

LiFePO4 Battery

• 12.8V-100Ah • 12.8V-300Ah

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1.Overview

1.1 Scope

This user manual provides information, instructions and maintenance guidelines for the low-voltage household energy storage battery series. The Residential energy storage series is a lithium battery system developed to be compatible with various inverter brands on the market.

1.2 Intended Audience

This manual is intended for professional technical personnel involved in the installation, operation, and maintenance of lithium batteries, as well as end-users seeking technical information.

1.3 Manual Usage

1. Before using the product, carefully review this user manual and keep it in a readily accessible location.
2. All information in this user manual, including images and symbols, is owned by our company, and the use of any part or all of this manual by individuals outside the Company is strictly prohibited without authorization.

2.Product Introduction

2.1 Introduction




1. The residential energy storage series is a battery module developed by for low-voltage lithium battery systems, primarily applied in the field of residential energy storage. It can achieve high-precision multi-cell voltage and temperature acquisition.
2. Embedded BMS system effectively monitors phenomena such as over-temperature, over-voltage, and over-current, reducing the risk of battery damage or even fire, ensuring the safety of life and property.
3. This manual introduces the types, performance, technical characteristics, warnings, and precautions of lithium battery systems. This specification applies only to battery systems supplied by the Company.

2.2 Advantages

1. The positive electrode material of the battery is lithium iron phosphate (LiFePO₄) material, which has good safety performance, has a cycle life of more than 6,000 times.
2. The high-performance intelligent management system is adopted to realize comprehensive state control of battery charging, discharging, floating charging and hibernation, and multi-level protection is set for voltage, current, temperature, etc., so that the battery is always in an ideal state.
3. Built-in intelligent balance module to ensure the capacity consistency of the battery pack during long-term use and prolong the service life.

3.Warning Symbols

To ensure user safety during product use, relevant labeling information with appropriate symbols is provided in this manual. The following lists symbols that may be used in this manual, so please read carefully.

Icon	Description
	Signifies a low-level potential hazard. Failure to avoid may result in minor or moderate injury to personnel.
	Indicates the presence of high voltage inside the battery module. Touching may lead to electric shock hazards.
	Wear suitable protective gears (clothing, shoes and gloves) to prevent electrostatic damage on the equipment.

4.Precautions

4.1 Manual Storage

- 1.This manual covers crucial information for the Home Energy Storage Series. Prior to operating the product, carefully read this manual as it provides essential assistance in acquainting you with the product.
- 2.Store this manual securely for the convenience of relevant installation and maintenance personnel to refer to during operations.
- 3.Strictly follow the descriptions in this manual when operating the Home Energy Storage Series to avoid equipment damage, injuries, property loss, and other potential issues.

4.2 Label Protection

- 1.Warning labels on the Home Energy Storage Series contain crucial safety operation information.It is strictly prohibited to intentionally tear or damage them!
- 2.The product has a nameplate on the casing, providing essential parameter information. It is strictly prohibited to intentionally tear or damage it!

4.3 Safety Warning Labels

When conducting installation, routine maintenance, inspections, etc., on the Home Energy Storage Series, to prevent unauthorized individuals from approaching, engaging in improper operations, or accidents, adhere to the following conventions:

- 1.Set warning signs or establish safety warning tape near the operating area to prevent unrelated personnel from approaching.
- 2.After maintenance or inspection, conduct a thorough on-site safety check.

4.4 Personnel Requirements

- 1.Only personnel with relevant professional qualifications are allowed to perform various operations on this product.
- 2.Operating personnel should be thoroughly familiar with the composition and working principles of the entire Home Energy Storage Series system.
- 3.Operating personnel should be fully acquainted with the "User Manual" for this product.

4.5 Power-On Measurement



Danger

After the energy storage battery is installed, there is a high voltage present, and accidental contact with the positive and negative terminals may result in electric shock injuries. Therefore, when conducting power-on measurements, attention should be paid to the following:

1. Take necessary insulation protection measures (such as wearing insulated gloves).
2. Accompanying personnel must be present to ensure personal safety.

4.6 Measuring Instruments



Danger

When performing electrical connections and trial operations on the energy storage backup battery, and to ensure that electrical parameters meet requirements, relevant electrical measuring equipment such as multimeters, power meters, etc., should be used. Note the following:

1. Use measuring equipment with a suitable range that conforms to on-site working conditions.
2. Ensure the correct and standardized electrical connections of the instruments to avoid dangers such as electric arcs.

4.7 Maintenance And Inspection



Danger

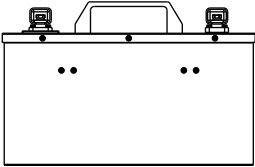
When both the energy storage battery and the inverter are turned off, and electrical connections are confirmed to be disconnected, maintenance or inspection operations can be carried out on the energy storage battery cabinet. Pay attention to the following:

1. Ensure that the energy storage battery will not be accidentally re-energized.
2. Use a multimeter to ensure that the energy storage battery is completely de-energized.
3. For parts near potentially live components during operations, use insulating materials for insulation covering or grounding.
4. It is strictly prohibited to perform maintenance or inspection operations on live equipment!

When performing maintenance or inspection on equipment, it must be ensured that at least two personnel are present at the site. Maintenance operations can only be carried out after the equipment is safely de-energized, fully charged, or discharged.

5.Overview of Main Components

5.1 Product Configuration List

No.	Image	Name	Qty
1		Battery	1

The product configuration list is subject to change without prior notice.

6.Product Details

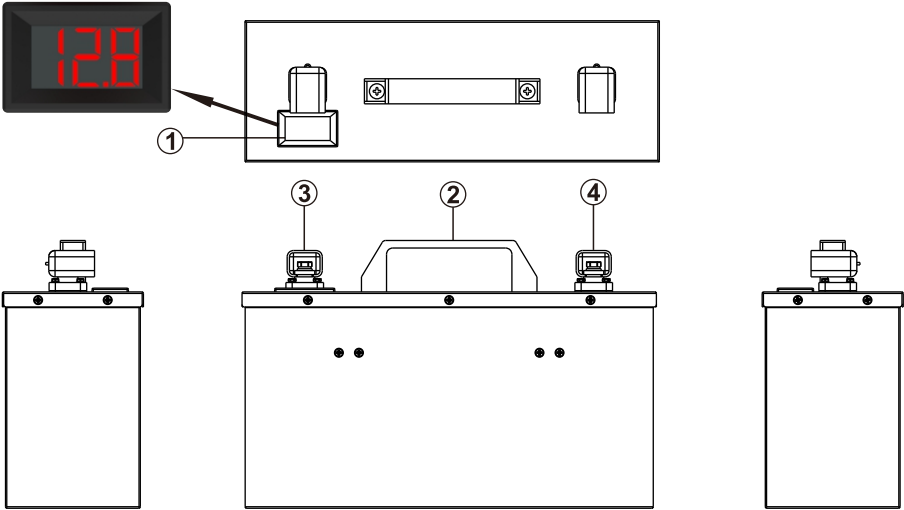
6.1 Product Parameter

The technical parameters of LiFePO4 Battery Energy Storage System are shown in Table 1 below:

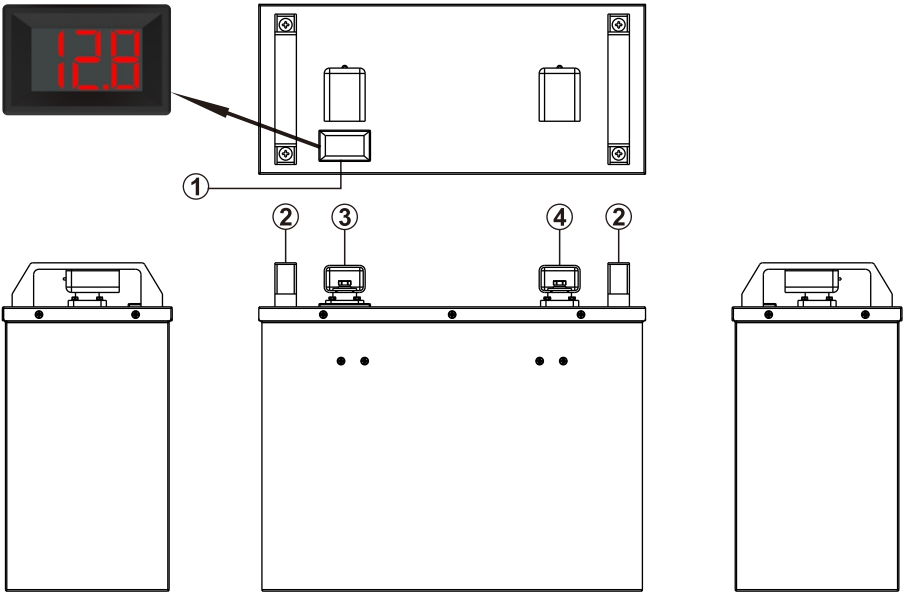
Items	12.8V 100Ah	12.8V 300Ah
Energy Storage	1280Wh	3840Wh
Rated Voltage	12.8V	12.8V
Voltage Range	10.8V-14.6V	10.8V-14.6V
Max Charge Current	100A	200A
Max Discharge Current	100A	200A
Discharging Cut-off Voltage	10.8V	10.8V
Floating Voltage	14.4V	14.4V
Cycle life	6000 cycles @ 80% DOD	
Work Temperature	-20°C~55°C	

6.2 Product Appearance

The structure of LiFePO4 battery energy storage system is shown below:



(100Ah machine diagram)



(300Ah machine diagram)

- 1.Voltage display screen 2.lift handle 3.Positive terminal 4.Negative terminal

7. Product Installation

7.1 Preparations













1. There is a standard site for installing battery modules.
2. Check whether the battery module is installed firmly and correctly.
3. Considering the load capacity, carefully set the total installation capacity of the installation site.

*Installation Suggestions:

When placing battery modules on the shelf it is recommended to use an elevator for safety. If the elevator is difficult to use, it is recommended that at least two people to install it.

7.2 Installation Tools

Prior to installation, prepare the following tools:

Category	Description		
General Tools	 Multimeter	 Protective gloves	 Insulated safety shoes
	 Protective clothing	 Safety goggles	 Antistatic wrist strap
Installation Tools	 Electric screwdriver	 Socket wrench	 Wire stripper
	 Phillips screwdriver (M4/M6)	 Electric drill	 Hammer

7.3 Visual Inspection

Items	Verification Method
Correct Position of All Screw	Visual checking
Power Port	
Label (position, direction, serial)	
No physical damage	

8.Usage

8.1 Charging Instructions

- 1.When charging the battery string, confirm the positive and negative polarities. Do not connect the positive and negative polarities to the opposite side.
- 2.Set the battery charging current on the rectifier to prevent overload protection of the rectifier due to high battery charging current.
- 3.Set the equalized charging voltage and floating charging voltage based on the battery charging voltage range to preven the battery from being overcharged or undercharged.
- 4.After the battery leaves the factory, 0.2C current should be used to replenish the battery for each three months of storage.

8.2 Discharging Instructions

Discharge the battery in accordance with the specified current size strictly. When a single battery is used, the maximum discharge current is 0.5C. When multiple batteries are connected in parallel, set the maximum discharge current according to the following coefficient.

*12V series, a maximum of 4 series support. When used in parallel or in parallel, the voltage difference of each battery cannot exceed 0.2V.

Number of parallel batteries	Multiplied by the coefficient of	Maximum system discharge current
2 only	0.6	0.6C.A*2
3 only	0.5	0.5C.A*3
N only	0.5	0.5C.A*N

9.Matters needing attention

- 1.The battery pack must be maintained by professional personnel, non-professional personnel are strictly prohibited to dismantle, To avoid danger, do not wear or damage the battery string cable during operation or maintenance.
- 2.Before using the battery module, ensure that the positive and negative terminals are correctly connected and reliably connected. The battery string cover is properly grounded.
- 3.Do not discharge the battery during charging.
- 4.Do not use the battery module outside the operating range. Otherwise, abnormal conditions such as insufficient battery power and reduced battery life may occur.
- 5.Do not expose the power module to the sun for a long time.
- 6.Do not step on the battery module or immerse the battery module in water. When not in use, store the battery module in a cool and dry environment, preferably with semi-electric storage.
- 7.Before connecting cables, ensure that the cables and cable labels are consistent with actual installation conditions.
- 8.When operating high voltage or AC power, use special tools. Do not use ordinary or non-special tools carried by yourself.
- 9.The installation of power supply equipment must comply with local safety standards, and the personnel who install the equipment must have relevant work qualifications.
- 10.Do not wear conductive objects such as watches, bracelets, bracelets and rings during operation.
- 11.When operating the battery in a damp environment, prevent water from entering the battery module.