Lithium-Iron Phosphate Battery
User Operation Manual

Product Name：Lifepo4 Battery Pack
Model：LFP-51200-10/20/30/40/50

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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 qualied 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 suppler or qualitied the battery installer befre wirng in parallel or series

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△ Contact your supplier or qualitied the battery installer before wirng in parallel or series

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 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 in on shelf; no memory effect, excellent performance of shallow charge and discharge;

- Working temperature range is from -10℃ to 50℃, (Charging 0~50℃; discharging -20~60℃) with excellent discharge performance and cycle life;
- Small size and light weight, standard of embedded designed module is comfortable for installation and maintenance;

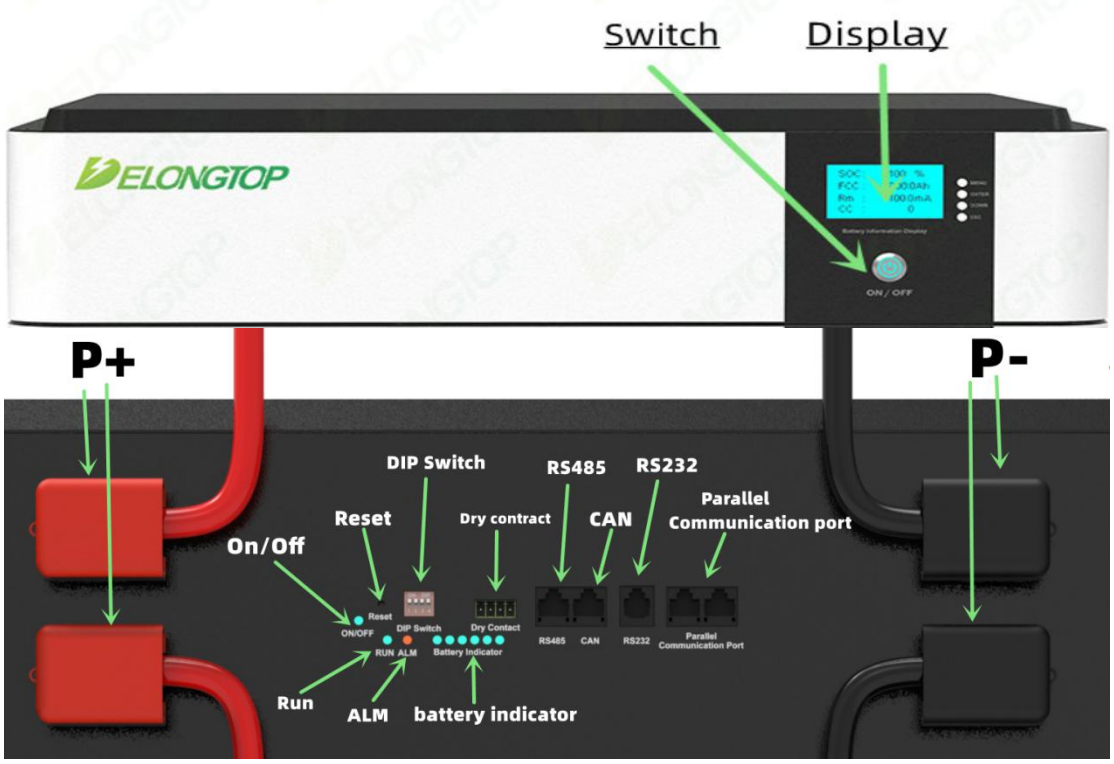
1.2 Specifications

LFP-51200-10 **LFP-51200-20** **LFP-51200-30** **LFP-51200-50**

Product Parameters				
Product model	LFP-51200-10	LFP-51200-20	LFP-51200-30	LFP-51200-50
Product Energy	10Kwh	20Kwh	30Kwh	50Kwh
Nominal voltage	51.2V			
Nominal capacity	200Ah	400Ah	600Ah	1000Ah
Cell type	LiFePO4 Battery (Lithium iron Phosphate Battery)			
Charge cut-off voltage	58.4V			
Max charge current	200A(Single Pack)			
Discharge cut-off voltage	40V			
Max discharge current	200A(Single Pack)			
Display	LCD			
Communication interface	RS232 / RS485 / CAN			
Cycle life	≥6000 Cycles			
Charge temperature range	0~55℃			
Discharge temperature range	-20~55℃			
Dimensions	690*560*290mm	690*560*450mm	690*560*610mm	690*560*930mm
Weight	About 91Kg	About 167Kg	About 243Kg	About 395Kg

1.3 Interfacing

This section details the front and back panel of the interface functions.



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

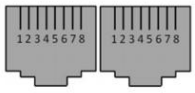
Battery Capacity: Power display, six indicator lights show the current power.

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

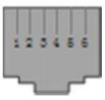


RS232

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

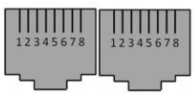


RS485

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.

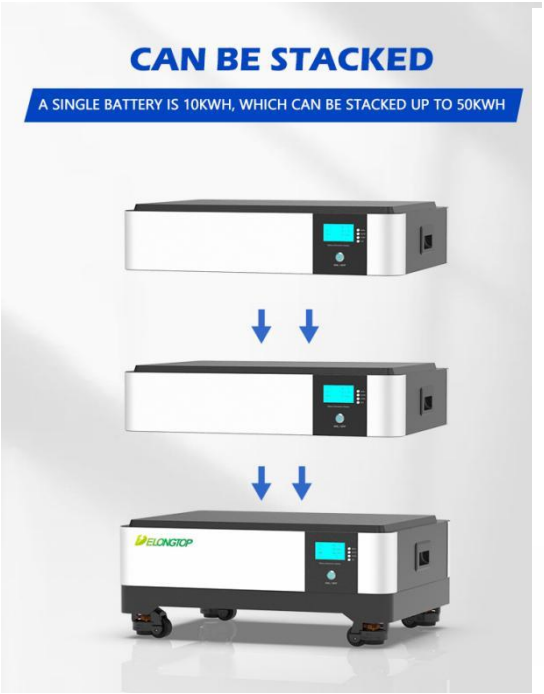
NOTE ： The address corresponding to ADD1 in the table is the host, and all other addresses are the slave

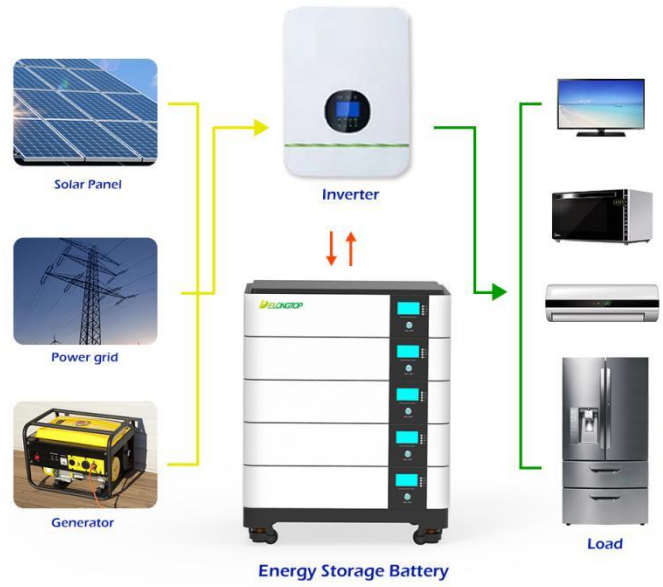
Dry contact

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

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

No	Item	picture	Qauntity	Specification
1	Battery pack		1pc	Wall mounted 48V 200Ah 10kwh
2	base		1 pc	**
3	Communication Cable		1 pc	**
4	Parallel Cable		1set	**

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.

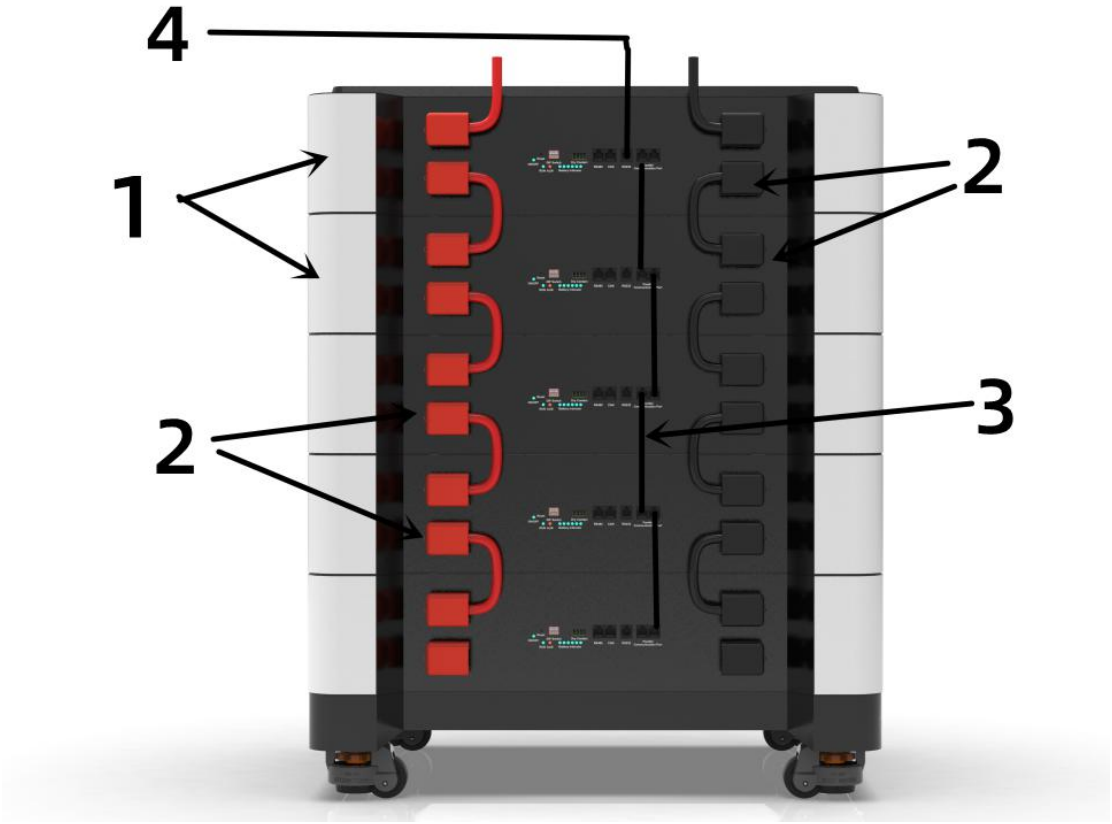
The ambient temperature is within the range from 0° C to 50° C.

The temperature and humidity is maintained at a constant level.

There is minimal dust and dirt in the area.

Installation Procedure

1. Put the batteries on the base
2. Connect the cables between battery modules
3. Connect the Communication cable between battery modules
4. Connect the cables to inverter



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 Ω ;

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 within12 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.