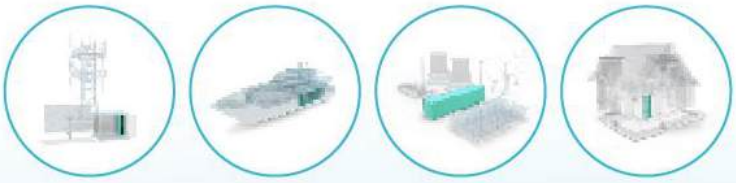
户用储能电池包规格书
Product Specification

Battery Pack for Household ESS

EVE-LVI-5.0

版本 Version V4.0



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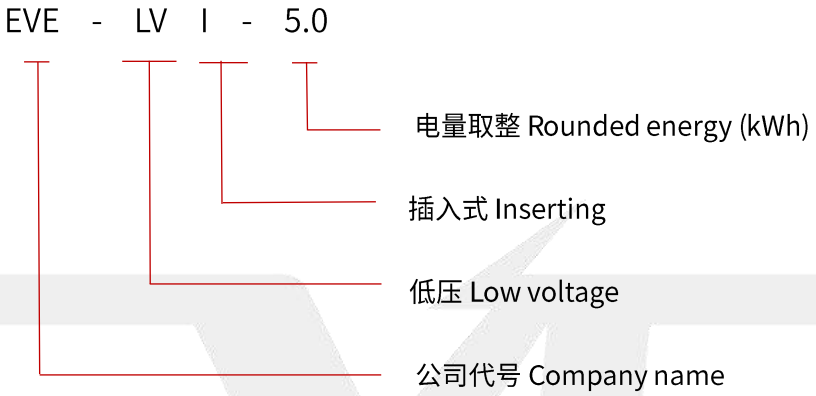
修订履历 Change history

序号 No.	版本 Version	修订日期 Date	修订内容 Contents	修订人 Revised by
1	1.0	2023-05-23	首版发行 First release	/
2	2.0	2023-06-14	标准充放电电流改为 0.5C Update the standard charge/discharge current: 0.5C	/
3	3.0	2023-11-07	更新充电电流，更新面板示意图 Update the charge current and panel diagram	/
4	4.0	2024-03-27	更新通讯接口定义，更新配线线规 Update communication interface definitions and wiring specifications	

目　录 Contents

1. 概述 Product Overview

产品型号定义规则参考以下说明。The definition of product model is shown as follows.



该规格书描述了电池包(51.2V 100Ah)设计结构、基本特性、测试方法和磷酸铁锂电池注意事项等，主要应用于户用储能应用场景。针对客户需求亿纬储能可以提供不同的产品解决方案。本产品的标准供货内容为电池包，不包含电池包的安装螺丝。详细供货清单参考下表。

The purpose of this document is to specify the structure design, basic performance and product precautions of battery pack: 51.2V 100Ah, which is mainly applicated in household ESS. EVE can provide diverse product solutions according to customers' demands. The supply scope of this product is: battery pack; customer's accessories: battery pack fixing screws. The details are as follows.

表 1 标准供货清单

Table 1 Components of battery pack

序号 No.	组件 Component	型号 Model	数量 Quantity
1	电池包 Battery pack	EVE-LVI-5.0	1
2	产品出厂检验报告 Test report	/	1
3	产品合格证 Product certificate	/	1
4	产品包装件 Product packaging	/	1

注：具体型号规格和数量以供货前确认为准。

Note: The specific model, specification and quantity are subject to confirmation before delivery.

表 2 客户选配件(单箱)

Table 2 Customer’ s accessories (per battery pack)

序号 No.	组件 Component	型号 Model	数量 Quantity
1	正极输出线 Battery pack positive output wires	OT8 端子 快插端子，橙色， EV 线，25mm²，橙色 OT8 terminal, plug-in, Orange EV line，25mm², Orange	1
2	负极输出线 Battery pack negative output wires	OT8 端子 快插端子，黑色， EV 线，25mm²，橙色 OT8 terminal, plug-in, Black EV line，25mm², Orange	1
3	正极并联功率线 Positive parallel power wires	快插端子*2，橙色， EV 线，25mm²，橙色 plug-in terminal *2，Orange EV line，25mm², Orange	1
4	负极并联功率线 Negative parallel power wires	快插端子*2，黑色 EV 线，25mm²，橙色 plug-in terminal *2，Black EV line，25mm², Orange	1
5	电池-逆变器通讯线 battery-inverter communication wires	双头 R J45 端子，超五类屏蔽双绞线 Double-ended R J45 terminal, Cat.5e Shielded Twisted Pair	1
6	电池并联通讯线 Battery parallel communication wires	双头 R J45 端子，超五类屏蔽双绞线 Double-ended R J45 terminal, Cat.5e Shielded Twisted Pair	1

注：具体型号规格和数量以供货前确认为准。

Note: The specific model, specification and quantity are subject to confirmation before delivery.

2. 产品特点 Product Features

◆ 小型化和易于安装

Compact size and easy installation

- 通过并联方案实现产品多样化，最大支持 15 个电池并联

  Product diversification through parallel solutions

  (max.: 15 pack in parallel)

- 长循环和高安全性

  Long cycle life and high safety

- 认证：UN38.3、IEC62619、CE

- Certification: meet the standards of UN38.3, IEC62619, CE

图 1 电池包示意图

Figure 1 Product diagram

3. 技术规格和性能描述 Product Specification

3.1 电芯技术参数 Technical Parameters (Cell)

亿纬储能采用自主研发和生产的磷酸铁锂电池 LF100LA(3.2V 102Ah)方形电芯，具有高安全性、长循环、高一致性、优越的充放电性能和绿色无污染，主要技术参数如下：

The prismatic LFP battery cell LF100LA(3.2V 102Ah) which is independently developed and produced by EVE, has the characteristics of high safety, longer cycle life, high consistency, excellent charge/discharge performance and green pollution-free. The main technical parameters are as below:

表 3 电芯技术参数表

Table 3 Technical parameters (cell)

序号 No.	项目 Item	规格 Specification	备注 Remark
1	额定容量 Rated capacity	100Ah	0.5C，25℃±2℃，2.5-3.65V
2	额定电压 Rated voltage	3.2V	
3	工作电压 Operating voltage	2.5V~3.65V	
4	尺寸 Dimension	T×W×H=（50.1±0.5）mm*（160±0.8）mm*（118.5±0.5）mm	
5	重量 Weight	1.985±0.1kg	

图 2 电芯示意图

Figure 2 Battery cell: LF100LA

3.2 电池包技术参数 Technical Parameters (Battery Pack)

表 4 电池包技术参数表

Table 4 Parameters of EVE-LVI-5.0

序号 No.	项目 Item	规格 Specification	备注 Remark
1	成组方式 Configuration	1P16S	
2	额定容量 Rated capacity	100Ah	充放电流：0.5C 25±2°C Charge/discharge current: 0.5C 25±2°C
3	标称电压 Rated voltage	51.2V	
4	电压范围 Voltage range	43.2 V-56.8V	单体电压 2.7V~3.55V Cell voltage 2.7V~3.55V
5	充电限流 Rated charge current	20A(0.2C)	限流开关默认开启，充电电流≥55A 进入 0.2C 限流 The current limit switch is enabled by default, when the charge current≥55A, enter the 0.2C limiting current.
6	标准充电电流 Standard charge current	50A(0.5C)	
7	最大持续充电电流 Maximum constant charge current	95A(0.95C)	关闭限流，当充电电流达到 96A，触发电池充电过流保护功能 Turn off the current limit, when

序号 No.	项目 Item		规格 Specification	备注 Remark
				the charge current reaches 96A, the overcurrent protection function will be triggered.
8	标准放电功电流 Standard discharge current		50A(0.5C)	25±2°C
9	最大持续放电电流 Maximum constant discharge current		100A(1C)	建议不多于 1 天 1 次循环 Recommended: no more than 1 cycle per day
10	电池内阻 Internal resistance		≤30mΩ	30%SOC, AC 1kHz
11	工作温度 Operating temperature	充电 Charge	4°C~55°C	
12		放电 Discharge	-20°C~55°C	
13	出货状态 Delivery state		25%~70%SOC	
14	尺寸 Dimension		L×W×H=（500±2）mm*（442±2）mm*（130.5±2）mm	
15	重量 Weight		43±2kg	以实际为准 Subject to actual conditions
16	IP 等级 IP rating		IP20	
17	存储温度 Storage temperature	1 个月内 Within 1 month	-20°C~45°C	
18		1 年内 Within 1 year	0°C~35°C	
19	储存湿度 Storage humidity		＜70% RH，无冷凝水 <70% RH, no condensation	
20	充放电容量效率 Charge/discharge capacity		≥97%	

序号 No.	项目 Item	规格 Specification	备注 Remark
	efficiency		
21	海拔高度 Application altitude	≤3000m	

4. 技术规格和外观及结构 Product Appearance and Structure

4.1 外形尺寸 Dimension

电池包由 16 个 LF100LA 电芯通过 1P16S 成组而成，尺寸如下图所示。

The battery pack is consisted of 16pcs LF100LA cells configured in 1P16S, and its dimension is presented as follows.

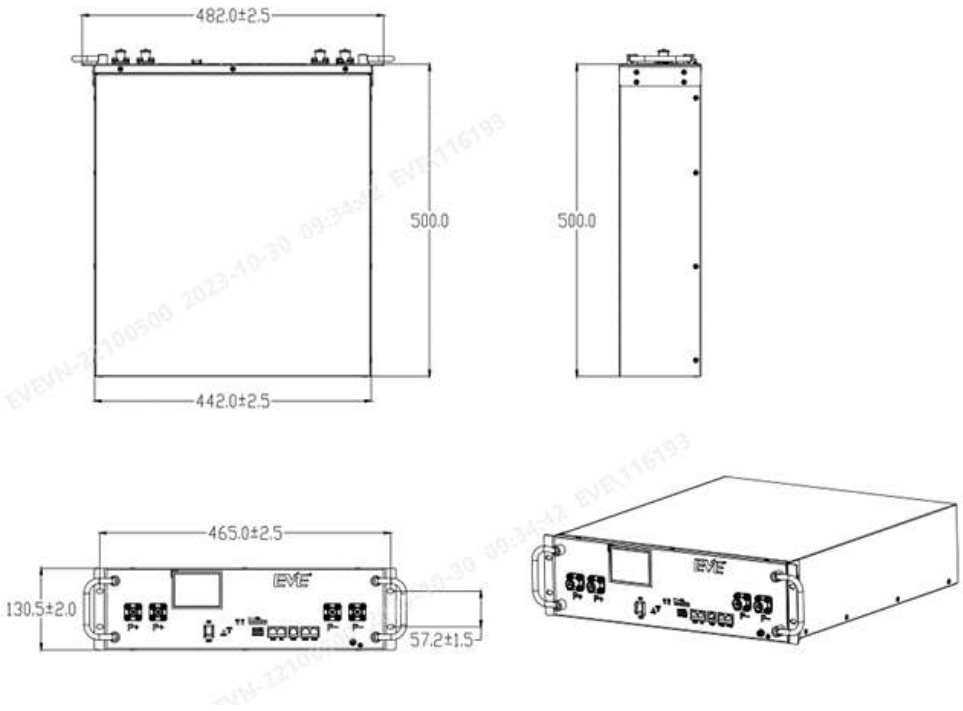


图 3 电池包尺寸图

Figure 3 The dimension of battery pack

注：建议采用 M5 螺丝安装

Note: M5 bolts are recommended for installation.

4.2 接口 Connection interface

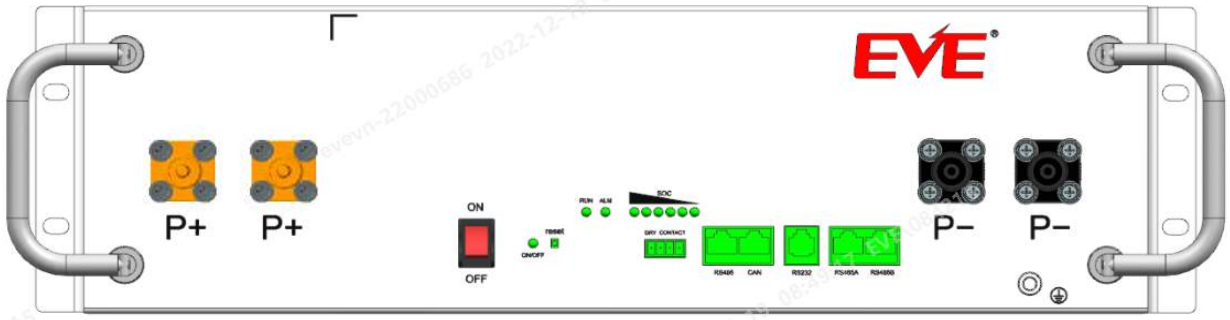


图 4 前面板及接口示意图

Figure 4 The diagram of front panel and connection terminals

注：船型开关： ① 在休眠关机模式下，且电池不处于欠压保护状态以及其他异常状态船型开关拨至 ON，6 个灯依次亮起，BMS 上电。②BMS 正常运行过程中，船型开关拨至 OFF 且面板无任何线束连接 BMS 下电，面板灯全灭 。

复位键：① 电池启动状态下，按压 RESET 按键持续 36S，可关闭电池。②电池处于关机状态，且船型开关拨至 ON，通过按压 RESET 按键持续 36S，可启动电池包。③电池并机失败时，面板 SOC 灯常闪，长按主机 RESET 按键，进行电池并机重启，对并机电池包进行地址重置。

干接点： 2 路干接点功能一致，电池正常状态导通，报警和保护状态断开。

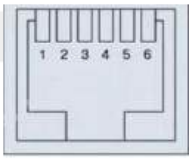
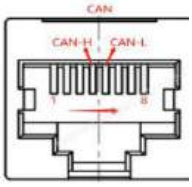
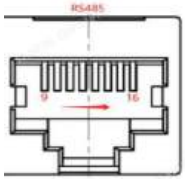
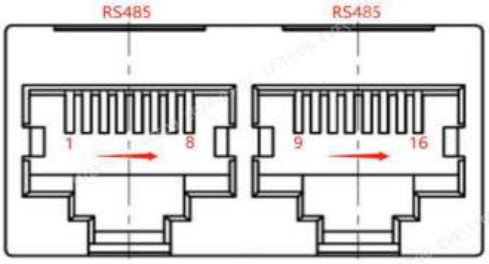
Note: Power switch: (1) In the sleep shutdown mode, and the battery is not in the undervoltage protection state and other abnormal states, when the power switch is set to ON, 6 lights are lit in turn, and the BMS is powered on. (2) During the normal operation of BMS, when the power switch is set to OFF and the panel is not connected to any wiring harness, and BMS is power-down, the panel lights are all off.

Reset button: (1) When the battery is started, press the RESET button for 36S to turn off the battery. (2) when the battery is in the shutdown state and the power switch is set to ON, press the RESET button for 36S to start the battery. (3) When the battery fails to parallel, the panel SOC light flashes constantly; then long pressing the RESET button to restart the battery and reset the address of the parallel battery pack.

Dry contact: The function of 2 units dry contact function is consistent, when the battery is in the normal state, the alarm and protection status are disconnected.

表 5 通信接口及定义表

Table 5 The definition of communication terminals

通信接口 Communication terminal	引脚 Pin No.	定义 Definition	示意图 Diagram
RS232 采用 6P6C 立式, RJ11 插座 RS232: RJ11 socket (6P6C vertical)	2	GND	 RS232 接口 RS232 communication terminal
	3	TX	
	4	RX	
CAN：采用 8P8C 立式, RJ45 插座 CAN: RJ45 socket (8P8C vertical)	1,3,6,7,8	NC	 CAN 接口 CAN communication terminal
	4	CAN-H	
	5	CAN-L	
	2	GND	
RS48：采用 8P8C 立式, RJ45 插座 RS485: RJ45 socket (8P8C vertical)	9,16	RS485-B1	 RS485 接口 RS485 communication terminal
	10,15	RS485-A1	
	11,14	GND	
	12,13	NC	
RS485A&RS485B：采用 8P8C 立式, RJ45 插座 RS485A&RS485B: RJ45 socket (8P8C vertical)	1,8	RS485-B	 并联通信接口 Parallel communication terminal
	2,7	RS485-A	
	3,6	GND	
	4	UP_IN+	
	5	UP_IN-	
	9,16	RS485-B	
	10,15	RS485-A	
	11,14	GND	

	12	UP_OP+	
	13	UP_OP-	

注：具体接口型号及引脚定义以供货前确认为准。

Note: The specific interface model and pin definition are subject to confirmation before delivery.

5. 产品使用说明 Product Instructions

(1)电池包可以单独使用，也可以多个并联使用，电池包不能串联使用，电池包的并联数量不能超过双方规定值。

The battery pack can be used alone or multiple in parallel, and the parallel quantity shall not exceed the value specified by both parties.

(2)电池包必须在规定的充电倍率或功率条件下使用，并且充电上限电压不得超过产品技术要求，防止电池过充电。以免影响电池的充放电性能、机械性能和安全性能。

The battery pack must be operated within the specified charge conditions. Overcharge will lead the electrical performance, mechanical performance and safety performance of the battery pack to be decreased.

(3)电池包必须在规定的放电倍率或功率条件下使用，并且放电下限电压不得超过产品技术要求，防止电池过放电。以免影响电池的充放电性能、机械性能和安全性能。

The battery pack must be operated within the specified discharge conditions. Over-discharge will lead the electrical performance, mechanical performance and safety performance of the battery pack to be decreased.

(4)电池包必须在规定的环境条件下使用，过高或过低的温度环境都会影响电池的性能和安全。

The battery pack must be operated within the specified environment conditions, since too high or too low ambient temperature will affect the battery performance.

(5)电池包必须在清洁、通风的环境条件下使用或存储，避免与腐蚀性物质接触，并远离火源及热源。

The battery pack shall be used or stored in clean, dry and ventilated environmental conditions, and avoid contact with corrosive substances and keep away from fire and heat sources.

(6)电池包禁止在强静电和强磁场的地方使用和存储，以免产生安全隐患。

The battery pack shall not be used or stored in places with strong static electricity and strong magnetic fields to avoid potential safety hazards.

(7)电池包安装或接线前，禁止拆下将正负极和通讯插座的防尘盖，避免造成接触短路和接口积灰。

Before the battery pack is installed or wired, it is forbidden to remove the dust cover of positive and negative terminals, and the communication socket to avoid short circuit and interface dust.

(8)未经我司允许，不得私自拆卸或改装本产品，否则质保终止，若产生安全事故，我司概不负责。

The product shall not be disassembled or modified without the permission of EVE, otherwise the warranty will be terminated, and our company will not be responsible for any safety accidents.

(9)不得将电池包与金属物体混放，避免造成短路，产生安全风险。

Do not mix the battery with metal objects to avoid short circuits and safety risks.

(10)电池包必须按照设计状态正立安装或存放，严禁侧放或倒置。

The battery pack must be installed or stored upright in accordance with the design state, and it is strictly forbidden to put it on its side or upside down.

(11)电池包第一次使用时，若有腐蚀，难闻气体或不正常现象，禁止使用。

Do not use the battery if there is corrosion, unpleasant smell or any abnormality during the first usage.

(12)禁止将电池包投入水中。

Do not throw the battery into water.

(13)禁止反向充电或过放电。

Do not reversely charge or discharge the battery.

(14)电池包的使用必须严格遵照以上要求，否则质保终止，造成产品的性能损坏以及安全事故，

我司概不负责。

The usage of the battery pack must strictly comply with the above requirements, otherwise the warranty will be terminated, and EVE will not be responsible for any product performance damages or safety accidents.

6. 产品维护保养 Product Maintenance

(1)电池包长时间搁置或存放时，应保持在 30%～50%SOC 的状态下。

When the battery pack not in use for a long time, it is recommended to maintain the SOC at 30%～50%.

(2)电池包长时间搁置或存放时，建议每 3 个月进行一次补充电，防止电池过放亏电，每年应进行一次充放电循环。

When the battery pack not in use for a long time, it shall be charged every 3 months regularly in case of the occurrence of over-discharge; And it is recommended to cyclically charge and discharge the battery module every 6 months.

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