V1.0 2026-04-03

BAT-C 208.9-261.2kWh

Commercial and Industrial Battery System

User Manual

GOODWE

Copyright Statement

NOTICE

Due to product version upgrades or other reasons, the document content will be updated periodically. Unless otherwise agreed, the document content cannot replace the safety precautions on product labels. All descriptions in the document are for guidance only.

About This Manual

Overview

This document primarily introduces the product information, transportation and storage, installation and wiring, configuration and commissioning, troubleshooting, and maintenance of the battery system. Please read this manual carefully before installing and using this product to understand the product safety information and familiarize yourself with the product's functions and features. The document may be updated periodically. Please obtain the latest version of the documentation and more product information from the official website: https://www.goodwe.com.

Applicable Model

This document applies to the following models of battery systems:

- GW208.9-BAT-LC-G10
- GW208.9-BAT-LCD-G10
- GW261.2-BAT-LCD-G10

Symbol Definition

⚠DANGER
Indicates a situation with a high potential for danger which, if not avoided, will result in death or serious injury.

⚠WARNING
Indicates a moderate potential hazard that, if not avoided, could result in death or serious injury.

⚠CAUTION
Indicates a low potential hazard which, if not avoided, may result in moderate or minor injury.

NOTICE
Emphasizes and supplements the content, may also provide tips or tricks for optimal product use, helping you solve a problem or save your time.

Table of Contents

1 Safety Precautions

The Safety Precautions information contained in this document must always be followed when operating the device.

⚠WARNING
The device has been strictly designed and tested in accordance with safety regulations, but as an electrical device, before performing any operations on the device, relevant safety instructions must be followed. Improper operation may lead to serious injury or property damage.

1.1 General Safety

NOTICE

- Due to reasons such as product version upgrades, the content of this document may be updated periodically. Unless otherwise specified, the document content cannot replace the safety precautions on the product label. All descriptions in the document are for guidance only.
- Please read this document carefully before installing the device to understand the product and its precautions.
- All operations on the device must be performed by professional and qualified electrical technicians who are familiar with the relevant standards and safety regulations in the project location.
- When operating the device, use insulated tools and wear personal protective equipment to ensure personal safety. When handling electronic components, wear anti-static gloves, wrist straps, clothing, etc., to protect the device from electrostatic damage.
- Unauthorized disassembly or modification may cause device damage, and such damage is not covered by the warranty.
- Device damage or personal injury caused by failure to install, use, or configure the device in accordance with the requirements of this document or the corresponding user manual is beyond the manufacturer's liability. For more product warranty information, please visit the official website: https://www.goodwe.com/warrantyrelated.html.

1.2 personnel requirements

NOTICE

To ensure safety, compliance, and efficiency throughout the entire process of equipment transportation, installation, wiring, operation, and maintenance, all work must be performed by professionals or qualified personnel.

1. Professionals or qualified personnel include:
   - Personnel who have mastered knowledge of equipment working principles, system structure, risks and hazards, and have received professional operation training or possess extensive practical experience.
   - Personnel who have received relevant technical and safety training, possess certain operational experience, are aware of the potential dangers specific tasks may pose to themselves, and can take protective measures to minimize risks to themselves and others.
   - Qualified electrical technicians who meet the regulatory requirements of the country/region where the work is performed.
   - Personnel holding a degree in electrical engineering/an advanced diploma in electrical disciplines or equivalent/possessing professional qualifications in the electrical field, and having at least 2/3/4 years of experience in testing and regulatory work using electrical equipment safety standards.
2. Personnel involved in special tasks such as electrical work, work at heights, and operation of special equipment must hold valid qualification certificates required by the location of the equipment.
3. Operation of medium-voltage equipment must be performed by certified high-voltage electricians.
4. Replacement of equipment and components is only permitted to be performed by authorized personnel.

1.3 Battery Safety

⚠DANGER

- This battery system is a high-voltage system, and high voltage is present during operation. Before operating any equipment within the system, ensure the equipment is powered off to avoid the risk of electric shock. Strictly adhere to all safety precautions in this manual and the safety labels on the equipment during

⚠DANGER

operation.

- This battery system is a high-voltage system and should be kept away from by non-professionals. Do not touch or operate without authorization.
- This energy storage system is heavy equipment. During installation and maintenance, use appropriate equipment and tools and take protective measures. Improper operation may cause personal injury or product damage.
- Do not disassemble, modify, or repair the battery or control box without official authorization from the equipment manufacturer. Otherwise, it may cause electric shock or equipment damage, and any resulting losses are beyond the manufacturer’s liability.
- The equipment must be installed on concrete or other non-combustible surfaces. Ensure the foundation is level, firm, flat, dry, and has sufficient load-bearing capacity. Depressions or tilting are prohibited.
- Do not impact, pull, drag, squeeze, step on the equipment, or puncture the equipment casing with sharp objects. Also, do not place the battery in fire, as this may cause the battery to explode.
- Do not place the battery in high-temperature environments. Ensure there are no heat sources near the battery and that it is not exposed to direct sunlight. A fire may occur if the ambient temperature exceeds 60°C.
- Do not use the battery or control box if there are obvious defects, cracks, damage, or other abnormalities.
- Battery damage may cause electrolyte leakage.
- Do not move the battery system while it is operating.
- Pay attention to the positive and negative terminals when installing the battery system. Do not reverse the polarity, as this may cause a short circuit, leading to personal injury or property damage.
- Never short-circuit the battery's positive and negative terminals. A battery short circuit may cause personal injury. The instantaneous high current from a short circuit can release a large amount of energy, potentially causing a fire.
- When operating the equipment, ensure it is not damaged and the system has no faults. Otherwise, there may be risks of electric shock and fire.
- During equipment operation, do not open the cabinet doors or touch any terminals or components. Otherwise, there is a risk of electric shock.
- The cabinet temperature may exceed 60°C during equipment operation. Do not touch the cabinet before it cools down; do not install it within reach of non-

⚠DANGER

professionals.

- During battery system operation, do not plug or unplug terminals and connecting cables, as this may create safety hazards.
- If any abnormal conditions occur during battery system operation, immediately power off the battery system and contact relevant personnel for handling.
- The battery DC circuit breaker must comply with the requirements of the AS/NZS 5139 standard.

⚠WARNING

- Ensure the battery is charged promptly after discharge; otherwise, over-discharge may cause battery damage.
  Do not charge or discharge the battery using currents exceeding the rated specifications.
- Battery current may be affected by factors such as: temperature, Humidity, weather conditions, etc., which may lead to current limiting and affect load capacity.
- If the battery fails to start, please contact the after-sales service center as soon as possible. Otherwise, the battery may be permanently damaged.
- If you need to replace battery modules or add battery modules, please contact the after-sales service center.
- Avoid charging the battery in low-temperature conditions, as this may reduce the battery system's capacity.
- Do not place unrelated items into any part of the battery cabinet.

NOTICE

Emergency Response Measures:

- Battery electrolyte leakage
  If the battery module leaks electrolyte, avoid contact with the leaking liquid or gas. Electrolyte is corrosive, and contact may cause skin irritation and chemical burns. If you come into contact with the leaked substance, take the following actions:
  - inhalation: Evacuate from the contaminated area and seek medical help immediately.
  - Eye contact: Rinse with clean water for at least 15 minutes and seek medical help immediately.
  - Skin contact: Wash the affected area thoroughly with soap and water and seek medical help immediately.
  - Ingestion: Induce vomiting and seek medical assistance immediately.
- Fire
  - When the battery temperature exceeds 150°C, there is a risk of fire. A battery fire may release toxic and harmful gases.
  - To prevent fire, ensure carbon dioxide, Novec1230, or FM-200 fire extinguishers are available near the equipment.
  - When extinguishing a fire, do not use ABC dry powder fire extinguishers. Firefighters must wear protective clothing and self-contained breathing apparatus.

1.4 EU Declaration of Conformity (Battery)

Batteries that can be sold in the European market meet the following directive requirements:

- Electromagnetic compatibility Directive 2014/30/EU (EMC)
- Electrical Apparatus Low Voltage Directive 2014/35/EU (LVD)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)[*1]
- Regulation (EU) 2023/1542 Article 12 - Safety of stationary battery energy storage systems
- Regulation (EU) 2023/1542 Article 10 - Performance and durability requirements

for rechargeable industrial batteries, LMT batteries and electric vehicle batteries
- Regulation (EU) 2023/1542 Article 14 - Information on the state of health and expected lifetime of batteries
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)
  *1: Our company's battery products meet the hazardous substance limit requirements specified in this regulation.

More EU Declarations of Conformity can be obtained from the official website.

1.5 Safety Symbols and Certification Marks

⚠DANGER

- After the equipment is installed, the labels and warning signs on the cabinet must be clearly visible. It is prohibited to cover, alter, or damage them.
- The following cabinet warning label descriptions are for reference only. Please refer to the actual labels used on the equipment.

No.	Symbol	Description
1		Potential hazard during operation. Take precautions when operating the device.
2		High voltage hazard. The device operates with high voltage. Ensure the device is powered off before performing any operations.
3		High temperature on the device surface. Do not touch during operation to avoid burns.
4		Use the device properly. Operating under extreme conditions may cause explosion.
5		Battery contains flammable materials. Risk of fire.

No.	Symbol	Description
6		The device contains corrosive electrolyte. Avoid contact with leaked electrolyte or vapor.
7		Delayed discharge. After powering off, wait 5 minutes for the device to fully discharge.
8		Keep the device away from open flames or ignition sources.
9		Keep the device out of reach of children.
10		Use the device properly. Operating under extreme conditions may cause explosion.
11		Battery contains flammable materials. Risk of fire.
12		Do not lift the device after the battery system is wired or while the battery system is operating.
13		Do not extinguish with water.
14	 	Read the product manual thoroughly before operating the device.
15		Wear personal protective equipment during installation, operation, and maintenance.
16		Do not dispose of the device as household waste. Dispose of the device according to local laws and regulations, or return it to the manufacturer.

No.	Symbol	Description
17		Grounding point.
18		Recycling symbol. Dispose of the device properly and recycle it according to local environmental regulations.
19		CE certification mark.
20		RCM certification mark.

2 Product Introduction

2.1 Product Overview

The BAT-C 208.9-261.2kWh battery system (hereinafter referred to as the battery system) is primarily composed of the battery PACK, high-voltage box, liquid cooling unit, fire protection system, and other main components, enabling the storage and release of electrical energy.

Model Description

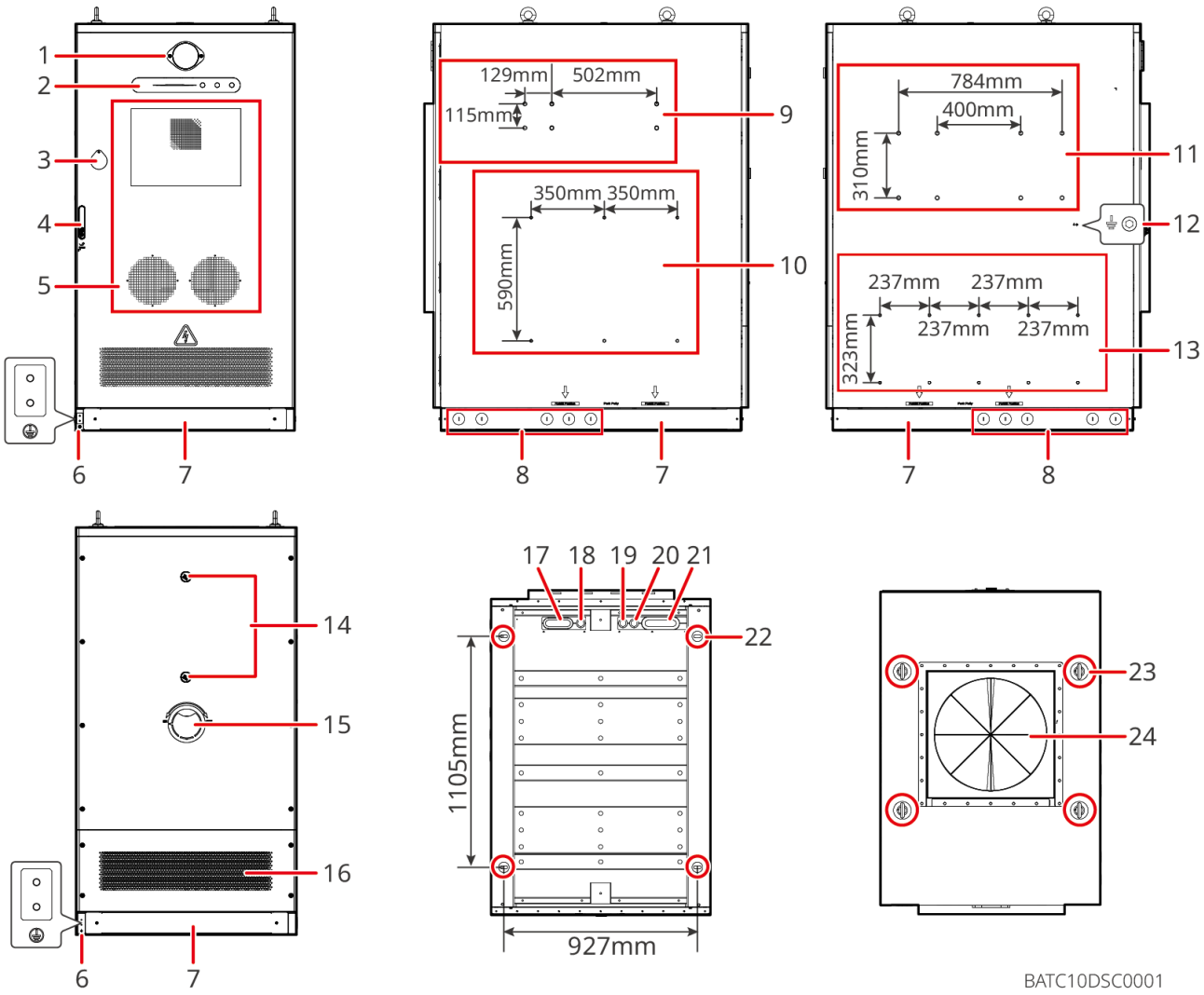
Identifier	Meaning	Description
1	Brand code	GW: GOODWE
2	Energy Level	• 208.9: Rated energy is 208.9kWh • 261.2: Rated energy is 261.2kWh
3	Series code	BAT: BAT Series
4	Whether DCDC function is supported	• LC: DCDC function not supported • LCD: DCDC function supported
5	Version code	G10: First generation product

Product Highlights

- Fully self-developed system stack (PACK, BMS, DCDC)
- Low cost (high-capacity cells), long lifespan

- Multiple detections, multiple layers of safety protection
- Supports 8-hour long-duration backup power
- Equipped with an intelligent thermal management system
- Door-mounted liquid cooling unit for more convenient operation and maintenance
- Strong compatibility, adaptable to multiple inverters, supporting flexible application of solutions.
- The battery system equipped with the DCDC version supports mixing and paralleling of old and new batteries or battery clusters with different cells, and supports mixing and paralleling between battery systems with different capacities, facilitating iterative use.
- The system platform can display Cell-level information.

2.2 Appearance Introduction



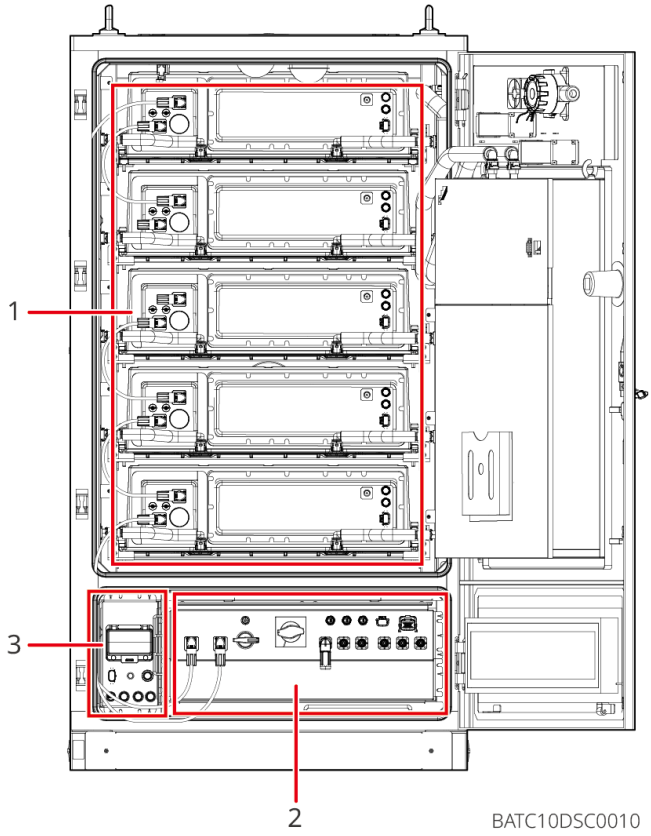
No.	Name	Description
1	Exhaust fan	Used to quickly exhaust gases from the enclosure.
2	Indicator	Indicates the operating status of the battery system.
3	Emergency stop switch	Pressing the emergency stop button will power down the battery system.
4	Door lock	-
5	Liquid cooling unit	Used for cooling and temperature control of the battery system.
6	Protective grounding point	Used for connecting the battery grounding cable.
7	Bottom cover plate	-
8	Side wiring port	-
9	SEC3000C mounting hole	Used for installing the SEC3000C, compatible with both old and new versions of SEC3000C installation.
10	SEC3000C bridge mounting hole	Used for installing the bridge for the SEC3000C.
11	Inverter mounting hole	Used for installing the inverter.
12	Inverter grounding point	Used for connecting the inverter grounding cable.
13	Cable protection cover / Circuit breaker waterproof box mounting hole	Used for installing the cable protection box / circuit breaker waterproof box.
14	Explosion-proof valve	Prevents explosion of the battery system.
15	Firefighting water interface	In case of fire, water can be injected for fire suppression.

No.	Name	Description
16	Rear cover plate	-
17	Wiring port 1	Used for routing power cables connecting the battery to the inverter.
18	Wiring port 2	Used for routing communication cables connecting the battery to the inverter.
19	Wiring port 3	Used for routing power supply cables for the liquid cooling unit.
20	Wiring port 4	Used for routing parallel cluster communication cables for the battery.
21	Wiring port 5	Used for routing parallel cluster power cables for the battery.
22	Battery system fixing hole	Used for securing the battery system to the foundation.
23	Lifting lug	Used for hoisting and handling.
24	Explosion venting panel	(Optional) Prevents rupture of the battery pack enclosure.

2.3 Component Introduction

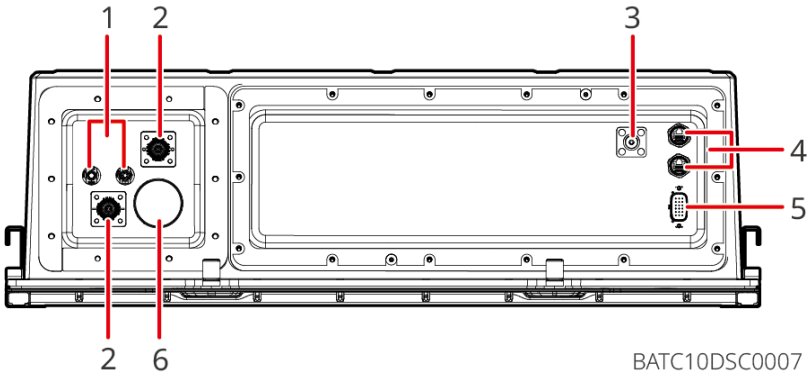
2.3.1 Power Supply and Distribution System

The power supply and distribution system mainly consists of PACK, PCU, and distribution box:



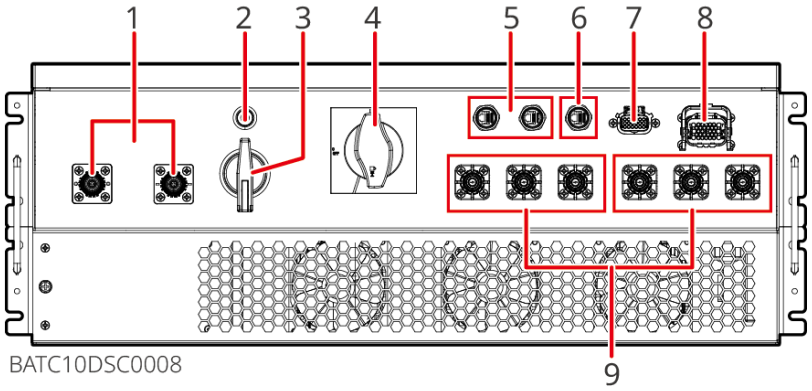
1	2	3
PACK	PCU	distribution box

PACK



No.	Name	Description	Remarks
1	PBM- / PBM+	PACK-level balancer positive/negative terminal interface.	Optional
2	B+ / B-	PACK positive/negative wiring terminals.	-
3	Fire nozzles	PACK firefighting nozzles.	Optional
4	COM1 / COM2	Inter-PACK communication ports.	-
5	COM3	Inter-PACK communication port.	Optional
6	Explosion-proof valves	Explosion-proof valves.	-

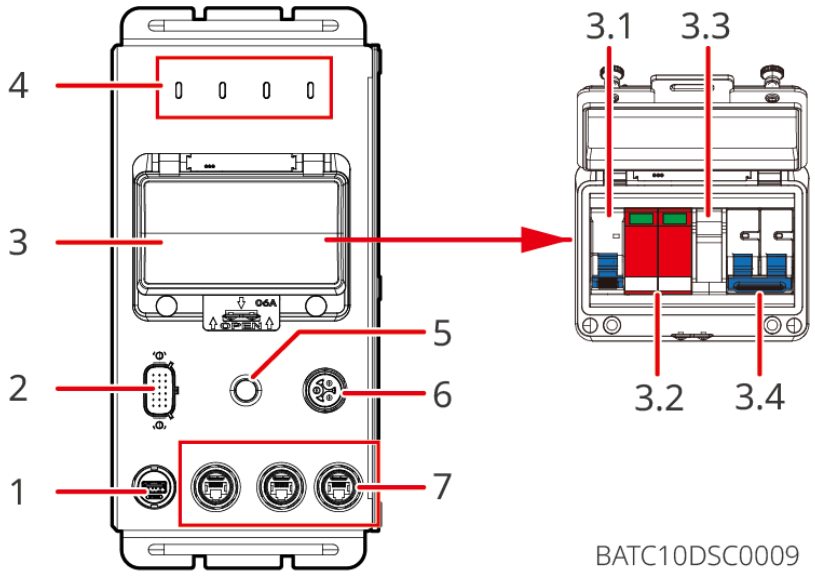
PCU



No.	Name	Description	Remarks
1	B+ / B-	Battery system positive/negative terminal ports	-
2	BLACK START	Black start switch button	-
3	BMS PWR	BMS power supply circuit breaker	-

No.	Name	Description	Remarks
4	DC BREAKER	Output circuit breaker	-
5	COM1	For communication connection between the battery system and the inverter, or for inter-cluster communication connection of the battery system	-
6	COM2	For communication connection between the PCU and the PACK	-
7	COM3	Internal communication port of the battery cabinet	Isolated
8	COM4	Internal communication port of the battery cabinet	Non-isolated
9	P+ / P-	DC-DC output positive/negative terminals.	-

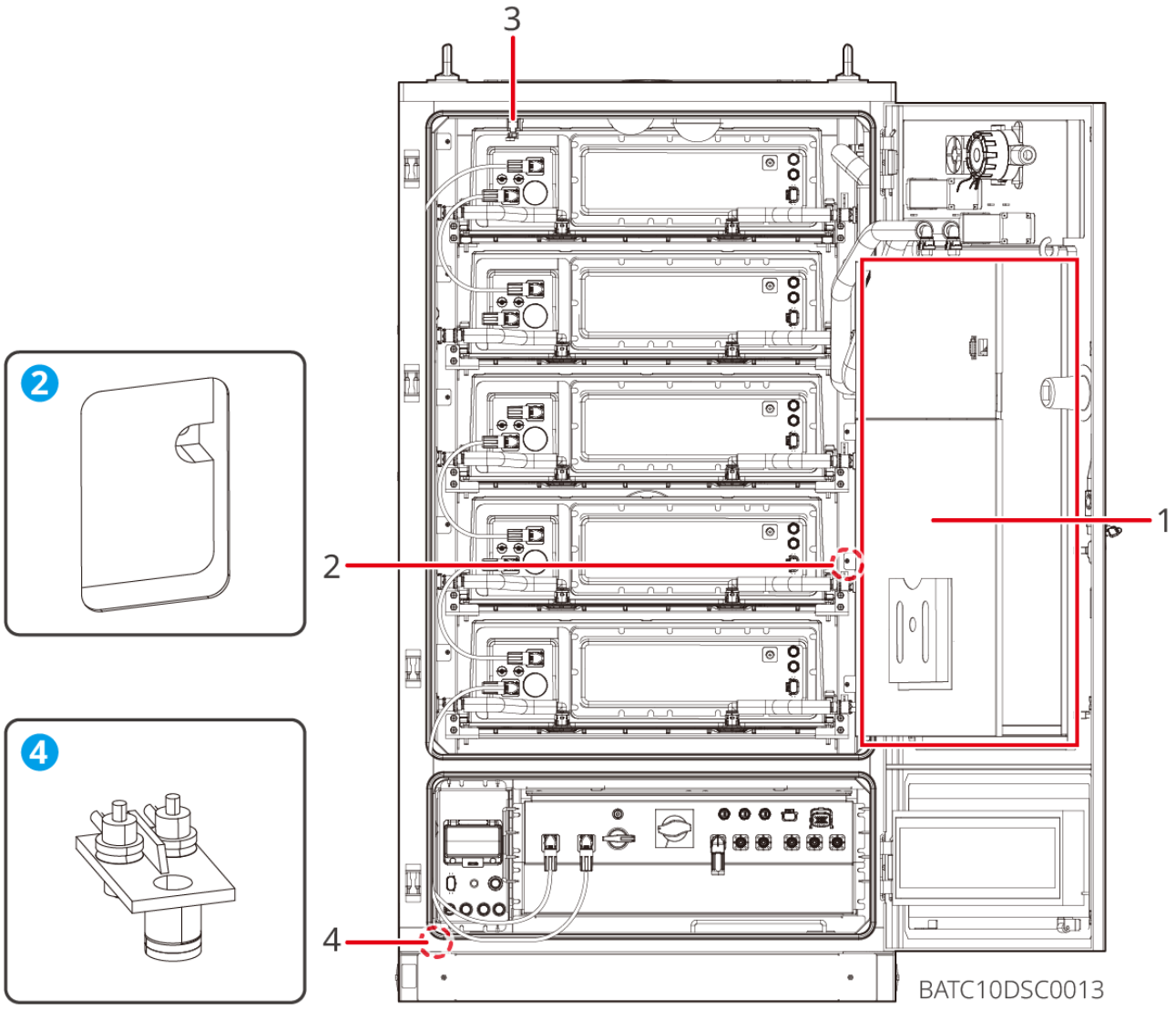
Distribution Box



No.	Name	Description	Remarks
1	USB	USB port	-

No.	Name	Description	Remarks
2	JX	Water leak detection interface, used to connect water leak detector	-
3	6P Circuit Breaker Protective Cover	-	-
3.1	UPS BAT	UPS switch	Optional
3.2	SPD	SPD lightning protection module	-
3.3	FU	FU2 fuse	-
3.4	AC BREAKER	AC circuit breaker	-
4	indicator	Indicates the operating status of the cloud board	-
5	RST	Cloud board reset button	-
6	AC PWR	Liquid cooling unit power supply port	-
7	FE1 / FE2 / FE3	Cloud board communication port	-

2.3.2 Environmental Control System

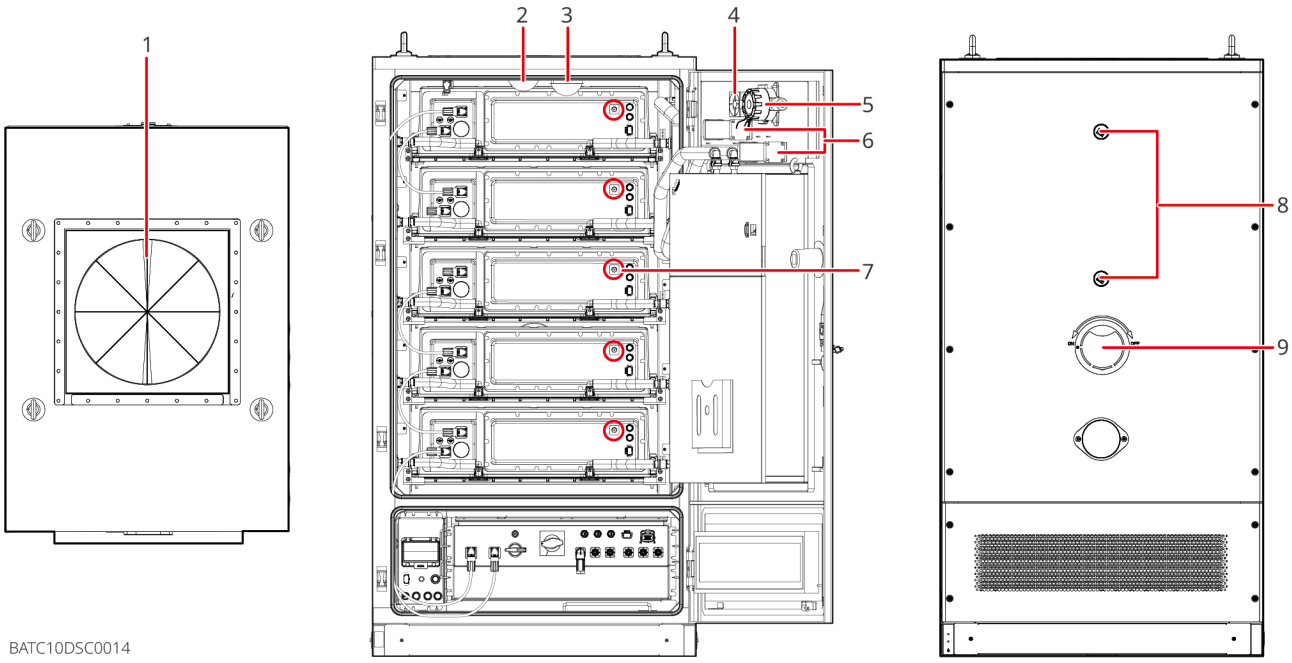


No.	Name	Description
1	Liquid Cooling Unit	The liquid cooling unit maintains the battery system within a suitable temperature range and balances the temperature difference between cells by precisely controlling the temperature and flow rate of the coolant, thereby ensuring battery performance, safety, and lifespan.
2	Temperature and Humidity Sensor	Monitors the temperature and humidity in the environment.

No.	Name	Description
3	Access Switch	The energy storage system automatically powers off when the door is opened.
4	Water Leak Detector	Continuously monitors for water accumulation or liquid leakage within the installation area of the energy storage equipment. It promptly issues an alarm or triggers the control system to take action when water ingress occurs, to prevent equipment damage and safety incidents.

2.3.3 Fire Protection System

2.3.3.1 Introduction to Fire Protection Components



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1	2	3	4	5	6	7	8	9
Explosion vent panel (Optional)	Temperature detector	Smoke detector	Smoke exhaust fan	Flammable gas detection	Aerosol fire suppression device	PACK enclosure spray head (Optional)	Explosion-proof valve	Fire water connection

Pressure Relief Panel

Working Principle: When the internal pressure of the battery pack rises sharply due to thermal runaway or other reasons and exceeds the design threshold, the pressure relief panel ruptures or pops open first, forming a rapid pressure relief channel. This directs high-temperature, high-pressure gas and ejected materials out of the pack, thereby preventing the battery pack casing from bursting and ensuring the safety of personnel and equipment.

Technical Specifications	Pressure Relief Panel
Operating Temperature Range	-40℃ ~ +125℃
Maximum Pressure Relief Area	0.363609m^2
Flame Retardant Rating	UL94 V-0
Ingress Protection Rating Requirement	IP66

Temperature Detector & Smoke Detector

Working Principle:

- The temperature detector uses a Negative Temperature Coefficient (NTC) thermistor as a sensor, leveraging its sensitivity to ambient temperature to obtain environmental temperature information. The internal circuitry converts this information into a voltage signal and sends it to a microcontroller. The microcontroller analyzes and processes the signal using built-in intelligent algorithms to determine whether a fire alarm or fault condition is present.

- The smoke detector operates on the principle of infrared light scattering to detect fires. In a smoke-free state, it receives only a very weak infrared light. When smoke particles enter the optical smoke detection chamber, scattering causes the received light signal to strengthen. When the smoke concentration reaches a certain level, an alarm signal is output.

Technical Specifications	**Heat Detector**	**Smoke Detector**
Dimensions	• Diameter: 100mm • Height: 44.5mm (without base)	• Diameter: 100mm • Height: 43.3mm (without base)
Weight	Approx. 110g (without base)	Approx. 105g (without base)
Mounting Hole Spacing	45mm~75mm	
Alarm Indicator (Red)	When patrol light setting is ON: flashes once periodically; when OFF: remains off; during alarm: stays lit constantly; during fault or dirty condition: flashes twice periodically.	
Ambient Temperature	-10℃~+50℃	
Relative Humidity	≤95% (non-condensing)	

Smoke Exhaust Fan

Working Principle: When the air pressure / combustible gas concentration / temperature / smoke concentration inside a sealed enclosure rises to a preset value, sensors within the enclosure work in conjunction with the control system to send a command to the intake/exhaust valve. The valve then opens, fully connecting the sealed enclosure with the outside. Gas inside the enclosure is rapidly discharged through the opened exhaust port (a feedback signal indicating the valve is open is sent simultaneously). To close it, a signal is sent to the intake/exhaust valve, which then closes automatically (a feedback signal indicating the valve is fully closed is sent simultaneously). Different models of fans can also be installed according to actual working conditions to accelerate the discharge of harmful gases from the enclosure,

thereby achieving the goal of preventing combustion and explosion.

Technical Specifications	Inlet/Exhaust Valve
Opening Stroke	30mm
Exhaust Area After Opening	>6000mm^2
Exhaust Flow Rate After Opening	>35000L/min@5kPa
Opening Speed	4mm/s
Operating Temperature	-20℃ ~ +60℃
Ingress Protection Rating	IP66

Combustible Gas Detector

Working Principle: The device triggers an alarm when combustible gas is detected.

Technical Specifications	Combustible Gas Detection Device
Operating Environment	
Temperature	-10℃ ~ +55℃
Relative Humidity	≤93% (No Condensation)
Gas Detection Pressure	86~106kPa
Combustible Gas Performance	
Detection Principle	Catalytic Combustion Type
Detection Object	Combustible Gas
Detection Method	Diffusion Type
Indication Error	±3%LEL
Electrochemical Performance	
Detection Principle	Redox Reaction
Detection Object	Toxic and Harmful Gases

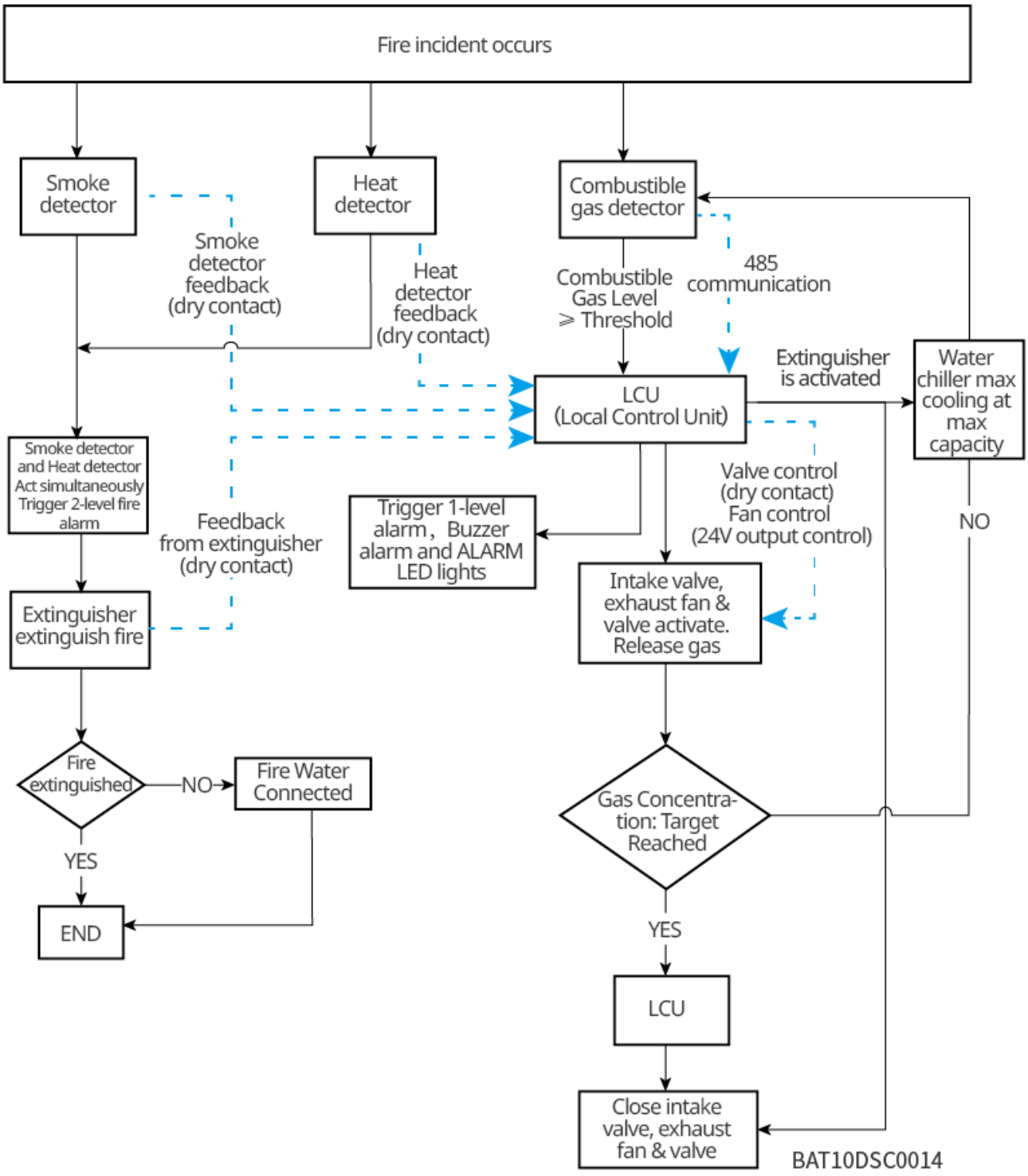
Technical Specifications	Combustible Gas Detection Device
Detection Method	Diffusion Type
Indication Error	±5%FS
Physical Parameters	
Dimensions (Length × Width × Thickness)	200×178×98mm
Housing Material	Die-cast Aluminum
Weight	Approximately 2030g
Ingress Protection Rating	IP65

Explosion-Proof Valve

Working Principle: When the internal pressure of a sealed product, such as a battery box, rises rapidly, the explosion-proof check valve's exhaust port opens to rapidly and directionally release the internal gas, thereby preventing the sealed product from exploding.

Technical Specifications	Explosion-Proof Valve
Ingress Protection Rating	IP68
Opening Area	570 mm^2
Operating Temperature	-40℃ ~ +130℃
Flame Retardancy	UL94-V0

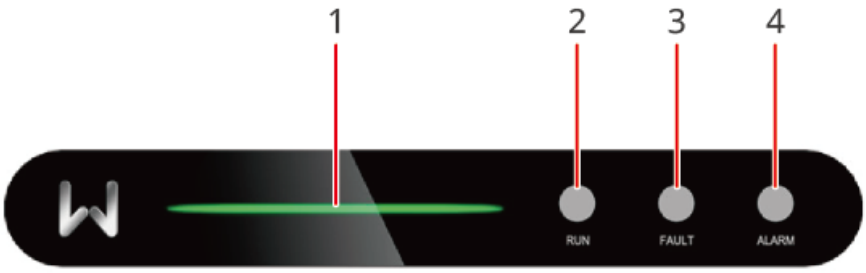
2.3.3.2 Introduction to Fire Safety Logic



The battery system strictly adheres to relevant standards and specifications, adopting an energy storage fire safety solution comprising an automatic fire suppression system + explosion-proof ventilation system + emergency water system. This ensures the solution's scientific nature, rationality, and effectiveness, and comprehensively safeguards the fire safety of the electrochemical energy storage system, ensuring safe operation and efficient response to fire incidents.

The battery system employs a multi-level response fire safety system, including PACK-level fire suppression + battery cabinet-level fire suppression. It utilizes multiple fire control measures such as smoke detectors, temperature sensors, cabinet aerosol, Pack aerosol, ventilation systems, pressure relief systems, and water-based fire suppression. In the event of a PACK-level fire, the PACK-level aerosol fire suppression is triggered first, eliminating the hazard at its source. If the fire spreads to the cabinet, the cabinet-level fire suppression system and ventilation system work in conjunction, prioritizing the exhaust of flammable gases in the early stages of a fire to reduce the risk of ignition.
The aerosol system features two activation methods: electrical triggering and thermal fuse activation, ensuring timely action when a fire occurs to suppress the fire and guarantee system safety and reliability. Fire alarm activation can also be quickly relayed to on-site staff at the backend station; alarms and fault lights can promptly alert staff to fire safety anomalies.
In extreme situations, such as when the fire suppression system fails to extinguish a fire after a system fire incident, a fire water connection interface is reserved on the back of the cabinet. The emergency water system can be injected as a last resort, manually connecting to the emergency water system.
The battery system can be optionally equipped with a top-mounted fixed pressure relief panel. During pressure relief, the panel will not eject, avoiding the potential risk of injuring on-site personnel.

2.4 Indicators



BAT10CON0002

No.	indicator	Status	Description
1	——		SOC: 100%

No.	indicator	Status	Description
			SOC: 75%
			SOC: 50%
			SOC: 25%
			SOC: 0%
2	 RUN	Steady on	System operating normally
		Single flash	System idle
		Double flash	System on standby
3	 FAULT	Steady yellow	Fault alarm
		Steady red	System fault
4	 ALARM	Steady red + buzzer	Fire alarm

3.1 Check Before Receiving

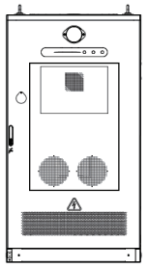
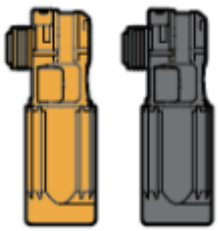
Before signing for the product, please carefully inspect the following:

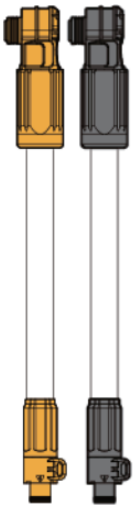
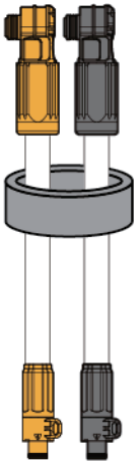
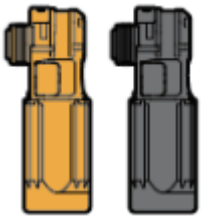
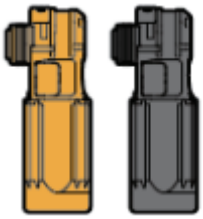
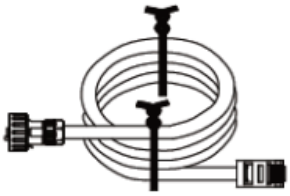
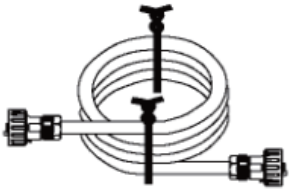
- Check the outer packaging for any damage, such as deformation, punctures, cracks, or any other signs that could indicate damage to the equipment inside the box. If damage is found, do not open the packaging and contact your distributor.
- Check the tilt indicator label. If the window on the label has turned red, it indicates the device has been tilted. Do not open the packaging and contact your distributor.
- Check that the battery system model is correct. If it does not match, do not open the packaging and contact your distributor.

3.2 deliverables

NOTICE

- Check if the type and quantity of delivered items are correct and if there is any external damage. If damaged, please contact your distributor.
- During shipping, the power cable, communication cable, and the liquid cooling unit drain hose are placed separately in front of the high-voltage box.
- The optimizer terminal unlocking tool is placed in the document box on the inside of the front door. This tool is not required during installation, only for maintenance. Please store it properly.

Component	Description	Component	Description
	Battery system ×1		50mm^2 power cable terminal ×1

Component	Description	Component	Description
	25mm^2 power cable ×2 (only included with ET100 and ET G3)		70mm^2 power cable ×1 (only included with ETR125)
	25mm^2 power cable terminal ×2 (only included with ET100 and ET G3)		70mm^2 power cable terminal ×1 (only included with ETR125)
	Communication cable (10m) ×2		Communication cable (3.8m) ×1
	Expansion bolt ×4		Grounding terminal ×3
	AC connector ×1		PIN terminal ×3

Component	Description	Component	Description
	M8 screw ×12		Bellows joint ×4
	Flat-head screwdriver ×1		fireproofing mud ×6
	Optimizer positive terminal release tool ×1 (optional)		Optimizer negative terminal release tool ×1 (optional)
	cable tie ×20		Liquid cooling unit drain pipe ×1
	Product documentation ×1		

3.3 Storage

To ensure battery performance and service life, it is recommended to avoid long-term idle storage. Prolonged storage may cause deep discharge of the battery, leading to irreversible chemical degradation, resulting in capacity loss or even complete failure. It is advised to use it promptly. After long-term storage, it must be inspected and confirmed by professionals before it can be used again.

If the battery needs to be stored for a long time, please follow the maintenance requirements below:

Battery	Battery Storage Initial SOC Range	Recommended Storage Temperature	Charge/Discharge Maintenance Cycle	Battery Maintenance Method
BAT-C 208.9-261.2kWh Industrial and Commercial Battery System	35%~45%	0~35℃	-20℃~35℃ (<12 months) 35℃~45℃ (<6 months)	For maintenance methods, please consult the dealer or after-sales service center.

NOTICE
After the charge-discharge maintenance is qualified, if there is a Maintaining Label on the outer box, please update the maintenance information on the Maintaining Label. If there is no Maintaining Label, please record the maintenance time and battery SOC by yourself and keep the data properly for preserving maintenance records.

Packaging Requirements:

Ensure that the outer packaging box is not removed and the desiccant inside the box is not lost.

Environmental Requirements:

1. Ensure that Storage is in a cool place, avoiding direct sunlight. When the ambient temperature is too high, there is a risk of fire in the battery system.
2. Ensure that the storage environment is clean, with appropriate temperature and humidity ranges, and no condensation. If there is condensation on the device ports, do not install the device.
3. Ensure that Storage is away from flammable, explosive, corrosive, and other hazardous materials.

Stacking Requirements:

1. Ensure that the stacking height and direction of the device are arranged according to the instructions on the packaging box label.
2. Ensure that there is no risk of tipping after the devices are stacked.

4 Installation

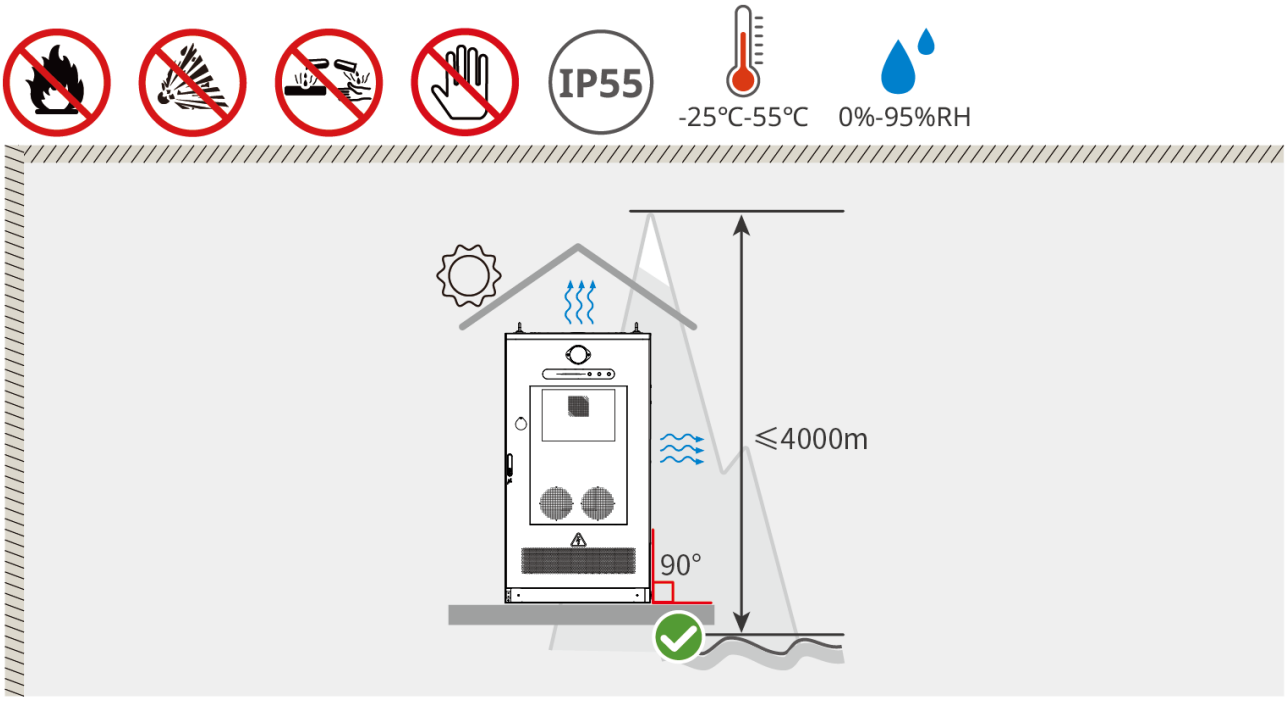
4.1 Installation Requirements

4.1.1 Environmental Requirements

1. The installation site selection must strictly comply with local laws and regulations and relevant industry standards. It must not be installed in flammable, explosive, corrosive, or other hazardous environments. It should be installed near a fire hydrant.
2. The temperature and humidity of the equipment installation environment must be within a suitable range.
3. The installation location must be out of reach of children and avoid being placed in easily accessible positions.
4. The enclosure temperature may exceed 60°C during equipment operation. Do not touch the enclosure before it cools down to prevent burns.
5. It is recommended to avoid installation environments with direct sunlight, rain, snow accumulation, etc. Installation in a sheltered location is recommended. A sunshade canopy can be constructed if necessary.
6. The installation space must meet the equipment's ventilation, heat dissipation, and operational space requirements.
7. The installation environment must satisfy the equipment's protection rating. The battery system is suitable for both indoor and outdoor installation.
8. Flood prevention and drainage should be considered for the installation site:
   - Avoid low-lying areas and regions prone to flooding. The equipment installation site must be at least 250 mm above the local historical highest water level.
   - Wind and waves from rivers, lakes, or seas may impact the device. The foundation should be at least 0.6 meters above the historical highest wave level.
   - If a significant amount of water flows into or through the equipment installation area, drainage facilities should be installed.
   - For installation sites prone to water accumulation, waterproofing measures should be taken, including but not limited to installing water baffles, configuring drainage systems, or elevating the foundation.

9. The equipment installation height should facilitate operation and maintenance, ensuring equipment indicator lights, all labels are easily visible, and wiring terminals are easily accessible.
10. The equipment installation altitude should be lower than the maximum operating altitude.
11. Consult the equipment manufacturer before installing equipment outdoors in salt damage areas. Salt damage areas mainly refer to regions within 500m of the coastline. The affected area is related to sea breezes, precipitation, topography, and other conditions.
12. Do not install the equipment in noise-sensitive areas (such as residential areas, office areas, schools, etc.), as it may cause complaints from residents. If installation in the above areas is necessary, the installation location should be at least 40m away from the noise-sensitive zone.
13. If the equipment is installed in public places other than work and living areas (such as parking lots, stations, factory buildings, etc.), install protective fencing around the equipment and erect safety warning signs for isolation. Unauthorized personnel are prohibited from approaching the equipment to prevent personal injury or property damage caused by accidental contact by non-professionals or other reasons during equipment operation.
14. Keep away from strong magnetic field environments to avoid electromagnetic interference. If there are radio stations or wireless communication equipment below 30MHz near the installation location, install the equipment according to the following requirements:

- energy storage system: Add a ferrite core with multiple windings or a low-pass EMI filter at the DC input line or AC output line of the energy storage system; or ensure the distance between the energy storage system and the wireless electromagnetic interference equipment exceeds 30m.
- Other equipment: The distance between the equipment and the wireless electromagnetic interference equipment should exceed 30m.

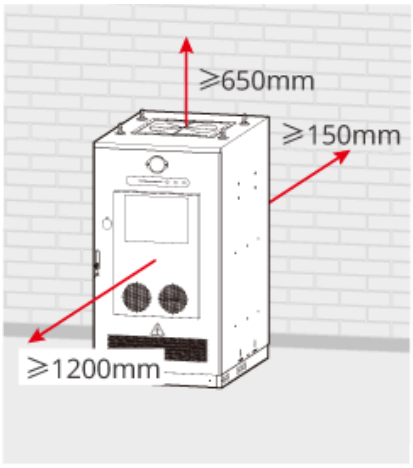


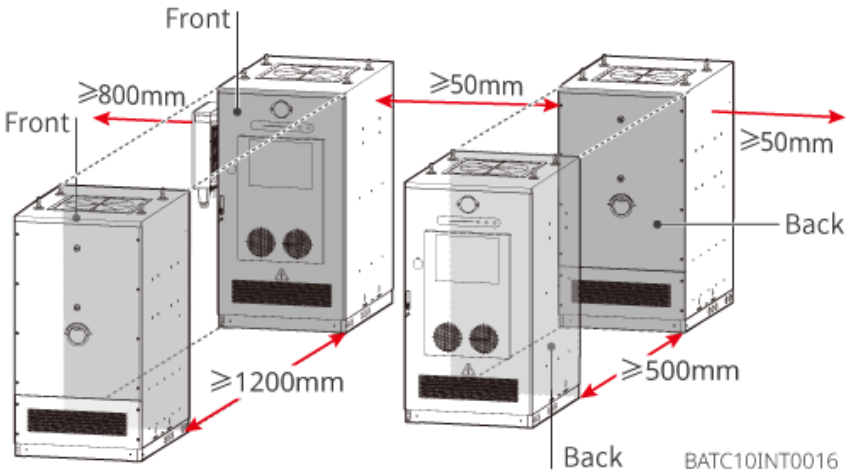
BATC10INT0015

4.1.2 Space Requirements

NOTICE

- When using a forklift, the front and rear spacing of the energy storage system must be greater than or equal to 2.5m.
- When installing two adjacent battery systems, it is prohibited for the back of one to face the front of the other.

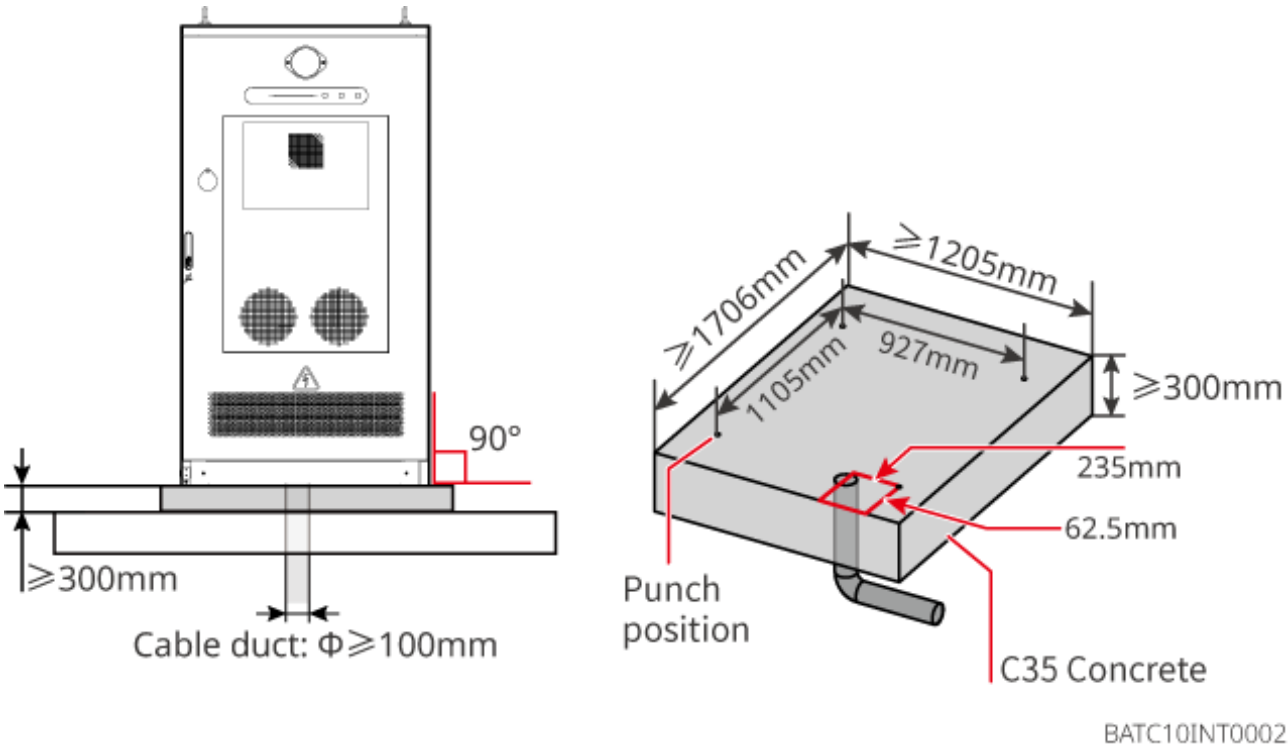




BATC10INT0016

4.1.3 Foundation Requirements

- The equipment shall be installed on a C35 plain concrete hardened floor or other non-combustible surface.
- The bottom of the foundation pit must be reinforced and filled to ensure the foundation is solid, level, horizontal, dry, and has sufficient load-bearing capacity; foundations with depressions, subsidence, or tilting are considered unqualified.
- The base should have pre-embedded conduits or reserved cable openings to facilitate equipment cabling.
- The equipment uses a bottom cable entry method. The foundation must have dust-proof and rodent-proof measures to prevent foreign objects from entering.
- The foundation should have an anti-waterlogging and anti-moisture design to prevent cable aging or short circuits due to dampness, which could affect the normal operation of the equipment.
- The equipment cables are relatively thick. Pre-embedded conduits or reserved cable openings should fully consider the space required for cable routing to ensure smooth cable connection and avoid abrasion.
- The drawings are for reference only. Construction personnel should review and adjust them based on the actual conditions of the installation site, geological conditions, and seismic requirements.



4.2 Moving Requirements

⚠WARNING

1. During operations such as transportation, handling, and installation, it is necessary to comply with the laws, regulations, and relevant standards of the country or region.
2. Freight forwarders engaged in the transportation of dangerous goods must obtain relevant qualifications and strictly adhere to local regulations for the transportation of dangerous goods.
3. The tilt angle of the cabinet during transportation and movement must be less than 10 degrees.
4. Before installation, the equipment needs to be moved to the installation site. To avoid personal injury or equipment damage during the moving process, please note the following:
   - Based on the weight of the equipment, assign an appropriate number of personnel to prevent the equipment from exceeding the weight range that can be manually carried, causing injury.
   - Please wear safety gloves to avoid injury.
   - Ensure that the equipment remains balanced during moving to prevent it from falling.
   - During the moving of the equipment, ensure that the cabinet doors are locked.
5. When using hoisting methods to move the equipment, please use flexible slings or straps, and the load-bearing capacity of a single strap must be ≥2t.
6. When using a forklift to move the equipment, the load-bearing capacity of the forklift must be ≥5t.

⚠CAUTION

Forklift handling must meet the following requirements:

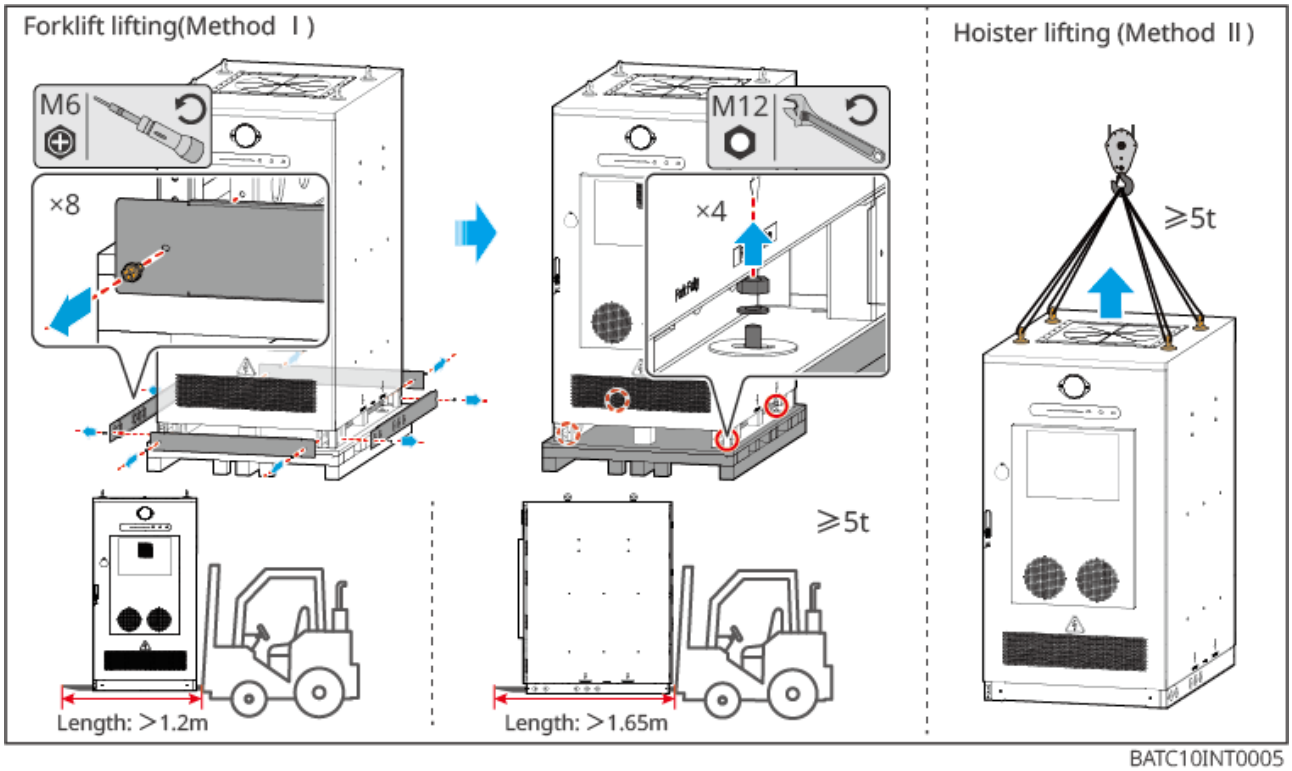
- Before use, confirm that the forklift's load capacity is ≥5 tons, fork width is 350~600mm, and fork thickness is 40~80mm.
- If entering from the side, fork length needs to be >1.2m; if entering from the front, fork length needs to be >1.65m.
- Before moving the equipment, pay attention to the equipment's center of gravity, and securely fix the equipment to the forklift using measures such as ropes or straps.
- During forklift transportation, designate a dedicated person for supervision.
- Refer to the label instructions on the equipment packaging for the forklift entry position.
- During forklift transportation, maintain low speed, stability, and reduce speed when turning.

Lifting and handling must meet the following requirements:

- Crane operators must have good operational skills and safety awareness, must be trained and certified, and operate in accordance with local laws and regulations.
- Crane lifting capacity ≥5 tons, lifting operation radius >2 meters.
- Before lifting, confirm:
  1. Lifting tools are complete, have been tested, and are completely safe
  2. Equipment doors are closed and locked to prevent accidental opening
  3. The quality of lifting ropes must meet standards and should be securely fixed to avoid falling and wear
- Do not perform outdoor lifting in adverse weather conditions such as rain, snow, or strong winds.

NOTICE

- The battery system has a baffle plate at the bottom. Remove the baffle plate before using a forklift to move the equipment.
- During shipment, the battery system is secured to the base with screws. Remove the base before installation.

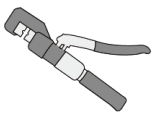


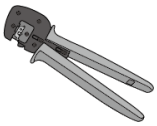
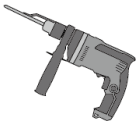
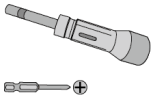
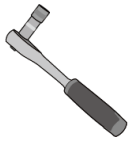
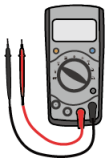
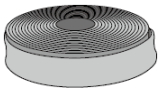
BATC10INT0005

4.3 Tool Requirements

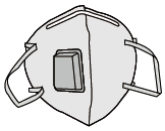
NOTICE
During installation, it is recommended to use the following installation tools. If necessary, other auxiliary tools can be used on-site.

Installation Tools

Tool Type	Description	Tool Type	Description
	Diagonal plier		RJ45 Connector Crimping Tool
	Wire stripper		YQK-70 Hydraulic Crimping Tool

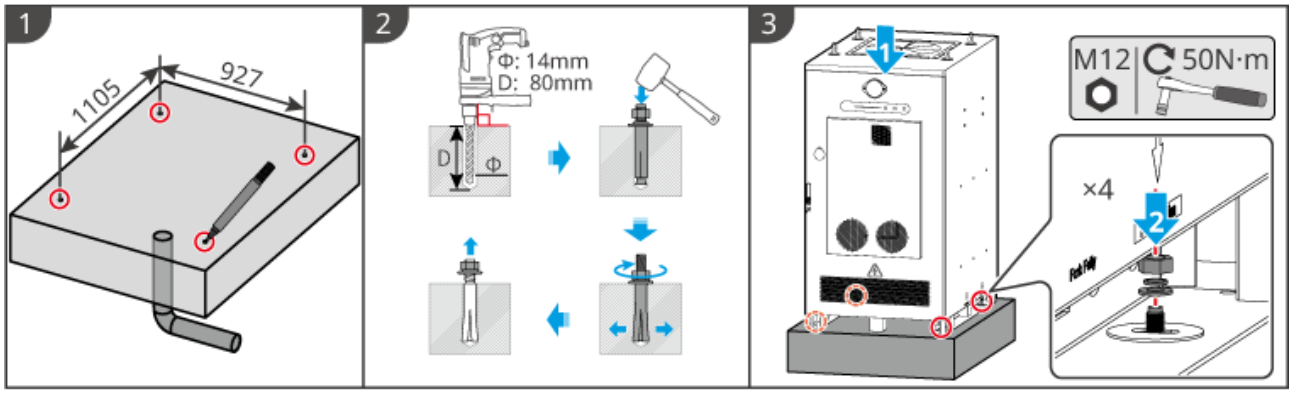
Tool Type	Description	Tool Type	Description
	Open-end wrench		PV Terminal Crimping Tool PV-CZM-61100
	Hammer drill (Drill bit Φ8mm)		Torque wrench
	Rubber hammer		Socket wrench
	Marker Pen		Multimeter Range ≤1100V
	Heat Shrink Tubing		Heat Gun
	Cable tie		Vacuum Cleaner

Personal Protective Equipment

Tool Type	Description	Tool Type	Description
	Insulating gloves, protective gloves		Dust mask
	goggle		Safety shoes

4.4 Install Equipment

1. Mark the drilling positions on the foundation with a marker pen.
2. Install the expansion bolts.
3. Secure the battery system to the foundation using the expansion bolts.



BATC10INT0006

5 Electrical Connection

⚠DANGER

- All operations, cables, and component specifications used during electrical connection must comply with local laws and regulations.
- Before connecting electrical cables, ensure all upstream switches of the equipment are disconnected.
- Before performing electrical connections, ensure the equipment is completely powered off. Live working is strictly prohibited, otherwise electric shock or other hazards may occur.
- Cables of the same type should be bundled together and routed separately from different types of cables. Intertwining or crossing of cables is prohibited.
- If the cable is subjected to excessive tension, it may lead to poor connections. When connecting, leave a certain length of slack in the cable before connecting it to the equipment's terminal port.
- When crimping terminals, ensure the conductor part of the cable makes full contact with the terminal. Do not crimp the cable insulation together with the terminal, as this may cause the equipment to malfunction, or lead to heating due to unreliable connections after operation, potentially damaging the equipment's terminal block.
- Using cables in high-temperature environments may cause insulation aging or damage. Maintain a distance of at least 30mm between cables and heating components or the periphery of heat source areas.
- Before operating the equipment, ensure it is reliably grounded and that appropriate protective measures are in place. Otherwise, there may be a risk of electric shock.

NOTICE

- Before electrical connection, please wear personal protective equipment such as safety shoes, protective gloves, insulating gloves, etc. as required.
- Only trained professionals are allowed to perform electrical connection and related operations.
- Please keep the cabinet door keys properly.
- The cable colors in the graphics of this document are for reference only; specific cable specifications must comply with local regulatory requirements.

5.1 Preparation Before Wiring

Preparing Cables

No.	Cable		Recommended Specification	Description
1	PE cable		• Single-core outdoor copper cable • Conductor cross-sectional area: 16-25mm²	To be provided by the user
2	Battery DC cable	ET100	• Single-core outdoor copper cable • Conductor cross-sectional area: 25mm² • Cable outer diameter: 9.4-10.6mm	Pre-made wire harness is shipped with the box. If the pre-made wire harness length is insufficient, the user needs to prepare their own cable.
		ET G3		

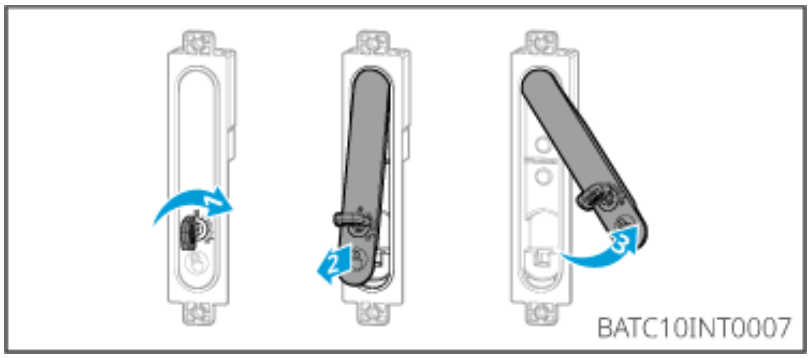
No.	Cable		Recommended Specification	Description
		ETR125	• Single-core outdoor copper cable • Conductor cross-sectional area: 70mm² • Cable outer diameter: 14.5-15.5mm	
3	Battery cluster parallel power cable		• Single-core outdoor copper cable • Conductor cross-sectional area: 50mm² • Cable outer diameter: 13mm-14mm	To be provided by the user
4	BMS communication cable		-	Shipped with the box
5	Battery cluster parallel communication cable / Cloud board communication cable		Standard shielded Ethernet cable, CAT 5E or above, with RJ45 connectors	Communication cables are included in the product packaging. If more cables or longer lengths are required for the actual installation, please prepare them separately.

Preparing Circuit Breakers

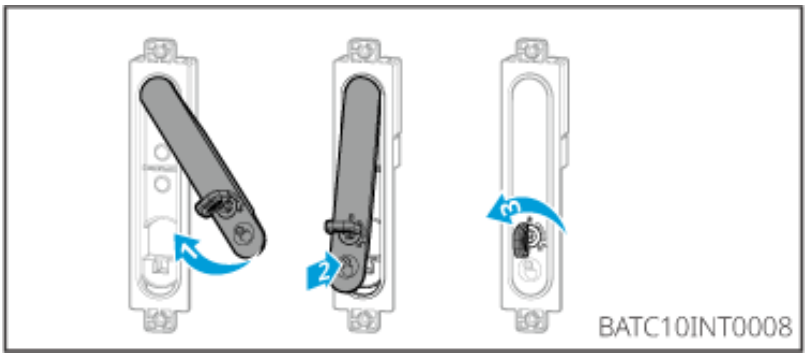
breaker	Specifications	Description
Battery Switch	Select according to local laws and regulations • 2P DC switch*2 • Rated Current ≥125A • Nominal Voltage ≥1000V	User-provided Before equipment maintenance, the breaker must be disconnected to ensure personal safety! (This specification applies only when paired with ET100 inverter)

Cabinet Door Operation

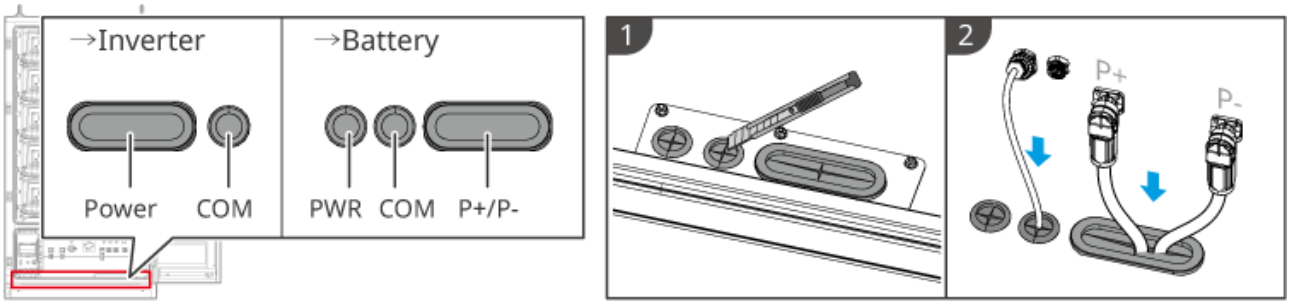
- Open the cabinet door



- Close the cabinet door

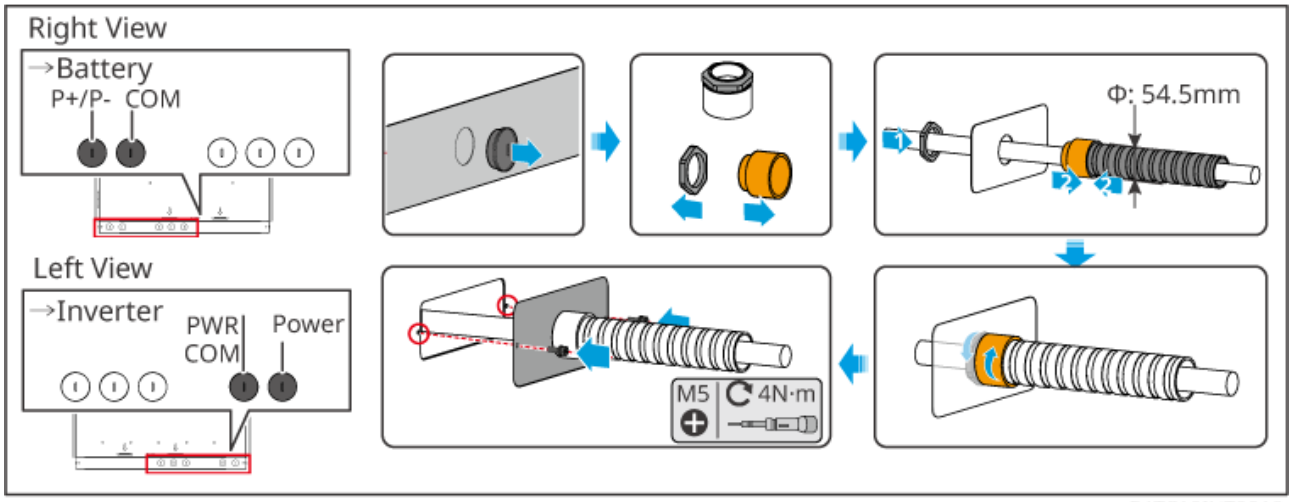


Introduction to Internal Cable Entry Holes in the Cabinet



BATC10INT0009

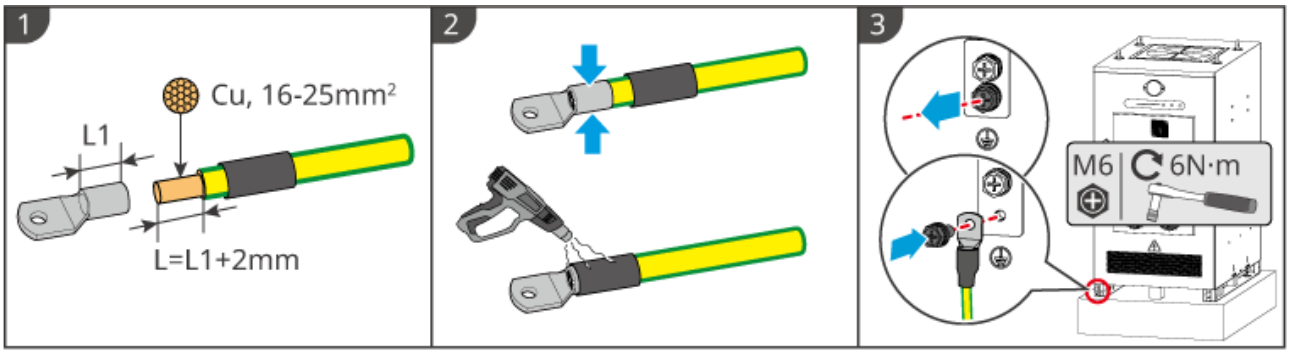
Introduction to Side Cable Entry Holes in the Cabinet



BATC10INT0010

5.2 Connecting the PE cable

1. Prepare the cable and terminal, and strip the wire as required.
2. Crimp the terminal.
3. Unscrew the screw at the grounding point, and use the screw to connect the crimped ground wire to the grounding point of the battery system.



BATC10ELC0003

5.3 Connecting Power Cables

NOTICE

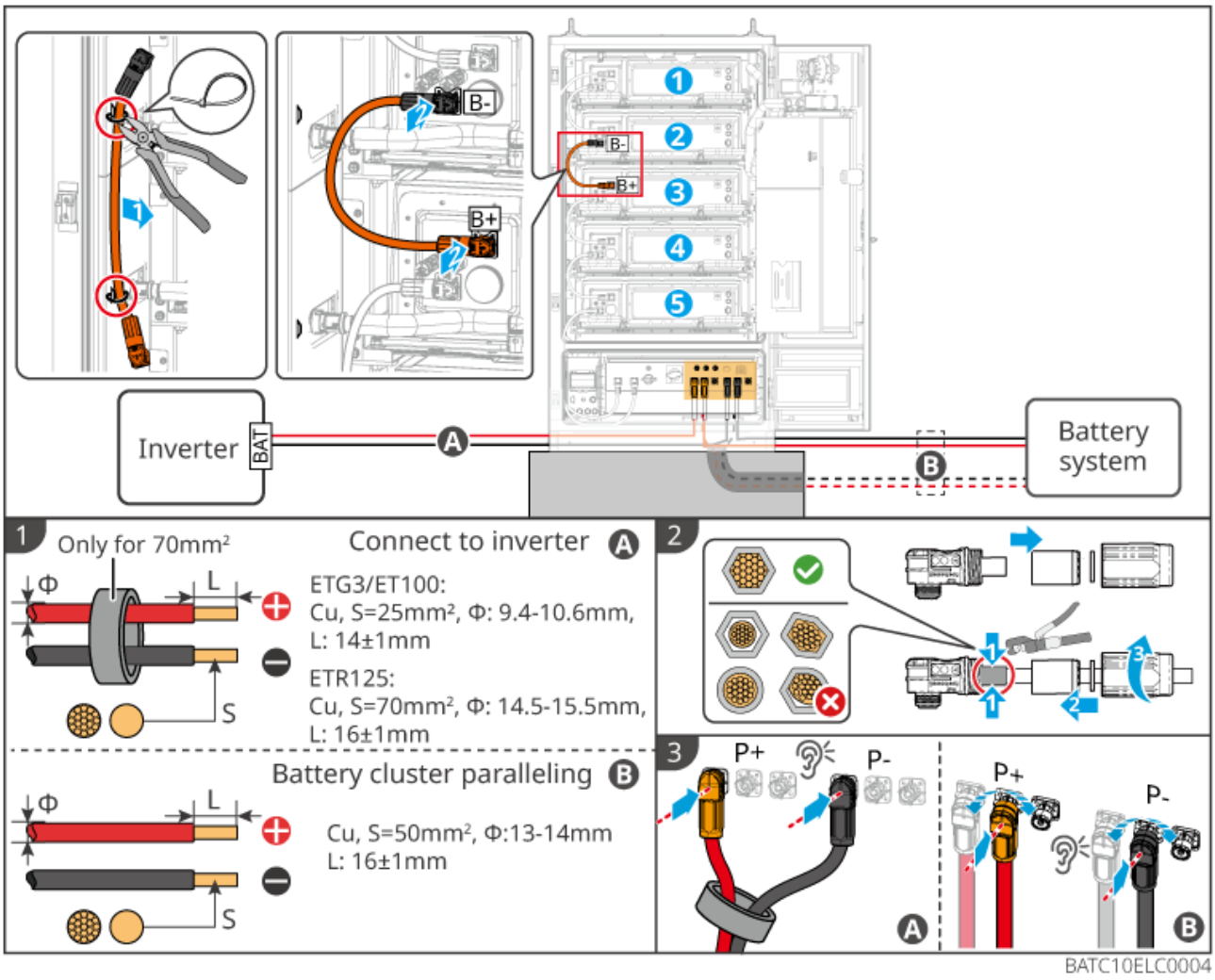
- When connecting the battery system to the inverter, please use the pre-made cable shipped with the unit. If the pre-made cable is not long enough, please select a cable that meets the requirements and make your own cable.
- If there is a ferrite core on the pre-made cable, you need to remove it from the pre-made cable and install it on the custom-made cable harness after making your own cable.
- The BAT-C Series 208.9kWh Commercial & Industrial Battery System supports a maximum of 4 battery cabinet clusters in parallel.

- **Connecting Inter-Battery Power Cables**

1. Use wire cutters to cut the cable ties and remove the power cables.
2. Connect the power cables to the PACK positive and negative terminals.

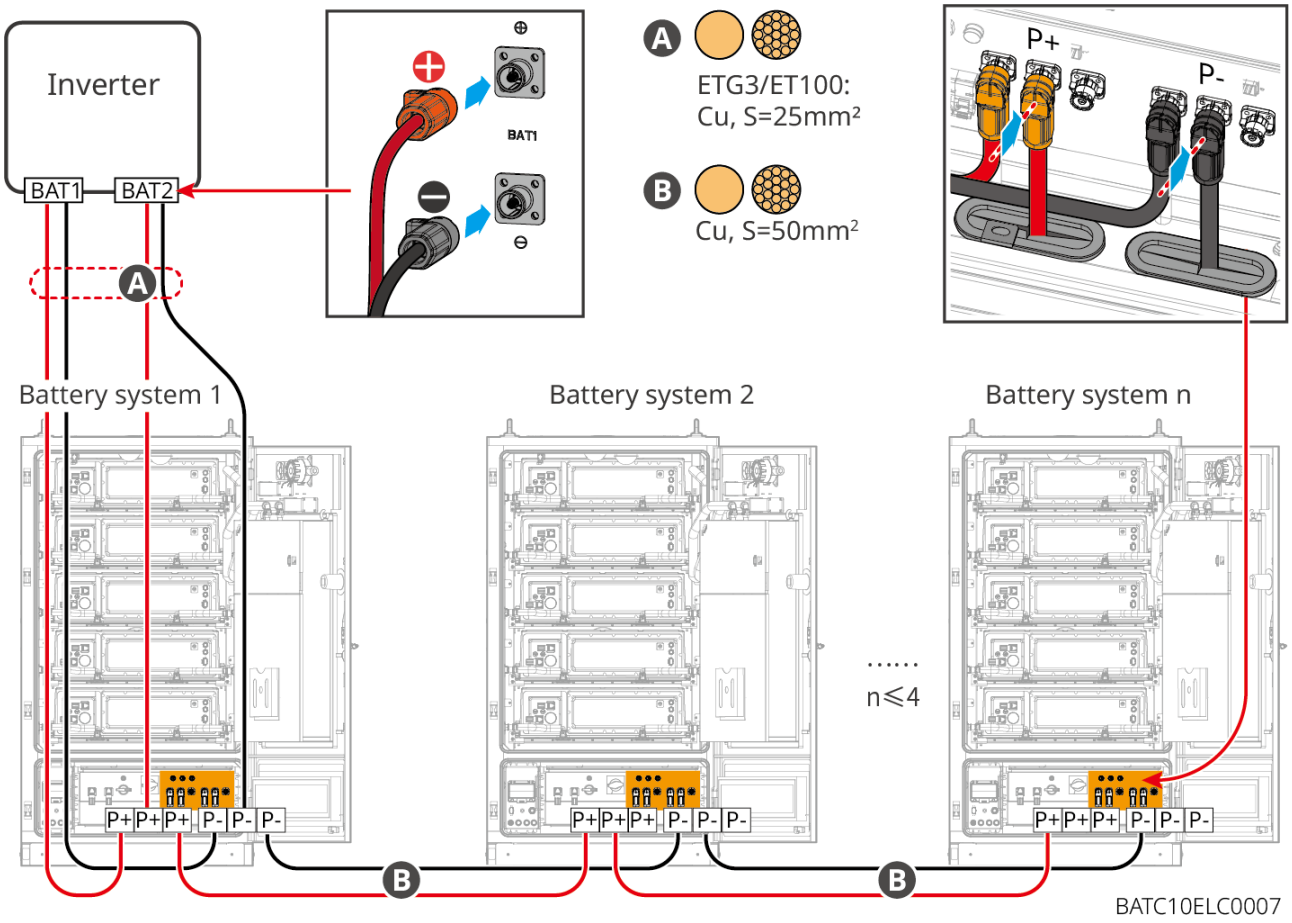
- **Connecting Battery System Power Cables**

1. Prepare the cables.
2. Terminate the cables.
3. Connect the cables to the corresponding ports.



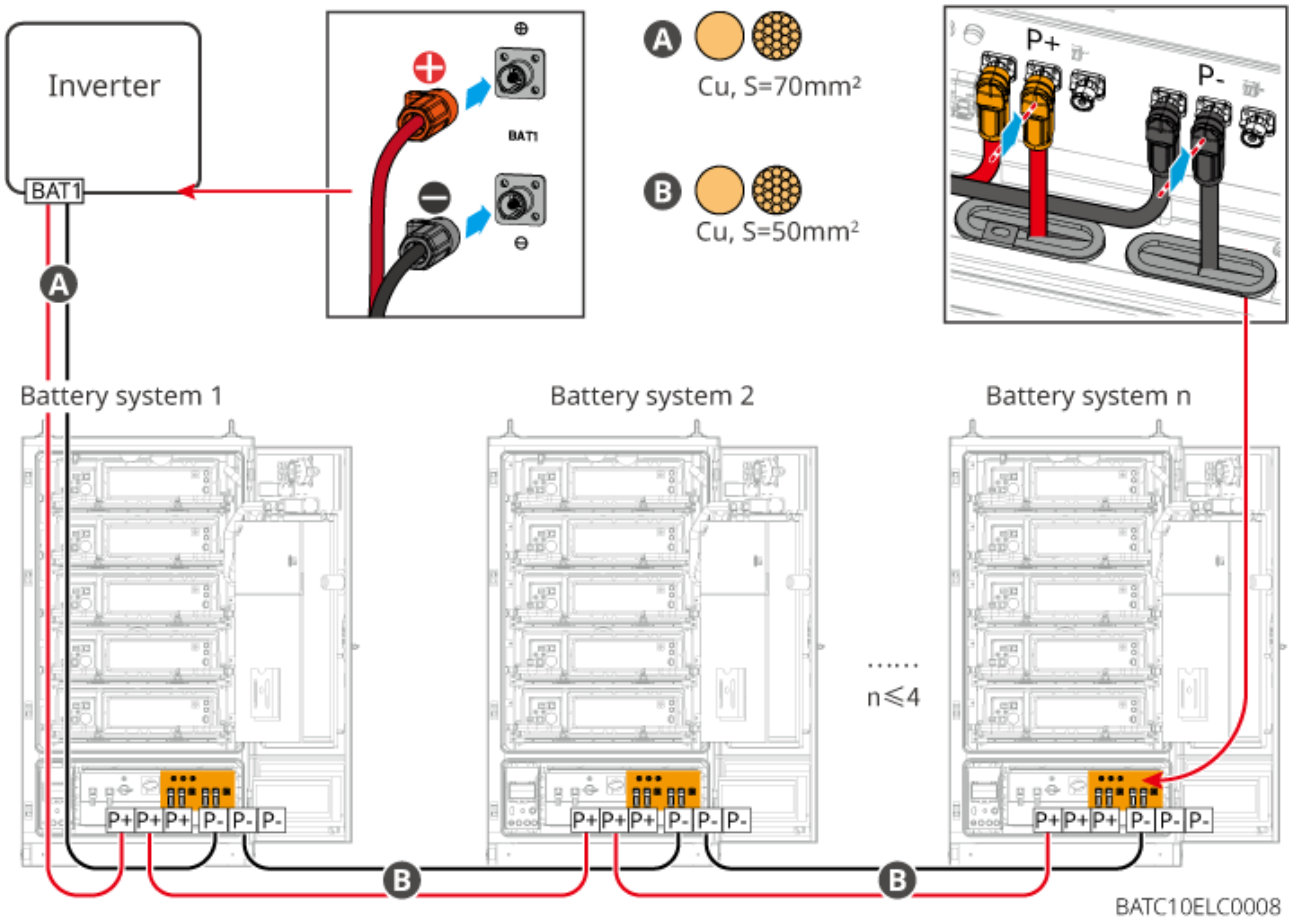
Wiring Diagram

- **Connecting ET100 / ET G3**



- **Connecting ETR125**

NOTICE
When the ETR125 boost converter is paired with a battery system, the PV side voltage must be higher than 650V; otherwise, it will trigger voltage difference current limiting.



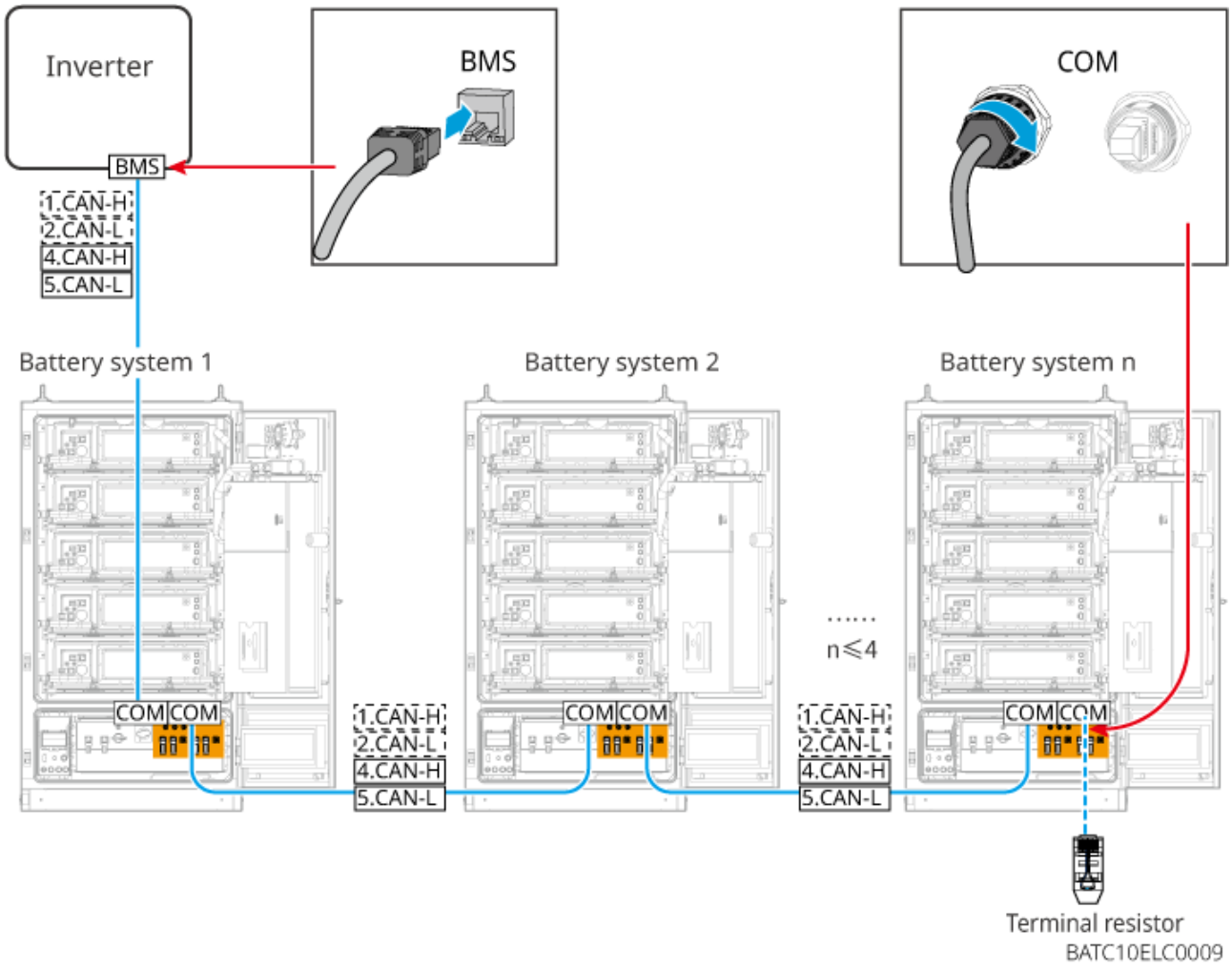
5.4 Connecting Communication Cables

NOTICE

- The external communication port of the battery system is pre-installed with a terminal resistor at the factory. If you need to connect a communication cable, please remove the terminal resistor. For ports not connected to communication cables, retain the terminal resistor.
- LAN communication between batteries supports transmission of cell-level information, with a maximum of 60 battery systems in parallel. For LAN communication, please use shielded network cables, and the connected router must be the router configured with the inverter.
- When batteries are clustered in parallel, to enhance communication quality, retain the terminal resistor on the COM port of the battery farthest from the inverter.
- When batteries are clustered in parallel, ensure that the distance from the battery farthest from the inverter to the inverter does not exceed 50 meters.
- When connecting communication cables, please use the communication cables provided with the package.

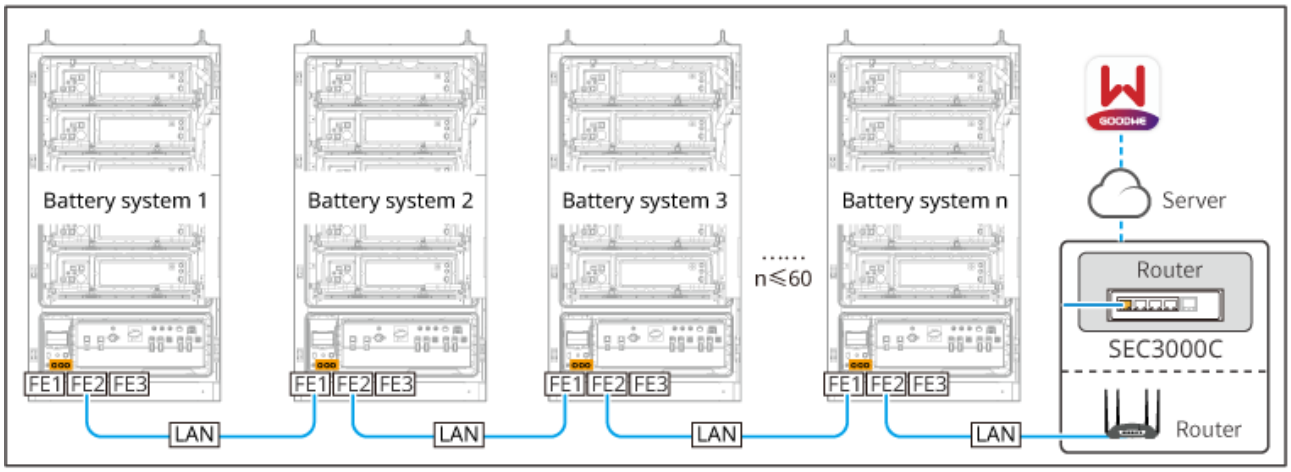
BMS Communication between Inverter and Battery

port	Definition	Description
1	CAN_H	(Optional) DCDC and Inverter Communication & Parallel Cluster CAN Bus
2	CAN_L	
3	-	-
4	CAN_H	Battery System and Inverter Communication & Parallel Cluster CAN Bus.
5	CAN_L	
6-8	-	-

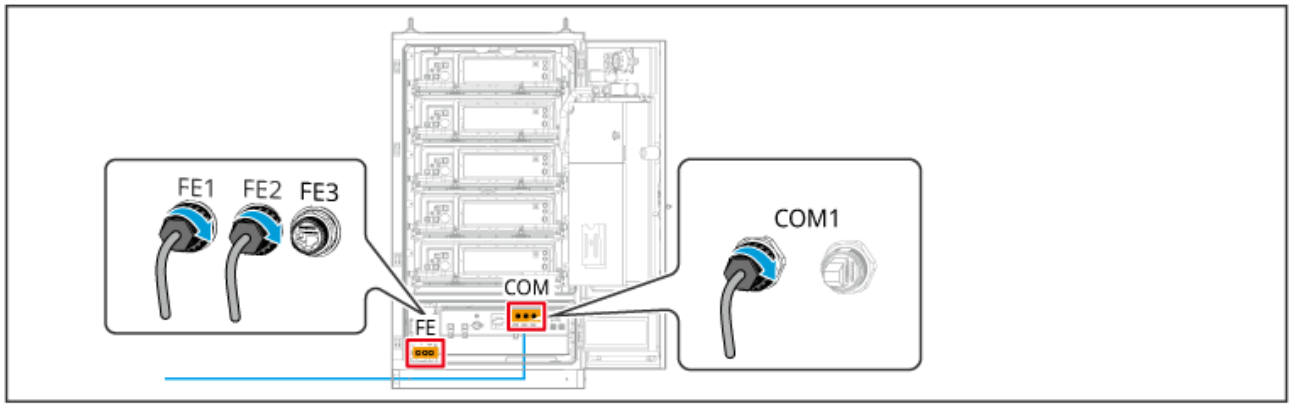


Cloud Board Communication between Batteries

The cloud board communication between batteries supports the transmission of CELL-level information and can support parallel connection of up to 60 battery systems. When performing cloud board communication, please use standard shielded Ethernet cables, and the connected router must be the one used for the inverter's network configuration.



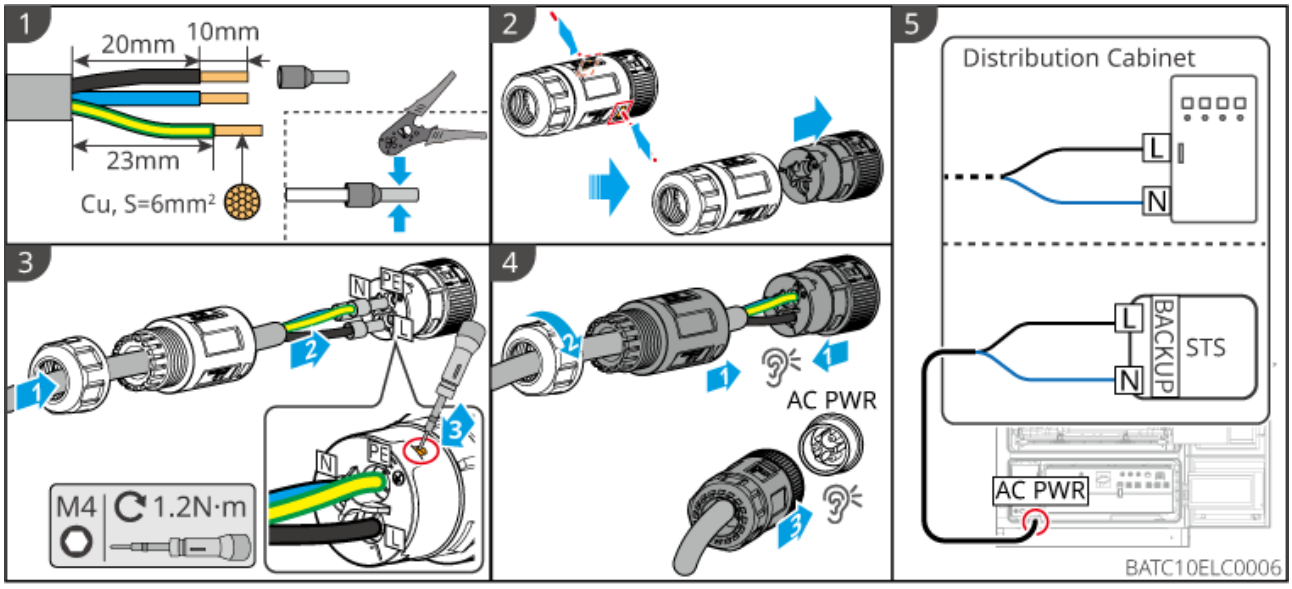
BATC10ELC0002



BATC10ELC0005

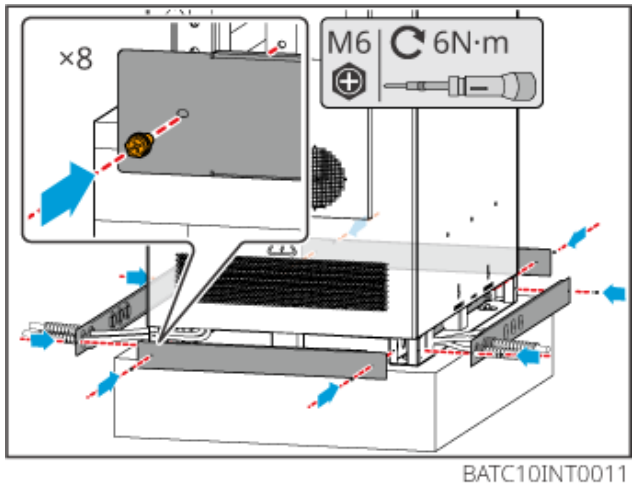
5.5 Connecting Power Cables for Liquid Cooling Unit

1. Prepare the cables and crimp the terminals.
2. Disassemble the AC connector.
3. Insert the crimped cables into the corresponding terminal holes, and use a flat-head screwdriver to secure the wires.
4. Assemble the connector and tighten the nut, then insert the connector into the AC PWR port.
5. Connect the other end of the cable to the distribution board or the BACK-UP port.

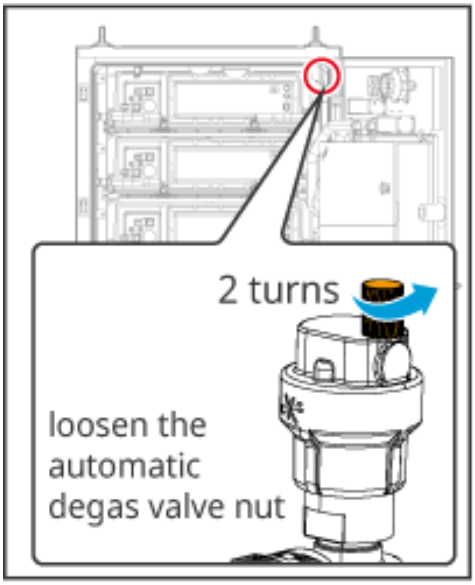


5.6 Post-Wiring Operations

1. After the installation and wiring are completed, please reinstall the removed bottom plate.

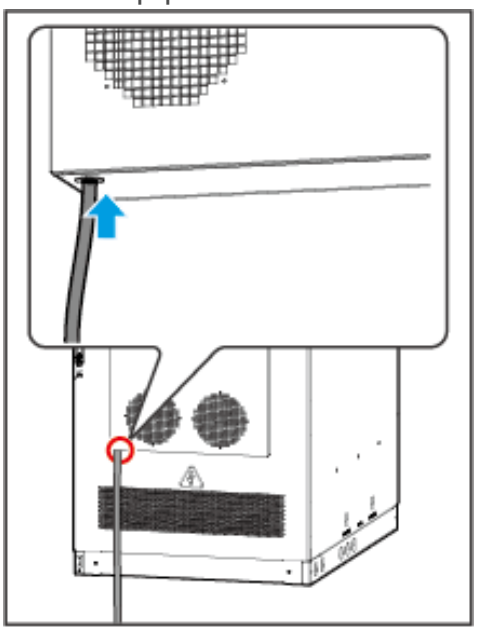


2. Loosen the automatic exhaust valve nut.

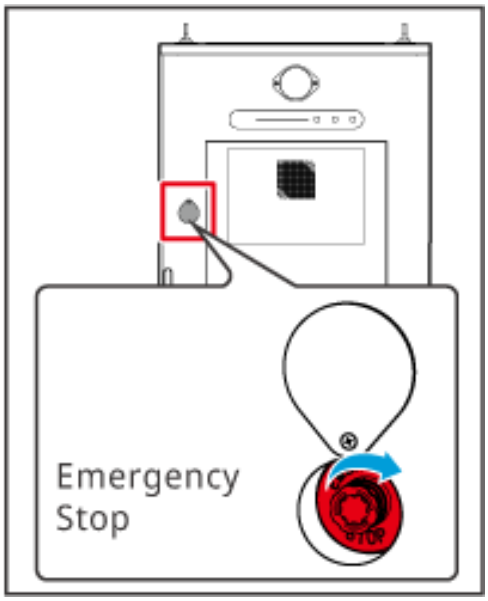


BATC10INT0012

3. Install the liquid cooling unit drain pipe.


BATC10INT0017

4. Release the emergency stop switch.


Emergency
Stop

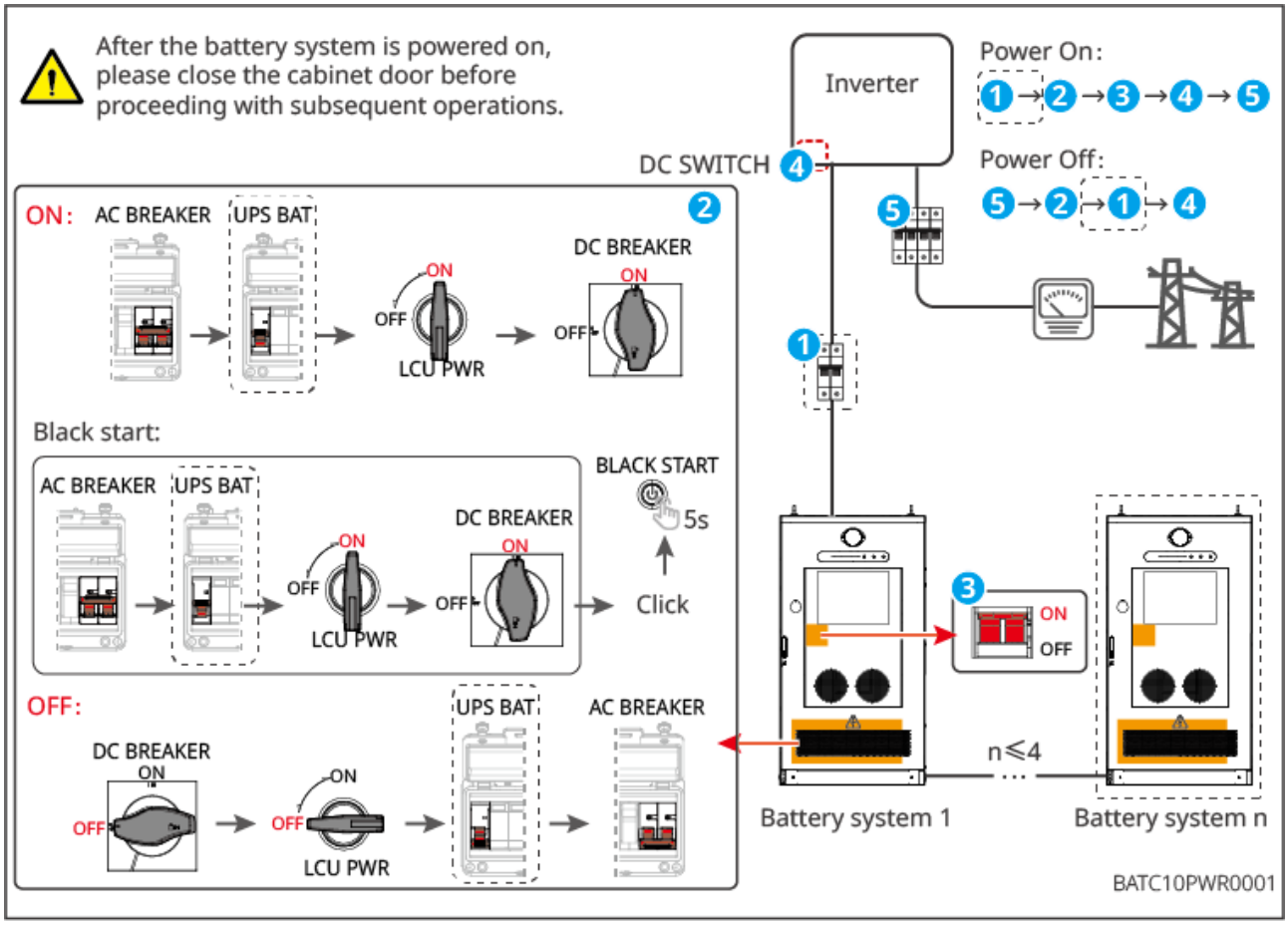
6 System Commissioning

6.1 Pre-power Check

No.	Inspection Item
1	The equipment is installed securely. The installation location facilitates operation and maintenance. The installation space allows for ventilation and heat dissipation. The installation environment is clean and tidy.
2	The PE cable, power cable, Communication cable, and terminal resistor are connected correctly and securely.
3	Cable bundling meets routing requirements, is distributed reasonably, and shows no damage.
4	All cut cable entry holes have been sealed with fireproof putty.

6.2 Device Power On

1. Push the AC BREAKER operating handle to the "ON" position.
2. (Optional) Push the UPS BAT operating handle to the "ON" position.
3. Turn the LCU PWR to the "ON" position.
4. Turn the DC BREAKER to the "ON" position.
5. Push the liquid cooling unit power switch operating handle to the "ON" position.



Black Start Procedure

1. Push the AC BREAKER operating handle to the "ON" position.
2. (Optional) Push the UPS BAT operating handle to the "ON" position.
3. Turn the LCU PWR to the "ON" position.
4. Turn the DC BREAKER to the "ON" position.
5. After hearing a "click" sound, press and hold the BLACK START switch for 5 seconds.

7 System Debugging and Monitoring

7.1 Debugging via SEC3000C

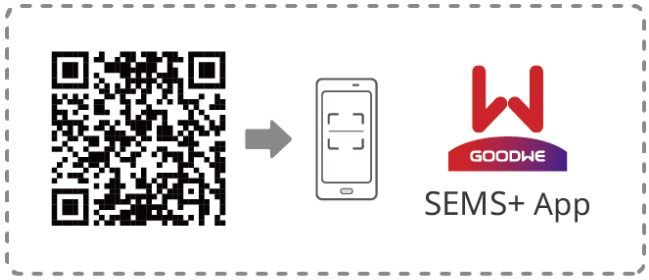
For SEC3000C debugging content, please refer to the corresponding user manual: 《SEC3000C User Manual》.

7.2 Power Plant Monitoring via SEMS+

SEMS+ is a monitoring platform that communicates with devices via WiFi, LAN, or 4G. The following are common functions of SEMS+:

1. Manage organization or user information, etc.
2. Add, monitor power plant information, etc.
3. Maintain equipment.

Scan the QR code below to download and install.



SEMS0164

For detailed functions, please refer to the "SEMS+ User Manual". The user manual can be obtained from the official website or by scanning the QR code below.

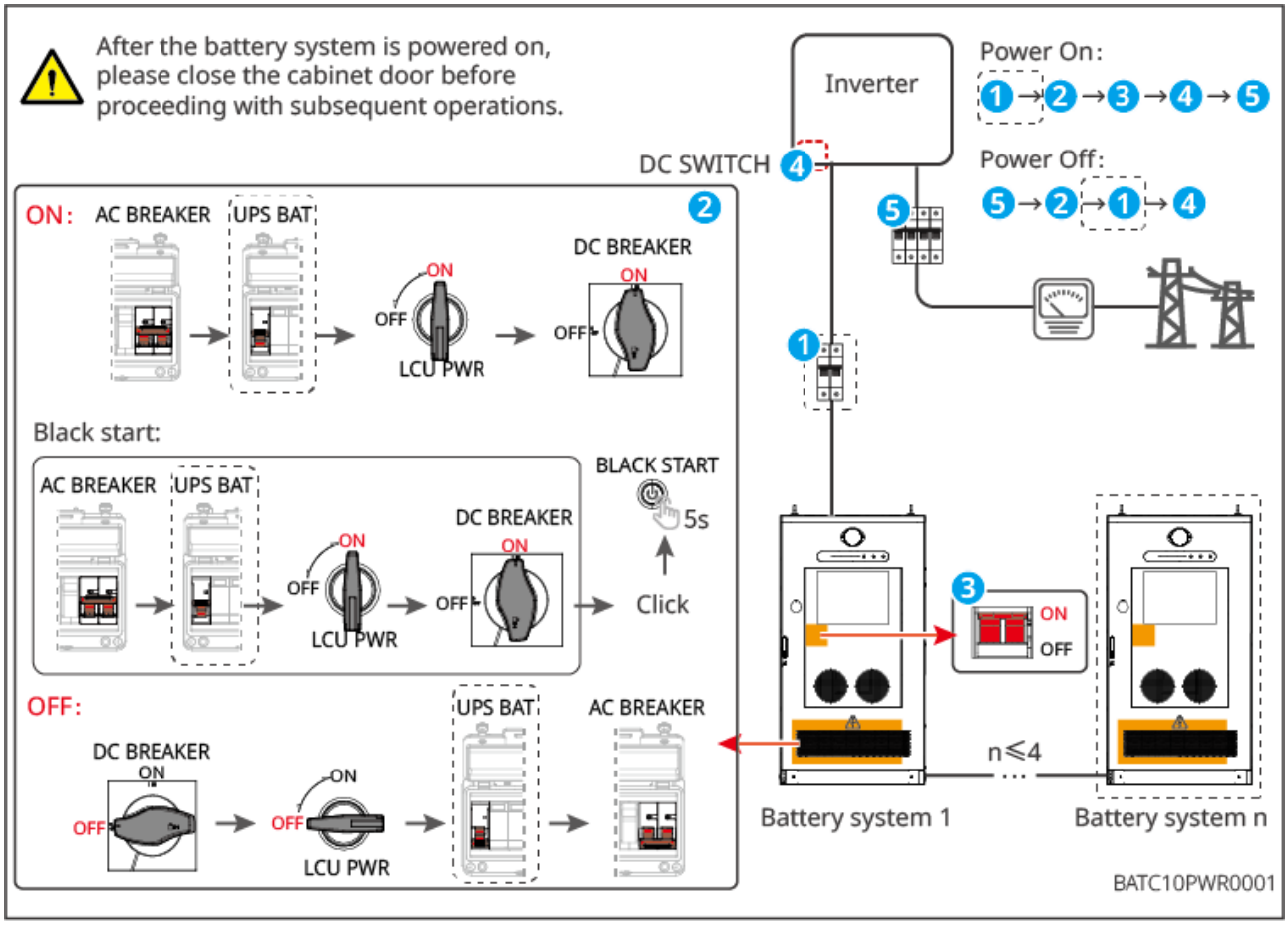
8 Maintenance

8.1 Powering Off the Device

⚠DANGER

- When performing operation and maintenance on the equipment, please power off the device. Operating the equipment while it is powered on may cause equipment damage or risk of electric shock.
- After the equipment is powered off, internal components require a certain amount of time to discharge. Please wait according to the time indicated on the label until the equipment is completely discharged.

1. Rotate the DC BREAKER to the "OFF" position.
2. Rotate the LCU PWR to the "OFF" position.
3. (Optional) Push the operation handle of the UPS BAT to the "OFF" position.
4. Push the operation handle of the AC BREAKER to the "OFF" position.



8.3 Disposing of the Equipment

When the equipment can no longer be used and needs to be disposed of, please dispose of the equipment according to the electrical waste disposal requirements of the country/region where the equipment is located. Do not treat the equipment as household waste.

8.4 Troubleshooting

Please follow the methods below for troubleshooting. If these methods do not resolve your issue, please contact the after-sales service center.
When contacting the after-sales service center, please gather the following information to facilitate a quick resolution.
1. Energy storage system information, such as: serial number, software version, equipment installation date, time of fault occurrence, frequency of fault occurrence, etc.

2. Equipment installation environment, such as: weather conditions, etc. Providing photos, videos, or other files of the recommended installation environment can assist in problem analysis.
3. Grid conditions.

NOTICE
When the ambient temperature exceeds 25℃ and the energy storage system fault indicator is lit, please turn off the power switch of the liquid cooling unit before opening the door for inspection. Then, close the door and let it stand for at least 15 minutes before opening it to proceed with fault diagnosis.

No.	Fault Name	Possible Causes	Troubleshooting
1	Overvoltage Protection	1. Single cell or total voltage too high 2. Voltage sampling harness abnormal	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
2	Undervoltage Protection	1. Single cell or total voltage too low 2. Voltage sampling harness abnormal	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
3	Overcurrent Protection	Current limiting abnormal, charging current too high	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
4	Overtemperature Protection	1. Single cell temperature too high 2. Temperature sensor abnormal	1. Power off and let it sit for 30 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.

No.	Fault Name	Possible Causes	Troubleshooting
5	Low Temperature Protection	1. Single cell temperature too low 2. Temperature sensor abnormal	1. Power off and let it sit for 30 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
6	Imbalance Protection	Temperature difference: 1. Battery capacity衰减. Leads to excessive internal resistance, large temperature rise during overcurrent. 2. Battery tab welding issue. 3. Temperature sampling issue. 4. Power line connection loose. Voltage difference: 1. Battery aging degree inconsistent. 2. Harness issue.	1. Power off and let it sit for 30 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
7	Insulation Protection	Insulation resistance damaged	1. Power off and let it sit for 30 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
8	Pre-charging Failure	Pre-charging relay failed to close	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.

No.	Fault Name	Possible Causes	Troubleshooting
9	Harness Abnormal	Sampling wire break	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
10	Relay Open Circuit	Relay damaged	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
11	Relay Welded/Stuck	Relay damaged	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
12	Parallel Cluster Fault	1. Slave cluster communication loss 2. Slave cluster registration failed	1. Replace the communication cable and check if the fault clears. 2. If the fault persists, contact after-sales service.
13	PCS Comm Loss	Communication cable disconnected	1. Replace the communication cable and check if the fault clears. 2. If the fault persists, contact after-sales service.
14	BMU Communication Loss	AFE internal communication loss	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.

No.	Fault Name	Possible Causes	Troubleshooting
15	MCU Communication Loss	Communication loss between battery and DCDC	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
16	Circuit Breaker Welded/Stuck	Circuit breaker, shunt trip abnormal	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
17	Pre-charging Failure	Pre-charging relay failed to close	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
18	Reverse Connection Fault	P+P- port voltage <-500V	1. Check if the power cables between batteries are connected reversely. 2. If the fault persists, contact after-sales service.
19	Software Failure	Software cannot run normally	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.

No.	Fault Name	Possible Causes	Troubleshooting
20	Hardware Overcurrent	Large current exists when system is not working	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
21	Microelectronics Fault	Electronic component failure	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
22	General Alarm	Single cluster has a fault and is bypassed	Check the single cluster fault information and handle it according to the corresponding troubleshooting solution.
23	Main Controller Overload	Output current exceeds system capacity	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
24	Circuit Breaker Abnormal	Molded case circuit breaker tripped	1. Close the molded case circuit breaker and check if the fault clears. 2. If the fault persists, contact after-sales service.
25	Fire Fighting Failure	Fire fighting truly triggered or false trigger	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.

No.	Fault Name	Possible Causes	Troubleshooting
26	Emergency Stop Fault	Emergency stop button pressed	1. Reset the emergency stop button and check if the fault clears. 2. If the fault persists, contact after-sales service.
27	Door Access Fault	1. Door access open 2. Door access switch damaged	1. Close the door access and check if the fault clears. 2. If the fault persists, contact after-sales service.
28	Connector Overtemperature	Power connector temperature too high	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
29	Water Ingress Fault	Cabinet water ingress	1. After draining water, restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.
30	DCDC Fault	DCDC internal fault	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.

No.	Fault Name	Possible Causes	Troubleshooting
31	PACK Fault	PACK internal fault	1. Power off and let it sit for 5 minutes, then restart to see if the fault clears. 2. If not recovered after restart, contact after-sales service.

8.5 Routine Maintenance

⚠WARNING

- If any issues are found that may affect the battery or system, contact after-sales personnel. Disassembly by unauthorized personnel is prohibited.
- If exposed copper wires are found inside the conductive cables, do not touch them due to high voltage danger. Contact after-sales personnel. Disassembly by unauthorized personnel is prohibited.
- In case of any other emergencies, contact after-sales personnel immediately. Operate under their guidance or wait for on-site assistance from after-sales personnel.

Maintenance Item	Maintenance Method	Maintenance Cycle	Maintenance Purpose
System Cleaning	Check if there are any foreign objects or dust on the fans and air inlets/outlets. Check if the installation space meets requirements, and check for debris accumulation around the equipment.	Once every six months	Prevent smoke exhaust failure.

Maintenance Item	Maintenance Method	Maintenance Cycle	Maintenance Purpose
System Installation	Check if the equipment installation is secure and if fastening screws are loose. Check for any damage or deformation on the equipment's exterior.	Once every six months to once a year	Confirm equipment installation stability.
Electrical Connections	Check if electrical connections are loose, if cable exteriors are damaged, or if exposed copper is present.	Once every six months to once a year	Confirm reliability of electrical connections.
Sealing	Check if the sealing of the equipment's cable entry holes meets requirements. If gaps are too large or unsealed, reseal them.	Once a year	Confirm machine sealing and intact waterproof performance.
Battery Maintenance	If the battery has not been used for a long time or is not fully charged, it is recommended to charge the battery periodically.	Once every 15 days	Protect battery service life.
Louver Filter Screen	Remove dust and debris using a soft brush, vacuum cleaner, soft cloth or sponge, dry towel, etc.	Once every six months	Ensure air circulation and filtration effectiveness inside the cabinet.
Liquid Cooling Unit	Use a brush or cotton cloth to remove dust and dirt from the unit.	Once every six months	Ensure the unit is clean, dust-free, and free of dirt.

9 Technical Data

Technical Data	GW208.9-BAT-LC-G10	GW208.9-BAT-LCD-G10	GW261.2-BAT-LCD-G10
Battery System			
Battery Type	LFP (LiFePO4)		
Rated Capacity (Ah)	314		
Pack Type/model	GW52.2-PACK-LC-G10		
Pack Rated Energy (kWh)	52.24		
Pack Configuration	1P52S		
Pack Weight（kg）	335±8		
Number of Packs	4	4	5
Rated Energy (kWh)	208.9	208.9	261.2
Pack Nominal Voltage (V)	166.4	166.4	166.4
Nominal Voltage (V)	655.6	655.6	832
Operating Voltage Range（System） (V)	596.96~750.88	700~1000	746.2~1000
Rated Charging/Discharging Current (A) *1	157/157	/	/
Rated Input/Output Current (A) *1	/	157/157	157/157
Max.Charging/Discharging Current (A) *2	188.4/188.4	/	/
Max. Input/Output Current (A)	/	180/180	180/180

Technical Data	GW208.9-BAT-LC-G10	GW208.9-BAT-LCD-G10	GW261.2-BAT-LCD-G10
Max. Charging/DisCharging power (kW) *2	125.3/125.3	/	/
Max. Input/Output Power (kW)	/	125.3/125.3	137.5/137.5
Max. Charging/Discharging Rate *2	0.6/0.6P	0.6/0.6P	0.6/0.6P
Charging/Discharging Operating Temperature Range（℃）	-25~55	-25~55	-25~55
Cycle Life	≥8000Cycles 70% EOL@25±2°C,0.5C,90% DOD	≥8000Cycles 70% EOL@25±2°C,0.5C,90% DOD	≥8000Cycles 70% EOL@25±2°C,0.5C,90% DOD
Depth of DisCharge	1	1	1
Efficiency			
Round-trip Efficiency	94%@100%DOD, 0.5P, 25±2℃	93%@100%DOD, 0.5P, 25±2℃	93%@100%DOD, 0.5P, 25±2℃
General Data			
Storage Temperature (℃)	+35°C...+45°C(< 6 Months); -20°C...+35°C(< 1 Year)		
Relative Humidity	0 ~ 95%, No condensation		
Max. Operating Altitude (m)	4000	4000	4000
Cooling Method	Liquid Cooling		
Communication	CAN (RS485 Optional)		
Weight (kg)	≤2095	≤2105	≤2440
Dimension (W×H×D mm)	1050*2025*1565		
Noise Emission (dB)	<70		

Technical Data	GW208.9-BAT-LC-G10	GW208.9-BAT-LCD-G10	GW261.2-BAT-LCD-G10
Useable Extinguishing Agent	CO2, H2O		
Crucial Material	LiFePO4, C, Cu, LiPF6, Al, (C3H6)n		
Ingress Protection	IP55		
Protective Class	I		
Anti-Corrosion Class	C4-M (C5-M Optional)		
Fire safety equipment	Aerosol (Pack&Cabinet Level)		
Certification *3			
Safety Regulation	For details, please visit our official website		
EMC	For details, please visit our official website		

Note:

1. Only For Australia
2. Actual Dis-/Charging Current and power derating will occur related to Cell Temperature and SOC. And, Max C-rate continuous time is affected by SOC, Cell Temperature, Atmosphere environment temperature.
3. Not all certifications & standards listed, check the official website for detail.

10 Contact Details

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400-998-1212
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service@goodwe.com