

# 48V Wall Mounted Battery

LiFePO<sub>4</sub> Lithium Iron Phosphate Battery



## USER MANUAL

# Product Description

Technical Specifications	
Battery Type	LiFeP04
Normalinal Voltage (V)	51.2V
Norminal Energy(KWH)	10.24KWH
Nominal Capacity (Ah)	200Ah
Design Years	15 Years
Product Size	
Size(mm)	570*730*165mm
Weight	≤95kg
Technical Parameter	
Cycle Life	6000 times
Operating Voltage Range	40V-58.4V
Charging Voltage	DC 58.4V
Charge/Discharge Current(A)	Same Port Max. 100A
Internal Resistance	≤40 mΩ
BMS Parameters	
Self-Consumption	≤2.5W
Rated Voltage	51.2V
Balance Current	30-65(MA)
Communication Method	CAN/RS485/RS232(Optional)
Information Storage	500 Strip
Limiting	10/20A(Optional)
Ambient Temperature	
Operating Temperature	-10°C-55°C
Storage Temperature	0°C-55°C
Humidity	15%-75%
Warranty	
10 years (2 years free warranty, rest 8 years charge actual repair costs)	



## Smart

Each module is equipped with an independent BMS system.



## Easy Installation

Just Plug & Play.



## Safe

Safe lithium,iron phosphate battery cell.



## Certifications

CE IEC  
UN38.3 MSDS.



## Modular

Modular expansion.



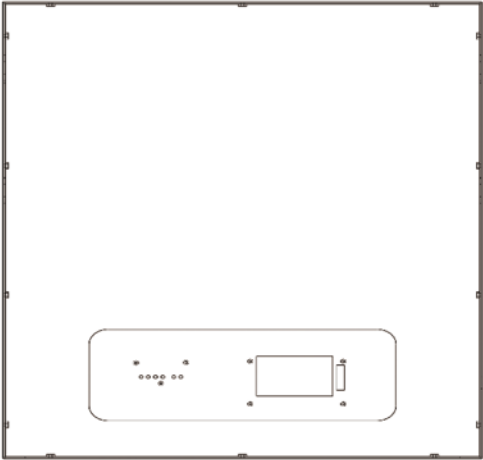
## Longer Lifetime

6000 cycles, 15 years design life.

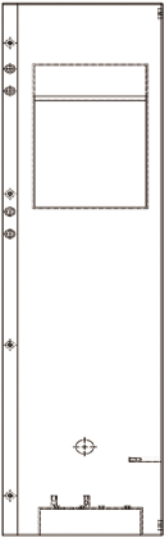


Lithium battery systems are widely used in residential energy storage systems, such as solar energy storage systems and UPS. The power wall LiFeP04 battery pack adopts the international advanced lithium iron phosphate battery application technology and BMS control technology.

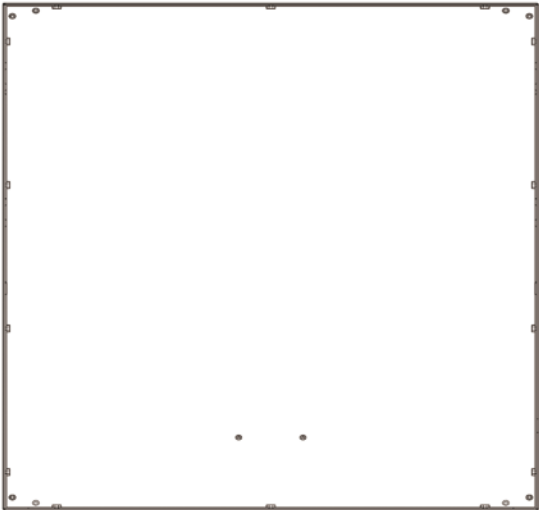
**Product Size:**



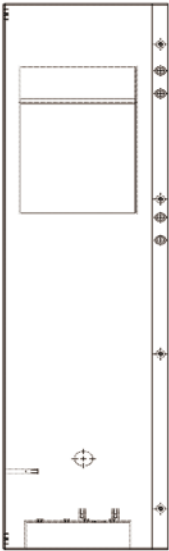
**Front View**



**Right Side**

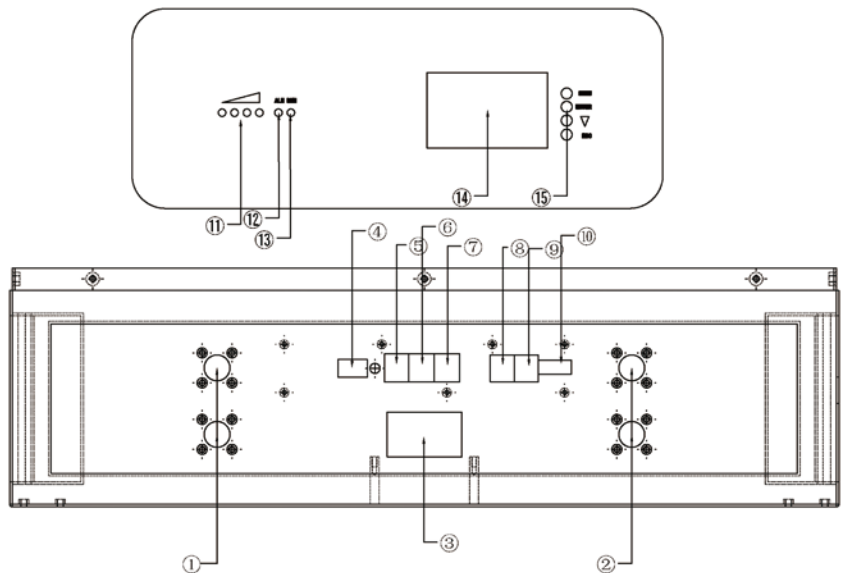


**Back View**



**Left Side**

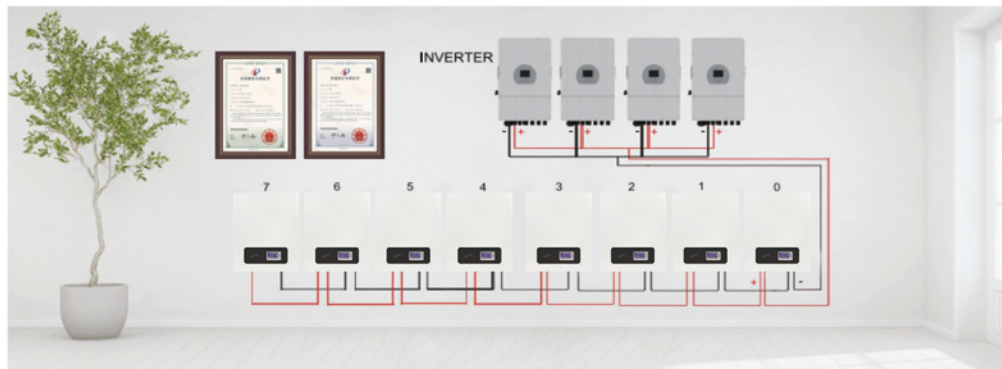
## Product Interface:



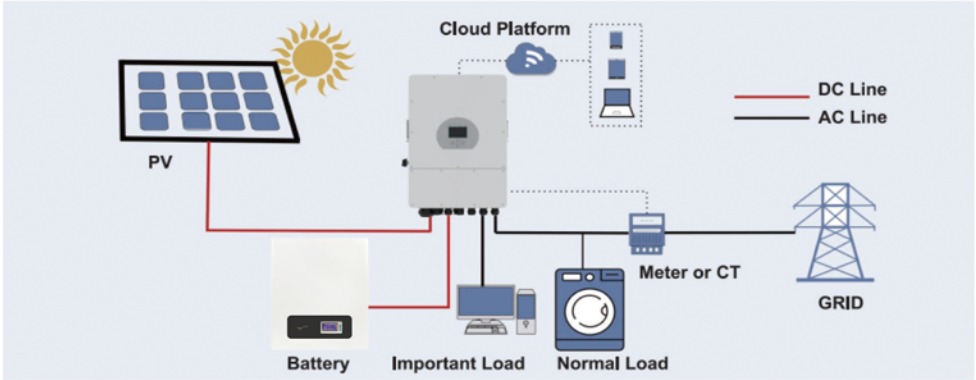
①Battery + ②Battery - ③Air switch ④Address ⑤RS232 ⑥RS485 ⑦CAN ⑧RS485A ⑨RS485B ⑩Dry contact ⑪Capacity indicators ⑫Alarm indicator ⑬Running indicator ⑭LCD screen ⑮Display Button

## Parallel Connection of Batteries

Connect the positive pole and positive pole in parallel, and the negative pole and negative pole in parallel, as shown in the figure below.



# Solution Diagram



## Accessories:(Optional)

1.2m Positive and negative lines\*2



1m USB cable\*1



1m Network cable\*1



load bearing bracket\*1



expansion bolts\*4



screws\*8

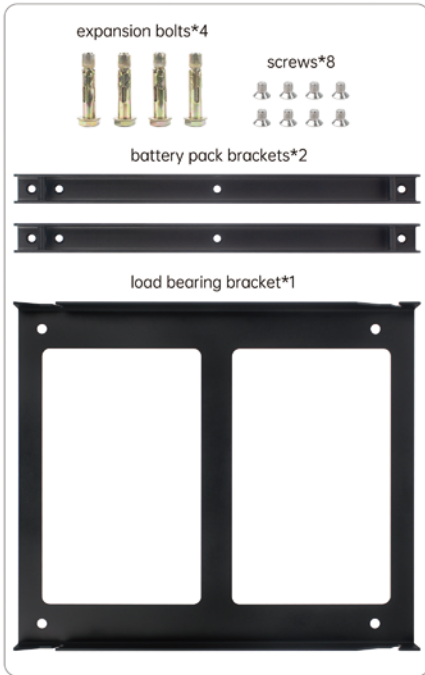


battery pack brackets\*2



# Installation diagram

## -Battery Pack Mounting Assembly-



Note: The battery pack is heavy, please work safely with professional protective equipment, pay attention to safety, thank you!

1. Find a reliable load-bearing wall, place the barb hole of the load-bearing bracket upward, drill holes according to the position of the load-bearing bracket hole and fix it with expansion bolts.



2. Fasten the two brackets to the back of the battery pack with screws.



3. Put the battery pack with the bracket installed on the load-bearing bracket on the wall.



# LED Instructions

**Table 1 LED working status indication**

Status	Normal / alarm / protection	RUN	ALM	Power quantity indicates the LED				Explain
		●	●	●	●	●	●	
Shut down	Sleep	OFF	OFF	OFF	OFF	OFF	OFF	All day long
Stand by	Normal	Flash 1	OFF	According to the power display				Stand by
	Alarm	Flash 1	Flash 3					Module low voltage
Charge	Normal	ON	OFF	According to power indication (maximum LED flash 2)				The highest power LED flashes (flashing 2), the overcharge alarm ALM does not flash
	Alarm	ON	Flash 3					
	Overcharge protection	ON	OFF	ON	ON	ON	ON	If there is no utility power, the indicator light is on hold state
	Temperature, Overcharge, Short-circuit, Reverse connection, Failure protection	OFF	ON	OFF	OFF	OFF	OFF	Stop charging
Discharge	Normal	Flash 3	OFF	According to the power display				
	Alarm	Flash 3	Flash 3					
	Undervoltage protection	OFF	OFF	OFF	OFF	OFF	OFF	Stop discharge
	Temperature, Overcurrent, Short circuit, Reverse connection. Failure protection	OFF	ON	OFF	OFF	OFF	OFF	Stop discharge
Failure		OFF	ON	OFF	OFF	OFF	OFF	Stop charging and discharging

**Table 1 LED working status indication**

State		Charge				Discharge			
Capacity indicator light		L4	L3	L2	L1	L4	L3	L2	L1
Battery Power(%)	0~25%	OFF	OFF	OFF	Flash2	OFF	OFF	OFF	ON
	25~50%	OFF	OFF	Flash2	ON	OFF	OFF	ON	ON
	50~75%	OFF	Flash2	ON	ON	OFF	ON	ON	ON
	75~100%	Flash2	ON	ON	ON	ON	ON	ON	ON

**Table 2 Capacity indication instructions**

Flash mode	Bright	off
Flash, 1	0.25s	3.75s
Flash, 2	0.5s	0.5s
Flash 3	0.5s	1.5s

**Table 3 LED flash instructions**

Note: can enable or prohibit LED indicator light alarm through the upper machine, the factory default is enabled.

## Communication description


### 1) RS485 communication

The BMS shall have the RS485 upper computer communication and cascade communication functions of the battery pack, and the default baud rate is 9600bps.

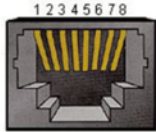
Data is transmitted between the BMS battery pack and the upper computer. Refer to YD/T 1363.3 Centralized Monitoring and Management System for Power Supply, Air Conditioning and Environment of Communication Bureau (Station) Part 3: Front end Intelligent Equipment Protocol and BMS Modbus Protocol for communication protocol. When the charging and discharging current is not zero, the BMS is not allowed to upgrade firmware.

The RS485 level communication interface adopts 8P8C straight PCB welding telephone socket (round pin). The BMS is configured with an RS485 interface. When the battery packs are cascaded, the upper computer is the host and all battery packs are slave computers. The upper computer will upload the data of each battery pack in the cascade system after polling. RS485 communication interface is defined in the following table.

**RS485 interface definition - 8P8C vertical RJ45 socket**

Pin	Definition description	Port Description	Top view
1、8	RS485 B2	Independent RS485 interface 2A	
2、7	RS485 A2		
3、6	Land		

4、5	NC(Overhang)		
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Pin	Definition description	Port Description	Top view
1、8	RS485 B2	Independent RS485 interface 2B	
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3、6	Land		
4、5	NC(Overhang)		

## 2) Four remote functions

**Remote sensing:** Total battery string voltage, battery string capacity (SOC), battery string health status (SOH), battery voltage, battery string charging/discharging current, and number of battery string cycles (If the discharge exceeds 80% of the nominal capacity, the value is 1 Cycle), cumulative discharge capacity, maximum and minimum battery voltage, ambient/battery string temperature (four battery temperatures, one ambient temperature, and one MOSFET temperature), historical data, alarm and protection records, and so on.

**Remote Letter:** Protection function status, battery string charging/discharging status, total battery string voltage high alarm, total battery string voltage low alarm, Battery overvoltage alarm, battery battery undervoltage alarm, battery string short circuit alarm, battery string overvoltage/overcurrent alarm, battery string undervoltage/overcurrent alarm, battery string low capacity alarm, battery string polarity reverse connection alarm, battery high/low temperature alarm, ambient high/low temperature alarm, MOSFET temperature alarm, battery string low capacity alarm, and cell failure alarm Alarm (Optional). The fire extinguishing device is started.

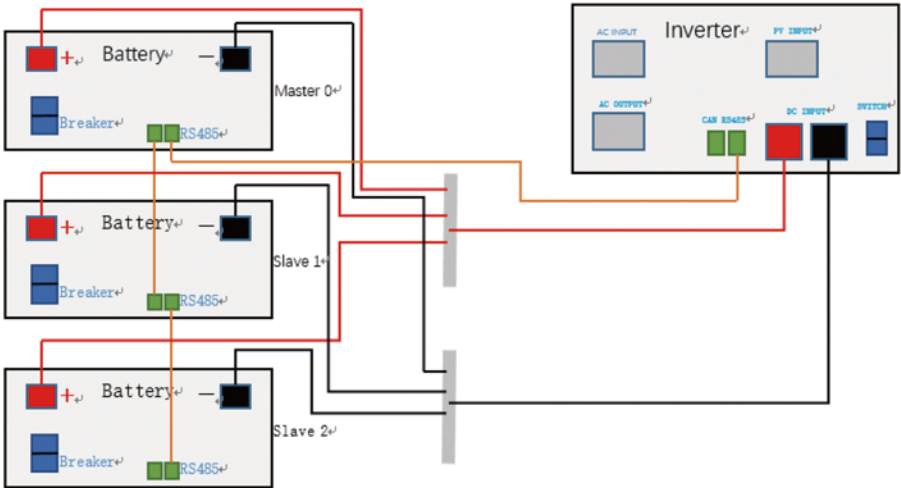
**Remote control:** Protection function status, alarm sound on/off, intelligent intermittent charging mode, current limiting charging mode, charging on/off, discharge start/stop, etc.

**Remote control:** various functional states and parameter setting range, BMS and switching power system output performance matching parameters.

## 3) Parallel communication

When multiple machines are connected in parallel, the inverter is connected to one RJ45 interface of the battery host through the standard network cable, the host is connected to the slave through the other RJ45 interface, and the other slave communication cables are connected in sequence. The connection diagram is as follows:

The host requests the battery information of all slave computers and summarizes it for the inverter to query the information of all batteries. The BMS slave computers do not communicate with each other.



#### 4) Dip switch address

When the battery strings are used in parallel, the hardware addresses of each PACK are unique. The hardware addresses can be set by using DIP switches on the board. For the definition of the switches, see the following table.



Note If the six-bit DIP switch is used, you need to specify in advance. By default, the five-bit dip switch is invalid. Only the four-bit DIP switch is enabled. Corresponding to the red font in the following table.

The host is at address 0, and the slave starts at address 1:

Address	Dial-code switch position						Explain
	#1	#2	#3	#4	#5	#6	
0	OFF	OFF	OFF	OFF	OFF	OFF	Set PACK 0
1	ON	OFF	OFF	OFF	OFF	OFF	Set PACK 1
2	OFF	ON	OFF	OFF	OFF	OFF	Set PACK 2
3	ON	ON	OFF	OFF	OFF	OFF	Set PACK 3
4	OFF	OFF	ON	OFF	OFF	OFF	Set PACK 4
5	ON	OFF	ON	OFF	OFF	OFF	Set PACK 5

6	OFF	ON	ON	OFF	OFF	OFF	Set PACK 6
7	ON	ON	ON	OFF	OFF	OFF	Set PACK 7
8	OFF	OFF	OFF	ON	OFF	OFF	Set PACK 8
9	ON	OFF	OFF	ON	OFF	OFF	Set PACK 9
10	OFF	ON	OFF	ON	OFF	OFF	Set PACK 10
11	ON	ON	OFF	ON	OFF	OFF	Set PACK 11
12	OFF	OFF	ON	ON	OFF	OFF	Set PACK 12
13	ON	OFF	ON	ON	OFF	OFF	Set PACK 13
14	OFF	ON	ON	ON	OFF	OFF	Set PACK 14
15	ON	ON	ON	ON	OFF	OFF	Set PACK 15

## Reset button

- When the BMS is in the dormant state, press the button for 1 second and then release it, the protection board is activated, and the LED indicator lights start from "L4" for 0.5 seconds.
- When the BMS is in the active state, press the button for 3 seconds and then release it, the protection board is dormant, and the LED indicator lights turn on for 0.5 seconds from "RUN".

## Buzzer Action Description

- When the fault occurs, the sound is 0.25 seconds every 1S.
- When protecting, chirp 0.25S every 2S (except overvoltage protection);
- When an alarm is generated, the alarm buzzes for 0.25S every 3S (except the overvoltage alarm).

The buzzer function can be enabled or disabled by the upper computer, but is disabled by factory default.

## Sleep function

When any of the following conditions are met, the system enters the low-power mode:

- Monomer or overall over-release protection is not removed within 30 minutes.
- Release the button after holding it down for 3 seconds.
- The minimum cell voltage is lower than the hibernation voltage of 3300mV, and the duration reaches the hibernation delay (The default value is 500 seconds. No communication or current is required).
- Standby time exceeds 1 hour (0.5 to 2 hours can be configured) (no communication, no charge-discharge, and no charger is connected).
- Forcibly shut down the computer through the upper computer software.

Before hibernation, ensure that no external voltage is connected to the input terminal, no external communication is available, and the button is not pressed. Otherwise, the low-power mode cannot be

entered.

When the voltage of any unit is lower than the undervoltage protection value of 500mV, the BMS will enter the ultra-low voltage sleep after 1min.

## Wakeup

When the system is in low power mode and any of the following conditions are met, the system exits the low power mode and enters the normal mode:

- Connect the charger and ensure that the output voltage of the charger is greater than 48V.
- Press the button for 3S and release the button.
- Access the communication line and start the upper computer software (due to the over-release protection and enter the hibernation state, this method cannot wake up the protection board).

## Warning

To ensure proper use of the battery please read the manual carefully before using it.

### ● Handling

Do not expose to, dispose of the battery in fire.

Do not put the battery in a charger or equipment with wrong terminals connected.

Avoid shorting the battery

Avoid excessive physical shock or vibration.

Do not disassemble or deform the battery.

Do not immerse in water.

Do not use the battery mixed with other different make, type, or model batteries.

Keep out of the reach of children.

### ● Charge and discharge

Battery must be charged in appropriate charger only.

Never use a modified or damaged charger.

Do not leave battery in charger over 24 hours.

### ● Storage

Store the battery in a cool, dry and well-ventilated area.

### ● Disposal

Regulations vary for different countries. Dispose of in accordance with local regulations.

## Battery Operation Instruction

### ● Charging

Charging current: Cannot surpass the biggest charging current which in this specification book stipulated.

Charging voltage: Does not have to surpass the highest amount which in this specification book stipulated to decide the voltage.

Charge temperature: The battery must carry on the charge in the ambient temperature scope which this specification book stipulated.

Uses the constant electric current and the constant voltage way charge, the prohibition reverse charges. If the battery positive electrode and the cathode meet instead, can damage the battery.

- Discharging current

The discharging current does not have to surpass this specification book stipulation the biggest discharging current, the oversized electric current electric discharge can cause the battery capacity play to reduce and to cause the battery heat.

- Electric discharge temperature

The battery discharge must carry on in the ambient temperature scope which this specification book stipulated.

- Over-discharges

After the short time excessively discharges charges immediately cannot affect the use, but the long time excessively discharges can cause the battery the performance, battery function losing. The battery long-term has not used, has the possibility to be able to be at because of its automatic flash over characteristic certain excessively discharges the condition, for prevented excessively discharges the occurrence, the battery should maintain the certain electric quantity.

- Battery storage

The battery should store in the product specification book stipulation temperature range. If has surpasses above for six months the long time storage, suggested you should carry on additional charge to the battery.

- Warranty

The quality guarantee period is 10 years. If the product is damaged under normal use within one year and not caused by external reasons, the factory will replace it; After one year, if there is a quality problem with the product, the factory will provide paid warranty service, and the specific charge depends on the situation.

- Other chemical reactions

Because batteries utilize a chemical reaction, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, if the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage. If the batteries cannot maintain a charge for long periods of time, even when they are charged correctly, this may indicate it is time to change the battery.