product

The output voltage and frequency marked on the product are its rated value, in other words, the standard value. However, in the process of product design and actual operation, the internal adjustment system will automatically adjust according to the working conditions of the product, and the output voltage and frequency will change slightly with different loads, which is a normal phenomenon. Taking the AC output as an example, the rated output is 100V, and the actual output range is may be within the range of $100\pm(5-10)$. The same as the commercial power we usually use, the voltage will fluctuate around the rated value, which is normal and is also allowed by the connected load.

7.Product Troubleshooting

There are multiple protections inside the product, so when the battery is discharged to the cut-off voltage, abnormal charging, abnormal temperature, and abnormal equipment will lead to power shutdown protection. Abnormalities such as overload over temperature can be observed from the display. If the power station stops working (abnormal), first, check whether the input and output are abnormal. After the investigation is completed, you can turn on the power again. You can first open the function keys that are not currently in use to initially judge the power status. For example, if an AC device is connected at this time, you can first open the USB port and observe the power station and display indications. If there is no abnormality, You can turn on the AC output again and observe the working status of the power station.

7.1 The product cannot be charged

1) The input and output of the adapter are not plugged into place: Plug the input and output of the adapter into place.

2) Not use original adapter: use the original adapter provided with the product.

3) When the ambient temperature exceeds the specified temperature, the internal protection of the power station is turned on: Lithium batteries are extremely dangerous when used above the specified temperature, so if the ambient temperature is very low or high, please wait for the product temperature to recover before use. Using ambient temperature reference 4 for instructions.

4) Adapter failure: Judging by observing the indicator light on the adapter, if the indicator light is off, it proves that the adapter is faulty, and the adapter should be replaced.

5) Charging circuit fault: The judgment condition is that the adapter is normal and the above faults are eliminated, but it still cannot be charged normally, then professional maintenance is required..

7.2 The product Out of service after loading

1) The power of the connected load exceeds the specified value (the exclamation mark symbol in 4 of the 3.2 display screen will light up after starting the machine for a while), please note that although the nominal power of some loads is small, the starting current is large, this will also cause the product to enter an overload protection state. To use these loads, you need to select the power station according to the maximum power, see the description of 6.4.2.

2) There is a short-circuit fault in the connected load (quick shutdown after startup, the exclamation mark symbol in 4 of the 3.2 display screen will light up): The confirmation of this fault requires professionals to use special tools to measure (such as a multimeter to measure resistance of connected devices).

In the event of overload or short-circuit fault, it can be verified by the normal low-power load. If there is no problem with the low-power load, the connected load is generally overloaded or short-circuit fault.

3) The over temperature protection icon in 4 of the 3.2 display is lit and there is no output: it means that the internal inverter temperature is too high, and the power station stops output for protection. Normal ambient temperature and normal load generally do not occur in this situation. If it occurs, please check according to the following suggestions: First, whether the ambient temperature is too high, causing the internal temperature rise of the power supply to exceed the specified value; Second, there are cooling holes on the front, back and both sides of the power station. You need to leave at least 20cm of space for air circulation and heat dissipation. So you should also be careful not to place some light and thin paper, plastic film, cloth and other soft materials on the surface of the product, because the fan will generate suction when it rotates. When these materials are adsorbed, it will greatly affect the heat dissipation of the power station and lead to internal protection. After eliminating the above reasons, the power station can be used again after cooling down for a while. However, if the above reasons are excluded and the over-temperature protection occurs again, you need to contact the manufacturer to find out the cause of the failure and get professional maintenance.

4) The product itself is faulty: If the above-mentioned abnormality has been eliminated and the product still cannot work normally, it may be the fault of the power station itself, which needs to be repaired.

7.3 Automatic shutdown when the product has no output

1) In order to avoid the power station running at no-load and causing the battery to run out of power, and no power when the power station needs to be used, the power station will detect the load current and turn off the output when the load is small and maintained for a period of time (see the description in 6.11 for details). In this case, restart to use it.

2) Shut down when the connected load is overloaded or short-circuited, see 7.2.

7.4 The product cannot be turned on

The ambient temperature exceeds the specified temperature to cause the internal protection of the power station. Lithium batteries are extremely dangerous when used above the specified temperature. Therefore, if the ambient temperature is very low or high, the internal temperature protection of the product will have no response when the product is turned off. If it is turned on, it will stop charging and discharging. In this case, please wait for the product temperature to recover before use. Using ambient temperature please refer to the description in 4 of this manual.

If there is no obvious abnormality in the ambient temperature, It may be that the battery has been stored for too long, causing the battery to run out of power. or the battery has not been charged in time after the last discharge. Please plug in the adapter and charge it for at least 1 hour before using it. The battery in the power station needs regular maintenance, please refer to the instructions in "5.1 How to Charge" in this manual.

If the above measures are taken and it still cannot be turned on normally, and there is no response after pressing any button, the power station itself is faulty and requires professional maintenance.

7.5 The discharge time of the product is very short (the discharge time often changes or differs from the actual test)

1) The discharge time of the product is affected by many conditions, please refer to the description in "6.2 The actual amount of power released by the power station" and "6.3 Power station loading time" in this manual.

2) The ambient temperature has a great influence on the battery discharge time, especially when the ambient temperature is lower than 0 degrees. please refer to the description in "6.2 The actual power released by the power station" and "6.3 Power station loading time".

3) More product cycles. The capacity of the battery will gradually decay with the increase of the number of cycles. Generally, the capacity when reaching the rated cycle life is only 80% of the rated capacity. This is normal and can continue to be used, but the discharge time will be shortened accordingly.

4) The time displayed by the power station is changing or different from the actual one: the remaining time displayed by the power station is calculated based on the current stored power and actual output power. The actual load, especially the computer load, the power of the computer changes at any time with the operation, so the time displayed by the power station also changes frequently. This also causes the displayed time to be slightly different from the actual discharge time. Please refer to the remaining power change.

5) Percentage change of battery power: Lithium battery discharge has its own characteristics, the voltage changes at the initial and final stages of discharge are large, and the voltage change is relatively smooth in the middle stage. The measured residual power percentage has a certain relationship with the voltage, so It is normal for the displayed power percentage change rate to fluctuate.

7.6 Wireless charging is abnormal

1) Wireless charging is not possible: First, make sure that the USB output switch of the power station is turned on. The wireless charging function be used only when the USB output switch is turned on. Second, the location of the mobile phone is wrong, please move the location of the mobile phone. The wireless charging receiving position of the mobile phone is slightly different. If the position is clear, please align the position of the wireless charging center of the mobile phone with the middle dot of the wireless charging logo on the top of the power station. If it is not clear, please move the mobile phone slowly (because the docking response takes several seconds.) until the phone shows that it is charging. Third, the distance between the mobile phone and power station may be too large due to the use of the casing. The specified distance is 3-8mm, and the effect will be better when the distance is close!

2) The surface of the wireless charging area is hot: Because the coil of the wireless charging will heat up, the wireless charging area will be a little hot. But please pay special attention that there should be no metal material on the back of the phone, which will cause abnormal heat and can't charge properly. Please refer to the last warning about wireless charging in "Warning" in this instruction!

7.7 The product shell heats up

When the power station has a large load, the inverter at the top and the battery at the bottom will generate heat, and the cooling fan will start to dissipate heat. Even so, the temperature of the casing will still rise. The shell temperature of the concentrated heat area will reach about 40 degrees (related to the ambient temperature), this is a normal phenomenon.

7.8 The DC and USB outputs of the power station are abnormal

1. The corresponding switch is not turned on: Confirm that the DC and USB switches have been pressed, and the corresponding icons are lit.

2. Output overload protection: When the DC and USB outputs are overloaded, the output will be automatically cut off, and the corresponding icons will flash. At this time, you need to disconnect the connected faulty device from the power station, then press the DC switch again and confirm that the corresponding icon is no longer flashing but always turn on, and then it can be used again.

3. There is no response when the device is turned on and the corresponding icon flashes: some DC devices have a large starting current (such as a car vacuum cleaner), and the power station may have no response at the moment after startup, or it may enter the protection within a short time after startup. In this case, please judge and operate according to the description in 2.

8. After-sales Service

If the product fails, please operate it according to the instructions. If troubleshooting cannot be done by yourself, please contact the after-sales service personnel of our company with following information: product model, date of purchase, contact number, detailed address, and product failure description. Please cooperate with and answer the detailed inquiries of our company's after-sales service engineers, including on-site conditions, fault performance status, frequent/occasional accidents, and whether the operation procedures are wrong, etc., so that our company's after-sales engineers can find the reason and then reply (or guide) the user how to fix the failures. If you still cannot solve the problem, please contact your dealer.

- The warranty period is 12 months from the date of sale;
- During the warranty period, product defects in material and workmanship and damage caused by non-human causes, our company will provide free maintenance and replacement parts, the broken parts belong to our company;
- During the warranty period, there are some circumstances where free maintenance service is not provided:
 - Disassemble the product without permission;
 - Damage to the surface coating and appearance is not covered by the warranty;
 - The user does not use it according to the instructions;
 - Failure or damage caused by accident, man-made, environmental and other factors (operation error, collision, unreasonable voltage, moisture, etc.);
- Product packaging and product accessories are not covered by the warranty.

After-salesServiceGuaranteeCard

Productmodel	
Dateofpurchase	
Buyingmerchant	
Customeraddress	
Contactnumber	
BriefIntroductionof FaultProblems	