



Rechargeable

Li-ion Battery System

USER MANUAL



Battery System

LIB BSS01L16 I
LIB BSS01L16 II
LIB BSS01L16 III

Statement of Law

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Revision History

Revision NO.	Revision Date	Revision Reason
1.0	1-Oct-2025	First Published

Preface

Overview:

The Battery System User Manual systematically elaborates on the device structure, parameters, and basic procedures for installation, operation, and maintenance.

Target Audience:

This document is applicable to both product users and professionals.

Sign Explanation:

The following icons may appear in this document to indicate safety precautions or important information. Before installation and operation, please familiarize yourself with each icon and its corresponding meaning.

Icon	Definition
 DANGER	Danger. Failure to comply may result in death or serious personal injury.
 WARNING	Warning. Failure to comply may result in serious personal injury or property damage.
 ATTENTION	Pay attention. Failure to comply may result in property damage.
TIPS	Provide key points or important information, and supplement with tips for operation.

Chapter 1

Safety Precautions

Before installing, operating, or maintaining the equipment, please carefully read and understand the contents of this manual.

The "Attention", "Warning", and "Danger" items described in the manual serve only as supplements to all safety precautions.

Our company will not be held responsible for any equipment damage or property loss caused by the following reasons:

- The installation environment does not meet relevant international, national, or regional standards.
- Failing to comply with local laws, regulations, and standards during the transportation, installation, operation, and maintenance of equipment.
- The installation area does not meet the equipment requirements.
- The cables, tools, etc. used do not comply with relevant international, national, or regional standards.
- Damage caused by storage conditions not meeting the equipment requirements.
- The operation was not conducted in accordance with the operational guidance and precautions provided in the document.
- Rough handling or improper installation that may cause cracking, leakage, ignition, explosion, or other equipment damage.
- Failing to operate in accordance with the requirements indicated on the warning labels on equipment or tools.
- Negligence, improper operation, or intentional damage.
- Due to the customer's failure to charge the device in a timely manner, the battery pack has suffered capacity loss or irreversible damage.
- Damage caused by customers or third-party companies replacing equipment provided by our company (e.g., replacing our battery pack with another one, mixing battery packs, or using our battery packs with inverters or converters from other brands).
- Damage caused by the customer or a third-party company neither using the accessories provided with the equipment nor purchasing and installing accessories of the same model.
- Unauthorized disassembly, replacement of equipment, or modification of software code, among other improper operations, can lead to equipment damage.
- Equipment damage caused by force majeure events (such as war, earthquakes, fires, storms, lightning, floods, mudslides, etc.).
- The equipment was stolen.
- After the warranty period, the equipment was damaged.

Safety Requirement



DANGER

- Overheating of the battery pack may cause fires, explosions, etc. It is prohibited to expose the device to high temperatures for extended periods or to keep it near heat sources for long periods. Be prepared for the surroundings (such as sunlight, sources of ignition, heaters, etc.).
- It is prohibited to clean or soak the equipment with water, alcohol, oil, or other liquids, to prevent damage or leakage of the equipment or battery pack, etc.
- It is prohibited to knock or impact the equipment. If accidental impact occurs, immediately stop using the equipment and contact your installer or sales agent. The equipment may only be used again after inspection and evaluation by qualified professionals.



WARNING

- During operation, the surface of the equipment may reach high temperatures. Contact with the equipment is prohibited.
- During operation, maintain a 300–600 mm heat dissipation clearance around the equipment to prevent overheating or fire hazards.



ATTENTION

- Equipment exhibiting malfunctions must not be operated. In the event of abnormalities, such as battery pack leakage or visible deformation etc., immediately notify qualified safety personnel. Handling, inspection, or repair of the equipment shall be performed exclusively by authorized dealers or sales agents. Unauthorized disassembly is strictly prohibited.
- It is recommended to maintain carbon dioxide (CO₂) and ABC dry powder fire extinguishers on the premises for emergency use.
- Should the device fail to enter charging mode, immediately contact the installer or authorized sales agent for technical assistance.

Chapter 2

System Introduction

2.1 Product Introduction

Performance Parameter

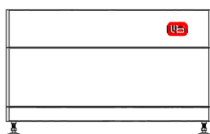
No.	Items	Model		
		LIB BSS01L16 I	LIB BSS01L16 II	LIB BSS01L16 III
1	Combination	16S1P	16S2P	16S3P
2	Total Energy Capacity	16.08kWh	32.15kWh	48.23kWh
3	Rated voltage	51.2V	51.2V	51.2V
4	Voltage range	44.8V~57.6V	44.8V~57.6V	44.8V~57.6V
5	Rated capacity	314Ah	628Ah	942Ah
6	Rated DC Power	8kW	12kW	12kW
7	Rated charge/discharge current	160A/160A	250A/250A	250A/250A
8	Max. continuous charge/discharge current ^[1]	160A/160A	250A/250A	250A/250A
9	Peak charge/discharge current (10s,25°C)	180A/180A	300A/300A	300A/300A
10	Prospective Short Circuit Current	10kA		
11	Max. Short Circuit Current	10kA		
12	Depth of discharge	Max. 100% DOD (settable)		
13	Cycle life	≥8000 cycles (@25±2°C,70%EOL)		
14	Ingress Protection	IP65		
15	Operating temperature	Charge: 0~50°C Discharge: -20~50°C		
16	Operating Humidity	≤95% (non-condensing)		
17	Altitude	≤3000m		
18	Dimensions(W×H×D)	850×458×440mm	850×701×440mm	850×944×440mm
19	Weight	136±3kg	251±3kg	366±3kg
20	Cooling Strategy	Natural convection		
21	Communication	RS485/CAN		
22	Warranty ^[2]	10 years		
23	Certificate	IEC 61000-6-1/2/3/4 / IEC 62619 / IEC 62040-1 / IEC 60529 / UN38.3		

[1] The current is affected by temperature and SOC.

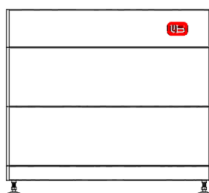
[2] Conditions apply, refer to Warranty Letter at www.energy-lib.com.

2.2 Product Appearance Introduction

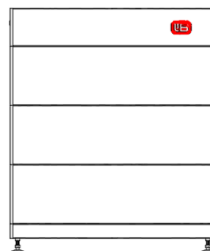
2.2.1 Appearance and Dimensions



LIB BSS01L16 I



LIB BSS01L16 II

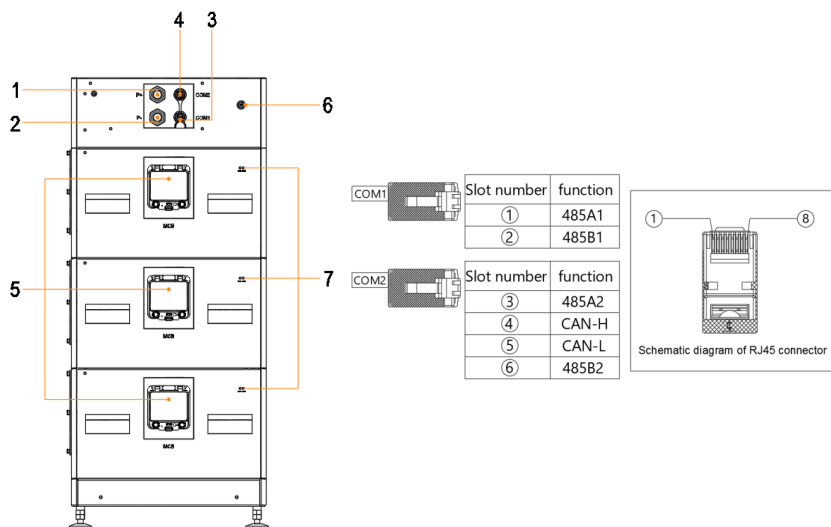


LIB BSS01L16 III

Rechargeable Li-ion Battery System

2.2.2 Interface Definition

This section elaborates on interface functions of the device.



Item	Name	Definition
1	Positive	The battery DC output positive pole, which is connected to the positive pole of the inverter through the cable
2	Negative	The battery DC output negative pole, which is connected to the negative pole of the inverter through the cable
3	COM1	The RS485 socket is the debugging interface
4	COM2	The CAN/RS485 socket is connected to the inverter CAN/RS485 interface through the communication cable
5	DC circuit breaker	On-off and protection of circuit
6	Reset switch	Press the switch and the battery system turn on. Press and hold the switch for 1 seconds to turn off the battery system
7	LED indicator	When system is started or encounters a fault, the indicator light will turn on

2.3 Label Instructions



Battery voltage is higher than safe voltage, direct contact with electric shock hazard.



Be careful with your actions and be aware of the dangers.



Read the user manual before using.



The scrapped battery cannot be put into the garbage can and must be professionally recycled.



After the battery life is terminated, the battery can continue to be used after it recycled by the professional recycling organization and do not discard it at will.



This battery product meets European directive requirements.



Do not place it near an open flame or incinerate it, as it may lead to fire or explosion.

Chapter 3

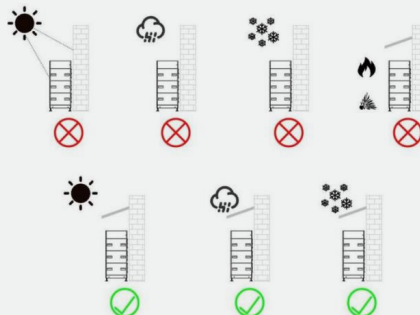
Site Selection Requirements

Tips

- Prior to installation, carefully review and comply with the following installation requirements. The company shall not be held liable for any functional abnormalities, equipment damage, or personal injury resulting from failure to adhere to these requirements.
- During installation, the selection of the installation site must comply with applicable local fire safety and environmental protection regulations. Detailed planning of the specific installation location shall be determined by the installer or EPC (Engineering, Procurement, and Construction) contractor.

Installation environment requirements

- Installation of the equipment in environments containing smoke, flammable, explosive, or corrosive substances is strictly prohibited.
- Avoid installing the equipment in locations exposed to direct sunlight, rain, water accumulation, snow, dust, or similar conditions. Installation in a sheltered area is recommended.
- In regions prone to natural disasters, such as floods, mudslides, earthquakes, or typhoons, appropriate preventive measures must be implemented during installation.
- Installation in areas with strong electromagnetic interference is prohibited.
- The temperature and humidity of the installation environment must comply with the equipment specifications.
- The equipment must be installed at least 1 km away from coastal areas and corrosive sources, such as environments with high salt or high acid concentrations (including, but not limited to, thermal power plants, chemical plants, smelting plants, coal plants, rubber plants/factories, electroplating facilities, etc.).



Requirements for installation location

- The equipment must be installed horizontally and must not be tilted or inverted.
- Installation in areas accessible to children is prohibited.
- Installation near ignition sources or in damp locations is prohibited.
- The equipment generates operational noise and must be installed away from areas of daily work or residential activity.
- Installation in enclosed, unventilated areas without fire-fighting facilities or with limited firefighter access is prohibited.
- The equipment generates heat during operation. For indoor installations, ensure adequate ventilation to prevent the indoor temperature from increasing by more than 3 °C due to equipment operation, as excessive temperature may cause equipment derating.
- Installation in mobile environments, such as recreational vehicles, cruise ships, or trains, is prohibited.
- The equipment should be installed in a location that allows convenient access for installation, operation, maintenance, and monitoring of indicator lights.
- For garage installations, the equipment must not be placed in vehicle traffic paths to prevent collisions.

Requirements for installation carrier

- Installation of the equipment on flammable supports is strictly prohibited.
- The installation carrier must meet the required load-bearing requirements. A solid structure, such as brick-concrete, concrete walls, or floors, is recommended.
- The installation surface must be level, and the available area must satisfy the spatial requirements for equipment installation.
- Ensure that no water pipes or electrical wiring are present within the installation carrier to prevent hazards during drilling for equipment installation.

Mounting Space Requirements

Below are some interpretations of possible battery installation locations and their requirements per AS/NZS 5139.

See AS/NZS 5139 for more detailed requirements.

KEY:



acceptable location



unacceptable location



habitable room



non-habitable room



non-combustible barrier

Note: The National Construction Code (volume 1 and 2) can be used for the classifications of buildings, habitable rooms and some definitions of AS/NZS 5139.

Barrier to habitable rooms – plan 1 – weatherboard house

AS/NZS 5139 clauses 4.2.4.2 and 5.2.4.2

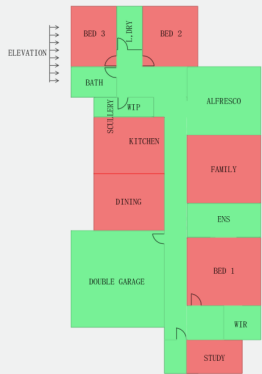


Figure 1a – plan 1 – plan view of a weatherboard house
This image is a reference for elevations shown in figures 1b-e.

KEY:

-  habitable room
-  non-habitable room
-  non-combustible barrier

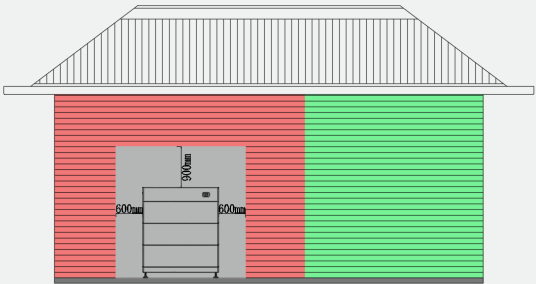


Figure 1b – elevation 1 – on the other side of a habitable room
Battery systems shall have non-combustible material between the battery and the weatherboards.

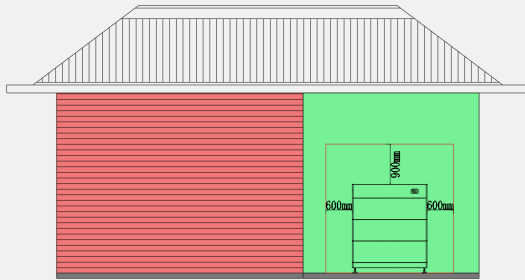


Figure 1c – elevation 1 – on the other side of a non-habitable room

Battery systems do not require non-combustible material between the battery and the surface material when there is a non-habitable room on the other side.

KEY:



habitable room



non-habitable room



non-combustible barrier

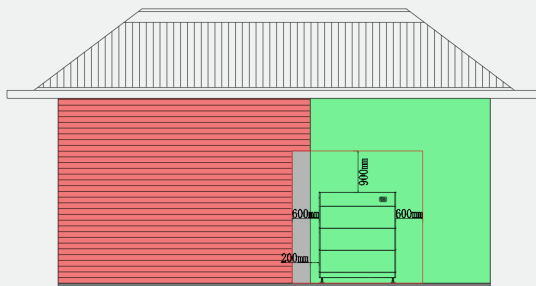


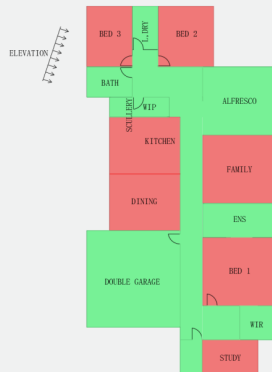
Figure 1d – elevation 1 – near boarder of habitable and non-habitable room

AS/NZS 5139 clause 4.2.4.2 and 5.2.4.2 – apply where the battery system is placed near the surface of a wall with a habitable room on the other side.

AS/NZS 5139 clauses 4.2.4.2 and 5.2.4.2

 habitable room

 non-habitable room

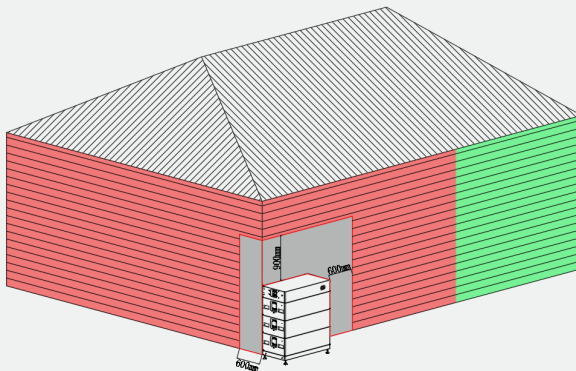


This image is a reference for elevations shown in figures 2b-e.

 habitable room

 non-habitable room

 non-combustable barrier



AS/NZS 5139 clause 4.2.4.2 and 5.2.4.2 – apply where the battery system is placed near the surface of a wall with a habitable room on the other side.

KEY:



habitable room



non-habitable room



non-combustible barrier

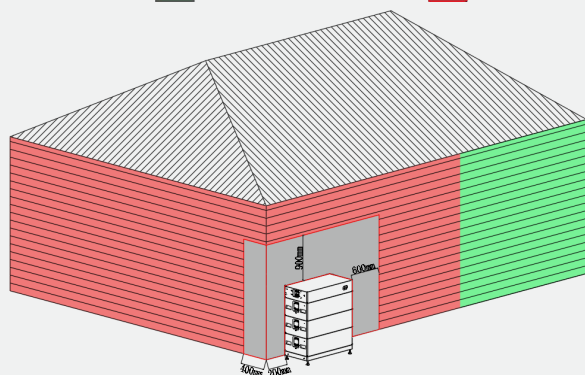


Figure 2c – elevation 2 – 200mm from the corner of a non-habitable room

AS/NZS 5139 clause 4.2.4.2 and 5.2.4.2 – apply where the battery system is placed near the surface of a wall with a habitable room on the other side.

KEY:



habitable room



non-habitable room



non-combustible barrier

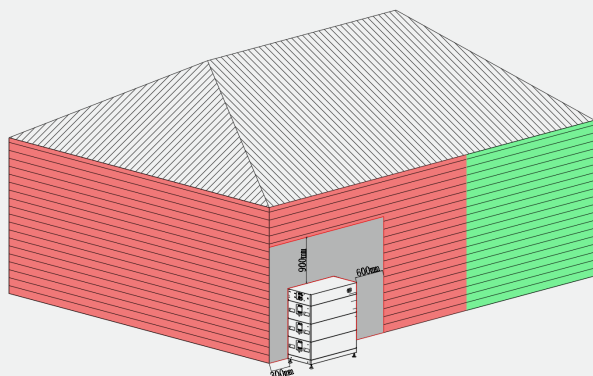


Figure 2d – elevation 2 – 300mm from the corner of a non-habitable room

Where the battery system is 300mm or more from the habitable room, the battery is no longer near the surface of a wall that has a habitable room on the other side.

Restricted locations – brick house

AS/NZS 5139 clause 4.2.2.2 and 5.2.2.2 (b) within 600mm of any exit.

KEY:



acceptable location



unacceptable location



habitable room



non-habitable room

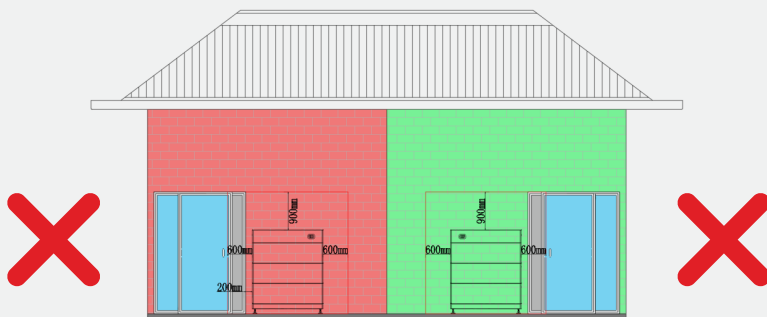


Figure 3a – openable portion of a sliding door less than 600mm to the side

KEY:



acceptable location



unacceptable location



habitable room



non-habitable room

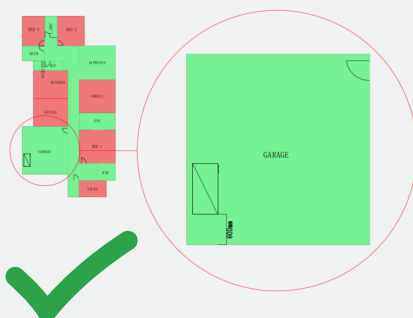


Figure 3b – 600mm clearance from a garage door opening

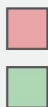
KEY:



acceptable location



unacceptable location



habitable room



non-habitable room

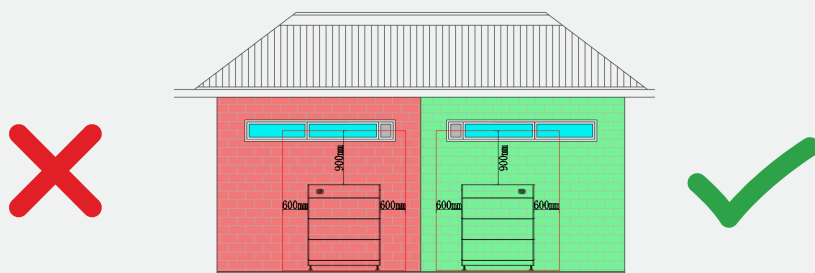


Figure 3d – openable window less than 900mm above

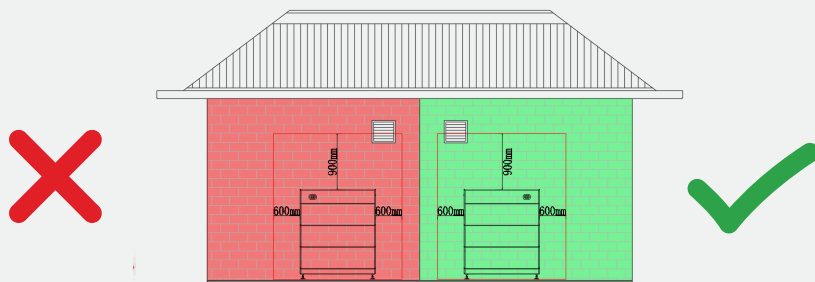


Figure 3e – self closing vent less than 900mm above

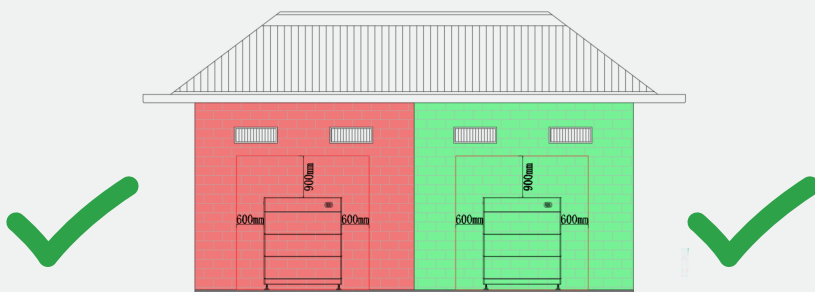


Figure 3f – fixed vent more than 900mm above

Chapter 4

Equipment Installation and Wiring

Inspection before installation

- Verify the accompanying parts against the packing list to ensure completeness and intact appearance. If any discrepancies or damage are found, promptly contact your sales agent.
- All components included in the package are the property of the owner and must not be removed from the installation site after installation.
- Inspect personal protective equipment and installation tools to confirm completeness. Replenish any missing items before commencing installation.

Protective equipment



Insulated Gloves



Safety Goggles



Safety Shoes

Installation tools



Power Cable Clamp



Pen



Phillips
Screwdriver Bit



Flat-Head
Screwdriver



Wire Stripper



Crimping Pliers



Tape Measure



Hair Dryer



Cylinder
Screwdriver

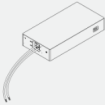
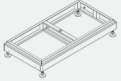
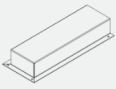
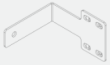


Torque Wrench



Drill

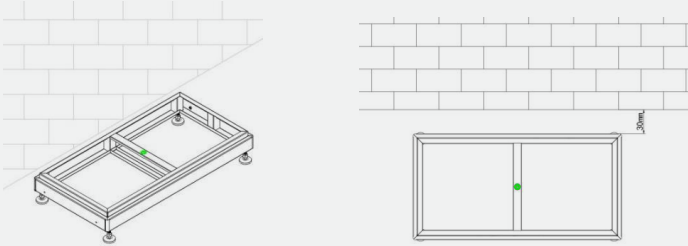
Unpacking Inspection

Item	Specification	Quantity	Figure
Battery	51.2V/314Ah	1/2/3	
Junction box		1	
Base		1	
Wire protection box		1	
fixed bracket		2	
RJ45 socket		1	
dust cover		1	
M6 OT terminals		2	
Screw 1	M5*10	10	
Expansion screw(M6)	M6*50	2	
User Manual		1	
QR code card		1	

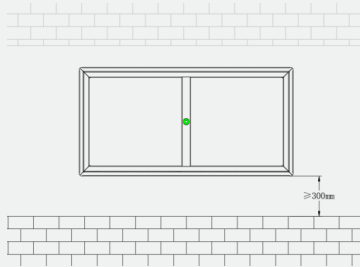
Floor Installation

1. Base installation

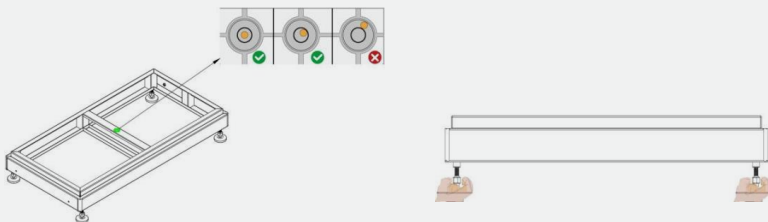
1-1 The back of the base should be $\geq 30\text{mm}$ away from the wall.



1-2 A space of $\geq 300\text{mm}$ should be maintained in front of the base.

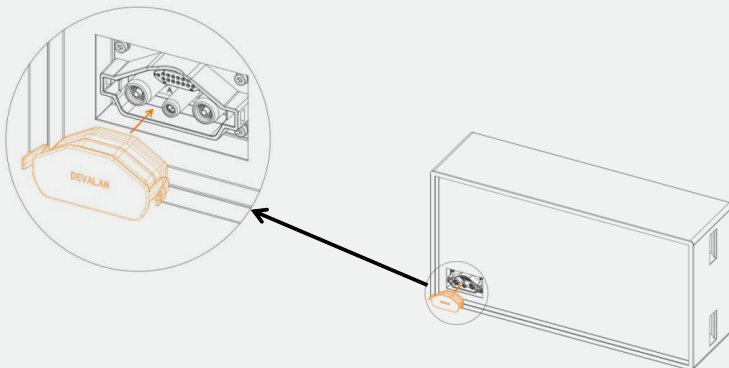


1-3 Adjust the leveling bubble in the middle of the base to the horizontal position. The adjustable rotating foot base allows for the height of the base to be adjusted, ensuring the level bubble is centered.

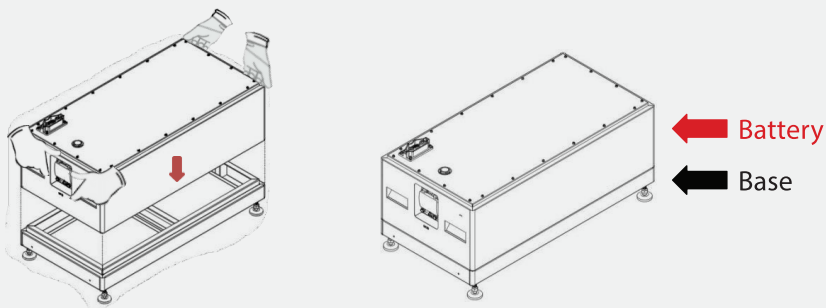


2. Battery Installation

2-1 Carry the battery box to the installation site, Install dust cover on the connectors at the bottom of the first battery box. (No such operation is required for the remaining battery boxes.)



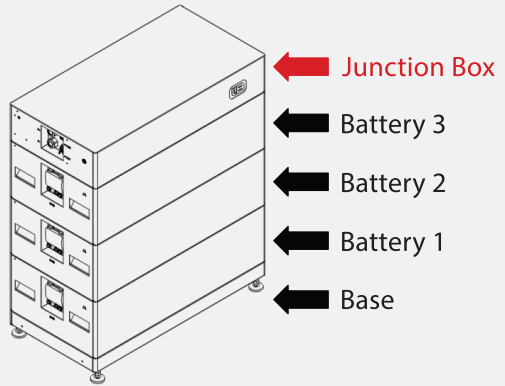
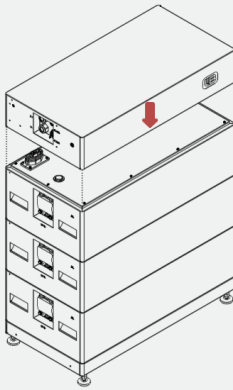
2-2 Install the first battery vertically downward, keeping it level. (Due weight of the battery, four people are required to carry it together)



2-3 To place the second and third battery boxes, refer to step 2.

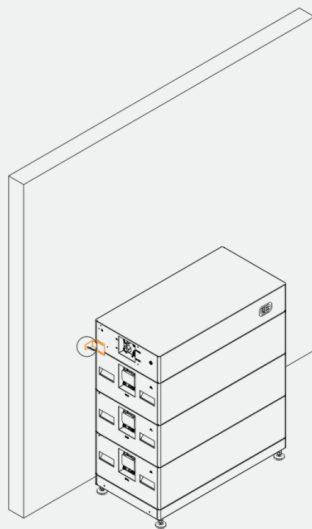
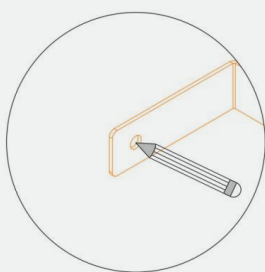
3. Junction box Installation

3-1 Install the junction box on the top in the same way as described above

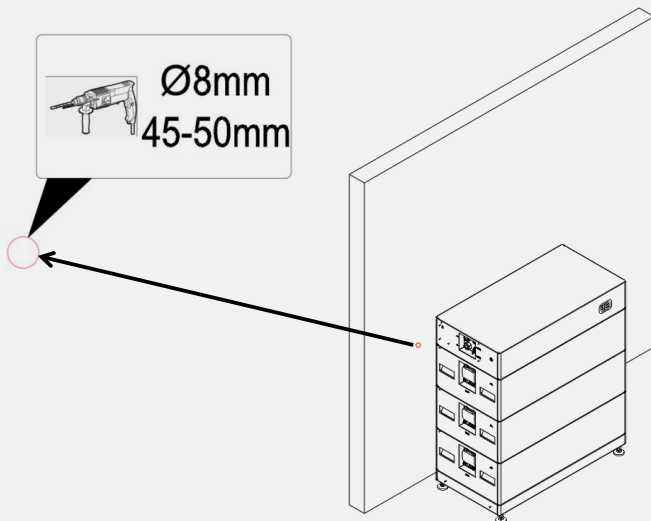


4. Fixed bracket installation

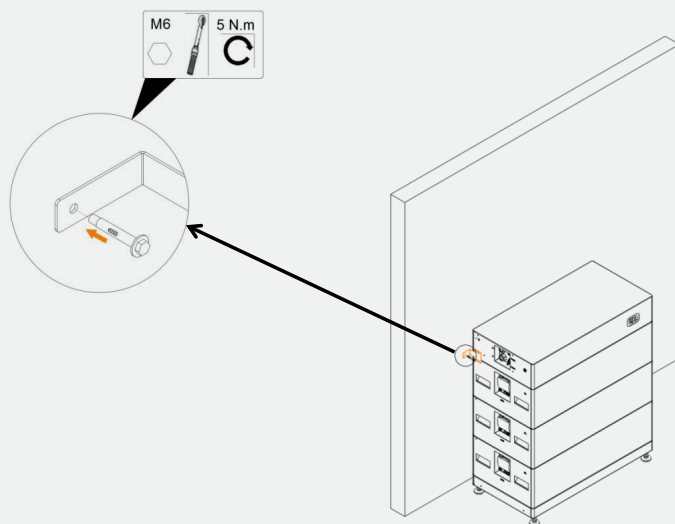
4-1 Pre-align the two side fixing brackets on the wall and mark the points with a pen.



4-2 Use a rotary hammer to drill a hole in the wall and insert the expansion tube.

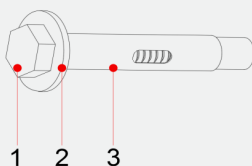


4-3 Install expansion screws on both sides of the wall. (M6*50,2pcs).



Instructions:

For wall installation, use the M6×50 expansion bolts provided in the box. If the length does not meet the installation requirements, please bring your own M6 stainless steel expansion bolts. The expansion bolts provided in the box are mainly used for solid brick-concrete structure walls. If you choose to install on other types of walls, please ensure that the installation requirements are met and choose the installation bolts yourself.



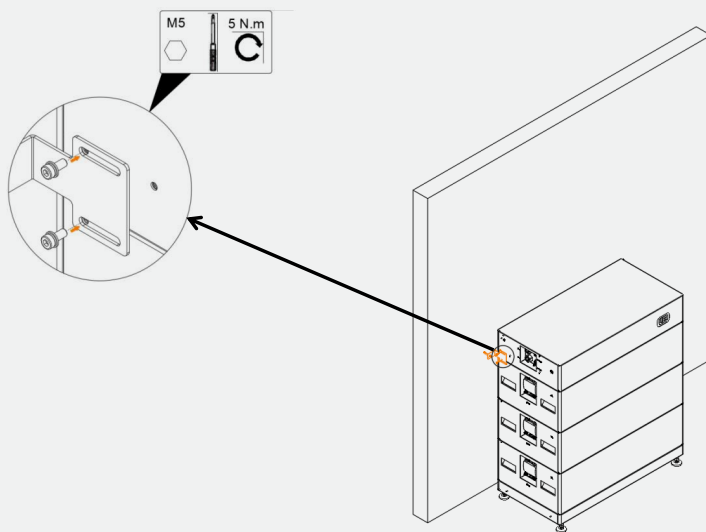
Structural diagram of M6 expansion bolt

(1)Screw

(2)flat

(3)expansion tube

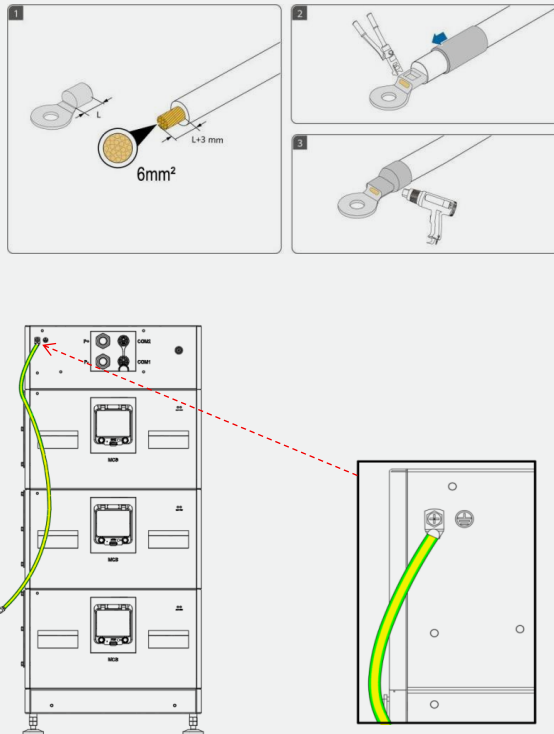
4-4 Install the screws on both sides of the junction box. (M5*10,4pcs).



Electrical Installation

Ground Cable Connection

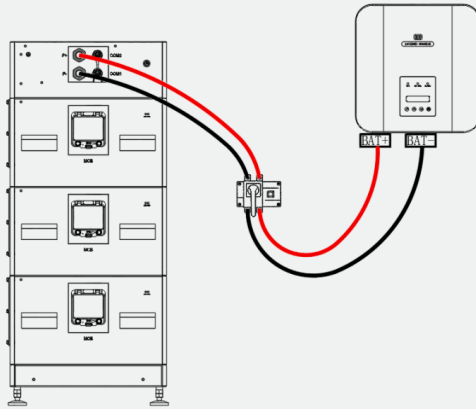
Customer needs to prepare ground cables, Use the M6 OT terminals we provided for wire crimping, Ground the battery shell as shown below. The sectional area of the grounding cable shall be at least 6mm^2 and the bolt-locking torque is 6NM.the other end is connected to the grounding point of the building.



Inverter Connection

The battery is connected to the inverter, and it is required to use the dedicated power cable and communication cable as follows:

- Keep the battery system at power off state, connect the power cable to the interface on the input side of the inverter.



- According to the Australian installation regulations, a isolating switch* must be added between the battery and the inverter, and the installer should adapt it accordingly.

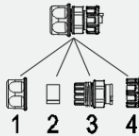
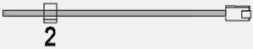
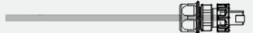
* The isolation switch must comply with the standard AS60947.3 and must disconnect the positive and negative poles simultaneously.

- Recommended disconnector

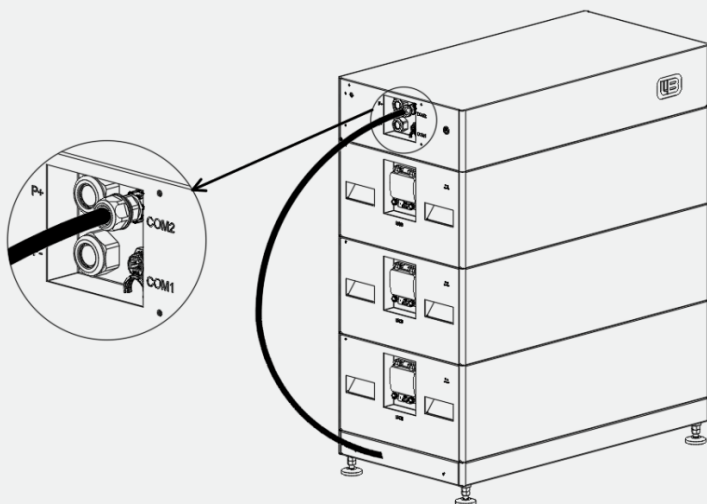
Product Model	Recommended disconnector	
	Rated voltage	Rated current
LIB BSS01L16 I	250VDC	250A
LIB BSS01L16 II		400A
LIB BSS01L16 III		

In addition, the disconnector needs to meet the BPG requirements.

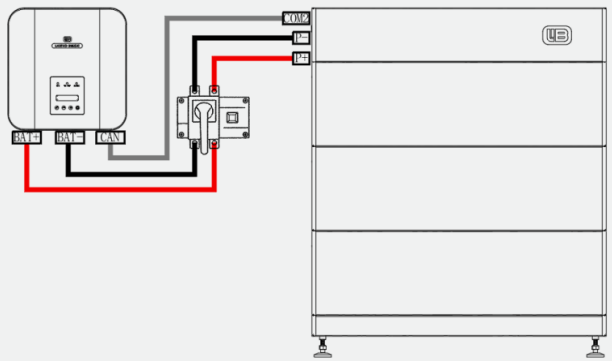
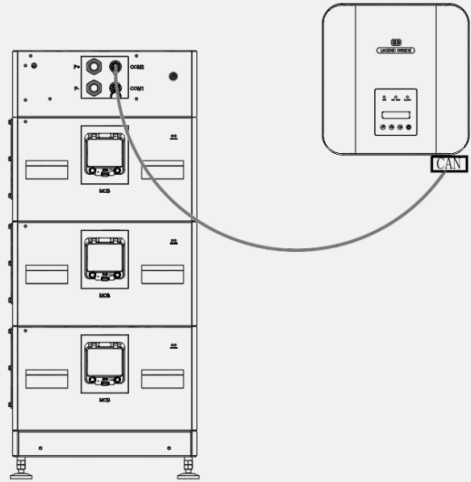
- Install the communication cable.

1	Disassemble the RJ45 socket	
2	Insert the silicone sealing sleeve into the cable	
3	Insert the sealing card into the slot	
4	Tighten the locking sleeve clockwise to ensure it is fully retracted in place	
5	Installation completed	

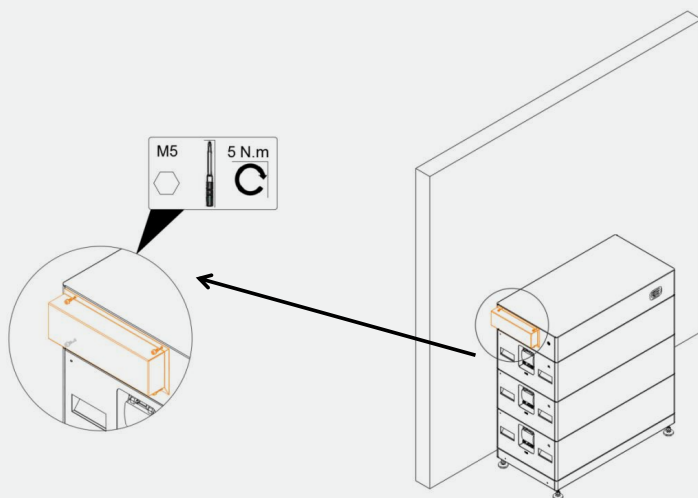
- Install RJ45 socket into COM2.



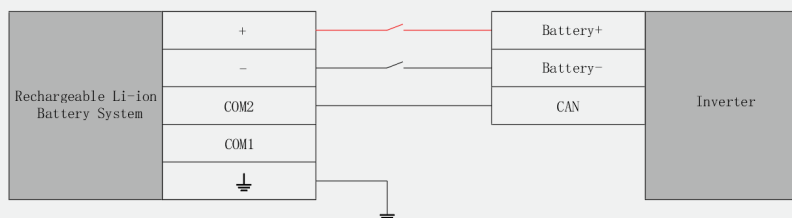
- Connection of Communication interface. Connect the COM2 port of the battery to the CAN or RS485 communication interface of the inverter.



Install the wire protection box. (M5*10,4pcs).

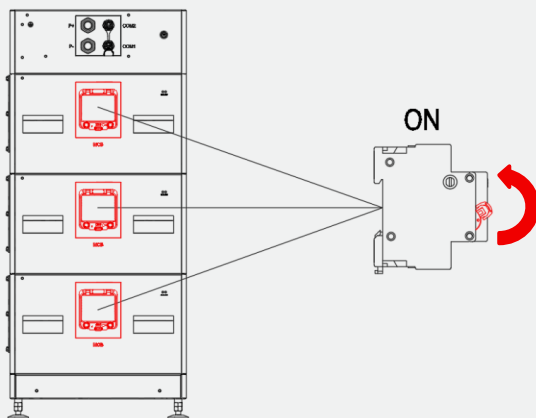


Wiring diagram installation

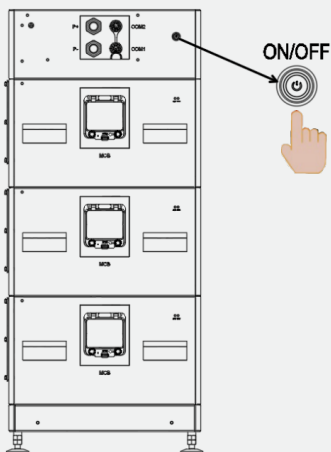


After completing the electrical installation, follow the instruction below to start the battery system.

1. Push the miniature circuit breaker switch to turn on position.



2. Press the self reset switch for about 1 second.



3. The battery system information can be monitored through the inverter APP.

Chapter 5

System Operation

LED Indicator Status

When a system failure occurs, the LED indicator on the side panel will signal an alarm. The approximate alarm categories can be identified in the corresponding tables.

System status	RUN	ALM
		
Shut down	Lights off	Lights off
Standby	Slow flash	Lights off
Charge	Always on	Lights off
Discharge	Quick flash	Lights off
ALM	/	Always on/flash

Chapter 6

System Maintenance

6.1 Routine Maintenance

To ensure the long-term reliable operation of the equipment, it is recommended that routine maintenance be carried out in accordance with the instructions provided in this chapter.

Inspection content	inspection method	Is it turned off	maintenance cycle
System cleaning	Regularly check the battery system for any obstructions, dust, or dirt. If so, please clean it. Do not use tools that may cause electric shock or insulation damage, such as wire brushes, during cleaning. Check for electrical connectors and cables for damage.	yes	Once every three months.
System operating status	Observe whether the appearance of the device is damaged or deformed.	No	Once every six months.
	Listen for any abnormal sounds from the device during operation.		
	During device operation, check if all parameters of the device are set correctly.		

If any abnormal situation occurs, please contact the post-sales staff promptly for treatment.

6.2 Equipment on/off

Turn on:

- Turn on the battery (First push the battery system circuit breaker switch to the "ON" state, Then press the self reset switch for about 1 second);
- Turn on the inverter;
- Turn on the inverter side AC and PV

Turn off:

- Isolate all loads;
- Push the circuit breaker switch between the inverter and the battery to the "OFF" state;
- Battery shutdown (press and hold the self-reset switch for about 6 seconds to push the built-in circuit breaker of the battery system to the "OFF" state);
- Isolate the AC and PV on the inverter side;
- Turn off the inverter

6.3 Emergency Response

Fire emergency measures

- Ensure that the device is powered off or the main power switch is disconnected under safe conditions.
- Excessive temperature may cause deformation and damage to the battery pack, resulting in electrolyte leakage or the release of toxic gases. Do not approach the equipment, and wear appropriate protective gear.
- If the fire is minor, extinguish it using a carbon dioxide or ABC dry powder fire extinguisher.
- If the fire continues to spread, evacuate the building or equipment area immediately and call the local fire emergency number. Do not re-enter the burning premises.
- Firefighters must avoid contact with high-voltage components during firefighting operations to prevent the risk of electric shock.
- After the fire has been extinguished, the equipment must not be used. Please contact your installer or sales agent.

Emergency measures for floods

- Ensure that the device is powered off or the main power switch is disconnected under safe conditions.
- If the battery pack is submerged in water, do not touch it in order to avoid the risk of electric shock.
- After the floodwaters recede, the equipment must not be used. Please contact your installer or sales agent for further inspection and handling.

Emergency measures for abnormal battery pack

- If the battery pack exhibits abnormal odor, electrolyte leakage, overheating, or other abnormalities, it must not be approached or touched. Professional personnel should be contacted immediately for assessment and mitigation. Professional personnel must wear appropriate personal protective equipment (PPE), including goggles, rubber gloves, gas masks, and protective clothing, to ensure their safety.
- The electrolyte is corrosive; contact may cause skin irritation or chemical burns. In case of accidental exposure, take the following actions immediately:
 - Inhalation: Evacuate the affected area, ensure fresh air circulation, and seek medical attention immediately.
 - Eye contact: Rinse eyes with plenty of water for at least 15 minutes without rubbing, and seek immediate medical attention.
 - Skin contact: Wash the affected area with plenty of soapy water and seek medical attention immediately.
 - Ingestion: Seek immediate medical attention. Do not induce vomiting unless instructed by medical personnel.
 - Abnormal battery packs must not be used. Contact your installer or sales agent immediately.

Emergency measures for battery pack drop or impact

- If there is a noticeable odor, smoke, or fire etc., do not approach the equipment. Evacuate the area immediately and contact professional personnel for assessment and mitigation.
- Do not use the battery pack if it has been dropped or subjected to impact. Contact your installer or sales agent immediately.

6.4 Storage and transportation

Storage environment requirements

- Ambient temperature for short-term storage is $-20^{\circ}\text{C} \sim 50^{\circ}\text{C}$ and the temperature should be $-10^{\circ}\text{C} \sim 35^{\circ}\text{C}$ if the storage time is more than three months, relative humidity not exceeding 95% , no condensation.
- If batteries are expected to be stored for more than 30 days, the SOC should be adjusted to $40\% \pm 10\%$.
- During storage, it is prohibited to get in the rain, expose to the sun, turn over, step on, etc.
- Do not store batteries near a heat source, such as a fire or heater.

Transportation requirements

- When the product is transported separately, the individual products should be transported with the original packaging materials.
- The product stack in transportation should not exceed 6 layers.
- During the transportation of batteries, dust and rain protection measures should be taken, and the goods should be placed and fixed to prevent impact and scattering.
- Loading and unloading of goods is recommended to use forklifts, and by professional personnel for loading and unloading operations.
- Please check and accept the goods immediately after the arrival of the products.
- During transportation, it is prohibited to turn over, step on, etc.



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