

# Lithium-Iron Phosphate Battery

## User Operation Manual



Product Name: Lifepo4 Battery Pack  
Model: LFP48200 Wall mounted

## **WARNING**

### Quality Statement

**Proper use and maintenance will ensure that the battery (or battery system) will operate reliably and consistently for a long period of time.**

- △After receiving the product, please check if the packaging is in good condition. If the packaging is broken, there may be damage to the product. If there is damage, please contact us.
- △Anyone who does not use or maintain the battery according to this owner's manual, gives up any right to warranty.

**This battery is to be installed and serviced only by qualified personnel equipped with appropriate personal protective equipment and following safe electrical work practices. Always wear eye protection, gloves, apron and mask when working with batteries. Also remove any metal / conductive jewelry.**

### Precautions When Working With Batteries

- △Use caution to eliminate the risk of dropping a metal tool on the battery. It could spark or short circuit the battery or other electrical parts and could cause an explosion.
- △Insulated tools are strongly recommended anytime you are working around batteries.
- △Never smoke or allow a spark or flame near the batteries.
- △Ensure that someone is within range of your voice or close enough to come to your aid when you are working near a battery.
- △Wear complete eye / face protection and gloves. Avoid touching your eyes while working near batteries.
- △If you need to disconnect the battery, always remove the negative terminal from the battery first. Make sure all accessories are turned off so you don't cause a spark.
- △Never use or combine this battery with another dissimilar battery.
- △Batteries are temperature sensitive. For optimum performance, they should be installed in a stable temperature environment.
- △Always recycle old batteries. Contact your local recycling center for proper disposal information.
- △ Contact your supplier or qualified the battery installer before wiring in parallel or series

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## 1. Introduction

Lithium iron phosphate battery is one of new energy storage products developed and produced by manufacture, it can be used to support reliable power for various types of equipment and systems. DL-51200 is especially suitable for application scene of high power, limited installation space, and restricted load-bearing and long cycle life. DL-51200 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.

### 1.1 Features:

- The whole module is non-toxic, non-polluting and environmentally friendly;
  - Cathode material is made from LiFePO<sub>4</sub> 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 in on shelf; no memory effect, excellent performance of shallow charge and discharge;
- Working temperature range is from (Charging 0~55 °C ; discharging -20~55 °C ) with excellent discharge performance and cycle life;
  - Small size and light weight, standard of embedded designed module is comfortable for installation and maintenance;

## 1.2 Specifications

	Model	<b>LFP48200</b>
	Nominal Capacity	200Ah
	Nominal Voltage	51.2V
	Energy	10KWH
	Self discharge	<3% per month
	Energy efficiency	> 98%
	Cycle Life	4000~6000 , 25°C
	Lifespan	10 years
	Internal Resistance	≤100mΩ
Standard Charge	End of charge Voltage	58.8V
	Max.Continuous charge current	<b>100A</b>
	Recommended charge current	<b>40 A</b>
	Charge Method	0.2C (0.5A) CC/CV
Standard Discharge	End of discharge Voltage	40V
	Max Continuous Discharge Current	<b>200A</b>
	Max. Pluse Discharge Current	<b>400A/5S</b>
Environment	Working Temperature °C	-20~55°C
	Recommended Storage temperature	-10 ~ 45°C
	Casing material	Metal case/ wall type
	Dimensions	L*W*H 730*145*465mm
	Terminal Type	M8 or customized
	Weight	≤80kg

## 1.3 Interfacing



**Switch**

Power : to turn ON/OFF the whole battery BMS standby.

**Display:**

to show the batteries information

**ON/OFF**

ON/OFF Light: Constantly on after the boot, off after the extinguish

**Run:**

Run light: to show the Power Switch is ON, and the BMS has electricity (No power).

**ALARM**

Alarm light: Battery failure status indicator light, red for failure, green for normal.

**Battery indicator**

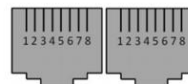
Battery Capacity: Power display, six indicator lights show the current power.

**CAN**

CAN Communication Terminal: (RJ45 port) follow CAN protocol, for output batteries information.

**Definition of RJ45 Port Pin (CAN)**

No.	RJ45Pin	No.	RJ45Pin
1, 8	RS485B1	9,10,11,14,16	NC
2, 7	RS485A1	12	CANL
3, 6	GND	13	CANH
4, 5,	NC	15	CAN_GND



**RS232**

R232 Communication Terminal: (RJ11 port) follow RS232 protocol, for output batteries information.

**Definition of RJ11 Port Pin**

No.	RJ11 Pin
1	NC
2	NC
3	TXD
4	RXD
5	GND
6	NC

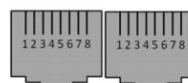


**RS485**

R485 communication terminal : (RJ45 interface) using RS485 protocol, output battery information, can also be used for multi-group lithium battery parallel communication.

**Definition of RJ45 Port Pin**

No.	RJ45Pin	No.	RJ45Pin
1, 8	RS485B2	9,16	RS485B2
2, 7	RS485A2	10,15	RS485A2
3, 6	GND	11,14	CANH
4, 5,	NC	12,13	CAN_GND



**Power Terminals(P+, P-)**

Power cable terminals: for connecting to equipment and paralleling to other battery module for

capacity expanding. For each single module, each terminal can achieve charging and discharging function.

### RESET

RESET Switch: When BMS is in hibernation state, press the button (3~6s) and release it, the protection plate will be activated, and the LED indicator will light up for 0.5 seconds successively from "RUN". When BMS is in the active state, press the button (3~6s) and release it, the protection board will sleep, and the LED indicator will light up for 0.5 seconds from the lowest battery level light. When BMS is in the active state, press the button (6~10s) and release it, the protection plate is reset, and all LED lights are on for 1.5 seconds at the same time.

### DIP (ADD)

DIP (ADD) Switch: 4 ADD switches, to definite different address code for each battery module when multiple modules are cascaded, up to 15 addresses.

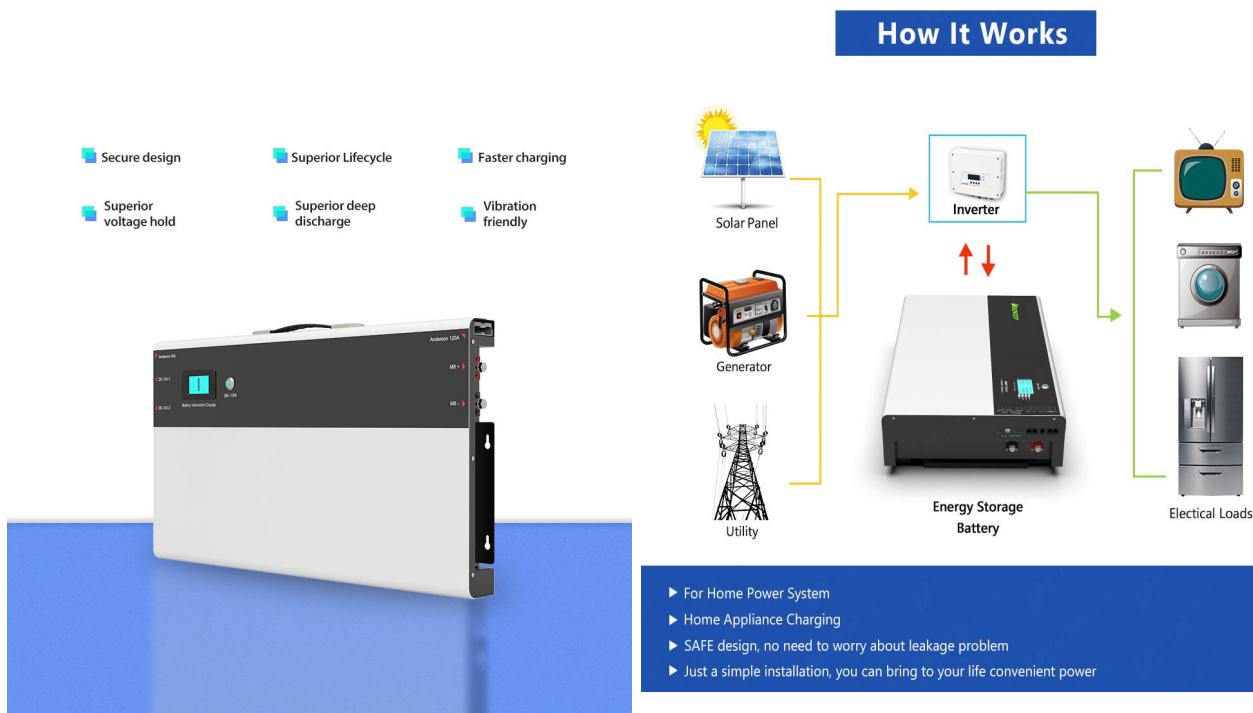
NOTE : The address corresponding to ADD1 in the table is the host, and all other addresses are the slave

### Dry contact

Dry contact: Dry contacts are reserved for external I/O port control signals

## 2 Safe handling of lithium batteries Guide

### 2.1 Schematic Diagram of Solution



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.

**2.2 Safety protection**

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

**Insulated gloves**



**Safety goggles**





**Safety shoes**



**3 Installation**

**3.1 Package Items**

For battery module package:

No	Item	picture	Quantity	Specification
1	Battery pack		1pcs	Wall mounted 48V 200Ah 10kwh
2	Wall mounted bracket and Screws		1 set	**

### 3.2 Installation Condition

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° C to 50° C.
- The temperature and humidity is maintained at a constant level.
- There is minimal dust and dirt in the area.

### Installation Procedure

(WARNING: In order to avoid electrical shock or other injury, inspect existing electronic or plumbing installations before drilling holes. The battery is heavy, please handle with care to avoid damage to the product or injury to the installer.)

- 1.Choose suitable firm wall with thickness greater
- 2.Use the mounting frame as a template, mark the hole position.
- 3.Drill holes according to the hole position
- 4.Hammer the M8 screws to the above holes, and screw the nut. Note: Do not position screws flush to the wall - leave 10 to 20 mm exposed.
- 5.Fix the mounting frame to the screws.
- 6.Raise the battery a little higher than the mounting frame whilst maintaining the balance of the battery. Hang the battery on the frame through the match hooks.

#### A. Power On

Double check all the power cable and communication cable.

##### (1) Switch power on

Switch on all the battery modules and the green LED light below will be on:



### 4.1 Precautions before installation

- 1) After unpacking, please check product working or not
- 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 is designed for 48VDC, please DO NOT connect battery in series before confirm with the supplier
- 6) Battery system must be well grounded and the resistance must be less than  $1 \Omega$  ;
- 7) Please ensured the electrical parameters of battery system are compatible to related equipment;
- 8) Keep the battery away from water and fire.

#### 4.2 Notes in the process of use

- 1) If the battery system needs to be moved or repaired, the power must be cut off and the battery is completely shut down;
- 2) It is prohibited to connect the battery with different type of battery.
- 3) It is prohibited to put the batteries 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 Manufacture or authorized by dealer. 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.



#### Reminded

- 1) Please read the user manual carefully (in the accessories);
- 2) If the battery is stored for long time , it is required to charge them every six months, and the SOC should be no less than 80%;
- 3) Battery needs to be recharged within 12 hours, after fully discharged;
- 4) All the battery terminals must be disconnected for maintenance;
- 5) Please contact the supplier within 24 hours if there is something abnormal.
- 6) The warranty claims are excluded for direct or indirect damage due to items above.