Residential High Voltage Series

Battery Energy Storage System

User Manual

AESCB Series

V1.1

Statement

 Please keep this manual in a safe place and strictly follow all safety and usage instructions in this manual.

- Please do not install and operate the system before reading the manual.
- All information in this document is the property of the equipment manufacturer. No part of this document may be reproduced in any commercial manner. Internal use is permitted.
- The equipment manufacturer makes no warranties or guarantees, express or implied, with respect to this document or any equipment and/or software that may be described in this document, including but not limited to any implied warranty. All such representations or warranties are expressly disclaimed. In no event shall the Equipment manufacturer or its distributor or reseller be liable for incidental or consequential losses.
- The exclusion of an implied guarantee may not apply, according to certain statutes, so the above exclusion may not apply. The specifications and product appearance in this document are subject to change without prior notice.
- Every effort has been made to keep this document complete, accurate, and up-to-date. However, in some cases, equipment manufacturers may need to make improvements without notice. The equipment manufacturer shall not be liable for any damages arising out of this document, including but not limited to omissions, typographical errors, arithmetic errors, or errors in listing in this document.

Responsibility statement:

The equipment manufacturer will not bear any direct or indirect responsibility for the damage to the battery system or property damage caused by the following situations.

- The battery system has been modified or replaced without the authorization of the equipment manufacturer.
- Non-equipment manufacturer's technicians change or clear the battery system serial number.
- The design and installation of the system formed with other equipment does not meet the standards, safety regulations, and other relevant requirements.
- Equipment damage caused by failure to comply with the relevant requirements of the battery system user manual.
- Equipment damage caused by improper use or misuse of the battery system.
- Device damage caused by insufficient ventilation of the battery system.
- Maintenance procedures for battery systems do not follow acceptable standards.
- Equipment damage caused by force majeure, such as earthquake, storm, lightning, overvoltage, fire, etc.
- Equipment damage caused by any external factors.

Version Information

Version	Date	Content
V1.0	2023/12/30	First release
V1.1	2024/10/23	Secondary release

1 Information in this document

1.1 Content and structure of this document

- This document applies to Pack AESCB series.
- This document describes the installation, setup, commissioning, configuration, operation, troubleshooting, and operation methods of the product user interface.
- Follow all documentation that came with the product, keep them in one convenient place, and have them readily available.
- The illustrations in this document have been simplified to basic information and may deviate from the actual product.

1.2 Target groups

This document is intended for qualified personnel and end users. Only qualified personnel are allowed to carry out the activities marked with a WARNING sign in this document. Unmarked tasks do not require any specific qualifications and can be performed by end users.

Qualified individuals must possess the following skills:

- Learn how battery systems work and operate.
- Training on dealing with the hazards and risks associated with installing and using electrical equipment, batteries, and systems.
- Installation and commissioning training of electrical equipment and systems.
- Learn about applicable standards and directives.
- Understand and follow this document, including all safety precautions.
- Know and follow the battery manufacturer's documentation, including all safety precautions.

1.3 Warning message level

The following levels of warning messages may appear when handling the product

Danger
"DANGER" indicates a hazardous situation that, if not avoided, will result in death or serious injury.
Warning
"WARNING" indicates a hazardous situation that, if not avoided, could result in death or serious injury.
Cautions
Indicates a potentially hazardous situation that, if not avoided, could result in moderate or minor personal injury.
NOTICE
" NOICE" indicates a situation that, if not avoided, could result in property damage.

Contents

2 Safety

2.1 Safety Precautions for Pack

2.1.1 General Safety Precautions

- Overvoltage or incorrect wiring can damage the Pack and cause a detonation, which can be extremely dangerous.
- Various types of battery breakdown can lead to leakage of electrolyte or flammable gases.
- The Pack cannot be repaired by the user.
- Please read the "WARNING" label on the side of the Pack carefully.
- It is forbidden to connect AC conductors or photovoltaic conductors directly to the Pack, and the Pack can only be connected to the inverter.
- Do not charge or discharge damaged batteries.
- Do not damage the Pack by dropping, deforming, impacting, cutting, or piercing with sharp objects. Otherwise, electrolyte leakage or fire may occur. Do not expose the battery to an open flame.

2.1.2 Emergency Response

The battery pack consists of multiple cells and BMS designed to avoid danger due to failure. But their absolute safety cannot be guaranteed.

The following actions are recommended if the user comes into contact with the material inside the battery due to damage to the battery case.

- Inhalation: Get out of the contaminated area and seek medical attention immediately.
- Eye Contact: Flush eyes with running water for 15 minutes and seek medical attention immediately.
- In contact with skin: Wash the contact area thoroughly with soap and seek medical attention immediately.
- Ingestion: Induce vomiting and seek medical attention immediately.

In the event of a fire at the location of the Pack, take the following actions:

Extinguishing media

- No respirator is required for normal operation.
- If the fire is not emerging from the battery, and has not spread to it, use an ABC fire extinguisher.

Fire instruction

- If a fire occurs while the battery is being charged when it is safe to do so, disconnect the charging source.
- If the Pack does not catch fire, put the fire out before the Pack catches fire.
- If the Pack is on fire, do not attempt to extinguish the fire, evacuate immediately.

⚠ **Warning**
May explode when heated above 150 °C. When the pack burns, it will leak toxic gas, so keep it away.

Effective ways to deal with accidents

- On land: Store damaged batteries in an isolated area and contact your local fire department or service engineer.
- In the water: If any part of the battery, inverter, or wiring is submerged, keep away from the water and do not touch anything.
  (Do not use the submerged battery again and contact a service engineer.)

2.1.3 Important Safety Instructions

This section contains safety precautions that must always be observed during installation, commissioning, or use of the product.

To avoid personal injury and property damage and ensure the long-term use of the product, please read this section carefully and strictly observe the safety precautions.

Danger

Risk of electric shock when touching live parts or cables

High voltages are present in the conductive parts and cables of the product. Contact with live parts and cables can result in death or fatal injury from electric shock.

- Contact with non-insulated parts and cables is prohibited.
- Disconnect the product from the voltage source and ensure that it cannot be reconnected before working on the equipment.
- After disconnecting, wait 5 minutes until the capacitors are discharged.
- Do not open this product.
- Appropriate personal protective equipment should be worn when using the product.

Danger

Risk of electric shock when touching live parts or DC cables

When exposed to sunlight, photovoltaic arrays generate high DC voltages present in the DC conductors. Contact with live DC cables can result in death or fatal injury from electric shock.

- Disconnect the inverter from the voltage source and make sure that it cannot be reconnected before working on the equipment.
- Contact with non-insulated parts and cables is prohibited.
- Do not disconnect the DC connector under load.
- Appropriate personal protective equipment should be worn when installing and debugging the product and the inverter.

Warning

Risk of chemical burns from electrolytes or toxic gases

During normal operation of the battery, no electrolyte will leak from the Pack and no toxic gas will be formed. If the Pack is damaged or malfunctioning, it may result in electrolyte leakage or the formation of toxic gases when applied with care.

- Store Pack in a cool dry place.
- Do not drop the Pack or damage the Pack with sharp objects.

• Do not open the Pack. • Do not install or operate the Pack in potentially explosive atmospheres or areas of high humidity. • Do not install or operate the Pack if moisture seeps into the Pack (e.g., due to damage to the casing). • In case of contact with the electrolyte, flush the affected area with water and seek medical attention immediately

2.1.4 Symbol Description

Interpretation of the symbols on the Pack nameplate and manual:

SIGN	EXPLANATION
	The equipment is potentially hazardous after installation and operation. Take precautions when operating the equipment.
	Be careful with voltage
	Risk of explosion Please use the equipment reasonably, use it in extreme cases, the equipment has the risk of explosion
	View Documentation Instructions Indicates an error, and instructions need to be looked up to determine the cause of the failure.
	The device contains a corrosive electrolyte. Avoid contact with leaked electrolyte or volatile gas.
	CE Mark This product complies with the requirements of applicable EU directives.
	Before operating the equipment, please read the product manual carefully.
	Pay attention to personal protection during installation, operation, and maintenance.

	The device should be kept away from open flames or sources of ignition.
	Equipment should be kept out of reach of children.
	At the end of the life of the device, do not dispose of this product with household waste, and comply with the e-waste disposal regulations applicable at the installation site.
	Equipment should be recycled in the correct category and recycled in accordance with local environmental regulations
	Do not use water to extinguish fire
	Flammability risk
	Grounding sign

3 Product introduction and application scenarios

3.1 Dimension and specifications for the smallest battery system

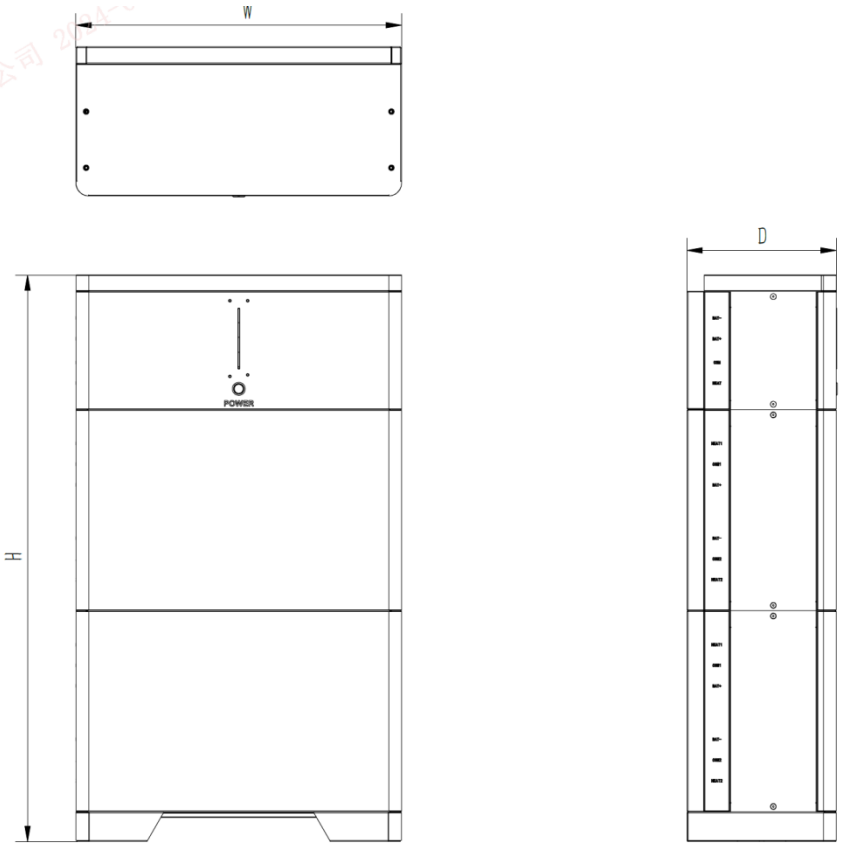
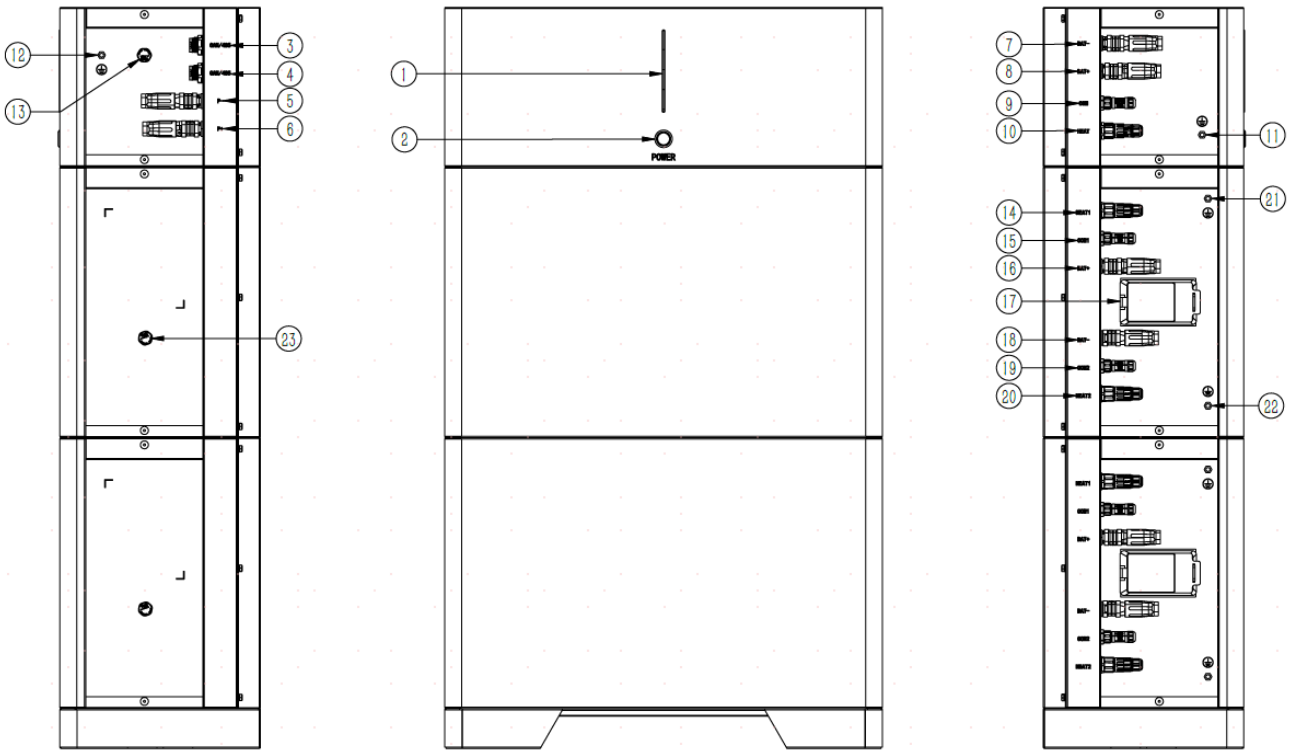


Figure 1 Battery Pack Dimension

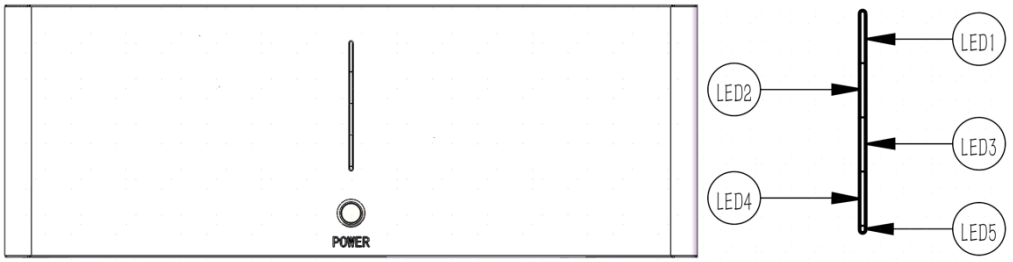
Item	Dimension (W×H×D)
AESCB10	550×960×252mm±5mm
AESCB15	550×1300×252mm±5mm
AESCB20	550×960×252mm±5mm 550×760×252mm±5mm
AESCB25	550×960×252mm±5mm 550×1100×252mm±5mm
AESCB30	550×1300×252mm±5mm 550×1100×252mm±5mm

3.2 Component introduction



No.	Part	Description
1	SOC/fault indicator	Power and State of System indicator; Fault indicator *For details on fault display, please refer to Section 9.2
2	Power switch	Turn on / off Battery System
3~4	Battery system CAN / 485 communication port	Communication transmission port
5	Battery system negative terminal	Battery system negative power connector
6	Battery system positive terminal	Battery system positive power connector
7	DC Negative Terminal	Battery negative power connector
8	DC Positive Terminal	Battery positive power connector
9	Battery system COM communication port	Communication transmission
10	Battery controller heating interface	Heating
11	Battery controller ground	Grounding terminal connect to Battery
12	Battery controller ground	Grounding terminal connect to inverter
13	Pressure relief valve	Equalize air pressure
14	Battery pack heating interface	Heating
15	Battery pack COM communication port	Communication transmission
16	DC Positive Terminal	Battery positive power connector
17	Battery pack circuit breaker	Protect, break
18	DC Negative Terminal	Battery negative power connector
19	Battery pack COM communication port	Communication transmission
20	Battery pack heating interface	Heating
21~22	Battery ground	Grounding terminal
23	Pressure relief valve	Equalize air pressure

3.3 Battery System LED Indicator



There are 5 LED indicators on the Battery system LED signal display panel, LED1 to LED5 from top to bottom. LED5 at the bottom is the status bit, and LED1 to LED4 is the SOC indicator bit, displaying the SOC operating status.

Indicator color					
Standby	Fault	Discharging mode	Heating mode	Charging mode	Precharging mode

	LED 5 LED 4 LED 3 LED 2 LED 1	
Indicator LED	**SOC indicator LED4 (25%) ~ LED1 (100%)**	**SOC description**
Standby mode: LED 5 flashes white for 1s, with an interval of 2s		0%≤SOC<25%
Discharge mode: LED 5 blue light is always on		25%≤SOC<50%
Charging mode: LED 5 is always on in yellow, and flashes the corresponding indicator of the uncharged soc; in heating mode, the orange light is always on, and the soc light is always on		50%≤SOC<75%
Precharging mode: LED 5 purple light flashes for 1 second, with an interval of 2 seconds. LED 1 – LED 4 is displayed according to the current SOC		75%≤SOC<100%
Fully charged: LED 5 is always on in yellow, LED 1 – LED 4 is always on in yellow		SOC=100%

4 Storage

4.1 Battery system storage

If the battery system is not put into use immediately, please make sure it is stored as follows:

1. The battery system should be placed as the labels on the packing case required. Do not place the battery upside down or sideways.
2. The battery system should be piled as by the marks on the package.
3. Keep the battery system out of reach of children and animals.
4. Put the battery system in places with minimum dust and dirt.
5. Be cautious when operating the battery to avoid any damage to the battery.
6. The storage environment requirements are as follows:
    a. Recommended storage conditions: 20% to 50% SOC, 0 °C to 35 °C, and relative humidity ≤60%.
    b. Keep the battery in a dry, clean, and well-ventilated place.
    c. Keep batteries away from corrosive organic solvents and gases. Keep the battery away from direct sunlight.
    d. Keep the battery at least 2 meters away from the heat source.
7. The battery system must be disconnected from external devices and hibernated. The indicators on the Battery Controller should be off, and the battery external circuit breaker should be off.
8. The delivery of batteries shall follow the principle of "first in, first out".
9. Storage SOC: 20~50%SOC. It should be charged and discharged every 6 months.
10. If the device is not installed within 3 days after unpacking, it is recommended to store the device in the packing box.
11. If the lithium battery is stored for a long time, it may cause a loss of capacity. If the lithium battery is stored at the recommended storage temperature for 12 months, the irreversible capacity loss rate is 3%~10%. It is not recommended to store batteries for long periods of time. If the battery needs to be stored for more than 3 months, it is recommended to charge the battery at least to 50% of the SOC.If the battery is not charged in time according to 6 months, and the battery cannot be turned on due to prolonged storage, the battery will need to be repaired or replaced, and this product is automatically out of warranty, and all costs incurred during the inspection and repair period will be borne by the customer.

5 Unpack

5.1 Check the outer package

- Before opening the package, check the status of the package. If there is any anomaly, do not open the package and contact the after-sales service center immediately.
- After opening the package, please check the package information to see if the product and accessories are all in the package. If there is any anomaly, please contact the after-sales service center immediately.

5.2 Packing List

5.2.1 Package for AESCB Battery system

Please confirm the materials according to the packing list inside the packaging box.

6 System Installation

6.1 Installation requirements

⚠ Warning

Danger to life due to fire or explosion

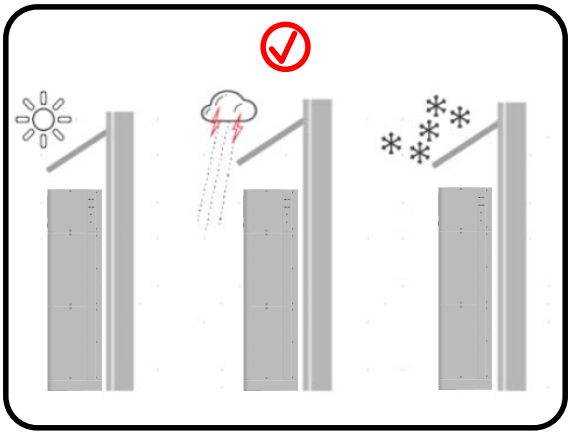
- Try to be cautious in construction, electrical equipment may still cause fire.
- Do not install this product in areas containing highly flammable materials or gases.
- Do not install the product in a potentially explosive atmosphere.

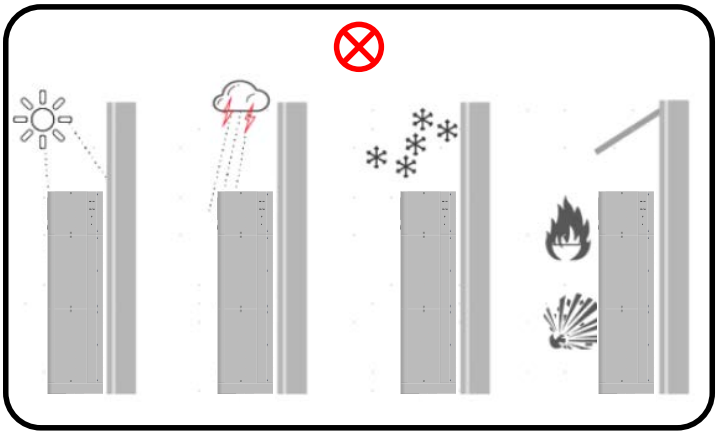
6.1.1 Basic requirements

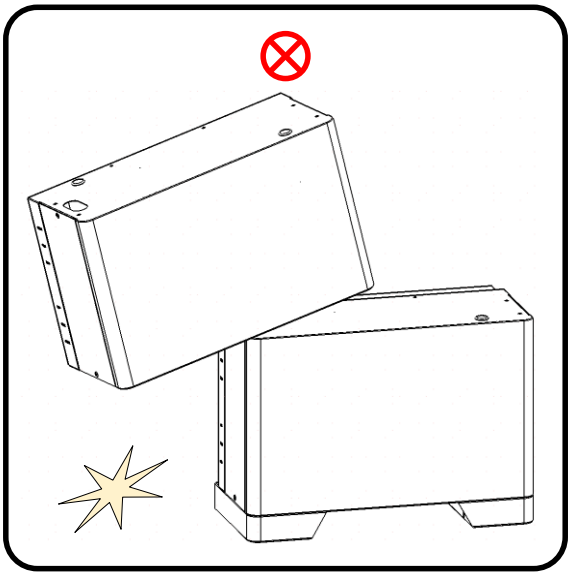
- Do not install this product in flammable and explosive places.
- Avoid installation where children can reach.
- Do not install the product in an outdoor salt area as it will corrode and may cause a fire. "Salt area" refers to areas within 500 meters of the coast or areas with high sea breezes. Areas susceptible to sea breezes vary by weather conditions (such as typhoons and monsoons) or topography (such as dams and hills).

6.1.2 Installation Environment Requirements

- This product must be installed in a well-ventilated environment to ensure good heat dissipation.
- When installed in direct sunlight, the power of the product may be reduced due to additional temperature rise.
- Install the product in a sheltered area, or install an awning over the product.
- The optimum temperature range for Pack operation is 15 to 30°C.
- Do not expose or place the product near water sources such as downspouts or sprinklers.







DANGER

When installing the battery module, if the battery module is dropped or subjected to strong impact, the device will be damaged, and it is strictly prohibited to continue to use it, otherwise there will be safety risks (potential leakage of battery cells, click injury, etc.).

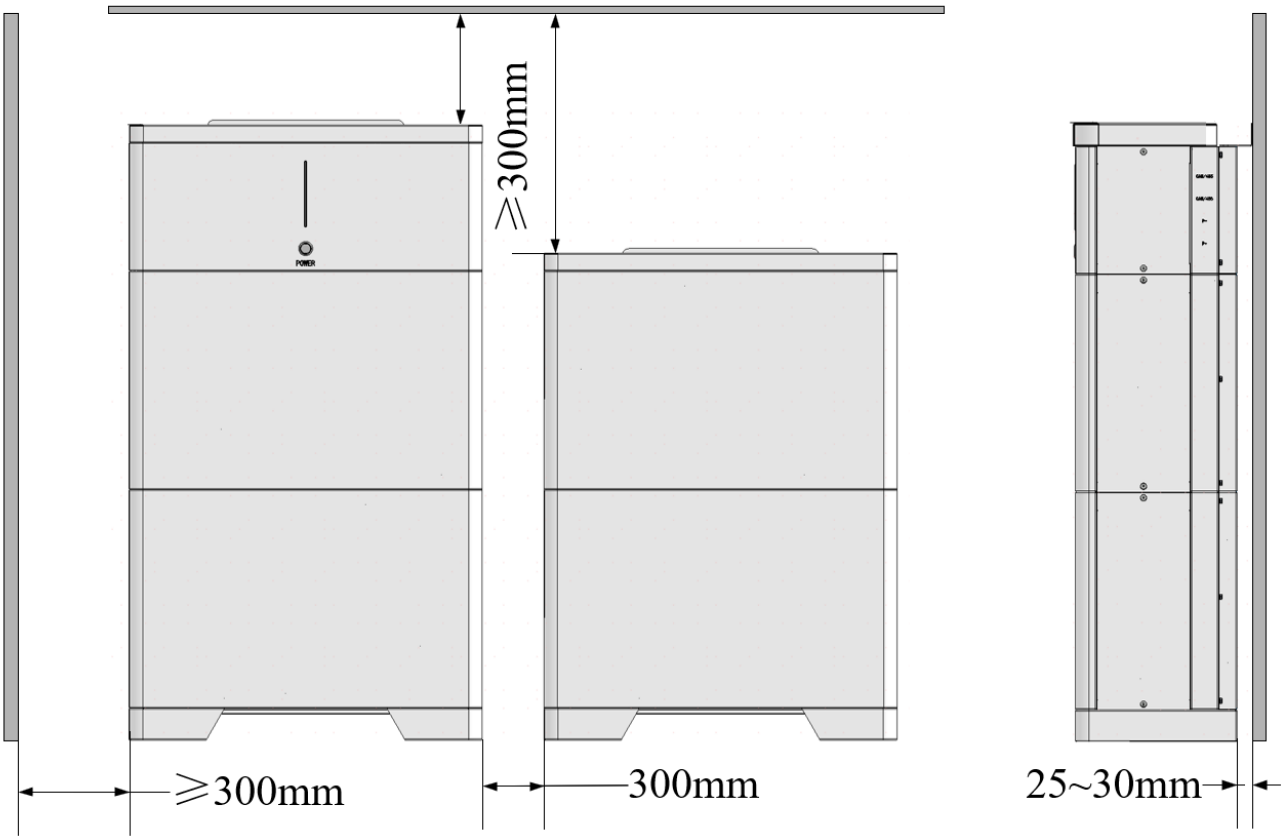
6.1.3 Installation Structure Requirements

- The installation structure where the product is installed must be fireproof.
- Do not install this product on flammable building materials.
- Do not install in places prone to water accumulation
- For floor installation, make sure the mounting surface is strong enough to withstand the weight load.

6.2 Installation space requirements

6.2.1 Floor Installation Space Requirements

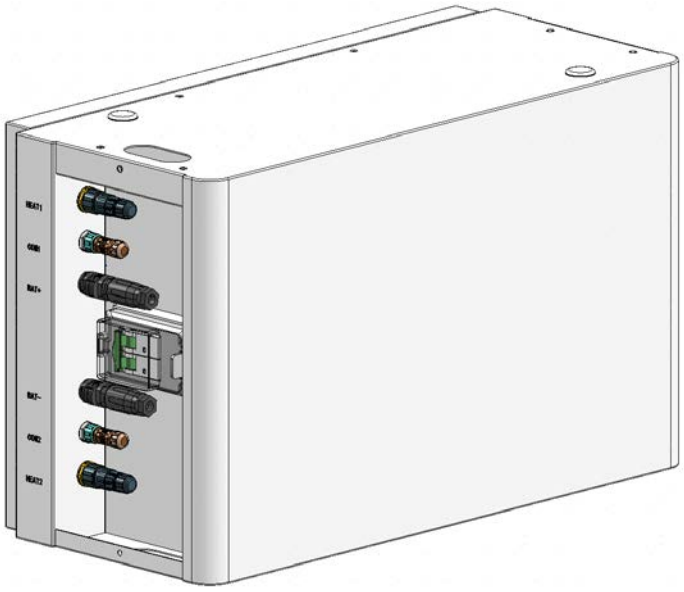
- Reserve enough space around the pack and inverter to ensure space for installation, maintenance, and heat dissipation.



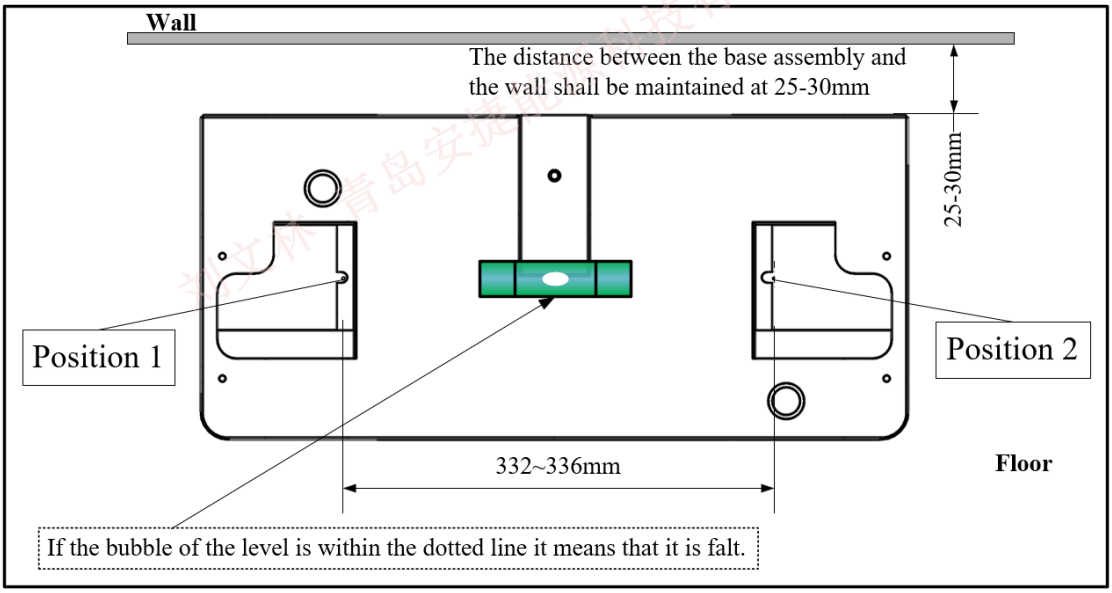
7 Battery System Installation

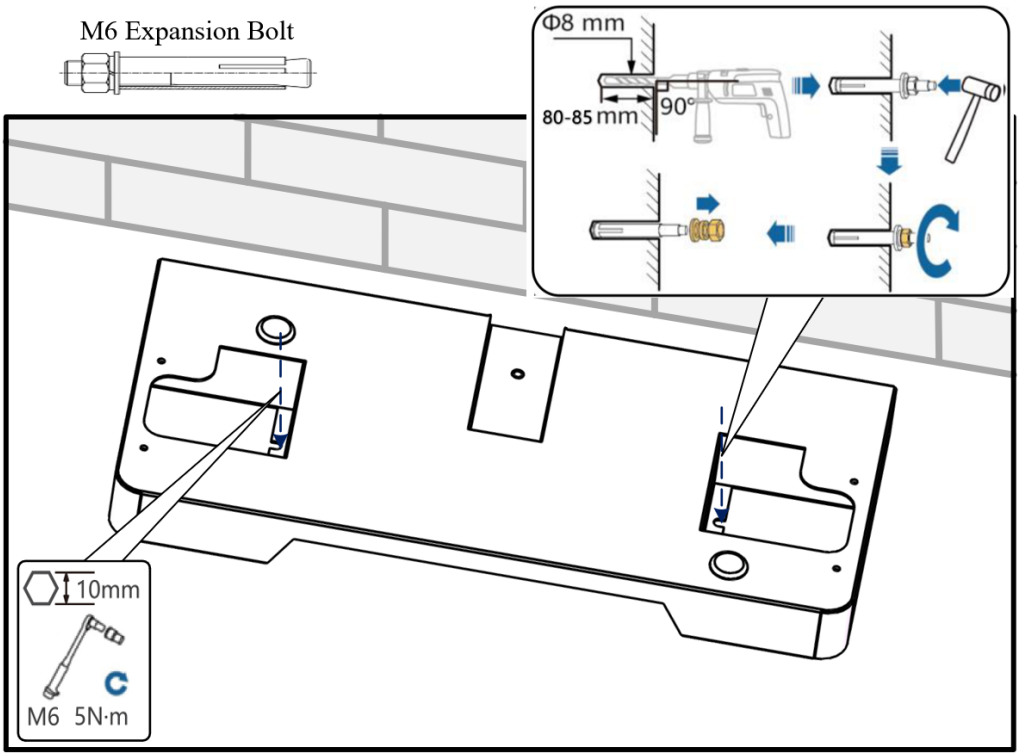
7.1 Installing the Battery on the Floor

- Take the Battery and accessories out of the box. Do not place the Battery upside down on the floor.

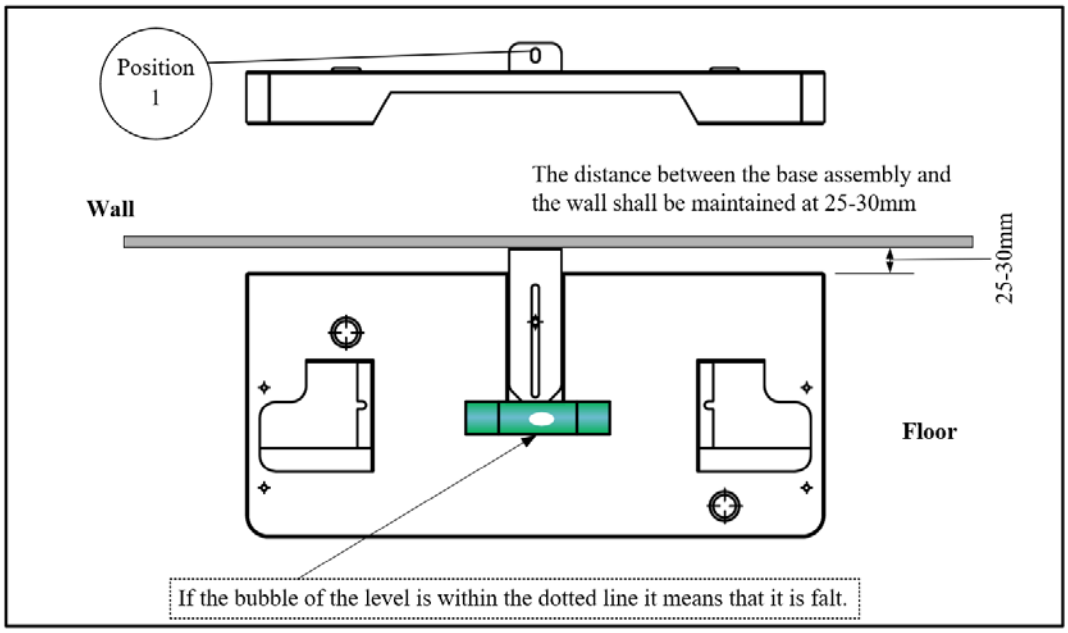


- Place the base assembly against the wall, 25-30mm away from the wall, and keep it level. Drill holes in positions 1 and 2 and install the M6 expansion bolts.

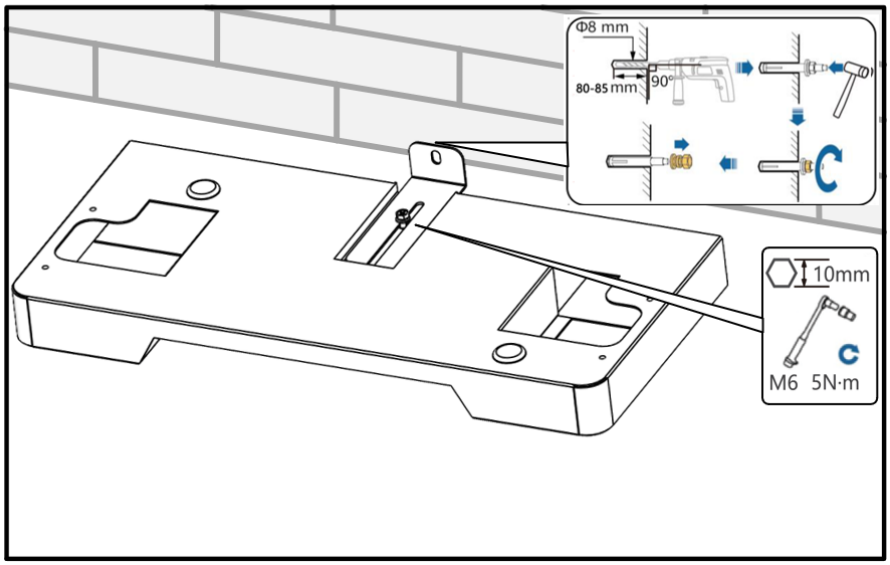




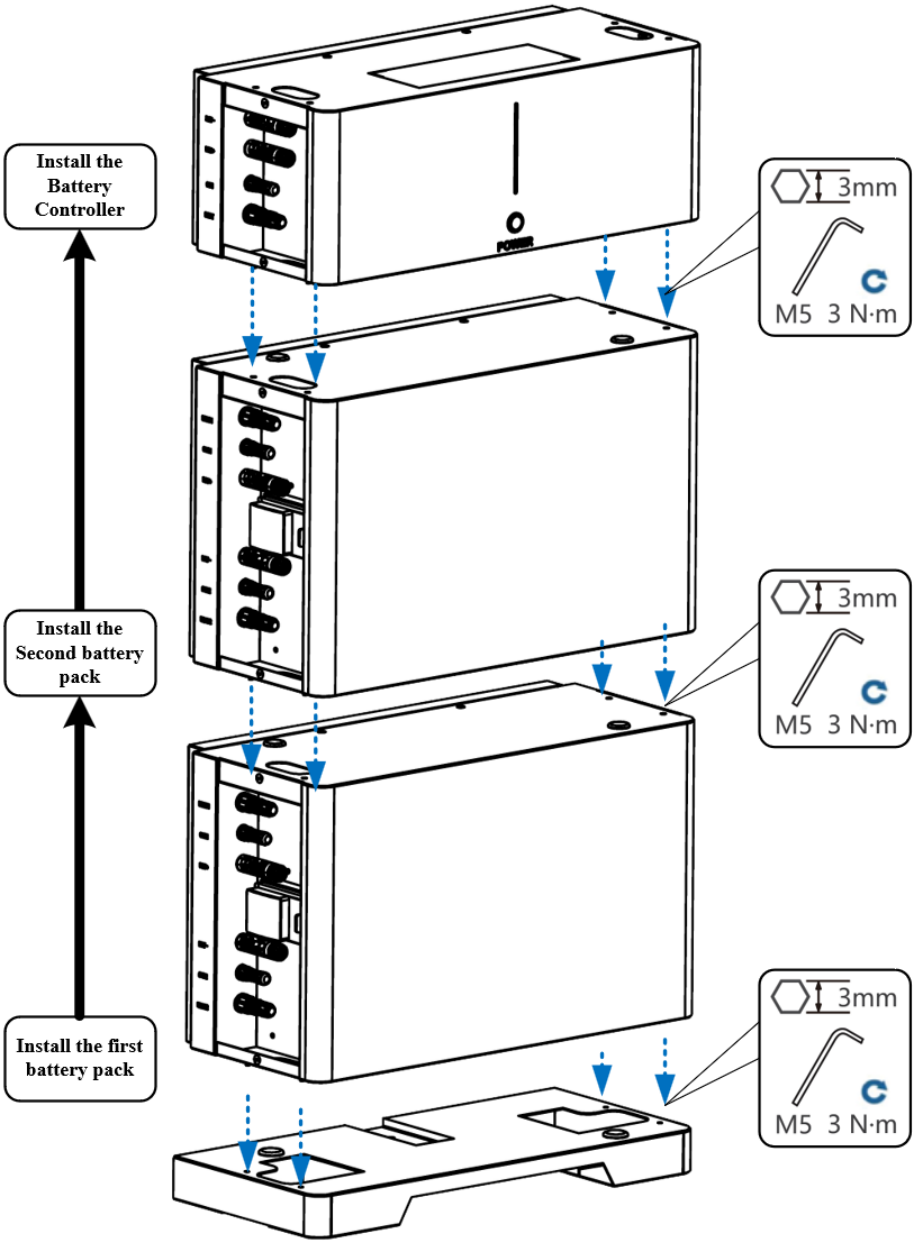
- Or Place the base assembly against the wall, 25-30mm away from the wall, and keep it level. Drill a hole in position 1 to install the M6 expansion bolt.



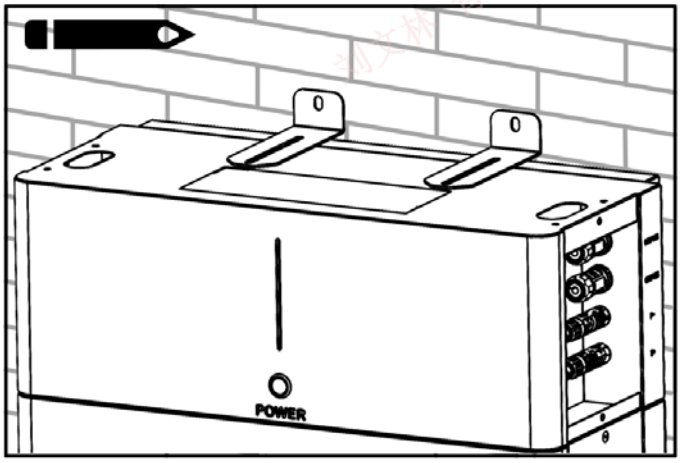
M6 Expansion Bolt



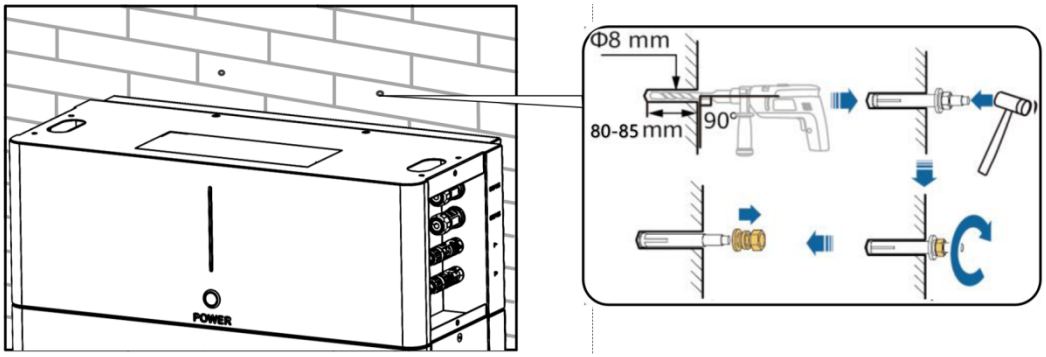
- Align the first module on the floor stand, install the bolts on both sides and fasten them.
- Install the battery pack from bottom to top. After installing each pack, tighten the left and right bolts (M5x12) before installing the next battery pack. After completing the installation of all the battery packs, install the Battery Controller.



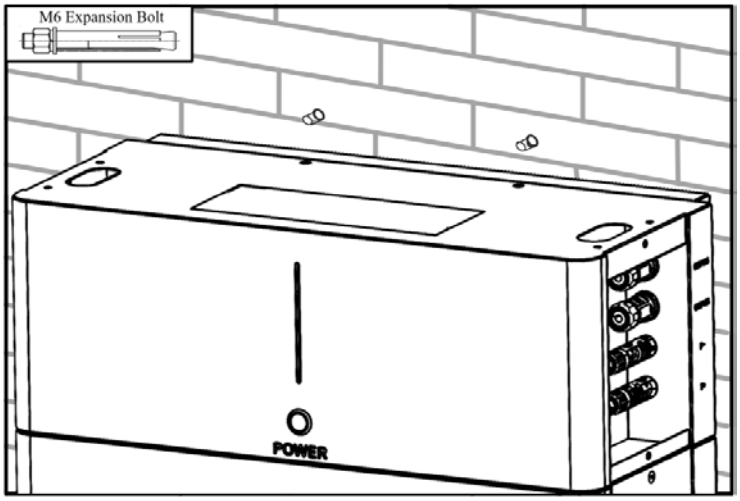
- Install the top fixing bracket



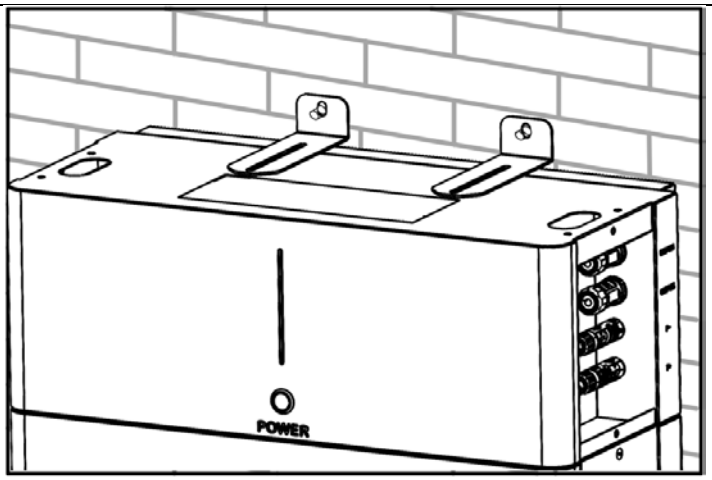
Use a fixed bracket to align the holes and mark the hole locations with a marker.



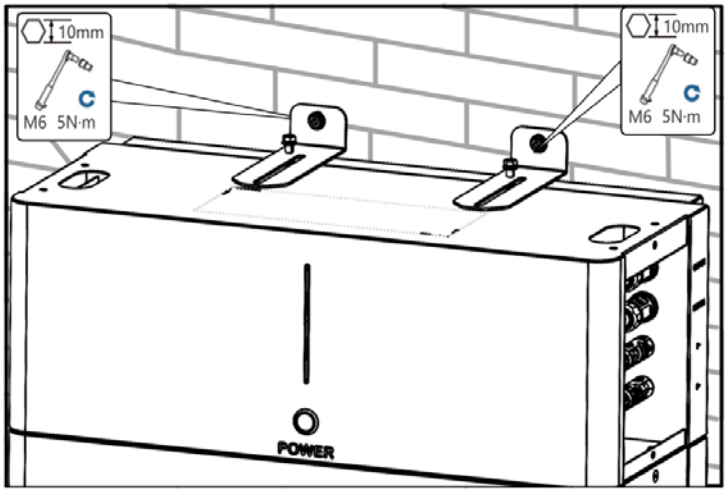
Use an impact drill to drill holes in the wall (aperture: 10mm, depth: 80-85mm)



After cleaning the dust and other debris in the two holes, place an expansion bolt into each hole and secure them to the wall with a sleeve



Install the fixing bracket



Tighten the fixing bracket

⚠ Warning

Risk of injury if the Pack is lifted or placed on the ground

- The Battery is very heavy, ⩾ 51 kg. There is a risk of injury if the Battery is incorrectly lifted or lowered during transport and installation.

  It is forbidden to stack more than 3 packs from top to bottom.

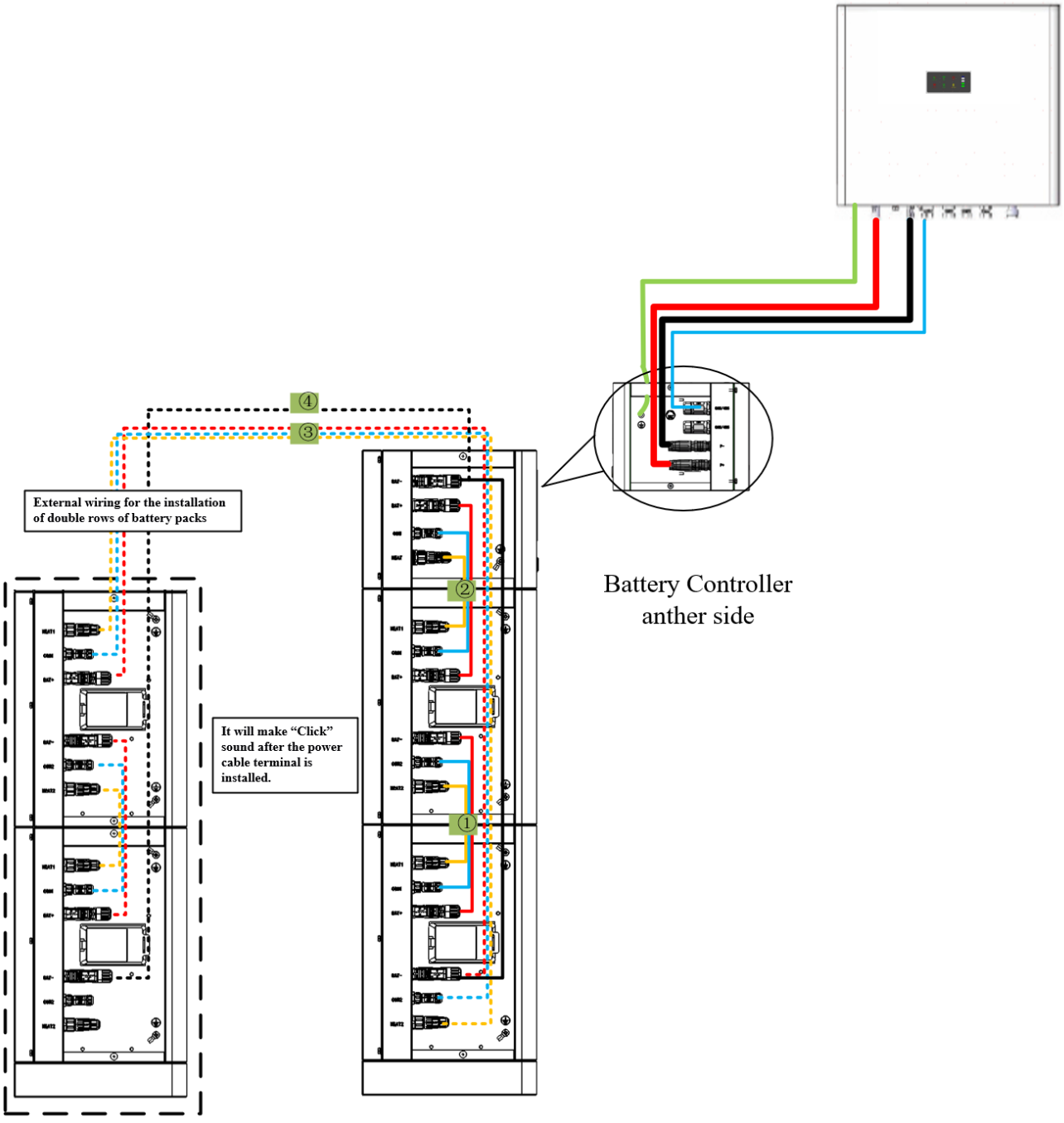
8 System connection

Precautions

⚠ **Danger**
• Before wiring, please confirm that all switches of the inverter and Pack are in the "OFF" state. Otherwise, the product voltage may cause electric shock.
⚠ **Warning**
• Equipment damage caused by incorrect cable connections is not covered by any warranty. • Only a certified electrician is allowed to connect the cables. • When connecting cables, operators must wear safety protection equipment
NOTICE
The cable colors shown in the electrical connection diagrams provided in this chapter are for reference only. Select cables according to local cable codes.

8.1 System Electrical Installation Overview

Take the 20kWh system as an example.



System Electrical Diagram

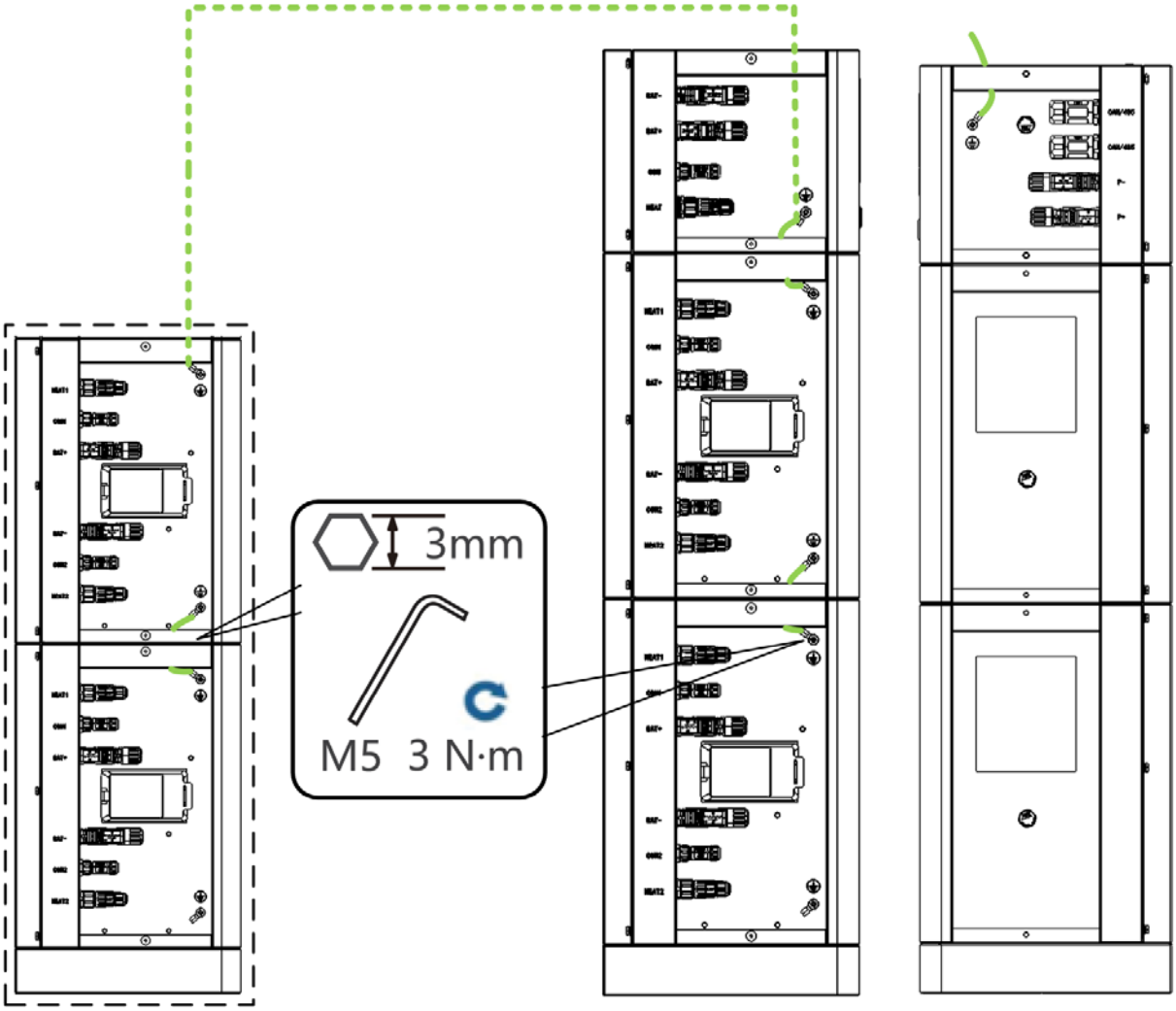
- Plug in 3-in-1 connection wire between PACKS (No. 1 in the diagram) at BAT+ and BAT-. Lengthened 3-in-1 connection wire between PACKS (No.4 in the diagram) should be used for double rows of battery packs.
- Plug in positive 3-in-1 connection wire between PACK and BCU (No. 2in the diagram) at BAT+.
- Plug in the negative connection wire (No. 3 in the diagram) at BAT-.
- When installing the device, the protective ground wire must be installed first; when removing the device, the protective ground wire must be removed at the end.
- The pull-out force after crimping should be greater than 400N.
- Protective ground conductor cross-sectional area: 12awg. The wire must meet the requirements of outdoor use standards.

Ground wire connection diagram

Note:

1.The length of the ground wire cannot exceed 1.2m

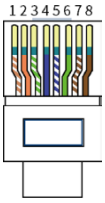
2.The length of the power cable cannot exceed 3m

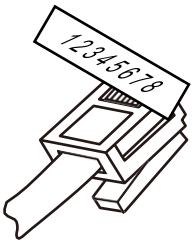

3mm
M5 3 N·m

8.2 Installation of communication cable, power cable, side panel, and upper cover

Please follow the steps below to connect

I. Crimp RJ45 crystal head terminal





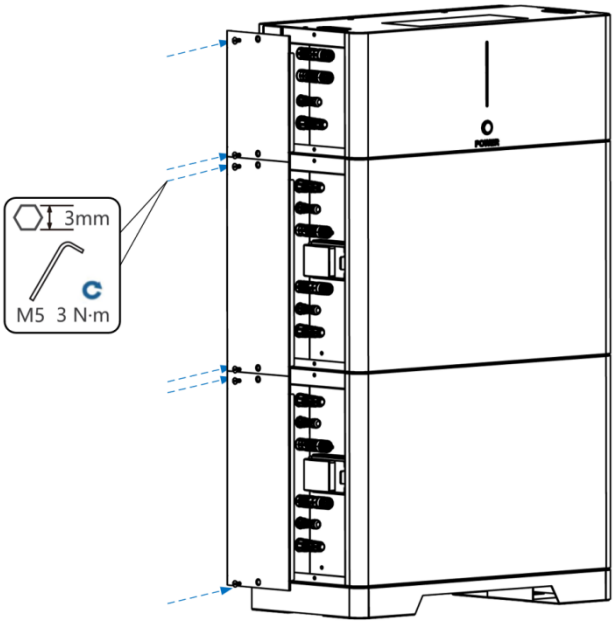
PIN	definition
1	RS485_A1
2	RS485_B1
3	NC
4	CANH1
5	CANL1
6	NC
7	DIG1_GND
8	DIG1

Adopt standard Cat 6 network cables (4 pairs of twisted pairs) as wring cables.

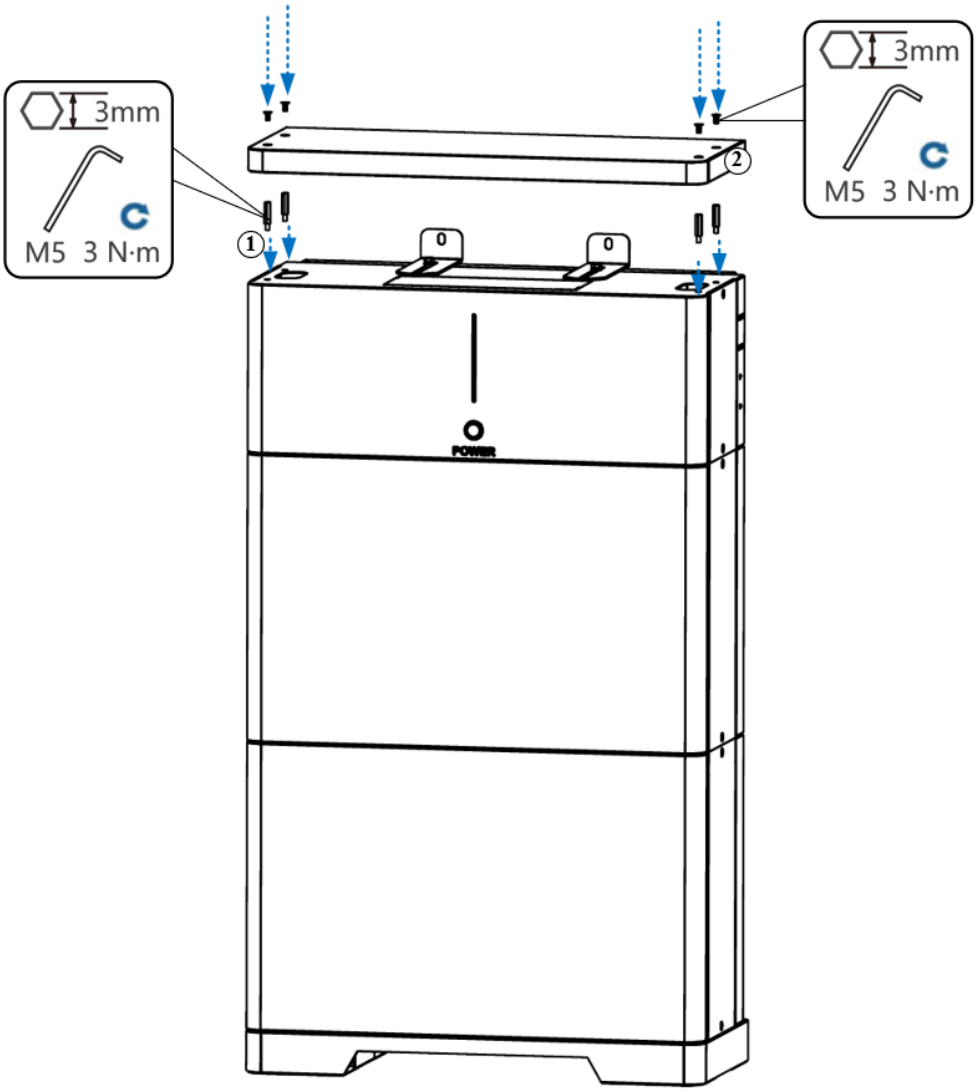
II. Install the side covers

a. Install the Battery Controller side covers.

b. Install the battery side covers.



III. Install the upper cover



9 System running

9.1 Check before powering on

Table 8-1 Installation check item description

No.	Check item	Acceptance Criteria
1	Battery system and inverter installation	The battery system and inverter are installed correctly, safely, and reliably.
2	Cable layout	The cable layout is reasonable and meets the requirements of users and local regulations.
3	Nylon tie	The tie is fixed evenly without burrs.
4	Grounding	The ground wire connection is correct, firm, and reliable.
5	Cable connection	AC cables, photovoltaic cables, battery system cables, and communication cables are connected correctly, firmly, and reliably.
6	Unused power terminal	Block unused power terminals with waterproof caps.

9.2 Turn on and off

Boot method: Press and hold the power button on the front of the Battery Controller for 3 seconds.

Shutdown method: Press and hold the power button on the front of the Battery Controller for 3 seconds.

⚠ **Warning**
After the inverter and battery system are powered off, the remaining electricity and heat may still cause electric shock and burns. Therefore, please wear protective gloves and operate the product after 5 minutes of power outage

9.3 Heating function

When the minimum temperature of the battery cell is lower than 2°C, charging the battery, the battery system automatically enters the heating mode. When the lowest temperature of the battery cell is higher than 5°C, it stops heating and enters the charging mode.

10 Maintenance & Troubleshooting

10.1 Routine maintenance

Disconnect the inverter and battery system from all power sources before cleaning. Clean the case, cover, and display with a soft cloth.

To ensure the long-term normal operation of the inverter and battery system, it is recommended to perform routine maintenance on the inverter and battery system.

Check item	Acceptance Criteria	Maintenance interval
Product cleaning	The battery system is free of obstructions and dust.	Once every 6 to 12 months
Product damage	The battery system is not damaged or deformed.	Once every 6 months
Product operating status	1. The battery system operates without abnormal sounds. 2. The battery system parameters are set correctly. This check should be performed when the battery system is operating normally.	Once every 6 months
Electrical connections	1. The cable connection is firm. 2. The cable should be intact, especially when the cable sheath contacts the metal surface, scratches should be avoided。	The first maintenance is carried out 6 months after the initial commissioning. It is recommended to perform maintenance every 6 ~ 12 months.
Ground reliability	Check whether the ground cable is reliably grounded.	The first maintenance is carried out 6 months after the initial commissioning. It is recommended to perform maintenance every 6 ~ 12 months.

Troubleshooting

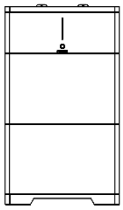
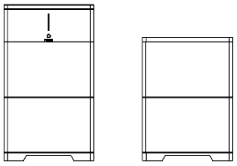
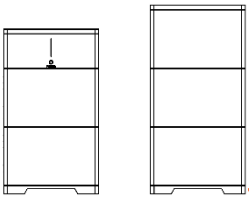
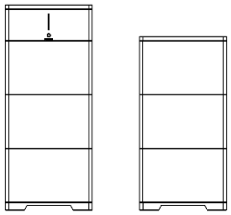
Priority	indicator light	indicator light	Fault category	Solution
1	LED1-LED5 red flash		Contactor sticking	Disconnect the circuit breaker on the battery, contact customer service
2	LED5、LED2 red lights are always on,LED1、LED3 white lights are on,LED4 yellow light is on		Internal Power Failure	Shut down, contact customer service
	LED5、LED2 red lights are always on,LED1、LED4 white lights are on,LED3 yellow light is on		Contactor closure fault	Shut down, contact customer service
3	LED3、LED5 red lights are always on,LED1、LED2 white light are on,LED4 yellow light is on		Power line failure	Shut down, check the power cable connections, and restart the battery. If the problem is not resolved, contact customer service
	LED5、LED3 red lights are always on,LED1、LED4 white lights are on,LED2 yellow light is on		Voltage Sampling Line Fault	Shut down, contact customer service
	LED5、LED3 red lights are always on,LED2、LED4 white lights are on,LED1 yellow light is on		Temperature sampling line fault	Shut down, contact customer service
4	LED5 white light is on,LED1-LED4 red lights are on		Insulation resistance warning	Shut down, contact customer service

5	LED1-LED5 red lights are on		The cell voltage difference is too large	Shut down, contact customer service
6	LED5 Purple light is on,LED1-LED4 red lights are on		Pre-charge or short circuit warning	Shut down, contact customer service
7	LED5 orange light is always on, LED1-LED4 red lights are on		Failure of heating function	Shut down, wait for the temperature to rise, and restart the battery, if the problem is not solved, contact customer service
8	LED5 red light is always on, LED1 yellow light is on,LED2-LED4 white lights are on		Communication with the inverter is interrupted	Shut down, check the communication cable connection, and restart the battery. If the problem is not resolved, contact customer service
	LED5 red light is always on, LED4 yellow light is on,LED1-LED3 white lights are on		Daisy-chain communication failure	Shut down, check the daisy-chained communication connections, and restart the battery. If the problem is not resolved, contact customer service
9	LED5、LED1 red lights are always on,LED2-LED4 white lights are on		Battery undervoltage	In the case of charging conditions, keep pressing the switch button for 10 seconds, restart the battery pack and enter the forced charging mode, wait for the voltage to rise and return to normal.

10	LED1、LED3、LED5 red lights are always on,LED2 yellow light is on,LED4 white light is on		Battery overvoltage	Restart the battery and inverter, if the problem is not solved, contact customer service
	LED1、LED3、LED5 red lights are always on,LED2 white light is on,LED4 yellow light is on		Charge overcurrent	Restart the battery and inverter, if the problem is not solved, contact customer service
	LED1、LED3、LED5 red lights are always on,LED2 white light is on,LED4 blue light is on		Discharge overcurrent	Restart the battery and inverter, if the problem is not solved, contact customer service
11	LED5 red light is flash,LED1-LED4 yellow lights are on		temperature difference	Shut down, wait for the temperature to rise, and restart the battery, if the problem is not solved, contact customer service
			High-temperature 11protection	
			Low-temperature protection	

Note: Fault display is based on priority. Multiple faults under the same priority can be displayed at the same time.

11 AESCB Battery pack parameter table

MODEL	AESCB10	AESCB15	AESCB20	AESCB25	AESCB30
PICTURE					
CELLS	LFP(LiFePO4)				
Battery pack	AES5.1-M(32S1P 102.4V 50Ah)				
NO OF MODULE	2	3	4	5	6
Energy Capacity (kWh)	10.24	15.36	20.48	25.6	30.72
Available Capacity (kWh)	9.22	13.82	18.43	23.04	27.65
Rated Voltage (V) (25°C)	204.8	307.2	409.6	512.0	614.4
Operating Voltage Range (V) (25°C)	179.2~227.2	268.8~340.8	358.4~454.4	448.0~568.0	537.6~681.6
Max Charge Current (A)	32				
Max Discharge Current (A)	32				
Size (W×D×H)[mm]	550×252×960	550×252×1300	550×252×960 550×252×760	550×252×960 550×252×1100	550×252×1300 550×252×1100
Weight (kg)	116.5±2	168.5±2	220.5±5	275.5±5	327.5±5
Monitoring Module	**AESCB-Battery Controller**				
Size (W×H×D)[mm]	550×252×200±5				
Weight (kg)	9.5±1				
Battery pack	**AES5.1-M**				
Size (W×D×H)[mm]	550×252×340±5				
Weight (kg)	52±2				
Parameters					
IP Level	IP65				
Installs Way	On ground				
Class Level	CLASS I				

Operating Temperature Range	-20~53
Storage Temperature Range* (°C)	0~35
Relative Humidity (%)	5~95 Relative Humidity
Salt spray resistance	YES
Working altitude (m)	≤4000
Cooling Type	Free cooling
Communication	CAN/RS485
CERTIFICATE	
EMC	EN 61000-6-1/EN 61000-6-3
Safety	IEC/EN 62477-1、IEC 62619、IEC60730-1(Annex H)、IEC 63056
Transportation	UN38.3

*Battery performance degrades at low and high temperatures