



JBL-B-5K-W

User Manual

Model

JBL-B-5K-W

Driving the Future with Better Energy.

catalog

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1. General Information

This manual introduces the **JBL-B-5K-W** battery products. Please read this manual carefully before using the battery. For any questions, please contact JEBEL immediately for advice and clarification.

1.1 Validity

This user manual is applicable to JBL-B-5K-W.

This manual contains JBL-B-5K-W product information, usage, safety information, installation guidance and details on common operation issues and subsequent maintenance measures.

1.2 Intended Use

JBL-B-5K-W is an energy storage unit that designed for residential application scenarios with the capability of short-term backup.

Notes:

JBL-B-5K-W is not suitable for supporting life-sustaining medical devices. This product is intended for used only in accordance with the information provided in the enclosed documents and applicable local standards and regulations. Any other use may result in personal injury or property damage. The illustrations in this manual are only intended to help explain the concept of the system configuration, including use guidelines, safety precautions, common operating problems, and subsequent battery maintenance.

Alterations to the product, e.g. changes or modifications, are only permitted with the express written permission of JEBEL . Unauthorized changes will not be allowed by warranty claims. JEBEL shall not be liable for any damage resulting from such changes. Any use of the product other than described in the intended use section does not qualify as appropriate. The enclosed documentation is an integral part of this product. Please keep the documentation in a safe and convenient place for future reference.

Product model labels (see Section 1.3) must be attached to the product.

1.3 Product labels

The type labels were attached on the product, which contain the product identification information. For safe usage, the user must be well-informed of the contents in the type labels.

The Labels include:

J E B E L	Lithium-ion Battery Pack
Model:	JBL-B-5K-W
Battery Combination type	1p16s
Battery Capacity(wh)	5120
Nominal voltage(VDC)	51.2
Operating Volttge Range(VDC)	46.4-57.6
Cell Type	LiFePO4
Max Charging / Discharge Current(A):	75/100
Continuous Charging / Discharge Current(A)	70/85
Operating Temperature Range(°C)	0-55
Temperature Control	Natural Cooling
Communication	CAN/RS485/RS232
Installation	Wall or floor mounting
Relative Humidity	≤95%rh No condensation
Humidity of Storage Environment	≤95%rh No condensation
Max Operating Altitude(m)	≤3000

CAUTION!
Do not disassemble
Do not short -circuit
Do not place in fire or near hot source
Please read user manual carefully



CE, IEC62619, MSDS, UN38.3



2. Safety Measures

This section contains safety information that must always be observed when using or installing batteries. To prevent personal injury or property damage and ensure long-term operation of the batteries, please read this section carefully, always watch for warnings from all safety messages.

Environmental requirements:

1. Do not expose the battery to temperature above 50 °C;
2. Do not place the battery near any heat source;
3. Do not expose the battery to moisture or liquid;
4. Do not expose the battery to a corrosive gas or liquid;
5. Do not expose the battery to a combustible gas or liquid;
6. Do not expose the battery to direct sunlight for extended periods of time;
7. Battery power terminals are not allowed to contact conductive objects, such as electric wires;
8. Place the battery in safe place that away from children and animals.

Operation Precautions:

1. Do not disassemble the battery;
2. Do not touch the battery pack with wet hands;
3. Do not smash, fall or puncture the battery;
4. Do not reverse the polar series connection battery;
5. Do not short-circuit the terminal and remove all metal jewelry items that may produce a short-circuit before installation and repair;
6. Always handle the products in accordance with the local safety regulations;
7. Ensure reliable grounding;
8. Disconnecting all batteries to the wires before installation and repair;
9. Do not stack batteries outside the protective packaging during storage or Handling;
10. The stacking of packaging batteries shall not exceed the quantity specified on the packaging;

11.Continued operation of a damaged battery may lead to dangerous situations, causing serious injuries such as electric shock or combustion.

3. Technical parameters

Basic Parameters	Technical Specification
Model	JBL-B-5K-W
Battery Type	LiFePO4
Nominal Capacity (Ah)	100Ah
Nominal Voltage (V)	51.2V
Total Energy	5120Wh
Depth of Discharge (90%DOD)	4608Wh
Maximum Charging Voltage (V)	57.9V
Cut-off voltage(V)	46.4V
Maximum charge/discharge current(A)	75/100A
Maximum Power(W)	5120W
Operating Humidity	≤95%rh
Storage Humidity	≤95%rh
Operating Altitude	≤3000m
Maximum number of Parallel	15 pcs
Protection Level	IP54
Net Weight (Kg)	44
Dimensions (mm)	610*370*163
Product Certificate	CE,UN,ROHS,IEC62619,CE-LVD
Cycle life	≥6000 Times
Communication Port	CAN, RS485, RS232
Operating temperature	0°C ~ 60°C

Storage temperature	$\leq 25^{\circ}\text{C}$, 12 months;
	$\leq 35^{\circ}\text{C}$, 6 months;
	$\leq 45^{\circ}\text{C}$, 3 months.

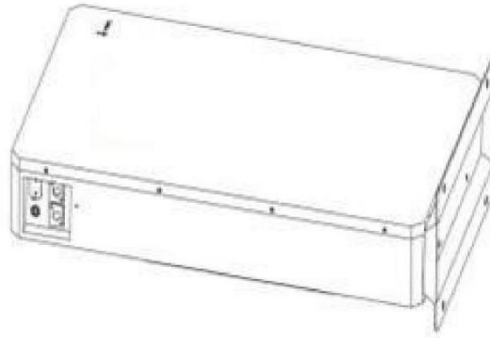
Note: Operating current derates according to battery voltage and temperature .

4. Technical Items

No.	noun	explanation
1	Discharge	Battery output power for load
2	Charge	Put the electricity into the battery through the charger
3	Full Charge	The battery is fully charged with 100% SOC
4	Standby	Ready for charging or discharging
5	Turn-off	Turn-off battery output
6	SOC	State of Charging (Useable Capacity)
7	Battery voltage	Voltage between PCS+/PCS- of battery module
8	Single-string Voltage	Single-cell voltage
9	Battery module voltage	Voltage between BAT+/BAT- of battery module
10	Protection	Battery stops charging or discharging
11	Fault	Battery or BMS is damaged and need to be replaced
12	Over discharged	Battery is lack of electricity, and need to be charged

5. Product Overview

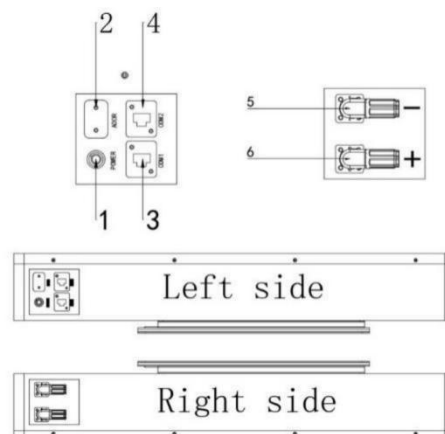
5.1 Product Introduction



JBL-B-5K-W is a lithium battery energy storage system with an operating voltage range of between 46.4V~57.9V, it is used for household energy storage applications, in cooperation with low voltage inverters to achieve home energy storage purpose.

JBL-B-5K-W built-in BMS (Battery Management System) can manage and monitor battery information, including voltage, current and temperature. In addition, BMS can balance battery charging to extend service life. BMS has protection functions such as over-discharge, over-charge, over-current, high/low temperature, etc. The system can automatically manage the charging state, discharge state, and balance state. Multiple batteries can be connected in parallel to expand storage capacity to meet larger capacity and continuous power supply support time. JBL-B-5K-W supports up to 15 parallel operations.

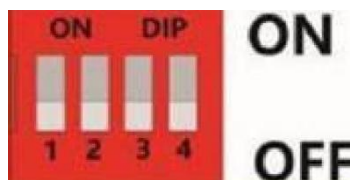
5.2 Interface Introduction



No	Items	No	Items
1	Power Switch	2	ADDR Dial address
3	COM1(RS485/CAN)	4	COM2(RS485/RS232)
5	Battery negative pole	6	Battery positive pole

5.2.1 Start Button

After pressing the "power switch" button for the first time, the system starts, release the button, and the button will automatically lock; Press the "Power Switch" button again to shut down the system and unlock the button.



5.2.2 Dip Switch Definition

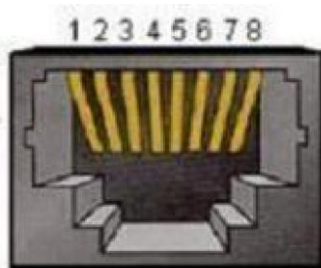
The dial-dip switch is used to set the BMS address of each battery. The code value of the dial-ON position is 1, and the code value of the dial-1234 position is 0.

The host battery address is 1, and the slave battery address is 2 to 15. (The host is connected to the inverter, and the slave machines are arranged in numerical order according to the address).

The dial-up address table is as follows:

Dial-up code location	Add	Dial-up code location	Add	Dial-up code location	Add	Dial-up code location	Add
#1 #2 #3 #4		#1 #2 #3 #4		#1 #2 #3 #4		#1 #2 #3 #4	
0 0 0 0	X	0 0 1 0	4	0 0 0 1	8	0 0 1 1	12
1 0 0 0	1	1 0 1 0	5	1 0 0 1	9	1 0 1 1	13
0 1 0 0	2	0 1 1 0	6	0 1 0 1	10	0 1 1 1	14
1 1 0 0	3	1 1 1 0	7	1 1 0 1	11	1 1 1 1	15

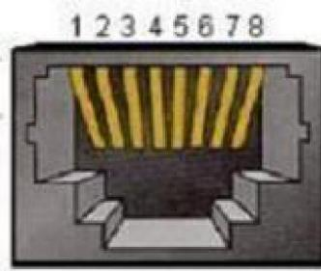
5.2.3 COM1 Port



Port	Definition Description
PIN 1	RS485-B
PIN 2	RS485-A
PIN 3	NC (empty)
PIN 4	CAN-H
PIN 5	CAN-L
PIN 6	NC (empty)
PIN 7	NC (empty)
PIN 8	NC (empty)

The CAN communication terminal (RJ45 port) follows the CAN/RS485 protocol and connects to the inverter BMS for communication. The BMS controls the charging current/charging voltage or discharge current/discharge cut-off voltage of the inverter based on the battery voltage and battery temperature through CAN/RS485 communication.

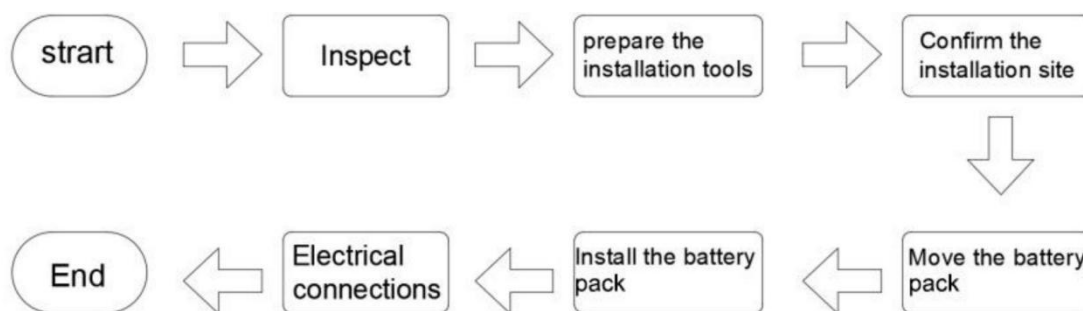
5.2.4 COM2 Port



Port	Definition Description
PIN 1	RS485-B
PIN 2	RS485-A
PIN 3	RS232-TX
PIN 4	RS232-RX
PIN 5	RS232-GND
PIN 6	NC (empty)
PIN 7	RS485-A
PIN 8	RS485-B

Com2 communication terminal (RJ45 port) follows RS485 / RS232 protocol and communicates internally when multiple batteries are combined.

6. Installation guide



Installation Flowchart

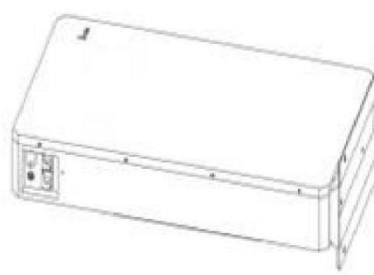
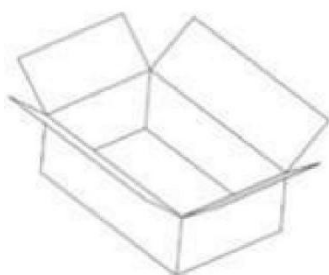
6.1 Inspection Before Installation

6.1.1 Check the Outer Packaging

Packaging materials and components may be damaged during transportation. Therefore, please check the packaging material before installing the battery. Check the surface of packaging materials for damage, such as holes and cracks. If any damage is found, do not unpack the battery and contact the JEBEL as soon as possible. It is recommended that you remove the packaging material within 24 hours before installing the battery.

6.1.2 Check whether the Accessories are Complete

After opening the packing box, check whether the attached accessories are complete. If any damage or missing parts are found, contact your dealer.

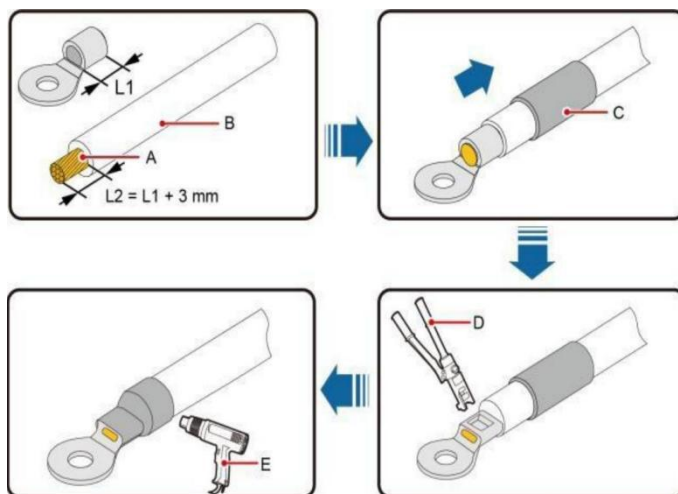


Bill of Materials:

Model : JBL-B-5K-W					
No.	Name	Model	unit	Qty	Mark
1	Energy storage battery	JBL-B-5K-W	PCS	1	
2	EC5K-01-04(0) Wall Hanging		PCS	1	
3	ES5K-01-04(01) Base		PCS	1	
4	Positioning paper	EC10KPositioning paper	PCS	1	
5	Hexagonal three-combination	M8*14	PCS	4	
6	Internal expansion screw	M10*80	PCS	4	
7	Crystal Head	8P/Gold plating3U	PCS	2	
8	OT cord end terminal	OT25-10	PCS	2	
9	Heat shrinkable tube	USB to 9-pin	Set	1	
		9-hole to 8-pin			
10	Network pass-through head	One point two	PCS	1	
11	Single network cable	1500mm	PCS	1	Press the crystal heads at both ends
12	ES10K-04-01(00) Output positive	P057C025B 4AWG(Red)/1500m	PCS	1	

13	ES10K-04-02(00) Output negative	P057C025A 4AWG(Black)/1500	PCS	1	
14	ES10K-04-04(00) Host computer communication line	8P Crystal Head 8-core 1500mm	PCS	1	
15	Warranty		PCS	1	
16	Certificate		PCS	1	
17	User Manual		PCS	1	

Manufacturing instructions for power cable terminals:



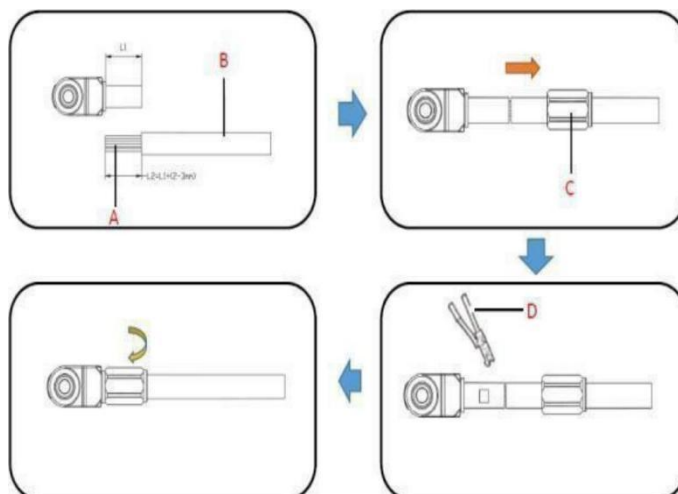
(A)Copper Core Line

(B)Insulation layer

(C)Heat-shrink tube

(D)Hydraulic pliers

(E)Hot-air gun



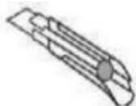
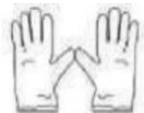
(A)Copper Core Line

(B)Insulation layer

(C)Protective cover

(D)Hydraulic pliers

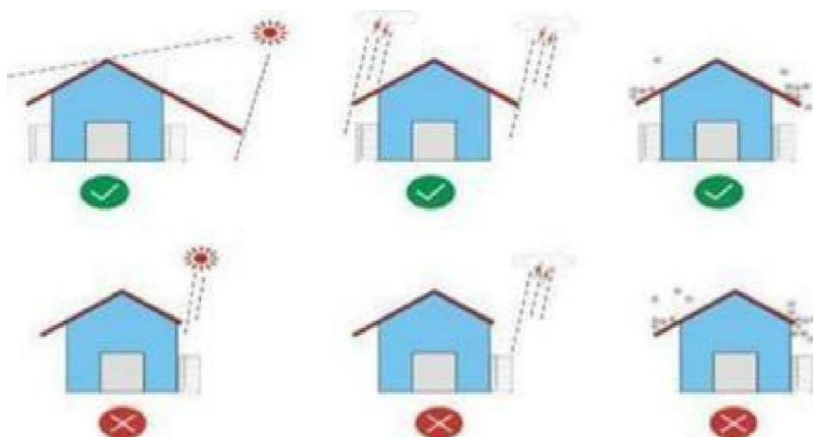
6.2 Tools

Type	Tool		
Installation Tools	Knife	Hammer drill	Socket wrench
			
	Rubber mallet	Cross Screwdriver	
			
	Incinometer	Measuring tape	
			
Protective Equipments	ESD gloves	Safety goggles	Anti-dust respirator
			
	Safety shoes		
			

6.3 Installation Requirements

6.3.1 Installation Environment Requirements

1. Install the battery in an indoor environment.
2. Place the battery in a safe position away from children and animals.
3. Do not place the battery near any heat source, and avoid generating sparks.
4. Do not expose the battery to moist air or liquid.
5. Do not expose the battery to direct sunlight.
6. Do not expose the battery to a combustible gas or liquid.



6.3.2 Installation Carrier Requirements

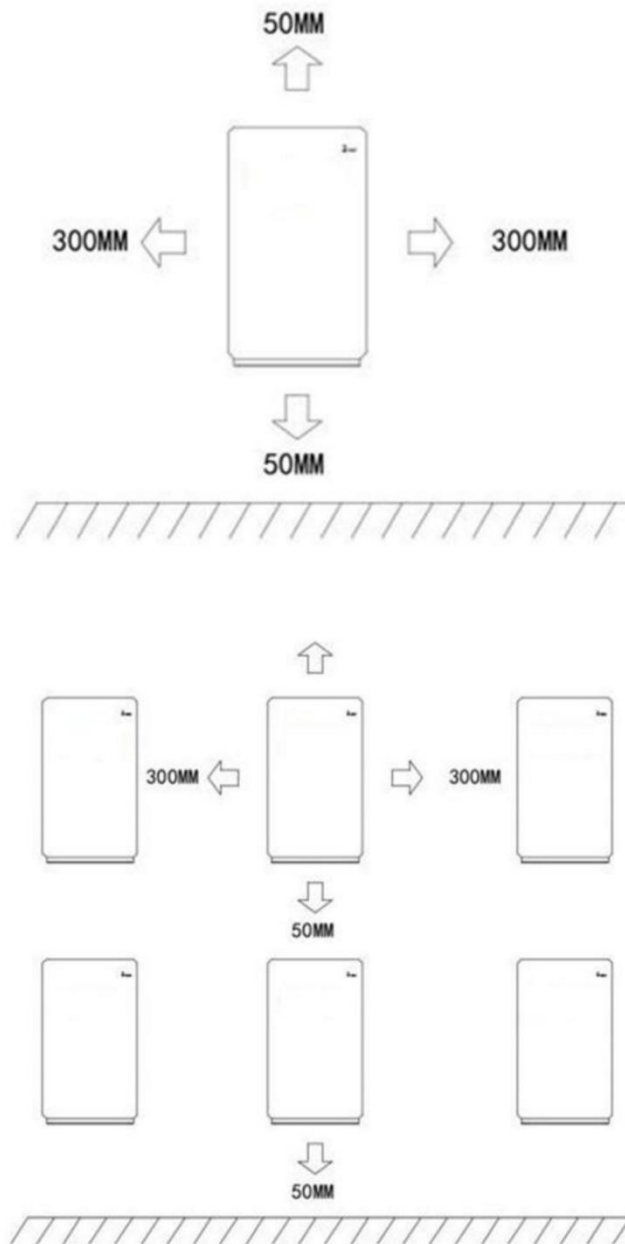
1. The mounting carrier shall be fire resistant. Do not install batteries on flammable buildings.
2. The mounting bracket surface shall meet the requirements of bearing requirements.



6.4 Installation Instructions

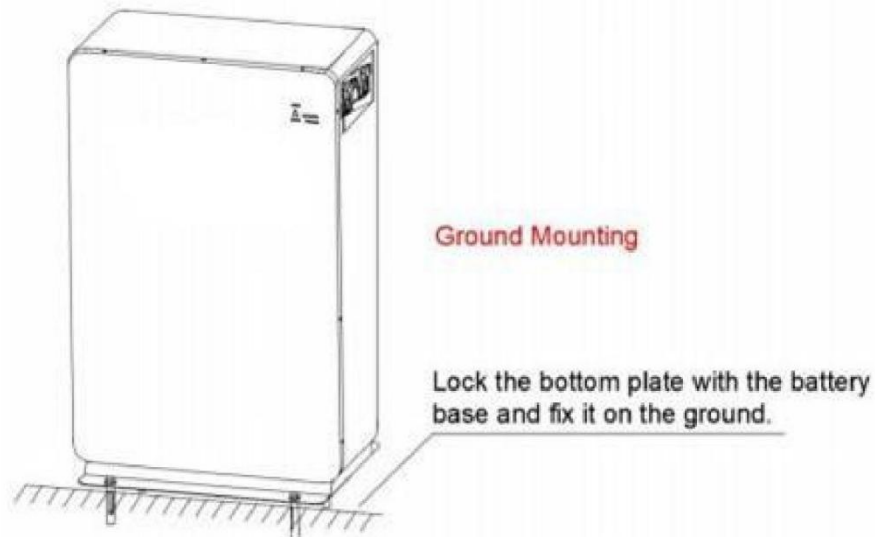
6.4.1 Overall Dimensions

Minimum installation distance between batteries:



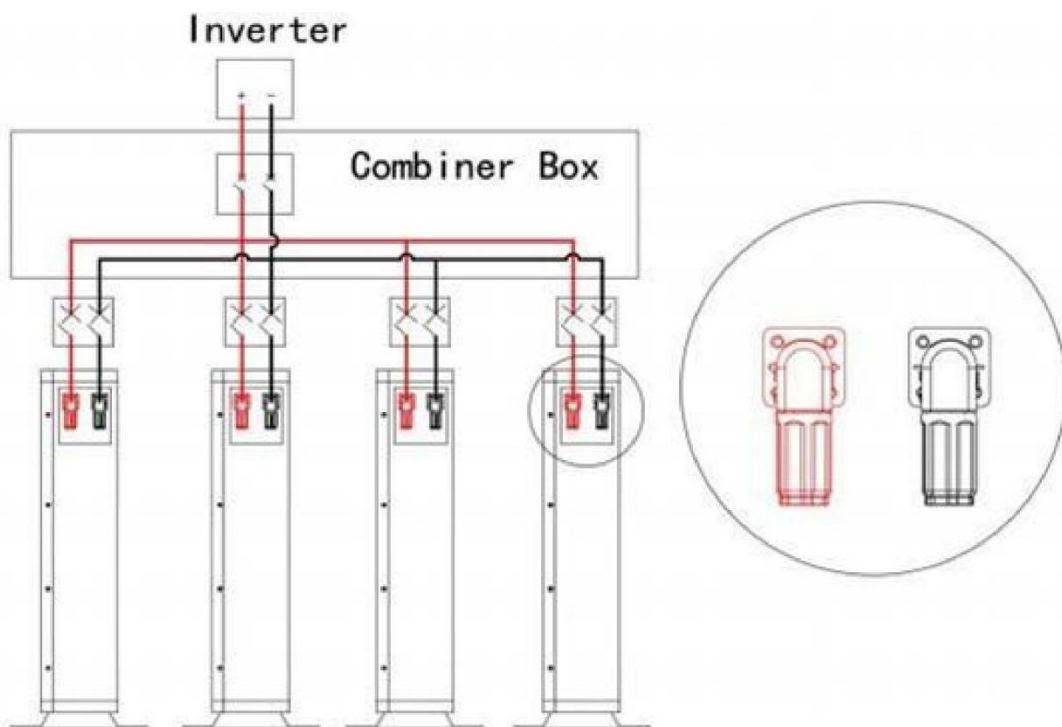
6.4.2 Installation Steps

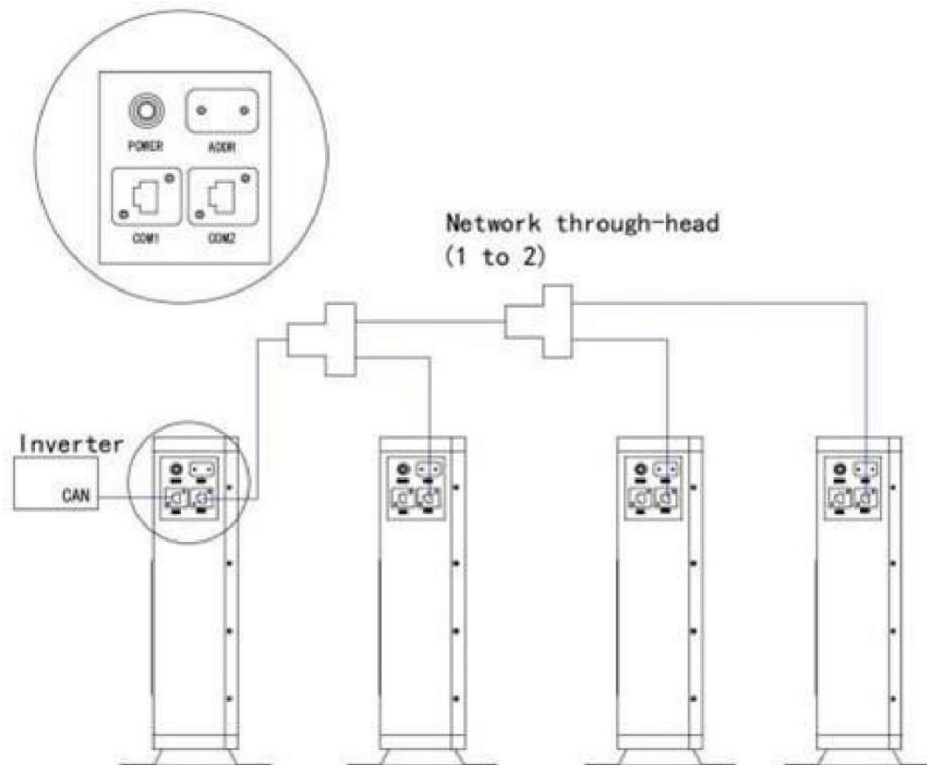
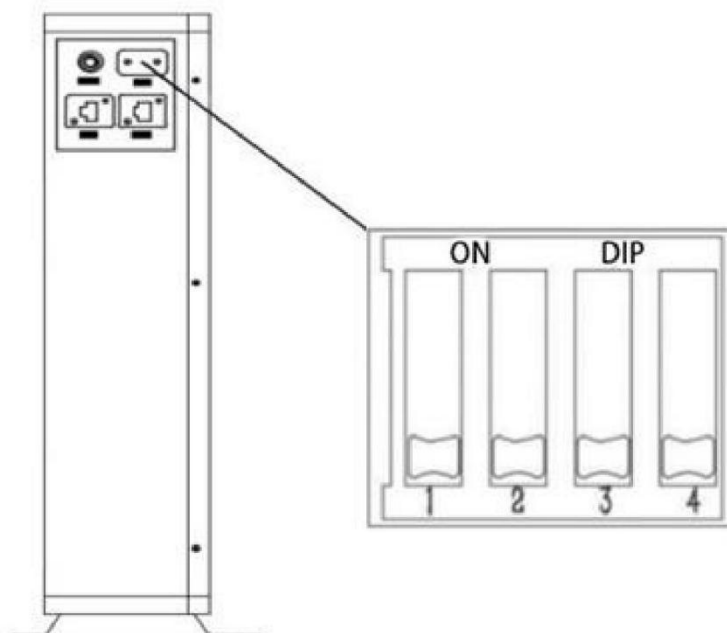
Step 1: Fix the battery



Step 2: Connect the power cable

(Make sure the voltage difference between parallel batteries is within 1V)



Step 3: Connection of All Wires**Step 4: Set the BMS communication address**

Please refer to 5.2.3: The dip rule is to set the address of the battery module in order from near to far (near: refers to the battery closer to the inverter).

7. Cleaning and maintenance

7.1 Cleaning Work

Note: please turn off the power supply of the system before cleaning. It is recommended to clean battery regularly. If the shell is dirty, please use a soft and dry brush or dust collector to remove the dust. Do not use solvents, or corrosive liquids to clean the enclosure.

7.2 Maintenance

7.2.1 Charging requirements during normal storage

The battery should be stored in the temperature range of $-10^{\circ}\text{C}\sim+45^{\circ}\text{C}$ and kept regularly according to the following table; Charge at 0.5C current until the SOC of the battery reaches 40%.

Charging conditions during storage:

Store the ambient temperature	Relative humidity of the storage environment	Storage time	SOC
Below -10°C		Prohibit	/
$-10\sim 25^{\circ}\text{C}$	5%~70%	$\leq$ deadline: 12 months	$30\%\leq\text{soc}\leq 60\%$
$25\sim 35^{\circ}\text{C}$	5%~70%	$\leq$ deadline: 6 months	$30\%\leq\text{soc}\leq 60\%$
$35\sim 45^{\circ}\text{C}$	5%~70%	$\leq$ deadline: 3 months	$30\%\leq\text{soc}\leq 60\%$
45°C above		Prohibit	

7.2.2 Recharging Requirements for Excessive Discharge

Please charge the overdischarged ($\text{DOD}>90\%$) battery within the time specified in the following table, otherwise the overdischarged battery module will be damaged.

Storage Environment Temperature	Storage Time	Note
-10~25°C	≤15 days	The battery pack disconnected to PCS
25~45°C	≤7 days	
-10~45°C	<12 hours	Battery pack connect to the inverter

Charging requirements for excessive battery discharge

8. Common Issues and Solutions

8.1 Common Issues and Solutions

The user can monitor the operating status, warning, and alarm information through the inverter LCD display and/or via battery pack LED status.

1.The product cannot power up, and all battery pack LEDs are off.1.If the external charger supply voltage is 51V or above and the product still cannot be powered up after a recharge, please contact JEBEL .

2.The product powers up, but cannot charge or discharge - if the ALM LED is red, the system is in an abnormal state, check the following values:

1)Temperature: Above 60°C or below 0°C, the battery protection is activated.

Solution: Move the battery to normal operating temperature range between 0 °C to 60 °C.

2)Temperature: Above 55 °C or below 0°C, the battery cannot charge.

Solution: Move the battery to normal operating temperature range between 0°C to 55 °C.

3)Current: The current is greater than 120A the battery protection is activated.

Solution: Stop using electrical appliances that exceed the maximum battery power load.

4)High voltage: The battery voltage is higher than 57.9V, the battery charge protection is activated.

Solution: Set the inverter Li(Lithium) mode or set a reasonable charging voltage, the inverter will stop charging the battery.

5)Low voltage: The battery discharge protection is turned on when the battery discharges to 46.4V or lower.

Solution: Charge the battery until the red light is off.

Otherwise, turn off the battery and contact JEBEL .

3.In a system with multiple batteries in parallel, the SOC indicator light displays at different levels Before installing batteries in parallel, measure the voltage of each battery to ensure that the voltage difference of each battery is within 1V.

1) When installing for the first time, fully charge the batteries that need to be connected in parallel to balance the capacity gap;

2) If the number of the lowest SOC LED lights in the parallel system is only 1 less than the number of the highest SOC LED lights, and the SOC LED lights return to the same within 10 minutes of operation, it is normal operation;

3) Before expanding the battery capacity, charge/discharge 45% to 50% of the SOC of the battery already in operation; After expanding the capacity, charge all batteries in the battery system to SOC 100% to even out the capacity gap. (Make sure the capacity difference before parallel is no more than 10%. If the capacity gap is large, it takes about 2 cycles to balance the capacity gap; The actual balance time depends on the capacity difference and the charge and discharge current.

Otherwise, the parallel system still does not work, contact JEBEL.

8.2 Emergency

Please cut off the power supply and turn off the battery in an emergency.

1. **Damp:** If the battery pack is damp or immersed in water, do not get close to the battery, and then contact JEBEL or an authorized dealer for technical support.

2. **Fire:** Water cannot be used to extinguish the battery fire! Our company recommends the use of dry powder fire extinguishers to avoid environmental pollution; If possible, place the battery pack in a safe area.

3. **Battery leakage:** If the battery pack electrolyte leaks, avoid contact with the leaking liquid or gas.

If someone comes into contact with the leaked material, do the following immediately.

Inhalation: Evacuate the contaminated area and seek medical attention as soon as possible.

Contact: Rinse eyes with water for 15 minutes and seek medical attention as soon as possible.

Contact skin: Wash the affected area thoroughly with soapy water and seek medical attention as soon as possible.

Swallow in: Induce vomiting and seek medical attention as soon as possible.

Battery damage: Damaged battery is dangerous and must be treated with very carefully.
Battery cannot be used or may be dangerous to person or property. If the battery pack is

damaged, contact JEBEL for handling.

8.3 Disposal of damaged batteries

- 1) The disposal of batteries must comply with local regulations on the disposal of electronic waste and used batteries.
- 2) Do not treat the battery system along with household waste.
- 3) Avoid exposing the battery to high heat or direct sunlight.
- 4) Avoid exposing the battery to high humidity or corrosive environments.
- 5) Avoid exposing the battery to flammable gases or liquids

Jebel Technology

Jumeirah Bay X2 Tower, Jumeirah Lakes Towers,
Dubai, United Arab Emirates