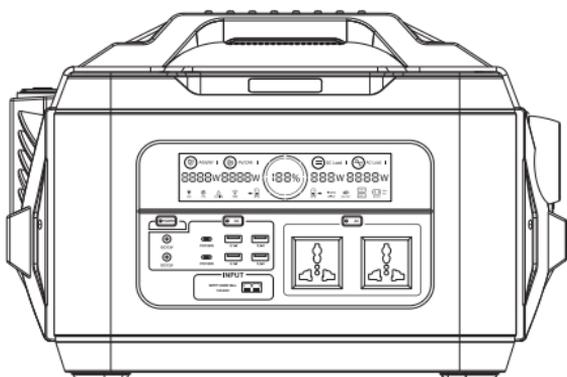


# User manual

( English )



Model: M2200L-S

Thank you for purchasing our  
portable energy storage power supply.

Please read this manual carefully before use, and keep it in case of emergency. This manual will help you to operate this product correctly, and our company will not be responsible for any losses caused by users' failure to use the product according to the specifications in this manual.

Our company has the final right to interpret this document and all documents related to this product. This document is subject to change (update, revision or termination) without prior notice.

Thank you!

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## SAFETY INSTRUCTIONS

### Usage

- 01.** Do not use the product near a heat source, such as a fire source or a heating furnace.
- 02.** Avoid contact with any liquid. Do not immerse the product in water or get it wet. Do not use the product in rain or humid environments.
- 03.** Do not use the product in an environment with strong static electricity/magnetic fields.
- 04.** Do not disassemble the product in any way or pierce the product with sharp objects.
- 05.** Avoid using wires or other metal objects that may result in a short circuit.
- 06.** Do not use unofficial components or accessories. If you need to replace any components or accessories, please visit official channels to check relevant information.
- 07.** When using the product, please strictly follow the operating environment temperature specified in this user manual. If the temperature is too high, it may result in a fire or explosion; if the temperature is too low, the product performance may be severely reduced, or the product may cease to work.
- 08.** Do not stack any heavy objects on the product.
- 09.** Do not lock the fan forcibly during use.
- 10.** Please avoid impact, falls, or severe vibrations when using the product. In case of a severe external impact, turn off the power supply immediately and stop using the product. Ensure the product is well fastened during transportation to avoid vibrations and impacts.
- 11.** If you accidentally drop the product into water during use, please place it in a safe open area, and stay away from it until it is completely dry. The dried product should not be used again, and should be properly disposed of according to section "Disposal Guide" below. If the product catches

fire, we recommend that you use the fire extinguishers in the following order: water or water mist, sand, fire blanket, dry powder, and finally a carbon dioxide fire extinguisher.

- 12.** Use a dry cloth to clean off dirt on the product ports.
- 13.** Rest the product on a flat surface to avoid damages caused by the product falling over. If the product is overturned and severely damaged, turn it off immediately, place the battery in an open area, keep it away from combustible matter and people, and dispose of it in accordance with local laws and regulations.
- 14.** Ensure that the product is kept out of reach of children and pets.

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### Disposal Guide

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- 1.** If conditions permit, make sure that the battery is fully discharged before disposing it in a designated battery recycling bin. The product contains batteries with potentially dangerous chemicals, so it is strictly prohibited to dispose of it in ordinary trash cans. For more details, please follow the local laws and regulations on battery recycling and disposal.
- 2.** If the battery cannot be fully discharged due to a product failure, please do not dispose of the battery directly in the battery recycling box. In such case, you should contact a professional battery recycling company for further processing.
- 3.** Please dispose of over-discharged batteries that cannot be recharged.

# SPECIFICATIONS

Basic parameter	
Model	M2200L-S
Battery Capacity	48V 45Ah 2160Wh
Rated Power	2400W, Peak 4800W
Battery Type	LiFePO4
LED Light	4W
Gross Weight	About 23KG
Product Size	L466*W300*H310mm
Operation Temperature	-10°C ( 14°F ) ~40°C ( 104°F )

Input Parameter	
AC Charging Input	AC 1600W max
Solar Charging Input	12V-80V 8.6A max, 650W max
Car Charger Input	12V/24V 8.6A max

Output Parameter	
AC Output	100V-120V~60Hz or 200V-240V~50Hz
DC Output(x2)	12V/8A
Cigarette Lighter Output	12V/10A
QC 3.0 Output(x4)	5V/3A,9V/2A,12V/1.5A
Type C Output(x2)	PD 100W: 5V/3A,9V/3A,12V/3A,15V/3A, 20V/5A
Output Waveform	Pure Sine Wave

## Protection Circuit



Short Circuit Protection



Over Current Protection



Over Power Protection



Over Discharge Protection

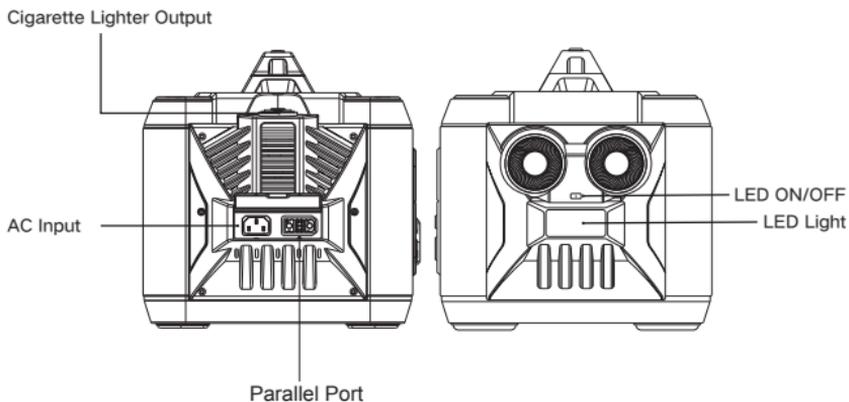
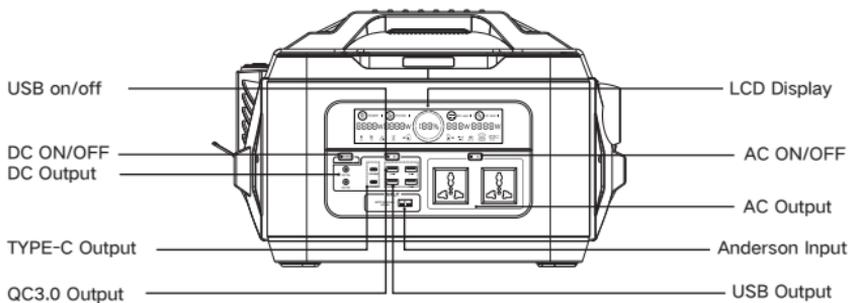


Over Charge Protection

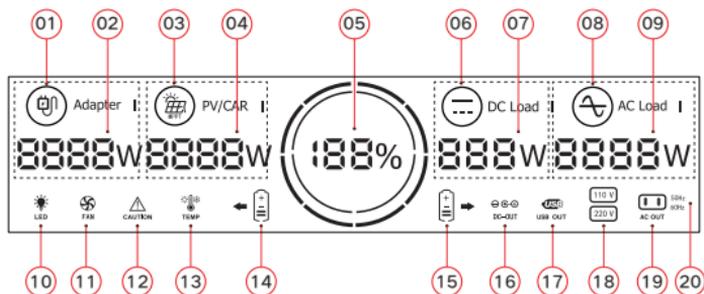


Over Temperature Protection

# PRODUCT DESCRIPTION



# LCD DISPLAY



- |                                 |                       |                           |
|---------------------------------|-----------------------|---------------------------|
| 01.AC Input                     | 08.AC output          | 15.Output indication      |
| 02.Mains input power            | 09.AC output power    | 16.DC Output display      |
| 03.MPPT ( Car Charger ) input   | 10.LED                | 17.USB Output display     |
| 04.MPPT(Car Charger)input power | 11.Fan                | 18.Output voltage display |
| 05.Electric quantity display    | 12.Fault              | 19.AC output indication   |
| 06.DC output                    | 13.Temperature Status | 20.Frequency display      |
| 07.DC output power              | 14.Input instruction  |                           |

	<p>Rotate clockwise:----- Charging            100% display:----- Fully charged            The icon flashes:----- Low battery</p>
 8888W	<p>When you use the power cord to charge the energy storage, this icon will light up and display the current AC input power in real time.</p>
 8888W	<p>When you use solar panel (vehicle charger) to charge energy storage, this icon will light up and display the current MPPT (vehicle charger) input power in real time.</p>
 888W	<p>When you use the DC output function of energy storage, this icon will light up and display the current DC output power in real time.</p>
 8888W	<p>When you use the AC output function of energy storage, this icon will light up and display the current AC output power in real time.</p>

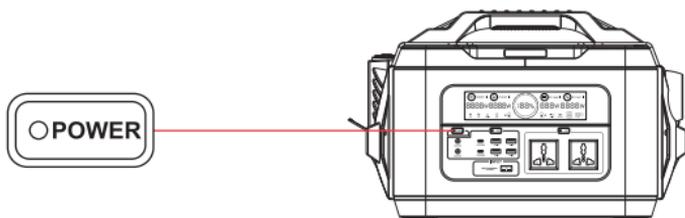
### Functional fault warning

In case of short circuit, exceeding the maximum current/power limit or low voltage, the output will be automatically turned off immediately, the functional fault icon will appear on the display screen, and the corresponding socket indicator will flash for 60 seconds at the same time. Please remove the overload equipment immediately, and then restart the energy storage equipment to return to normal.

## How To Charge The Portable Power Station?

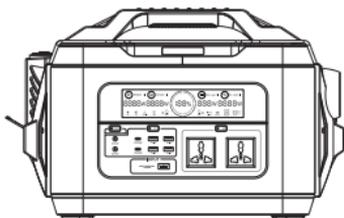
### 1.How to turn on/off the Portable Power Station?

Turn on	Press the main power switch briefly to start, the display screen will light up, the buzzer will drop, and the main power indicator will turn green. When the equipment is in no-load state and the function button is not turned on, the energy storage will be automatically turned off after one minute.
Rest screen	Press the main power switch briefly, the display screen will go out, and the main power indicator light will be green and always on. When the device is in the no-load state and the function button is not turned on, it will automatically turn off after one minute.
Turn off	Press and hold the main power switch for 3 seconds to turn it off. (When the energy storage is in the charging state, it cannot be turned off)



## 2.How to use AC output?

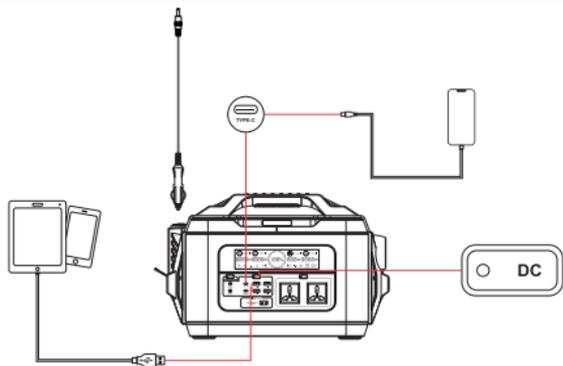
AC on	Press and hold the AC button for 3 seconds to turn on the inverter. The AC output icon lights up, the buzzer clicks, and the AC key indicator turns green.
Frequency switching	With AC turned on, click the AC button for 5 times continuously to switch the frequency. 
AC off	Press and hold the AC button for 3 seconds to turn off the inverter. The AC output icon goes out, the buzzer drops, and the AC key indicator goes out.



Due to the energy storage equipment you currently have, the rated power is 2400W W. It can be used for notebook computers, fans, televisions, ventilators, cameras and other equipment. When AC power is short-circuited or overloaded, it will automatically turn off, and it can be restored after removing the short-circuit/overload equipment.

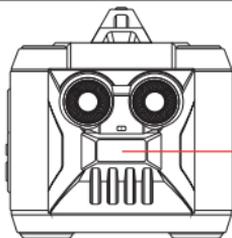
## 3.How to use DC output?

DC on	Press the DC button briefly to turn on the USB/DC output. The DC output icon lights up, the buzzer clicks, and the DC button indicator turns green.
Buzzer setting	In the power-on state, press the DC button for 2 seconds to turn off/on the buzzer. (Automatic recovery at next boot)
DC off	Press the DC button briefly to turn off the USB/DC output. The DC output icon goes out, the buzzer drops, and the AC key indicator goes out.



## 4.How to use LED flashlight?

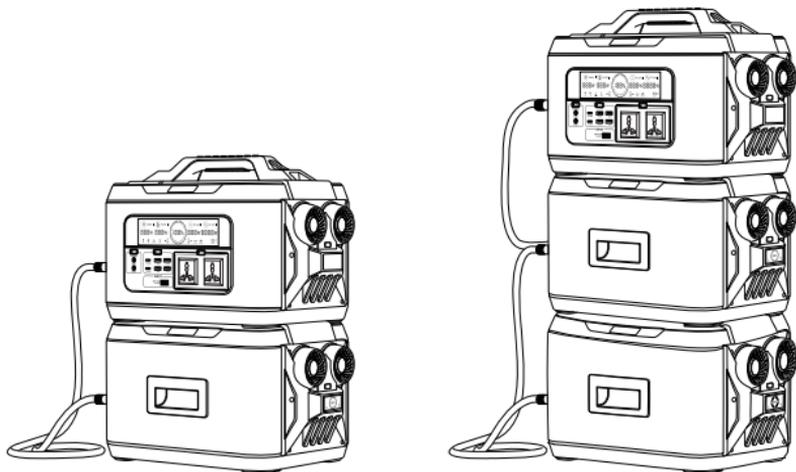
Turn on the LED	Press and hold the DC button for 2 seconds to turn on the LED flashlight. The LED icon lights up, the buzzer drops, and the light lights up.
Switching LED	When the LED is on, short press can switch the lighting modes: high light, low light, SOS, flash.
Turn off the LED	Press and hold the DC button for 2 seconds to turn off the LED flashlight.



LED Light

## CAPACITY EXPANSION FUNCTION

A single product can be connected to at most two auxiliary machines at the same time, and the auxiliary machines can only expand their capacity and cannot add power.



## Precautions:

- ① Before using the main engine to connect the auxiliary engine, please ensure that both the main engine and the auxiliary engine are turned off. (Live operation is very dangerous, please don't try)
- ② Before starting the machine, make sure that the main machine is correctly connected to the auxiliary machine. If the auxiliary battery screen lights up to show the remaining power, the fault light does not light up, indicating that the intelligent extra battery is connected successfully.
- ③ Don't insert or take out the intelligent backup battery during discharge, so as to avoid unnecessary accidents.
- ④ Do not touch the metal end of the interface with your hands or other objects to prevent poor contact. If there is something on the metal end, wipe it gently with a dry cloth.
- ⑤ To charge the intelligent additional battery, please connect the auxiliary machine that is turned off when the main machine is turned off. When the power cord is connected to charge the auxiliary machine, the normal output of the main machine will not be affected.

### CONSTANT POWER (UP-DIMENSION DRIVE)

With the help of dimension-lifting drive technology, the maximum power of this product can reach 3500W W. Under the condition that the rated output power of the equipment is kept at 2400W, the operation failure caused by overload protection is avoided.

**Note:** the dimension-lifting drive technology is not suitable for all electrical appliances, please refer to the actual use.

## CHARGE AND RELEASE AT THE SAME TIME

Support the simultaneous charging of commercial power and photovoltaic charging, and give priority to photovoltaic charging.

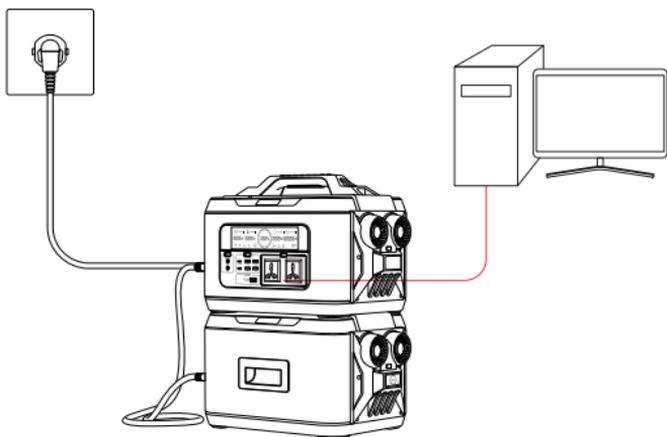
When the mains supply is input, the bypass mode is adopted when charging and discharging, and when MPPT is input, the normal inverter output.

## UPS FUNCTION (UNINTERRUPTED POWER STATION)

This product supports UPS function. When you connect the AC input of the energy storage power supply through the power cord, you can also use the AC output port to supply power to the equipment (at this time, the electricity used by the equipment comes from the power grid). In case of sudden power failure, this product can automatically switch to battery power supply mode within 30 ms.

This function is a non-professional UPS function and does not support 0 millisecond switching. Therefore, don't connect it to any devices that need 0 millisecond conversion, such as data servers and workstations, or if you still want to use it, please test it several times before using it to confirm compatibility.

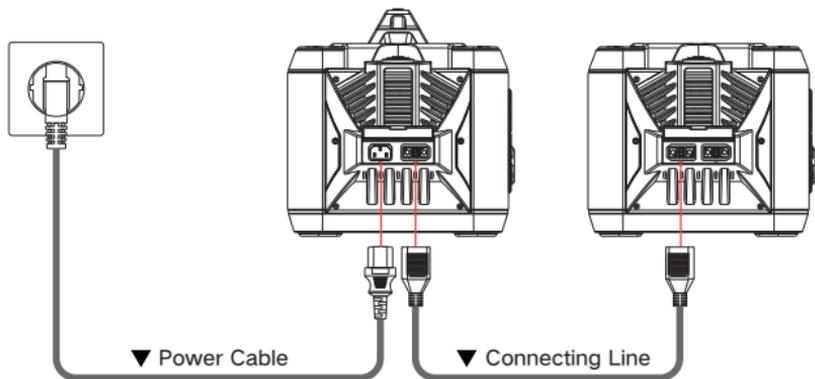
In addition, it is recommended to use only one device, otherwise using multiple devices at the same time will lead to overload protection of energy storage equipment. If the equipment fails to work normally or data is lost due to failure to follow the instructions, the company will not bear corresponding responsibilities.



## HOW TO CHARGE THE PORTABLE POWER STATION?

### 1. Charge the portable power station the AC input.

- Please connect our portable energy storage power supply to the household AC outlet, the battery icon lights up and the icon rotates clockwise. When the battery icon shows 100%, it means that the stored energy is fully charged.
- When the auxiliary machine needs to be charged, it must be connected to the main machine before charging. (Auxiliary machine cannot be charged separately)

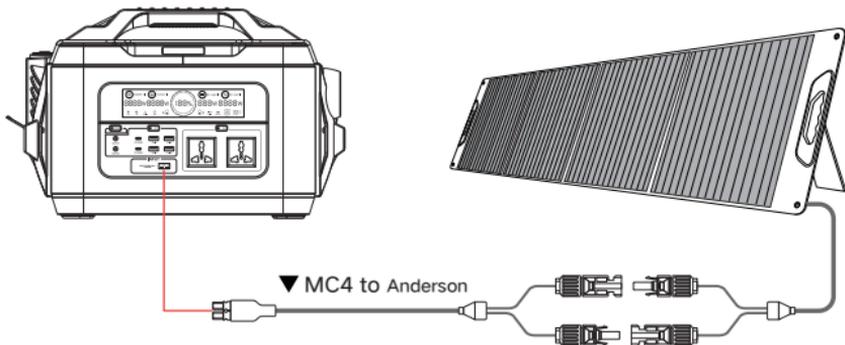


## Precautions for charging:

- ① Before charging, it is necessary to ensure that both the main engine and the auxiliary engine are turned off.
- ② After the main engine is connected with the auxiliary engine, click the POWER button of the main engine and confirm that the display screens of both are displayed normally before charging or discharging can begin;
- ③ When the average power of the main engine and the auxiliary engine is insufficient, the battery with less power will be charged first.

## 2.Charging the portable power station through solar panels

- This product has MPPT controllers (12V-80V, 8.6MAX, MPPT 650W), which can better and more efficiently use solar panels to charge energy storage. Before charging, please ensure that your solar panel output parameters are within this range.

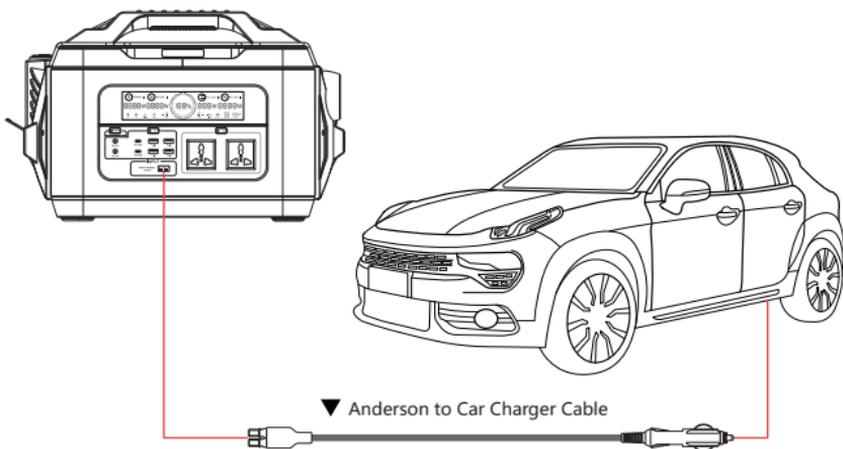


## Precautions for charging:

- ① Please confirm the positive and negative poles of Anderson line before charging, and don't connect them backwards.
- ② The charging efficiency of solar panels depends on the placement of solar panels and the intensity of the sun on that day. Please place the solar panels on the side facing the sun.

### 3.Charging the portable power station through automobile cigarette lighter

- Users can charge energy storage products through the cigarette lighter of the car. Because the automobile charges the energy storage through Anderson port, the charging power depends on the output power of the automobile cigarette lighter port.



### **Precautions for charging:**

- ① Please make sure that the car is properly connected to the energy storage.
- ② When using the car to charge the energy storage, please make sure that the car battery has enough power to prevent the car from starting due to battery loss.

## **FREQUENTLY ASKED QUESTIONS**

### **1. Can I take the product on the plane?**

You can't. According to international air transport standards, lithium batteries cannot exceed 100 watt-hours. You can't take the product aboard because the built-in battery is 2160Wh.

### **2. Why is there noise when the product works?**

Battery products will generate heat during charging and discharging, so they are equipped with a strong cooling system. The built-in fan can better help the product to dissipate heat and achieve high conversion rate. It is normal to have slight noise during use.

### **3. When the product is charged, is the product temperature normal?**

It is normal for the product to generate heat during charging. The product has an independent temperature control system and over-temperature protection measures, and the products have undergone strict aging tests before leaving the factory, so there is no need to worry about such situations.

## PRODUCT MAINTENANCE

- 1) This product has built-in high-quality lithium iron phosphate battery. It has better characteristics of high temperature resistance, heat resistance, moisture resistance and high pressure resistance. However, we still recommend that you use it in the range of 10°C ~30°C to obtain the best charging capacity.
- 2) When charging, please stay away from TV, radio and other equipment to avoid interference.
- 3) If the equipment has not been used for a long time, please disconnect the cable and store it.
- 4) Some portable devices may need to be set to charging mode to charge. For more information, please refer to the corresponding equipment manual.
- 5) After starting, if there is no output, the display will automatically turn off within 60 seconds to achieve better energy-saving effect.
- 6) Please dispose of scrapped products according to regulations, and don't treat the built-in battery as domestic garbage to avoid explosion and pollution.
- 7) This product is only used for emergency power supply and cannot replace the standard DC or AC power supply of household appliances or digital products.
- 8) This product is only used for emergency power supply and cannot replace the standard DC or AC power supply of household appliances or digital products.



To preserve lifespan  
recharge every 3 months



Use original  
or certified cables



Don't expose  
to liquids



Don't disassemble

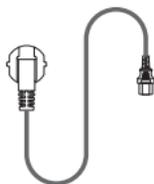
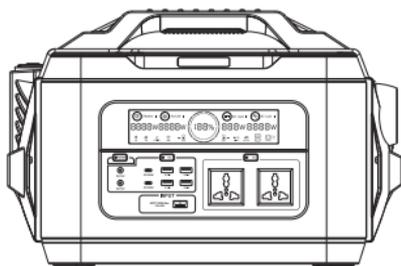


Avoid dropping

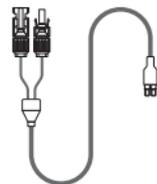


Avoid extreme  
temperatures

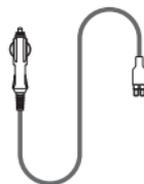
## PARTS LIST



Power Cable



Anderson  
to MC4 Cable

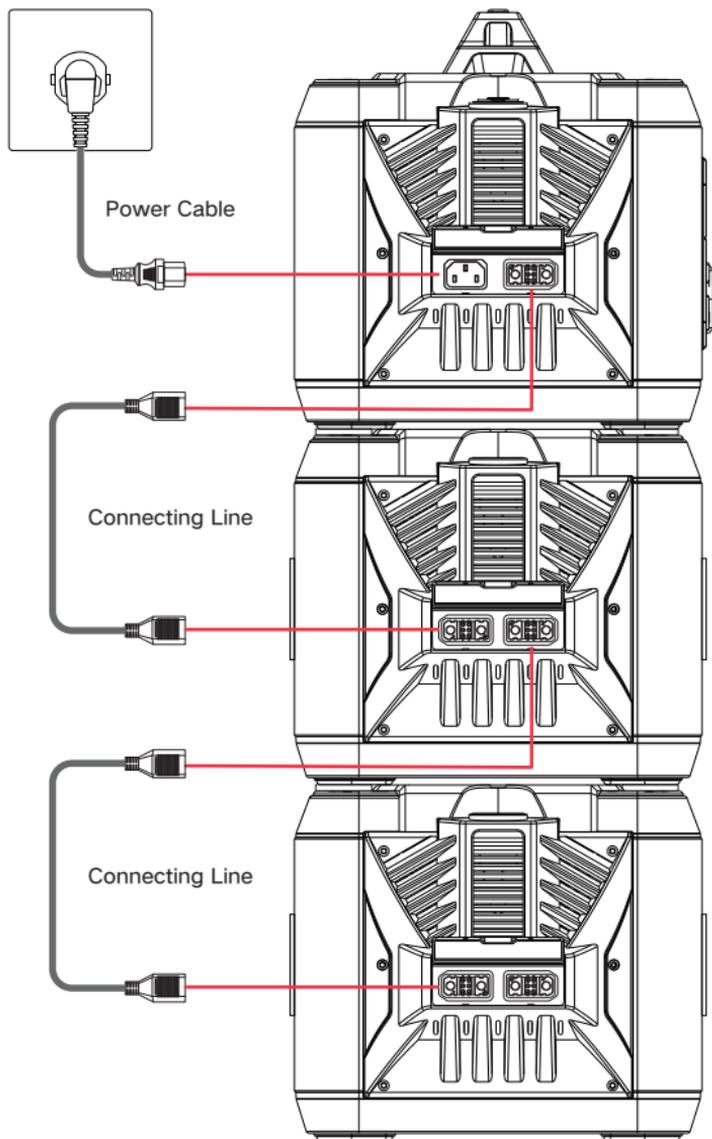


Anderson  
to Car Charger Cable



User Manual

## SCHEMATIC DIAGRAM OF EQUIPMENT CONNECTION



# TROUBLE CODES

## BMS PART

 101	Battery Overcharge Protection
 102	Battery pack over-discharge protection
 103	Battery charging overcurrent protection
 104	Battery discharge overcurrent protection
 105	Battery pack charging over-temperature protection
 106	Battery pack discharge over-temperature protection
 107	Battery pack charging low temperature protection
 108	Battery pack discharge low temperature protection
 109	Battery short circuit protection
 110	Protection against excessive pressure difference of battery pack monomer
 111	Analog front-end exception
 112	Pre-charging failed
 113	MOS overtemperature
 114	MOS exception
 115	BMS Eeprom fault
 116	NTC exception
 117	CAN communication is abnormal

## INV PART

 160	AC output overvoltage protection
 161	AC output undervoltage protection
 162	AC output short circuit protection
 163	Inverter over-temperature protection

## MPPT PART

 130	24V overvoltage
 131	24V undervoltage
 132	PV input overvoltage
 133	PV input overcurrent
 134	PV output overvoltage
 135	PV output overcurrent
 136	Car charging output overvoltage
 137	Car charging output undervoltage
 138	Car charging output overcurrent
 139	DC5525 overcurrent
 140	MPPT overtemperature
 141	MPPT fan fault
 142	PV output short circuit
 143	MPPT NTC fault
 144	DC5525 short circuit
 145	Car charging short circuit

## HMI PART

 180	Inverter communication fault
 181	Main BMS communication fault
 182	MPPT communication fault
 183	Communication fault from BMS



