User Manual

RS-SH Series

Rechargeable Lithium battery

About This Manual

This manual details the requirements and procedures for the safe installation and operation of the lithium battery pack. Please read this manual carefully. Only qualified persons are permitted to install, operate, and maintain the system. Failure to do so may result in product damage or pose a risk to personal safety.

Failure to comply with the safety guidelines in this manual or violating the terms of the limited warranty will void the product's warranty and invalidate applicable certifications.

The information in this manual is accurate at the time of its issuance. TOPBAND reserves the right to change specifications (such as through optimization or upgrades) without prior notice. Please refer to the latest version of this document, accessible via the QR code. Additionally, please note that the diagrams and schematics in this document are for illustrative purposes and to aid in understanding system configuration and installation. Actual components may differ.

Legal Terms

Table of Contents

Revision History

Version	Revision Date	Revision Content	Person in Charge
V0.0		Draft version	
V1.0	2025.09.23	Released version	Ecosolex Product Solution

1. General Information

1.1. Validity

This document is valid for the RS-SH Series Battery Pack.

1.2. Personnel Requirements

This document is intended for qualified persons and end-users. Activities marked with a warning symbol and the caption "Qualified person" must only be performed by qualified individuals. Qualified persons must possess the following skills:

1) Knowledge of the operation and principles of lithium iron phosphate batteries.
2) Knowledge of the operation and principles of an energy storage system (including PV/battery/hybrid inverters, MPPT, meters, distribution boxes, etc.).
3) Knowledge of applicable local connection requirements, standards, and directives.
4) Training in the installation and commissioning of electrical devices and batteries.
5) Training in managing the dangers and risks associated with installing, repairing, and using electrical devices and batteries.

1.3. Levels of Warning Messages

To ensure the personal and material safety of users when using the product and to use the product more efficiently and correctly, the manual contains relevant information and uses the following symbols to highlight it. The following symbols may be used in this manual. Please read them carefully to make better use of this manual.

The following symbols may appear in this article, and their meanings are as follows:

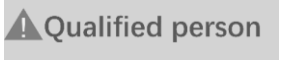
Symbol	Meaning
⚠ DANGER	To warn of urgent hazardous situations which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Used to warn of a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	Used to transmit warnings about devices or environmental safety Failure to avoid this may result in damage to the device, loss of data, reduced device performance or other unforeseeable consequences. Personal injury is not included.
NOTE	To highlight important/critical information, best practices, tips, etc. This is not a safety warning and there is no danger to people, equipment or the environment.

1.4. Symbol Description

1.4.1. Symbols on Product Labels

Label	Definition
	Beware of electrical shock.
	Do not place the battery in an area accessible to children or pets.
	Do not place the battery near heat sources or flammable materials.
	Do not expose the battery to direct sunlight, rain, or snow.
	Do not short-circuit the battery.
	The certification label for Safety by TÜV Rheinland.
	The UL1973 certification label for Safety by Intertek.
	The certification label for European EMC directives.
	The certification label for U.K. EMC directives.
	Recycle label.
	WEEE designation.

1.4.2. Other Symbols

Label	Definition
	Indicates activities that may only be performed by qualified persons.
	Grounding point.

1.5. Abbreviation Description

Abbreviation	Definition
Battery / Battery Pack / Battery Module	A single RS-SH rechargeable lithium iron phosphate battery pack, including cells, BMS, and enclosure.
Battery System / Cluster	Multiple RS-SH series battery modules connected in parallel with power, communication, and grounding cables.
BMS	Battery Management System: An electronic unit that ensures the safety of lithium cells and displays information or controls the battery's operating mode.
SOC	State of Charge: The percentage of the battery's remaining capacity relative to its rated capacity.
SOH	State of Health: The percentage of the battery's current full-charge capacity relative to its rated capacity.

2. Safety

2.1. Safety Precautions

DANGER	Explosion Risk ● Do not strike the battery with heavy objects. ● Do not crush or puncture the battery pack. ● Do not dispose of the battery pack in a fire.
WARNING	Fire Risk ● Do not expose the battery pack to temperatures exceeding 80°C. ● Do not place the battery near a heat source, such as a fireplace. ● Do not expose the battery pack to direct sunlight or rain.
CAUTION	Electric Shock Risk ● Do not allow non-qualified persons to disassemble the battery pack. ● Do not touch the battery pack with wet hands. ● Do not expose the battery pack to moisture or liquids.
NOTICE	Damage Risk ● Do not short-circuit or reverse the polarity of the battery. ● Do not use chargers or charging devices not approved by the manufacturer. ● Do not mix batteries from different manufacturers, or of different kinds, types, or brands.

2.2. Safety Instructions

The battery has been designed and tested in accordance with international safety requirements (e.g., UL, IEC, UN38.3). However, to prevent personal injury, property damage, and ensure the long-term operation of the battery, please read the following sections carefully to operate the battery correctly and handle emergencies.

2.2.1. Safety Gear

It is mandatory to wear the following safety gear when installing and handling the battery pack.

Insulated Gloves

Safety Goggles

Safety Shoes

2.2.2. Emergency Safety Measures

Water Ingress

Under safe conditions, first cut off the AC power supply to the system, and then disconnect all switches.

Electrolyte or Gas Leakage

If the battery pack leaks electrolyte or gas, avoid all contact with the substance. If exposed, take the following actions immediately:

Gas Inhalation: Evacuate the contaminated area and seek immediate medical assistance.

Eye Contact: Flush eyes with clean, running water for at least 15 minutes and seek immediate medical assistance.

Skin Contact: Thoroughly wash the exposed area with soap and water, ensuring no chemicals remain. Seek immediate medical assistance.

Ingestion: Induce vomiting and seek immediate medical help.:

⚠ WARNING	• In case of fire, use a carbon dioxide (CO_2) or dry powder fire extinguisher. Do not use liquid extinguishers.

2.2.3. Other Tips

All products are strictly inspected before shipment. If you notice any defects, such as swelling, please contact your supplier for a replacement.

Do not disassemble batteries or their components. The manufacturer is not responsible for any damage caused by unauthorized disassembly or repair.

Ensure the battery is safely grounded before use to guarantee safe and normal system operation.

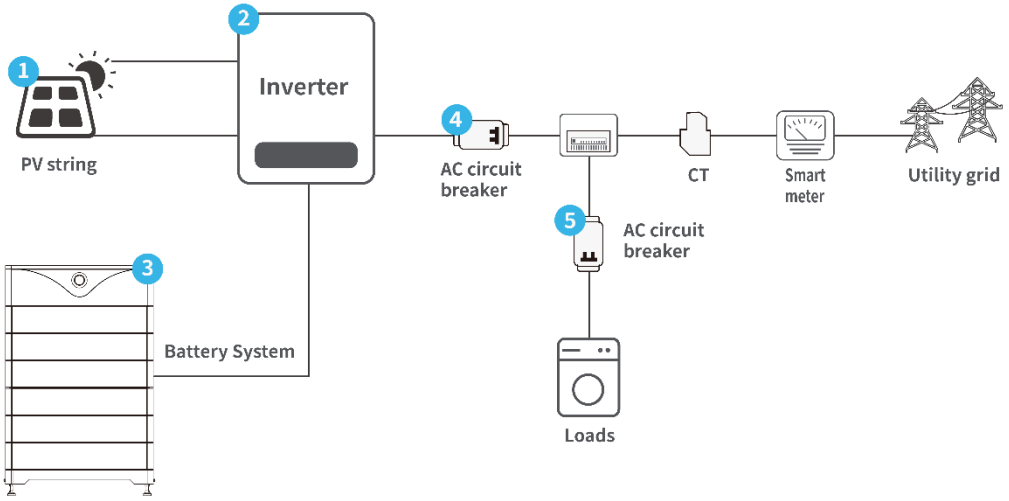
Before connecting the battery to other devices, ensure their electrical parameters are compatible.

Carefully consider environmental factors to ensure the system operates under suitable conditions, as the environment and storage methods impact the product's service life and reliability.

3. Product Overview

3.1. Introduction

The RS-SH series battery is designed for residential applications, serving as a storage unit within a photovoltaic (PV) system. It can be operated in on-grid, backup, and off-grid modes with compatible inverters. The diagram below shows a general schematic of an AC-coupled system with the batteries.



⚠ CAUTION	• *The electrical connections in this diagram are for illustrative purposes only. Please follow the manual's recommendations for all related devices and operate in accordance with locally applicable connection requirements, standards, and directives.*

3.2. Features

1) Maximum Safety: The battery utilizes LiFePO4 chemistry and complies with the highest international safety and transportation standards.
2) Modular and Flexible: Supports up to 8 batteries connected in parallel to expand system capacity.
3) Built-in Pre-charge Circuit: Prevents inrush current when connecting to various inverters/chargers.
4) High Depth of Discharge (DOD): Supports a maximum DOD of 96% for off-grid and backup applications.
5) Advanced BMS Protection: The built-in Battery Management System (BMS) provides warning and protection functions, including over-discharge, over-charge, over-current, short-circuit, and high/low temperature.
6) Long Cycle Life: LiFePO4 as the cathode material and an automatic cell balancing function ensure a longer cycle life.
7) Easy Installation: Features a modular design, compact size, and light weight for straightforward installation and maintenance.
8) Versatile Mounting: Multiple installation brackets are available to accommodate different customer requirements.

9) Remote Management: A CAN/RS485 port allows for external communication and BMS firmware upgrades

3.3. Specifications

3.3.1. Dimensions

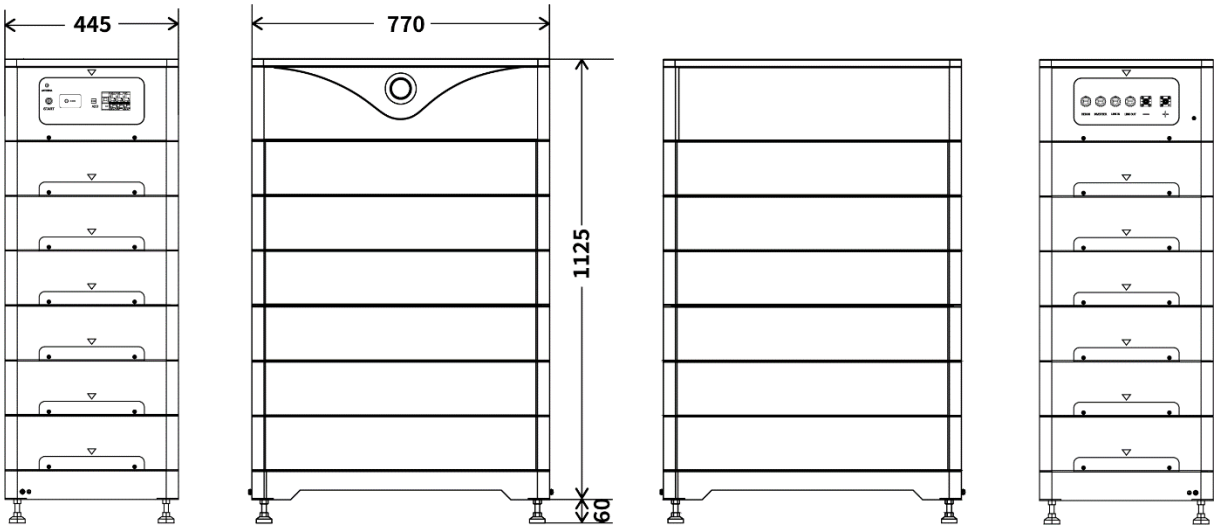


Figure 3.3-1 Battery System (unit: mm)

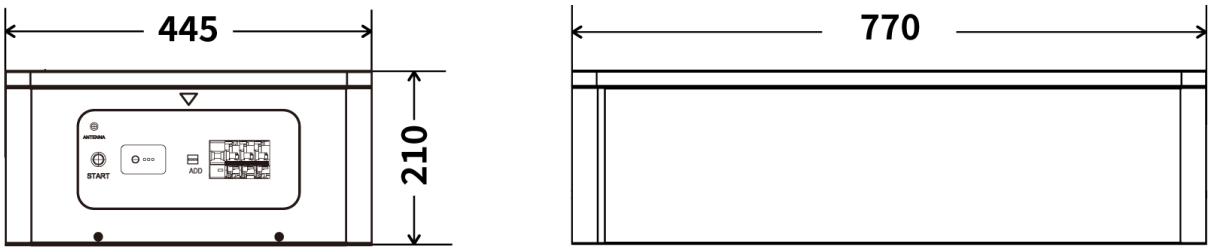


Figure 3.3-2 Battery Module (unit: mm)

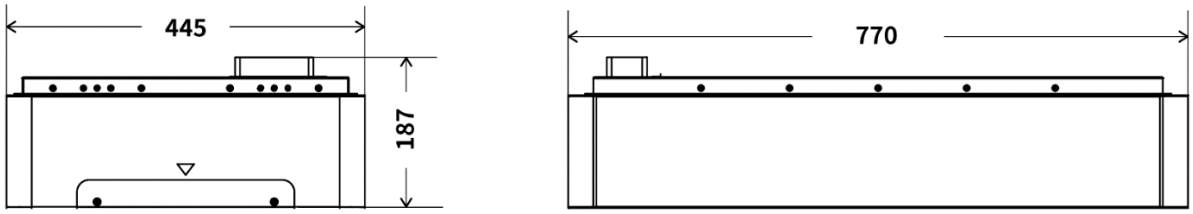


Figure 3.3-3 Control Module (unit: mm)

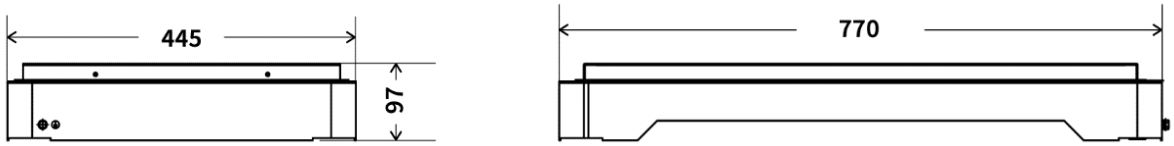


Figure 3.3-4 Base (unit: mm)

3.3.2. Parameters

Items	RS-SH20550C	RS-SH30750C	RS-SH41050C	RS-SH51250C	RS-SH61450
Cell Type	LiFePO4				
Managed Battery Capacity	50Ah				
Number of Battery Modules	2 (min)	3	4	5	6 (max)
Energy	10.24 kWh	15.36 kWh	20.48 kWh	25.60 kWh	30.72 kWh
Nominal Voltage	204.8V	307.2V	409.6V	512V	614.4V
Max Charge Current	50A				
Max Discharge Current	50A				
Operating Temperature	Charging: 0~50°C Discharging: -10~55°C				
Communication to Inverter	CAN/RS485				
APP	Supports APP Monitoring				
Active Balancing Current	2A				
Module Dimensions (L×W×H)	Battery Module: 760×400×150 mm Control Box: 760×400×219 mm				
System Dimensions (L×W×H)	760×400×685 mm	760×400×875 mm	760×400×1065 mm	760×400×1255 mm	760×400×1445 mm
Weight	165.5 kg	230.5 kg	295.5 kg	360.5 kg	425.5 kg
Altitude	≤ 4000 m				
Cycle Life	6000 Cycles @25°C, 60% EOL, 0.2C charge & 0.5C discharge, 90% DOD				
Relative Humidity	5%～90%				
Protection Rating	IP65				
Design Life	10 years				
Installation	Stack Mounting				
Relative Humidity	5%～90%				

3.3.3. Appearance

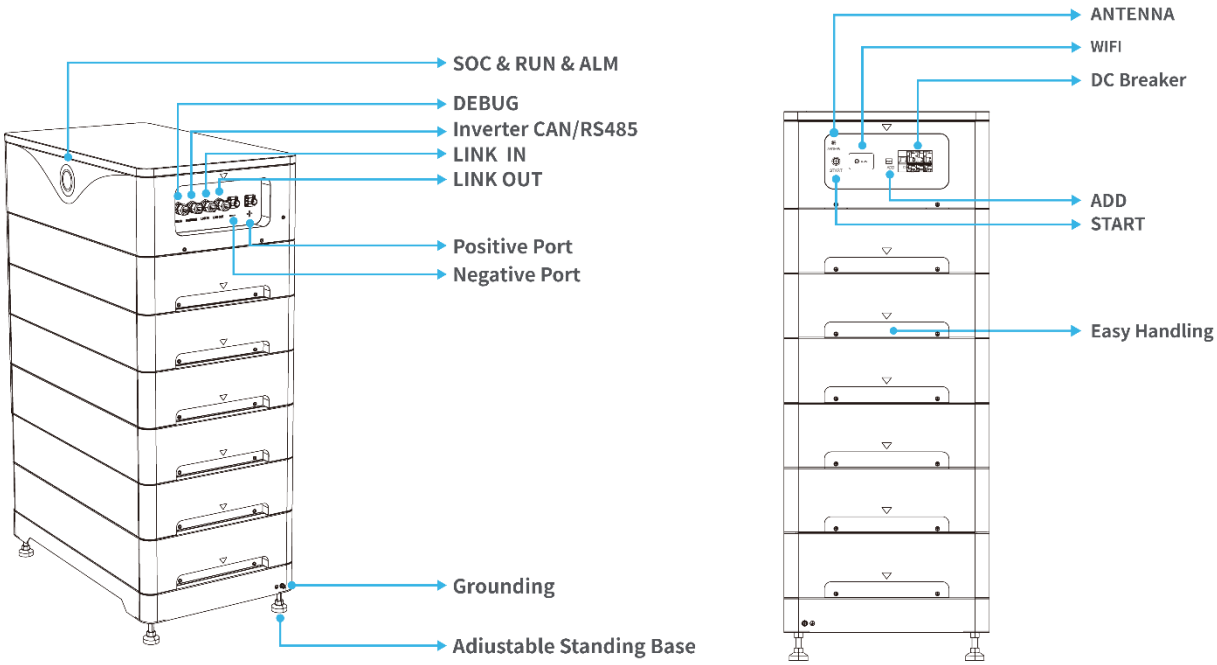


Figure 3.3-5 RS-SH battery appearance

3.3.3.1. DEBUG Port

Port	Pin No.	Definition	Remarks
DEBUG	1	BMU_CANH	For communication during debugging.
	2	BMU_CANL	
	3	NC	
	4	Inverter_CANH	
	5	Inverter_CANL	
	6	NC	
	7	BAU_CANH	
	8	BAU_CANL	

3.3.3.2. INVERTER Port

Port	Pin No.	Definition	Remarks
Inverter CAN/RS485	1	NC	For communication between battery and inverter.
	2	NC	
	3	NC	
	4	Inverter_CANH	
	5	Inverter_CANL	
	6	NC	

	7	Inverter_RS485A	
	8	Inverter_RS485B	

3.3.3.3. LINK IN Port

Port	Pin No.	Definition	Remarks
Parallel Port	1	Parallel_CANH	For communication between parallel battery systems.
	2	Parallel_CANL	
	3	NC	
	4	NC	
	5	NC	
	6	NC	
	7	NC	
	8	NC	

3.3.3.4. LINK OUT Port

Port	Pin No.	Definition	Remarks
Parallel Port	1	Parallel_CANH	For communication between parallel battery systems.
	2	Parallel_CANL	
	3	NC	
	4	NC	
	5	NC	
	6	NC	
	7	NC	
	8	NC	

3.3.3.5. Indicator Lights

<table>
<tr><th colspan="2">Status</th><th colspan="10">Charging</th></tr>
<tr><th colspan="2">Capacity Indicator Lights</th><th>L1</th><th>L2</th><th>L3</th><th>L4</th><th>L5</th><th>L6</th><th>L7</th><th>L8</th><th>L9</th><th>L10</th></tr>
<tr><td rowspan="8">ChargingBlinking Frequency：0.25S ON/ 0.25s OFF

Discharging Blinking Frequency：0.5s ON/ 0.5s OFF</td><td>0~10%</td><td colspan="10">Running lights</td></tr>
<tr><td>10~20%</td><td>Steady ON</td><td colspan="9">Running lights</td></tr>
<tr><td>20~30%</td><td colspan="2">Steady ON</td><td colspan="8">Running lights</td></tr>
<tr><td>30~40%</td><td colspan="3">Steady ON</td><td colspan="7">Running lights</td></tr>
<tr><td>40~50%</td><td colspan="4">Steady ON</td><td colspan="6">Running lights</td></tr>
<tr><td>50~60%</td><td colspan="5">Steady ON</td><td colspan="5">Running lights</td></tr>
<tr><td>60~70%</td><td colspan="6">Steady ON</td><td colspan="4">Running lights</td></tr>
<tr><td>70~80%</td><td colspan="7">Steady ON</td><td colspan="3">Running lights</td></tr>
</table>

	80~90%	Steady ON	Running lights
	90~100%	Steady ON	Running lights

Status		**Discharging**									
Capacity Indicator Lights		**L1**	**L2**	**L3**	**L4**	**L5**	**L6**	**L7**	**L8**	**L9**	**L10**
ChargingBlinking Frequency: 0.25S ON/ 0.25s OFF Discharging Blinking Frequency: 0.5s ON/ 0.5s OFF	0~10%	Blinking	Off								
	10~20%	Steady ON	Blinking	Off							
	20~30%	Steady ON	Blinking	Off							
	30~40%	Steady ON		Blinking	Off						
	40~50%	Steady ON			Blinking	Off					
	50~60%	Steady ON				Blinking	Off				
	60~70%	Steady ON					Blinking	Off			
	70~80%	Steady ON						Blinking	Off		
	80~90%	Steady ON								Blinking	Off
	90~100%	Steady ON									Blinking

4. Installation

4.1. Preparation

4.1.1. Safety Compliance

Qualified person(s) must complete the system installation. Throughout the installation process, strictly adhere to local safety regulations and related operating procedures.

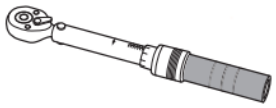
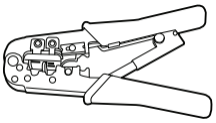
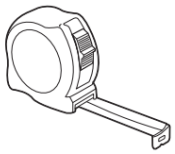
4.1.2. Environment

The operating environment must meet the following requirements:

Category	Description
Application Scenarios	Residential & Commercial Energy Storage Systems
Operating Environment	Indoor, away from strong electromagnetic radiation
Installation Site	At least 2 km from the coast (to avoid high salt spray)
Ambient Temperature	-10°C to 40°C (14°F to 104°F)
IP Grade	IP65
Storage Temperature	Short-term (≤1 month): -20°C to 45°C (-4°F to 110°F) Long-term (≥1 month): 5°C to 35°C (41°F to 95°F)
Operating Humidity	0% to 85% RH
Installation Altitude	≤ 4000 m
Safety Requirements	* Do not expose to direct sunlight, rain, or snow. * Keep out of reach of children and pets. * Keep away from heat sources and flammable materials. * Do not drop, deform, impact, cut, or pierce with sharp objects. * Do not place heavy objects on the battery. * Do not disassemble without manufacturer's permission. * Prevent contact with conductive dust, water, or other liquids. * Follow emergency measures for water ingress or leaks. * Contact your supplier within 24 hours of any product failure.

4.1.3. Tools

Tools	
Torque screwdriver 	Multi-meter 

Torque wrench 	Cable crimper 
Phillips-head screwdriver 	Tape measure 
Phillips-screwdriver bit 	Drill 

4.2. Inspection

4.2.1. Unpacking

When the equipment arrives, load and unload it according to specified requirements, protecting it from sun and rain.

Before unpacking, check and confirm the contents (quantity, appearance, etc.) against the "Scope of Delivery."

Handle items with care during unpacking to protect surface coatings.

If the inner packing is damaged, document the issue and provide feedback to the manufacturer.

4.2.2. Packing List

Verify the battery package contents, including type, quantity, appearance, and other components.

Parts	QTY	Photo
M4 * 14 outer hexagon screw	28pcs	
M4 * 10 outer hexagon screw	4pcs	

Arched sheet metal part	2pcs	
Connecting cable from BAT+ to inverter	1pcs	
Connecting cable from BAT- to inverter	1pcs	
Wall-mounted support bracket	2pcs	
Expansion screw	2PCS	
Waterproof plug	4PCS	

NOTICE	• Users often equip inverters from different brands, which may require different communication cables. Inform your dealer of the inverter brand (e.g., SMA, Fronius, Goodwe, Growatt, Solis, Megarevo, Luxpower, SAJ) before installation to ensure compatibility and avoid mismatches.

4.3. Installation Commencement

⚠Qualified person

4.3.1. Reminders

Before starting, double-check that the following conditions are met:

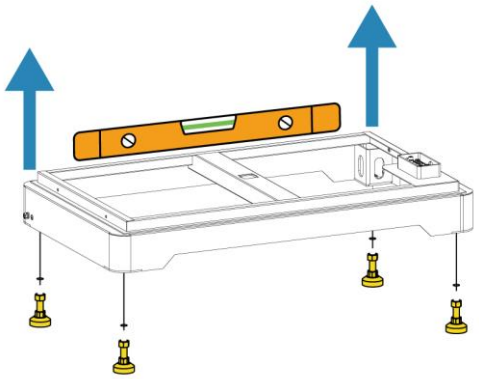
1) Sufficient space for installation and adequate load-bearing capacity of the mounting surface.
2) Power cables are sized correctly for the maximum operating current.
3) The overall layout of power equipment and batteries is reasonable.
4) The installer is wearing an anti-static wristband.
5) At least two people are present for the installation work.
6) The installation site is free of potential risks like flooding, direct sun exposure, corrosion, and high salt spray.

4.3.2. Procedures

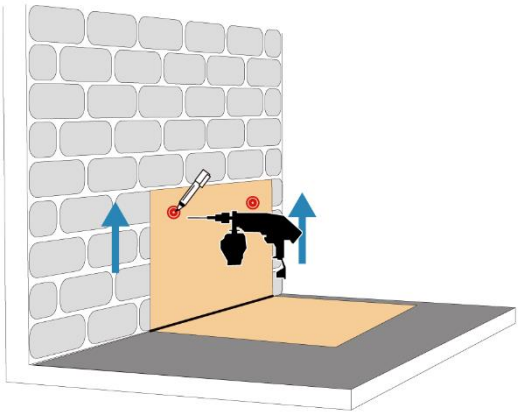
⚠ CAUTION	• Injuries may result if the product is lifted incorrectly or dropped. Always wear suitable personal protective equipment for all work on the product.

4.4. Installation Steps

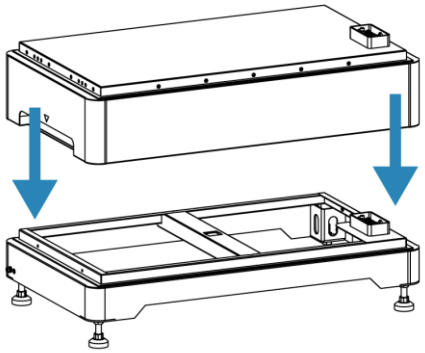
Step 1: Install and level the feet on the base, then secure the base in its final position.



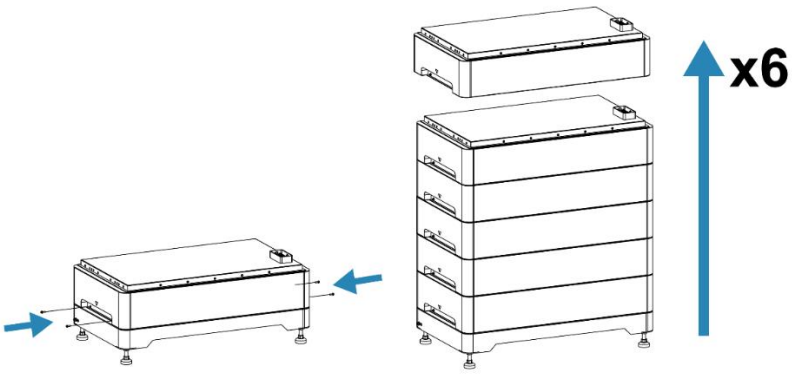
Step 2: Position the marking template against the wall. Mark the locations for the mounting holes and drill them using an impact drill.



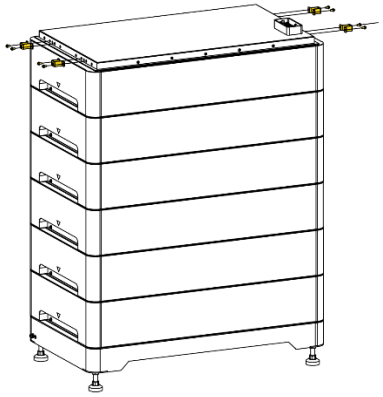
Step 3: Unpack and install the first battery module onto the base, ensuring its orientation is correct. Secure the module to the base using the M4x14 parallel connection screws.



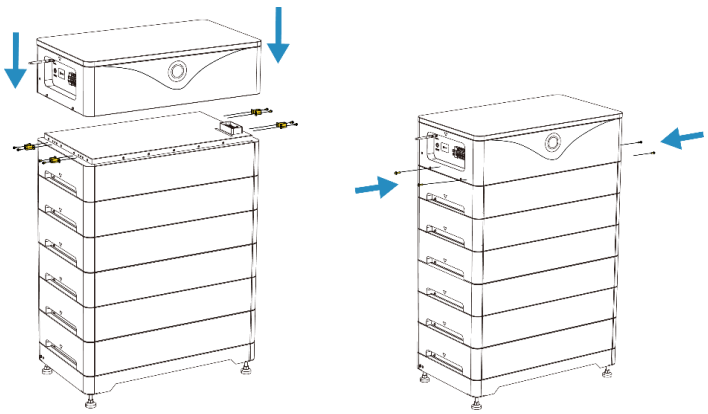
Step 4: Install the remaining battery modules sequentially. Secure the parallel connection screws on both sides of each module before installing the next one.



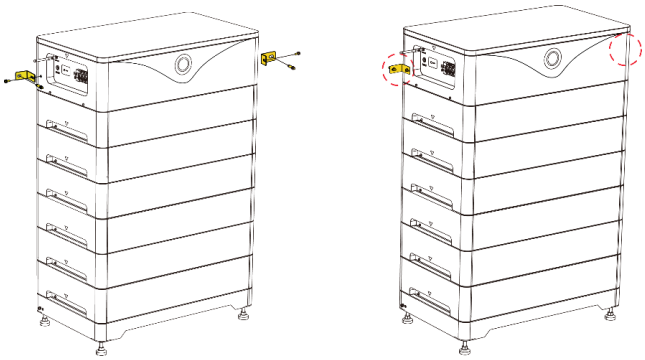
Step 5: Install the parallel connection bracket between the top battery module and the Control Module.



Step 6: Place the Control Module on top of the battery stack, aligning its orientation. Secure it using the M4x10 parallel connection screws.



Step 7: Install the wall-mounted brackets and fasten them using M6x16 expansion screws to complete the physical installation.



NOTICE

- This series supports a maximum stack of 4 battery modules. Stacking more than 4 modules can cause damage and will void the warranty.
- Do not mix old and new battery modules. All modules in a system must be from the same batch. Mixing modules will negatively affect the consistency, capacity, and cycle life of the battery system.

5. Cable Connection and Commissioning

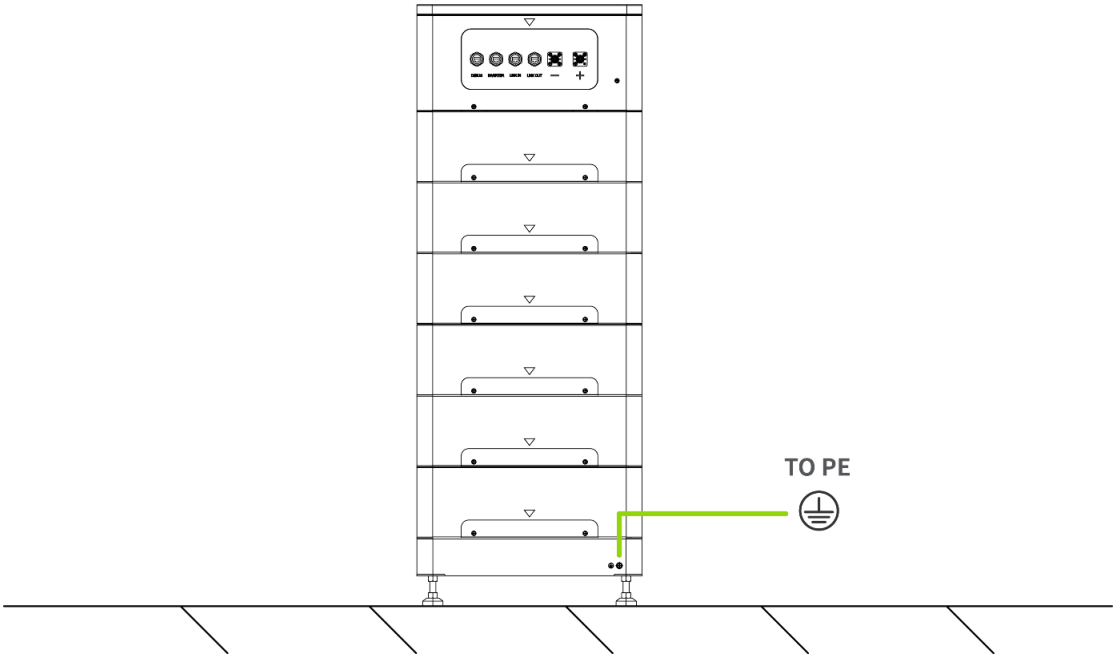
⚠Qualified person

5.1. Preparing the Battery

1) Ensure all battery modules are in the OFF mode.
2) Verify that the installation is tight and stable.
3) Check that the cable kit accessories are correct per the scope of delivery. If making cables yourself, follow the manufacturer's requirements.
4) Before wiring, switch on each battery individually to check for any alarm or protection information. If any issues are found, refer to the troubleshooting section. Then, switch off all batteries.

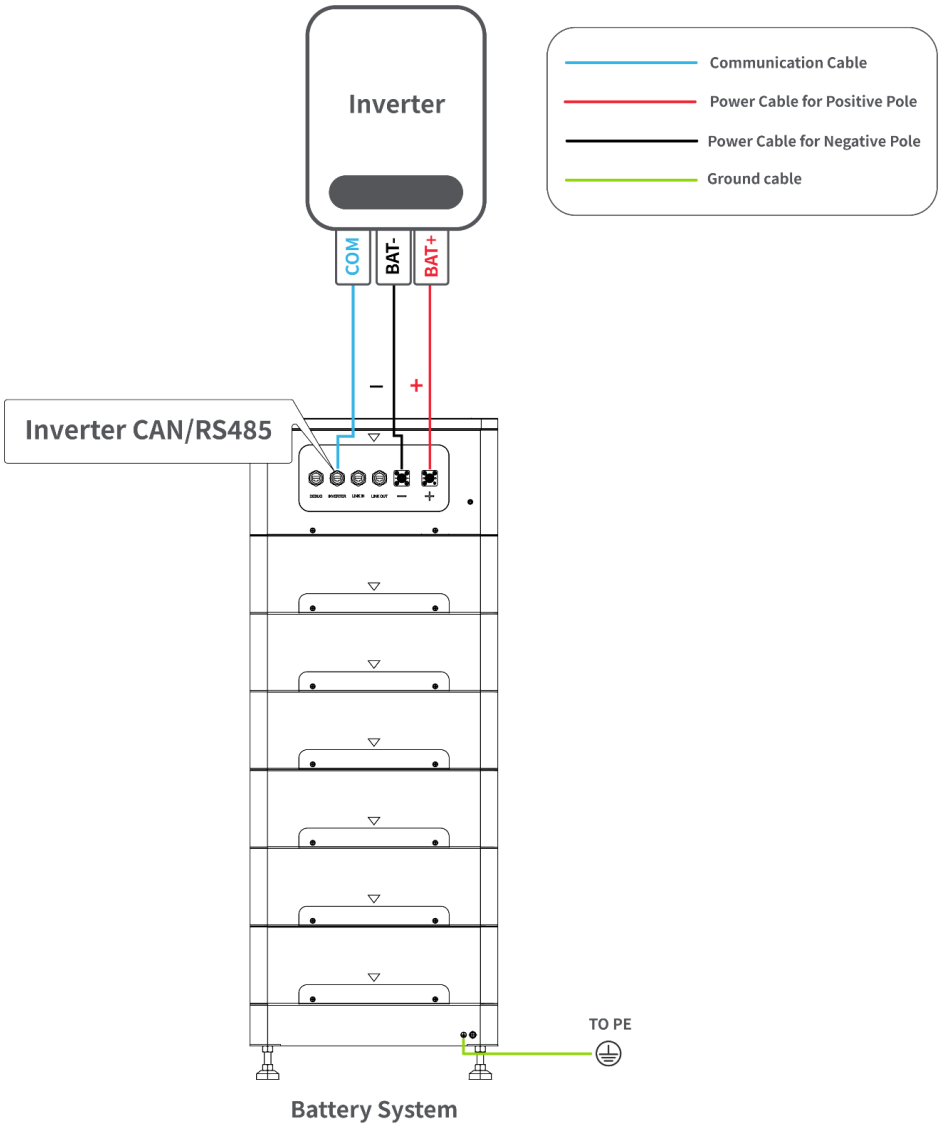
5.2. Grounding Cable Connection

The grounding point for the battery system is located on the base. The ground cable must be at least 10 AWG.



5.3. Single Battery System Connection

The following illustration shows how to connect a single battery system to an inverter.

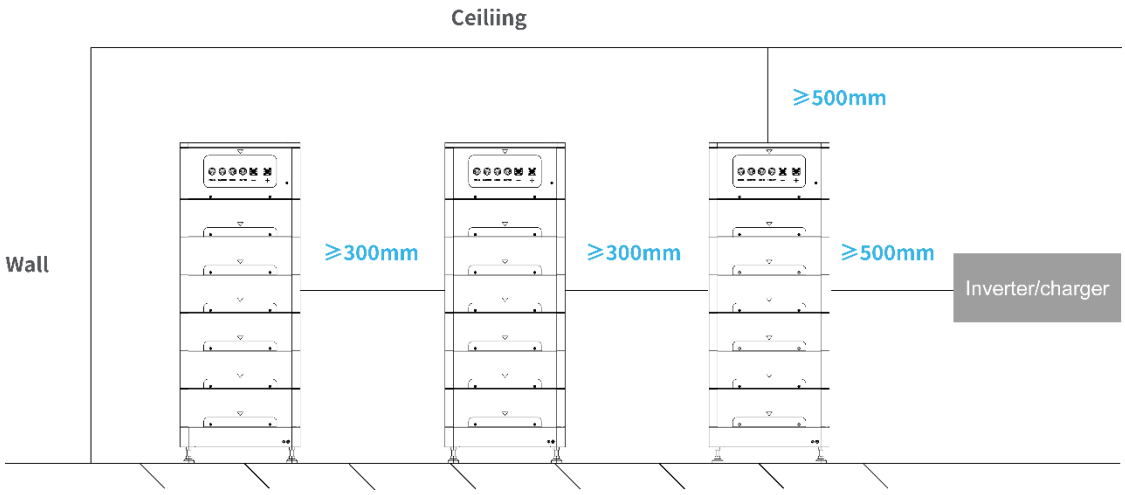


⚠ CAUTION	● Verify the polarity at all connections with a voltmeter before energizing the system. Reverse polarity at the battery terminals will destroy the batteries and void the warranty. Do not short-circuit the batteries.

5.4. Multi-Cluster Connection

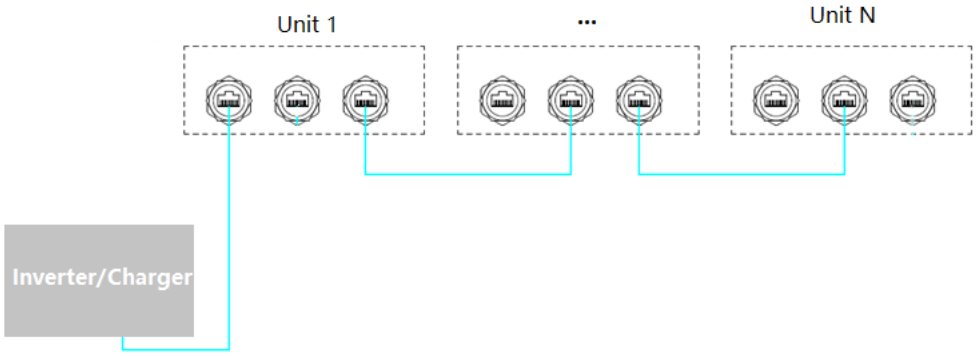
5.4.1. Recommended Installation Clearance

When connecting multiple battery units, maintain a minimum clearance of 12 inches (300mm) between the sides of adjacent units or walls. Keep a minimum clearance of 20 inches (500mm) between the top of the battery unit and the inverter or ceiling.



5.4.2. Communication Port Connection

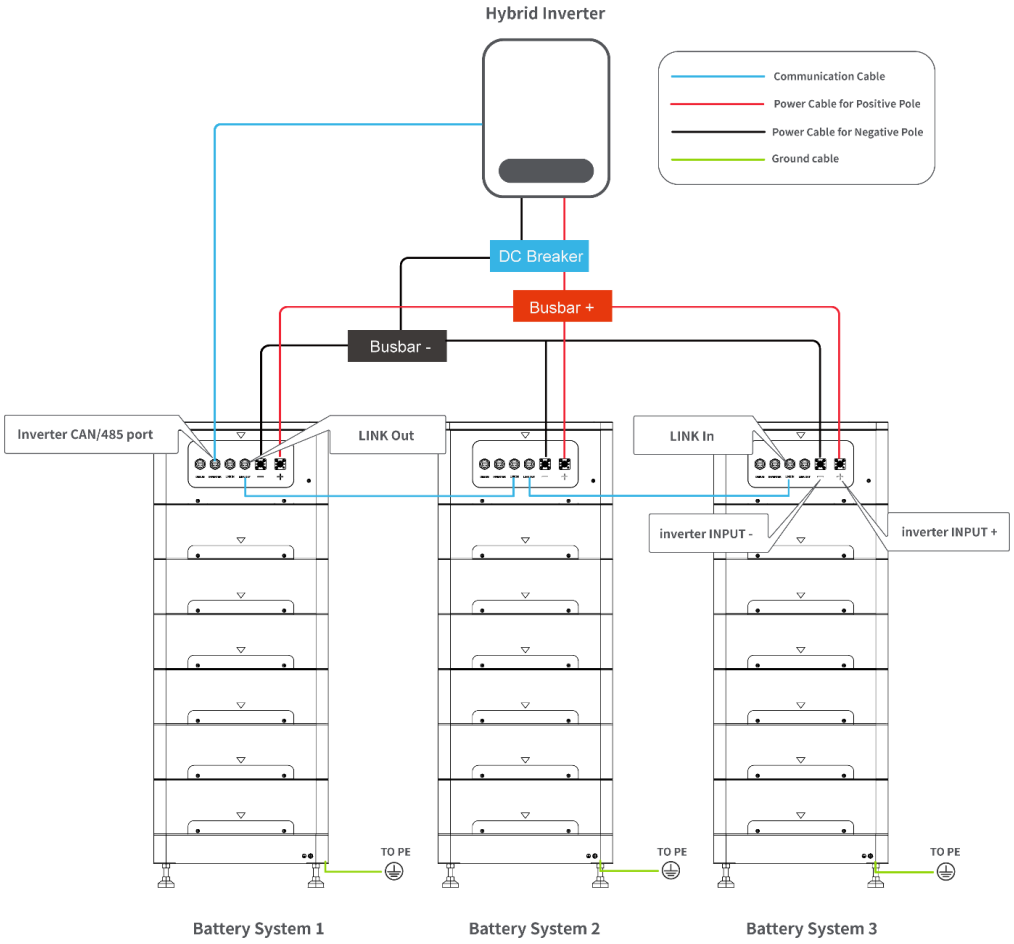
For parallel operation of multiple battery systems, use the following communication wiring method:



⚠ CAUTION	• Verify the polarity at all connections with a voltmeter before energizing the system. Reverse polarity at the battery terminals will destroy the batteries and void the warranty. Do not short-circuit the batteries.

5.4.3. Wiring the Battery Cables

When connecting multiple battery systems in parallel, use the following wiring method to a common busbar.



⚠ CAUTION	• For parallel connections, ensure that the wire lengths and gauges are identical from each battery terminal to the common busbar to ensure balanced performance.

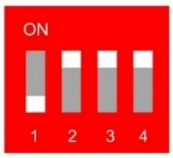
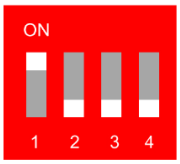
5.5. Commissioning

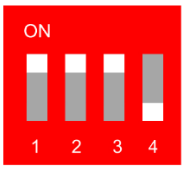
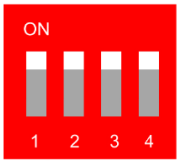
DIP Addressing

NOTE	• Only the master battery needs its Protocol ID set via the DIP switches. Keep all slave batteries at their default settings. After selecting the Protocol ID, the battery will automatically detect the inverter and begin operation. A restart is required for new DIP switch settings to take effect.

	CANBUS Connection				DIP setting (Master battery)
1	2	3	4	Inverter	

0	0	0	0	GOODWE	 X0000
0	0	0	1	Megarevo	 X0001
0	0	1	0	SAJ	 X0010
0	0	1	1	NC	 X0011
0	1	0	0	Deye	 X0100
0	1	0	1	SOFAR	 X0101
0	1	1	0	Solis	 X0110

0	1	1	1	NC	 X0111
1	0	0	0	Sinexcel	 X1000
1	0	0	1	ATESS	 X1001
1	0	1	0	NC	 X1010
1	0	1	1	KELONG	 X1011
1	1	0	0	Afore	 X1100
1	1	0	1	NC	 X1101

1	1	1	0	NC	 X1110
1	1	1	1	NC	 X1111

NOTICE

- Failure to follow the DIP switch settings will cause a communication fault between the battery and the inverter. For detailed settings with different inverters/chargers, please consult your supplier.

5.6. Connecting to Wi-Fi

Download the Ecosolex Home app and follow its user manual to connect to Wi-Fi.

Method 1: Download and install the app from your device's app store.

Method 2: Scan the QR code to download and install the app.

Scan the separate QR code to view the app user manual.

5.7. Powering On the Unit

1) Switch on all battery modules.
2) Turn on the breaker between the inverter and the battery (if present), then turn on the inverter/charger.
3) Complete the necessary settings on the inverter/charger or other control devices.
4) If all checks are correct, the system is ready for use.

⚠ CAUTION	• Before starting the battery system, confirm that all connections between the battery system and the inverter are correct.

5.8. Powering Off the System

1) Turn off the inverter.
2) Turn off the disconnection breaker (if present).
3) Turn off all battery modules using their signal switches.

⚠ CAUTION	• If the battery system will be unused for an extended period or in case of a fault, it is necessary to power it off promptly.

6. Protective Circuit Specifications

The Battery Management System (BMS) monitors and optimizes each cell during charging and discharging to protect the battery pack from over-charge, over-discharge, short-circuits, etc.

No	Item		Description
1	Over-Charge Protection	Over-charge alarm for each cell	3.55±0.03V
		Over-charge protection for each cell	3.60±0.03V
		Over-charge release for each cell	3.34±0.03V
		Over-charge alarm for total voltage	3.6V per cell
		Over-charge protection for total voltage	3.65V per cell
		Over-charge release for total voltage	3.40V per cell
		Protection delay time	2s
		Over-charge release method	Under the release voltage
2	Over-Discharge Protection	Over-discharge alarm for each cell	3.1±0.03V
		Over-discharge protection for each cell	2.70±0.03V
		Over-discharge release for each cell	3.15±0.03V
		Over-discharge alarm for total voltage	2.90V per cell
		Over-discharge protection for total voltage	2.70V per cell
		Over-discharge release for total voltage	3.15V per cell
		Protection delay time	2s
		Over-discharge release method	Charge to recovery
3	Over-Current Protection	Charge over current alarm	55±5A
		Charge over current protection	60±5A
		Protection delay time	5±1s
		Charge over current release method	Auto release after 1min；
		Discharge over current alarm	55±5A
		Discharge over current protection	60±5A
		Protection delay time	5±1s
		Over current release method	Auto release after 1min
4	Charge Over-Temperature	Alarm: 50±3°C; Protection: 55±3°C; Release: 45±3°C; Delay: 2s	
5	Discharge Over-Temperature	Alarm: 60±3°C; Protection: 65±3°C; Release: 55±3°C; Delay: 2s	
6	Charge Low-Temperature	Alarm: 3±3°C; Protection: 0±3°C; Release: 5±3°C; Delay: 2s	
7	Discharge Low-Temperature	Alarm: -15±3°C; Protection: -20±3°C; Release: -10±3°C; Delay: 2s	
8	Low SOC	Alarm at 10% SOC	

7. Troubleshooting Guide and Summary

7.1. Troubleshooting

Fault	Possible Cause	Solution
Indicator Off & No Power Output	Battery module or base is not installed correctly.	Reinstall correctly.
	Battery or Control Module has failed.	Check connectors and replace the faulty module.
	Battery voltage is too low.	Ensure at least two battery modules are installed.
Red Light On & No Power Output	Communication failure between battery modules.	Reinstall modules correctly or replace the faulty module.
	BMU failure.	Replace the BMU.
	Battery High Voltage.	Reduce charging voltage or stop charging.
	Battery Low Voltage.	Charge the battery immediately.
	Battery High/Low Temperature.	Stop operation until the battery temperature returns to the normal range.
	Charge/Discharge Over-Current.	Reduce charging current or load. The battery will auto-release after 1 minute.
	Battery Short-Circuit.	Check external power wiring and eliminate the short-circuit. Ensure the correct startup sequence.
	Relay Adhesion.	Replace the relay.

NOTICE

- If the problem persists after troubleshooting, please contact the manufacturer.

7.2. Key Points Summary

1) Each Lithium Battery contains circuitry that protects the cells from overcharging, over-discharging, and excessive current. If specified values are exceeded, the battery will enter a protective shutdown state.

2) If the battery enters self-protection mode, it may show negligible voltage until reset. In some cases of long-term disuse, a manual charge may be needed. Contact TOPBAND for technical support if this occurs.

3) Although the battery has internal protection, it must always be installed with a charge controller set to the appropriate parameters to protect it from open PV voltage and other high-voltage sources.

4) Grid-Tied Systems: After installation, test the entire system. Once testing is complete, disconnect the batteries from the load center until your local utility inspector is ready to commission the system. The monitoring systems can drain the batteries over time if the system is not fully operational.

5) Off-Grid Systems: Do not connect the batteries until the entire system is ready for full operation.

6) Chemical Degradation: Batteries utilize a chemical reaction, and their performance will deteriorate over time, even during storage. If usage conditions (charge, discharge, ambient temperature) are not maintained within the specified ranges, the battery's life expectancy may be shortened. A significantly reduced discharge time after a full charge indicates that the battery may need to be replaced..

8. Transport and Storage

1) During transportation, avoid violent shaking, impact, or crushing, and protect from sun and rain.
2) Handle with care during loading and unloading. Prevent dropping, rolling, and heavy pressure.
3) For long-term storage, place the battery in a dry, clean, dark, and well-ventilated indoor environment. The recommended storage temperature is 15°C to 30°C.
4) The storage location must be free of harmful gases, flammable or explosive products, and corrosive chemical substances.
5) Batteries should be stored and transported at approximately 50% SOC. Do not store at over 80% SOC for long periods.
6) If stored for a long time, the battery must be charged every 6 months.
7) Do not drop the batteries. Do not stack them more than 6 layers high, and always keep them face up.

9. Battery Disposal

Disposal of this battery must comply with local applicable regulations for electronic waste and used batteries. Please review your local battery recycling or management regulations or contact your supplier for more information.