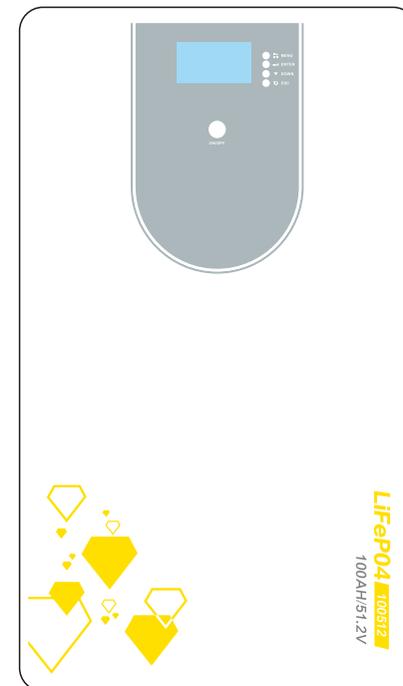


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整本彩印

# 用户指南

家用磷酸铁锂电池系统

家用磷酸铁锂电池系统



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LiFePO4 Battery System for Households

## 7. TROUBLE SHOOTING

1	No output after open the carton before using.	Check the ON/OFF button on the side of lithium battery and turn on it.
2	No output after turn of the ON/OFF button	Check the display turn on or not. If display turn on but still no output, please check the air switch on the side of lithium battery and turn on it.
3	After connect inverter to lithium battery and turn on the battery. If battery shows red light and inverter can not be started	Turn off the inverter start switch and then turn off the side circular switch of the lithium battery system. Wait 1 minute and press the side circular switch of the lithium battery system again to enable the battery. If the red indicator of the lithium battery system is still on after 3 times trying. Please check whether the cable between the lithium battery and the inverter is correct.
4	After the lithium battery is started, connect to the inverter. The inverter cannot be started, and the measured terminal voltage of the lithium battery is lower than 24V or 48V.	1. Check the display: Analog Info: Cell Voltage: Single cell voltage, If the voltage of a single cell is lower than 3000mV, it is necessary to connect the inverter or charger matching the nominal voltage of the lithium battery system to charge, and it can be used normally after charging. 2. Check the display: Analog Info: Cell Voltage: Single cell voltage, If there is a cell voltage difference of more than 200mV, it is necessary to contact professional engineer to fix it.
5	The lithium battery connects to the inverter and starts normally. When the load exceeds a certain value, the lithium battery suddenly turns off the output	Check whether the on-load power of the inverter is bigger than the maximum output power of the lithium battery. If the on-load power of the inverter is bigger than the maximum output power of the lithium battery, connect the lithium battery system in parallel to meet the on-load requirements.
6	Communication error between inverter and lithium battery	1. Turn the lithium battery Dip switch 1 on, restart inverter. 2. If connect lithium battery to other brand inverter, please check the protocol with professional engineer first.
7	Lithium battery can't charge to full	1. Check whether the inverter battery type is set to lithium battery, and connect the BMS communication cable to enable the inverter to communicate with the lithium battery. 2. If connect lithium battery to other brand inverter, please check the protocol with professional engineer first.
8	The lithium battery is connected to the inverter. If the lithium battery SOC is not used up, the inverter shuts down in advance	Check whether the SOC value of the inverter and the cut off voltage too high.
9	Alarm with red light after few time charging.	1. The lithium battery BMS communication cable is not connected, need to connect the BMS communication line to charge. 2. When connect the charger without BMS communication function need to adjust the charger charging current to the rated value.

## 1 关于本手册

## 1.1 目的

本手册介绍了电池系统的概述、安装、操作以及紧急情况处理。在安装和操作前，请仔细阅读本手册。请将本手册留存以备日后查阅。

## 1.2 范围

本手册提供了安全和安装指南，以及有关工具和布线的信息。

## 1.3 安全说明



警告：本章包含重要的安全和操作说明。请阅读并保存本手册，以备将来参考。

1. 在使用本装置前，请阅读本装置、电池和本手册所有相关章节上的所有说明和警示标记。
2. 注意：为减少伤害、损坏甚至爆裂的风险。如有造成个人伤害，请立即就医。
3. 请勿拆卸电池。当需要服务或维修时，将其带到合格的服务中心。装配不当可能导致火灾风险。
4. 为了降低触电风险，在尝试任何维护或清洁之前，断开所有电线。关闭设备不会减少这种风险。
5. 本手册提供了安全和安装指南，以及有关工具和布线的信息。
6. 为了使该电池达到最佳工作状态，请按照要求的规格选择合适的电缆尺寸。
7. 在电池上或电池周围使用金属工具时要非常小心。存在引发火花或短路电池或其他电气部件的潜在风险，可能引起爆炸或火灾。
8. 请严格按照安装程序操作。
9. 为支持全输出负载，当逆变器功率大于锂电池的最大输出功率时，需要并联锂电池以满足功率输出关系
10. 接地说明-本系统应连接到永久接地布线系统。一定要遵守当地的要求。
11. 切勿使交流输出和直流输入短路。直流输入短路时，请勿连接到电源。
12. 警告！！只有具备资质的维修人员才能维修此设备。
13. 电池应安装在室内，远离水、高温机械力和火焰。
14. 不要在任何温度低于0°C或超过55°C，湿度超过80%的环境中安装电池。
15. 请勿在电池上放置任何重物。

## 1.4 可并联连接

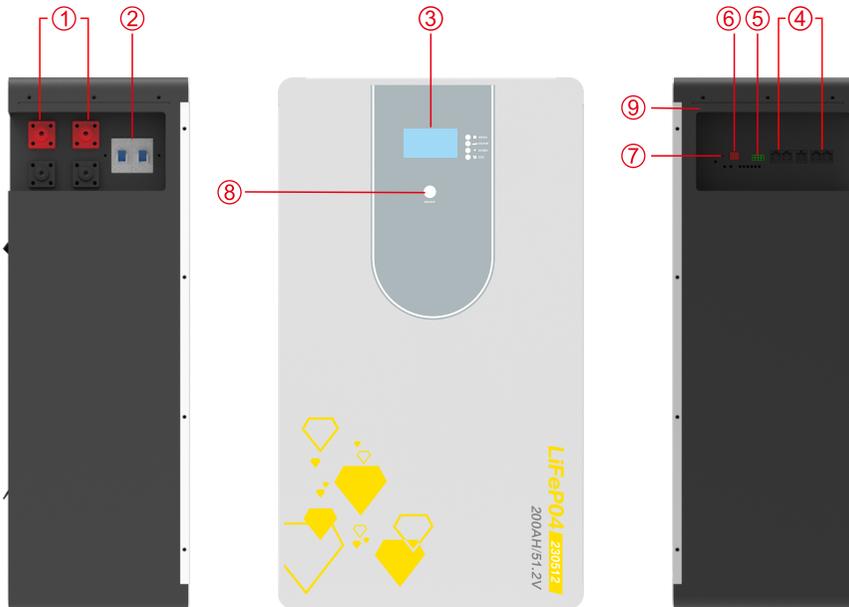
1. 这些电池可以并联连接。不允许串联连接。仅限在直立位置使用。
2. 电池不允许与PWM控制器连接以进行充电。特别注意：由于锂电池组内置保护板具有过放电保护功能，强烈建议在电池组过放电时停止使用负载。电池组不能重复激活以进行放电。或者电池可能未被交流电或未被光伏激活电激活（它需要一种特殊的充电激活方法），因此不能充电。因此，当电池组电量低时，请在主电源或太阳能可用时尽快给电池充电。

## 2 简介

### 2.1 功能特点

- 磷酸铁锂动力电池
- 更高的能量密度，更小的体积，适合家用
- 支持以并行模式连接以进行扩展
- 光伏系统：该电池组专为家用光伏系统设计。
- 电池管理系统(BMS):电池组内置BMS监控其运行，防止电池在超出设计限制的情况下运行。
- 可扩展性：这种电池组可以很容易地扩展电池组。

### 2.2 产品概述



- 1.....电池正负极
- 2.....开关
- 3.....显示器
- 4.....CAN232/485通信接口
- 5.....干接点

- 6.....地址
- 7.....复位
- 8.....开关
- 9.....把手

	<b>DRY CONTACT</b>
	Definition: Dry contact 1-PIN1 to PIN2: Always on, when battery error turns off. Dry contact 2-PIN3 to PIN4: Always on, when battery low turns off.

## 6. EMERGENCY SITUATIONS

We cannot guarantee battery absolute safety.

### 6.1 Fire

In case of fires, make sure that the following equipment is available near the system.

- SCBA(self-contained breathing apparatus) and protective gear in compliance with the Directive on Personal Protective Equipment 89/686/EEC.
- NOVEC 1230, FM-200, or dioxide extinguisher

Batteries may explode when heated above 150°C. KEEP FAR AWAY from the battery if it catches fire.

### 6.2 Leaking Batteries

If the battery pack leaks electrolyte, avoid contact with the leaking liquid or gas. If one is exposed the leaked substance, immediately perform the actions described below.

- Inhalation: Evacuate the contaminated area, and seek medical attention.
- Contact with eyes: Rinse eyes with running water for 5 minutes, and seek medical attention.
- Contact with skin: Wash the affected area thoroughly with soap and water, and seek medical attention.
- Ingestion: Induce vomiting, and seek medical attention.

### 6.3 Wet Batteries

If the battery pack is wet or submerged in water, do not let people access it, and contact your supplier for help. Damaged Batteries

Damaged batteries are not fit for use and are dangerous and must be handled with the utmost care. It may leak electrolyte or produce flammable gas. If the battery pack seems to be damaged, pack it in its original container, and then return it to your supplier.

### 6.4 Warranty

Products that are operated strictly in accordance with the user manual are covered by the warranty. Any violation of this manual may void the warranty.

#### Limitation of Liability

Any product damage or property loss caused by the following conditions, Five Star does not assume any direct or indirect liability.

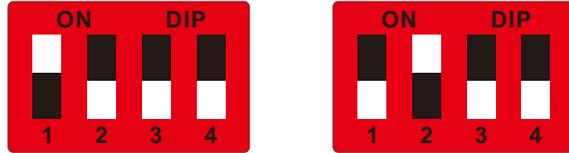
- Product modified, design changed or parts replaced.
- Changed, or attempted repairs and erasing of series number or seals;
- System design and installation are not in compliance with standards and regulations;
- The product has been improperly stored in end user's premises;
- Transport damage (including painting scratch caused by movement inside packaging during shipping).

A claim should be made directly to shipping or insurance company.

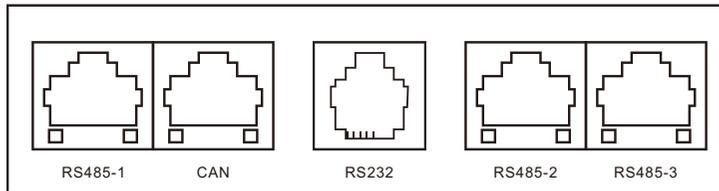
## LiFePO4 Battery System for Households

The communication steps between the master and slave batteries are as follows:

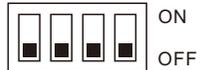
**Step 1:** When multiple lithium batteries are connected in parallel, find the red DIP switch on the battery. Take two batteries in parallel as an example. For the main battery, switch No. 1 need be on, and No. 2, 3, and 4 need off, so make it as master battery. For the second battery, No. 2 need be on, and No. 1, 3, and 4 need be off, so make it as slave battery. (as pictures)



**Step 2:** For the communication between these two battery, No.1 battery use port RS485-3, No.2 battery use port RS485-2.



**Attached table:** DIP switch mode for multiple batteries in parallel. In parallel mode, the default code 1 is turned on for the master battery.



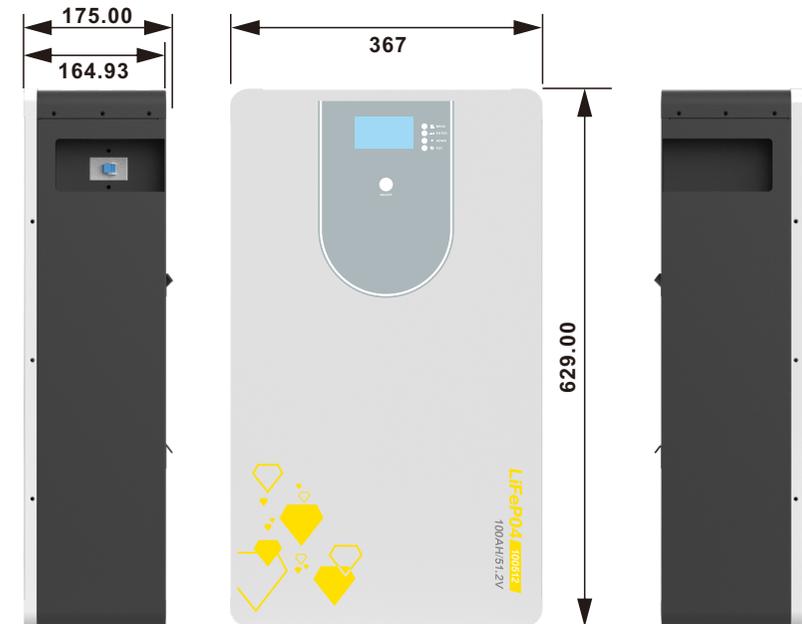
Address	DIP switch position			
	#1	#2	#3	#4
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF
8	OFF	OFF	OFF	ON
9	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON
11	ON	ON	OFF	ON
12	OFF	OFF	ON	ON
13	ON	OFF	ON	ON
14	OFF	ON	ON	ON
15	ON	ON	ON	ON

Between parallel batteries, the former battery uses RS485-3, the latter battery uses RS485-2, and so on.

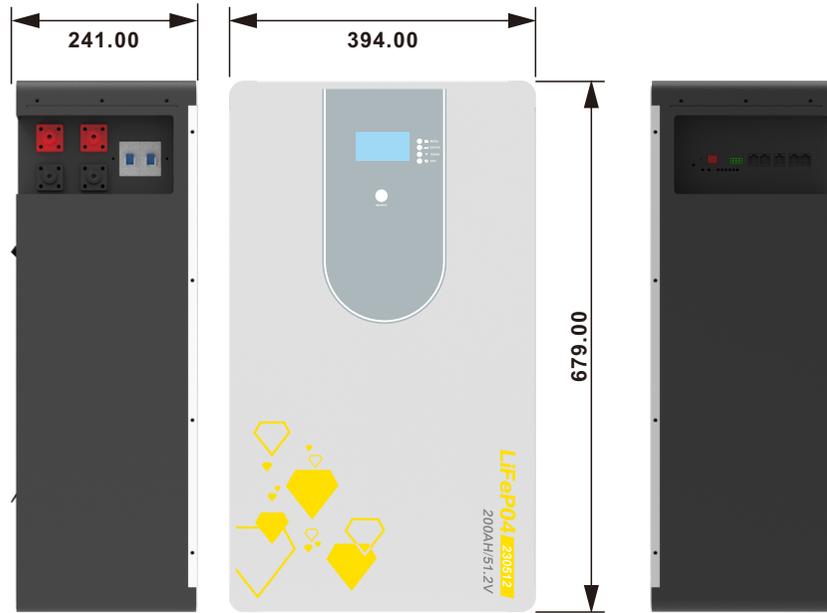
## 家用磷酸铁锂电池系统

通信	接口类型	图片	说明
RS485	RJ45		1-RS485-B 2-RS485-A 3-GND 6-GND 7-RS485-A 8-RS485-B
CAN	RJ45		4-CAN-H 5-CAN-L 7-GND
RS232	RJ11		3-RS232-TX 4-RS232-RX 5-GND

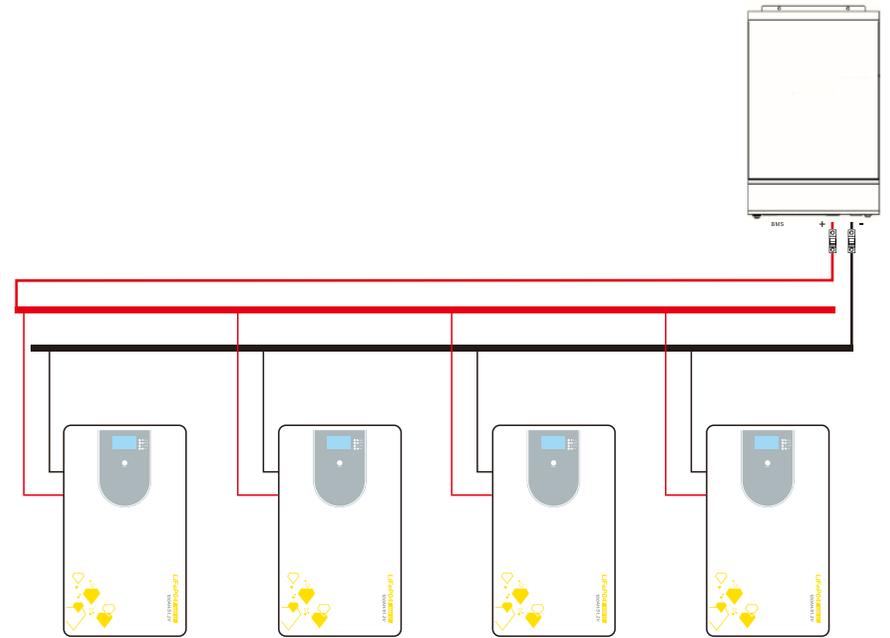
## LC100 512



LC200 512

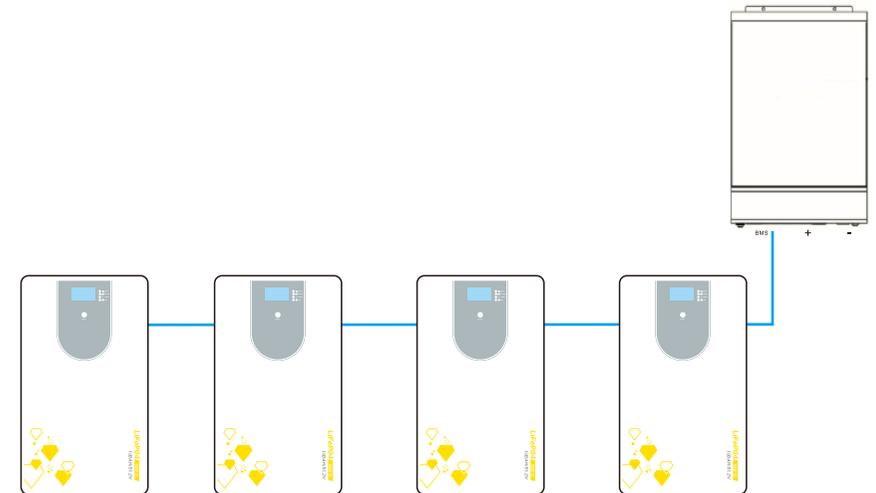


If multiple batteries are used in parallel, Bus bar is required.



5.2 Connecting Signal Line

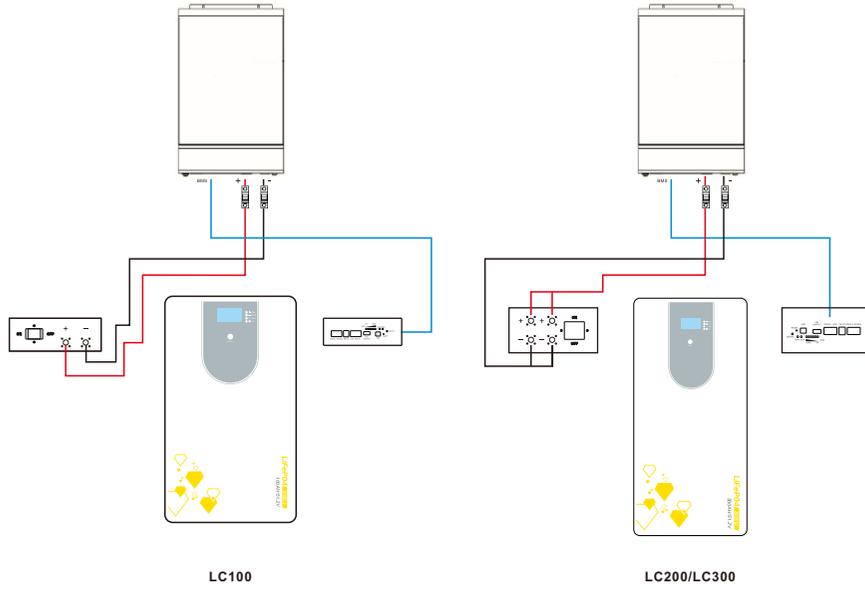
If there are multiple batteries, you need to connect the communication line of each battery. Battery and battery connection use RS485-Battery interface, battery and inverter connection need RS485-Inverter interface.



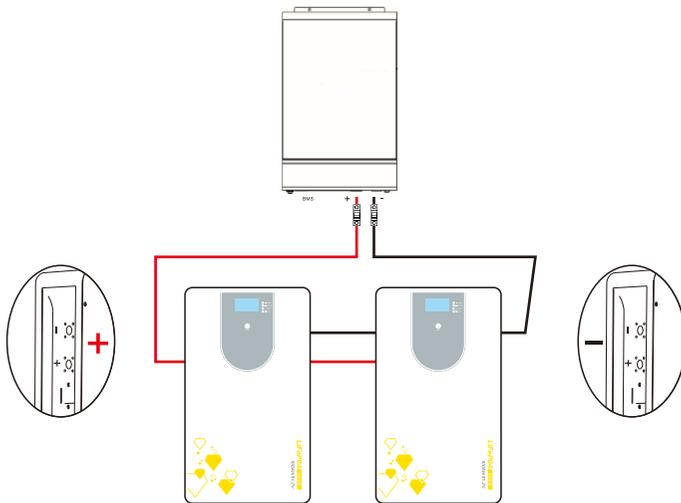
## 5 ELECTRICAL CONNECTION

### 5.1 Connecting Power Cord

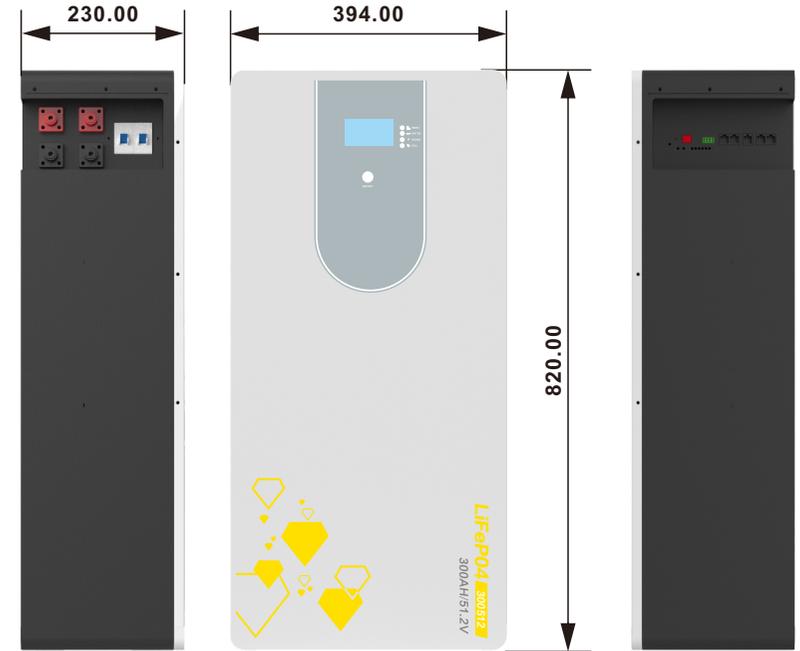
The signal line shall be used to connect RS485-Inverter interface for battery module and inverter.



If there are 2 batteries used in parallel, you need to connect the power cord of each battery.  
Parallel connection cable of battery modules are optional products. If necessary, please contact your local dealer.



## LC300 512



2.3 技术参数表

型号	LC100 512	LC200 512	LC300 512
可用容量	5120WH	10496WH	14336WH
额定电压	51.2V	51.2V	51.2V
电压范围	43.2-59.2	43.2-59.2	43.2-59.2
最大连续充电电流	100A	200A	200A
最大连续放电电流	100A	200A	200A
最大输出功率	5120W	10240W	10240W
推荐输出功率	2500W	5000W	7168W
显示屏幕	LED 显示	LED 显示	LED 显示
放电深度	≥95%	≥95%	≥95%
模块并联	1-15 并联	1-15 并联	1-15 并联
通信	485/CAN	485/CAN	485/CAN
防护等级	IP21	IP21	IP21
循环寿命	≥6000	≥4000	≥6000
工作温度范围	放电: -10°C ~ 50°C, 充电: +0°C ~ 60°C		
产品尺寸 (MM)	629x367x175	679x394x241	820x394x230
包装尺寸 (MM)	730x460x265	800x480x415	945x480x415

注：在市场上使用不支持锂电池激活的逆变器时，需要调整逆变器锁定电压如下：设置51.2V调整48V，否则，逆变器将无法开始为锂电池充电。

2.4 推荐设置

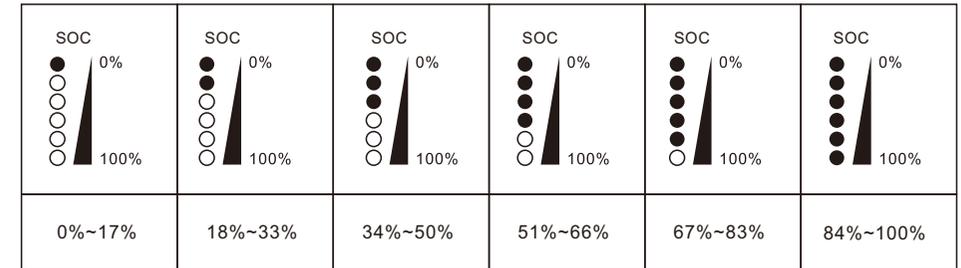
锂电池组与铅酸电池不一样，所以对于您与电池组连接进行充电或放电的设备，如逆变器、MPPT充电器控制器或UPS，请在启动前执行以下建议的预设置。

型号	LC100 512	LC200 512	LC300 512
最高的充电电压	58.4V	58.4V	58.4V
浮动充电电压	57.6V	57.6V	57.6V
最高的充电电流	100A	200A	200A
截止电压	43.2V	43.2V	43.2V

注：“N”表示并联连接的电池组数量。

4. Description for LED

The SOC of the battery is shown by the LED



Note: The battery need to be fully charged for at least once in one month to ensure the accurate SOC calculation

LED Working Status Indicator

Indicator: ● Always on ★ Flashing ◇ Off

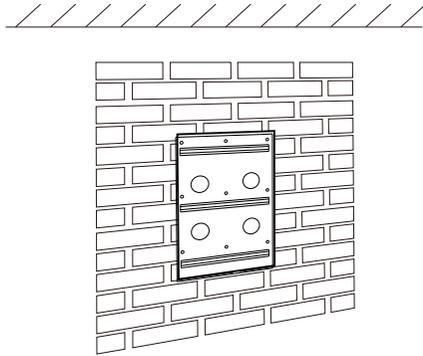
Status	Normal /Warning /Protection	ON/OFF	RUN	ALM	Battery indicator LED						Description
					L6	L5	L4	L3	L2	L1	
Power off	Sleep	◇	◇	◇	◇	◇	◇	◇	◇	◇	All off
Standby	Normal	●	★1	◇	Indicator accordingly to battery capacity						Standby status
	Warning	●	★1	★3	Indicator accordingly to battery capacity						Module low voltage
Charging	Normal	●	●	◇	Indicator accordingly to battery capacity (The maximum battery capacity, LED flashes 2)						The maximum battery capacity ,LED flashes 2 ALM does not flash when overcharge alarm occurs
	Warning	●	●	★3	Indicator accordingly to battery capacity						If there is no AC power, the indicator light turns to standby mode
	Overcharge protection	●	●	◇	Always on	Always on	Always on	Always on	Always on	Always on	If there is no AC power, the indicator light turns to standby mode
Discharging	Temperature and over-current failure protection	●	◇	●	◇	◇	◇	◇	◇	◇	Stop charging
	Normal	●	★3	◇	Indicator accordingly to battery capacity						
	Warning	●	★3	★3	Indicator accordingly to battery capacity						
Failure	Under-voltage protection	●	◇	◇	◇	◇	◇	◇	◇	◇	Stop charging
	Over-current, short circuit temperature, reverse connection, failure protection	●	◇	●	◇	◇	◇	◇	◇	◇	Stop charging
Failure		◇	◇	●	◇	◇	◇	◇	◇	◇	Stop charging and discharging

### 3.4.2 Install Expansion Bolts

**⚠ DANGER!** In order to avoid electrical shock or other injury, inspect existing electronic or plumbing installations before drilling holes.

**⚠ CAUTION** Choose suitable firm wall with thickness greater than 80mm.

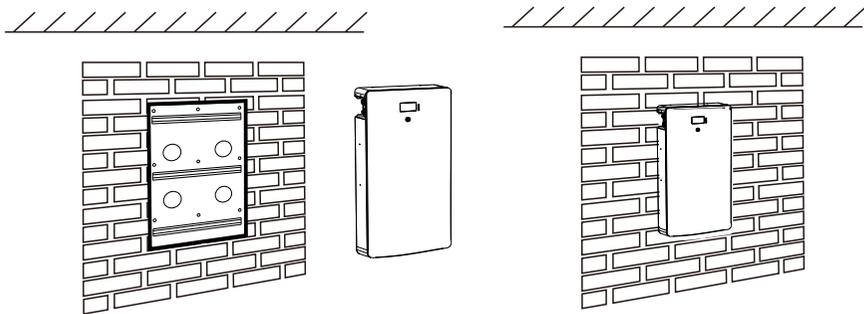
Drill 6 holes according to the hole position, it is  $\Phi 8$  with depth of 45-50mm. Hammer the M8 screws to the above holes, and screw the nut.



### 3.4.3 Install Battery Pack

**⚠ CAUTION** The battery pack is very heavy, which requires multiple people to install.

Keep the battery balanced, and then slowly hang the battery on the frame through the match hooks.



## 3 安装

### 3.1 开箱检查

安装前，请检查机组。确保包装内没有任何损坏。您应该已经收到了包装内的以下物品。

序号	名称	规格	图片
①	壁挂	壁挂支架	
②	电缆(可选配件)	用于电池并联连接	
③	螺钉	安装螺钉	
④	通信线	BMS通信或并行通信	

\*300AH用于地面安装，不带1和3号组件

\*电缆为可选附件。如果需要，请选择购买带有电缆的版本

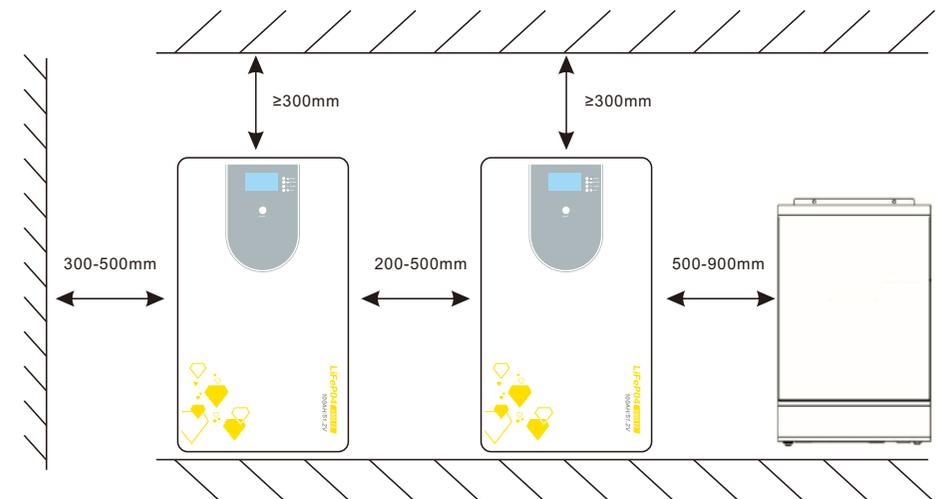
### 3.2 安装装置

在选择安装位置之前，请考虑以下几点：

- 不要将电池安装在易燃的建筑材料上。
- 环境温度应在0°C到45°C之间，以确保最佳运行。
- 建议的安装位置应垂直贴在墙上。
- 确保保留右图所示的其他物体和表面，以保证足够的散热和有足够的空间拆卸电线。

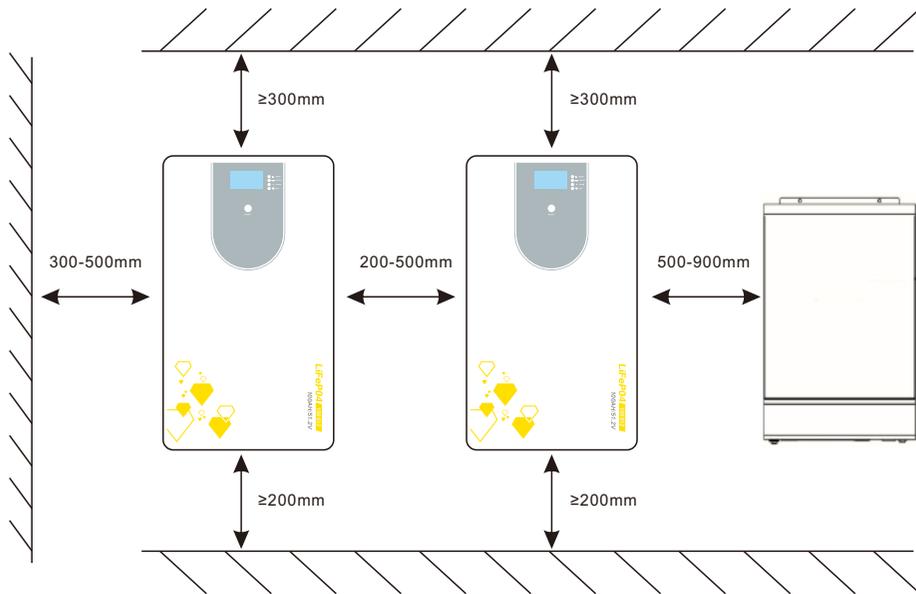
### 3.3 安装空间要求

**落地式安装：**电池应先放置在正确的位置，安装地点应光滑，墙壁应牢固，电池之间的距离应大于200-350mm。



## 家用磷酸铁锂电池系统

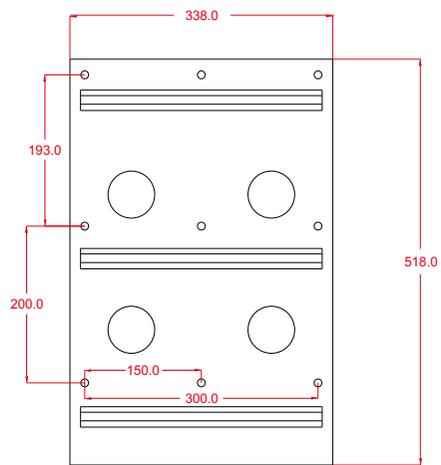
**壁挂式:** 电池应先放置在正确的位置, 安装地点应光滑, 墙壁应牢固, 设备离地200mm, 电池之间的距离应大于200-350mm。



### 3.4 壁挂式

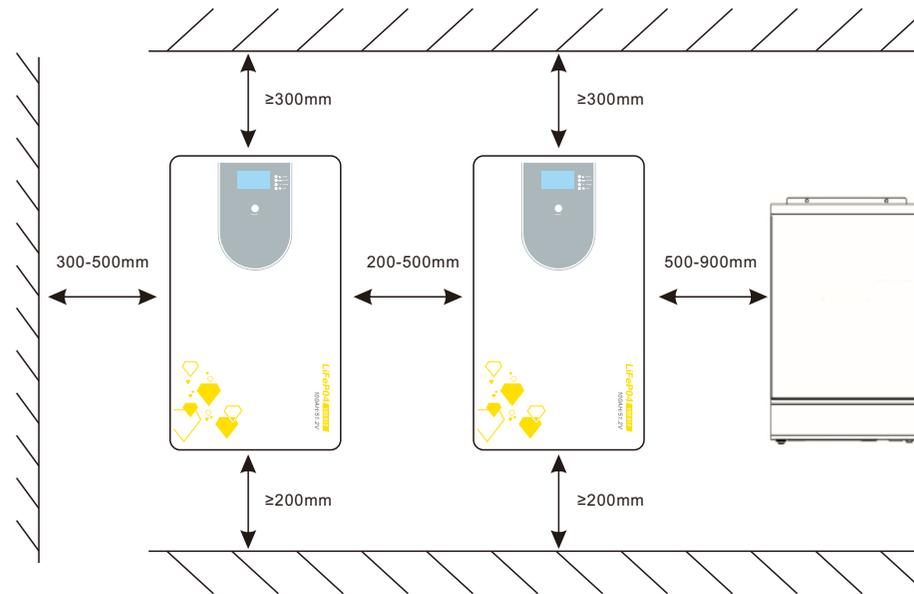
#### 3.4.1 安装位置的选择

确定安装位置, 将安装辅助板放在适当的位置, 并标记需要打孔的位置。



## LiFePO4 Battery System for Households

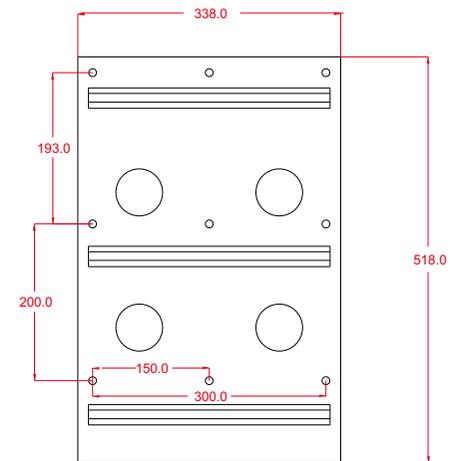
**Wall mount:** The battery should be placed in the right position first, and the installation site should be smooth and the wall should be solid, and the device is 200mm away from the ground, the distance between the batteries should be greater than 200-350mm.



### 3.4 Wall mount

#### 3.4.1 Installation Location Selection

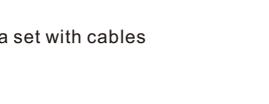
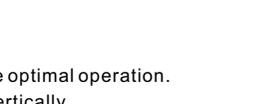
Determine the installation position, put the installation auxiliary board in the proper position, and mark the place where the holes need to be punched.



### 3.INSTALLATION

#### 3.1 Unpacking and Inspection

Before installation, please inspect the unit. Be sure that nothing inside the package is damaged. You should have received the following items inside of package.

NO	NAME	SPECIFICATION	PICTURE
①	Wall mount	Wall mount bracket	
②	Cables (Optional accessories)	Used for battery parallel connection	
③	Screw	Mounting Screw	
④	Communication line	BMS communication or parallel communication	

\* 300AH is for ground installation, without 1 or 3 components

\*Cable maintenance optional accessories. If needed, please choose a set with cables

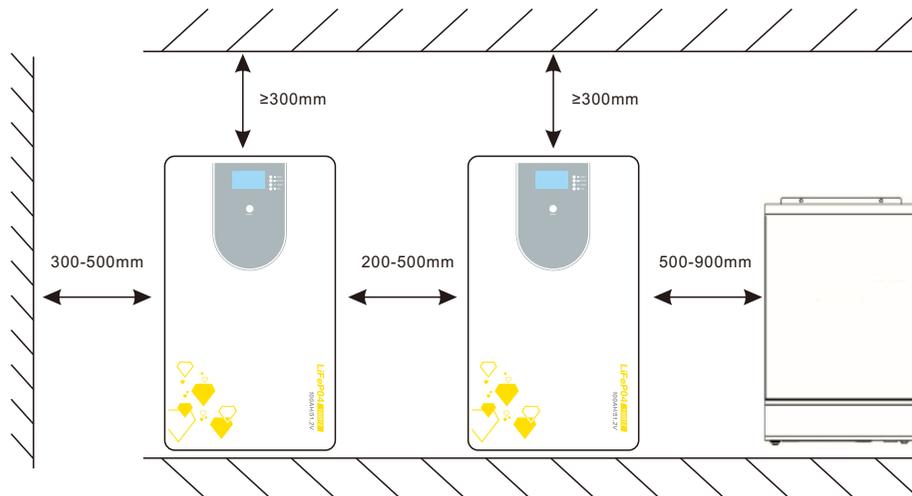
#### 3.2 Mounting the Unit

Consider the following points before selecting where to install:

- Do not mount the battery on flammable construction materials.
- The ambient temperature should be between 0°C and 45°C to ensure optimal operation.
- The recommended installation position is to be adhered to the wall vertically.
- Be sure to keep other objects and surfaces as shown in the right diagram to guarantee sufficient heat dissipation and to have enough space for removing wires.

#### 3.3 Installation Space Requirements

**Floor Mount:** The battery should be placed in the right position first, and the installation site should be smooth and the wall should be solid, and the distance between the batteries should be greater than 200-350mm.



#### 3.4.2 安装膨胀螺栓



危险!

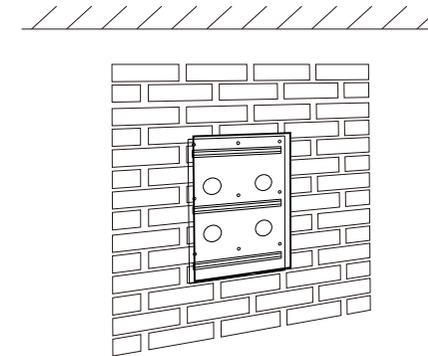
为避免触电或其他伤害，在钻孔前应检查现有的电子或管道装置。



注意

选择厚度大于80mm的坚固墙。

根据孔的位置钻4个孔，孔为φ8，深度45-50mm。将M8螺钉固定在上述孔上，然后拧紧螺母。



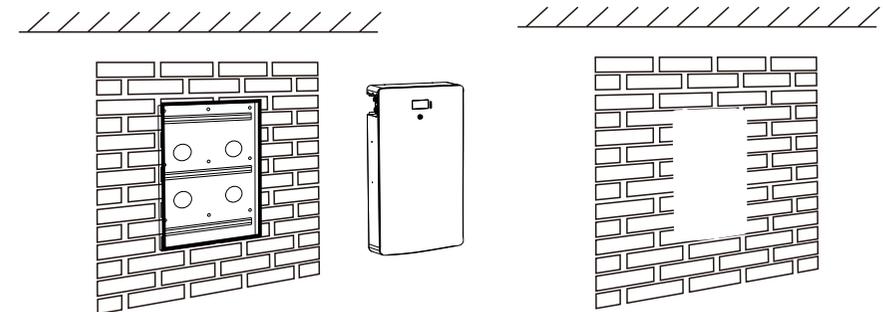
#### 3.4.3 安装电池组



注意

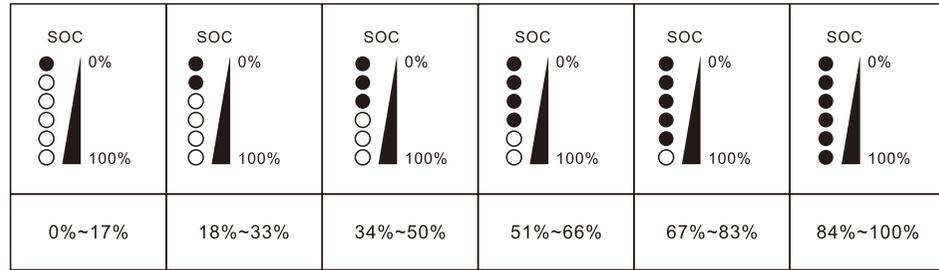
电池组非常重，需要多人安装。

保持电池的平衡，然后通过匹配钩慢慢地将电池挂在机架上。



### 4.LED显示屏描述

电池的SOC由LED显示



注：电池每月至少需要完全充电一次，以确保SOC计算的准确性。

#### LED工作状态指示器

指示器：● 始终亮起 ★ 闪烁 ◇ 关闭

状态	正常/警告/保护	开启/关闭	运行	报警	电池指示灯						描述
					L6	L5	L4	L3	L2	L1	
关闭状态	睡眠	◇	◇	◇	◇	◇	◇	◇	◇	◇	全部关闭
待机状态	正常	●	★1	◇	根据电池容量（显示）的指示灯						待机状态
	警告	●	★1	★3	根据电池容量（显示）的指示灯						模块低压
充电状态	正常	●	●	◇	根据电池容量（显示）的指示灯						电池容量达到最大值时，LED灯闪烁2次； 发生过充报警时，报警指示灯（ALM）不闪烁。
	警告	●	●	★3	（电池容量达到最大值时，LED灯闪烁2次）						
	过充保护	●	●	◇	始终开启	始终开启	始终开启	始终开启	始终开启	始终开启	如果没有交流电源，指示灯将转为待机模式。
	温度故障保护与过流故障保护	●	◇	●	◇	◇	◇	◇	◇	◇	停止充电
放电状态	正常	●	★3	◇	根据电池容量（显示）的指示灯						
	警告	●	★3	★3	根据电池容量（显示）的指示灯						
	欠压保护	●	◇	◇	◇	◇	◇	◇	◇	◇	停止充电
	过载、短路温度、反接故障保护	●	◇	●	◇	◇	◇	◇	◇	◇	停止充电
故障状态		◇	◇	●	◇	◇	◇	◇	◇	◇	停止充放电

### 2.3 Specifications

Model	LC100 512	LC200 512	LC300 512
Usable Capacity	5120WH	10496WH	14336WH
Rated Voltage	51.2V	51.2V	51.2V
Voltage Range	43.2-59.2	43.2-59.2	43.2-59.2
Max Continuous Charge Current	100A	200A	200A
Max Continuous Discharge Current	100A	200A	200A
Max Output Power	5120W	10240W	10240W
Recommend Output Power	2500W	5000W	7168W
Display Screen	LED Display	LED Display	LED Display
DOD	≥95%	≥95%	≥95%
Modules Connection	1-15 in parallel	1-15 in parallel	1-15 in parallel
Communication	485/CAN	485/CAN	485/CAN
Ingress Protection	IP21	IP21	IP21
Cycle Life	≥6000	≥4000	≥6000
Working Temperature Range	Discharge: -10°Cto+50°C,Charge:+0°Cto+60°C		
Product Dimension(MM)	629x367x175	679x394x241	820x394x230
Package Dimension(MM)	730x460x265	800x480x415	945x480x415

**Note:** When using inverters on the market that do not support lithium battery activation, it is necessary to adjust the inverter lock voltage as follows: set 51.2V to 48V. Otherwise, the inverter will not be able to start charging the lithium battery.

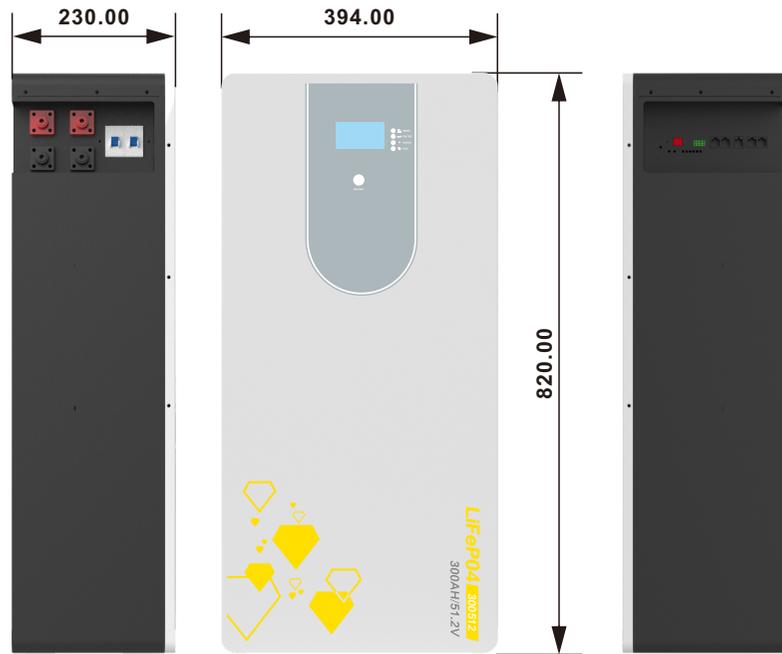
### 2.4 Recommended Settings

Lithium battery pack is not same as lead-acid battery, so for the devices which you connect with the battery pack for charging or discharging, such as inverters, MPPT charger controllers or UPS, please implement pre-settings as recommended settings as below before you launched them.

Setting	LC100 512	LC200 512	LC300 512
Max. Charging Voltage	58.4V	58.4V	58.4V
Floating charging Voltage	57.6V	57.6V	57.6V
Max. Charging Current	100A	200A	200A
Cut-off voltage	43.2V	43.2V	43.2V

**Notes:** "N" means the number of battery packs connected in parallel.

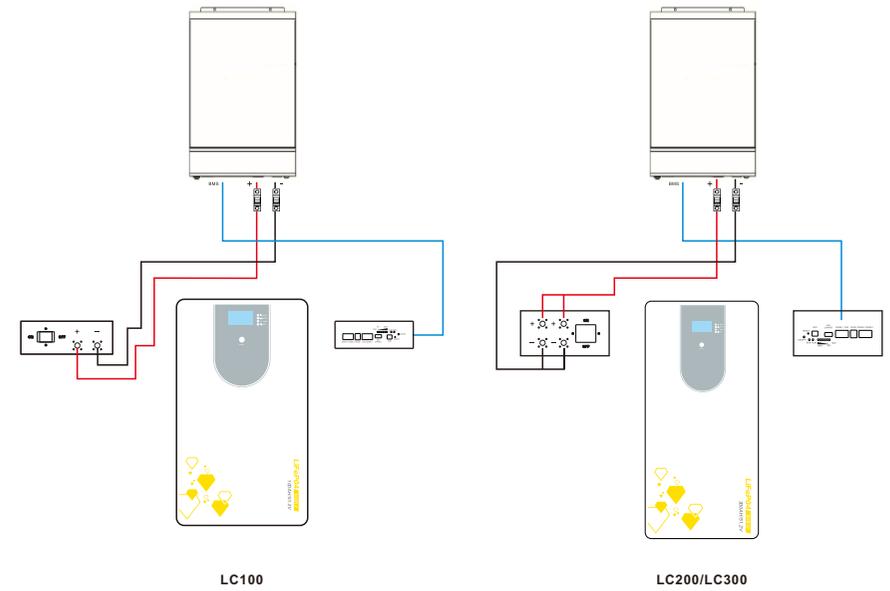
Lc300 512



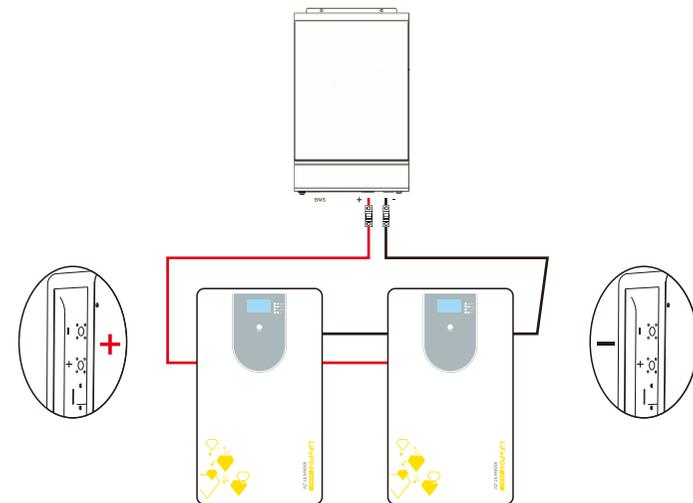
5 电气连接

5.1 连接电源线

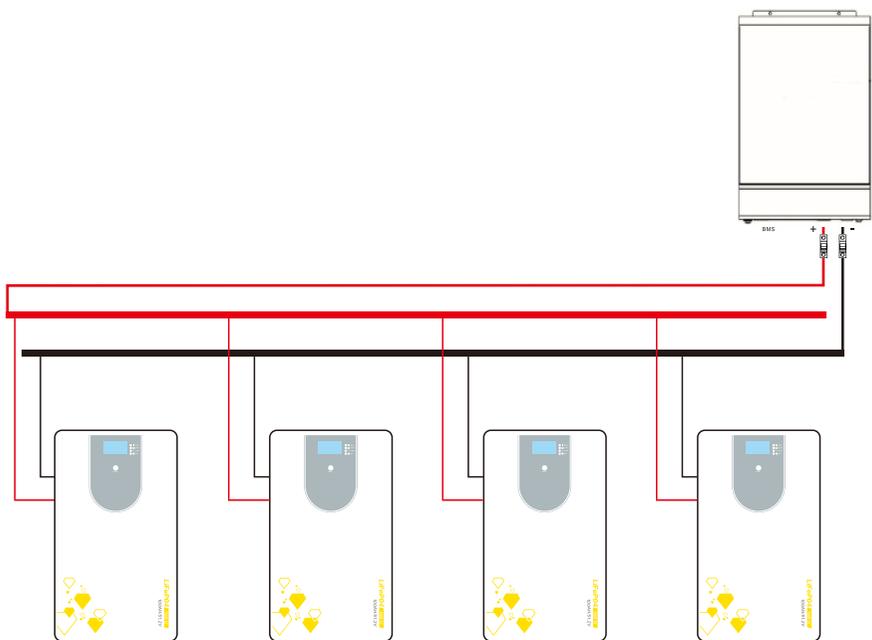
该信号线应用于连接电池模块和逆变器的RS485-逆变器接口。



如果有2个电池并联使用，您需要连接每个电池的电源线。电池模块的并联连接电缆是可选的产品。如有必要，请联系您当地的经销商。

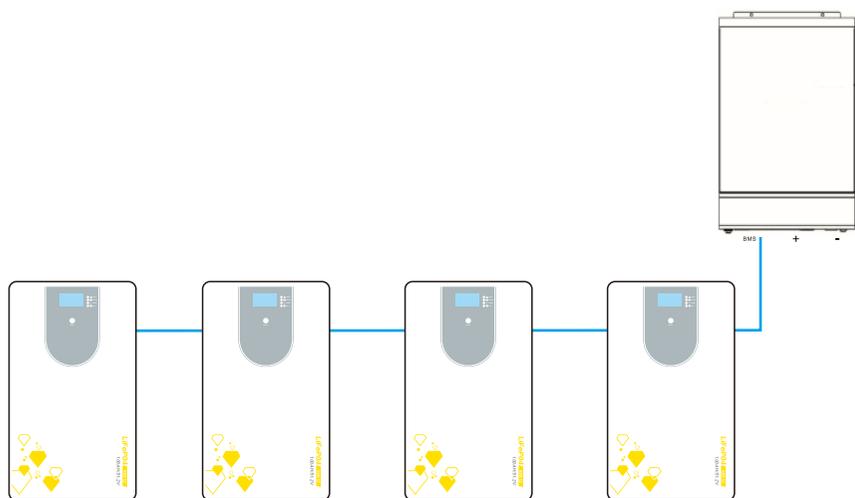


若使用多个电池并联，则需要母线。

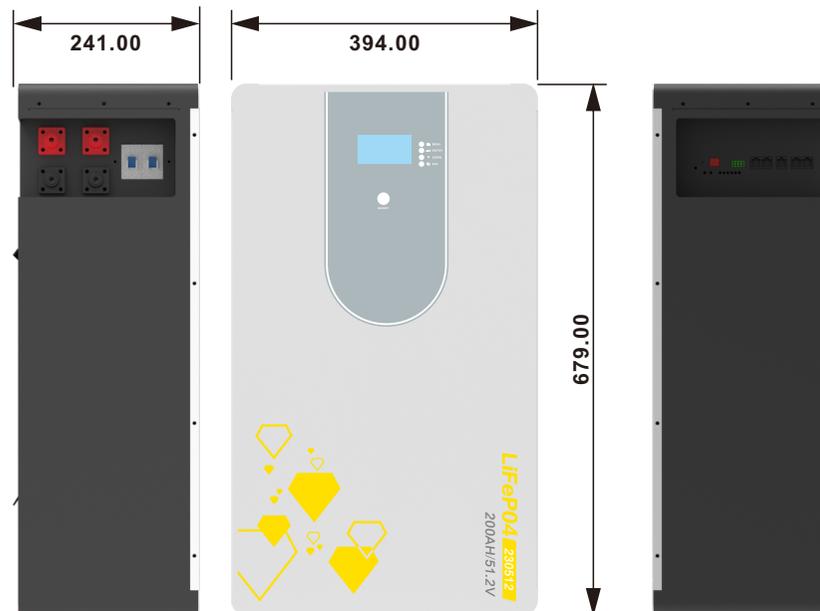


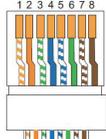
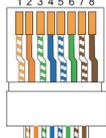
### 5.2 连接信号线

如果有多个电池，您需要连接每个电池的通信线路。电池与电池连接使用RS485-电池接口，电池与逆变器之间连接需要RS485-逆变器接口。

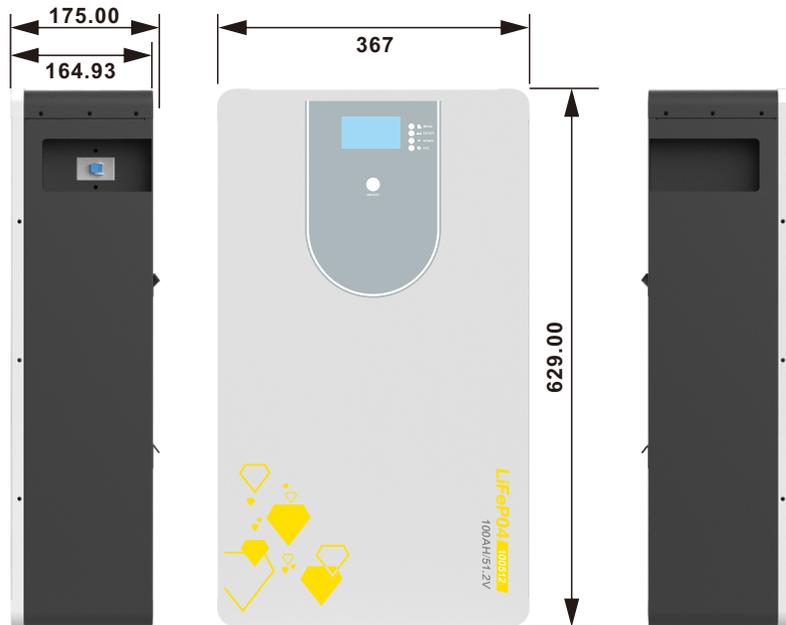


### LC200 512



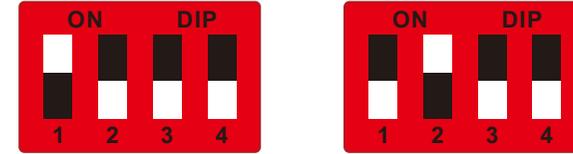
Communication	Interface Type	Picture	Instruction
RS485	RJ45		1-RS485-B 2-RS485-A 3-GND 6-GND 7-RS485-A 8-RS485-B
CAN	RJ45		4-CAN-H 5-CAN-L 7-GND
RS232	RJ11		3-RS232-TX 4-RS232-RX 5-GND

LC100 512

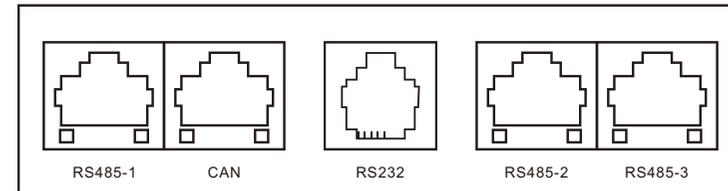


主电池与从电池之间的通信步骤如下：

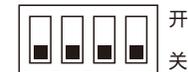
步骤1：当多个锂电池并联时，在电池上找到红色的 DIP 开关。以两个电池并联为例。对于主电池，需将第1个开关拨到“开”，第2、3、4个开关拨到“关”，这样就将其设为主电池。对于第二个电池，需将第2个开关拨到“开”，第1、3、4个开关拨到“关”，这样就将其设为从电池。（如图所示）



步骤2：对于这两个电池之间的通信，No. 1电池使用端口RS485-3，2号电池使用端口RS485-2。

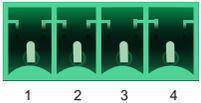


附表：多电池并联时的 DIP 开关模式。在并联模式下，主电池默认开启代码 1。



地址	DIP开关位置			
	#1	#2	#3	#4
0	关	关	关	关
1	开	关	关	关
2	关	开	关	关
3	开	开	关	关
4	关	关	开	关
5	开	关	开	关
6	关	开	开	关
7	开	开	开	关
8	关	关	关	开
9	开	关	关	开
10	关	开	关	开
11	开	开	关	开
12	关	关	开	开
13	开	关	开	开
14	关	开	开	开
15	开	开	开	开

并联电池之间，前一个电池使用RS485-3，后一个电池使用RS485-2，依此类推。

	干接点
	定义: 干接点1-PIN1 to PIN2: 常开, 故障保护时闭合 干接点2-PIN3 to PIN4: 常开, 低电量告警闭合

## 6.紧急情况

我们不能保证电池的绝对安全。

### 6.1 火灾

在发生火灾时, 请确保在系统附近有以下设备。

- SCBA符合个人防护设备指令89/686/EEC的自给式呼吸器 (SCBA) 和防护装备。
- NOVEC 1230、FM-200或二氧化碳灭火器。

电池在加热温度超过150°C时可能会爆炸。如果电池着火了, 一定要远离电池。

### 6.2 电池漏液

如果电池组电解液泄漏, 切勿接触泄漏的液体或气体。若不慎接触到泄漏物质, 请立即按照以下步骤处理。

吸入: 撤离污染区域, 并寻求医疗救助。

眼睛接触: 用流动清水冲洗眼睛 5 分钟, 并就医。

皮肤接触: 用肥皂和水彻底清洗受影响区域, 并就医。

吞食: 催吐, 并立即就医。

### 6.3 湿电池

如果电池组受潮或浸水, 请勿让人接触, 并联系供应商寻求帮助。

损坏的电池: 损坏的电池无法使用且存在危险, 必须极其小心地处理。电池可能会泄漏电解液或产生易燃气体。

如果电池组似乎已损坏, 请将其装入原包装容器中, 然后退还给供应商。

### 6.4 保修

严格按照用户手册操作的产品都包括在保修范围内。任何违反本手册的行为都可能使保修无效。

责任限制

因下列情况造成的产品损坏或财产损失, 我方不承担任何直接或间接责任。

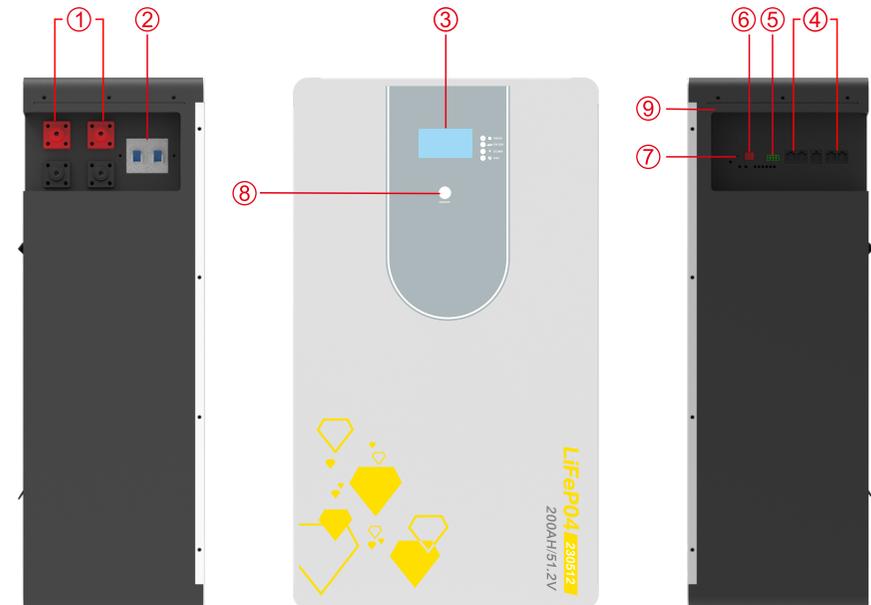
- 产品修改、设计或更换部件。
- 已更改, 或试图维修和擦除系列编号或密封件;
- 系统的设计和安装不符合标准和规定;
- 该产品在最终用户的办公场所中存储不当;
- 运输损坏 (包括在运输过程中因包装内移动而造成的油漆划伤)。应直接向运输或保险公司进行索赔

## 2.INTRODUCTION

### 2.1 Features

- Iron phosphate-lithium power battery
- Higher energy density, smaller volume for household.
- Support connected in parallel mode for expansion
- Photovoltaic system: This battery pack is designed for household photovoltaic systems.
- Battery management system (BMS): The battery packs built-in BMS monitors its operation and prevents the battery from operating outside design limitations.
- Expandability: This battery pack can be easily expanded by adding expansion battery packs in parallel connection.

### 2.2 Product Overview



1. Battery Positive and Negative
2. Switch
3. Display
4. CAN232/485
5. Dry Contact

6. ADD
7. Reset
8. Switch
9. Handle

## 1 ABOUT THIS MANUAL

### 1.1 Purpose

This manual describes the introduction, installation, operation and emergency situations of the battery bank. Please read this manual carefully before installations and operations. Keep this manual for future reference.

### 1.2 Scope

This manual provides safety and installation guidelines as well as information on tools and wiring.

### 1.3 Safety Instructions



**WARNING:** This chapter contains important safety and operating instructions. Read and keep this manual for future reference.

1. Before using the unit, read all instructions and cautionary markings on the unit, the batteries and all appropriate sections of this manual.
2. CAUTION --- To reduce risk of injury, damage, even burst, please use it following using manual. In case of causing personal.
3. Do not disassemble the battery. Take it to a qualified service center when service or repair is required. Incorrect re-assembly may result in a risk of fire.
4. To reduce risk of electric shock, disconnect all wirings before attempting any maintenance or cleaning. Turning off the unit will not reduce this risk.
5. CAUTION -- Only qualified personnel can install this device with inverter.
6. For optimum operation of this battery, please follow required spec to select appropriate cable size.
7. Be very cautious when working with metal tools on or around batteries. A potential risk exists to drop a tool to spark or short circuit batteries or other electrical parts and could cause an explosion or fire.
8. Please strictly follow installation procedure.
9. To support full output load, when the inverter power is greater than the maximum output power of the lithium battery, the lithium battery needs to be connected in parallel to meet the power output connection.
10. **GROUNDING INSTRUCTIONS** - This System should be connected to a permanent grounded wiring system. Be sure to comply with local requirements.
11. NEVER cause AC output and DC input short circuited. Do not connect to the mains when DC input short circuits.
12. Warning!! Only qualified service persons are able to service this device.
13. Battery should be installed indoor and kept away from water, high temperature mechanical force and flames.
14. Do not install the battery in any environment of temperature below 0°C or over 55°C, and humidity over 80%.
15. Do not put any heavy objects on the battery.

### 1.4 Can be connected in parallel

1. The batteries can be connected in parallel. Series connection is not allowed. Use in upright position only.
2. The batteries are not allowed to be connected with PWM controller for charging. Special Attention: Due to the built-in protection board of the lithium battery pack is with over-discharge protection function, it is strongly recommended to stop using the load when the battery pack is over-discharged. The battery pack cannot be repeatedly activated for discharge. Or the battery may be failed to be activated by the AC or PV activation cable (It requires a special charging activation method), so cannot be charged. Therefore, when the battery pack is low power, please charge the battery as soon as possible when main power or solar energy is available.

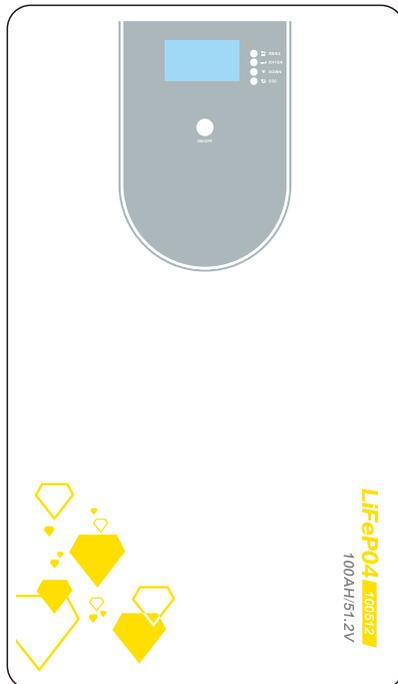
## 7.故障诊断与排除

1	锂电池系统开箱后无电压输出。	检查锂电池系统侧面启动开关是否按下，如未按下，需按压锂电池系统侧面圆形开关启用电池。
2	锂电池系统按压启动开关后无电压输出。	观察锂电池系统显示屏是否正常亮起，正常亮起后输出端无电压输出需检查侧面空气开关是否打到"ON"侧。
3	锂电池与逆变器连接后启用电池，指示灯红灯亮起，逆变器无法开启。	先关闭逆变器启动开关，再关闭锂电池系统侧面圆形开关，等待1分钟后重新按压锂电池系统侧面圆形开关启用电池，如重复3次“等待1分钟后重新按压锂电池系统侧面圆形开关启用电池”操作后锂电池系统红色指示灯依然亮起，请检查锂电池与逆变器连接线是否正确。
4	锂电池开启后连接逆变器，逆变器无法开启，测量锂电池端电压低于24V或48V。	1、查看显示屏：Analog Info: 模拟信息 Cell Voltage: 单体电池电压，如单个电芯电压低于3000mV需连接与锂电池系统标称电压匹配的逆变器或充电器进行充电，充电完成后即可正常使用。 2、查看显示屏：Analog Info: 模拟信息 Cell Voltage: 单体电池电压，如有电芯电压差200mV以上，需联系专业人员判断处理。
5	锂电池连接逆变器并正常开机，带载超过一定值时锂电池突然关闭输出。	检查逆变器带载功率是否大于锂电池最大输出功率，如逆变器带载功率大于锂电池最大输出功率需并联锂电池系统以满足带载需求。
6	锂电池与逆变器BMS通讯异常。	1、锂电池拨码开关1拨到ON，再重启逆变器； 2、如使用其他品牌逆变器需考虑协议匹配问题。
7	锂电池充电不满。	1、检查逆变器电池类型是否设置为锂电池类型，连接BMS通讯线使逆变器与锂电池通讯； 2、如使用其他品牌逆变器需考虑是否支持锂电功能。
8	锂电池连接逆变器，锂电池电量SOC未用完，逆变器提前关机。	查看逆变器设置的锁机SOC值与锁机电压点是否调节过高。
9	锂电池充电时锂电池充一会后亮红灯告警。	1、锂电池BMS通讯线未连接，需连接BMS通讯线充电。 2、连接无BMS通讯的充电器需调节充电器充电电流至额定值。

# Contents

# USER GUIDE

LiFePO4 Battery System for Households



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