



USER MANUAL

PB Replacement 12.8V Series LiFePO₄ Battery



Important safety instructions

Please keep this manual for future reference

This manual contains all the safety, installation and operating instructions for 12.8V lithium iron phosphate batteries.

Please read all instructions and precautions in the manual carefully before installation and use.

1. There is a non-safe voltage inside the energy storage battery, in order to avoid personal injury, please do not disassemble it yourself, if you need to repair it, you should contact the company's professional maintenance personnel.
2. Do not install the energy storage battery in a place that is within the reach of children.
3. Do not install the energy storage battery in harsh environments such as wet, greasy, flammable, explosive, or dust accumulation.
4. When the energy storage battery is working, please do not open the box.
5. It is advisable to install a suitable fuse or circuit breaker externally.
6. After installation, check whether all wiring connections are tight to avoid the danger of heat accumulation due to false connections.
7. The energy storage battery should be charged with DC power supply when charging, and it is forbidden to connect it in parallel with other input AC power sources to avoid damage.
- 8. If not used for a long time, it is recommended to charge it every three months.**

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1. Basic information

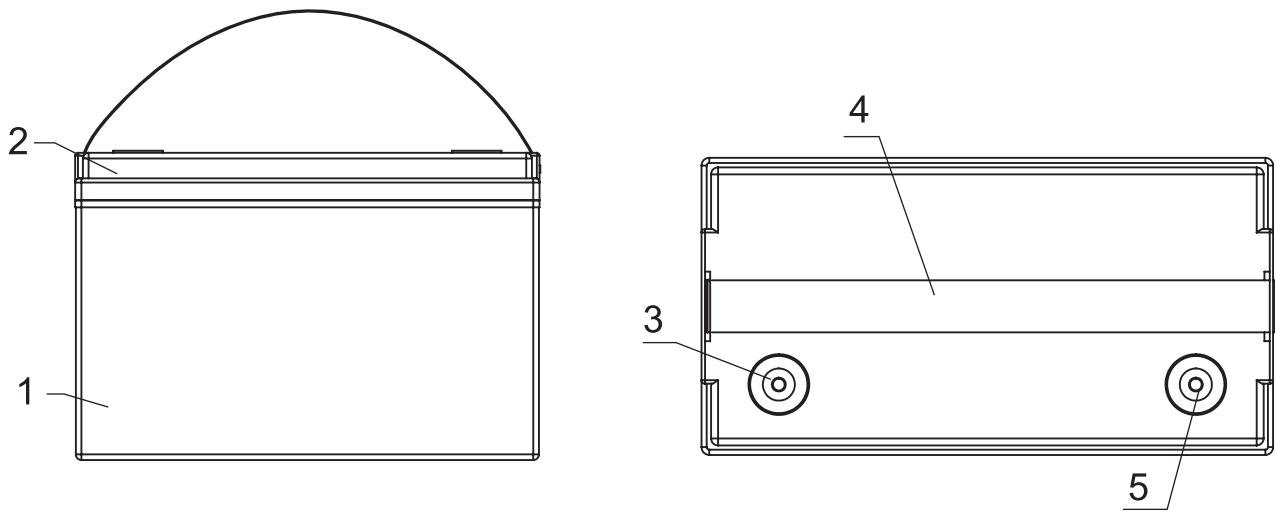
1.1 Product Overview

12.8V series energy storage battery is mainly used for RV, yacht, golf cart and other internal energy storage, using high-performance, long-life lithium iron phosphate Battery is the basic energy storage unit. The 12.8V series energy storage battery improves the internal temperature field of the product through a scientific and reasonable active heat dissipation method Consistency, extended service life and continuous high current output. External can be string and use, up to four string eight, Compared to 12V lead-acid batteries, 12.8VLiFePO4 batteries are lighter and safer to use.

1.2 Features:

- ◆ The battery adopts high-performance lithium iron phosphate battery with high safety performance and long service life;
- ◆ Super long life, small size, more lightweight
- ◆ Safe and non-explosive, can work in a wide temperature range
- ◆ Output terminal, convenient transportation, with protective measures
- ◆ Low self-discharge, easy to adjust capacity
- ◆ External can be string and use, up to 4 strings 8 and
- ◆ Plastic shell, waterproof and explosion-proof

1.3 Function Description



1	box	3	Positive terminal
2	Case cover	4	Rope handle
5	Negative terminal		

2. Installation instructions

2.1 Installation Precautions..

Before installation, read this manual carefully to familiarize yourself with the installation procedure.

1. Leave a certain space around the installation for heat dissipation
2. Avoid direct sunlight and rain infiltration during outdoor installation, which may cause damage.
3. Do not place metal objects nearby to prevent short circuit.
4. The virtual connection points and corroded wires may cause great heat, melt the insulation layer, burn the surrounding materials and even cause fire, so To ensure that the connector is tight, the wire is best fixed with a cable tie to avoid shaking when moving the application and causing the connector to loose.
5. After the power switch is turned off, the energy storage chassis still has high voltage. Do not open or touch the internal components.
6. Do not reverse connect the charge and discharge end of this product, otherwise it is easy to damage the equipment, or unpredictable risks occur.
7. If any injury occurs during installation or use, please seek medical attention.

2.2 Installation and Cable Connection

Installation and connection must comply with national and local electrical code requirements.

Select the corresponding or larger wire according to the use of current, so as not to bring unnecessary trouble when using.

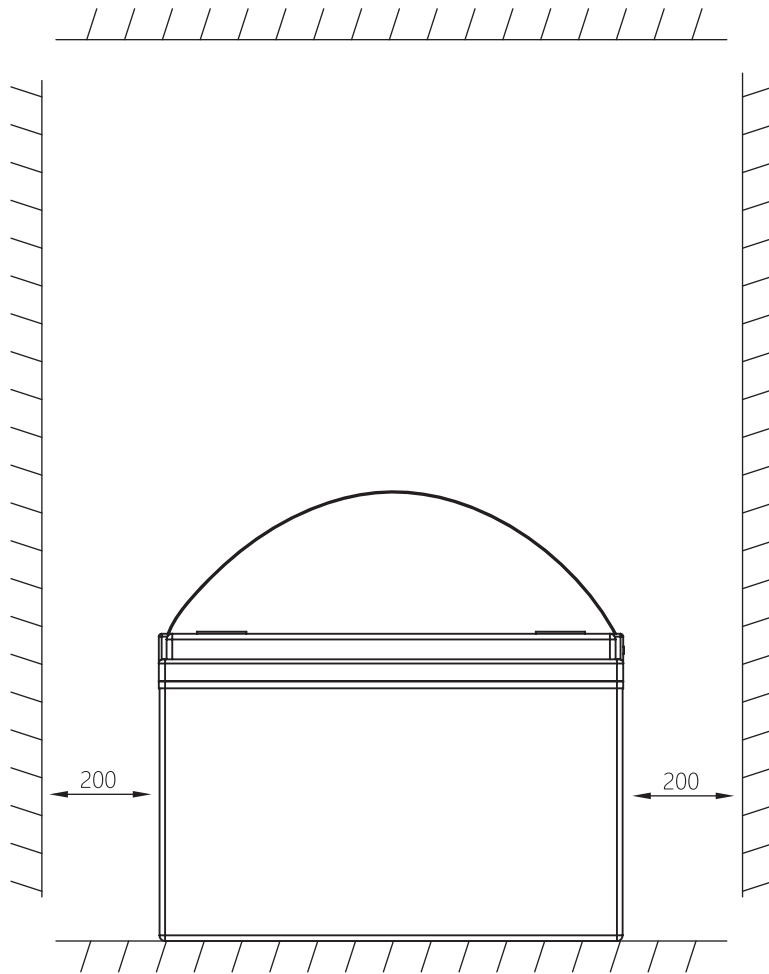
Determine the installation position, and ensure that the left and right air vents of the energy storage system leave at least 200mm space to ensure natural convection heat dissipation.

2.3 Recommended external wiring diameter and switch selection

Model number	Recommended outer wiring diameter	Continuous system current	Circuit breaker/circuit breaker recommended
EM12.8-6LPH	3135-16#	5A	DC20A-1P
EM12.8-8LPH	3135-16#	7.5A	DC20A-1P
EM12.8-36LPH	3135-10#	30A	DC63A-1P
EM12.8-50LPH	3135-8#	50A	DC63A-1P
EM12.8-100LPH	3135-6#	100A	DC125A-1P
EM12.8-150LPH	3135-6#	100A	DC125A-1P
EM12.8-230LPH	3135-6#	100A	DC125A-1P
EM25.6-100LPH	3135-6#	100A	DC125A-1P

Note: The wire diameter is for reference only, if the distance between the load and the battery is relatively far, the use of larger wire can reduce the voltage drop to improve System performance. The above cable diameters and circuit breakers are only recommended. Select an appropriate cable diameter and circuit breaker based on the actual situation.

2.4 Overall Installation diagram



Warning: Danger of explosion! In order to avoid accidents, do not reverse the charge and discharge port, as well as short circuit, can not be safe Installed in a closed environment, outdoor installation must have rain and moisture proof devices;

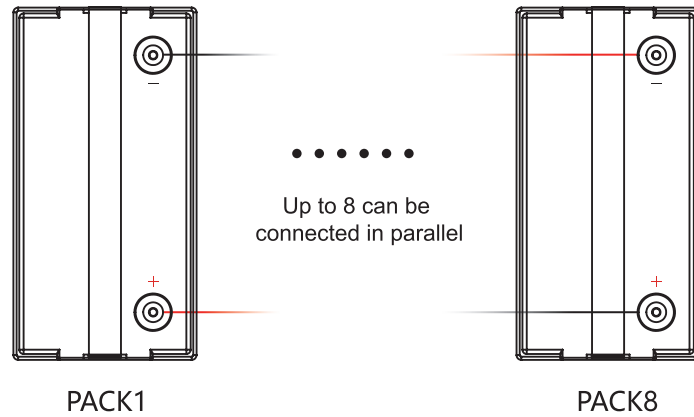
Attention!! When the battery is used, it shall not exceed the maximum current limit of the battery, such as: EM12.8-100LPH can support 100A maximum current;

Attention!! Before making the final DC connection, ensure that the battery switch/DC circuit breaker is off, ensure that the positive electrode (+) must be connected to the negative positive electrode (), and the negative electrode (-) must be connected to the negative negative electrode (-)

3. Parallel diagram

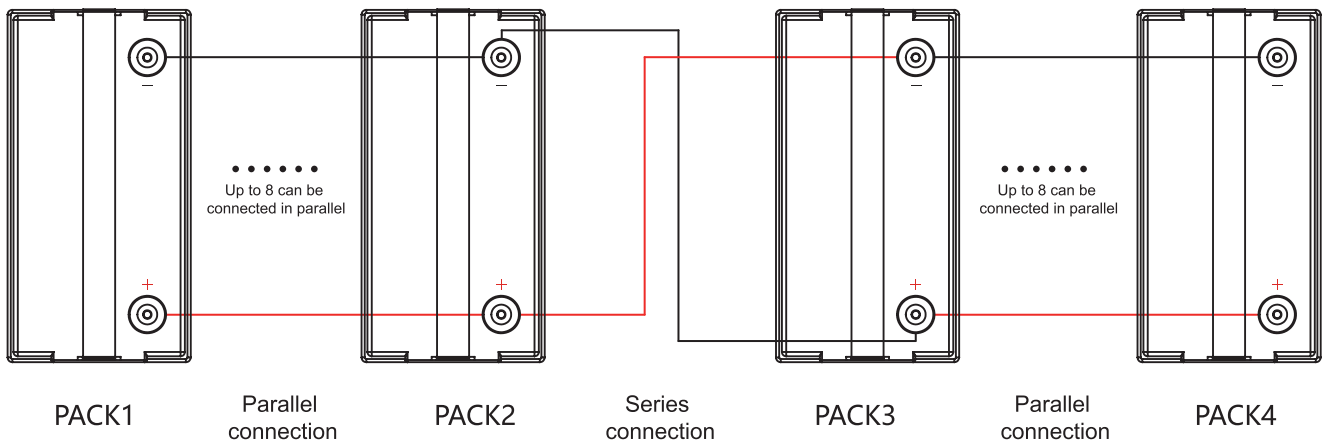
Note: When the battery is connected in series or parallel, please connect each group of batteries after off electricity is emitted to ensure the same consistency of the battery system.

3.1 12V System



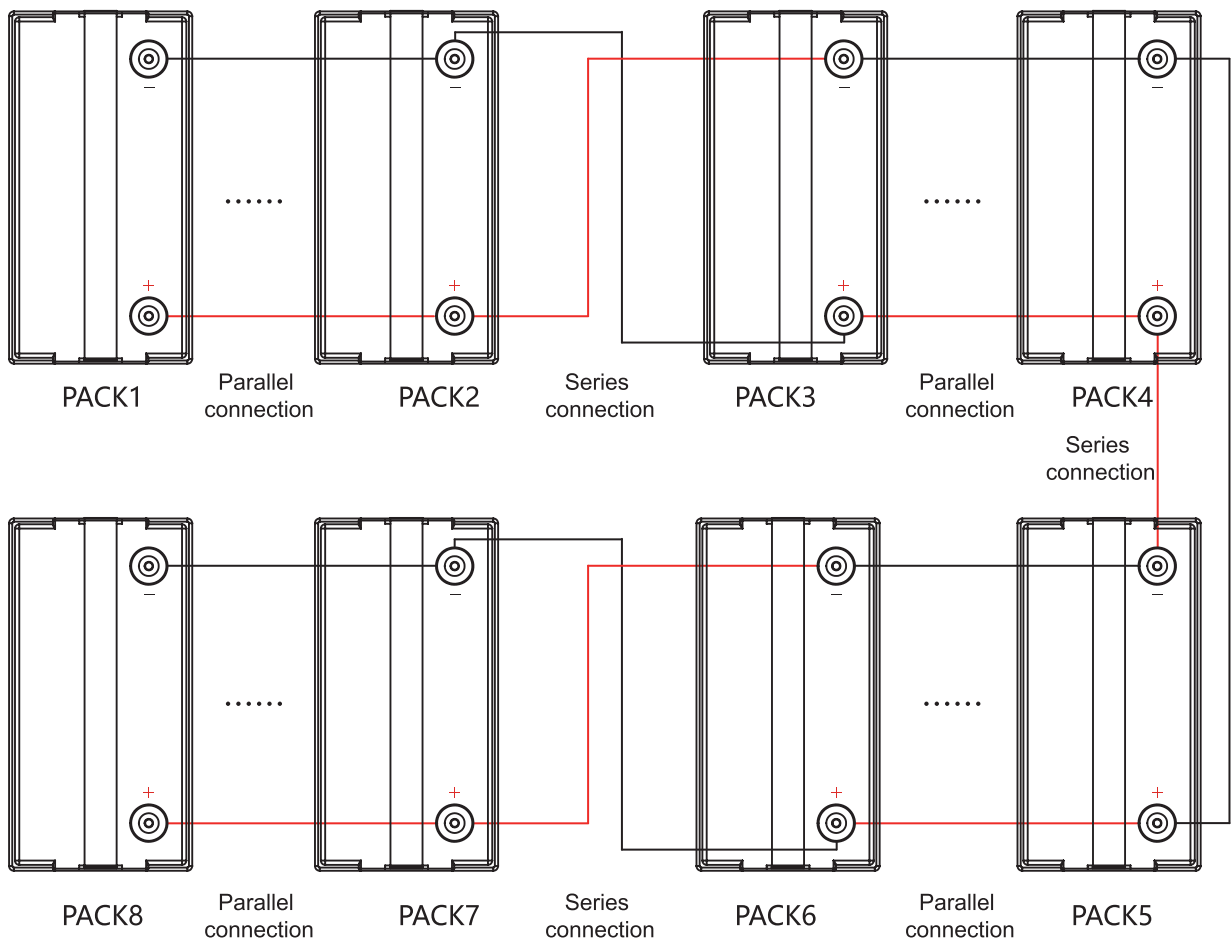
① Battery parallel, output connection diagram

3.2 24V System



② 24V battery system outlet connection diagram

3.3 48V System



- ③ When multiple batteries are used in series parallel, a maximum of four series and eight parallel batteries are supported

Recommended inverter parameters:

Battery type: LiFePO4						
Battery system voltage	Overdischarge recovery	Normal charging voltage	Surge charging voltage	Overvoltage protection	Overvoltage recovery	Discharge cut-off voltage
12V	12V	14.6V	14.6V	14.6V	14V	10V
24V	24V	29.2V	29.2V	29.2V	28V	20V
48V	48V	58.4V	58.4V	58.4V	56V	42V

4. Bluetooth connection and setting (optional)

If you choose our products with Bluetooth communication function, you can achieve Bluetooth communication through the following operations:

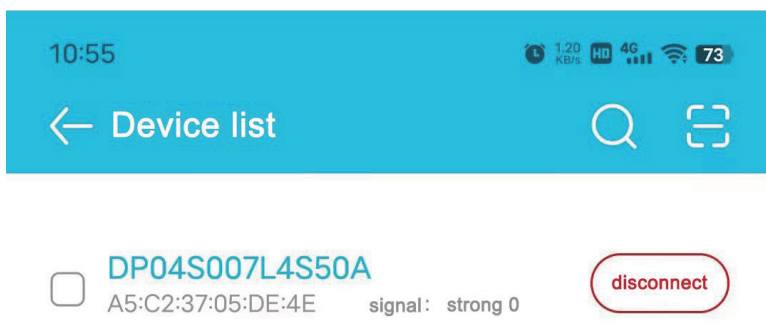
4.1 APP download, register and login

Scan the QR code below to download and register the APP



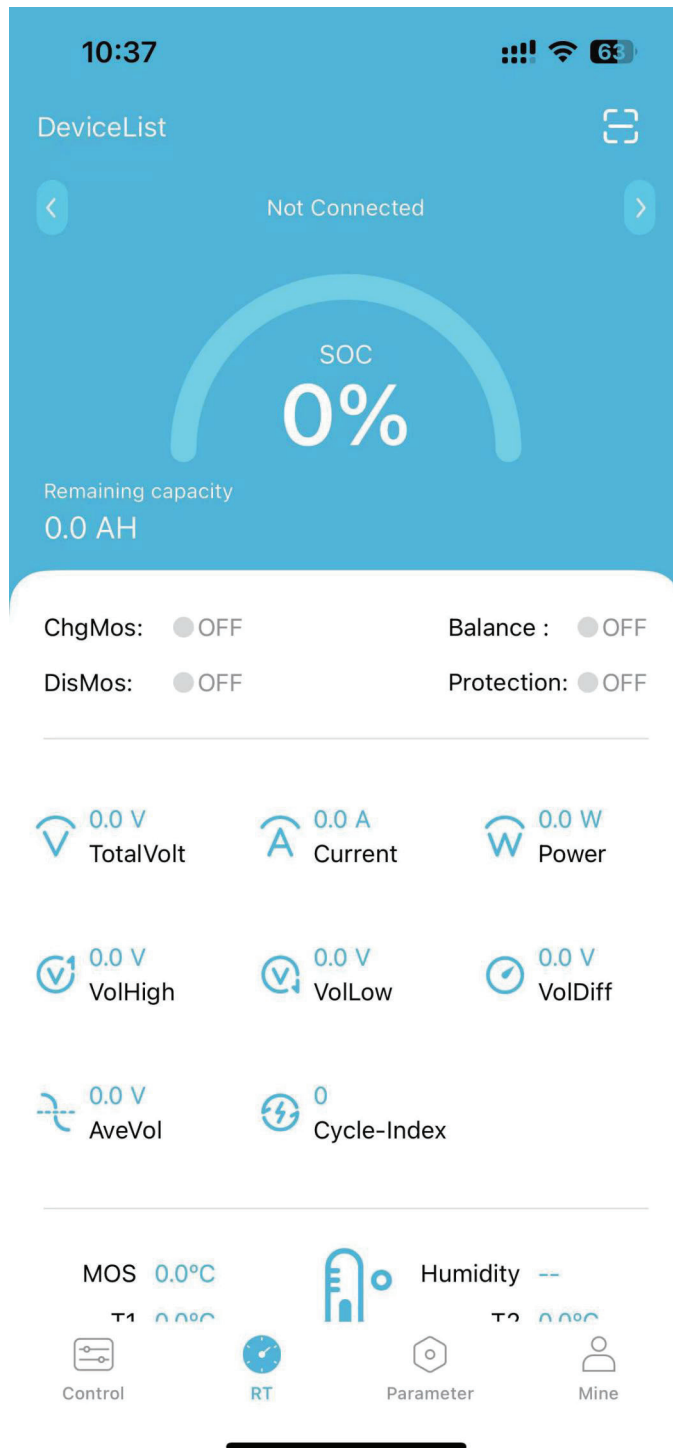
4.2 Device Connection

After successful login, the APP will automatically jump to the < Device list > interface, where you can select the device you want to connect (according to the MAC address on the back of the Bluetooth module) or scan the MAC QR code to connect the device directly. Each case is tagged with the MAC address of the current device and a QR code diagram.



4.3 Device Connection Succeeded

The device is successfully connected. The following information is displayed



5. Technical parameter table

Battery type	Rated voltage (V)	Rated capacity (Ah)	Recommended charging Current (A)	Maximum discharging current (A)	dimension (±2mm)	weight (±3%, kg)	BMS
EM12.8-6LPH	12.8	6	2.5	7.5	90×72×108	0.95	With Hard BMS
EM12.8-8LPH	12.8	8	4	7.5	151×65×94	1.05	With Hard BMS
EM12.8-36LPH	12.8	36	15	30	195×166×170	5.00	With Hard BMS
EM12.8-50LPH	12.8	50	25	50	195×166×170	6.30	With Hard BMS
EM12.8-100LPH	12.8	100	50	100	330×173×216	10.30	With Hard BMS
EM12.8-150LPH	12.8	150	50	100	483×170×240	16.30	With Hard BMS
EM12.8-230LPH	12.8	230	50	100	532×207×215	22.00	With Hard BMS
EM25.6-100LPH	25.6	100	50	100	532×207×215	20.40	With Hard BMS
EM12.8-36LPS	12.8	36	15	30	195×166×170	5.00	With Smart BMS
EM12.8-50LPS	12.8	50	25	50	195×166×170	6.30	With Smart BMS
EM12.8-100LPS	12.8	100	50	100	330×173×216	10.30	With Smart BMS
EM12.8-150LPS	12.8	150	50	100	483×170×240	16.30	With Smart BMS
EM12.8-230LPS	12.8	230	50	100	532×207×215	22.00	With Smart BMS
EM25.6-100LPS	25.6	100	50	100	532×207×215	20.40	With Smart BMS

Note: The dimensions in the table are the dimensions of the product appearance. The above parameters are subject to change without prior notice.

6. Maintenance and conservation

Item	Problem description	Description/possible causes	Solution
1	Unable to boot properly, BMS will immediately enter the protection state after press the switch	The external load does not match, and the instantaneous current of load startup is too large	1. Press the on key to restart 2. Reduce load power
2	Automatically disconnect the output during use	1. The battery voltage is too low 2. Output or load short circuit	1. Charge the battery 2. Disconnect the load and restart the battery
3			
4			
5			
6			

In order to maintain the best and long-term performance, the following items are recommended to be inspected twice a year.

1. Confirm that the surrounding air flow will not be blocked, and remove any dirt and debris on the cooling hole.
2. Check all exposed wires, shabby and damage, please place or repair them if necessary.
3. If it is not used for a long time, it is recommended to charge it every three months.



Danger of electric shock! Make sure that the power supply has been disconnected during the above operations, and then carry out corresponding inspection and operation.

7. Warranty record card

Dear Customers:

Hello! Thank you very much for purchasing our products. In order to serve you better, please read and fill in and keep this warranty card after purchasing the product. In order to avoid your worries, our company here by makes a warranty service commitment and provides standardized after sales service accordingly.

Exemption of warranty liability scope:

1. Damage caused by man-made or other natural disasters.
2. Failure caused by incorrect operation and installation or use in an environment other than the product's prescribed use.
3. Damage caused by unauthorized disassembly and modification.

Contact: _____ Number: _____

Tel: _____ Email: _____

Purchase date: _____

Address: _____

Maintenance records			
Repair Date	Repair content	Repair Person	remark



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