



SUN-BATT-5.12-R-01



USER MANUAL

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V. 5 (01/07/26)



**PLEASE RETAIN FOR
FUTURE REFERENCE**

About this Document

This manual provides instructions for safe installation, operation, and maintenance of the Sunsynk SUN-BATT-5.12-R-01 Lithium Iron phosphate (LiFePO₄ or LFP) battery. Please read it carefully before installation and follow all steps during the process. If anything is unclear, contact Sunsynk for guidance and clarification. Contents may be periodically updated or revised due to product development. The information in this manual is subject to change without notice.

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Intended Audience

This document is intended for use by:

- Qualified Personnel / Installers
- End-users

Intended Use

The battery is designed for energy storage applications in residential and commercial solar PV systems, backup power systems, and hybrid systems.

Disclaimer

Sunsynk is not responsible for any damage or consequences resulting from:

- Damage occurring during transportation by the customer.
- Storage conditions that do not meet the requirements outlined in this manual.
- Improper storage, installation, or use of the battery.
- Installation or operation by unqualified personnel.
- Failure to follow the operation instructions and safety precautions in this manual.
- Use in extreme environments not covered in this manual.
- Operation beyond the specified voltage, current, temperature, or other limits.
- Unauthorized modifications to the product, software, or removal of components.
- Damage caused by force majeure events (e.g., earthquake, fire, storm).
- Expired warranty or failure to extend warranty coverage.
- Installation or use in environments not compliant with relevant international standards.

Manufacturer & Global Support Contact Information

						
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1 INTRODUCTION

Thank you for choosing the SUN-BATT-5.12-R-01 Lithium Iron Phosphate (LiFePO₄ or LFP) Battery. This energy storage system is designed for high-power applications, efficient use in limited installation spaces, and offers an exceptionally long cycle life. It provides safe and reliable power for residential, commercial, and industrial energy Systems.

Each module delivers a 5.12 kWh capacity and can be connected in parallel with multiple units to expand the total system capacity and output power. This modular design makes the SUN-BATT-5.12-R-01 highly flexible, allowing system sizes to be scaled according to the energy requirements of the user.

The battery is equipped with a built-in Battery Management System (BMS) that:

- Monitors real-time voltage, current, and temperature.
- Ensures over-charge, over-discharge, over-current, and short-circuit protection.
- Provides cell balancing to maximize performance and extend service life.
- Communicates seamlessly with Sunsynk inverters and other approved compatible systems via CAN/RS485 protocols.

1.1 Applications

- Solar PV energy storage.
- Backup power for residential and commercial loads.
- Peak-shaving and load-shifting in commercial and industrial facilities.
- Microgrid and distributed energy storage systems.

1.2 Key Advantages

- High safety: Uses LiFePO₄ chemistry with excellent thermal stability.
- Long cycle life: ≥ 6,000 cycles at 80% depth of discharge (DOD).
- Scalable: Parallel connection supports large-capacity energy storage.
- High efficiency: Fast charging and discharging capability with low energy loss.
- Smart monitoring: Integrated BMS with communication interface for inverter and system integration.
- Compact design: Space-saving with flexible installation options.

1.3 Compliance and Standards

The SUN-BATT-5.12-R-01 battery meets international safety and performance standards, ensuring reliable operation and global compatibility. For detailed information, refer to the Technical Specification section of this manual or contact Sunsynk for further assistance.

1.4 User Guidance

This manual provides:

- General and electrical safety precautions.
- Installation requirements and wiring instructions.
- Battery operation, communication, and monitoring guidance.
- Maintenance and troubleshooting information.



NOTICE

Please read this manual carefully before installation and operation. Keep it for future reference and ensure that all installers and users are familiar with the safety precautions and instructions provided.

2 SAFETY INFORMATION

Sunsynk products are engineered with safety as a top priority. However, like all electrical devices, they can pose risks if used incorrectly, including fire or electric shock, which may result in serious injury or death. To ensure your safety, please read and follow all safety precautions carefully before use.

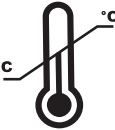
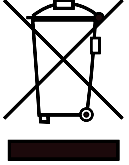
2.1 Safety Symbols and Definitions

The following symbols are used in this document and their meanings are provided below.

 DANGER	Indicates an immediate hazard that, if not avoided, will result in serious injury or death. This is the highest level of risk.
 WARNING	Indicates a potential hazard that could result in serious injury or death if not avoided. It is slightly less severe than "DANGER".
 CAUTION	Highlights a potential hazard that could cause minor injuries or property damage if not avoided.
 NOTICE	Provides helpful information that does not indicate any hazard.

The safety symbols shown below may appear in this document and on product labels, specification markings, or packaging. The definitions of these symbols are provided for the user's reference.

Symbol	Description	Symbol	Description
	This symbol indicates information that if ignored, could result in personal injury, physical damage or even death due to incorrect handling.		This product's batteries contain an explosive, self-reactive material that could blow up when heated.
	Electrical Hazard.		Read the manual.
	Danger.		Indicates that this product is recyclable.
	The Battery is heavy and can cause injury if not handled safely.		Do not place near open fire or incinerate. Do not use near heaters or hot temperature sources.
	Do not submerge the battery in water or expose it to moisture or liquid.		Do not disassemble or alter the battery in any way. Do not strike or puncture the battery.
	Do not drop, deform, or impact the battery.		Do not step or put any objects onto the battery.

Symbol	Description	Symbol	Description
	Keep out of reach of children, animals, and insects.		Li-ion Battery.
	Rechargeable.		Charge temperature, Discharge temperature.
	Rate voltage, Minimum voltage, Maximum voltage.		Storage temperature.
			Recommended Charge Instructions
	Follow the indicated temperatures.		BATTERY INPUT Rate capacity, Rate energy, Maximum discharge current.
	Contact the supplier within 24 hours if there is anything wrong. In case of leakage contact with eyes or skin, immediately clean with water and seek help from a doctor.		Do not dispose the device, accessories, and packaging with regular waste. Follow local ordinances or contact the manufacturer for disposal guidance.
	The UKCA marking is used for products placed on the market in Great Britain (England, Scotland and Wales). The UKCA marking applies to most products for which the CE marking could be used.		CE mark is attached to the solar inverter to verify that the unit follows the provisions of the European Low Voltage and EMC Directives.
	No direct sunlight!	<div>  CAUTION! Do not plug or unplug the power cables when the T-BAT System is on, doing so could result in an arc discharge which could cause serious harm! </div> <div>  CAUTION! Ground connection is mandatory! </div>	
	Keep away from heat!	<div>  WARNING! Handle with care: No external force allows on BMS slot. </div> <div>   </div>	

2.2 Safety Symbols and Definitions

The SUN-BATT-5.12-R-01 Lithium Iron Phosphate (LiFePO₄ or LFP) battery must only be installed, commissioned, operated, and maintained by qualified personnel.

Qualified personnel are individuals who:

- Have received formal training in electrical systems and photovoltaic (PV) installations.
- Are familiar with local and national electrical codes, regulations, and safety standards.
- Understand the risks involved when working with both low- and high-voltage equipment.
- Possess the skills to correctly use the required tools, personal protective equipment (PPE), and test instruments.

For safe and reliable installation, Sunsynk strongly recommends using a Sunsynk-approved installer. These installers are trained specifically on Sunsynk products and are equipped with the knowledge to ensure correct installation, commissioning, and long-term operation.



NOTICE

- Installation or operation by unqualified personnel may cause personal injury, electric shock, fire hazards, or property damage.
- Any damage or failure resulting from improper installation, unauthorized modifications, or neglect of instructions will void the product warranty.
- Always follow all safety warnings, handling instructions, and manufacturer recommendations when working with the battery.

2.3 General Safety

- Use the battery only as instructed in this manual.
- Do not use the battery if it appears broken, damaged, or compromised in any way.
- The battery is non-user-serviceable, do not attempt to open or repair it.
- Handle the battery with care during installation, transportation, or relocation.
- Do not connect the SUN-BATT-5.12-R-01 battery with batteries of a different type or model unless otherwise specified the battery may be paired only with a compatible battery.
- Do not operate the battery with faulty or incompatible inverters.
- Always contact the supplier within 24 hours if any abnormal condition occurs.
- After unpacking, carefully check the product and packing list. If any parts are missing or damaged, contact your retailer immediately.
- Recharge within 48 hours after full discharge.
- Charge the battery at least every 6 months; keep State of Charge (SOC) $\geq 50\%$ during long-term storage.
- Warranty does not cover damage caused by misuse or violation of the above precautions.

2.4 Electrical Safety

- Before installation, disconnect the grid power supply and ensure the battery is switched off.
- Verify correct wiring: do not reverse positive (+) and negative (–) cables, and ensure no short circuit with external devices.
- Never connect the battery directly to PV solar panel wiring.
- Do not connect the battery directly to AC power.
- Ensure the battery system is properly grounded with a resistance of less than 1Ω .
- Confirm that the electrical parameters of the battery system match the connected equipment.
- Disconnect all terminals before maintenance.
- Always cut off the power supply and fully shut down the battery before moving or performing any repairs.

2.5 Environmental Safety

To ensure safe operation and long service life, the SUN-BATT-5.12-R-01 Lithium Iron Phosphate (LiFePO₄ or LFP) battery must be installed in an environment that meets the following conditions:

LOCATION AND PROTECTION

- Install indoors or in a sheltered environment, protected from direct sunlight, rain, dust, and condensation.
- Keep away from flammable materials, corrosive substances, or explosive gases.
- Ensure adequate physical protection against accidental impact or mechanical damage.

VENTILATION AND CLEARANCE

- Provide sufficient airflow around the battery to prevent heat build-up.
- Maintain at least 30 cm clearance around all sides for cooling and maintenance access.
- Do not block air vents or enclose the battery in an airtight cabinet.

PROHIBITED AREAS

- Do not install outdoors without appropriate weatherproof enclosures.
- Do not install in bedrooms, living spaces, or occupied areas where noise or heat may cause discomfort.
- Avoid areas exposed to salt spray, chemicals, or corrosive vapors (e.g., near swimming pools or industrial sites).

2.6 Safety Handling

To ensure safe operation and longevity of the SUN-BATT-5.12-R-01 Lithium Iron Phosphate (LiFePO₄ or LFP) battery, the following precautions must be observed:

- Cables: Keep all cables protected from damage. Do not bend, crush, or expose them to heat or moisture.
- Foreign Objects: Never insert objects into the battery or its connectors.
- Cleaning: Do not use solvents, chemicals, or cleaners on the battery. If cleaning is required, use a dry, soft cloth only.
- Flammable Materials: Do not expose the battery to fire, heat sources, or flammable/harsh chemicals.
- Painting/Modifications: Do not paint, disassemble, modify, or tamper with the battery.
- Servicing: Only Sunsynk staff or authorized service personnel may open, repair, or service the battery. Unauthorized handling or repair will void the warranty and may result in hazards.
- Fire Safety: In case of fire, use a dry powder fire extinguisher only. Do not use water or liquid extinguishers.
- Environment: Keep the battery away from water, excessive dust, vibration, and direct sunlight. Do not expose to freezing temperatures or high humidity.
- Handling: Always lift the battery with proper equipment or sufficient manpower. Avoid dropping or subjecting it to impact.
- Storage/Transport: Store and transport the battery in an upright position, in a clean, dry, and ventilated environment.



WARNING

Improper handling may cause injury, fire, electric shock, or permanent damage to the battery.

2.7 Prohibited Uses

To prevent hazards, never:

- Short-circuit the battery terminals or connect them directly with metal objects.
- Immerse the battery in water or allow it to get wet.
- Connect incompatible chargers, inverters, or third-party devices not approved by Sunsynk.
- Operate the battery outside its rated voltage, current, or temperature limits.
- Install the battery in a sealed or poorly ventilated area.
- Place heavy objects on top of the battery.
- Use the battery if it is physically damaged, leaking, or emits unusual odors or sounds.



WARNING

Improper handling or prohibited use may lead to electric shock, fire, property damage, or personal injury, and will void the product warranty.

2.8 Emergency Procedures

In case of accidental exposure to battery materials, take immediate action as outlined below. Always seek medical assistance after providing first aid.

- Do not use a damaged battery.
- Return it to Sunsynk or dispose it properly at a certified recycling facility.
- Leaking electrolytes can cause skin irritation, chemical burns, or other serious injuries.
- Avoid all direct contact with leaking material.

Hazard	Action
Eyes	Flush eyes with plenty of clean water for at least 15 minutes, lifting eyelids occasionally. Seek immediate medical attention.
Skin	Remove contaminated clothing. Rinse skin thoroughly with water or shower for at least 15 minutes. Seek medical attention.
Inhalation	Move the affected person to fresh air immediately. If breathing is difficult, provide oxygen if available. Seek medical assistance.
Ingestion	Do not induce vomiting. Do not give anything by mouth if the person is unconscious. If conscious, rinse mouth with water and give small sips of water or milk. Call a physician or poison control center immediately.



WARNING

Failure to follow the safety instructions in this manual may result in serious injury, electric shock, fire, or damage to the battery and will void the warranty.



NOTICE

Always use the battery as instructed in this manual. Safe handling and proper maintenance will ensure reliable performance and extend the service life of your battery.

3 TECHNICAL DATA

Note

Operating current is reduced based on cell voltage and battery temperature.

-  Top-notch LFP Class A cell / Strict capacity grading
-  100% tested for safety, readability and capacity
-  Precise voltage / temperature / SOC detection
-  One button start / stop and parallel connection
-  Real-time data monitoring and firmware update
-  IP65-certified, higher protection level



Note

Approvals and certification are subject to change without prior notice. Please confirm the current status with Sunsynk before placing an order.

Product Name		Rechargeable Li-ion Battery
Model		SUN-BATT-5.12-R-01
Performance		
Cell Technology		LFP (LiFePO ₄)
Nominal Voltage		51.2Vdc
Nominal Capacity		100Ah
Battery Energy ^[1]		5120Wh
Operating Voltage		44.8 - 56.16Vdc
Nominal Charge/Discharge Current		50A
Max. Charge/Discharge Current ^[2]		98A
Communication		
Display		SOC Status Indicator, LED Indicator
Communication		CAN/RS485/RS232/Wi-Fi
General Specification		
Dimension (WxDxH)		18.5x6.3x25 inches (470x160x635mm)
Weight		104.7lbs (47.5kg)
Installation		Floor Stand or Wall Mounted
Operating Temperature ^[3]		Charge: 0 to 50°C (32 to 122°F) Discharge: -15 to 50°C (5 to 122°F)
Environmental Humidity		≤ 95%RH (non-condensing)
Protection Rating		NEMA 3R/IP65
Cycle Life		6000 Cycles @ 80% DOD / 25°C / 0.5C, 60% EOL
Scalability		Max. 15 Batteries in Parallel
Application		On-Grid/On-Grid + Backup/Off-Grid
Compatible Inverters		Refer to Compatible Inverter List (Compatible with Major PCS Brands)
Standard Compliance		
Approvals and certification are subject to change without prior notice. Please confirm the current status with Sunsynk before placing an order		
Warranty ^[4]		See website for Warranty details
Ordering and Deliverable Part		
Parts		SUN-BATT-5.12-R-01 Battery SUN-BATT-5.12-R-01 Parallel Cable SUN-BATT-5.12-R-01 to PCS Cable

^[1] Test conditions: 100% depth of discharge (DOD), 0.2C rate charge & discharge at 25°C.

^[2] There is 0.5C or 1C configurations optional in factory default.

^[3] Charge/discharge derating occurs when the temperature is below 0°C or above 45°C.

^[4] Please refer to the Warranty Letter for applicable conditions, the warranty is due whichever comes first.

4 PRODUCT OVERVIEW

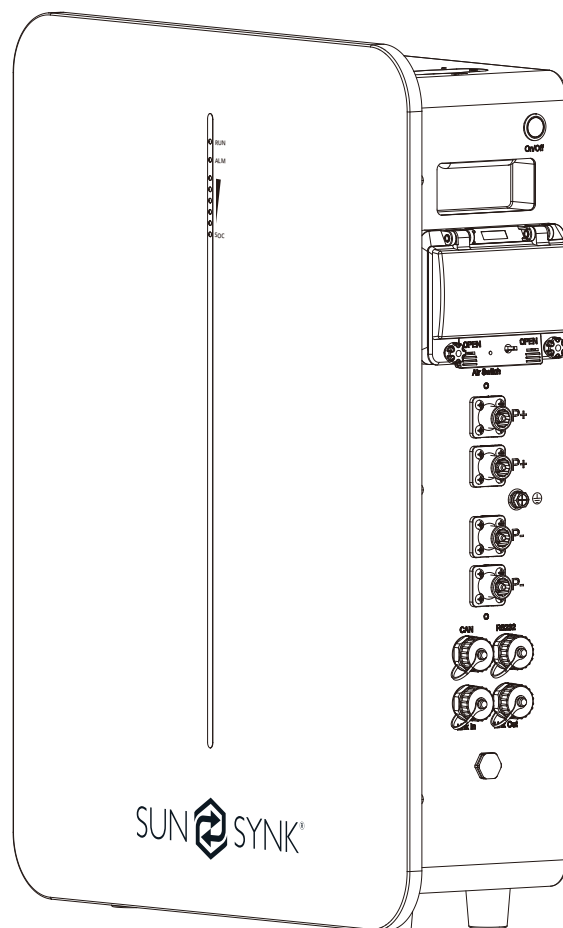
4.1 Brief Introduction

SUN-BATT-5.12-R-01 is a lithium battery with an operating voltage range of 44.8~56.16V. It is designed for residential energy storage applications and is compatible with a 48V battery hybrid inverter.

SUN-BATT-5.12-R-01 is must not be used to support life-sustaining medical equipment.

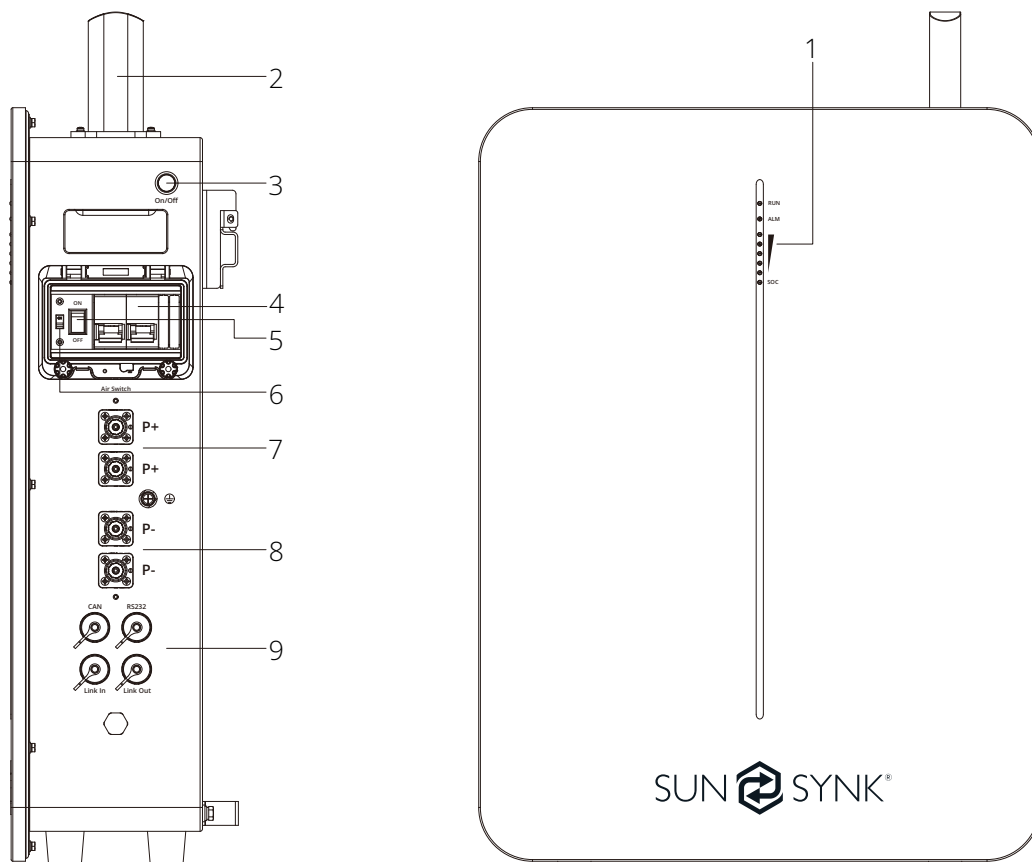
SUN-BATT-5.12-R-01 has built-in BMS (Battery Management System), which can manage and monitor cell information, including voltage, current, and temperature. Besides that, BMS can balance cells charging to extend cycle life. BMS has protection functions including over-discharge, over-charge, over-current and high/low-temperature protection; the system can automatically manage the charge state, discharge state and balance state.

Up to 15 SUN-BATT-5.12-R-01 can be connected in parallel to increase capacity and power.



PRODUCT OVERVIEW

4.2 Interface Introduction



Operation interface description:

Serial Number	Name	Description
1	Status indicator	Operation, alarm, and SOC status
2	WiFi interface	Connect to WiFi module
3	On / Off	Reset switch
4	Air switch	Output switch (125A)
5	Rocker switch	Weak current switch
6	Slide switch	BMS power supply switch
7	Positive terminal	Total positive terminal
8	Negative terminal	Total negative terminal
9	Communication port	Communication interface

4.2.1 LED Indicator Definition

Note

flash 1 - 0.25s light / 3.75s off
flash 2 - 0.5s light / 0.5s off
flash 3 - 0.5s light / 1.5s off

LED Indicators Instructions

		RUN	ALM	Batte ry Level Indicator						
Status		L8	L7	L6	L5	L4	L3	L2	L1	Descriptions
Shut down		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	All OFF
Standby		Flash 1	OFF	According to the battery level						Indicates Standby
Charging	Normal	Light	OFF	According to the battery level						The highest capacity indicator LED flashes (flash 2), others lighting
	Full Charged	Light	OFF	Light	Light	Light	Light	Light	Light	Turn to standby status when charger off
	Protection	OFF	Light	OFF	OFF	OFF	OFF	OFF	OFF	Stop charging
Discharge	Normal	Flash 3	OFF	According to the battery level						
	UVP	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Stop charging
	Protection	OFF	Light	OFF	OFF	OFF	OFF	OFF	OFF	Stop discharge
Fault		OFF	Light	OFF	OFF	OFF	OFF	OFF	OFF	Stop charging and discharge

Charging Battery Level Indicators Instructions

Status		Charging							
Batte ry Level Indicator		L8	L7	L6	L5	L4	L3	L2	L1
Battery Level (%)	0~17%	Light	OFF	OFF	OFF	OFF	OFF	OFF	Flash 2
	18 ~ 33%			OFF	OFF	OFF	OFF	Flash 2	Light
	34 ~ 50%			OFF	OFF	OFF	Flash 2	Light	Light
	51 ~ 66%			OFF	OFF	Flash 2	Light	Light	Light
	67 ~ 83%			OFF	Flash 2	Light	Light	Light	Light
	84 ~ 100%			Flash 2	Light	Light	Light	Light	Light
	Full Charged			Light	Light	Light	Light	Light	Light

Discharging Battery Level Indicators Instructions

Status		Charging							
Batte ry Level Indicator		L8	L7	L6	L5	L4	L3	L2	L1
Battery Level (%)	0~17%	Flash 3	OFF	OFF	OFF	OFF	OFF	OFF	Light
	18-33%			OFF	OFF	OFF	OFF	Light	Light
	34~50%			OFF	OFF	OFF	Light	Light	Light
	51~66%			OFF	OFF	Light	Light	Light	Light
	67~83%			OFF	Light	Light	Light	Light	Light
	84~100%			Light	Light	Light	Light	Light	Light

Protection Fault Indicators Instructions

Status	Protection Fault							
	L8	L7	L6	L5	L4	L3	L2	L1
Status Battery Level Indicator								
Battery level (%)	OFF / Light	Light	84 ~ 100%	67 ~ 83%	51 ~ 66%	34 ~ 50%	18 - 33%	0 ~ 17%
Cell failure			OFF	OFF	OFF	OFF	OFF	OFF
NTC failure			Light	OFF	OFF	OFF	OFF	OFF
Precharge failure			OFF	Light	OFF	OFF	OFF	OFF
Short circuit fault			Light	Light	OFF	OFF	OFF	OFF
Charging MOS failure			OFF	OFF	Light	OFF	OFF	OFF
Discharge MOS fault			Light	OFF	Light	OFF	OFF	OFF
Precharge failure			OFF	Light	Light	OFF	OFF	OFF
Total negative contact failure			Light	Light	Light	OFF	OFF	OFF
Overvoltage protection of charging cells			OFF	OFF	OFF	Light	OFF	OFF
Overall charging overvoltage protection			Light	OFF	OFF	Light	OFF	OFF
Charging overcurrent protection			OFF	Light	OFF	Light	OFF	OFF
Discharge cell undervoltage protection			Light	Light	OFF	Light	OFF	OFF
Discharge overall undervoltage protection			OFF	OFF	Light	Light	OFF	OFF
Discharge overcurrent protection			Light	OFF	Light	Light	OFF	OFF
Charging high-temperature protection			OFF	Light	Light	Light	OFF	OFF
Charging low-temperature protection			Light	Light	Light	Light	OFF	OFF
High-temperature protection for discharge			OFF	OFF	OFF	OFF	Light	OFF
Discharge low-temperature protection			Light	OFF	OFF	OFF	Light	OFF
MOS tube high-temperature protection			OFF	Light	OFF	OFF	Light	OFF
Environmental low-temperature protection			Light	Light	OFF	OFF	Light	OFF
Ambient high-temperature protection			OFF	OFF	Light	OFF	Light	OFF

Note

1. In normal operation the ALM fault lamp is off and the SOC lamp indicates power. When a fault occurs, the ALM lamp turns on and the SOC lamp displays the fault code (in priority order from low light), if multiple protection faults exist, the RUN lamp will also remain on.

4.2.2 CAN / RS485 Port

CAN / RS485 Communication terminal (RJ45 port) connects to inverter and operates using the CAN/RS485 protocols.

PIN	Definition
Pin 1, Pin 8	RS485-B (to Inverter, reserved)
Pin 2, Pin 7	RS485-A (to Inverter, reserved)
Pin 3	NC
Pin 4	CANH (to Inverter)
Pin 5	CANL (to Inverter)
Pin 6	GND

4.2.3 RS232 Port

RS232 terminal (RJ45 port) uses the RS232 protocol and is intended for manufacturers or qualified engineers to debug or service.

PIN	Definition
Pin 1, Pin 8	GND
Pin 2, Pin 7	RS232_TX
Pin 3, Pin 6	RS232_RX
Pin 4, Pin 5	NC

4.2.4 Link In / Link Out

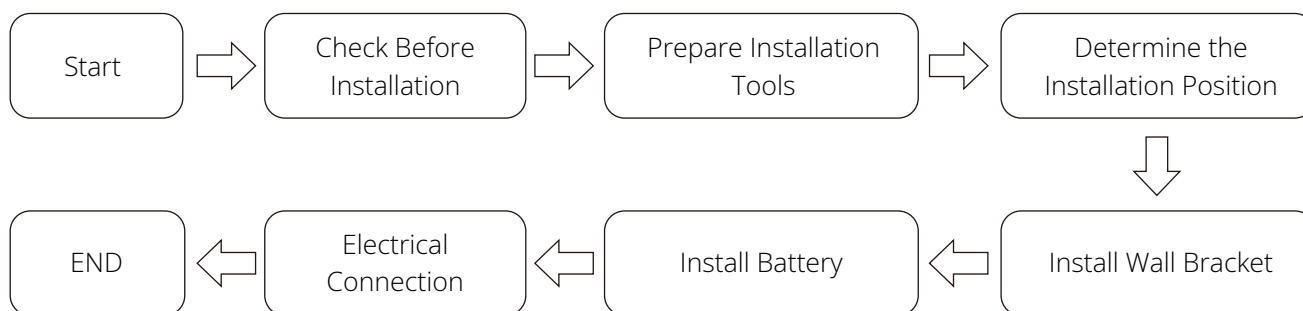
Link In/Link Out terminal (RJ45 port) is used for battery parallel communication.

PIN	Link In
Pin1	NC
Pin2, Pin7	RS485-A (Parallel communication)
Pin3, Pin6	RS485-B (Parallel communication)
Pin4	UP IN+ (Parallel address)
Pin5	UP IN- (Parallel address)
Pin8	GND

PIN	Link Out
Pin1	NC
Pin2, Pin7	RS485-A (Parallel communication)
Pin3, Pin6	RS485-B (Parallel communication)
Pin4	DN OP+ (Parallel address)
Pin5	DN OP- (Parallel address)
Pin8	GND

5 INSTALLATION GUIDE

Installation flow chart



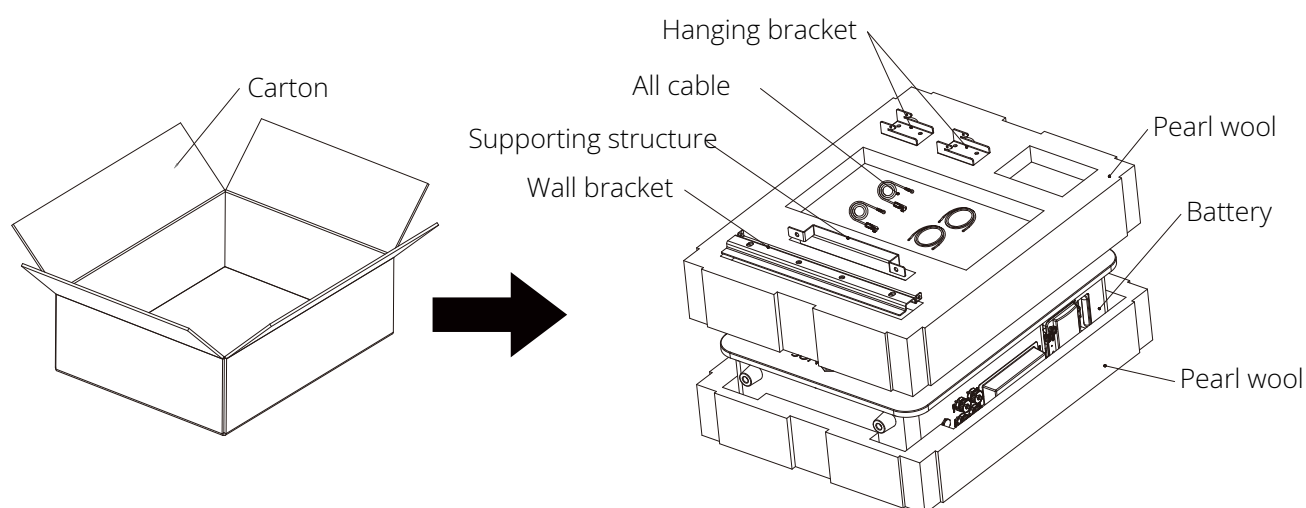
5.1 Checking Before Installation

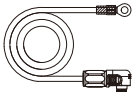
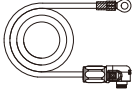
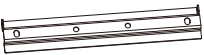
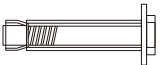
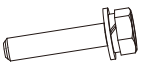
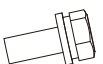
5.1.1 Checking Outer Packing Materials

Packing materials and components may be damaged during transportation. Before installing the battery pack check the outer packing for damage such as holes and cracks. Checking the surface of packing materials for damage such as holes and cracks. If any damage is found, do not unpack the battery and contact the dealer immediately. It is recommended to remove the packing materials within 24 hours before installing the battery.

5.1.2 Checking Deliverables

After unpacking the battery, check the deliverables are intact and complete. If any damage or missing component is found contact the dealer. The table below lists the components and mechanical parts that should be included.



ON.	Pictures	Quantity	Description
1		1PCS	Battery
2		1PCS	Positive power cable
3		1PCS	Negative power cable
4		1PCS	PE cable
5		1PCS	Communication cable
6		1PCS	Wall bracket
7		2PCS	Hanging bracket
8		1PCS	Supporting structure
9		4PCS	M8*60
10		2PCS	M4*20
11		8PCS	M6*16
12		1PCS	Pamphlet
13		1PCS	Test report
14		1PCS	QA certificate

5.2 Tools

Model	Tools		
Installation Safety Equipment	Knife 	Measuring tape 	Socket wrench (10/16mm) 
	Rubber mallet 	Cross screwdriver 	Hammer drill (10mm) 
	ESD gloves 	Safety goggles 	Anti-dust respirator 
	Safety shoes 		

5.3 Installation Requirements

5.3.1 Installation Environment Requirements

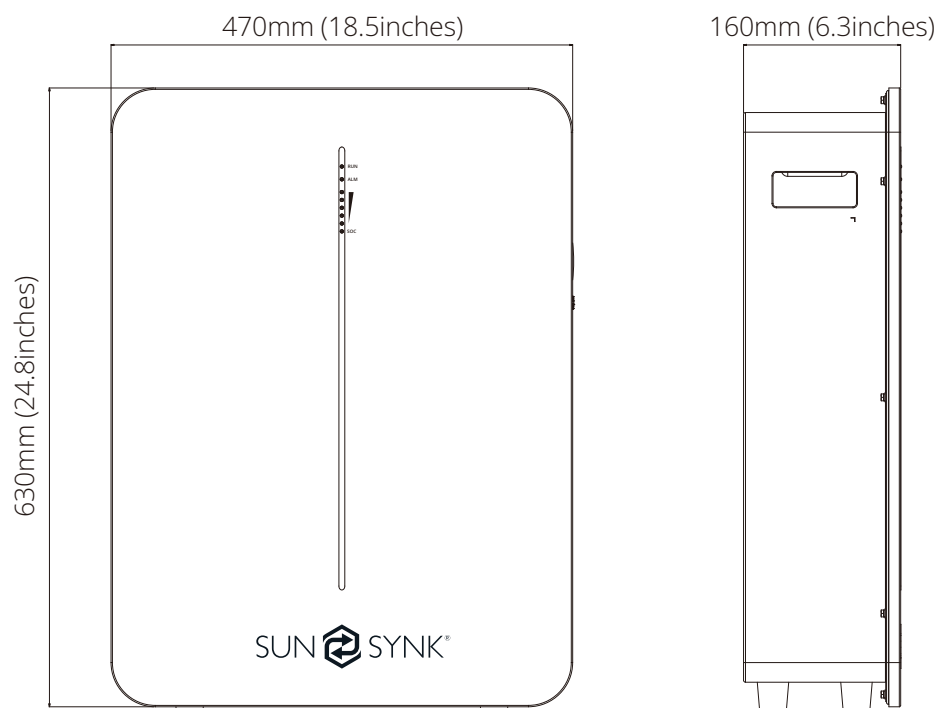
- Install the battery in the indoor environment.
- Place the battery in a secure location away from children and animals.
- Do not place the battery near any heat sources and avoid sparks.
- Do not expose the battery to moisture or liquids.
- Do not expose the battery to direct sunlight.

5.3.2 Installation Carrier Requirements

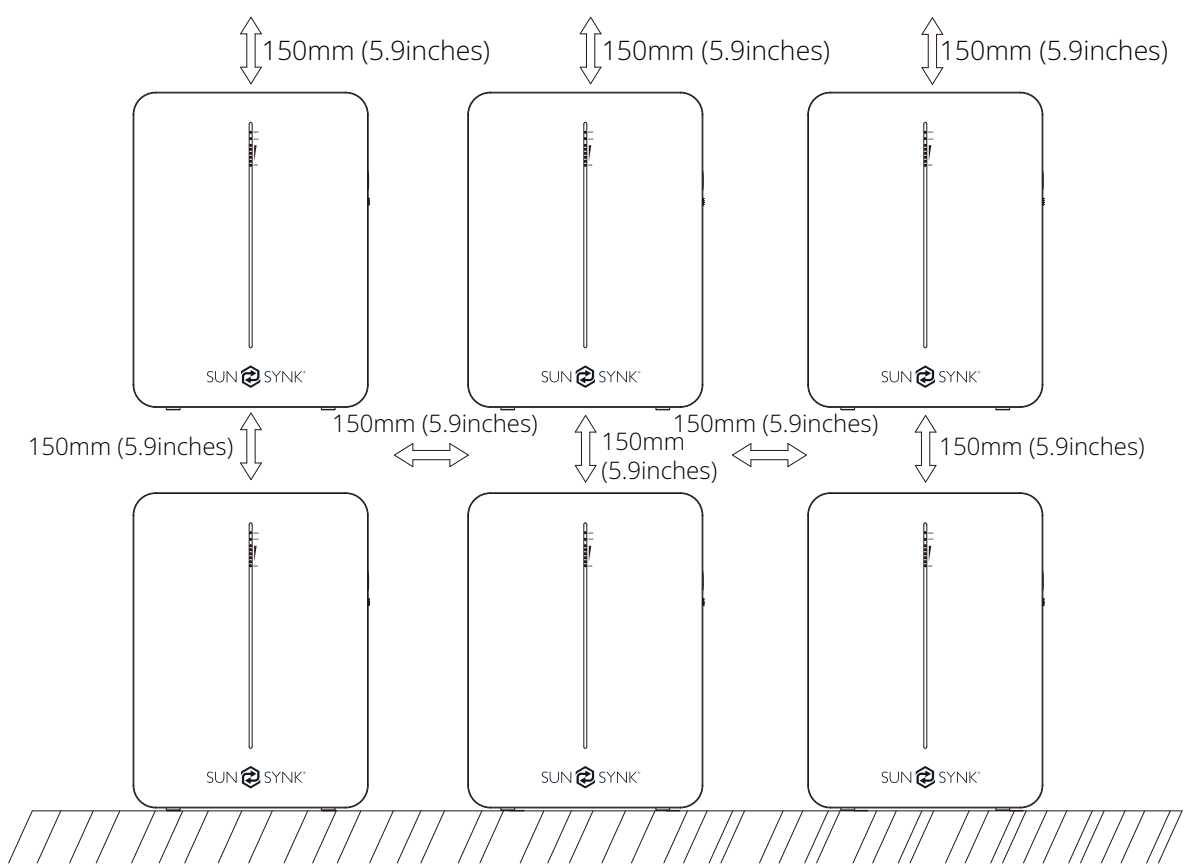
- Install the battery only on fire resistant Structures. Do not install the battery on flammable structures.
- Due to the relatively heavy battery, make sure the wall / ground can meet the load-bearing requirements.

5.4 Installation Instructions

5.4.1 Dimensions



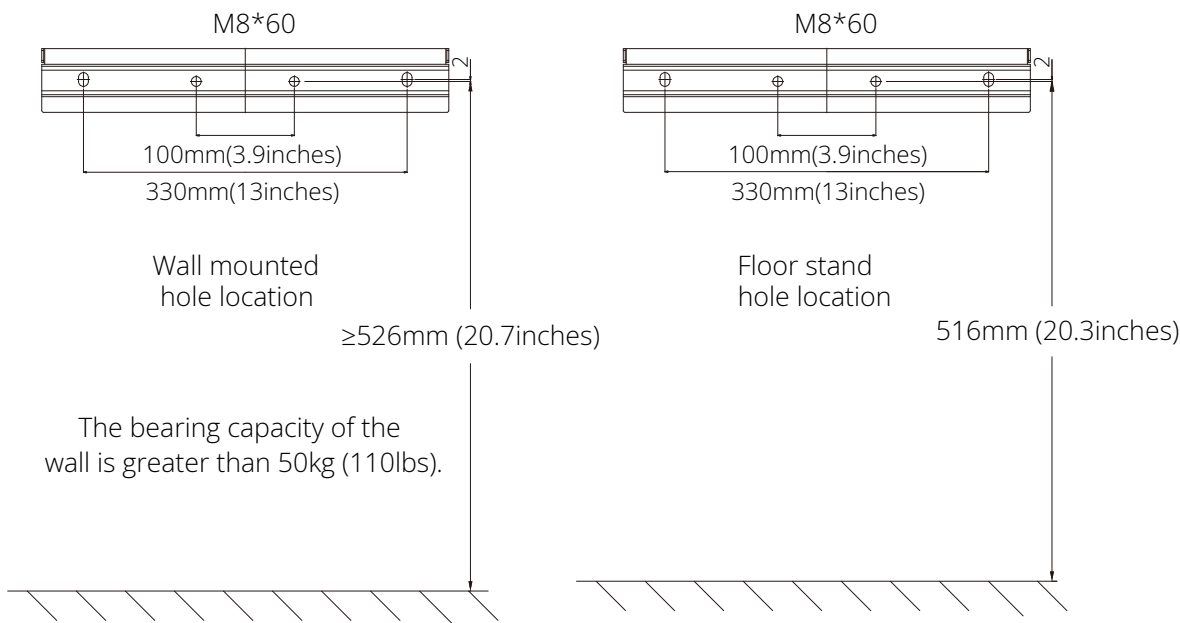
Minimum mounting distance between battery pack and equipment:



5.4.2 Installation Procedure

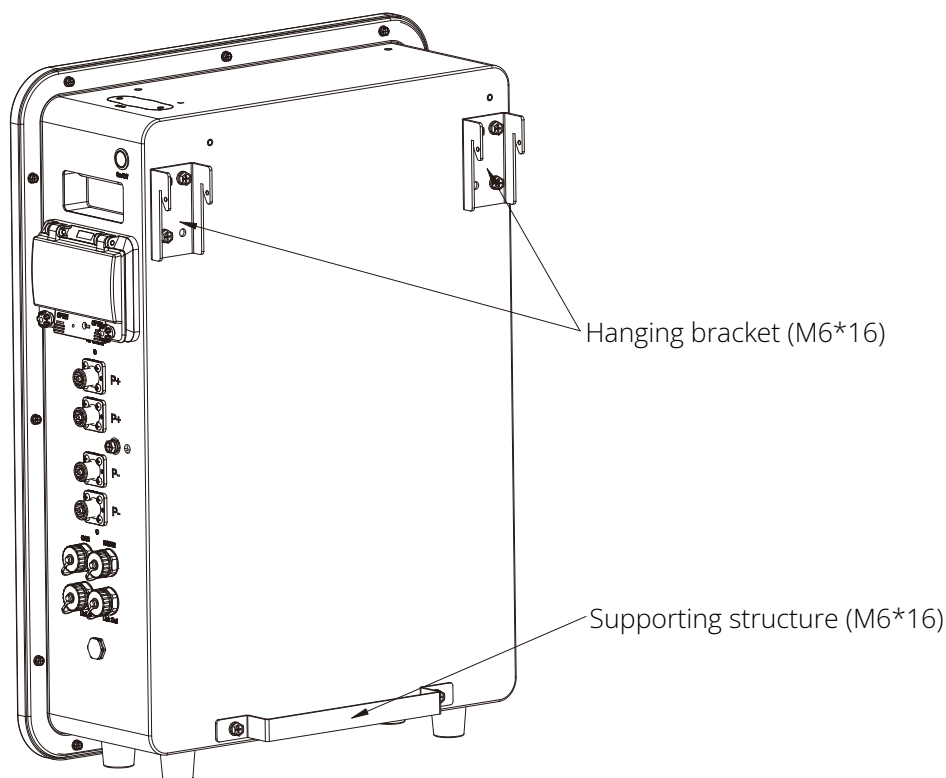
Step 1

Drill the holes with a 10mm (0.4inches) drill bit as follows and fix the wall bracket to the wall.



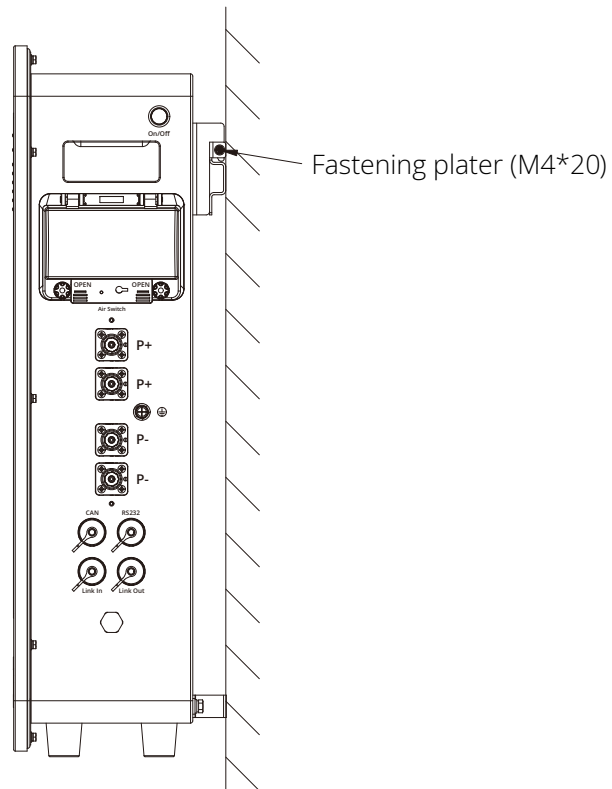
Step 2

Install the hanging bracket and the supporting structure.



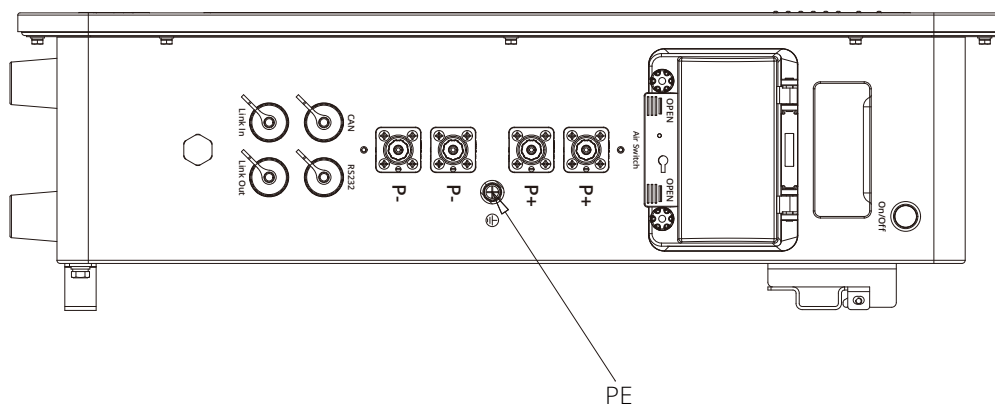
Step 3

Hang SUN-BATT-5.12-R-01 on the wall bracket and tighten it.



Step 4

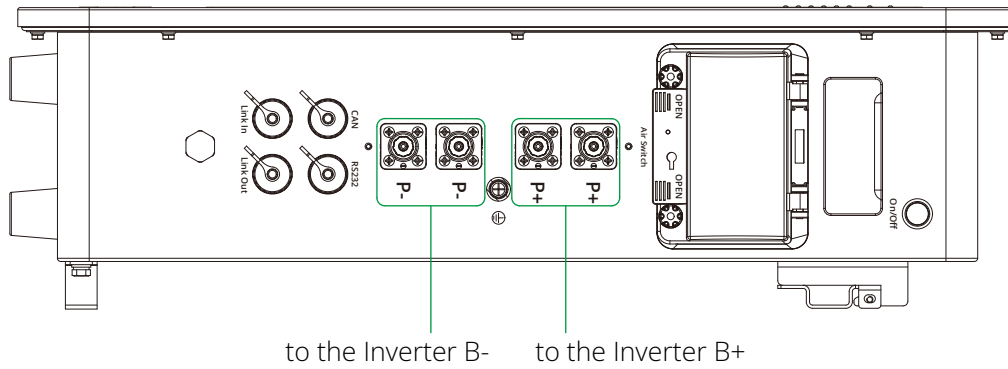
Connect to the ground.



Step 5

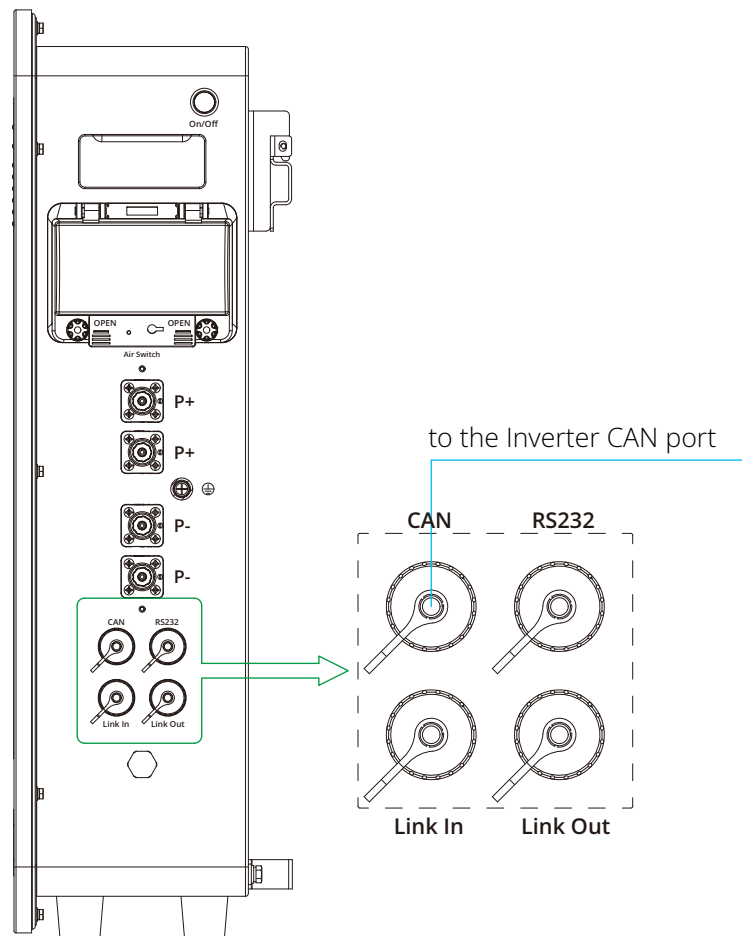
Connect the power cable.

Note that all switches are OFF before wiring.



Step 6

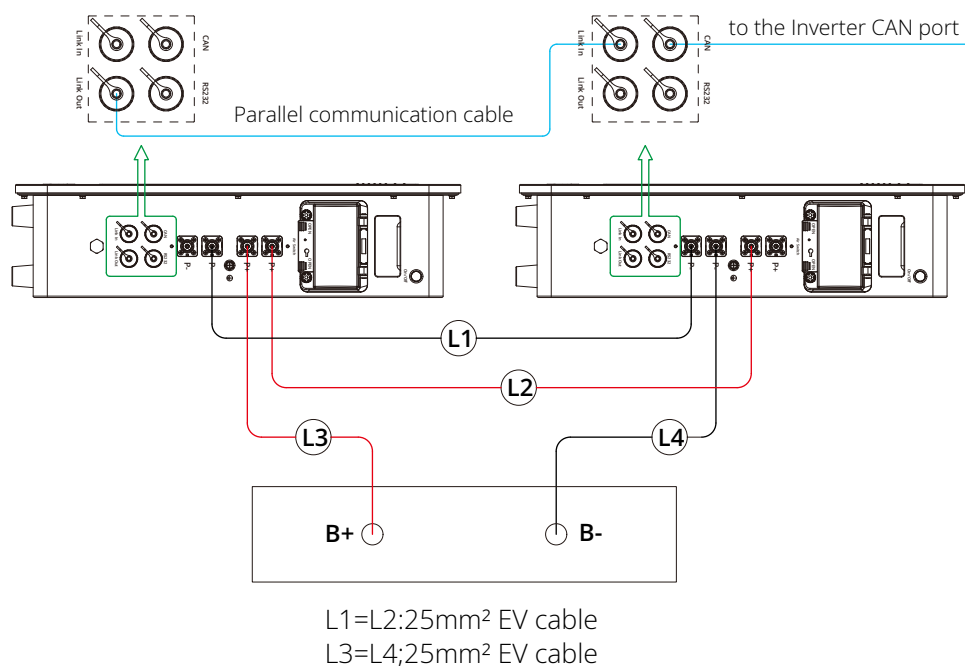
Connect the communication cable.



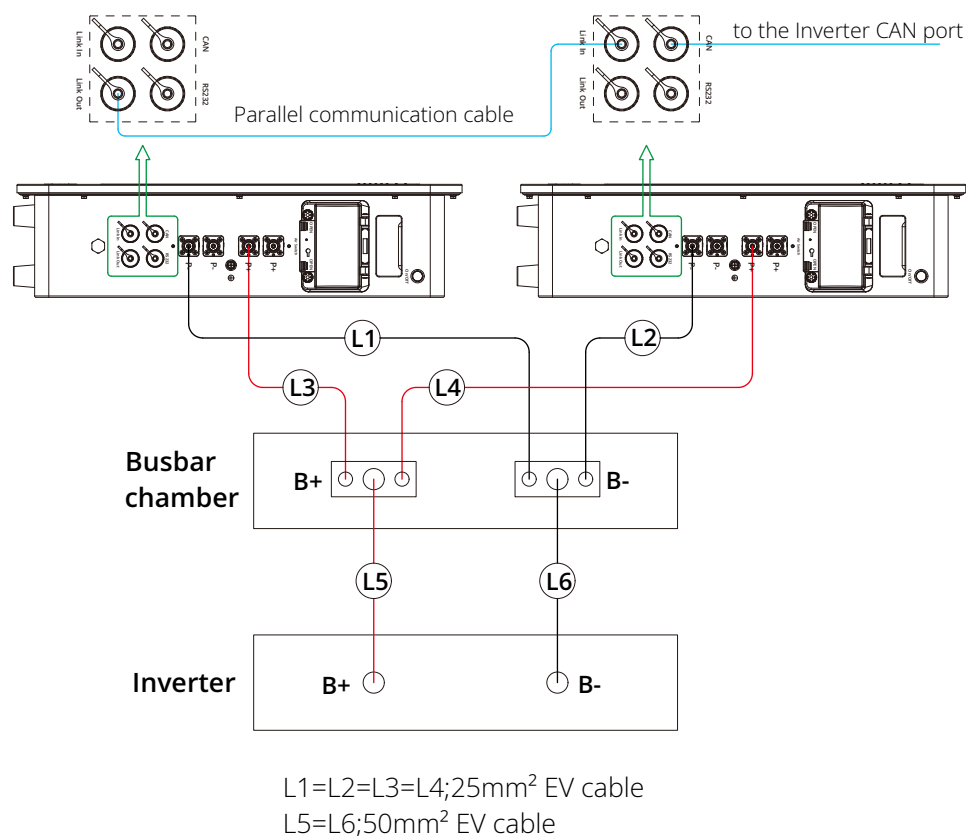
Step 7

When connecting the multiple batteries in parallel, use the wiring method shown below, and then install a Wi-Fi stick on the master unit.

Scheme One (Inverter Power $\leq 5\text{KW}$)



Scheme Two (Inverter Power $> 5\text{KW}$)



5.4.3 Power ON / OFF

1. Power ON

For a single SUN-BATT-5.12-R-01, switch on the Air switch and rocker switch, then press and hold the ON / OFF button for more than 3 seconds. The LED will flash, and the battery will begin normal operation. L1 to L6 display the battery SOC, and L7/L8 indicate the battery status.

For multiple SUN-BATT-5.12-R-01 units in parallel, switch on the Air switch and rocker switch of all batteries. Press and hold the ON / OFF button on the master battery for more than 3 seconds. The LED will flash, the system will automatically encode and assign IDs to each slave battery. The battery system will then begin normal operation.

2. Power OFF

Press and hold the ON / OFF button of the master battery for more than 3 seconds, then release the button, the master battery will shut down after all slave batteries enter the sleep mode. For a single SUN-BATT-5.12-R-01, simply switch off the rocker switch and Air switch. For multiple SUN-BATT-5.12-R-01 in parallel, switch off the rocker switch and Air switch of all slave batteries first. Then switch off the rocker switch and Air switch of the master battery.

6 MAINTENANCE

6.1 Recharge Requirements During Normal Storage

Storage temperature should be between -10°C to 35°C. If storage time is longer than 6 months, please charge battery every 6 months to 50% SoC (3LED) using 0.5C (50A) current.

Recharge Conditions When in Storage

Storage Environment Temperature	Relative Humidity of Storage Environment	Storage Time	SOC
Below -10°C	/	Prohibit	/
-10~25°C	5%~70%	≤12 months	30% <SOC≤60%
25~35°C	5%~70%	≤6 months	30%≤SOC≤60%
35~45°C	5%~70%	≤3 months	30%≤SOC≤60%
Above 45°C	/	prohibit	/

6.2 Recharge Requirements When Over Discharged

The over-discharged (90% DOD) battery should be recharged according to the following table, otherwise the over-discharged battery will be damaged.

Recharge Conditions When Battery is Over Discharged

Storage Environment Temperature	Storage Time	Note
-10~25°C	≤15 days	Battery Pack disconnected from PCS
25~35°C	≤7 days	
-10~45°C	<12 hours	Battery Pack connected to PCS

7 DISPOSAL OF THE BATTERY SYSTEM

Disposal of the battery must comply with the local applicable disposal regulations for electronic waste and used batteries.

- Do not dispose of the battery system with your household waste.
- Avoid exposing the batteries to high temperatures or direct sunlight.
- Avoid exposing the batteries to high humidity or corrosive atmospheres.



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