



PowerHelp-Mini

User Manual

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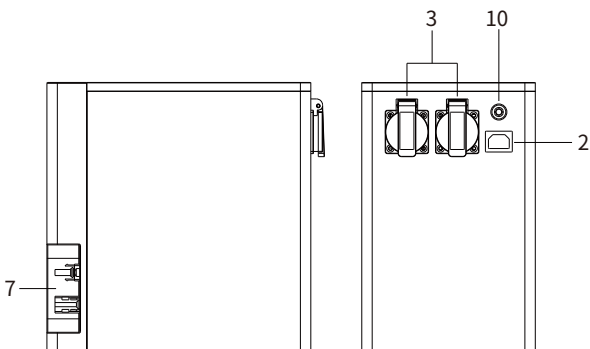
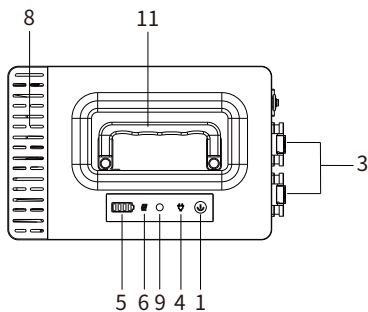
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1. Safety Instructions

1. Do not expose the power supply to any liquids; avoid submerging it in water or wetting it. Do not use the power supply in the rain or in damp environments.
2. If the power supply accidentally falls into water during use, place it in a safe, open area and stay away until it is completely dry. Do not reuse the dried power supply; dispose of it properly according to local regulations. In case of fire, use fire extinguishing agents in the following order: sand, fire blanket, dry chemical powder, and carbon dioxide extinguisher.
3. Do not use the power supply in environments with strong static electricity or magnetic fields, as it may malfunction. For example, some protective functions of the power supply may fail, leading to serious malfunctions.
4. Do not place the power supply in a microwave or pressure cooker.
5. Keep the power supply away from children and pets, and away from heat sources.
6. Store the power supply in a dry, well-ventilated place.
7. Do not cause a short circuit with wires or other metal objects.
8. Do not hit the power supply or place heavy objects on it to avoid deformation.
9. Do not disassemble or puncture the device with sharp objects in any way. Doing so may cause the power supply to malfunction, catch fire, or even explode.
10. If the power supply has experienced a severe fall or impact from an external force, to ensure your personal safety, do not use it again.
11. Do not use parts provided by non-official sources. If replacement is needed, please contact the dealer for purchase. The official will not be responsible for any product accidents or malfunctions caused by the use of non-official parts.
12. The charging temperature of the device should be above 0°C (32°F), and the discharging temperature should be above -20°C (-4°F). The recommended operating temperature range is 15°C to 35°C (59°F to 95°F). Charging a frozen battery is prohibited.
13. If there are contaminants on the power supply's interface, clean it with a dry cloth. Failure to do so may result in poor contact, leading to energy loss or inability to charge.

2. Interface Description

1. Power Button
2. AC Input Port
3. AC Output Port
4. AC Indicator
5. Battery Indicator
6. PV Indicator
7. PV Input Port
8. Cooling Grille
9. Infrared
10. Overload Reset Button
11. Handle



*Infrared function's appearance will vary from the pictures according to different countries and regions. Please refer to the actual product for details.

3. Indicator Description



Battery Indicators

Each battery level represents 25% SOC.

Charging: The last battery SOC level flashes.

Discharging: The battery indicator stays on.

Low Battery: The first battery SOC level flashes continuously.



PV Indicator

Working: The indicator is on, indicating that the PV input is working normally.

Disconnected: The indicator is off, indicating that the PV is not connected or there is no input.

Fault: The indicator light flashes, indicating a fault with the PV function.



AC Indicator

ON: The indicator is on, indicating that the AC output and UPS mode are activated.

OFF: The indicator is off, indicating that the AC output and UPS mode are inactivated.

Fault: The indicator light flashes once every 0.5s, indicating an AC output fault.



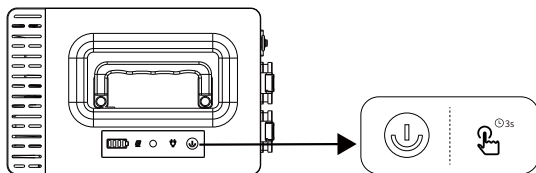
Power Indicator

ON: The indicator is on, indicating the power supply is powered on.

OFF: The indicator is off, indicating the power supply powered off.

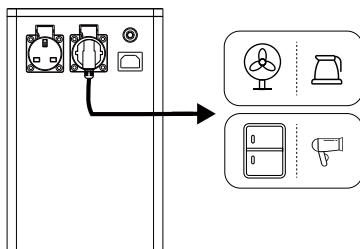
4. Power On/Off

- 1. Power On:** Long press the power button for 3s or more, and the battery indicator will turn on automatically.
- 2. Power Off:** Long press the power button for 3s or more, and all indicator will turn off.



5. Powering Loads

The power supply is equipped with 2 AC output ports. After turning on the power supply, connect the electrical Loads to the AC output port.



The power supply has an automatic AC output shutdown or automatic power-off function to reduce power consumption.

Automatic AC Output Shutdown: After the power supply is switched on, if the load is consistently less than 5W, the device will automatically switch off after 24h to save battery energy.

Low Power Auto Shut-off: When the battery is too low ($SOC \leq 3\%$), it will be forced to shut down, you need to charge the power supply as soon as possible.

6. Common Loads



Mobile phone
11.76Wh
≈153 times



Mac book
60Wh
≈30 times



iMac
143W
≈12h



iPad
28.65Wh
≈63 times



TV
110W
≈16h



Refrigerator
120W
≈16h



Electric rice
cooker 280W
≈6.4h



LED light
10W
≈180h



Hairdryer
800W
≈2.2h



Bracker fan
45W
≈40h



Hand-held hammering
drill 1000W
≈1.8h



Angle grinder
750W
≈2.3h



Inflation pump
40W
≈45h



Water suction
pump 480W
≈3.7h

The above data are all from laboratory environment tests. There may be differences in testing under different scenarios or environments, meanwhile, due to the existence of self-consumption of electricity, the above data is only for reference, so please refer to actual usage.

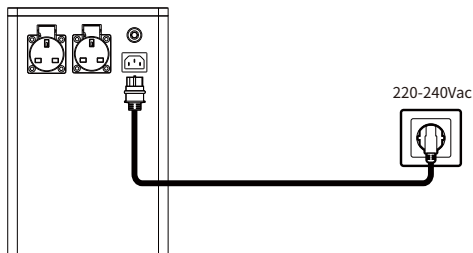
7. Charge the Power Supply

7.1 AC Charging

The power supply is equipped with 1 AC input port.

The AC charging steps are as follows:

1. Use the AC power cables in the package to connect the AC input port to the AC.
2. Check whether the power indicator is blinking. If the last battery SOC level indicator blinks, it means that the power supply is charging.



1. After charging is completed, disconnect the AC connection.
2. To prolong the battery cyclic life, it is recommended to charge the battery regularly every 6 months.
3. If the original power cables are damaged, please contact the after-sales service and use new cables. Do not purchase other types of power cables for charging randomly.
4. Place the device in indoor for charging.
5. Do not charge it in sunlight.

7. Charge the Power Supply

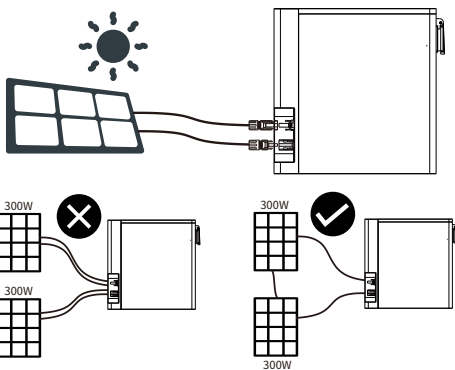
7.2 Solar Charging

The power supply is equipped with 1 PV input port, and the PV input port is a standard MC4 port.

The solar charging steps are as follows:

1. Unfold the solar panel, set up the bracket and fix it. In order to make the solar panel directly face to the sun, adjust the angle of the solar panel.
2. Improve the solar charging efficiency, please try to make the sunlight shine vertically on the solar panel and ensure that there are no obstructions.
3. Use the solar charging cable. If it is an MC4 port, it can be directly plugged in. If it is an XT60 port, please connect an XT60 to MC4 adapter cable to charge the power supply.

Note: The power supply powers on automatically via solar charging. AC output is off by default (indicator unlit) to minimize standby power use. Press and hold the power button for 3 seconds to enable AC output.



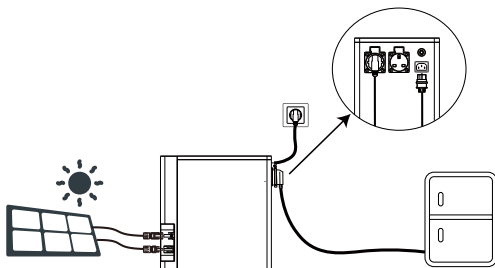
Precautions for Solar Charging:

1. Do not mix different types of solar panels, otherwise it may damage the device.
2. The maximum current of solar panel can't be higher than 16A.
3. If multiple solar panels are connected in series, don't exceed 100V of the maximum PV input voltage.
4. The starting voltage of PV input is at least 20V, and 12V DC charging is not supported.
5. When using solar charging, pay attention to avoid direct sunlight on the device to prevent overheating damage.

7. Charge the Power Supply

7.3 AC + Solar Simultaneous Charging

The power supply supports simultaneous charging with AC and solar power. When connect AC grid and solar charging at the same time, the power supply will prioritize maximizing the solar input power, and the remaining charging power will be compensated by AC charging.

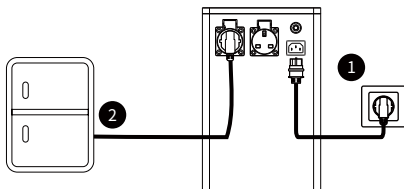


Precautions for Simultaneous Charging:

1. When charging simultaneously, the total charging power will not exceed 1150W, and the solar charging power will not exceed 600W.
2. When solar charging stops, if the battery is not fully charged, AC charging will continue until the power supply is fully charged.
3. When charging simultaneously, the power supply can still provide a maximum power of 1000W to the load.

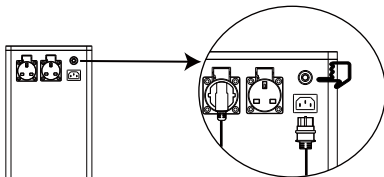
8. Uninterruptible Power Supply (UPS)

The power supply supports the uninterruptible power supply (UPS) function. Connect the AC to the input port and connect the electrical loads (such as a refrigerator) to the output port, the UPS function is enabled by default. At this time, AC can power to the power supply and the electrical loads. In case of a sudden shed off, the power supply can switch to the UPS mode within 20 ms automatically.



Precautions for UPS:

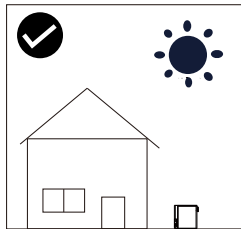
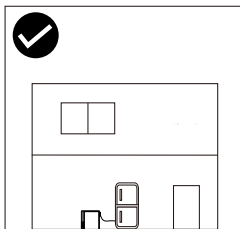
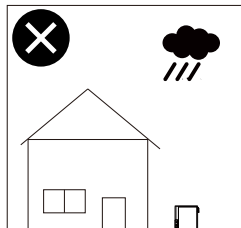
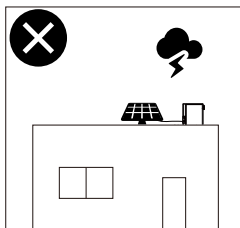
1. This power supply can't support 0 ms and can't be used in high precision devices, like medical gear or data servers.
2. If the input current exceeds 10A, check your load's power. If it's within limits, reset the input overload manually to use the UPS again.



9. Usage Scenario Description

It is not recommended to use the power supply in the following scenarios or environments:

1. **Extreme Temperatures:** Do not use the power supply in extremely hot or cold conditions as it may affect battery performance and safety.
2. **Humidity/Water:** Avoid using the power supply in humid or water-rich environments to prevent electrical shorts and battery damage.
3. **High-Voltage Proximity:** Keep the power supply away from high-voltage power sources to avoid electromagnetic interference and personal safety hazards.
4. **Flammable Environments:** Do not use the power supply in areas with flammable gases or dust to prevent explosions or fires.
5. **Storms:** Avoid placing power supply and solar panels on high ground during thunderstorms to prevent lightning damage.



10. Frequently Asked Questions

1. What type of battery does the power supply use?

This product uses LFP cells.

2. What loads can the AC output of the power supply power?

The device's AC output can handle up to 1000W continuously and up to 1500W peak. It will manage a light overload (1000-1200W) by adjusting after 30s. For a heavy overload (over 1200W), it adjusts after 15s. If the overload persists after adjustment, it stops output to protect itself.

3. Can the power supply be charged with AC and PV power simultaneously?

Yes, it supports to be charged by AC and PV simultaneously.

4. How to determine if the device is charging?

When charging, the last battery SOC level blinks once every 2s. When charged to 100%, all 4 indicator will remain on.

5. Can this power supply be carried on an airplane?

No.

6. Can the power supply be charged with a 12V cigarette lighter socket in a car?

No.

7. How to know how long the power supply can still supply power?

Examine the battery indicator. Each battery SOC level is 25% SOC. First indicator blinking means 0 - 24% power left. Estimate remaining usage time by dividing remaining capacity by load.

11. Maintenance and Care

1. Storage Requirements

- (1) For long-term storage, discharge to around battery SOC 60%.
- (2) Store the power in the specified storage temperature range (15°C(59°F) to 35°C(95°F)).
- (3) Store in a cool, dry place, out of direct sunlight.
- (4) Do not place the power supply in water or places that may leak water.

2. Maintenance Requirements

- (1) Within 15°C(59°F) to 35°C(95°F), cycle every 4 months: discharge to SOC 15%, then charge to SOC 100%, check for issues.
- (2) Outside this range, maintain monthly: discharge to SOC 15%, charge to SOC 100%, check for issues.
- (3) Do not disassemble or modify the power supply (which contains high voltage) on your own. If there is a fault, please contact the after-sales service center for maintenance.

12. Accessories List

AC Power Cable 1.5m(59")*1	
PV MC4 Connector Set x 1	
User Manual*1	

13. Specification

Model	PowerHelp-Mini
Capacity	2009.6Wh
Net Weight	19.5±0.5kg (42lbs)
Dimensions	304x200x310mm (11.9"x7.8"x12.2")
Output	
AC Output	220-240Vac, 50Hz, 4.5A, 1000W
AC Output (Bypass Mode)	1000W Max
Input	
AC Input	*220-240Vac, Rated 5.2A, 1150W
	Maximum input current(RMS) 7.5A
PV Input	10-100Vdc, 16A, 600W
Battery	
Cell Type	LFP
Operating Temperature	
Discharge Temperature	** -20°C to 45°C (-4°F to 113°F)
Charging Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	15°C to 35°C (59°F to 95°F)

*The power supply can withstand an input voltage range of 155 - 300 Vac, and the full power operation range is 155 - 264 Vac.

**When the power supply is operating at full power input or output, the maximum temperature is 35°C(95°F). If the temperature exceeds this value, the power supply will limit the power.



CE mark of conformity.



This product shall not be disposed of together with ordinary wastes, but must be recycled. This symbol indicates that this product shall not be treated as household waste, but must be handed over to the corresponding waste recycling station for recycling of electronic and electrical devices.



Warning

Please strictly follow the operation instructions and precautions, otherwise it may cause fire, electric shock, damage or other injuries

Product qualification certificate



Product qualification certificate:

This certificate indicates that the product has passed the inspection.

Return Registration Form

Product model: _____

Consumer name: _____

Order No.: _____

Product name: _____

Contact details: _____

Reason for return: _____

Manufacturer: Hangzhou Vestwoods Technology Co., LTD

Address: Floor 3, Building 1, Yongle Countryside, Cangqian Street,
Yuhang District, Hangzhou City, Zhejiang Province, 311121, P.R. China



MADE IN CHINA