LPS

LEMANIAENERGY Switzerland

OFFGRID-2500 L

SWISS QUALITY

PURE SINE AC POWER
High Quality Inverter supplies pure AC power to electronic devices ensuring their smooth operation

THREE THOUSAND+ CYCLES
High Quality LiFePo4 batteries are rated for over 3000+ cycles delivering power when you need it for years to come

WHEELED TROLLEY DESIGN
The LPS can be moved easily without being carried thanks to its trolley wheels and handle

MULTIPLE OUTPUT
Power devices using the 8 separate outputs from smartphones to larger appliances

HEAVY DUTY

POWER

OUTPUT DURATION 100% → 0%

16 Hrs ~150W	1.2 Hrs ~2000W	1.5 Hrs ~1600W	32 Hrs ~75W	120 Hrs ~18W	80 Hrs ~30W

CHARGE

RECHARGE TIME 0% → 100%

*5 Hrs Max. 600W	5 Hrs Max. 600W	24 Hrs Max. 160W	12 Hrs Max. 300W

LITHIUM POWER STATION

CONTENT

INTRODUCTION

Congratulations on your selection of a marvelous power station. This manual will provide you with a good basic understanding of the safe operation and maintenance of this machine, please read it carefully.

⚠ WARNING

- **Read this manual carefully before operating this power station. This manual should stay with this power station if it is sold.**
- **The power station is a potential source of electrical shock if misused. Do not expose the power station to moisture, rain or snow. Do not let the power station get wet, and do not operate it with wet hands.**
- **There is high-voltage power inside the power station. Do not start the power station when the casing is open to prevent accidental electrical shock.**
- **Electrical equipment (including lines and plug connections) should not be defective.**
- **Do not connect to a building electrical system unless an isolation switch has been installed by a qualified electrician.**
- **Place the power station in a place where pedestrians, children and pets are not likely to touch. Do not let children operate the power station without supervision. Protect children by keeping them at a safe distance from the generating set.**
- **Keep this owner's manual handy, so you can refer to it at any time. We reserve the right to modify this product or manual at any time without any notice.**
- **We continually seek advancements in product design and quality. Therefore, while this manual is the newest, there may be slight difference between your power station and this manual.**

- **If you have any questions, please consult an authorized dealer.**
- **Please DO NOT modify the unit in any way, otherwise factory may reserve the right not to provide the complete warranty.**

1. UNIT DESCRIPTION

1.1 COMPONENTS IDENTIFICATION

(1). Output Panel: Location of power station controls and output receptacles.

(2). Charging Input Panel: Location of power station charging input receptacles.

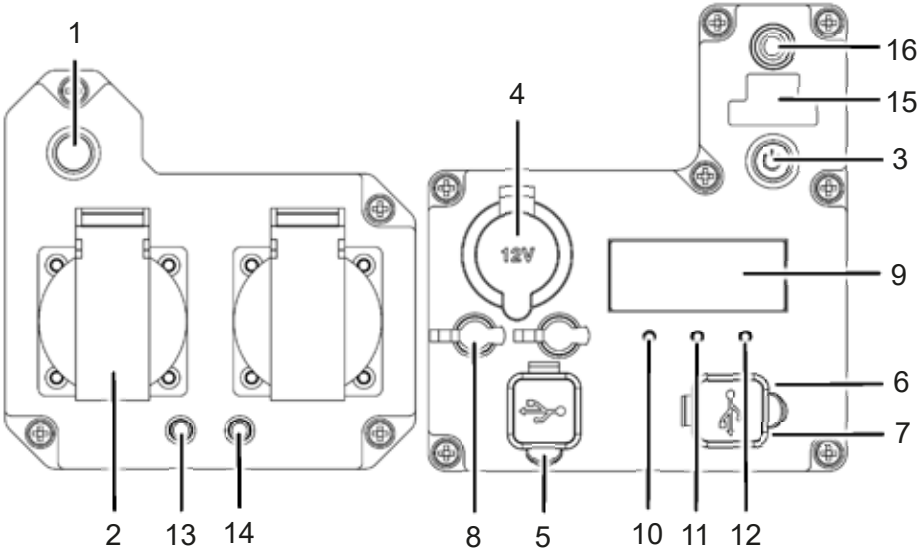
(3). Upper Cover: Open the cover to connect, install or replace the battery of the power station.

(4). Carrying Handle: Lift the power station by this handle.

(5). Draw Bar Handle: Pull the handle to wheel this power station around.

(6). Casing: It is matched with the upper cover to form a closed casing of the power station.

1.2 OUTPUT PANEL



(1). AC Switch: This switch turns ON or OFF AC output of the power station.
(2). AC Receptacle: AC output receptacles for connecting AC devices.
(3). Main Switch: This switch turns ON or OFF DC output of the power station, and AC Switch is available only after the main switch is turned on.
(4). Cigarette Lighter Receptacle: The 12V DC output receptacle for cigarette lighter plugs.
(5). USB Receptacle: The 5V DC output receptacle for USB plugs.
(6). Type-C Receptacle: The PD60W DC output receptacle for Type-C plugs.
(7). USB Receptacle: The QC3.0 DC output receptacle for USB plugs.
(8). 5521 Port: The 12V DC output receptacle for 5521 plugs.
(9). LCD Display: Display remaining capacity of the battery,

input/output watts, remaining operation hours or charging hours of the battery, battery voltage, total running time, and fault warnings. When the power station is charging, the battery segments in the LCD screen will blink. The power station is fully charged when all battery segments stop blinking and remain solid.

(10). Display Button ▲: You can activate the display backlight or value display for remaining capacity of the battery by pressing the button once, and for total running time by pressing the button twice.

(11). Display Button ▼: You can activate the display backlight or value display for battery voltage by pressing the button.

(12). Display Button **S**: You can activate the display backlight by pressing the button, and the factory or authorized dealer can use this button to initialize the LCD Display.

(13). Ready LED: The Ready LED light comes ON when the AC output is ready.

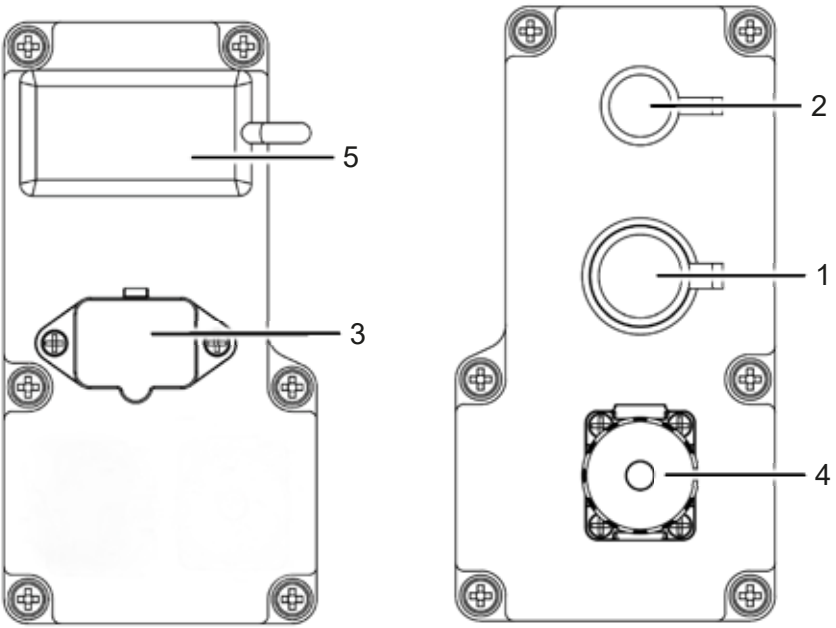
(14). Warning LED: The light comes ON and flashes when the following problems occur:

- AC output is overloaded.
- AC output is short-circuited.
- AC output is under voltage.
- AC output is over voltage.
- Over temperature in the inverter.
- Battery is under voltage.
- Battery is over voltage.

(15). Lighting: The LED light bar can be used for lighting.

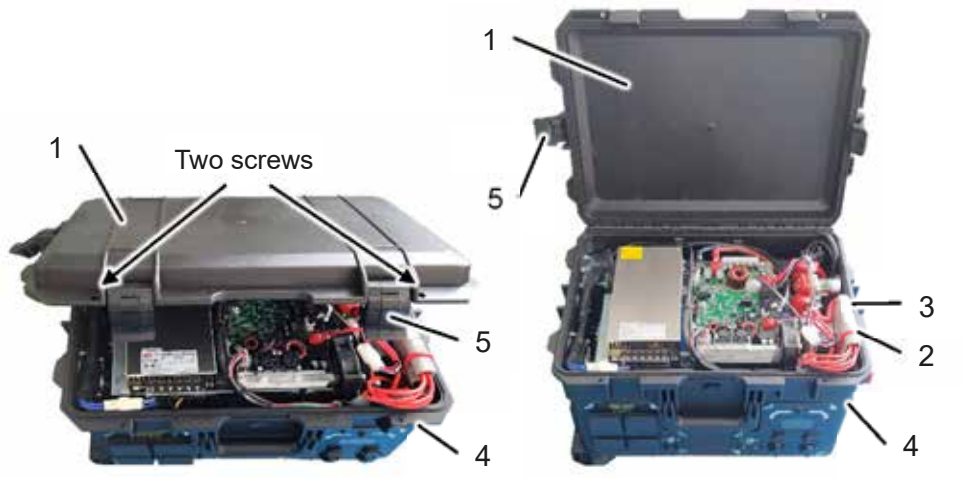
(16). Light Switch: Press this switch to turn on the light.

1.3 CHARGING INPUT PANEL



(1). PV Charging Input: Charge the power station from solar panels (optional equipment).
(2). DC Charging Input: Charge the power station from cars.
(3). AC Charging Input: Charge the power station from wall outlets or other AC power source.
(4). Wind Charging Input (optional): Charge the power station from wind turbines (optional equipment).
(5). DC Quick Charging Input (optional): Charge the power station from DC 24V power unit (optional equipment).

1.4 BATTERY CONNECTOR



You need to connect the battery connector 2 before charging or using the power station:

(1). Unscrew the two screws between the upper cover 1 and casing 4, loosen all buckle 5, and then open the upper cover 1.

(2). Open the connector cap on the battery connector 2, connect the battery connector 2 and power station connector 3 closely together, otherwise the power station cannot be charged or used.

(3) As shown in the figure above, put the battery connector 2 and power station connector 3 into the right position in the casing 4, and arrange all exposed connectors, wiring harness and other parts into the casing 4 to ensure that it will not affect closing the upper cover 1.

(4). Close the upper cover 1, make sure that the wiring harness, connectors and other parts will not be clamped between the upper cover 1 and casing 4, then press the upper cover 1, tighten all buckle 5, and finally tighten the two screws.

⚠ WARNING

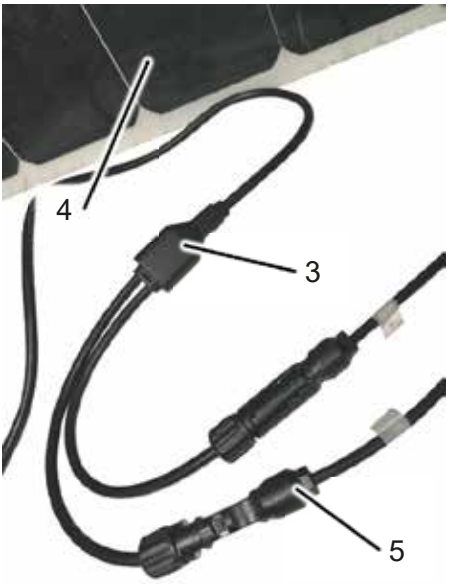
There is high-voltage power inside the power station. Do not start the power station when the upper cover is opened, to prevent accidental electrical shock!

2. CHARGING THE POWER STATION

NOTE

- **Before using for the first time, or after long-term storage, please charge the power station fully from AC charging for at least 10 hours to calibrate the battery capacity of the power station.**
- **During storage, please make sure to charge the power station at least every six (6) months.**
- **When the power station is charging, the battery segments in the LCD screen will blink.**
- **The power station is fully charged when all battery segments in the LCD screen stop blinking and remain solid.**

2.1 PV CHARGING INPUT



You can charge the power station from solar panels as follows:

(1). Remove the cover 1 from PV charging port 2.

(2). Connect PV charging port 2 to MC4 port 5 of solar panels 4 (optional equipment) by PV charging cable 3, which can be found in the packing box.

NOTE

You can charge the power station quickly from several solar panels in series if the solar panel power is small. But the total voltage of the solar panels in series CAN NOT exceed the PV INPUT voltage range.

2.2 AC CHARGING INPUT

You can charge the power station from wall outlets or other AC source as follows:

Connect AC charging port 1 to wall outlets or other AC source by the AC charging cable 2, which can be found in the packing box.

NOTE

- **The voltage of the AC charging CAN NOT exceed the AC INPUT voltage range.**
- **Before using for the first time, or after long-term storage, please charge the power station fully from AC charging for at least 10 hours to calibrate the battery capacity of the power station.**

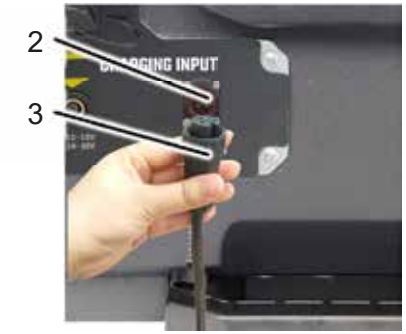
2.3 DC CHARGING INPUT

You can charge the power station from cars as follows:
Connect DC charging port 1 to cigarette lighter receptacle of 12V or 24V cars by DC charging cable 2, which can be found in the packing box.

NOTE

The car engine must run when charging the power station from the car.

2.4 WIND CHARGING INPUT (optional)



You can charge the power station from wind turbines as follows:

(1). Remove the cover 1 from wind charging port 2.

(2). Connect wind charging port 2 to wind charging cable 4 of wind turbines (optional equipment) by wind charging plug 3, which can be found in the packing box.

NOTE

The voltage of the wind turbine CAN NOT exceed the WIND INPUT voltage range.

2.5 DC QUICK CHARGING INPUT (optional)

You can charge the power station from DC 24V power unit as follows:

(1). Open the connector cap 1 on DC quick charging port 2.

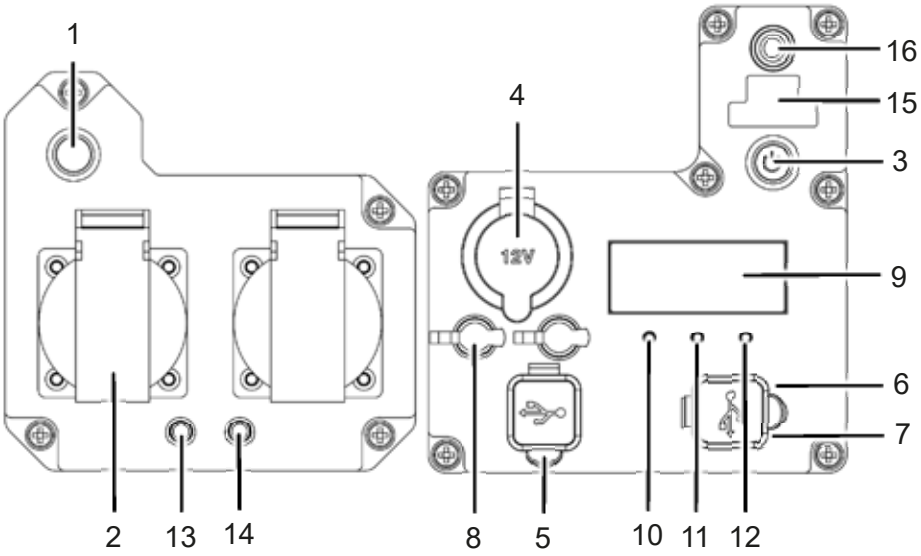
(2). Connect DC quick charging port 2 to the DC plug 3 on the DC output cable 4 of DC 24V power unit (optional) to charge the power station.

NOTE

- **The voltage of the DC power unit CAN NOT exceed the DC QUICK INPUT voltage range.**

- **DO NOT short circuit the DC quick charging port 2!**

3. OPERATING THE POWER STATION



3.1 DC OPERATION

You can use the DC output from the power station as follows:

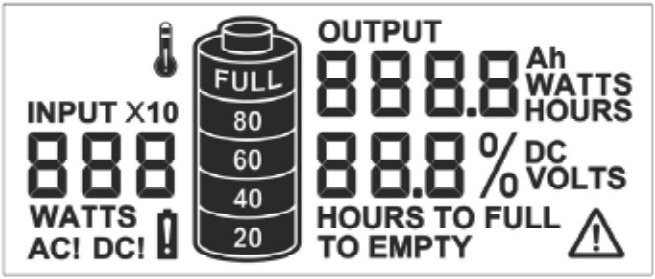
(1). Push the main switch 3 to "ON" position.

(2). Receptacle 4 and 8 all are 12V DC output port, according to the plug type of 12V DC electric devices to choose suitable one to connect.

(3). Receptacle 5, 6 and 7 all are DC output ports for USB or Type-C plugs. The maximum output power of the Type-C 6 is 60W, and the maximum output power of the USB 7 is 18W. These receptacles can automatically identify electric devices and then select the corresponding voltage and current for power supply.

NOTE

- **Be sure the receptacle load current is within receptacle rated current.**
- **If the DC output is overloaded (in excess of rated current), or if there is a short circuit in a connected appliance, the DC! icon and ⚠ icon in LCD Display 10 will show（as shown in the figure below）, and the DC output to the connected appliance(s) will shut off.**



3.2 AC OPERATION

You can use the AC output from the power station as follows:

(1). Push the main switch 3 to "ON" position.

(2). Push the AC switch 1 to "ON" position.

(3). Make sure the ready LED 13 comes on.

(4). Connect plug to the AC receptacle 2 for AC electric devices.

⚠ WARNING

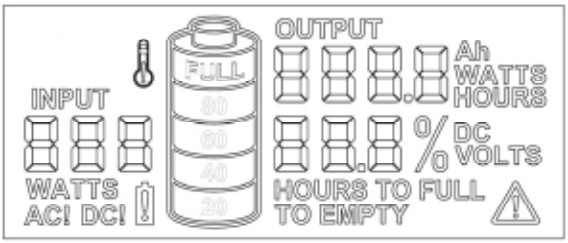
- **AC output voltage is very high, operators must be protected from electric shock at all times.**
- **Do not operate with wet hand.**
- **Do not operate by children without supervision.**

- **Do not expose the power station to rain, moisture or snow.**
- **There is high-voltage power inside the power station. Do not start the power station when the upper cover is opened, to prevent accidental electrical shock!**

NOTE

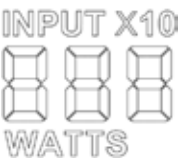
- **Be sure all electric devices including the lines and plug connections are in good condition before connection to the power station.**
- **Be sure the total AC load is within the power station rated output.**
- **The rated and maximum output power of the power station is based on resistive load, and is not applicable to inductive load and capacitive load. Since the power factor of inductive load and capacitive load are less than 1, the rated power of inductive load and capacitive load shall be small enough compared with the rated power of the power station, and the ratio of the two shall not exceed the power factor of the load, otherwise the power station may be overloaded or damaged. For example, if the power factor of the inductive load is 0.6, and if the rated output power of the power station is 2000VA, the rated power of this load cannot exceed: 0.6 * 2 = 1.2kW, otherwise the power station may have overload protection or damage.**
- **If the AC output is overloaded (in excess of rated power), or if there is a short circuit in a connected appliance, the warning LED 15 will go ON, and the AC output to the connected appliance(s) will shut off.**

4. LCD DISPLAY

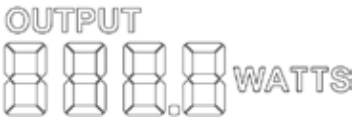


You can activate the display backlight by pressing any of the three buttons ▲/▼/**S**. The built-in LCD Display can indicate some important information:

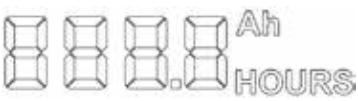
Battery icon: When the power station is charging, the battery segments in the LCD screen will blink. The power station is fully charged when all battery segments stop blinking and remain solid. If the remaining capacity of the battery is too low, the battery segments become blank and will blink as a prompt of recharging.



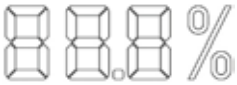
INPUT shows the amount of power (watts) going into the battery while charging. X10 will show when the input power exceeds 1000 watts. X10 means that the input power(watts) equals three displayed numbers multiplied by 10. If charging from solar, you will see the watts change as you reposition the panels into/out of the sunlight.



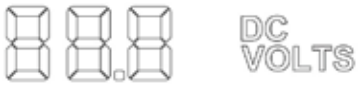
OUTPUT shows the amount of power (watts) that your appliances are using while plugged into the power station.



Shows the value in Ah for remaining capacity of the battery by pressing the button ▲ once, and for total running time in HOURS by pressing the button ▲ twice.



Shows remaining capacity of the battery in %.



Shows the battery voltage by pressing the button ▼

Shows remaining charging hours of the battery while charging.

Shows remaining operation hours of the battery while discharging.

Fault code 032 means that DC output is overloaded or short-circuited. Check DC appliances / cables /plugs, and reduce power of appliances.

Fault code 004 means that the battery voltage is too lower. Charge the battery immediately.
Fault code 008 means that the battery voltage is too higher. Stop charging the battery immediately and contact an authorized dealer.

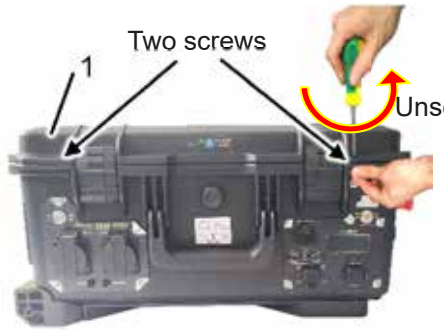
Fault code 016 means that the temperature in the power station is too higher. Turn off all appliances and put the power station in a cool place to cool it until the warning icons clear.

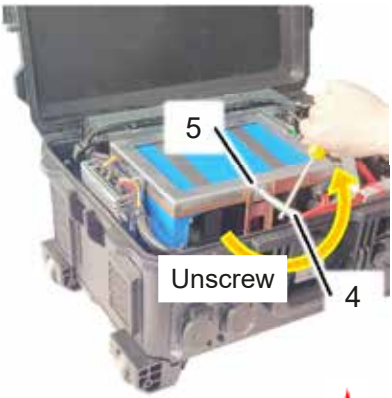
5. REPLACE THE BATTERY

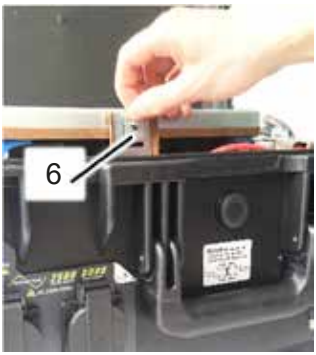
⚠ WARNING

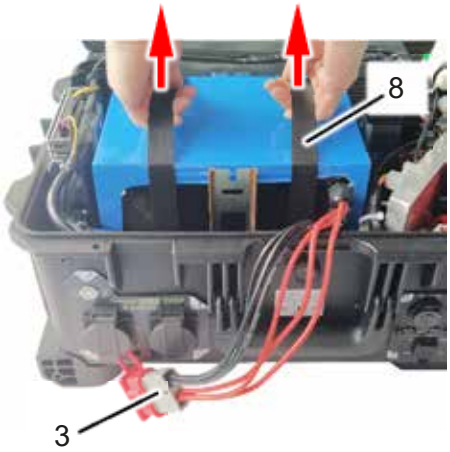
- **Read the instructions before you begin, and make sure you have the tools and skills required.**
- **Shut off the power station before starting to replace the battery.**
- **If you are not familiar with maintenance work, have an authorized dealer do it for you.**
- **Use ours or equivalent specifications / dimensions / quality batteries for replacement. Ask an authorized dealer for further attention.**
- **There is high-voltage power inside the power station. Do not start the power station when the upper cover is opened, to prevent accidental electrical shock!**

5.1 REMOVE THE BATTERY









(1). Remove the two screws, and then loosen the buckle 2.

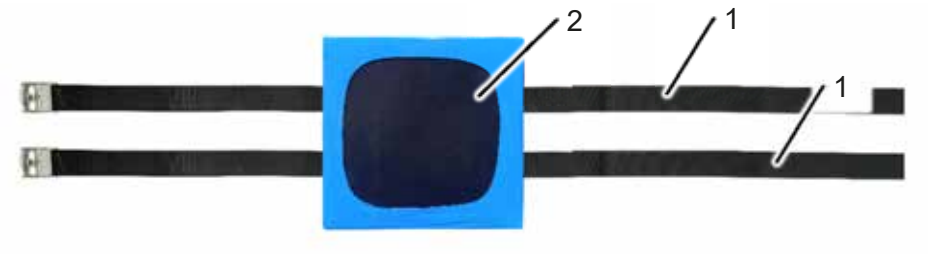
(2). Open the upper cover 1 and unplug the battery connector 3.

(3). Remove all screws 5 on battery baffle 7 with the spanner 4, and then remove gasket 6 and remove battery baffle 7. Two kinds of the spanner 4 can be found in the packing box.

(4). Hold the battery bandage 8 and remove the battery from the power station.

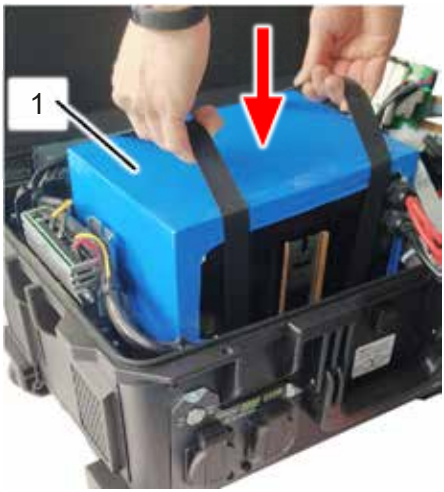
5.2 INSTALL THE BATTERY

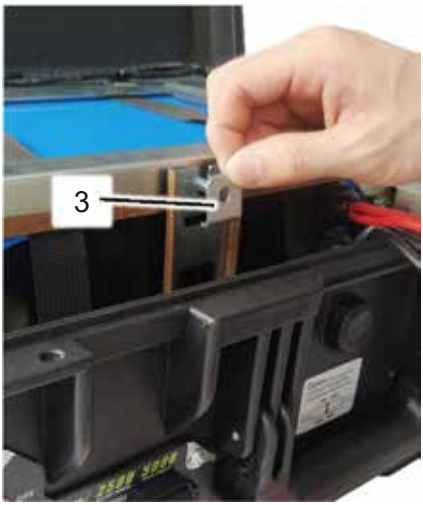
5.2.1 BIND THE BATTERY

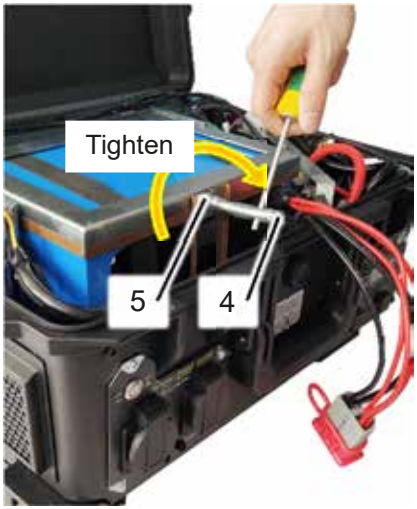


(1). Take out two battery bandages 1 from the packing box.
(2). Place the bandages 1 at the side of the battery 2, as shown in the figure above.
(3). Bind the bandages 1 around the battery 2.
(4). Make sure the bandage 1 through the metal buckle 3 and pressed tightly by the metal buckle 3 as shown in the figure above.
(5). The metal buckle 3 should be located on the side without waterproof joints as shown in the figure above.

5.2.2 REINSTALL THE BATTERY INTO THE POWER STATION

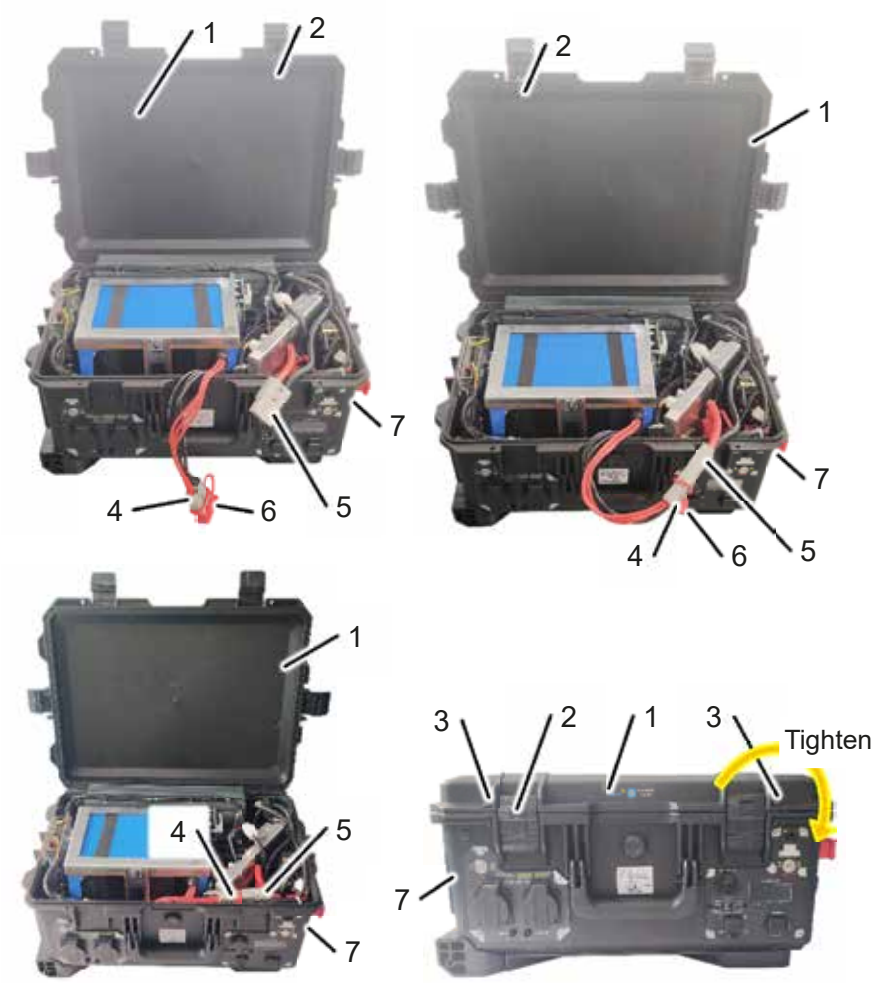






(1). Hold the battery 1 and put the battery 1 completely into the power station.
(2). Put the baffle 2 on the top of the battery 1 to cover the battery. Install the gasket 3. Note that the feet on the gasket 3 should be placed in the positioning slot, as shown in the figure above.
(3). Tighten screw 5 with the spanner 4. Two kinds of the spanner 4 can be found in the packing box.

5.2.3 CONNECT THE BATTERY



(1). Open the connector cap 6 on the battery connector 4, and connect the battery connector 4 securely together with the power station connector 5.
(2) As shown in the figure above, put the battery connector 4 and power station connector 5 into the right position in the casing 7, and arrange all exposed connectors, wiring harness and other parts into the casing 7 to ensure that it will not affect closing the upper cover 1.

(3). Close the upper cover 1, make sure that the wiring harness, connectors and other parts will not be clamped between the upper cover 1 and the casing 7, then press the upper cover 1, tighten all buckle 2, and finally tighten the two screws 3.

NOTE

Before using for the first time, please charge the power station fully from AC charging for at least 10 hours to calibrate the capacity of the new battery.

⚠ WARNING

There is high-voltage power inside the power station. Do not start the power station when the upper cover is opened, to prevent accidental electrical shock!

6. TRANSPORTATION AND STORAGE

- **Make sure turn OFF the main switch before transportation or storage.**
- **Disconnect the battery connector before long-distance transport or long-term storage.**
- **Before using for the first time, or after long-term storage, please charge the power station fully from AC charging for at least 10 hours to calibrate the capacity of the battery connected to the power station.**
- **During storage, please make sure to charge the power station at least every six (6) months.**

- **Keep all cooling holes open and clear of debris, mud, water, etc. Cooling holes are located on the front panel and back panel of the power station. If the cooling holes are blocked, the power station may overheat and damage the battery, or inverter.**
- **Store the unit in a clean, dry place. If possible, store the unit indoors and cover it to give protection from dust and dirt.**

7. PROTECTION

7.1 INPUT PROTECTION

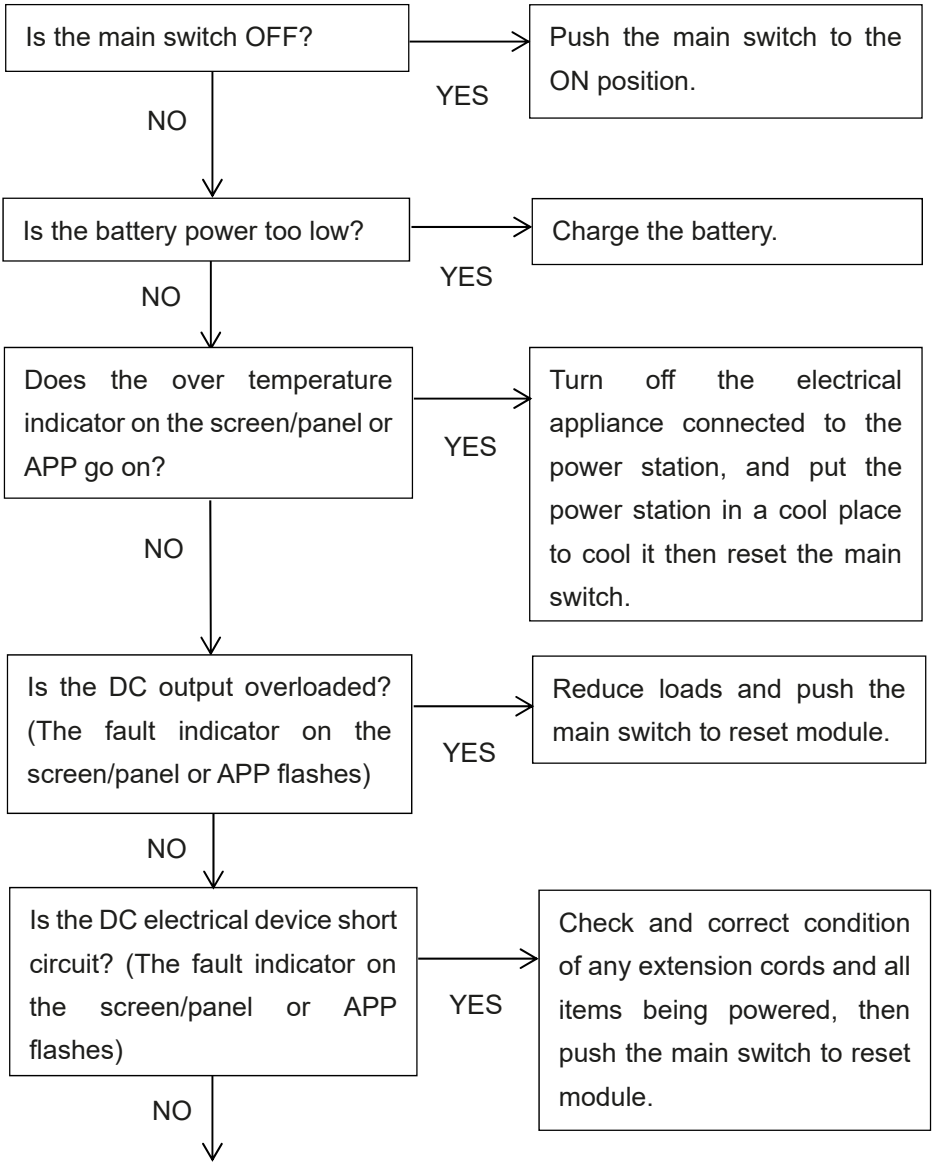
- Battery Charging Protection: When the battery is fully charged, the charging input will automatically shut down, and the all battery segments in the LCD screen will stop blinking and remain solid.
- Battery Low Voltage Protection: When the battery voltage is too lower, the DC and AC output will automatically shut down. Fault code 004 will show in the LCD screen, and the buzzer alarm will sound. Charge the battery immediately.
- Battery Over Voltage Protection: When the battery voltage is too higher, the charging input will automatically shut down. Fault code 008 will show in the LCD screen. Stop charging the battery immediately and contact an authorized dealer.

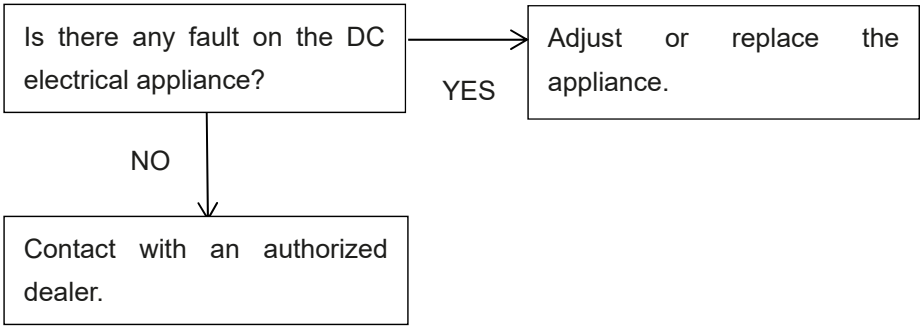
7.2 OUTPUT PROTECTION

- When AC output is overloaded (in excess of rated power) or short-circuited, the AC output will automatically shut down. The buzzer alarm will sound 3 times uninterruptedly and the warning light flashes 3 times at the same time. Reset the AC switch can recover the AC output after reducing loads or eliminating short-circuited problems.
- DC output is overloaded or short-circuited: the DC output will automatically shut down. Fault code 032 will show in the LCD screen. Reset the main switch can recover the DC output after reducing DC loads or eliminating short-circuited problems.
- Inverter Over Temperature Protection: When the temperature in the inverter is too higher, AC output will automatically shut down. The buzzer alarm will sound 5 times uninterruptedly and the warning light flashes 5 times at the same time. Turn off the electrical appliance connected to the power station, and put the power station in a cool place to cool it then reset the AC switch.
- Over Temperature Protection: When the temperature in the power station is too higher, the charging input, DC and AC output will automatically shut down. Fault code 016 will show in the LCD screen. Over temperature light comes on at the same time. Turn off the electrical appliance connected to the power station, and put the power station in a cool place to cool it then reset the main switch.

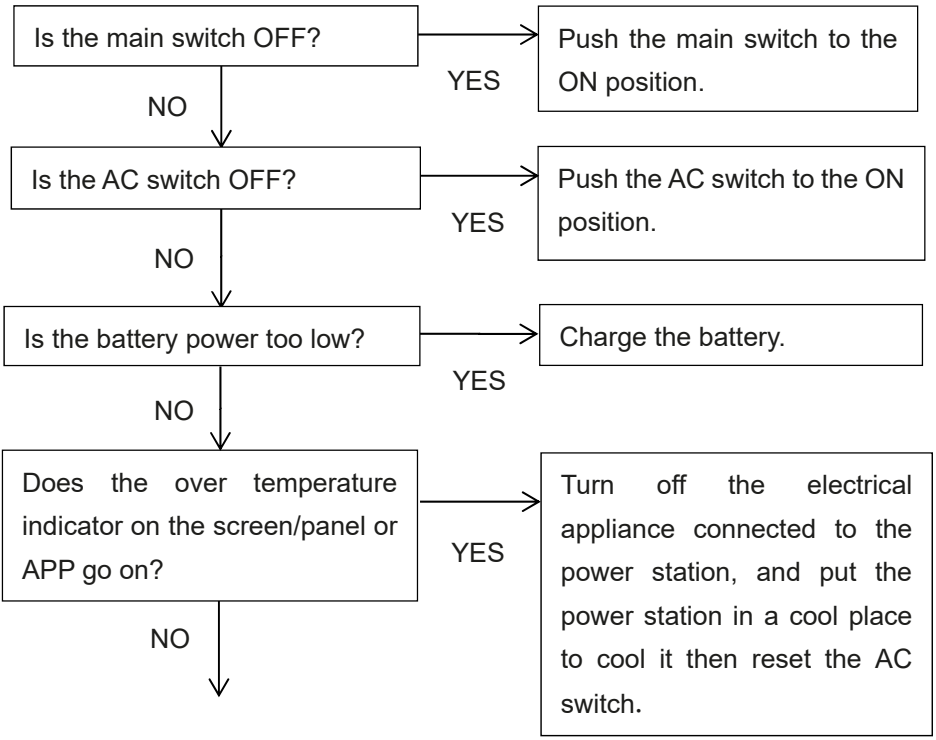
8. TROUBLE SHOOTING

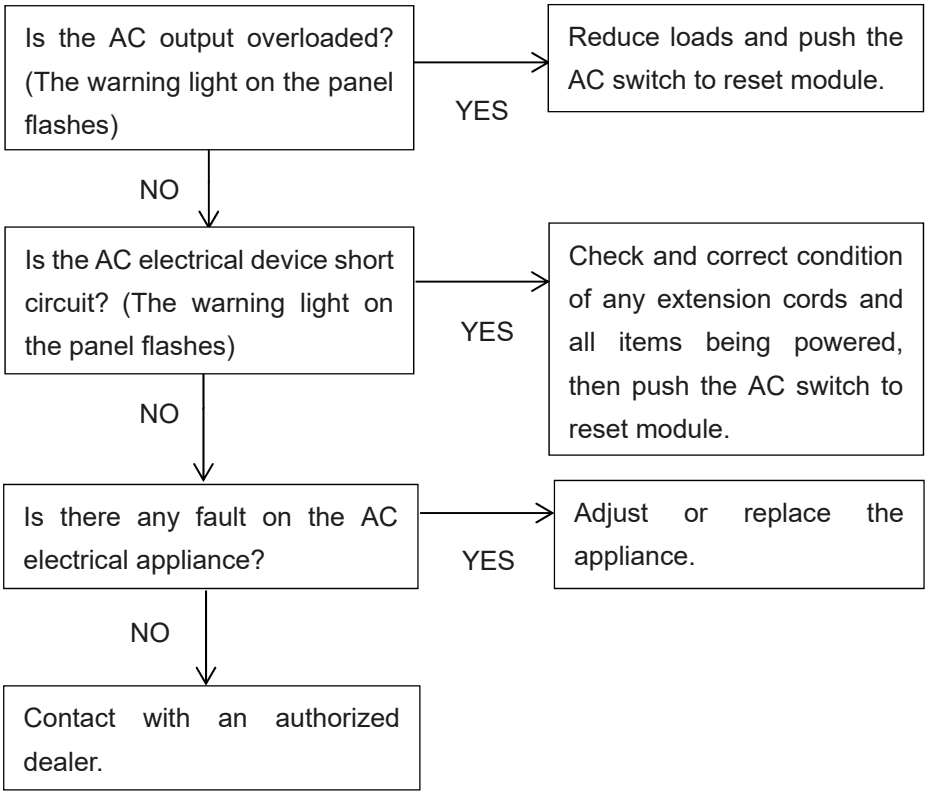
No DC Output




Is there any fault on the DC electrical appliance?
YES
Adjust or replace the appliance.
NO
Contact with an authorized dealer.

No AC Output


Is the main switch OFF?
YES
Push the main switch to the ON position.
NO
Is the AC switch OFF?
YES
Push the AC switch to the ON position.
NO
Is the battery power too low?
YES
Charge the battery.
NO
Does the over temperature indicator on the screen/panel or APP go on?
YES
Turn off the electrical appliance connected to the power station, and put the power station in a cool place to cool it then reset the AC switch.
NO


Is the AC output overloaded? (The warning light on the panel flashes)
YES
Reduce loads and push the AC switch to reset module.
NO
Is the AC electrical device short circuit? (The warning light on the panel flashes)
YES
Check and correct condition of any extension cords and all items being powered, then push the AC switch to reset module.
NO
Is there any fault on the AC electrical appliance?
YES
Adjust or replace the appliance.
NO
Contact with an authorized dealer.

9. SPECIFICATIONS

Model	OFFGRID-2500L
Rated Power	2500VA
Peak Power	5000VA
Dimensions	575×421×287mm
Weight	42kg
Battery Type	$LiFePO_4$
Battery Capacity	2688Wh, 105Ah (25.6V)
Battery Cycle Life	>3000 cycles

OUTPUT

AC Output	Output Waveform	Pure-Sine Wave, THD<3%
	Rated Voltage*	100/110/120/220/230/240V
	Rated Frequency*	60/50Hz
DC Output	Cigarette Lighter Port	12V/10A
	5521 Port	12V/6A
	USB	5V/3.1A, QC3.0(5V/3.4A, 9V/2A, 12V/1.5A)
	Type-C	PD60W(5V/3A, 9V/3A, 12V/3A, 15V/3A, 20V/3A)

CHARGING INPUT

Model		OFFGRID-2500L
AC	Wall Outlet	100~120V / 200~240V, Max. 300W, 12 hours fully charged
Solar	MPPT Control System	36~140V, Max. 600W, 5 hours fully charged
DC	Car Cigarette Lighter Port	12~15V / 24~30V, Max.160W, 24 hours fully charged
Wind (1)	3AC Port	3AC 22~26V, Max. 600W, 5 hours fully charged
DC Quick (1)	Anderson SB120	24~28V, Max.1500~2500W, 1.5~2.5 hours fully charged

NOTE

(1). The wind charger and the DC quick charger are optional equipment, which can charge the power station at the same time.

(2). The rated and maximum output power of the power station is based on resistive load, and is not applicable to inductive load and capacitive load. Since the power factor of inductive load and capacitive load are less than 1, the rated power of inductive load and capacitive load shall be small enough compared with the rated power of the power station, and the ratio of the two shall not exceed the power factor of the load, otherwise the power station may be overloaded or damaged. For example, if the power factor of the inductive load is 0.6, and if the rated output power of the power station is 2000VA, the rated power of this load cannot exceed: 0.6 * 2 = 1.2kW, otherwise the power station may have overload protection or damage.

(3).The output specifications are based on the standard ambient temperature: 25℃.

***Specific parameters to see labels on the product.**

LEMANIAENERGY®
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Lemania Energy S.A. - Rte du Bois-de-Bay 28, 1242 Satigny - Switzerland