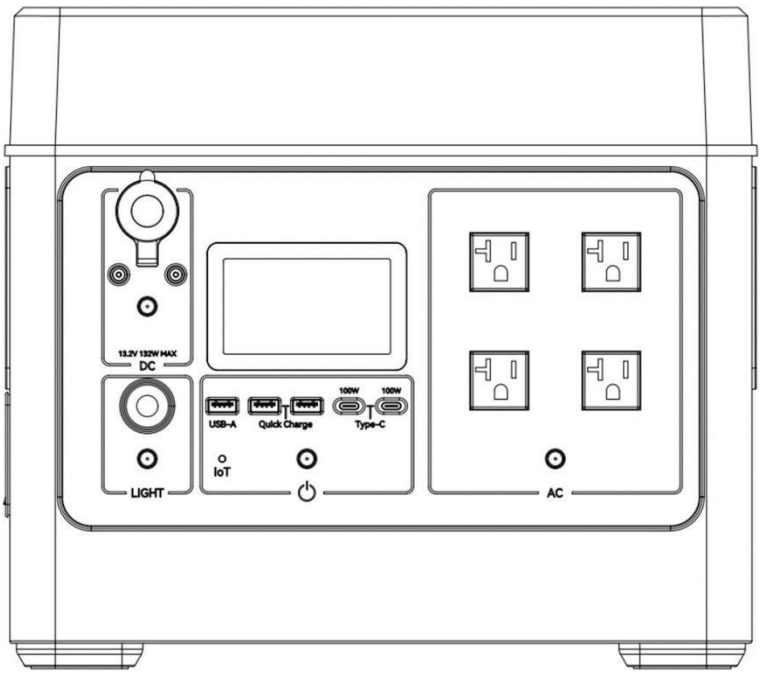


Portable Power Station

Singo2000Plus

User Manual

Version:V1.0

Contents

About This Manual

This manual describes the product information, installation, electrical connection, commissioning, troubleshooting, and maintenance. Read through this manual before installing and operating the product. All the installers and users have to be familiar with the product features, functions, and safety precautions. This manual is subject to update without Notice.

Features

①Home backup Portable Power Station.

②0%~100%, 1.5 hours super-fast charging.

③$LiFePO_4$ battery cells, 4000+ life cycles.

④Multi-function output ports.

Applicable Model

The manual can not include complete information about the photovoltaic (PV) system.
This manual is only for the product below:

Model	Rated Output Power	Battery Capacity
Singo2000Plus	2500W	2048Wh

Target Audience

This manual applies to trained and knowledgeable technical professionals. The technical personnel have to be familiar with the product, local standards, and electric systems.

How to Use This Manual

Read the manual and other related documents before performing any operation on the product. Documents must be stored carefully and be available at all times. Contents may be periodically updated or revised due to product development. The information in this manual is subject to change without notice.

Symbol Explanation

Singo2000Plus is designed and tested in strict accordance with international safety regulations. Read all safety instructions carefully prior to any work and observe them at all times when working on or with the product operation and maintenance,as any improper operation might cause personal injury or property damage.

DANGER	Failure to follow instructions may result in property damage, major accidents and serious injury.
CAUTION	Failure to follow instructions may result in property damage and more serious injuries.
NOTICE	Failure to follow instructions may result in property damage and minor injuries.

	Potential risks exist. Wear proper PPE before any operations.
	DANGER High voltage hazard. Disconnect all incoming power and turn off the product before working on it.
	High-temperature hazard. Do not touch the product under operation to avoid being burnt.
	Wait five minutes after power failure to ensure that the capacitor is discharged to a safe voltage.
	Do not disconnect under load.
	The components of the product can be recycled.
	It must not be disposed of as ordinary garbage, but recycled in a special way.
	Read through the user manual before any operations.
	CE mark.

1 Safety Instructions

Please strictly follow these safety instructions in the user manual during the operation.

NOTICE

■ The product has been designed and tested strictly according to international safety regulations. Read all safety instructions carefully prior to any work and observe them at all times when working on or with the product.

■ Personnel who install or maintain the device must be strictly trained and learn about safety precautions and correct operations.

■ Only qualified professionals or trained personnel are allowed to install, operate, maintain, and replace the device or parts.

■ Appropriate methods must be adopted to protect the product from static electricity damage. Any damage caused by static electricity is not warranted by the manufacturer.

1.1 General

DANGER

■ Do not disassemble or puncture the battery with sharp objects in any way without official authorization, as we are not responsible for spontaneous combustion of the battery or any danger to persons.

■ Damage to the battery may cause the electrolyte to leak. If the electrolyte leaks, do not touch the leaked electrolyte or evaporated gas and contact the after-sales service center immediately for assistance.

■ If the product accidentally falls into water during use, after taking the product out of the water, place it in a safe open area until it is completely dry. After drying, the product should not be used again and should be disposed of according to the disposal method in this manual.

CAUTION

■ This product contains batteries, do not place this product near a heat source, such as a fire source or a heating furnace, or it will cause spontaneous combustion of the batteries and may even cause an explosion.

■ This product cannot come into contact with any liquid, do not immerse this product in water or get it wet. Do not use the product in the rain or in a wet environment.

■ Do not use this product in an environment with strong static electricity or strong magnetic fields, as some of the protective functions of the machine may malfunction.

■ Do not use unofficial parts or accessories. If you need to replace them, please check the relevant purchase information from our official sales channels.

■ Do not hit, drop or step on the device. If there is any serious external impact, please turn off the power and stop using it immediately.

■ If the product is seriously damaged, please keep it away from combustible materials and people, ensure the safety of the surroundings, and scrap it according to the requirements of

local laws and regulations.

NOTICE

■ Too high a temperature may cause the battery to catch fire; too low a temperature will seriously degrade the product's performance and may not meet the requirements for normal use. When using this product, please strictly follow the ambient temperature of this user manual.

■ If there is any dirt on the interface of this product, please use a dry cloth to wipe it clean, otherwise it will cause poor contact, which may lead to energy loss or failure to charge.

■ Prohibit stacking other heavy objects on top of this product.

■ Avoid using the product in dusty places, otherwise it will cause the fan to be clogged.

■ Keep the product out of reach of children and pets to prevent accidents.

1.2 Operation

DANGER

■ Do not disconnect under load while the unit is running.

CAUTION

■ The temperature of the surface can exceed 50℃ during operation. Make sure it has cooled down before touching it and make sure the product is out of reach of children.

1.3 Maintenance Instructions

DANGER

■ High voltages may cause electric shock, resulting in serious property damage, serious injury or death, or severe property damage Before performing maintenance, turn off the power of product and strictly observe the safety precautions in this document.

■ Turn off the power of the product and wait at least 5 minutes before performing maintenance tasks.

CAUTION

■ Do not touch energized device when it is too hot.

1.4 Battery Safety Instructions

CAUTION

■ If the battery is fully discharged, recharge it in strict accordance with the user's manual.

■ Factors such as temperature, humidity, and weather conditions may limit the battery's current and affect its load.

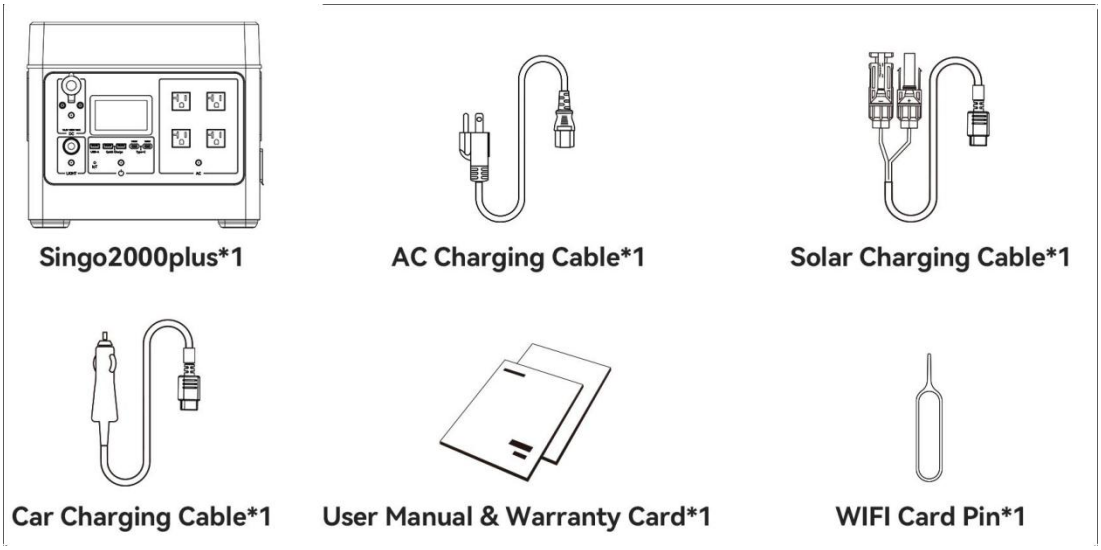
■ If the battery fails to start, contact the after-sales service immediately. Otherwise, the battery may be permanently damaged.

2 Product Description

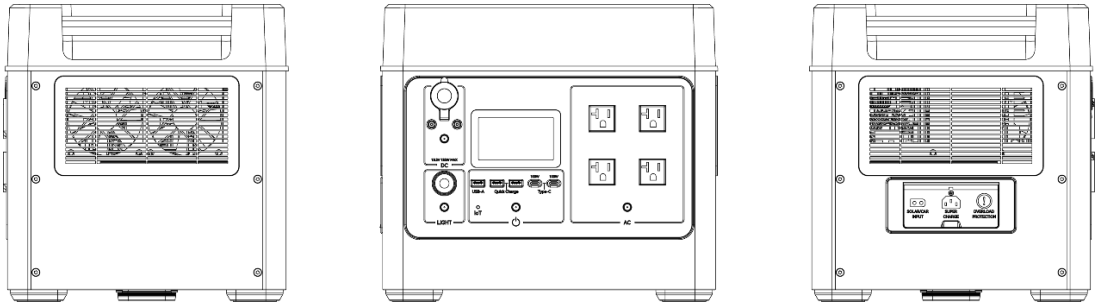
2.1 Package Contents

NOTICE

■ After receiving the outer packaging of the product, please check whether the product delivery is complete according to the packaging information. If there is any abnormality, please contact the after-sales service centre as soon as possible.

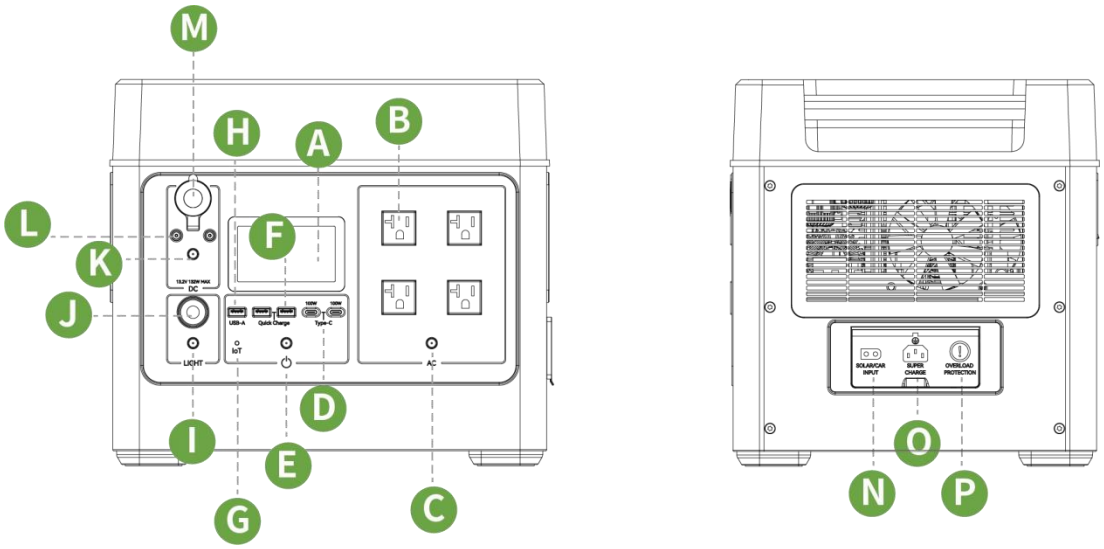


2.2 Product Views



2.3 Operating Instruction

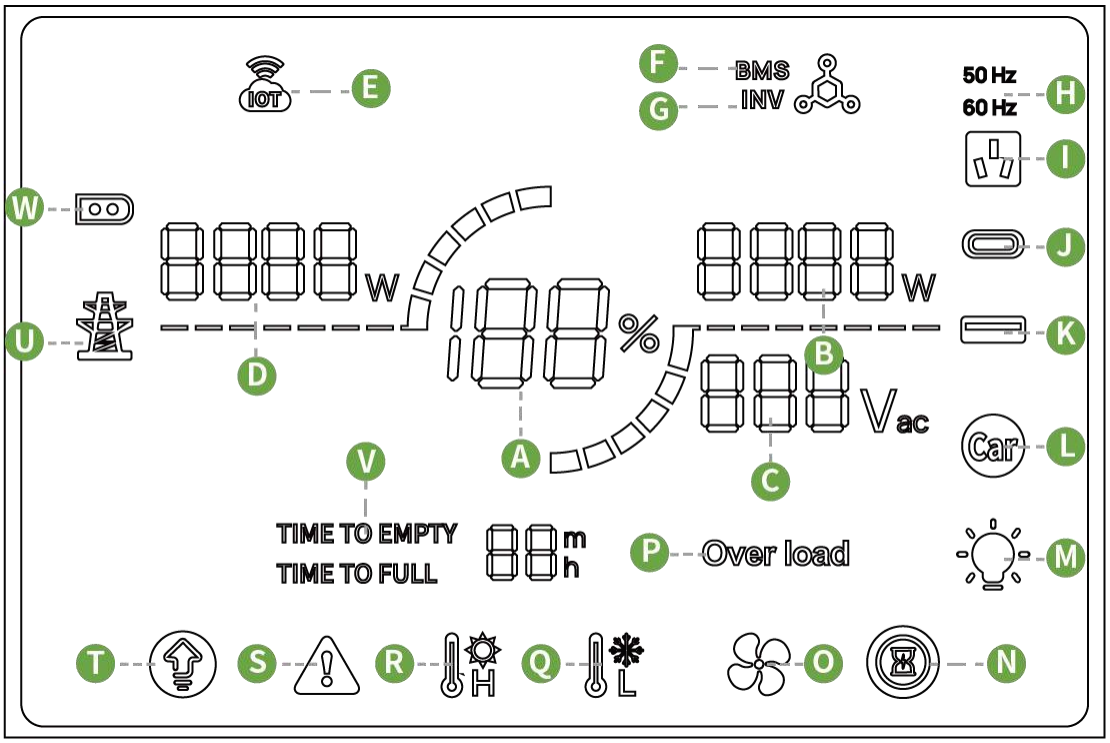
2.3.1 Product Details

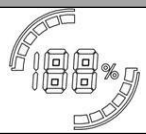
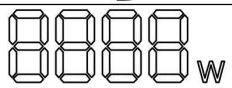
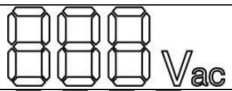
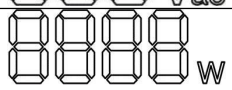
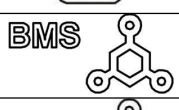
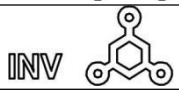


No.	Name	Description
A	Display Screen	Display user interface information.
B	AC Output Ports	Provide AC output.
C	AC Power Switch	Short press to switch AC output on/off.
D	Type-C Quick Charge Port	100W Type-C Quick Charge Port.
E	Main Power Switch	Press and hold to power on/off.
F	USB-A Quick Charge Port	18W USB-A Quick Charge Port.
G	IoT Switch	Use the card pin to press and hold to networking configuration.
H	USB-A Port	12W USB-A Port.
I	Reading Light Switch	Short press to switch the reading light on and off and switches the light mode.
J	Reading Light	Provision of lighting (Low light mode/strong light mode/SOS rescue beacon mode).
K	DC Power Switch	Short press to switch DC output on/off.
L	DC Output Ports	Charging of devices through the DC 5525 port.
M	Cigarette Lighter Output	Used for general-purpose on-board electrical appliances, and to charge 12V lead-acid batteries for small cars (please operate and use under the guidance of professionals).
N	Photovoltaic/Car Charging Port	Maximum support for 1000W solar charging; car charger can support 12V/24V maximum 10A car power input (please be sure to start the car when using, so as not to cause the car battery loss of power can not start).
O	AC Charge Port	Connect to the grid for charging.
P	Overload Protection Switch	When the input current is too high during the

		charging process, the AC charging port will be protected (manifested by the protection button popping up). After confirming that the machine has no faults, press the protection switch to reset and resume charging.

2.3.2 LCD Display Instruction



No.	Icon	Description
A		Indicates battery charging/discharging status and displays the battery SOC in real time.
B		Real-time total output power.
C		Real-time AC output voltage.
D		Real-time total input power.
E		Indicates monitoring connection status.
F		Indicate BMS communication abnormality.
G		Indicate inverter communication abnormality.

H		Display frequency.
I		Indicate AC output active status.
J		Indicate the active status of the PD Type-C interface.
K		Indicate the active status of the USB-A interface.
L		Indicate DC output active status.
M		Indicate the active status of the Reading light.
N		Indicate silent charging active status.
O		Indicate fan active status.
P		Indicate that the device is overloaded.
Q		Indicates low temperature fault.
R		Indicates over temperature fault.
S		Indicate battery failure.
T		Indicate AC constant power mode.
U		Indicate AC charge active status.
V		Indicate the time to be fully charged or discharged to empty.
W		Indicate PV charging/Car charging status.

3 Instructions for Use

3.1 Storage and Transportation

When the storage and transport of device is required, the following requirements shall be met:

DANGER

■ Do not place the product near sources of heat, such as in a car in direct sunlight, a fire source or a heating oven.
■ Do not transport products with more than 30% battery power.
■ Do not carry this product on board.

CAUTION

■ The device should be stored in a clean and dry place and protected from dust and water vapour.
■ When storing this product, seal it with an outer bag to avoid dust from entering and clogging the fan opening.
■ It is prohibited to store or transport the machine with metal necklaces, glasses, watches, hairpins or other metal objects.
■ If the machine is left unused for a long period of time, it will have an impact on its performance.
■ Please fix the product when transporting and avoid vibration and impact.

NOTICE

■ Maintain the storage temperature at -20°C to +45°C and the humidity at 5% to 95% RH without condensation.
■ The height and orientation of the device should follow the instructions on the box. The device must be stacked carefully to prevent falling.
■ Periodic inspections are required during storage. Replace the packing material if necessary.
■ After long-term storage, the device must be inspected and tested before it is put into service. Inspections and tests must be carried out by qualified personnel.
■ Keep this product out of the reach of children. If a child accidentally swallows parts, seek immediate medical attention.
■ If the machine Indicate a low battery at the end of use, please charge it before storing it. Otherwise, storing it in a low battery state for a long time may damage the battery inside the product. If the battery is severely low and has been idle for too long, the battery will enter deep sleep mode. If the battery enters deep sleep mode, it is necessary to charge the battery to wake up the product to restore the function of the product from sleeping state.

3.2 Charging Instructions

DANGER

■ The portable energy storage power station must be charged using the officially designated charging cable. We will not be responsible for any damage and all consequences caused by charging with a charging cable that is not officially provided.

CAUTION

■ After the machine has been continuously discharged at full capacity, if the product battery is in a high temperature state, it is recommended to wait for the product temperature to drop to ambient temperature before charging, otherwise the battery high temperature protection function may be triggered and charging may be prohibited. The product can be charged in the temperature range (0°C ~ 45°C). The ideal charging temperature range (15°C ~ 35°C) significantly extends the life of the battery.

NOTICE

■ When charging, please place the machine on a level floor and make sure there are no flammable or explosive materials around. When charging the product, please arrange for someone to be present to prevent accidents.

3.3 Battery Disposal

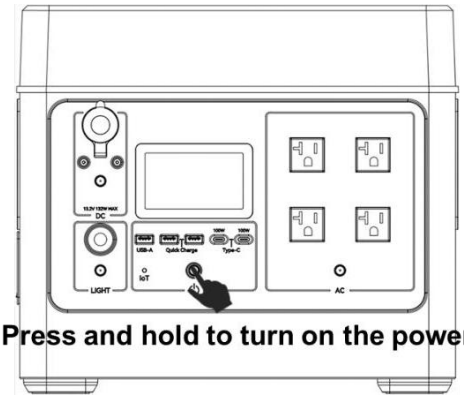
DANGER

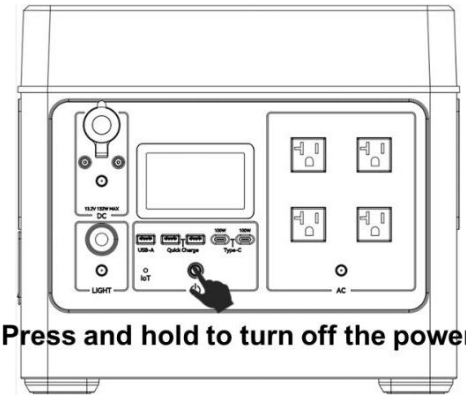
■ Always place the machine battery in the designated battery recycling bin only after it has been thoroughly discharged. Batteries are hazardous chemicals and should not be placed in the general waste bin.

■ Be sure to comply with local battery recycling and disposal laws and regulations.

4 Operating Instruction

4.1 Power ON/OFF





Power ON/OFF Ways:

① Press and hold the power button for 3~5 seconds to switch on.

② AC/Solar charger charging input access, the device is automatically powered on.

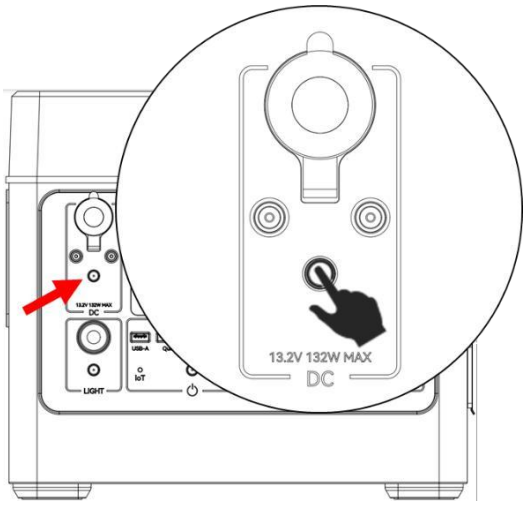
③ Press and hold the power button for 3~5 seconds to switch off.

NOTICE

■ The display will be automatically extinguished when the unit has continued for half an hour without any operation. When there is a change in operation, the display will be automatically lit.

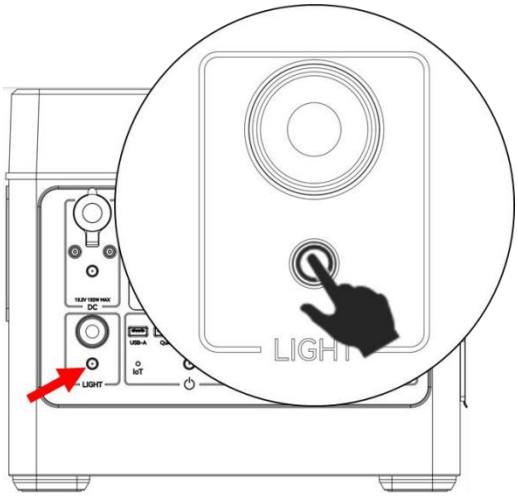
■ This product will enter sleep mode after 1 hour without input charging and without any loads connected to the device.

4.2 DC Output



Short press to switch DC output on/off.

4.3 Reading Light



① Short press to switch the reading light on/off.
② Short press to switch the light mode.
③ Light mode: Low light mode/strong light mode/SOS rescue signal flash.

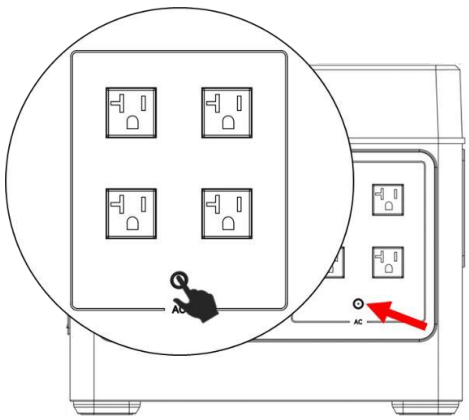
4.4 AC Output

DANGER

■ AC output has two kinds of specifications: 110V/230V, specific to receive the physical shall prevail, the specifications are set in the factory to complete, high-voltage and low-voltage specifications can not be changed. Before using the device, please check the voltage level of the device in advance, and regulate the use of electrical appliances, so as not to cause harm to the device, personal injury.

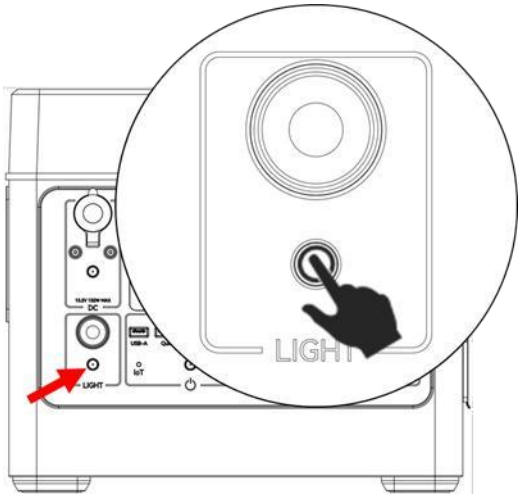
NOTICE

■ When the AC output is not in use, turn it off promptly to avoid loss of battery power.
■ If you want to turn off the power when the AC output power switch is on, turn off the AC output power switch first.



Short press to switch AC output on/off.

4.5 Slow/Silent Charging



① Slow/Silent Charging: when this feature is on, the device will run at 0.3C charging power when charging at 600W.

② Press and hold the reading light switch to turn on/off slow/silent charging.

4.6 Smart Drive Mode

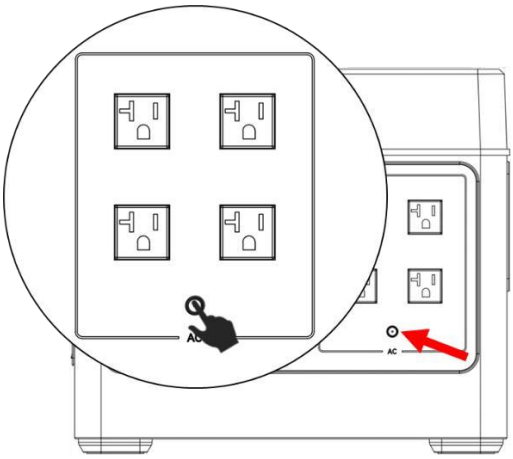
NOTICE

When using the Smart Drive Mode, please note the following:

■ This product cannot be grid-connected.

■ Smart Drive Mode is not available in charging status.

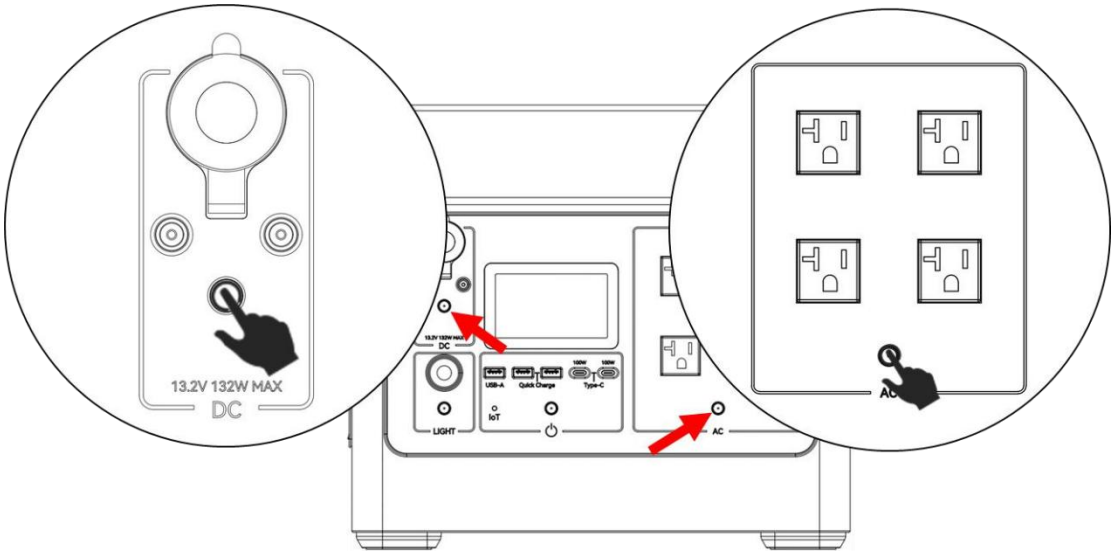
■ Smart Drive Mode is designed for resistive loads and is not suitable for all appliances such as electric heaters, electric saw, induction cookers, etc. Some electrical appliances with voltage protection(such as precision instruments, etc) are also not suitable for using Smart Drive Mode.



① When the load power is higher than the rated output power, Smart Drive Mode will be activated. When the portable power station recognizes that the power required by the load is higher than the rated output power, it can still power to the load. This allows you to use more types of electrical appliances, so that you can get an extraordinary experience.
② This product is enabled in Smart Drive Mode by default.
③ Press and hold the AC output switch to turn Smart Drive Mode on/off.

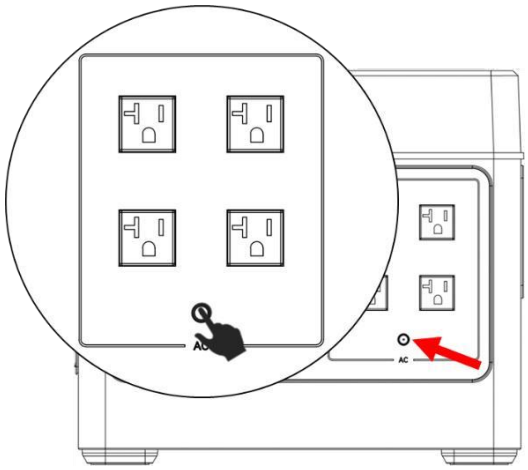
4.7 Other

Switching frequency:



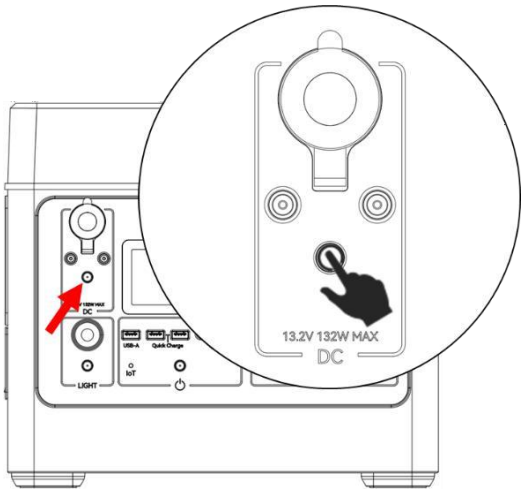
Press and hold the AC output switch and DC output switch simultaneously to switch the frequency 50Hz/60Hz.

Switching Voltage:



Double-click the AC output switch five times in a row to switch the AC output voltage.
110V specification device, switchable voltage: 100V/110V/120V.
220V specification device, switchable voltage: 220V/230V/240V.

Viewing device version number:



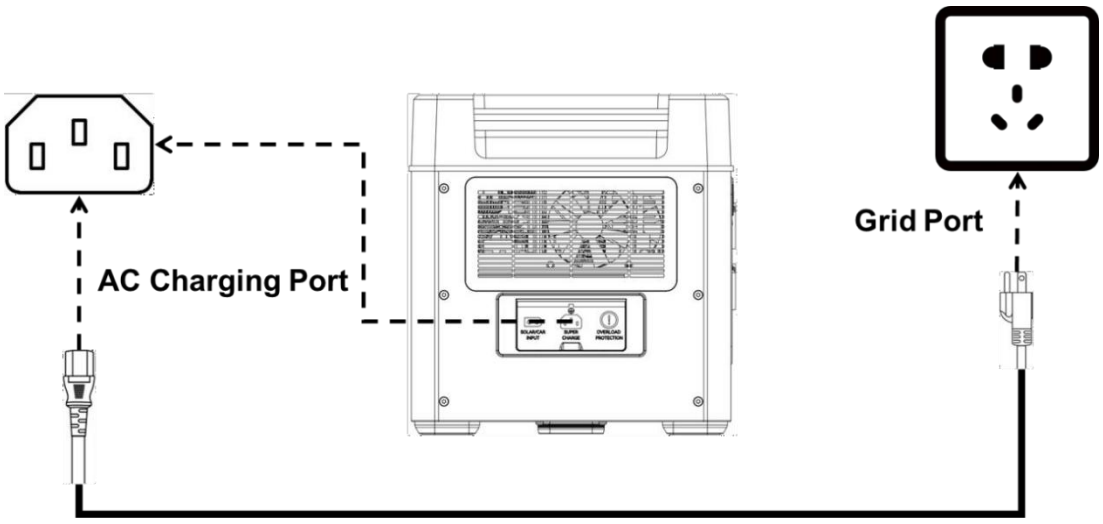
Press and hold the DC output switch to view the current device version number.

4.8 Device Charging

NOTICE
■ The charging process equipment determines the charging power based on factors such as the temperature and capacity of the battery cell, ensuring that the battery is in its optimal state.

AC charging

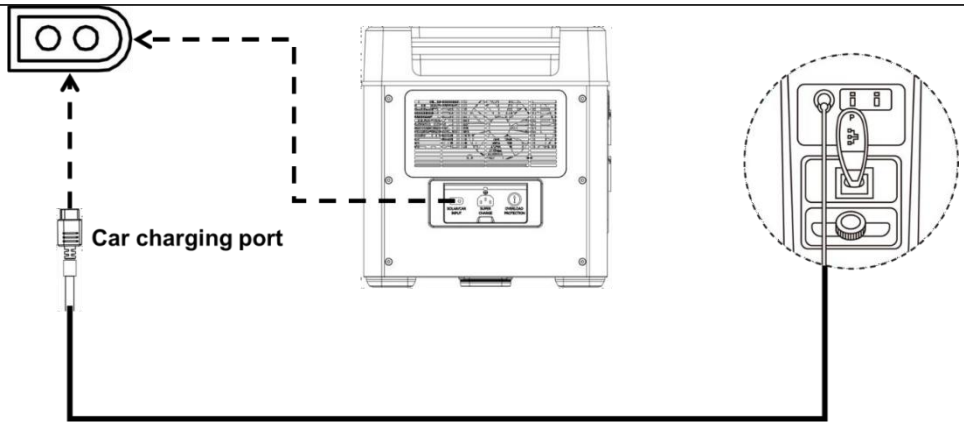
The inverter has a bi-directional current converter, which can either output AC power or charge the battery from the grid. The connection is shown in the figure below.



Car charging

CAUTION

■ This product can be charged by the cigarette lighter in your car. The connection method is shown in the instruction below. You need to use the car charger to charge the car after the ignition is turned on, so as not to cause the car battery to lose power and unable to start. Meanwhile, please make sure that the cigarette lighter plug of the car ignition port and the input cable of the car charger are in good contact. We will not be responsible for any damage caused by non-compliance with the specification.



Solar charging

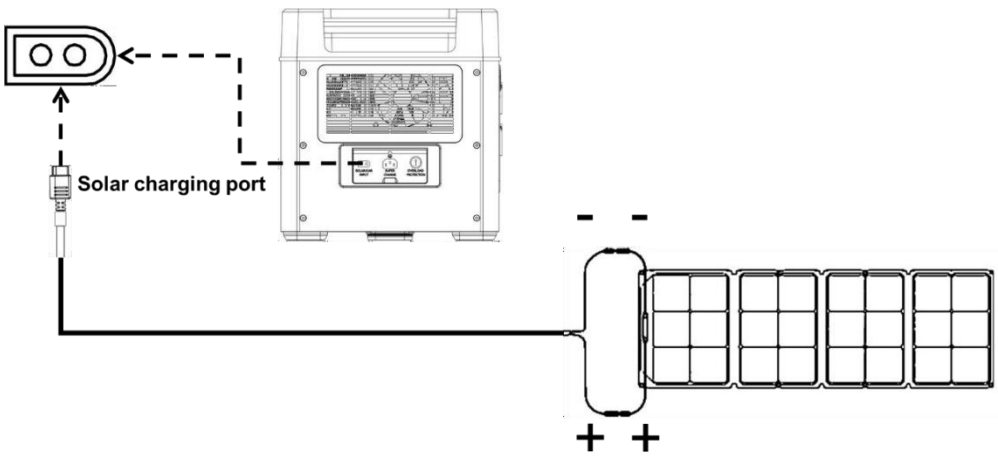
DANGER

■ Users can use the universal solar panel with MC4 interface standard to charge the portable power station, as long as the voltage and current meet the requirements (12-60V 12A MAX).

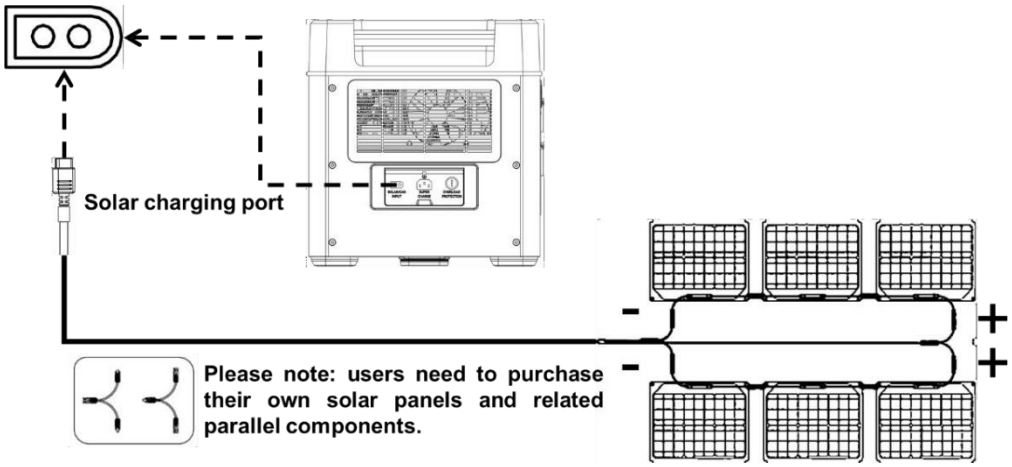
■ The use of solar panels that do not comply with this standard will cause irreversible damage to the equipment.

■ Please pay attention to the connection order of positive and negative poles of the interface, wrong connection will make the device at risk of damage.

Solar charging single photovoltaic panel connection diagram

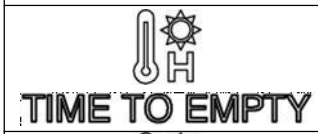
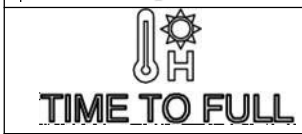
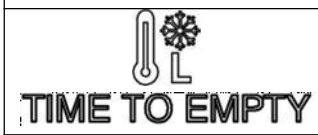
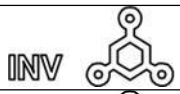
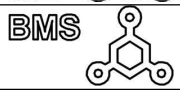


Schematic diagram of the connection of two photovoltaic panels for solar charging



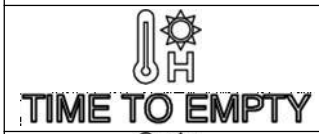
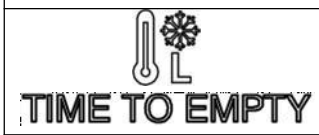
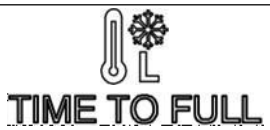
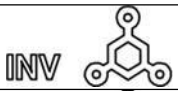
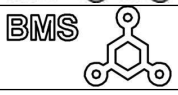
5 Failure and Maintenance

5.1 Failure

Icon	Fault Analysis
	Battery pack failure (blink)
	Fan failure (blink)
	Device undervoltage (blink)
	Battery fully charged (blink)
	Battery discharge over temperature (blink)
	Battery charge over temperature (blink)
	Battery discharge low temperature (blink)
	Battery charge low temperature (blink)
	PV charge overvoltage/overcurrent (blink)
	PV charger radiator over temperature (blink)
	Grid over undervoltage/underfrequency (blink)
	AC output overload (blink)
	Type-C output overload (blink)
	USB output overload (blink)
	Communication failure between DC module and AC module (blink)
	Communication failure between BMS module and DC module (blink)

F01	Inverter BUS soft start fault
F02	Inverter output short circuit fault
F03	Inverter BUS undervoltage fault
F04	Inverter BUS overvoltage fault
F05	Inverter BUS short circuit fault
F06	Inverter output overcurrent fault
F07	Inverter DC component too high fault
F08	Inverter over temperature fault
F09	Inverter discharge overcurrent fault
F10	Inverter charging overcurrent fault
F11	Inverter current sensor fault
F12	Inverter output over-undervoltage/over-frequency faults
F13	AC load short circuit
F14	Inverter main relay fault
F15	Inverter fan fault

5.2 Troubleshooting

Icon	Solution
	Restart the device, if the fault still exists, please contact the distributor.
	Check the fan for foreign matter.
	Connect the charger to powering, if the fault still exists, please contact the distributor.
	Unplug the charger, if the fault still exists, please contact the distributor.
	Place the device in a cool place and wait for the battery to cool down before restoring.
	Place the device in a cool place and wait for the battery to cool down before restoring.
	Place the device in a warm place and wait for the battery to warm up before restoring.
	Place the device in a warm place and wait for the battery to warm up before restoring.
	Restart the device, if the fault still exists, please contact the distributor(Ensure that the input voltage is within the rated power range).
	Place the device in a cool place and wait for the radiator to cool down before restoring.
	Restart the device, if the fault still exists, please contact the distributor(Ensure that the input voltage is within the rated power range).
	Restart the device, if the fault still exists, please contact the distributor. (Ensure that electrical appliances are within the rated power range)
	Restart the device, if the fault still exists, please contact the distributor. (Ensure that electrical appliances are within the rated power range)
	Restart the device, if the fault still exists, please contact the distributor. (Ensure that electrical appliances are within the rated power range)
	Restart the device, if the fault still exists, please contact the distributor.
	Restart the device, if the fault still exists, please contact the distributor.

F01	Restart the device, if the fault still exists, please contact the distributor.
F02	Restart the device, if the fault still exists, please contact the distributor.
F03	Restart the device, if the fault still exists, please contact the distributor.
F04	Restart the device, if the fault still exists, please contact the distributor.
F05	Restart the device, if the fault still exists, please contact the distributor.
F06	Restart the device, if the fault still exists, please contact the distributor.
F07	Restart the device, if the fault still exists, please contact the distributor.
F08	Check whether the device working environment temperature is within the working temperature range of the device and wait for cooling.
F09	Restart the device, if the fault still exists, please contact the distributor.
F10	Restart the device, if the fault still exists, please contact the distributor.
F11	Restart the device, if the fault still exists, please contact the distributor.
F12	Check whether the power grid voltage, frequency, is within the working range of the device.
F13	Check whether the output is short circuited or overload, please disconnect and restart the device.
F14	Restart the device, if the fault still exists, please contact the distributor.
F15	Restart the device, if the fault still exists, please contact the distributor.

5.3 Maintenance

Maintenance item	Maintenance cycle
Clean housing and output (including DC output/AC socket/USB output port) with a clean dust-free cloth.	Three months
The battery should be fully discharged and charged for one cycle.	Three months

6 Specification

Model	Singo2000Plus	
	120Vac	230Vac
Battery Parameters		
Cell Type	$LiFePO_4$	
Battery Capacity (Wh)	1920	
Input Voltage (V)	48	
Input Voltage Range (V)	40 ~ 60	
Nominal Input Current (A)	50	
Nominal Output Current (A)	70	
Max Output Current (A)	90	
Life Cycles(@25℃, 0.5C Discharge, DOD80%)	4000	
AC Input		
AC Input Power (W)	1800	1800
Nominal Voltage (Vac)	100/120	230
Voltage Range (V)	85~135	180~264
Frequency (Hz)	60	50
Frequency Range (Hz)	55~65	45~55
Power Factor(@Max. Charging Power)	>0.99	
DC /PV Input		
Max. Car Charging Input Power (W)	100	
DC Charging Input Power (W)	240W Max,(12V/8A,24V/10A)	
Max. Solar Charging Input Power (W)	500	
Voltage Range (V)	12 ~ 60	
Max. DC/PV Input Current (A)	12	
AC Output		
Nominal AC Power (W)	2400	
Surge Power (W)	5000	
Nominal Grid Voltage (Vac)	100/120	230
Nominal Grid Frequency (Hz)	60	50
THDv (@Nominal Power) (%)	<1.5%	
DC Output		
USB-A (×1)	12W, 5V, 2.4A	
Quick Charge 3.0 (×2)	18W Max/each port, (5V/3A, 9V/2A, 12V/1.5A)	
USB-TypeC (×2)	100W Max/each port, (5V, 9V, 12V, 15V/3A, 20V/5A)	
Car Port + DC Port Max. Output Power (W)	132W	
Car Port (×1)	132W, 13.2V, 10A	

DC Port (×2)	132W Max/each port, (13.2V, 10A)	
Wireless Charging (Optional)	10W	
Efficiency		
Battery To AC Max. (%)	93.0	94.0
AC To Battery Max. (%)	93.0	94.0
Protection	AC output over current, AC output short circuit, AC charging over current; AC output over voltage/under voltage, inverter over temperature; AC charging over voltage/under voltage, battery over temperature/under voltage, battery over voltage/under voltage	
General Parameters		
Dimensions (W*H*D) (mm)	356*284*314	
Weight (Kg)	20.5	
LCD (mm)	97*48	
Cooling	Forced Air Cooling	
Operation Temperature Range (℃)	0~40℃(Charging),-20~40℃(Discharging)	
Operation Relative Humidity [RH(%)]	0~95%, Non condensation	
Ingress Protection	IP20	
Noise (dB)	<65dB	
Communication Interface	WIFI / Bluetooth (Optional)	
LCD Light (W)	3W	

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Information

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled

environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.