



LPT-ENERGETECH

48V-4.8kWh 家用储能电源
Home energy storage power supply

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Instruction manual



尊敬的用户：

首先感谢您选用 LPT 家用储能系统电源，LPT 是一家从锂动力电池成套产品研发、生产和销售的股份制高新技术企业。

产品主要包括圆柱锂电池组，方形/软包锂电池系统，广泛应用于电动两轮车，三轮车，电动汽车，新能源储能领域以及其他锂电池应用领域，产品远销海外，遍布欧、美、亚等几十个国家和地区。

随着智能化、信息化时代的到来，用电需求大大增加。为缓解环境污染、能源消耗等方面的压力，全球都在寻找绿色的发电方式。太阳能，风能等作为一种清洁无污染的新型能源，不仅资源丰富，而且能量巨大，如果得到充分利用的话，不但能节省很多传统能源的使用，更能够保护环境，减少污染物的排放。在政策扶持和光伏储能降低发电成本的优势下，家庭光伏发电储能系统正逐步步入千家万户。

针对整个家庭光伏储能系统，LPT 电子提供全套系统的电源解决方案，致力于简化客户设计，增加系统的可靠性。本电源是基于磷酸铁锂电池，配置定制化电池管理系统（BMS）的新型储能系统。循环次数高，使用年限长，能适用每天充放电的应用场景。基于家庭储能电池的应用需求，产品在兼容性、能量密度、功率密度、安全性、可操作性及产品外观都进行了独特的设计和创新，可以为用户带来最佳的储能应用体验。

我们注重科学管理、技术创新、以人为本、专一专注的现代化企业理念。

坚持诚信第一，质量第一，顾客至上，致力合作双赢的目标。

从使用我们产品开始，我们就已经成为朋友，很高兴为您提供一系列储能电源产品，希望它在未来的时光为您提供可靠，安全的服务，保证您的设备安全运作。

为了您的安全和更好的使用该系列电源：

请您在安装使用前务必仔细阅读此使用手册！

如果您对本手册的内容有疑问或不明确之处，请您在使用产品前与我们联系。

Respected user:

First of all, thank you for choosing LPT home energy storage system power supply. LPT is a joint-stock high-tech enterprise that develops, produces and sells lithium battery complete sets of products.

The products mainly include cylindrical lithium battery packs and square/soft lithium battery systems, which are widely used in electric two-wheelers, tricycles, electric vehicles, new energy storage fields and other lithium battery applications. The products are exported to overseas, all over Europe and America, Asia and other dozens of countries and regions.

With the advent of the era of intelligence and information, the demand for electricity has increased greatly. In order to alleviate the pressure on environmental pollution and energy consumption, the world is looking for green power generation methods. Solar energy, wind energy, etc., as a new energy source that is clean and pollution-free, is not only rich in resources, but also has enormous energy. If fully utilized, it can not only save a lot of traditional energy use, but also protect the environment and reduce pollutant emissions. Under the advantages of policy support and photovoltaic energy storage to reduce power generation costs, home photovoltaic power storage systems are gradually entering thousands of



households.

For the entire home PV energy storage system, LPT Electronics offers a complete system of power solutions that simplify customer design and increase system reliability. This power supply is based on a lithium iron phosphate battery and is equipped with a new energy storage system with a customized battery management system (BMS). The cycle number is high and the service life is long, which can be applied to the daily charging and discharging application scenarios. Based on the application requirements of home energy storage batteries, the products are uniquely designed and innovated in terms of compatibility, energy density, power density, security, operability and product appearance, which can provide users with the best energy storage application experience.

We focus on scientific management, technological innovation, people-oriented, and a dedicated and modern corporate philosophy.

Adhere to the principle of integrity first, quality first, customer first, and strive to achieve win-win cooperation.

Since using our products, we have become friends and are happy to provide you with a series of energy storage power products. We hope that it will provide you with reliable and safe services in the future to ensure the safe operation of your equipment.

For your safety and better use of this series of power supplies, please read this manual carefully before installing and using!

If you have questions or are unclear about the contents of this manual, please contact us before using the product.



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1. 序言 Preface

LPT 家用储能系统系列电源,体现了当今世界领先的电力电子技术,功能齐备、性能卓越,具有高效率、高可靠度、高智能的优点。我们非常高兴为您提供这一产品,希望它在未来的岁月里为您提供可靠、安全的服务,保证您的设备安全运作。

LPT 家用储能系统系列电源技术特点:

- 具有应急状态过载保护,输出短路保护;电池反接保护;电池欠压、电池过压等完善的保护功能
- LED 显示方式: 具有 6 个 LED 指示灯, 其中 4 个绿灯为电量指示灯, 用于指示当前电池 SOC, 1 个红灯为故障指示灯用于警告、保护时的故障指示, 1 个绿色运行灯用于指示电池组的待机、充电、放电状态。
- 可以通过 RS485 通讯接口实现并联通信功能, 具有拨码开关, 用于并联通信时设定地址。并联后可以通过并联版上位机循环监控电池组数据
- 数据存储功能, 支持大约 500 条电池状态数据存储的功能
- 休眠及唤醒功能

编号	休眠条件	唤醒条件
1	空闲（无充放电、无通讯）状态下, 最低单体电压低于设置的休眠电压（可设）, 30 分钟后, 进入普通休眠	充电、通讯、复件按钮
2	最低单体电压低于单体过放保护值（可设）或总压低于总体过放保护值（可设）, 30 分钟后, 进入欠压休眠	充电、复位按钮
3	通过上位机强制休眠	复位按钮

- 智能完善的锂电池管理系统:具有均衡功能,高精度电压采集,保证电芯的一致性
- 人性化报警功能和完善的在线保护功能,确保系统在使用中安全。
- 自动控制温度功能当环境温度过高时,内置的冷却风机自动启动
- 性能稳定,安全可靠,使用寿命长

2. Preface

The home energy storage system series power supply from LPT reflects the world's leading power electronics technology. It is a fully functional and excellent inverter power supply with high efficiency, high reliability and high intelligence. We are very happy to provide you with this product, and hope that it will provide you with convenient and reliable services in the coming years to ensure the safe



operation of your equipment.

The technical features of **LPT** home energy storage system series power supply:

- With emergency state overload protection, output short circuit protection; battery reverse connection protection; battery under voltage, battery over voltage and other perfect protection functions.
- LED display mode: There are 6 LED indicators, 4 of which are power indicator lights, which are used to indicate the current battery SOC, 1 red light is the fault indicator for warning and protection, and 1 green running light is used to indicate the battery. Standby, charging, and discharging status of the group.
- The parallel communication function can be realized through the RS485 communication interface, and has a dial switch for setting the address when communicating in parallel. After parallel connection, the battery data can be monitored cyclically through the parallel version of the host computer.
- Data storage function that supports approximately 500 battery status data storage.
- Sleep and wake function.

NO	Sleep condition	Wake function
1	In the idle state (no charge, discharge, no communication), the lowest cell voltage is lower than the set sleep voltage (can be set), after 30 minutes, enter normal sleep	Charging, communication, reset button
2	The minimum cell voltage is lower than the cell over-discharge protection value (can be set) or the total voltage is lower than the overall over-discharge protection value (can be set), after 30 minutes, enter the under-voltage sleep	Charging, reset button
3	Forced sleep by the host computer	reset button

- Intelligent and perfect lithium battery management system: active or passive equalization, high-precision voltage acquisition, to ensure the consistency of the battery
- User-friendly alarm function and comprehensive online protection function ensure that the system is safe in use.
- Automatic temperature control function. When the ambient temperature is too high, the built-in cooling fan starts automatically.
- Stable performance, safe and reliable, long service life

1.1. 注意事项

本规格书提供给用户安装调试、操作使用及故障诊断等有关注意事项, 务请妥善保管, 并请您在使用本产品前仔细阅读本规格书。

- ◆ 在仔细阅读理解本规格书并能正确使用之前, 请不要安装、操作、维护或检查本产品。
- ◆ 遵从产品及附带的印刷品中标示的警告事项及说明。



- ◆ 接线前电源必须为关闭状态。
- ◆ 安装地点请远离水、蒸汽和其它液体物质, 远离易燃易爆物质。
- ◆ 安装的电缆必须符合要求, 请不要使用电缆线超载工作, 避免火灾及电击事故发生。

1.1. Precautions

This specification provides users with precautions for installation, commissioning, operation, and troubleshooting. Please keep it in a safe place and read this manual carefully before using this product.

- ◆ Do not install, operate, maintain or inspect this product until you have read and understood this specification and can use it properly.
- ◆ Follow the warnings and instructions marked on the product and accompanying printed materials.
- ◆ Power must be off before wiring。
- ◆ Keep away from water, steam and other liquid materials and keep away from flammable and explosive materials.
- ◆ The installed cable must meet the requirements. Please do not use the cable to overload the machine to avoid fire and electric shock.

1.2. 开箱检查

LPT 家用储能系统电源在出厂前已经经过严格的检验, 但在运输途中可能受损, 因此, 开箱后请先检查下列各项是否齐全, 确认型号、容量、输入电压、输出电压等是否与订购时所指定的内容相符; 如果出现异常或内容不符, 请尽快与我们联系。

- ◎ 完整电源机体
- ◎ 产品使用说明书
- ◎ 保修卡
- ◎ 合格证
- ◎ 产品配套的部件
- ◎ 订单规定的其它附件

1.2. open box to check

The **LPT** family energy storage system series power supply has been strictly tested before leaving the factory, but it may be damaged during transportation. Therefore, please check whether the following items are complete after unpacking, confirm the model, capacity, input voltage, output voltage, etc. Whether it matches the content specified at the time of ordering; if there is an abnormality or the content does not match, please contact the dealer as soon as possible.



- ◎ Complete power supply
- ◎ Product specification
- ◎ Product matching parts
- ◎ Other attachments specified by the order

1.3. 储存环境

本产品存放时应注意以下事项, 以避免可能遭受的不良影响。

- ◎ 置于无尘垢和干燥通风的场所
- ◎ 环境温度: $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$
- ◎ 环境相对湿度: $\leq 85\% \text{RH}$, 不凝露
- ◎ 远离腐蚀性气体、液体
- ◎ 长期不用的电源, 每隔半年应通电一次

1.3. Storage environment

The following matters should be observed when storing this product to avoid possible adverse effects.

- ◎ Placed in a place free of dirt and dry and ventilated
- ◎ Ambient temperature: $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$
- ◎ Relative humidity: $\leq 85\% \text{RH}$, No condensation
- ◎ Keep away from corrosive gases and liquids
- ◎ Long-term unused power supply should be recharged every six months

1.4. 搬运

本产品搬运过程中, 应避免强烈振动、摔跌、磕碰, 严禁将包装箱倒置, 开箱搬运时切勿遗失附件及使用说明书、保修卡等。

另外, 本产品体积大, 且较重, 搬运时请注意安全, 以免伤害到您的身体。

1.4. Handling

During the handling of this product, it should avoid strong vibration, falling, and bumping. It is strictly forbidden to invert the package. Do not lose the accessories, instruction manual, etc. when unpacking. In addition, this product is bulky and heavy, please pay attention to safety when handling, so as not to hurt your body.



2. 产品简介

2.1. 主要技术参数

电芯	电芯规格	Model: FFH4D3
	电池类型	LiFePO4
	标称容量	100.0Ah (Typical)
	内阻	≤0.35mΩ
电池系统	电池组合方式	1P16S
	标称容量	100.0Ah (Typical)
	标称电压	51.2V
	充电截止电压	58.4±0.5V
	充电电流	50.0A
	放电截止电压	41.6±0.5V
	放电电流	标准：50.0A 最大持续：100.0A 峰值：150A 持续 10S
BMS	均衡电流	60-100mA
	电压采集精度	±0.2mV
	通讯	RS485/CAN
其它	防护等级	IP20 (室内)
	环境温度	温度：0℃ ~45℃
	环境湿度	湿度：≤85% RH (不凝结)
	产品尺寸	400/170/600 (mm)
	重量	About 约 50.0kg
	外观	表面应无明显的划痕、裂纹、污点、泄露、变形等影响产品性能的外观缺陷。(白色/色号 189)

2. Product introduction

2.1. The main technical parameters

Battery	Battery Specifications	Model: FFH4D3
	Battery Type	LiFePO4
	Nominal Capacity	100.0Ah (Typical)
	Impedance	≤0.35mΩ
Battery system	Configuration	1P16S
	Nominal Capacity	100.0Ah (Typical)
	Nominal Voltage	51.2V
	Charge Cut-off Voltage	58.4±0.5V
	Charge Current	50.0A Standard
	Discharge Cut-off Voltage	40.0±0.5V
	Discharge Current	Standard: 50.0A



		Max. Continuous : 100.0A
		Peak: 150A continued 10S
BMS	Balancing current	60-100mA
	Voltage acquisition accuracy	±0.2mV
	Communication	RS485/CAN
Other	Protection level	IP20 (indoor)
	Ambient temperature	Temperature : 0°C ~45°C
	Environment humidity	Humidity: ≤85% RH (non-condensing)
	Size	400/170/600 (mm)
	Weight	About 50.0kg
	Appearance	There shall be no such defect as remarkable ,scratch leakage or deformation which may obviously affect the technical performance of the battery. (White / color number 189)

2.2. 工作环境

本产品的使用环境请尽量满足以下要求:

- 本设备散热采用风冷方式, 置于无尘垢和干燥通风的场所 (在宽敞的房间内安装本产品, 房间内安装强制性通风设备)
- 适当的温度 (电源能在-10°C~40°C的室内环境下运行, 但进行开启时的温度最好高于 0°C, 理想的操作温度为 10°C~25°C)
- 相对湿度符合要求 (10%~85%) 不结露
- 海拔 ≤2000m
- 无水蒸汽或其它腐蚀性气体, 附近无易燃易爆品

2.2. Working environment

Please try to meet the following requirements for the working environment of this product:

- The device is cooled by air-cooling and placed in a place free from dust and dry ventilation. (Install this product in a spacious room and install mandatory ventilation in the room)
- Appropriate temperature (The power supply can operate in an indoor environment of -10 ° C to 40 ° C, but the temperature at the time of opening is preferably higher than 0 ° C, and the ideal operating temperature is 10 ° C to 25 ° C)
- Relative humidity meets requirements (10%~85%) without condensation
- Altitude ≤2000m



- No steam or other corrosive gas, no flammable or explosive nearby

3. LED 指示说明

LED 排列顺序：4 个白发绿容量指示灯，一个红发红告警指示灯，一个白发绿运行指示灯。



状态	正常/告警/保护	RUN	ALM	电量指示				说明
		●	●	●	●	●	●	
关机	休眠	灭	灭	灭	灭	灭	灭	全灭
待机	正常	闪 1	灭	依据电量指示				待机状态
	告警	闪 1	灭					温度告警 ALM 闪 3
充电	正常	闪 2	灭	依据电量指示				—
	告警（不含温度）	闪 2	灭					温度告警 ALM 闪 3
	过充保护	闪 1	灭					过充保护 ALM 灯不闪
	过温、欠温、过流保护	闪 1	闪 2					—
放电	正常	常亮	灭	依据电量指示				—
	告警	常亮	闪 3					放电过流告警 ALM 不闪
	过放保护	闪 1	灭					过放保护 ALM 灯不闪
	过温、欠温、过流、短路保护	闪 1	闪 2					—
充电/放电/待机	故障	灭	常亮	灭	灭	灭	灭	故障指 BMS 电压采样器件、充电 MOS 损坏，温度传感器断线等硬件故障

LED 闪烁状态说明

闪烁状态	亮	灭
闪 1	0.25S	3.75S
闪 2	0.5S	0.5S
闪 3	0.5S	1.5S

SOC 灯显示和容量对应关系

容量状态	电量指示 LED			
	●	●	●	●
	LED1	LED2	LED3	LED4
0~25%	亮	灭	灭	灭
25~50%	亮	亮	灭	灭
50~75%	亮	亮	亮	灭
75~100%	亮	亮	亮	亮

灯亮条件：静置时如果有单压高于休眠电压时或充放电时容量指示灯按容量比例常亮

3.LED indication

LED arrangement order: 4 white- green capacity indicator lights, one red-red alarm indicator, and one white-green operation indicator.



Status	Normal / alarm / protection	RUN	ALM	Battery indicator				Description
		●	●	●	●	●	●	
Shut down	Sleep	OFF	OFF	OFF	OFF	OFF	OFF	Complete power-off
Standby	Normal	Flash 1	OFF	According to the battery indicator				standby mode
	Alarm	Flash 1	OFF					Temperature ALM flash 3
Charging	Normal	Flash 2	OFF	According to the battery indicator				—
	Alarm (without temperature)	Flash 2	OFF					Temperature ALM flash 3
	Overcharge protection	Flash 1	OFF					Overcharge protection ALM light does not flash
	Over temperature, under temperature, over current protection	Flash 1	Flash2					—
Discharge	Normal	Constantly bright	OFF	According to the battery indicator				—
	Alarm	Constantly bright	Flash3					Discharge overcurrent ALM does not flash
	Over discharge protection	Flash 1	OFF					Over-discharge protection ALM light does not flash
	Over temperature, under temperature, over current, short circuit protection	Flash 1	Flash2					—
Charging/ discharging/standby	Malfunction	OFF	Constantly bright	OFF	OFF	OFF	OFF	Fault refers to hardware failure of BMS voltage sampling device, charging MOS damage, temperature sensor disconnection, etc.

LED flashing status description

Flashing state	FLASH	OFF
Flash1	0.25S	3.75S
Flash2	0.5S	0.5S
Flash3	0.5S	1.5S

SOC lamp display and capacity correspondence

Capacity status	Battery indicator LED			
	●	●	●	●
	LED1	LED2	LED3	LED4
0~25%	FLASH	OFF	OFF	OFF
25~50%	FLASH	FLASH	OFF	OFF



50~75%	FLASH	FLASH	FLASH	OFF
75~100%	FLASH	FLASH	FLASH	FLASH
Light on condition: If there is a single voltage higher than the sleep voltage when standing by or when charging or discharging, the capacity indicator is always bright according to the capacity ratio				

4. 通信说明

4.1. 单机通信

4.1.1 RS485 通信

RS485 接口一般用于级联场景，也可用于与上位机进行数据通信。用 RS485 接口与主机通讯时，需要注意拨码地址的选择，管理系统上拨码开关的地址一定要与上位机的拨码地址一一对应（一般不使用地址 0 进行通讯）

4.1.2. 拨码开关选择地址



地址选择方式：

地址	6 位	5 位	4 位	3 位	2 位	1 位
0	0	0	0	0	0	0
1	1	0	0	0	0	0
2	0	1	0	0	0	0
3	1	1	0	0	0	0
4	0	0	1	0	0	0
5	1	0	1	0	0	0

拨码开关的作用是用于选择管理系统的通信地址（拨码开关默认使用 4 位，可扩展 6 位），拨码计数方式为二 进制计数。上图中，1 表是最低们，4 表示最高位（注：5、6 暂未开放）。第位拨到 ON 位置表示 1，拨到反向位置（OFF）表示 0. 四位二进制可以表示 0、1、2、……14、15，一共 16 个地址。



注：如果要把管理系统地址设置成 3 号，需要给 6 和 5 拨到 ON 位置（地址位 110），而不是将 3 拨到 ON 位置。

4. Communication description

4.1. Single communication

4.1.1 RS485 communication

The RS485 interface is generally used for cascading scenarios, and can also be used for data communication with the host computer. When using the RS485 interface to communicate with the host, you need to pay attention to the selection of the dialing address. The address of the DIP switch on the management system must correspond to the dialing address of the host computer (usually do not use the address 0 for communication).

4.1.2. DIP switch select address



Address selection method:



4位	3位	2位	1位	地址
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	0	0	0	8
1	0	0	1	9
1	0	1	0	10
1	0	1	1	11
1	1	0	0	12
1	1	0	1	13
1	1	1	0	14
1	1	1	1	15

The function of the DIP switch is to select the communication address of the management system (the DIP switch uses 4 bits by default and can expand 6 bits), and the dialing mode is binary counting. In the above picture, 1 is the lowest, and 4 is the highest (Note: 5, 6 is not open yet). The first digit is set to the ON position to indicate 1, and the dial to the reverse position (OFF) indicates 0. The four-digit binary can represent 0, 1, 2, ..., 14, 15 for a total of 16 addresses.

Note: If you want to set the management system address to number 3, you need to turn 1 and 2 to the ON position (address bit 011) instead of dialing 3 to the ON position.

4.2. 并联通信

BMS 可以通过 RS485 进行并联通信，接线时需将每个 RS485 接口对应的 RS485A、RS485B 分别连接。并联通信的地址选择则通过管理系统上的拨码开关实现，不同的管理系统需使用不同的拨码地址。如果选择四组电池，拨码地址必须依次为 1、2、3、4；如果选择八组电池，拨码地址必须依次为 1、2、3、4、5、6、7、8。

并联通信时，可以通过上位机监控页面的多组显示对不同系统的状态进行监控。

4.2.Parallel communication

The BMS can communicate in parallel via RS485. When wiring, RS485A and RS485B corresponding to each RS485 interface should be connected separately. The address selection for parallel communication

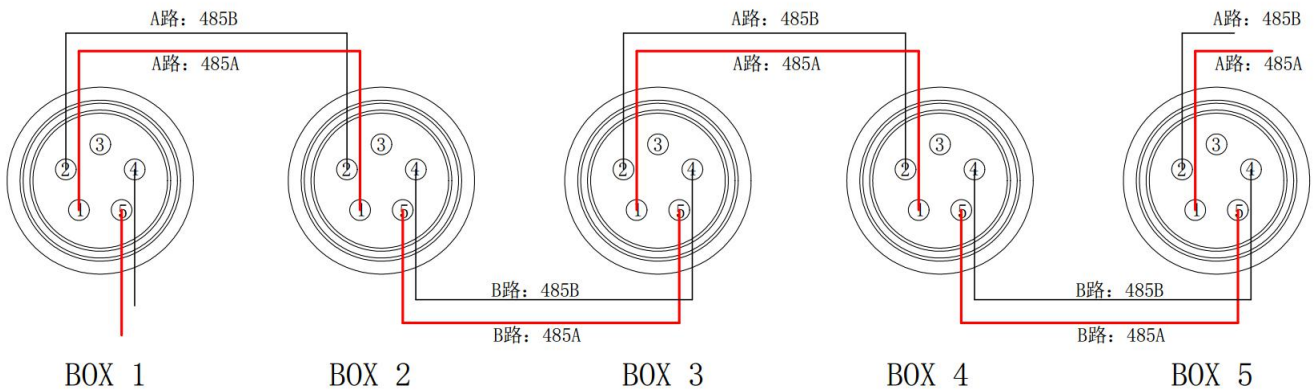


is realized by the DIP switch on the management system. Different management systems need to use different dialing addresses. If you select four batteries, the dialing address must be 1, 2, 3, and 4; if you select eight batteries, the dialing addresses must be 1, 2, 3, 4, 5, 6, 7, and 8.

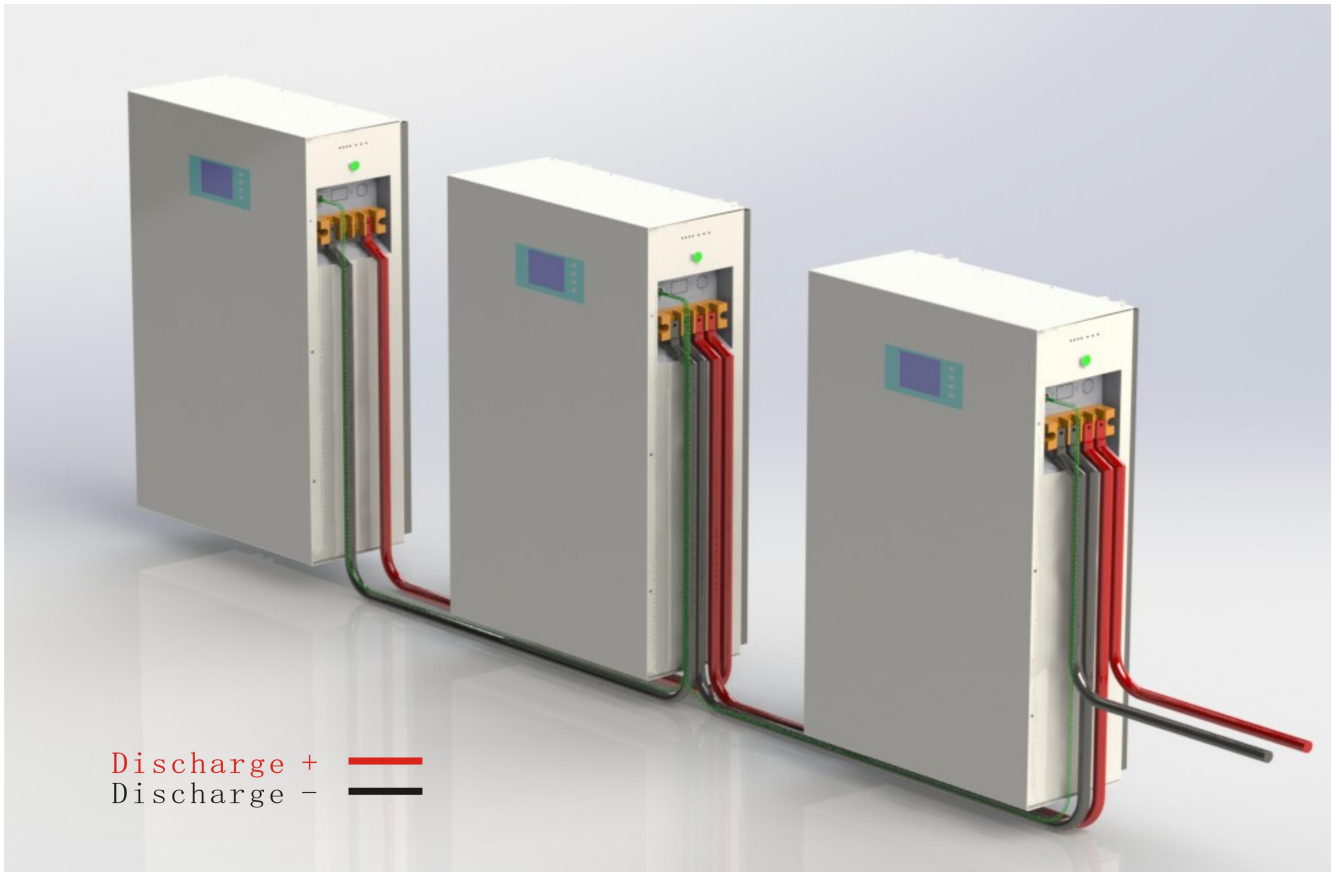
When communicating in parallel, the status of different systems can be monitored through multiple sets of display on the upper computer monitoring page.

4.3. 并联通讯接线方式

4.3. Parallel communication wiring method



4.4. 并联接线方式 4.4. Parallel wiring



5. 产品结构

5. Product structure





6. 安装运行

LPT 家庭储能系统系列电源的安装首先要求合理性,包括安装位置的选择、正确配置负载、选择适宜的电缆并正确连接等,以保证电源能够安全、正常运行。

6.1. 安装准备

负载配置

负载设备的标牌上一般都有额定电压、电流等数据,有的设备以瓦特(W)标注。用户在使用时一定要仔细查看负载功率,以免造成过载。

负载设备在一般运行状态下,特别是在待机状态下的实际功率要比标注的功率低一些,用户在使用时应以设备的标称功率为准,同时考虑设备在启动时的冲击电流,最好留有 30%的功率余量,以保证电源的可靠供电。

6.2. 安装位置

电源的安装位置选择以利于散热、便于接线为原则,并且要求符合本手册第 2.2 条对工作环境的要求。另外,机箱的进、出风口必须保持畅通,与墙壁或其它物件保持足够的距离;机箱的顶部不要放置任何物品。

6.Installation and operation

The installation of the LPT home energy storage system series power supply first requires rationality, including the selection of the installation location, the correct configuration of the load, the selection of the appropriate cable and the correct connection, so as to ensure the safe and normal operation of the power supply.

6.1.Installation preparation

Load configuration

The load device's signage generally has data such as rated voltage and current, and some devices are marked in watts (W). Users must carefully check the load power when using it to avoid overload.

In the normal operating state, especially in the standby state, the actual power of the load device is lower than the marked power. The user should use the nominal power of the device when using it, and consider about the inrush current of the device at startup. It is good to have a 30% power margin to ensure reliable power supply.



6.2. Installation location

The installation location of the power supply is selected to facilitate heat dissipation and easy wiring, and is required to comply with the requirements of the working environment in Section 2.2 of this manual. In addition, the inlet and outlet of the chassis must be kept clear and kept at a sufficient distance from the wall or other objects; do not place anything on the top of the chassis.

7. 维护保养

7.1. 维护保养

为了保证 LPT 家用储能系统系列电源连续正常运行, 要求经常进行维护和保养。

1) 电源的安装和存放应尽量避免高腐蚀性、高粉尘性、高温、高湿性环境, 特别应避免金属物质落入箱体内。

2) 定期检查连接线是否老化, 电缆连接点是否紧固、安全。

3) 定期清洁冷却风扇并检查风扇是否正常。

具体维护保养要求:

- ◎ 清洁箱体内的灰尘和杂物
- ◎ 检查箱体各端子、螺钉是否紧固
- ◎ 检查箱体有无出现过热后留下的痕迹以及损坏的器件
- ◎ 检查箱体内的电线是否老化

7. Maintenance

7.1. Maintenance

In order to ensure the continuous operation of the LPT home energy storage system series power supply, frequent maintenance is required.

1) The installation and storage of the power supply should avoid high corrosive, high dust, high temperature and high humidity environment. In particular, metal materials should be prevented from falling into the cabinet.

2) Regularly check if the cable is aging and the cable connection point is tight and safe.

3) Clean the cooling fan regularly and check if the fan is normal.

Specific maintenance requirements:

- ◎ Clean dust and Sundries in the box
- ◎ Check if the terminals and screws in the box are tight



- ◎ Check the cabinet for any signs of damage and damage after overheating
- ◎ Check if the wires in the box are aging

7.2. 售后服务

为了让用户买得称心,用得放心,公司专门组织了一支训练有素的高水平技术队伍,从事售后服务工作。请您认真地将用户信息反馈给我们,以便我们及时掌握,更好地为您服务。

公司郑重承诺:凡属产品质量问题,自发货之日起,一年之内保修,终身维护

欢迎您浏览我们的网站,我们会在网站上及时地发布公司最新的产品信息和新品动态,如果您对其它的电源产品有应用方案,我们愿与您携手合作!

7.2. After sales service

In order to make users feel satisfied, the company is dedicated to organizing a well-trained high-level technical team to engage in after-sales service. Please carefully feedback the user information to us so that we can master it in time and serve you better.

Welcome to browse our website, we will post the company's latest product information and new product news on the website in time. If you have application solutions for other power products, we are willing to cooperate with you!

8. 产品说明的修订和声明

本司有权对本产品规格书进行修订,修订后本司将会通知相关客户。

如对本规格有异议,双方可协商解决。

8. Revision and statement of product specifications

We have the right to revise this specification. We'll inform our customers after revision.

If any matters with this specification arise, it shall be revised by mutual agreements.