Lithium Battery Power Bank

Product Manual

This manual introduces 12/24VDC series energy storage battery, Please read this manual before you to install the battery and follow the instruction carefully during the installation .Any confusion,please contact manufacturer immediately for advice and clarification .

Contents

1. Safety Precautions

 Reminding

1) It is very important and necessary to read the user manual carefully (in the accessories) before installing or using battery .Failure to do so or to follow any of the instructions or warnings in this document can result in electrical shock,serious injury ,or death,or can damage battery,potential rendering it inopera ble .
2) If the battery is stored for longtime,it is required to charge them every six months,and the soc should be no less than 90% .
3) Battery needs to be recharged within 12 hours,after fully discharged .
4) Do not expose cable outside .
5) All the battery terminals must be disconnected for maintenance .
6) Please contact the supplier within 24 hours if there is something abnormal .
7) Do not use cleaning solvents to clean battery .
8) Do not expose battery to flammable or harsh chemicals or vapors .
9) Do not paint any part of battery,include any internal or external components .
10) Do not connect battery with PV solar wiring directly .
11) The warranty claims are excluded for direct or indirect damage due to items above .
12) Any foreign object is prohibited to insert into any part of battery .

 Warning

1.1 Before Connecting

1) After unpacking,please check product and packing list first,if products is damaged or lack of parts ,please contact with the local retailer .
2) Before installation,be sure to cut off the grid power and make sure the battery is in the turned-off mode .
3) Wiring must be correct ,do not mistake the positive and negative cables,and ensure no short circuit with the external device .
4) It is prohibited to connect the battery and AC power directly .
5) The embedded BMS in the battery .The wall mounted case are not allowed to be used in series,in the communication state, a maximum of 16 parallel connections are allowed .
6) Battery system must be well grounded and the resistance must be less than 1Ω .
7) Please ensured the electrical parameters of battery system are compatible to related equipment .
8) Keep the battery away from water and fire .

1.2 In Using

1) If the battery system needs to be moved or repaired,the power must be cut off and the battery is completely shutdown .
2) It is prohibited to connect the battery with different type of battery .
3) It is prohibited to put the battery working with faulty or incompatible inverter .
4) It is prohibited to disassemble the battery (QC tab removed or damaged) .
5) In case of fire,only dry powder fire extinguisher can be used,liquid fire extinguishers are prohibited .
6) Please do not open ,repair or disassemble the battery except staffs from manufacturer .We do not undertake any consequences or related responsibility which because of violation of safety operation or violating of design,production and equipment safety standards .

1.3 In Series Connection

1. The rated capacity of each battery must be keep same.
2. The remaining capacity of each battery must be keep same.
3. The voltage of each battery must be keep same.
4. The Max voltage of the lithium batteries in series should not exceed 51.2V.
5. The batteries which must be from the same batch productionter.

2. Introduction

12/24VDC series Lithium battery power bank is one of new energy storage products developed, it can be used to support reliable power for various types of equipment and systems. Is especially suitable for application scene of high power, limited installation space, restricted load-bearing and long cycle life .

12/24VDC series has built-in BMS battery management system, which can manage and monitor cells information including voltage, current and temperature. What s more, BMS can balance cells charging and discharging to extend cycle life.

Multiple batteries can connected in parallel to expand capacity and power in parallel for larger capacity and longer power supporting duration requirements.

The capacity of Lithium battery should be higher than the Solar Inverter which you will connect with.

2.1 features:

- The whole module is non-toxic, non-polluting and environmentally friendly .
- Cathode material is made from LiFePO4 with safety performance and long cycle life .
- Battery management system (BMS) has protection functions including over-discharge, over-charge, over-current and high/low temperature .
- The system can automatically manage charge and discharge state and balance current and voltage of each cell .
- Flexible configuration,multiple battery modules can be in parallel for expanding capacity and Power .
- Adopted self-cooling mode rapidly reduced system entire noise.
  The module has less self-discharge, up to 6 months without charging it on shelf, no memory effect,excellent performance of shallow charge and discharge .
- Working temperature range is from -10℃ to 50℃ ,(charge 0℃~ 50℃ ,discharge -10℃~ 50℃) with excellent discharge performance and cycle life .

2.2 Specifications:

Basic parameters	12.8V50Ah	12.8V100Ah	12.8V150Ah	12.8V200Ah	12.8V300Ah	25.6V100Ah	25.6V150Ah
Nominal capacity	640Wh	1280 Wh	1920 Wh	2560 Wh	3840Wh	2560Wh	3840Wh
Fast charge voltage	14.4 Vdc					28.8 Vdc	
Float charge voltage	14.0Vdc					28.0 Vdc	
Low DC cut-off voltage	11.7 Vdc					23.4 Vdc	
Max. CHG. current	25A	50A	75A	100A	150A	50A	75A
Max. DISC. current	50A	100A	100A	150A	200A	100A	100A
Peak DISC. current	75A(1sec.)	150A(1sec.)	150A(1sec.)	225A(1sec.)	300A(1sec.)	150A(1sec.)	150A(1sec.)
Display	LCD display or no display						
Working temperature	charge 0℃ ~ +50℃ ,discharge -10℃ ~ +50℃						
Shelf temperature	-10℃ ~ +50℃						
Certification	UN38.3 , MSDS						

2.3 Equipment Interface Instruction

1. +Battery terminal

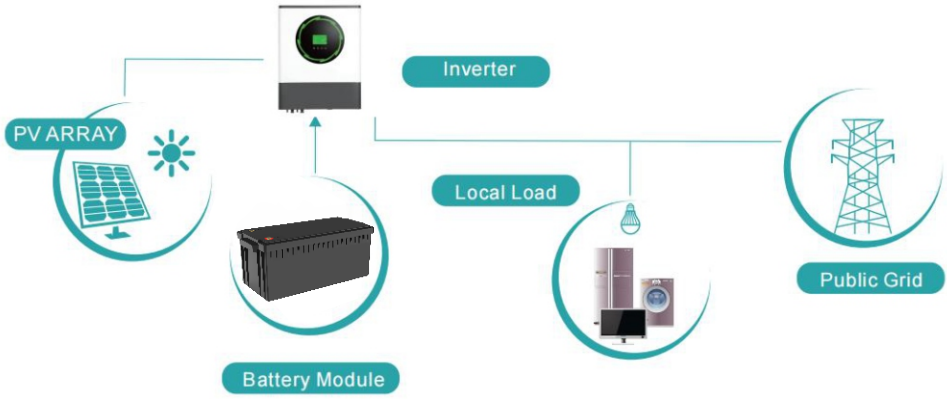
There are one pair of terminals, Red is battery positive pole

2. -Battery terminal

There are one pair of terminals , Black is battery negative pole .

3. Safe handing of lithium battery guide

3.1 Schematic Diagram of solution



3.2 Tools

The following tools are required to install the battery pack

Wire cutter

Crimping Modular Plier

Screw Driver

NOTE

Use properly insulated tools to prevent accidental electric shock or short circuits. If insulated tools are not available,cover the entire exposed metal surfaces of the available tools, except their tips, with electrical tape.

3.3 Safety Gear

It is recommended to wear the following safety gear when dealing with the battery back.

Insulated gloves

Safety goggles

Safety shoes

3.4 Installation Location

Make sure that the installation location meets the following conditions.

- The area is completely water proof.
- The floor is flat and level.
- There are no flammable or explosive materials.
- The ambient temperature is within the range from 0℃ to 50℃.
- The temperature and humidity is maintained at a constant level.
- There is minimal dust and dirt in the area.
- Use fitting screws to fix the box on the wall.

CAUTION

If the ambient temperature is outside the operation range, the battery pack stops operation to protect itself. The optimal temperature range for the battery pack to operate is 0℃ to 50℃ .

Frequent exposure to harsh temperature may deteriorate the performance and life of the battery pack .

4. Trouble Shooting Steps

4.1 Problem determination based on:

1) Whether the battery BMS can be work turned on or not.

2) Check the battery Voltage ,11.8-14.0Vdc （12.8V） , 23.6-28.0Vdc （25.6V） ,
check whether the battery can be charge/discharge or not.

3) Temperature: Above 50℃ or under -10℃, the battery could not work.
Solution: to move battery to the normal operation temperature range between -10 ℃ and 50 ℃ .

4) Current: If current is greater than 150A, battery protection will turn on .
Solution: Check whether current is too large or not, if it is, to change the setting on power supply side.

5) High Voltage: If charging voltage above 29.2 Vdc(25.6 V system), battery protection will turn on.
Solution: Check whether voltage is too high or not, if it is, to change the setting on power supply side.

6) Low Voltage: When the battery discharges to 22.4Vdc(25.6 V system) or less, battery protection will turn on.
Solution: Charge the battery for some time.

4.2 The battery cannot be charged or discharged

1) Cannot be charged:
Disconnect the power cables, measure voltage on power side, if the voltage is 25.6～28.0Vdc(25.6 V system) ,restart the battery,
connect the power cable and try again, if still not work, turn off battery and contact distributor.

2) Unable to discharge:
Disconnect the power cables and measure voltage on battery side, if it is under 22.4V, please charge the battery. If voltage is above 25.6V and still cannot discharge, turn off battery and contact distributor.

5. Emergency Situations

1) Leaking Battery

If the battery pack leaks electrolyte, avoid contact with the leaking liquid or gas. If one is exposed to the leaked substance, immediately perform the actions described below .

Inhalation: Evacuate the contaminated area, and seek medical attention.

Contact with eyes: Rinse eyes with flowing water for 15 minutes, and seek medical attention.

Contact with skin: Wash the affected area thoroughly with soap and water, and seek medical attention.

Ingestion: Induce vomiting, and seek medical attention.

2) Fire

NO WATER! Only dry powder fire extinguisher can be used; if possible, move the battery pack to a safe area before it catches fire.

3) Wet battery

If the battery pack is wet or submerged in water, do not let people access it, and then contact an authorized dealer for technical support.

4) Damaged Battery

Damaged battery are dangerous and must be handled with the utmost care. They are not fit for use and may pose a danger to people or property. If the battery pack seems to be damaged pack in its origial container, and then return it to an authorized dealer.

6. Parameter Setting

Lead-acid Battery

On the setting page of lead-acid battery, the voltage value flashes, press the button at lower right to select the voltage to be used, then press the button at upper right to confirm and save it (finally the voltage value is constantly on); either press and hold the button at upper right for 2 seconds to go back the home page, orpress it to perform other mode settings.

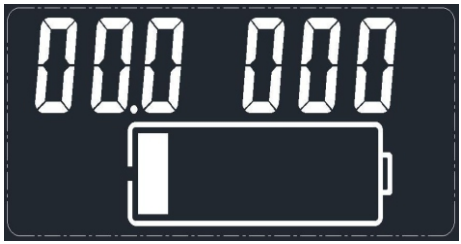
Ternary Lithium Battery

On the setting page of ternary lithium battery, the series value flashes, press the button at lower right to select the series value to be used, then press the button at upper right to confrim and save it (finally the series value is constantly on); either press and hold the button at upper right for 2 seconds to go back the home page, or press it to perform other mode settings.

Lithium-iron Battery

On the setting page of lithium-iron battery, the series value flashes, press the button at lower right to select the series value to be used, then press the button at upper right to confrim and save it (finally the series value is constantly on); either press and hold the button at upper right for 2 seconds to go back the home page, or press it to perform other mode settings.

Customized high and low voltage setting



On the page of customized high and low voltage setting, the figure 00.0 on the left stands for the low voltage, while the figure 000 on the right stands for the saturated voltage; press the button at lower right to set the digit value, then press and hold it for 2 seconds to shift the cursor; after the low voltage and the saturated voltage are both properly set, press the button at upper right to confirm and save them (finally both values are constantly on); either press and hold the button at upper right for 2 seconds to go back the home page, or press it to perform other mode settings.

Tips: Actually, 000 on the right shall be 00.0, for example, the actual display of 255 is 25.5.

Backlight Setting

On the setting page of backlight, ON/OFF flashes, press the button at lower right to select ON or OFF; ON means that the backlight will be automatically powered off after a delay of 10 s, while OFF means that the backlight is constantly on; press the button at upper right to confirm and save all settings, then either press and hold it for 2 seconds to go back home page, or press it to perform other mode settings.

Low Voltage Alarm Setting

On the setting page of low voltage alarm, 00.0 on the left stands for value set, press the button at lower right to set the digit value, then press and hold it for 2 seconds to shift the cursor; after the alarm voltage is properly set, press the button at upper right to confirm and save both values (finally they are constantly on); either press and hold the button at upper right for 2 seconds to go back the home page, or press it to perform other mode settings.

Notes: If the parameters of low voltage alarm are not customized by users, this product will automatically alarm by default when the power is lower than 10%.

Alarm Sound Setting

On the setting page of alarm sound, ON/OFF flashes, press the button at lower right to select ON or OFF; ON stands for turning on the alarm sound, while OFF stands for turning off the alarm sound, then press the button at upper right to confirm and save the settings; finally, either press and hold it to go back the home page, or press it to perform other mode settings.

Notes: This product is the patented product from our company, please don't imitate it, or violators will be prosecuted.