

Jilipow Co., Ltd.

Specification of battery pack for household ESS

Prepared by	Checked by	Approved by

Model: **JL-LVI-46.0**

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History of Specification

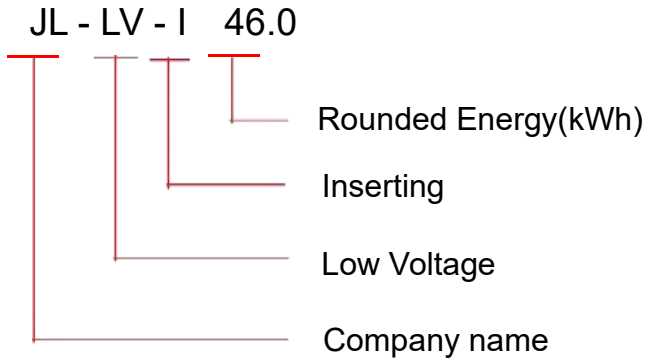
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1. Product Overview

The definition of product model is shown as follows



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 applied in household ESS. JILiPOW 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:

Table 1 Components of battery pack

No	Component	Model	Quantity
1	Battery pack	JL-LVI-46.0	1
2	Test report		1
3	Product certificate		1
4	Product packaging		1

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

Table 2 Customer's accessories (per battery pack)

No.	Component	Model	Quantity
1	Battery pack positive output wires	OT8 terminal,plug-in, Orange EV line, 25mm ² , Orange	9
2	Battery pack negative output wires	OT8 terminal,plug-in, Black EV line, 25mm ² , Orange	9
3	battery-inverter communication wires	Double-ended RJ45 terminal,Cat.5e Shielded Twisted Pair	1
4	Battery parallel communication wires	Double-ended R J45 terminal,Cat.5e Shielded Twisted Pair	8
5	Battery-Inverter Output Cable-Positive		1
6	Battery-Inverter Output Cable-Negative		1

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

2. Products Features

- Compact size and easy installation
- Product diversification through parallel solutions
(max:15 pack in parallel)
- Long cycle life and high safety
- Certification: meet the standards of UN38.3, IEC62619, CE



Figure 1 Product diagram



Figure 2 Cabinet 9*1P16S

3. Product Specification

3.1. Technical parameters(Cell)

The prismatic LFP battery cell LF100LA(3.2V 100Ah)which is independently developed and produced by JILiPOW,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:

Table 3 Technical parameters (cell)

No	Item	Specification	Remark
1	Rated capacity	100Ah	0.5C,25°C±2°C, 2.5-3.65V
2	Rated voltage	3.2V	
3	Operating voltage	2.5V-3.65V	
4	Dimension	T×W×H (50.1±0.5)mm*(160±0.8)mm* (118.5±0.5)mm	
5	Weight	1.985±0.1kg	



Figure 2 Battery cell: LF100LA

3.2. Technical parameters(Battery Pack)

Table 4 Parameters of JL-LVI-46.0

No.	Item -5.0		Specification	Remark
1	Configuration		1P16S	
2	Rated capacity		100Ah	Charge/discharge current:0.5C 25±2℃
3	Rated voltage		51.2V	
4	Voltage range		43.2V-56.8V	Cell voltage 2.7V~3.55V
5	Charging current limiting		20A(0.2C)	The current limit switch is enabled by default,when the charge current≥55A,enter the 0.2C limiting current.
6	Standard charge current		50A(0.5C)	
7	Maximum constant charge current		95A(0.95C)	Turn off the current limit,when the charge current reaches 95A, the overcurrent protection function will be triggered.
8	Standard discharge current		50A(0.5C)	25±2℃
9	Maximum constant discharge current		100A(1C)	Recommended:no more than 1 cycle per day
10	Internal resistance		≤30mΩ	30%SOC,AC 1kHz
11	Operating temperature	Charge	4℃~55℃	
12		Discharge	-20℃~55℃	
13	Delivery state		25%~70%SOC	
14	Dimension		L×W×H (500±2.0)mm*(442±2.0)mm* (130.5±2)mm	
15	Weight		43±2kg	Subject to actual conditions
16	IP rating		IP20	
17	Storage temperature	Within 1 month	-20℃~45℃	
18		Within 1 year	0℃~35℃	
19	Storage humidity		<70%RH, no condensation	
20	Charge/discharge capacity efficiency		≥97%	
21	Application altitude		≤3000m	

3.3. Technical parameters(Battery System)

Table 5 Parameters of JL-LVI-46.0

No.	Item		Specification	Note
1.	Configuration		9P16S	
2.	Rated capacity		900Ah	Charge/discharge current:0.5C 25±2°C
3.	Rated voltage		51.2V	
4.	Voltage range		43.2 V-56.8V	Cell voltage 2.7V~3.55V
5.	Rated charge current		20A	The current limit switch is enabled by default,when the charge current ≥20A
6.	Standard charge current		100A	
7.	Maximum constant charge current		400A	Turn off the current limit,when the charge current reaches 400 A, the over current protection function will be triggered
8.	Standard discharge current		100A	25±2°C
9.	Maximum constant discharge Current		400A	Recommended:no more than 1 cycle per day
10.	Internal resistance		≤30mΩ	30%SOC,AC 1kHz,PACK
11.	Operating temperature	Charge	4°C~55°C	
12.		Discharge	-20C~55°C	
13.	Delivery state		25%~70%SOC	
14.	Dimension		L×W×H=(600±2)mm*(600±2)mm* (1800±2)mm	
15.	Weight		About 500kg	Subject to actual conditions
16.	IP rating		IP20	
17.	Storage Temperature	Within 1 month	-20°C~45°C	
18.		Within 1 Year	0°C~35°C	
19.	Storage humidity		<70%RH,no condensation	
20.	Charge/discharge capacity Efficiency		≥97%	
21.	Application altitude		≤3000m	

4. Product Appearance and Structure

4.1 Dimension

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

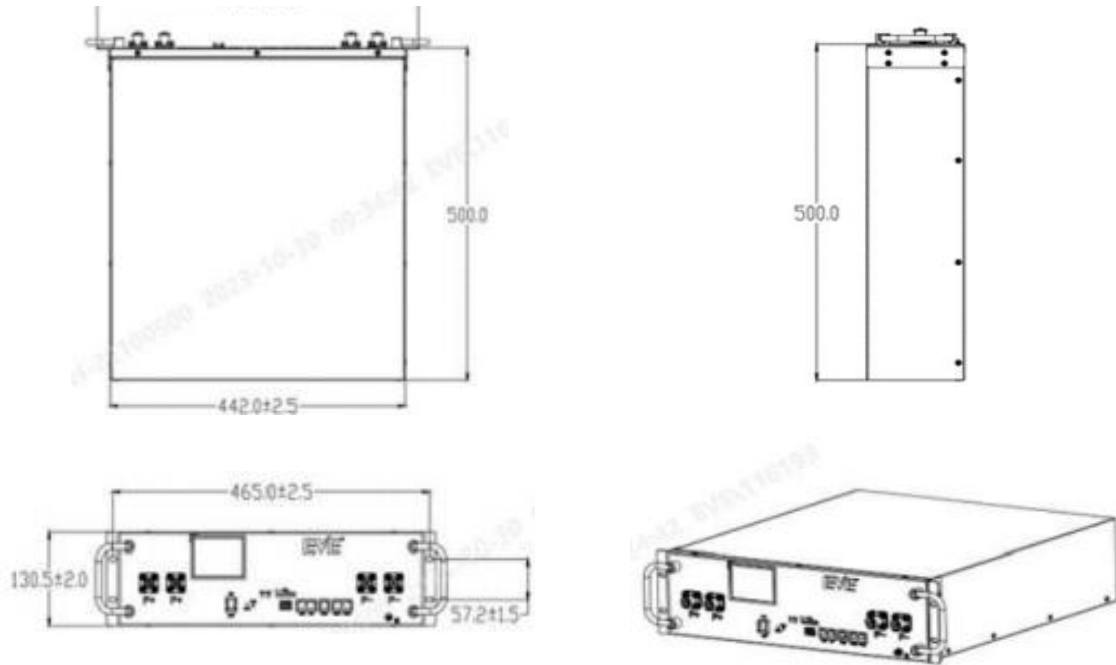


Figure 3 The dimension of battery pack

Note: M5 bolts are recommended for installation

4.2 Connection interface

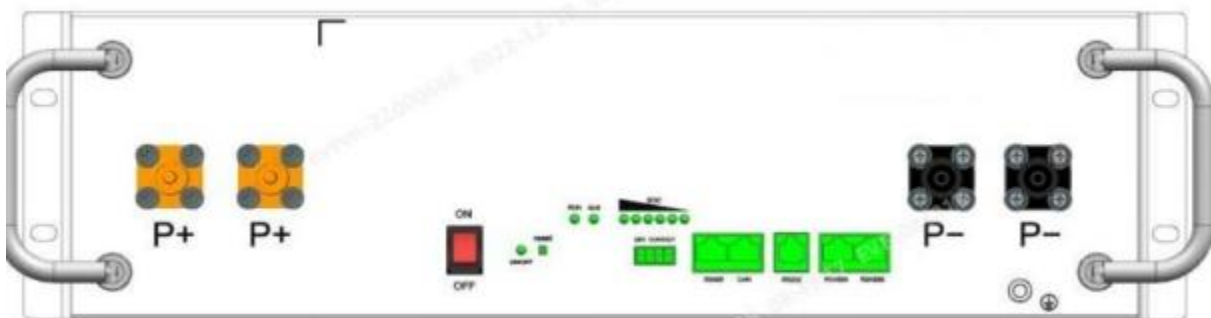


Figure 4 The diagram of front panel and connection terminals

Note:

Power switch:

- (1) In the sleep shutdown mode, and the battery is not in the under voltage 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.

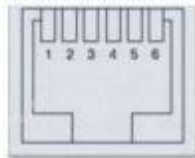
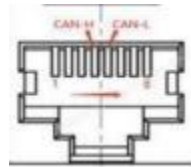
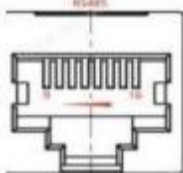
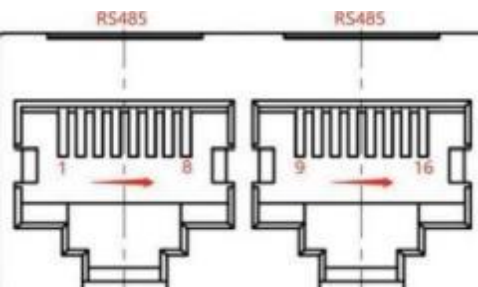
Reset button:

- (1) When the battery is started,press the RESET button for 3-6S 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 3-6S 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:

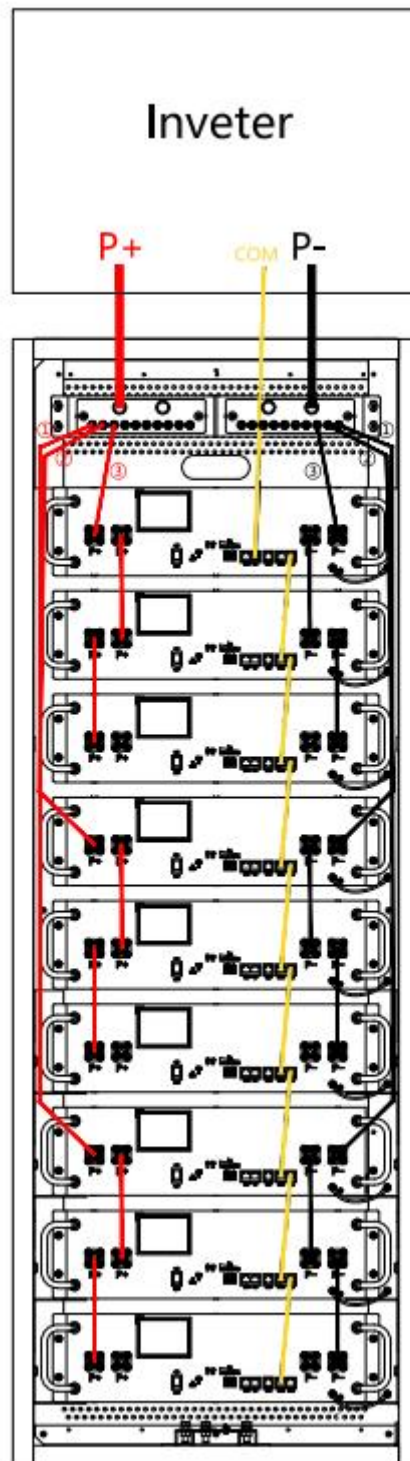
The function of 2 units dry contact function is consistent,when the battery is in the normal state,the alarm and protection status are disconnected.

Table 6 The definition of Communication terminal

Communication terminal	Pin No	Definition	Diagram
RS232:RJ11 socket (6P6C vertical)	2	GND	 <p>RS232 Communication terminal</p>
	3	TX	
	4	RX	
CAN:RJ45 socket (8P8C vertical)	1,3,6,7,8	NC	
	4	CAN-H	
	5	CAN-L	
	2	GNG	
RS485:RJ45 socket (8P8C vertical)	9,16	RS485-B1	
	10,15	RS485-A1	
	11,14	GND	
	12,13	CANH	
RS485:RJ45A&RS485B: RJ45 socket (8P8C vertical)	1,8	RS485-B	 <p>Parallel communication terminal</p>
	2,7	RS485-A	
	3,6	GND	
	4		
	5	UP.IN-	
	9,16	RS485-B	
	10,15	RS485-A	
	11,14	GND	
	12	UP_OP+	
13	UP_OP-		

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

Connection Method



≤400A connection mode

5. Storage and Transportation Requirements

Items		Requirement
Storage temperature	Within 1 month	-20 ° C~+45°C
	Within 6 month	0 °C~+35°C
Operation humidity(%)		5~85%RH
Storage(store in warehouse)SOC		25~70%SOC
Application altitude		≤3000m
Transportation	for transportation, and should be prevented from violent vibration, impact or extrusion during transportation, to prevent sun and rain above requirement apply for land and sea transportation	

6. Packaging and Transportation Requirements

1. Packaging of a single Pack: The pack is packed in a carton, and the carton is filled with pearl cotton. The packaged pack does not shake, which is safe and reliable.
2. Packing of whole system: winding film + paper angle bead + wooden pallet/Box.

Note:

Battery pack should be packed into boxes under less than 30%SOC for transportation, and should be prevented from violent vibration, impact or extrusion during transportation, to prevent sun and rain, above requirement apply for land and sea transportation..

7. Product Instructions

1. 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. 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. 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. 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. 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. The battery pack shall not be used or stored in places with strong static electricity and strong magnetic fields to avoid potential safety hazard.
7. 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. The product shall not be disassembled or modified without the permission of JILiPOW, otherwise the warranty will be terminated and our company will not be responsible for any safety accidents.
9. Do not mix the battery with metal objects to avoid short circuits and safety risks.
10. 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. Do not use the battery if there is corrosion, unpleasant smell or any abnormality during the first usage.
12. Do not throw the battery into water.
13. Do not reversely charge or discharge the battery.

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

8. Product Maintenance

1. When the battery pack not in use for a long time, it is recommended to maintain the SOC at 30%~50%.
2. 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.

➤ **Disclaimer:**

These mentioned products shall be used within the scope specified in product specifications. The manufacturer shall be free from liability for any damages to people, animals or property caused by the improper operations in the process of installation, commissioning, maintenance, use, etc., or uses not in accordance with the terms and conditions specified in product specifications.