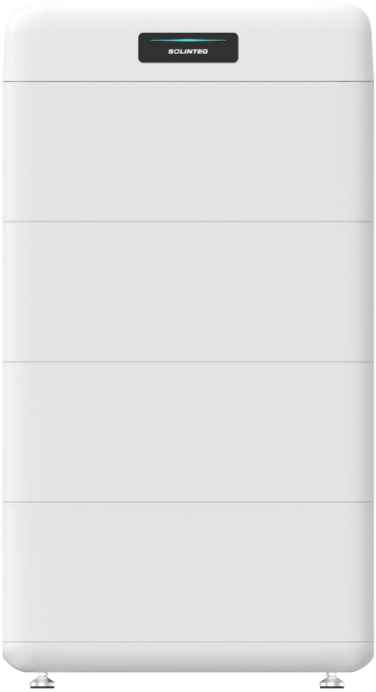
SOLINTEG
INTEGRATE SOLAR INTELLIGENTLY

INTEG E STORAGE SYSTEM

E2BS-B6K0/B9K0-D



User Manual

E2BS-B9K0-D-UMEN-00

Contents

Contents I
1. About This Manual 1
1.1. Purpose 1
1.2. How to Use This Manual 1
1.3. Target Groups 1
1.4. Symbols 1
2. Safety Instructions 2
2.1. General Statement 2
2.2. Personnel Safety 2
2.3. General Safety Statements 3
2.4. Preventive Statements 3
3. Product Description 5
3.1. Appearance 7
3.2. Symbols on the Battery 10
3.3. Current Limiting Declaration 11
4. Unpacking and Storage 12
4.1. Packing List 12
4.2. Storage Considerations 14
4.3. Safe Transport Instruction 14
5. Installation 15
5.1. Location 15
5.2. Installation Angle 16
5.3. Installation Tools & Materials 16
5.4. Moving the battery 17
5.5. Installing the battery 18
6. Electrical Connection 23
6.1. Safety Instructions 23
6.2. Wiring Tools and Materials 23
6.3. External Grounding Connection 24
6.4. Power Cable Connection 25
6.5. Communication Cable Wiring 26
7. Commissioning 28
7.1. Pre-Commissioning Inspection 28
7.2. Single-Unit Commissioning 28

7.3. Black Start····· 28
7.4. Shutting Down the Battery····· 29
8. Operation····· 30
Indicator····· 30
9. Troubleshooting····· 31
10. Operation and Maintenance····· 53
10.1. Routine Inspection····· 53
10.2. Periodic Maintenance····· 54
10.3. Battery Charge/Discharge Maintenance····· 54
11. End-of-Life Battery Disposal····· 55
Appendix····· 56
Technical Parameters····· 56

1.About This Manual

1.1.Purpose

This manual is an integral part of Solinteg E2BS-B9K0-D series energy storage batteries (hereinafter referred to as the battery). It mainly introduces the safety instructions, mechanical installation, electrical connection, debugging, operation, maintenance, and troubleshooting of the products. Please read this instruction carefully before installation.

The products, services, or features you purchase are subject to the commercial contracts and terms of Solinteg. All or part of the products, services, or features described in this document may not be within the scope of your purchase. This document serves only as a guide to use, and all statements, information, and recommendations in this document do not constitute any express or implied guarantee.

1.2.How to Use This Manual

Before installing and using battery, please read this manual carefully, understand the safety information and be familiar with the functions and characteristics of battery.The manual content of subsequent versions of the battery may be subject to change. The latest manual can be found at www.solinteg.com.

1.3.Target Groups

This manual is applicable to electrical installers with professional qualifications and endusers, who should have the following skills:

✧Training for installation and commissioning of the electrical system, as well as dealing with hazards.

✧Knowledge of photovoltaic power generation and energy storage systems and their working principles.

✧Knowledge of the manual and other related documents.

✧Knowledge of the local regulations and directives.

Only personnel who meet the above requirements are authorized to perform installation, maintenance, and troubleshooting. Unauthorized personnel do not operate the equipment.

1.4.Symbols

This manual contains important safety and operation instructions that must be accurately understood and followed during the installation and maintenance of the equipment. To ensure accurate use of this manual, please note the following symbol explanations.

DANGER	Indicates a hazard with a high level of risk that, if not avoided, will result in death or serious injury.

WARNING	Indicates a hazard with a medium level of risk that, if not avoided, could result moderate injury or property damage.

CAUTION

Indicates a hazard with a low level of risk that, if not avoided, could result in minor injury or property damage.

NOTE

Provides extra info to help users use the equipment better. "NOTE" is not a safety warning and does not involve personal, equipment, or environmental hazard information.

2.Safety Instructions

2.1.General Statement

Before transporting, storing, installing, operating, using, and maintaining the equipment, please read this manual carefully, strictly follow the manual's instructions, and comply with all safety precautions on the equipment and in the manual.

Solinteg has the right not to undertake quality assurance in any of the following circumstances:

✧Damages caused by improper transportation.

✧Damages caused by incorrect storage, installation or use.

✧Damages caused by installation and use of equipment by non-professionals or untrained personnel.

✧Damages caused by failure to comply with the instructions and safety warnings in this document.

✧Damages of running in an environment that does not meet the requirements stated in this document.

✧Damages caused by operation beyond the parameters specified in applicable technical specifications.

✧Damages caused by unauthorized disassembly, alteration of products or modification of software codes.

✧Damages caused by unauthorized opening of the equipment's cover and disassembling or replacing internal components.

✧Damages caused by abnormal natural environment (force majeure, such as lightning, earthquake, fire, storm, etc.).

✧Any damages caused by the process of installation and operation which don't follow the local standards and regulations.

✧Products beyond the warranty period.

2.2.Personnel Safety

✧Installers must undergo professional training or obtain electrical-related professional qualification certificates.

✧Do not wear watches, bracelets, rings, necklaces, and other conductive objects during installation and operation, to avoid electric shock and burns.

✧Do not operate with electricity during the installation. When removing or installing cables, sparks and arcs generated by live-line operation can cause fire or personal injury.

✧Installers must wear professional protective devices during installation and operation of the equipment.

✧The equipment should be installed out of reach of children and small animals.

2.3.General Safety Statements

✧Please strictly follow the content of the manual for proper operation.

✧Please strictly comply with local regulations for electrical connections.

✧Please disconnect the electricity while installing the equipment. Live-line operation is prohibited.

✧Please ground the equipment prior to installation. When removing the equipment, detach the grounding protective wire as the final step.

✧Please select proper cable size according to the local regulation and requirements from this manual.

✧During the installation of the device, ensure that the cables are firmly connected and the screws are tightened properly.

✧Any cable damages must be replaced by a professional to avoid risks.

✧Please disconnect the power source before connection of power or communication cables. Live-line operation is strictly prohibited.

✧Do not open the front cover of the equipment during installation. Unauthorized opening of the cover and replacement of internal components may result in personal injury, damage to the inverter, and voiding of the warranty.

✧Do not connect lithium battery terminals without advance turning off the circuit breaker or main power switch to avoid personal injury due to high voltage.

✧The battery may pose risks of electric shock, fire, or explosion due to gas leakage. Please observe appropriate precautions.

✧During normal energization of any part of the system, installation, disassembly, or operation of any component of the entire system is prohibited.

✧Drilling, cutting, chopping, piercing, deforming, burning, or any other destructive actions are prohibited, as they may damage seals or insulation.

2.4.Preventive Statements

2.4.1.Battery Leakage

Due to the corrosive nature of the electrolyte, use protective gloves/clothing, eye protection, and face shields to avoid direct contact. If battery leakage occurs, evacuate personnel immediately. If exposed to the leaked substance, seek medical attention immediately and take the following measures:

✧If inhaled: Do not remove contaminated work clothes from the workplace; they must be thoroughly cleaned before reuse.

✧If skin contact: Flush with plenty of water and seek medical advice immediately.

✧If eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing and seek medical advice.

✧If swallowed: Induce vomiting immediately and seek medical advice.

2.4.2.Fire

✧Have carbon dioxide, Novec 1230, or FM-200 fire extinguishers available near the equipment.

✧Extinguish fires before they reach the battery.

✧If a battery fire occurs, evacuate personnel immediately and without hesitation.

3.Product Description

The E2BS-B9K0-D series is a lithium high-voltage battery system. It boosts 6-series (or 9-series) lithium batteries to high voltage in an isolated manner before connecting to the inverter. The system integrates an internal BMS (Battery Management System) module, a DC/DC module, and a battery module.

This series has 2 models: E2BS-B6K0-D and E2BS-B9K0-D.

According to the number of battery packs, the system configurations are divided as follows:

	E2BS-S9K-D1	E2BS-S18K-D1	E2BS-S27K-D1	E2BS-S36K-D1	E2BS-S45K-D1	E2BS-S54K-D1
Lithium Battery E2BS-B9K0-D	1PCS	2PCS	3PCS	4PCS	5PCS	6PCS
Controller E2BS-C6-D	1PCS					
Base E2BS-A6-D	1PCS					
Dimensions (mm)	745*345*550	745*345*830	745*345*1110	745*345*1390	745*345*1670	745*345*1950
Weight (kg)	89.6	167.6	245.6	323.6	401.6	479.6

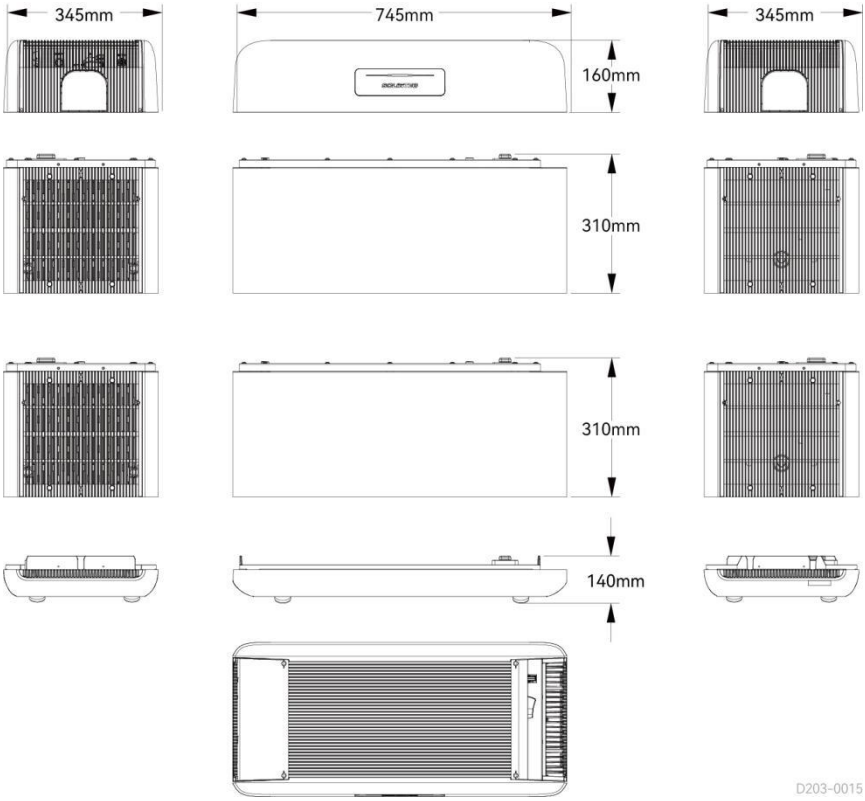
	E2BS-S6K-D2	E2BS-S12K-D2	E2BS-S18K-D2	E2BS-S24K-D2	E2BS-S30K-D2	E2BS-S36K-D2
Lithium Battery E2BS-B6K0-D	1PCS	2PCS	3PCS	4PCS	5PCS	6PCS
Controller E2BS-C6-D	1PCS					
Base E2BS-A6-D	1PCS					
Dimensions (mm)	745*345*550	745*345*830	745*345*1110	745*345*1390	745*345*1670	745*345*1950
Weight (kg)	70.6	129.6	188.6	247.6	306.6	365.6

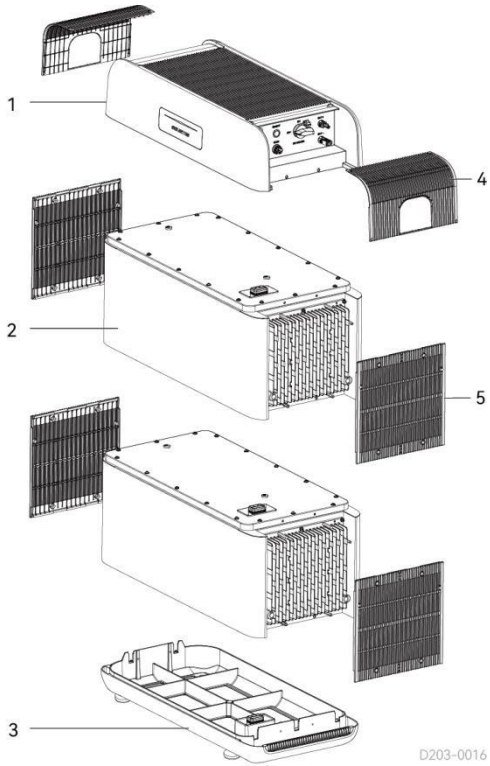
	E2BS-S15K-D3	E2BS-S21K-D3	E2BS-S24K-D3	E2BS-S30K-D3	E2BS-S33K-D3	E2BS-S39K-D3
Lithium Battery E2BS-B9K0-D	1PCS	2PCS	1PCS	2PCS	4PCS	2PCS
Lithium Battery E2BS-B6K0-D	1PCS	1PCS	2PCS	2PCS	1PCS	3PCS
Controller E2BS-C6-D	1PCS					
Base E2BS-A6-D	1PCS					
Dimensions (mm)	745*345*830	745*345*1110	745*345*1110	745*345*1390	745*345*1670	745*345*1670
Weight (kg)	148.6	207.6	226.6	285.6	325.6	363.6

	E2BS-S42K-D3	E2BS-S45K-D3	E2BS-S48K-D3	E2BS-S51K-D3
Lithium Battery E2BS-B9K0-D	1PCS	3PCS	2PCS	1PCS
Lithium Battery E2BS-B6K0-D	4PCS	3PCS	4PCS	5PCS
Controller E2BS-C6-D	1PCS			
Base E2BS-A6-D	1PCS			
Dimensions (mm)	745*345*1670	745*345*1950	745*345*1950	745*345*1950
Weight (kg)	382.6	422.6	441.6	460.6

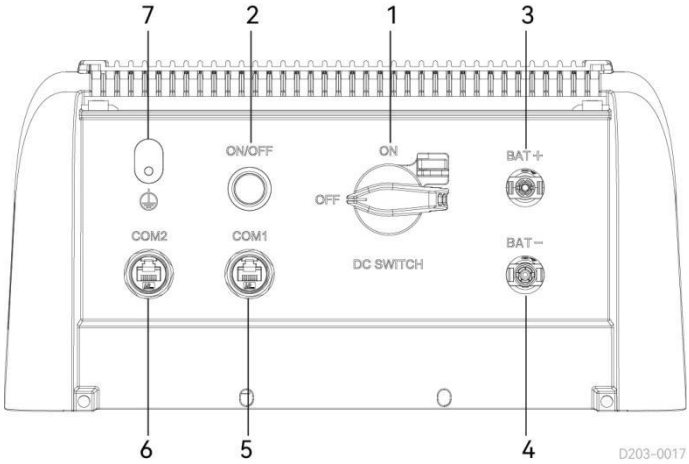
*The number of battery packs shown in the diagram below is for illustration purposes only and does not fully represent the actual system configuration quantity. Please refer to the configuration sheet for requirements.

3.1.Appearance





No.	Name	Description
1	Controller E2BS-C6-D	Starts and stops the control system, including wiring terminals and operation status indicators.
2	Lithium Battery E2BS-B6K0-D/E2BS-B9K0-D	Standardized and manageable energy module integrating BMS module, DC/DC module and battery modules (The quantity of batteries installed can be configured according to the system).
3	Base E2BS-A6-D	Structural load-bearing and fixing component of the system, which also closes the system start-up circuit.
4	Controller Trim Parts	Trim parts on both sides of the controller.
5	Lithium Battery Trim Parts	Trim parts on both sides of the battery pack.



Introduction to Controller Ports and Switches

No.	Name	Description
1	DC Switch	Controls the on/off of the power circuit of the battery system.
2	Start Button	Latching button, controls the start/stop of the battery system.
3	Positive Connection Terminal	Positive connection terminal of the battery system.
4	Negative Connection Terminal	Negative connection terminal of the battery system.
5	COM1	CAN port for communication between battery BMS and inverter.
6	COM2	Local debugging port.
7	PE Connection Terminal	PE connection terminal of the battery system.

3.2.Symbols on the Battery

Symbols	Description
	TÜV mark of conformity.
	CE mark, the battery complies with the requirements of the applicable CE guide lines.
	RCM mark, the inverter complies with Australian RCM requirements.
	To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, endusers of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted mu-nicipal waste and have to collect such WEEE separately.
	Please read the instructions carefully before installation.
	Risk of electric shock! After powering off the equipment, wait at least 1 minute for complete charge discharge!
	Grounding mark.

3.3.Current Limiting Declaration

Based on the characteristics of lithium batteries, to ensure long-term and reliable operation of this battery, it is necessary to limit the charge and discharge currents. This is one of the core protection mechanisms of the battery.

Typical conditions that trigger this mechanism include, but are not limited to, the following:

✧Excessively High Ambient Temperature: Ambient temperature > 40°C during charging, > 45°C during discharging, or overheating of critical internal components within the equipment.

✧Excessively Low Ambient Temperature: Ambient temperature < 20°C during charging, < 0°C during discharging, or overheating of critical internal components within the equipment.

✧Battery During Final Charging Stages: SOC > 80%.

✧Battery During Final Discharging Stages: SOC < 20%.

✧External Battery Limitations: Such as when photovoltaic energy exceeds both load consumption and battery charging power, and the inverter has enabled export limit, etc.

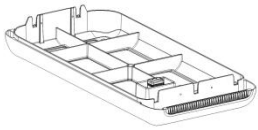
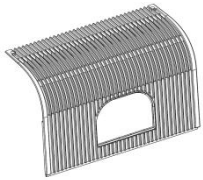
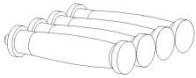
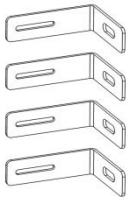
4.Unpacking and Storage

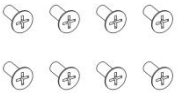
4.1.Packing List

The device is thoroughly tested and strictly inspected before delivery. Nonetheless, damage may still occur during shipping. For this reason, please conduct a thorough inspection after receiving the device. Please contact Solinteg or the transport company in case of any damage or incompleteness, and provide photos to facilitate services.The package of the inverter includes the following accessories.

Please check whether the accessories in the packing box are complete when receiving the goods.

A. Controller List

	1 Controller (1pcs)		2 Base (1pcs)		3 Controller Trim Parts (2pcs)
	4 Handle (4pcs)		5 M10×60mm Expansion Screw (4pcs)		6 Fixed Angle Iron (4pcs)



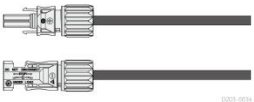
7 M4*10mm Cross Recessed Countersunk Head Bolt (8pcs)



8 M4×20mm Cross Recessed Pan Head Bolt (4pcs)



9 M6×14mm Cross Recessed Hexagon Bolt Assembly (4pcs)



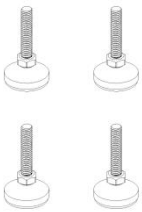
10 Positive Battery Power Cable (2m)
Negative Battery Power Cable (2m)



11 Unlocking Tool (1pcs)



12 PE Wire OT Terminal (1pcs)

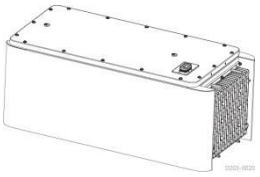


13 support columns (4pcs)

Quick Installation Guide

14 Quick Installation Guide (1pcs)

B. Lithium Battery List

		
1 Lithium Battery (1pcs)	2 Lithium Battery Trim Parts (2pcs)	3 M4*10mm Cross Recessed Countersunk Head Bolt (4pcs)

NOTE

✧Handle with care when removing packaging to prevent scratching the equipment. Ensure the device remains stable during packaging removal.

✧When placing the battery on the ground, use foam or cardboard padding underneath to prevent casing damage.

4.2.Storage Considerations

✧Environmental conditions and storage methods can affect the product's lifespan.

✧Please store the battery in the original packages.

✧Batteries must be stored in a clean, dry location free from corrosive gases, and protected against dust and moisture ingress.

✧Do not put heavy objects on the battery.

✧When batteries are stored in stacks, the number of stacked layers must not exceed the "maximum stacking layers" indicated on the outer packaging.

✧Store the battery in a no-fire zone with clear "No Smoking or Open Flames" warnings, and keep it separate from flammable or explosive materials.

✧Before storage, charge the battery to a state of charge between 30% and 60%.

✧After the battery is fully discharged, it must be recharged within 12 hours.

WARNING

To ensure battery performance and service life, it is recommended to avoid long-term idle storage. Extended storage may lead to deep discharge of the battery, resulting in irreversible chemical damage, capacity fade, or even complete failure. Therefore, timely usage is advised. If long-term storage of the battery is necessary, periodic charge and discharge maintenance should be performed according to the intervals specified in Section 10.3

4.3.Safe Transport Instruction

✧Observe the caution signs on the battery's packaging before transportation.

✧Pay attention to the weight of the battery. Be cautious to avoid injury when carrying it. Transport according to the personnel quantity required by local regulations.

✧Use the battery's original packaging during transportation.

5.Installation

DANGER

✧Do not mix batteries from different manufacturers, of different types and models, or new and old batteries.

✧Do not expose to fire, mix with other battery types, charge at rates exceeding specifications, connect incorrectly, or short-circuit, as this may cause overheating, explosion, or leakage of battery contents.

5.1.Location

The battery is designed with IP65 protection for indoor and outdoor installations.

✧Floor mounting is recommended. If wall-mounted, the battery must be installed on a solid wall or bracket capable of supporting its weight.

✧Install the battery in a location that is convenient for wiring, operation, and maintenance.

✧The installation location must ensure that the battery is out of reach of children and pets.

✧The battery should be installed in a well-ventilated environment for good heat dissipation.

✧The ambient temperature, humidity, and altitude of the installation site must comply with the requirements stated in the specification sheet.

✧Do not install the battery in direct sunlight or environments exposed to rain and snow.

✧Keep the battery away from heat sources, sparks, open flames, and high-temperature surfaces. Maintain a distance of more than 2 meters from any heat source.

✧A fire extinguishing system must be installed.

WARNING

✧Prohibit placing flammable or explosive materials near the battery.

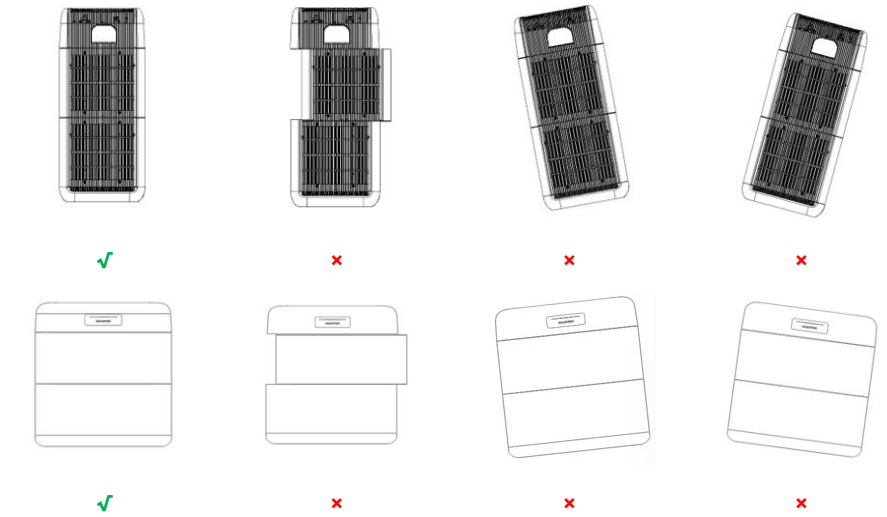
✧Do not install the machine on hollow masonry, drywall, or similar wall structures.

✧Due to the machine's weight, ensure the mounting surface is sturdy. The mounting base must support at least four times the battery's weight and match the battery dimensions.

✧Installation and operating environments impact product service life. Therefore, adhere to operational environment guidelines to ensure the device operates under suitable conditions.

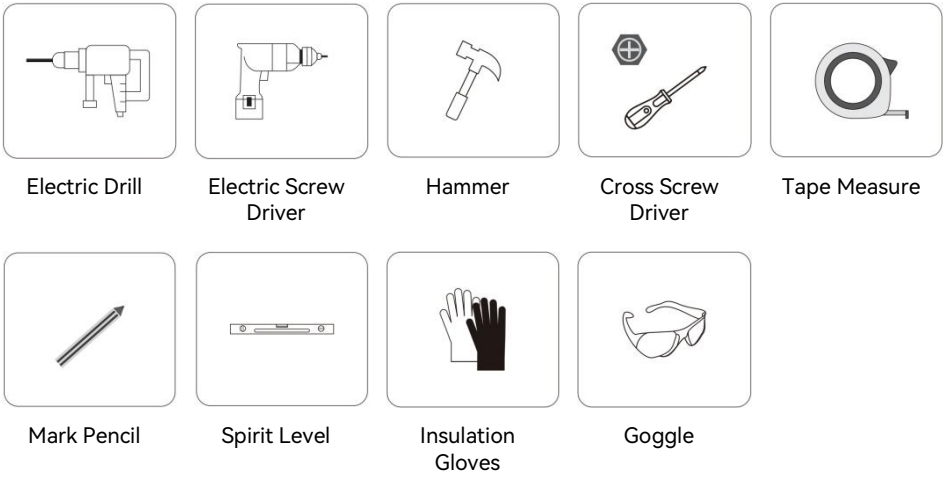
5.2.Installation Angle

Please install the battery vertically. Do not install it tilted forward, tilted backward, misaligned, or inverted.



5.3.Installation Tools & Materials

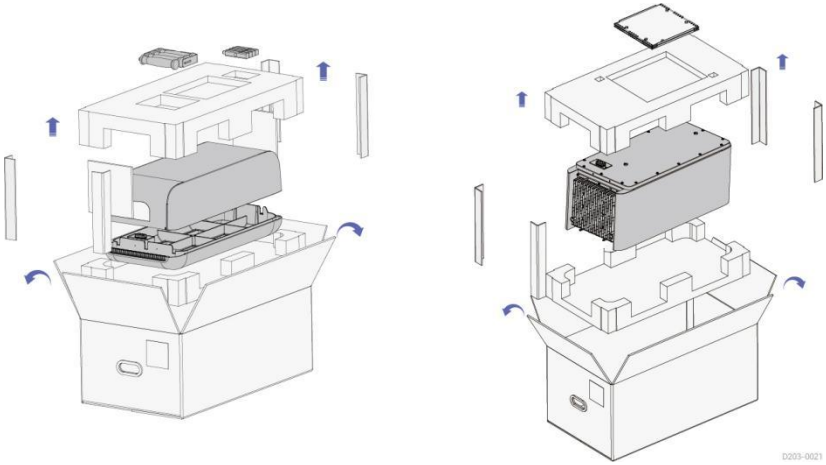
When installing the battery, please wear professional protective equipment.



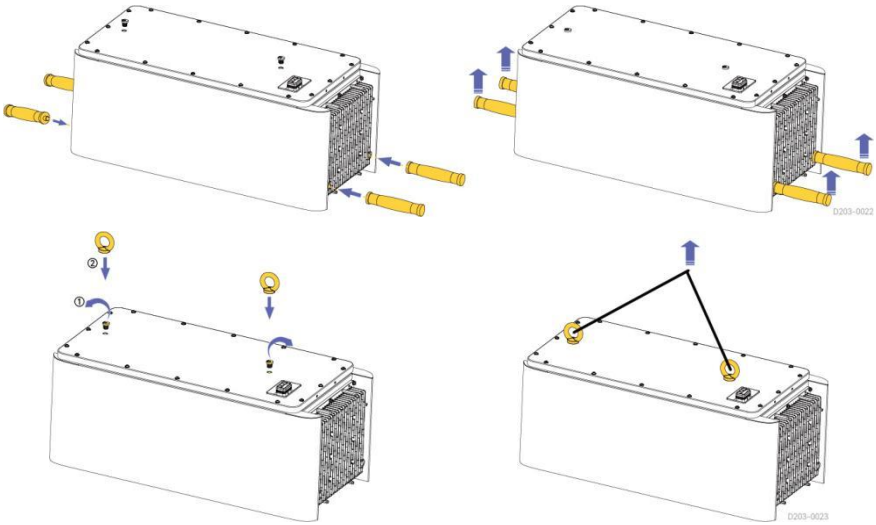
5.4.Moving the battery

Please carefully inspect the product after unpacking. If any abnormal damage or deformation is found, especially puncture, impact, stepping, or striking, immediately contact the installer or dealer.

1. Take the controller, base and other accessories out of the packaging respectively.



2. Remove the battery pack from the packaging box using the lifting rod or lifting ring.



WARNING

Improper handling operations may cause personal injury!

✧Ensure a sufficient number of qualified personnel are involved in handling the battery based on its weight. All operators must wear appropriate PPE (e.g., impact-resistant footwear, protective gloves).

✧Maintain constant awareness of the battery's center of gravity during transportation to prevent tilting or imbalance.

✧Place cushioning materials (e.g., foam pads or rubber mats) under the battery when setting it on rigid surfaces to avoid damage to the metal housing.

✧Always use the designated handles on the product for lifting/movement. Never use the terminals or non-designated components as handholds.

5.5.Installing the battery

DANGER

Where four or more battery packs are installed, or in areas prone to earthquakes, the battery packs must be secured; otherwise, they may topple over, causing personal injury or death, or leading to an explosion or leakage of battery contents.

✧The installation site must meet load-bearing requirements and comply with local regulations; otherwise, it may result in a collapse or subsidence, causing personal injury or death.

✧Throughout the installation process, constant attention must be paid to structural stability, and necessary stabilization measures must be taken to prevent the battery packs from toppling over, causing personal injury or death, or leading to explosions or leakage of battery contents.

✧During installation, it is essential to ensure that the main control switch is in the off position, and to switch off the main control switch before moving the equipment; failure to do so may result in high voltage, causing electric shock.

CAUTION

Improper installation may result in personal injury!

✧During installation, please pay attention to the orientation of the connectors; ensure that the base, battery pack and main control unit connectors are all facing the same direction to prevent damage to the connectors and the battery from tilting.

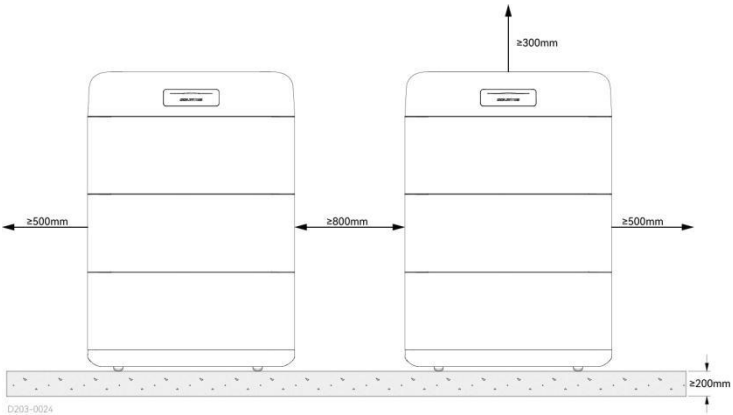
✧The battery installation process must comply with local regulations, and dedicated handling and lifting equipment must be used.

✧Where the battery is installed at a significant height, installation must be carried out in accordance with local regulations.

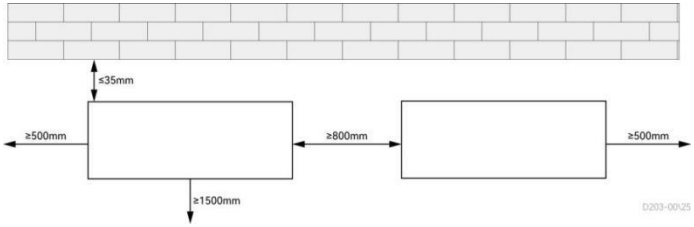
***The diagram is for installation reference only; the quantity of battery packs shall be installed according to the actual configuration.**

Step1: Select an area that meets the equipment load-bearing capacity for installation, and arrange according to the following spacing requirements.

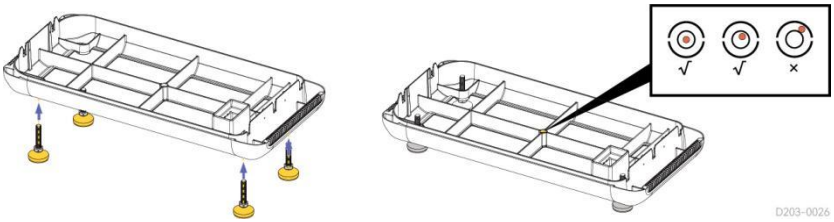
Front view



Top view



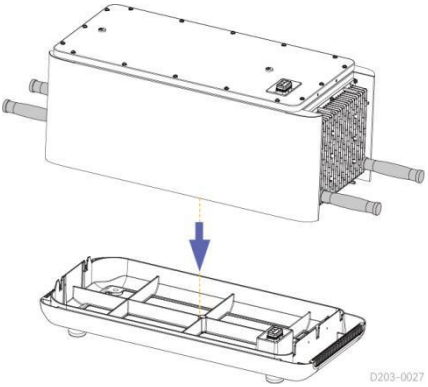
Step2: Level the base with the support columns and spirit level.

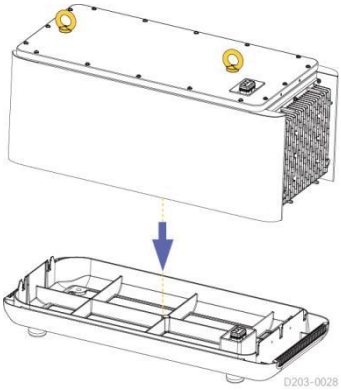


Step3: Select an appropriate installation scheme in accordance with local regulations. Stack the battery packs onto the base from bottom to top according to the configured quantity.

A. Manual handling installation

B. Hoisting installation

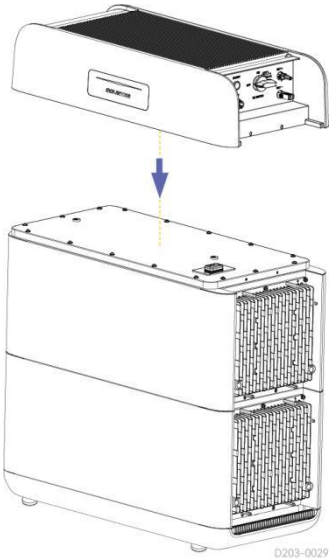




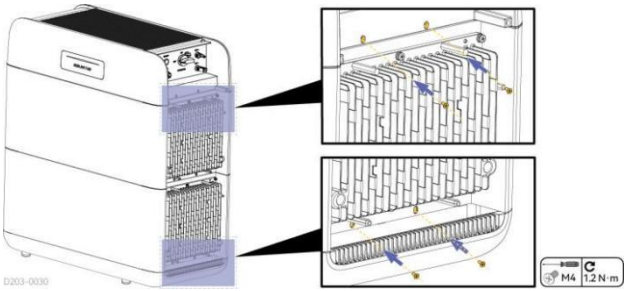
WARNING

✧If installing more than two battery packs, please use specialist tools or a hoist.
✧Ensure that the connectors are aligned correctly.

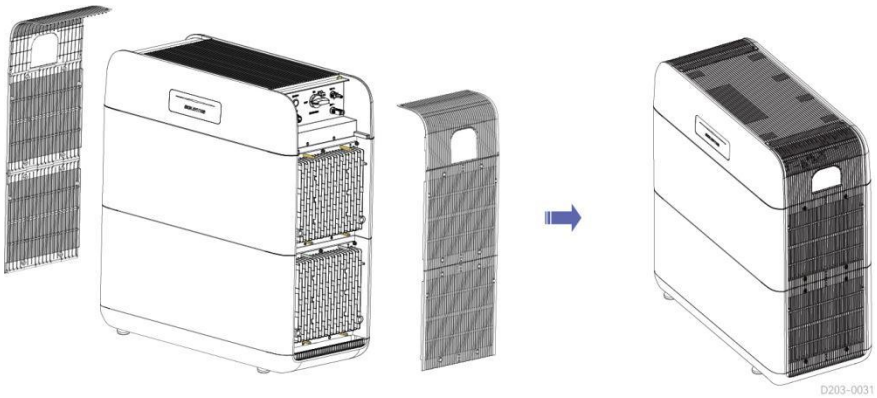
Step4: Stack the main controller tightly onto the top battery pack.



Step5: Securely fasten the base, battery packs and main controller from bottom to top using M4×10mm cross recessed countersunk head bolts.

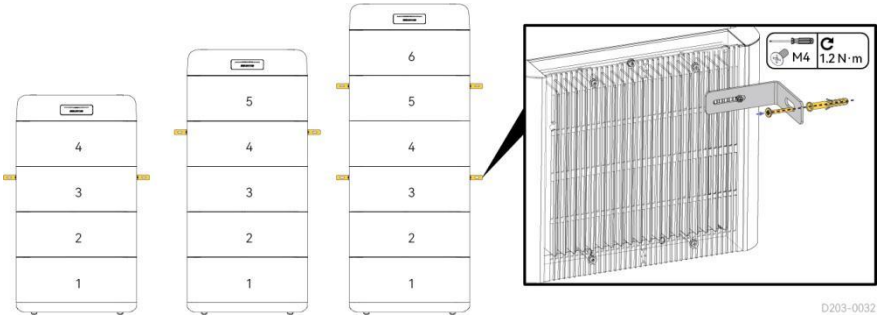


Step6: Attach the decorative parts of the battery packs and main controller to both sides in sequence.

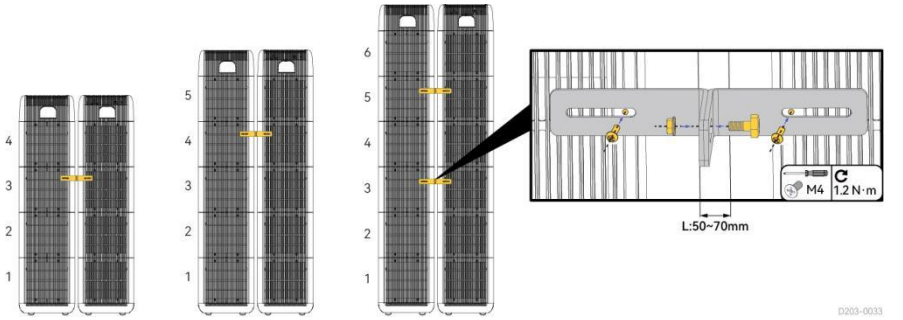


Step7:

Wall-mounted installation: Secure both sides of the battery packs to the wall using fixing angle irons, M4×20mm cross recessed pan head bolts and M10×60mm expansion screws.



Back-to-back installation: Secure the two rows of battery packs firmly using fixing angle irons, M4×20mm cross recessed pan head bolts and M6×14mm cross hexagon bolts.



DANGER

In the following situations, appropriate safety measures must be taken; failure to do so may result in personal injury or death, cause an explosion, or lead to leakage of the battery contents.

✧Where stability requirements are not met, measures to enhance securing must be implemented.

✧Securing measures must be implemented when four or more battery packs are installed.

✧In areas prone to earthquakes, securing measures must be implemented in accordance with local regulations.

6.Electrical Connection

6.1.Safety Instructions

DANGER

- ✧When installing the battery, ensure both the battery and the inverter are completely de-energized to prevent high voltage at conductive parts that could cause harm to personnel or equipment.
- ✧Always use well-insulated tools to prevent short circuits at the battery terminals.

WARNING

- ✧Do not ground the positive or negative pole of the battery, as this may cause serious damage to the system.
- ✧Electrostatic discharge (ESD) can damage the battery's electronic components. Always implement ESD protective measures during installation and maintenance.
- ✧Do not connect PV modules or DC power sources directly to the battery.

CAUTION

- ✧Use of terminal lugs (including other brands or models) outside the designated accessory kit is prohibited. Solinteg reserves the right to refuse compensation for damages caused by terminal incompatibility.
- ✧Moisture and dust may damage the battery. Ensure cable connectors are firmly tightened during installation. Warranty claims will be void if the battery is damaged due to poor connector mating.
- ✧All electrical connections must adhere to local electrical codes.
- ✧A stable and reliable grounding system should be installed for safety and proper operation.
- ✧Never connect the same battery bank to multiple inverters simultaneously, as this may damage the inverters.
- ✧Do not connect loads between the inverter and the battery.

6.2.Wiring Tools and Materials

Before performing electrical connections, prepare the following materials:

✧Cables: DC cables, communication cables, grounding cables. (Please prepare suitable cables according to actual conditions)

✧Wiring tools:



Wire strippers



Wire cutters



Crimping pliers



RJ45 connector crimping pliers



Multimeter (DC range >1100V)



Screwdriver



Allen socket wrench

6.3.External Grounding Connection

Connect the battery and ground bar through PE wire to achieve the purpose of grounding protection. Please always remember wiring the PE wire before wiring other wires.

CAUTION

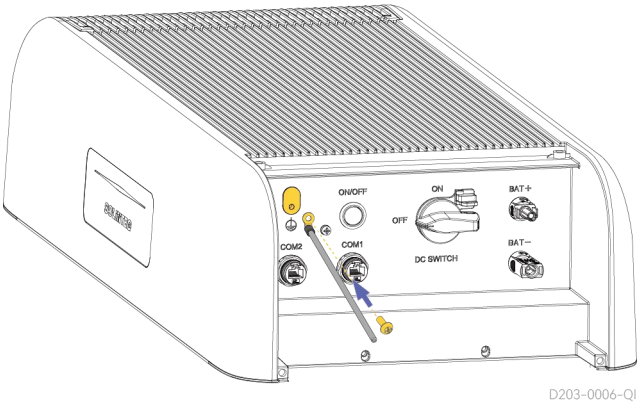
✧In a single-battery system: Ground the PE conductor only.

✧In a multi-battery system: All batteries' PE conductors must be connected to the same grounding copper busbar to ensure equipotential bonding.

✧Reliable grounding is good for resisting surge voltage shock and improving EMI performance.

Ground terminal connection steps:

Remove the decorative cover on the right side of the main controller. Use a crimping plier to crimp the PE conductor into the OT terminal. Then, use a screwdriver to secure the OT terminal onto the inverter's external grounding bolt (recommended torque: 1.2±0.15N · m). Connect the other end of the PE conductor to the grounding copper bus bar.



6.4.Power Cable Connection

WARNING

✧Before connecting the battery, disconnect the AC-side circuit breaker of the inverter and the battery-side circuit breaker. Set the DC switch on the battery to the OFF position to prevent electric shock.

✧Ensure correct polarity when connecting the battery.

CAUTION

✧The battery voltage range must match the inverter's battery voltage range.

✧Install fuses or circuit breakers on both the positive and negative lines of the power circuit between the battery and inverter, as required by local regulations.

NOTE

Solinteg batteries are compatible only with Solinteg inverters. Using them with other inverters will automatically void the battery warranty.

6.4.1.Cable Preparation

Please select the appropriate cable specifications based on actual conditions. The recommended specifications are as follows:

Name	Outside diameter	Conductor cross-section
DC Cable	5.9~8.8mm	8mm^2

6.4.2.Wiring Procedure

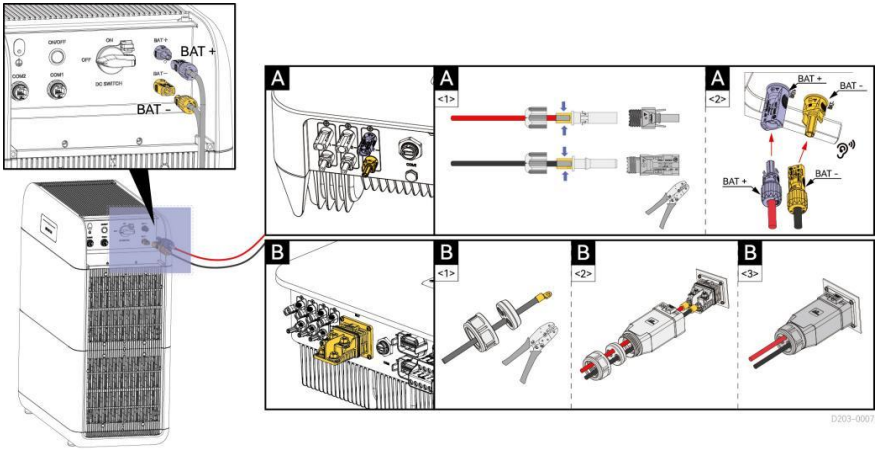
WARNING

Before assembling the Battery connector, make sure that the cable polarity is correct.

Installing the Battery Connector

Step 1: Check whether the cable polarity of the battery is correct. Check whether the maximum input voltage is within the inverter's maximum input voltage range.

Step 2: Feed the cable through the waterproof connector, then crimp the battery terminals securely and connect them to the battery input port.



6.5.Communication Cable Wiring

The battery BMS communicates with the inverter via CAN communication cables.

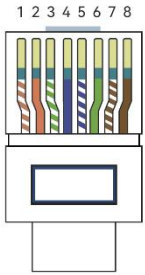
Wiring Procedure

Connect one end of the network cable to the COM1 port on the battery system and the other end to the BMS communication port on the inverter. Once you have ensured that all cables are correctly connected, refit the controller cover.

CAUTION

Unused pin terminals and cables in the battery communication line must not be grounded or connected to other devices.

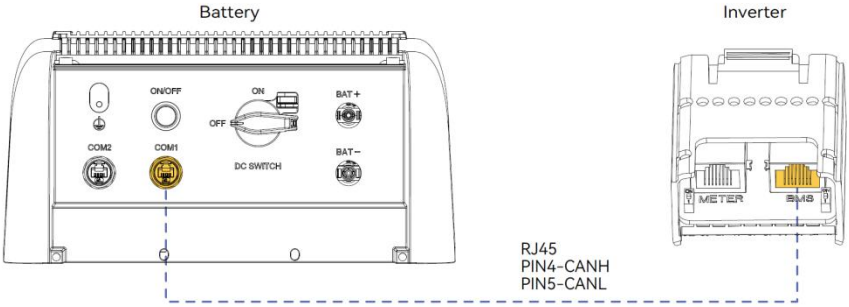
RJ45 Wiring Scheme Definition



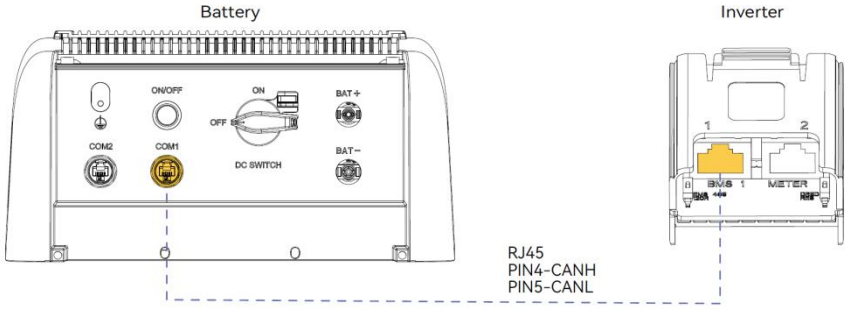
No	Color	BMS-Inverter	COM1	COM2
1	Orange& White	/	/	/
2	Orange	/	/	/
3	Green& White	/	/	/
4	Blue	CAN1_H	BMS CANH	DEBUG CANH
5	Blue& White	CAN1_L	BMS CANL	DEBUG CANL
6	Green	/	/	/
7	Brown& White	/	/	/
8	Brown	/	/	/

Battery and inverter communication

Inverter Type 1: Inverter COM2 BMS port



Inverter Type 2: Inverter COM2 BMS1 port



7.Commissioning

DANGER

During installation, ensure that the switch on the controller is in the off position, and switch off the controller before moving the equipment; failure to do so may result in high voltage and cause electric shock.

WARNING

During normal operation in non-emergency situations, the battery must be turned off via the button before switching the battery's switch. Directly turning off the switch on the battery is prohibited.

7.1.Pre-Commissioning Inspection

Before energizing the battery, confirm the following:

✧All equipment has been securely installed.

✧DC switch is in the "OFF" position.

✧Grounding cables are correctly and securely connected.

✧Power cables and communication cables are correctly and securely connected.

✧Unused terminals are sealed.

✧No foreign objects (e.g., tools) remain on top of the equipment or inside junction boxes (if applicable).

✧Fuses and circuit breakers comply with this manual and local standards.

✧All warning labels and markings are intact and legible.

7.2.Single-Unit Commissioning

If all above items are satisfied, follow these steps to start the battery for the first time:

✧Rotate the DC switch to "ON".

✧Press the power button until the indicator lights up.

CAUTION

✧After initial installation, enable the SOC RESET function. The battery will automatically charge to calibrate the SOC and disable this function once fully charged (manually disable if insufficient energy is available).

✧The battery initiates an equalization charge every 10 days to calibrate SOC.

NOTE

✧These steps apply only to battery startup. For system startup, refer to the inverter user manual.

✧Ensure no obstacles (e.g., cables or personnel) block the DC switch handle rotation during operation.

7.3.Black Start

When the DC switch on the battery is in the "ON" position, press the power button to initiate a cold start.

7.4.Shutting Down the Battery

To shut down the battery:

✧Turn off the inverter (refer to inverter user manual).

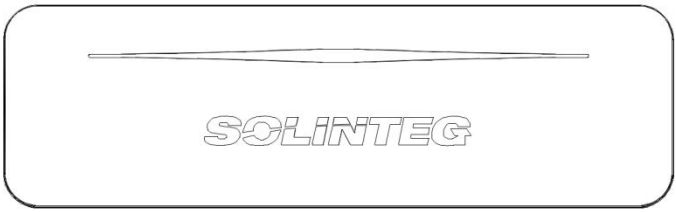
✧Press the power button again; it will spring back automatically. Wait until the indicator light goes out.

✧Rotate the battery DC switch to "OFF". Restart via Section "commissioning".

✧For long-term/permanent shutdown: Disconnect cables (certified electricians only).

8.Operation

Indicator



The indicator is located on the front of the battery and are defined as follows:

Battery Status	Color and State	Description
Normal	Green steady on	Normal operation
Abnormal	Red and green alternating	Battery in Sleep Mode
	Green blinking	Battery Self-testing
Fault	Red light slow blink	Battery Fault
Upgrade	Red light fast blink	Battery Updating Firmware

9.Troubleshooting

The battery has undergone a series of rigorous tests to ensure its sustained and reliable operation. If any battery fault occurs, please record the fault information, shut down the battery following the procedure in the "Pre-Commissioning Inspection" section, and then contact your distributor or Solinteg. Do not attempt to resolve the fault yourself.

No.	Fault Phenomenon	Corrective Actions
1	The battery cannot be powered on following the startup procedure.	The individual cell voltage is too low, triggering system protection, or other faults are preventing startup. Please contact the Solinteg service team.
2	The battery can be powered on, but the indicator light shows an abnormal status.	Battery fault. Please check the fault information on the monitoring platform and refer to the corrective actions in the table below. If the issue cannot be resolved, please contact the Solinteg service team.

When a battery fault occurs, detailed fault information can be obtained through the monitoring platform. The fault information and corresponding corrective actions are as follows (Version 2026.07.08):

ID	Information	Solution
E012	BAT Voltage Fault	1. The inverter has detected a sudden change in battery voltage. If it does not recover automatically, restart the battery. 2. Reduce the number of batteries to ensure that the maximum battery voltage is lower than the inverter maximum operating voltage. 3. If the issue persists, please contact your installer or our technical support team for further assistance.
E034	Backup Over Current	1.Restart the inverter. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E400	BMS Comm Fault -BAT1	Inverter–battery BMS communication error detected. 1. Check whether the selected battery model is correct. 2. Verify that communication between the BMS master and the inverter is properly established. 3. Check whether the battery is in normal status. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E431	Abnormal Battery Voltage -BAT1	A large difference between the battery voltage measured by the inverter and that reported by the BMS indicates a possible communication or sampling issue. 1. Check whether the battery power cables are properly and securely connected. 2. Check whether the battery circuit breaker, switch, or fuse is in normal condition.

ID	Information	Solution
		3. Check whether the battery has an alarm or protection status preventing output. Clear any faults and restart the battery after reinstallation. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E432	Abnormal BAT Parallel No. -BAT1	Contains offline battery clusters. 1.Check if each cluster is powered on. If any cluster without power, turn on the DC breaker of each battery/cluster and re-excute the parallel process. 2.Check if there is any alarm or protection in any cluster. If any alarm or protection, resolve it and re-excute the parallel process. 3.Check if the voltage deviation between batteries/clusters is ≤2.5V. If anything abnormal, charge or discharge the batteries/cluster to ensure the voltage deviation ≤2.5V and then re-excute the parallel process.
E489	BMS Comm Fault -BAT2	Inverter–battery BMS communication error detected. 1. Check whether the selected battery model is correct. 2. Verify that communication between the BMS master and the inverter is properly established. 3. Check whether the battery is in normal status. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E490	Abnormal Battery Voltage -BAT2	A large difference between the battery voltage measured by the inverter and that reported by the BMS indicates a possible communication or sampling issue. 1. Check whether the battery power cables are properly and securely connected. 2. Check whether the battery circuit breaker, switch, or fuse is in normal condition. 3. Check whether the battery has an alarm or protection status preventing output. Clear any faults and restart the battery after reinstallation. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E491	Abnormal BAT Parallel No. -BAT2	Contains offline battery clusters. 1.Check if each cluster is powered on. If any cluster without power, turn on the DC breaker of each battery/cluster and re-excute the parallel process. 2.Check if there is any alarm or protection in any cluster. If any alarm or protection, resolve it and re-excute the parallel process. 3.Check if the voltage deviation between batteries/clusters is ≤2.5V. If anything abnormal, charge or discharge the batteries/cluster to ensure the voltage deviation ≤2.5V and then re-excute the parallel process.

ID	Information	Solution
W003	BAT Power Low	When off-grid or during grid disconnection, if the battery status is abnormal or unable to supply power: 1. Check battery power cable connections. 2. Check the battery circuit breaker, switch, or fuse. 3. Check for alarms or protections and restart the battery after resolving the issue. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W006	BAT Invalid	When off-grid or during grid disconnection, if the battery status is abnormal or unable to supply power: 1. Check battery power cable connections. 2. Check the battery circuit breaker, switch, or fuse. 3. Check for alarms or protections and restart the battery after resolving the issue. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E404	BAT Voltage Sensor Fault	1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E405	BAT Temp. Sensor Fault	1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E406	BAT Internal Comm Fault	There might be something wrong with battery internal comm. circuit. 1. Check comm. cable between battery module and controller. 2. Reboot the battery. 3. If the issue persists, please contact your installer or our technical support team for further assistance.
E407	Input OV Fault	Input voltage on battery is too high. 1. Check if power cables are incorrectly connected to other source. 2. Check if there is malfunction of inverter. 3. If the issue persists, please contact your installer or our technical support team for further assistance.
E408	Input Reversed or Short Fault	Input polarity is reversed. 1. Check if power cables are reversely connected. 2. Check if there is malfunction of inverter. 3. If the issue persists, please contact your installer or our technical support team for further assistance.
E409	Control Device Check Fault	There might be something wrong with battery relay. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.

ID	Information	Solution
E410	Cell Damaged Fault	Cell is severely over-discharged. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E411	Shutdown Circuit Fault	Can not switch off the system. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E412	BMIC Fault	Sensor chip is abnormal. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E413	BAT Internal Bus Fault	1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E414	Self-checking Fault	Self-checking failed. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E415	Safety Function Fault	Chip self-checking failed. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E416	ISO Fault	Isolation is too low. 1. Turn off the whole system. 2. Check if any damage or breakage in devices, cables, terminals, etc. 3. Check if any circuit shorted by foreign matters. 4. Reboot battery after removing anomalies. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E417	Cell UV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Check if there is obvious cell voltage deviation. If there is obvious cell voltage deviation, fully charge and discharge the battery for several times. 4. Reboot and then charge the battery immediately. 5. If the issue persists, please contact your installer or our technical

ID	Information	Solution
		support team for further assistance.
E418	Cell OV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E419	Cluster UV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Check if load power is oversized. 4. Reboot and then charge the battery immediately. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E420	Cluster OV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E421	Charge UT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Increase the environment temp. to warm up battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E422	Charge OT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E423	Discharge UT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors.

ID	Information	Solution
		3. Increase the environment temp. to warm up battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E424	Discharge OT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E425	Charge OC	1. Check if current limitation of battery decreases cause of temp, SOC, etc. 2. Check if inverter does not charge according to current limitation. 3. Reboot battery after checking or adjusting configuration of inverter. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E426	Discharge OC	1. Check if current limitation of battery decreases cause of temp, SOC, etc. 2. Check if inverter does not discharge according to current limitation. 3. Reboot battery after checking or adjusting configuration of inverter. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E427	Battery Module UV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Reboot and then charge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E428	Battery Module OV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.

ID	Information	Solution
E430	Abnormal Leakage	1. Turn off the whole system. 2. Check if any damage or breakage in devices, cables, terminals, etc. 3. Check if any circuit shorted by foreign matters. 4. Reboot battery after removing anomalies. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E433	Fire Alarm	Presence of fire, smoke, or other fire-related emergencies are detected. Immediately ensure all on-site systems enter E-stop and check the alarm validity. If alarm is TRUE: 1. Evacuate all non-essential personnel at once. 2. Contact qualified technicians or fire-rescue immediately. 3. Establish an isolation perimeter without delay.
E434	Flooding Alarm	There is too much water accumulated in the system, which triggers the flood alarm. Immediately ensure all on-site systems enter E-stop and check the alarm validity. If alarm is TRUE: 1. Evacuate all non-essential personnel at once. 2. Contact qualified technicians or fire-rescue immediately. 3. Establish an isolation perimeter without delay.
E435	Access Alarm	Access control detect the disclosure of cabinet door. 1. Check if the cabinet door is opened without authorization. if it is an unauthorized opening, close the door with confirmation of the safety of on-site personnel and system. 2. Check if the access control is functioning normally. if there is faulty, replace it immediately.
E436	Emergency Stop	System emergency stop is triggered manually or automatically due to the present or potential hazard to system or personnel. 1. Check if there is present and/or potentional hazard to personnel or system. If it is true, excute those solutions of corresponding alarm. 2. Check if emergency-stop was activated accidentally. If it was a false trigger, reset the E-stop with confirmation of the safety of on-site personnel and system.
E437	UPS Battery Damaged	UPS battery has been damaged due to misuse or other causes. 1. Reboot the UPS. 2. If problem remains, contact manufacturer after-sales for solution.
E438	UPS OT	UPS is over temperature due to operating environment, overcurrent, etc. 1. Check if UPS temperature is reasonable. 2. Check if any malfunction of temp. sensors.

ID	Information	Solution
		3. Reduce the charging current or decrease the load power. 4. Reduce the environment temp. to cool down UPS.
E439	Abnormal Extinguisher Comm.	1. Check if any damage in comm. cables or ports. 2. Check on-site wiring and comm. settings are correct. 3. Check if any magnetic interference is present. 4. Reboot the system. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E440	Abnormal Air Conditioner Alarm	1. Check if any damage in the air conditioner. 2. Check the error code on the panel of air conditioner. 3. Check if any malfunction of temp. sensors. 4. Check if any magnetic interference is present. 5. Reboot the system. 6. If the issue persists, please contact your installer or our technical support team for further assistance.
E441	Abnormal EMS-BMS Comm.	1. Check if correct selection of battery ID. 2. Check the working status of battery. 3. Check if any damage in comm. cables or ports. 4. Check on-site wiring and comm. settings are correct. 5. Check if any magnetic interference is present. 6. Reboot the system. 7. If the issue persists, please contact your installer or our technical support team for further assistance.
E442	Abnormal EMS-Fire-SYS Comm.	1. Check if any damage in comm. cables or ports. 2. Check on-site wiring and comm. settings are correct. 3. Check if any magnetic interference is present. 4. Reboot the system. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E443	Abnormal EMS-Air Conditioner Comm.	1. Check if any damage in comm. cables or ports. 2. Check on-site wiring and comm. settings are correct. 3. Check if any magnetic interference is present. 4. Reboot the system. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E444	Cell UV-L3	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Check if there is obvious cell voltage deviation.If there is obvious cell voltage deviation, fully charge and discharge the

ID	Information	Solution
		battery for several times. 4. Reboot and then charge the battery immediately. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E445	Cell OV-L3	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E446	Cluster UV-L3	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Check if load power is oversized. 4. Reboot and then charge the battery immediately. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E447	Cluster OV-L3	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E448	Charge UT-L3	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Increase the environment temp. to warm up battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E449	Charge OT-L3	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.

ID	Information	Solution
E450	Discharge UT-L3	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Increase the environment temp. to warm up battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E451	Discharge OT-L3	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E452	Charge OC-L3	1. Check if current limitation of battery decreases cause of temp, SOC, etc. 2. Check if inverter does not charge according to current limitation. 3. Reboot battery after checking or adjusting configuration of inverter. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E453	Discharge OC-L3	1. Check if current limitation of battery decreases cause of temp, SOC, etc. 2. Check if inverter does not discharge according to current limitation. 3. Reboot battery after checking or adjusting configuration of inverter. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E454	Battery Module UV-L3	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Reboot and then charge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E455	Battery Module OV-L3	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical

ID	Information	Solution
		support team for further assistance.
E456	BAT Voltage Sensor Fault	1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E457	BAT Temp. Sensor Fault	1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E458	BAT Internal Comm Fault	There might be something wrong with battery internal comm. circuit. 1. Check comm. cable between battery module and controller. 2. Reboot the battery. 3. If the issue persists, please contact your installer or our technical support team for further assistance.
E459	Input OV Fault	Input voltage on battery is too high. 1. Check if power cables are incorrectly connected to other source. 2. Check if there is malfunction of inverter. 3. If the issue persists, please contact your installer or our technical support team for further assistance.
E460	Input Reversed Fault	Input polarity is reversed. 1. Check if power cables are reversely connected. 2. Check if there is malfunction of inverter. 3. If the issue persists, please contact your installer or our technical support team for further assistance.
E461	P+ Relay Checking Fault	There might be something wrong with battery relay. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E462	P- Relay Checking Fault	There might be something wrong with battery relay. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E463	Cell Damaged Fault	Cell is severely over-discharged. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E464	Shutdown Circuit Fault	Can not switch off the system. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E465	BMIC Fault	Sensor chip is abnormal.

ID	Information	Solution
		1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E466	BAT Internal Bus Fault	Battery internal bus is abnormal. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E467	Self-checking Fault	Self-checking failed. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E468	Safety Function Fault	Chip self-checking failed. 1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E469	ISO Fault	Isolation is too low. 1. Turn off the whole system. 2. Check if any damage or breakage in devices, cables, terminals, etc. 3. Check if any circuit shorted by foreign matters. 4. Reboot battery after removing anomalies. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E470	Terminal OT	1. Check if terminal temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down terminal and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E471	CAN2 Comm. Fault	Inverter–battery BMS communication error detected. 1. Check if the selected battery model is correct. 2. Verify that communication between the BMS master and the inverter is properly established. 3. Check if the battery is in normal status. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E472	CAN1 Comm. Lost	Inverter–battery BMS communication error detected. 1. Check if the selected battery model is correct. 2. Verify that communication between the BMS master and the inverter is properly established. 3. Check if the battery is in normal status. 4. If the issue persists, please contact your installer or our technical

ID	Information	Solution
		support team for further assistance.
E473	Abnormal DCDC Switch	1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E474	Duplicate CAN addr.	1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
E475	Cell UV-L2	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Check if there is obvious cell voltage deviation. If there is obvious cell voltage deviation,fully charge and discharge the battery for several times. 4. Reboot and then charge the battery immediately. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E476	Cell OV-L2	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E477	Cluster UV-L2	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Check if load power is oversized. 4. Reboot and then charge the battery immediately. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
E478	Cluster OV-L2	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution

ID	Information	Solution
		protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E479	Charge UT-L2	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Increase the environment temp. to warm up battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E480	Charge OT-L2	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E481	Discharge UT-L2	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Increase the environment temp. to warm up battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E482	Discharge OT-L2	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E483	Charge OC-L2	1. Check if current limitation of battery decreases cause of temp, SOC, etc. 2. Check if inverter does not charge according to current limitation. 3. Reboot battery after checking or adjusting configuration of inverter. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E484	Discharge OC-L2	1. Check if current limitation of battery decreases cause of temp, SOC, etc. 2. Check if inverter does not discharge according to current limitation. 3. Reboot battery after checking or adjusting configuration of inverter. 4. If the issue persists, please contact your installer or our technical support team for further assistance.

ID	Information	Solution
E485	Battery Module UV-L2	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Reboot and then charge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E486	Battery Module OV-L2	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
E487	Fatal Error	Fatal error in battery system. Please contact your installer or battery manufacturer for further assistance immediately.
E488	Severe Error	Fatal error in battery system. Please contact your installer or battery manufacturer for further assistance immediately.
W400	Cell UV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Check if there is obvious cell voltage deviation. If there is obvious cell voltage deviation, fully charge and discharge the battery for several times. 4. Reboot and then charge the battery immediately. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
W401	Cell OV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical

ID	Information	Solution
		support team for further assistance.
W402	Cluster UV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Check if load power is oversized. 4. Reboot and then charge the battery immediately. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
W403	Cluster OV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W404	Charge UT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Increase the environment temp. to warm up battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W405	Charge OT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W406	Discharge UT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Increase the environment temp. to warm up battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W407	Discharge OT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical

ID	Information	Solution
		support team for further assistance.
W408	Charge OC	1. Check if current limitation of battery decreases cause of temp, SOC, etc. 2. Check if inverter does not charge according to current limitation. 3. Reboot battery after checking or adjusting configuration of inverter. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W409	Discharge OC	1. Check if current limitation of battery decreases cause of temp, SOC, etc. 2. Check if inverter does not discharge according to current limitation. 3. Reboot battery after checking or adjusting configuration of inverter. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W410	Battery Module UV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Reboot and then charge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W411	Battery Module OV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W412	BMU Offline	BMU in battery module is offline. 1. Turn off the battery system. 2. Please contact your installer or our technical support team for further assistance.
W413	BMCU Offline	BMCU in controller is offline. 1. Turn off the battery system. 2. Please contact your installer or our technical support team for further assistance.

ID	Information	Solution
W414	SN Change of Module	Battery module(s) changed. 1. Check if any battery module is removed or added. 2. Check if SOC and voltage of all the battery modules are the same when added. 3. Please contact your installer or our technical support team for further assistance.
W415	Abnormal Change of Cluster Voltage	1. Check if power cable is connected correctly. 2. Check if abnormal change of voltage and SOC. 3. Reboot battery after removing anomalies. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W416	Abnormal Cluster △V	1. Check if power cable is connected correctly. 2. Check if abnormal change of voltage and SOC. 3. Check if battery mode and number in each cluster is the same. 4. Reboot battery after removing anomalies. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
W417	Abnormal Module △V	1. Check if power cable is connected correctly. 2. Check if abnormal change of voltage and SOC. 3. Reboot battery after removing anomalies. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W418	Abnormal Cluster △V	1. Check if power cable is connected correctly. 2. Check if abnormal change of voltage and SOC. 3. Check if battery mode and number in each cluster is the same. 4. Reboot battery after removing anomalies. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
W419	Inconsistent Cell qty.	1. Check if different battery pack used. 2. Check if there is internal comm. Malfunction in any battery pack. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W420	Cluster(s) under Forced-charging	1. Check if any battery under forced-charging 2. Reboot after forced-charging finished. 3. If the issue persists, please contact your installer or our technical support team for further assistance.
W421	Cluster(s) under Upgrading	1. Check if any battery under upgrading. 2. Reboot after upgrading finished. 3. If the issue persists, please contact your installer or our technical support team for further assistance.

ID	Information	Solution
W422	Master Polling	1. Check if any battery under information-poll. 2. Check if it back to normal after minutes. 3. Reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
W423	Cluster(s) turned off Manually	1. Check if any battery is turned-off manually. 2. Reboot the battery. 3. If the issue persists, please contact your installer or our technical support team for further assistance.
W424	Emergency Stop Triggered of Cluster(s)	1. Check if any battery is turned-off manually. 2. Reboot the battery. 3. If the issue persists, please contact your installer or our technical support team for further assistance.
W425	Heating Circuit Temperature Sensor Error	1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
W426	Heating Circuit Checking Error	1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
W427	Abnormal Voltage of Heating Circuit	1. Reboot the battery. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
W428	General Warning	General Warning for battery system, which might lead to performance limitation. Please contact your installer or battery manufacturer for further assistance immediately.
I400	Cell UV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Check if there is obvious cell voltage deviation.If there is obvious cell voltage deviation,fully charge and discharge the battery for several times. 4. Reboot and then charge the battery immediately. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
I401	Cell OV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation.

ID	Information	Solution
		2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
I402	Cluster UV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Check if load power is oversized. 4. Reboot and then charge the battery immediately. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
I403	Cluster OV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
I404	Charge UT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Increase the environment temp. to warm up battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
I405	Charge OT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
I406	Discharge UT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Increase the environment temp. to warm up battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.

ID	Information	Solution
I407	Discharge OT	1. Check if battery temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down battery and then reboot the battery. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
I408	Charge OC	1. Check if current limitation of battery decreases cause of temp, SOC, etc. 2. Check if inverter does not charge according to current limitation. 3. Reboot battery after checking or adjusting configuration of inverter. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
I409	Discharge OC	1. Check if current limitation of battery decreases cause of temp, SOC, etc. 2. Check if inverter does not discharge according to current limitation. 3. Reboot battery after checking or adjusting configuration of inverter. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
I410	Battery Module UV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-charging or unstopped discharging. 2. Check if the external source (PV, utility grid, diesel generator, etc.) stop working, which leads to inexecution of forced-charging or unstopped discharging. 3. Reboot and then charge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
I411	Battery Module OV	1. Check if there is any malfunction or incorrect configuration of inverter, which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 2. Check if any unsuitable setting and/or configuration , which leads to inexecution of forced-discharging or inexecution protection according to charging voltage limitation. 3. Reboot and then discharge the battery immediately. 4. If the issue persists, please contact your installer or our technical support team for further assistance.
I412	Terminal OT	1. Check if terminal temp. is reasonable. 2. Check if any malfunction of temp. sensors. 3. Reduce the environment temp. to cool down terminal and then reboot the battery. 4. If the issue persists, please contact your installer or our technical

ID	Information	Solution
		support team for further assistance.
I413	Abnormal Fan	Fan of battery module is abnormal. 1. Turn off the battery and check if power cable of fan is connected correctly. 2. If the issue persists, please contact your installer or our technical support team for further assistance.
I414	Abnormal Leakage	1. Turn off the whole system. 2. Check if any damage or breakage in devices, cables, terminals, etc. 3. Check if any circuit shorted by foreign matters. 4. Reboot battery after removing anomalies. 5. If the issue persists, please contact your installer or our technical support team for further assistance.
I415	General Info.	Tips of battery system status. Nothing needs to processed.

10.Operation and Maintenance

DANGER

Improper operation may cause battery damage or personal injury. When performing battery maintenance, strictly adhere to electrical safety regulations.

WARNING

✧Keep unauthorized personnel away from the equipment!

✧Temporary warning signs or barriers must be posted during electrical connection and maintenance to prevent access by unauthorized personnel.

✧The battery may only be restarted after troubleshooting is completed, provided that any issues affecting safety performance have been resolved.

CAUTION

✧Unauthorized replacement of internal battery components is prohibited. The battery cells inside are not replaceable. Please seek repair support from the Solinteg service team. Otherwise, Solinteg will not assume any liability.

✧Maintenance or repair of the battery is not recommended if you lack the proper tools, test equipment, or a clear and thorough understanding of the latest version of this manual.

✧In the event of a malfunction, the equipment must be handled by qualified personnel; the battery pack must not be disassembled or repaired on-site.

10.1.Routine Inspection

It is recommended to regularly confirm the battery is operating normally through system monitoring or on-site inspection.

Item	Method	Frequency
Monitoring System	1. Check if the battery is online and displaying information such as SOC. 2. Check if the battery's communication status is normal. 3. Check for any battery alarms or prompt messages.	Once per day
On-site Visual Check	Check if the battery is operating normally via the color and status of the battery indicator light.	Once per week
	Check via the inverter indicator light or screen whether the communication and power circuits between the battery and inverter are properly connected.	Once per week
	Check for heat sources or direct sunlight near the battery.	Once per week
	Check the battery for damage, leakage, or deformation.	Once per month
	Visually inspect connectors and cables for obvious signs	Once per month

Item	Method	Frequency
	of burning, pitting, corrosion, deformation, aging, cracking, or detachment.	

10.2.Periodic Maintenance

When performing battery maintenance, strictly adhere to the following steps:

✧Select the "Stop" option on the inverter screen or monitoring application to turn off the inverter.

✧Turn off the battery using the battery power switch.

✧Disconnect the battery-side DC circuit breaker or switch.

✧Rotate the battery's DC switch to the OFF position.

✧Confirm that all indicator lights are off.

Item	Method	Frequency
System Cleaning	Clean the exterior casing with a dry, soft cloth. Exercise caution during operation.	Every 6-12 months
Electrical Connections	1. Carefully check connectors, terminals, and cables for any looseness. 2. Carefully inspect the casing, gaskets, and seals for aging and cracking. 3. Check conductive copper cores and pins for signs of burning, pitting, corrosion, oxidation, or deformation.	Every 6-12 months
Sealing Integrity Check	Check that all terminals and ports are properly sealed. Re-seal any cable entry points if the gland is aged or unsealed.	Annually

10.3.Battery Charge/Discharge Maintenance

Charge/Discharge Maintenance During Normal Operation

During normal system operation, the battery automatically initiates an equalization charge every 10 days to calibrate its State of Charge (SOC).

Charge/Discharge Maintenance During Storage

To ensure battery performance and service life, prolonged idle storage should be avoided. Long-term storage may lead to deep discharge of the battery, causing irreversible chemical degradation, capacity reduction, or even complete failure. Therefore, timely usage is recommended. If long-term storage is necessary, maintenance must be performed according to the following requirements.

Initial Storage State of Charge (SOC) Range	Recommended Storage Temperature	Maintenance Charging/Discharging Interval	Battery Maintenance Method
30%~60%	0℃~35℃	0℃ ~ 35℃: ≤ 3 months 35℃ ~ 45℃: ≤ 1 month	Contact the Solinteg Service Team for the maintenance procedure.

11.End-of-Life Battery Disposal

For detailed information regarding end-of-life battery disposal, please contact the Solinteg Service Team.

Comply with local regulations concerning waste battery disposal. Cease using damaged batteries. Before disposing of a battery, contact your installer or sales partner and ensure the battery is not exposed to damp environments or direct sunlight.

CAUTION

✧Do not dispose of batteries and rechargeable batteries as household waste!

✧Waste batteries may contain pollutants. Improper storage or disposal may harm the environment or your health.

✧Batteries contain lithium, copper, aluminum, iron, and other critical raw materials that can be recycled.

Appendix

Technical Parameters

	E2BS-B6K0-D	E2BS-B9K0-D
Lithium Battery Parameter		
Nominal Energy (kWh)	6.02	9.04
Usable Energy (kWh)	6.00	9.00
Operating Voltage Range (V)	350~900V DC	430~900V DC
Rated Charge-Discharge Power (kW)	3.00/3.00	4.50/4.50
MAX. Charge Power (kW)	3.15	4.73
Peak Discharge Power (kW)	4.5@10s	6.75@10s
Cell Type	LiFePO4	
Nominal Capacity (Ah)	314	
Configuration Quantity	6	9
Configuration	6S	9S
General Data		
Mounting Type	Floor-mounted	
Dimensions (mm)	745*345*310	
Weight (KG)	59	77.5±1
Ingress protection	IP65	
Protective class	I	
Operating temperature range (℃)	0~55℃ (Charge) / -20~55℃ (Discharge)	
Storage temperature range (℃)	-20~55℃	
Relative humidity (%)	5~95% (No Condensation)	
Operating altitude (m)	≤3000	
Cooling	natural cooling	
Communication	CAN/RS485	

	E2BS-C6-D
Controller Parameter	
Operating Voltage Range (V)	350~900V DC
Rated Input-Output Current (A)	40
Communication	CAN/RS485
Display	LED
Dimensions (mm)	745*345*160
Weight (KG)	7.0
Ingress protection	IP65
Protective class	I
Operating temperature range (℃)	-20~55℃
Relative humidity (%)	5~95% (No Condensation)
Operating altitude (m)	≤3000
Cooling	natural cooling
System Configuration Quantity	1

	E2BS-A6-D
Base Parameter	
Operating Voltage Range (V)	350~900V DC
Rated Input-Output Current (A)	/
Communication	/
Dimensions (mm)	745*345*140
Weight (KG)	5.5
Protective class	I
Operating temperature range (℃)	-20~55℃
Relative humidity (%)	5~95% (No Condensation)
Operating altitude (m)	≤3000
Cooling	natural cooling
System Configuration Quantity	1

INTEGRATE SOLAR INTELLIGENTLY

China (HQ)
Wuxi Solinteg Power Co., Ltd.
Address: Building H1-1001, No.6 Jingxian Road, Xinwu District, 214135 Wuxi, Jiangsu Province, China
Website: www.solinteg.com
Service Mail: service@solinteg.com

M11-00129-00