

2026-09-30

Rechargeable Li-ion Battery System

LXA G4 5&10kWh

- GW5.0-BAT-LVI-G10
- GW10.0-BAT-LV-G10

User Manual

GOODWE

Copyright Statement

Copyright © GoodWe Technologies Co., Ltd. 2026. All rights reserved.

Without the authorization of GoodWe Technologies Co., Ltd., no content of this manual may be reproduced, transmitted, or uploaded to public networks or other third-party platforms in any form.

Trademark Authorization

GOODWE and other GOODWE trademarks used in this manual are owned by GoodWe Technologies Co., Ltd. All other trademarks or registered trademarks mentioned in this manual are the property of their respective owners.

NOTICE

Due to product version upgrades or other reasons, the document content will be updated from time to time. Unless otherwise specified, the document content does not replace the safety precautions on the product labels. All descriptions in this document are for guidance only.

Preface

Overview

This manual mainly introduces the product information, transportation and storage, installation and wiring, configuration and commissioning, troubleshooting, and maintenance of the battery system. Before installing and using the product, please read this manual carefully to understand the product safety information and become familiar with the product functions and features. Please keep this manual properly for future reference.

The illustrations in this manual are for conceptual understanding only and may differ from the actual product. Please refer to the actual product.

The manual is updated periodically, but may still have slight deviations or errors compared with the actual product. In such cases, please refer to the actual product. Please obtain the latest version of the materials and more product information from the official website: <https://en.goodwe.com/>.

Applicable Products

This document applies to GW5.0-BAT-LVI-G10 and GW10.0-BAT-LV-G10 battery systems.

Symbol Definitions

DANGER

Indicates a high potential hazard that, if not avoided, will result in death or serious personal injury.

WARNING

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

 CAUTION

Indicates a low potential hazard that, if not avoided, may result in moderate or minor personal injury.

NOTICE

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

Table of Contents

1 Safety Precautions	7
1.1 General Safety	7
1.2 Personnel Requirements	10
1.3 Battery Safety	11
1.4 European Declaration of Conformity (Battery)	14
1.5 Safety Symbols and Certification Mark Explanation	15
2 Product Introduction	18
2.1 Product Overview	18
2.2 Appearance Introduction	19
2.2.1 GW5.0-BAT-LVI-G10	19
2.2.2 GW10.0-BAT-LV-G10	20
2.3 Indicator Light Introduction	22
3 Equipment Inspection and Storage	25
3.1 Equipment Inspection	25
3.2 Battery Deliverables	25
3.2.1 Battery Delivery Items (GW5.0-BAT-LVI-G10)	25
3.2.2 Battery Delivery Items (GW10.0-BAT-LV-G10)	28
3.3 Device Storage	31
4 Installation	33
4.1 Installation Requirements	33
4.1.1 Environmental Requirements	33

4.1.2 Angle Requirements.....	35
4.1.3 Foundation Requirements.....	36
4.1.4 Space Requirements.....	36
4.2 Equipment Handling.....	38
4.3 Tool Requirements.....	39
4.4 Battery Installation.....	41
4.4.1 GW5.0-BAT-LVI-G10.....	42
4.4.2 GW10.0-BAT-LV-G10.....	44
5 Electrical Connection.....	47
5.1 Preparation Before Wiring.....	50
5.2 Connecting the Protection Ground Cable.....	51
5.3 Connecting the Power Cables.....	52
5.4 Connect Communication Cables.....	54
5.5 Operations After Wiring.....	56
6 System Trial Run.....	57
6.1 Checks Before System Power-On.....	57
6.2 Equipment Power-On.....	57
7 System Commissioning and Monitoring.....	60
7.1 Use the SEMS+ App for Device Commissioning and Plant Monitoring.....	60
7.2 Device Commissioning and Plant Monitoring via SEMS+ WEB.....	61
8 System Maintenance.....	63
8.1 Device Power-Off.....	63

8.2 Equipment Dismantling.....	64
8.3 Equipment Scrapping.....	65
8.4 Regular Maintenance.....	65
8.5 Troubleshooting.....	66
9 Technical Specifications.....	71
9.1 GW5.0-BAT-LVI-G10.....	71
9.2 GW10.0-BAT-LV-G10.....	73
10 Appendix.....	76
10.1 Terminology Explanation.....	76
10.2 Meaning of Battery SN Code.....	77
11 Contact Details.....	79

1 Safety Precautions

Always observe the safety precautions contained in this document when operating the equipment.

WARNING

The equipment has been designed and tested in strict accordance with safety regulations. However, as electrical equipment, the relevant safety instructions must be observed before any operation is performed on the equipment. Improper operation may cause serious personal injury or property damage.

1.1 General Safety

 DANGER

- Before performing electrical connections, disconnect all upstream switches of the equipment to ensure that the equipment is de-energized. Live-line operation is strictly prohibited; otherwise, hazards such as electric shock may occur.
- To prevent personal hazards or equipment damage caused by live-line operation, a circuit breaker must be added on the voltage input side of the equipment.
- During all operations such as transportation, storage, installation, operation, use, and maintenance, applicable laws, regulations, standards, and specifications shall be observed.
- The specifications of cables and components used for electrical connections shall comply with local laws, regulations, standards, and specifications.
- Please use the cable connectors supplied with the equipment to connect the equipment cables. If connectors of other models are used, any resulting equipment damage shall not be within the responsibility of the equipment manufacturer.
- Ensure that all equipment cables are correctly connected, tightened, and free from looseness. Improper wiring may cause poor contact or damage to the equipment.
- The equipment's Protection ground conductor must be securely connected.
- For the Protection of the equipment and its components from damage during transportation, ensure that transportation personnel have received professional training. During transportation, record the operation steps, keep the equipment balanced, and prevent the equipment from falling.
- The equipment is heavy. Please assign corresponding personnel according to the equipment Weight to prevent the equipment from exceeding the Weight range that a person can carry, resulting in crushing injuries.
- Ensure that the equipment is placed stably and not tilted. Tipping of the equipment may cause equipment damage and personal injury.

 WARNING

- During equipment installation, avoid applying load to the wiring terminals; otherwise, the terminals may be damaged.
- Avoid excessive tensile force on cables; otherwise, poor connections may occur. During wiring, reserve an appropriate cable length to avoid cables being in a taut state.
- Correctly secure and support cables to prevent cable self-weight, tensile force, bending force, torsional force, or other external mechanical stress from acting on terminals or connectors for extended periods.
- Ensure that the Protection grounding conductor is reliably connected and that appropriate slack is reserved. When subjected to unexpected tensile force or other external mechanical stress, ensure that the Protection grounding conductor does not disconnect before other conductors.
- Cables of the same type shall be bundled together; cables of different types shall be routed at least 30 mm apart. Intertwining or crossing is prohibited.
- Using cables in a high-temperature environment may cause aging or damage to the insulation layer. The distance between the cable and heat-generating components or the periphery of heat source areas must be at least 30 mm.

NOTICE

- Due to product version upgrades or other reasons, the document content will be updated from time to time. Unless otherwise specified, the document content does not replace the safety precautions on the product labels. All descriptions in this document are for guidance only.
- Before installing the equipment, carefully read this document to understand the product and precautions.
- All operations on the equipment must be performed by professional and qualified electrical technicians, and the technicians must be familiar with the relevant standards and safety regulations of the project location.
- When operating the equipment, use insulated tools and wear personal protective equipment to ensure personal safety. When touching electronic components, wear electrostatic gloves, ESD wrist straps, anti-static clothing, etc., to provide Protection for the equipment against electrostatic damage.
- Unauthorized disassembly or modification may cause equipment damage, and such damage is not covered by the warranty.
- Equipment damage or personal injury caused by installing, using, or configuring the equipment not in accordance with this document or the corresponding user manual is not within the responsibility of the equipment manufacturer. For more product warranty information, please visit the official website:
<https://en.goodwe.com/warranty>.

1.2 Personnel Requirements

NOTICE

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

1. Professionals or qualified personnel include:

- Personnel who have mastered the equipment working principles, system structure, and knowledge of risks and hazards, and who have received professional operation training or have extensive practical experience.
- Personnel who have received relevant technical and safety training, have certain operating experience, are able to recognize the dangers that specific operations 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 they are located.
- Personnel with an electrical engineering degree / advanced diploma or equivalent in electrical discipline / professional qualification in the electrical field, and at least 2/3/4 years of experience in testing and supervisory work using safety standards for electrical equipment.

2. Personnel involved in special tasks such as electrical work, work at height, and special equipment operation must hold valid qualification certificates required by the location of the equipment.

3. Medium-voltage equipment operations must be performed by certified high-voltage electricians.

4. Equipment and component replacement may only be performed by authorized personnel.

1.3 Battery Safety

DANGER

- Before operating equipment in the system, ensure that the equipment is powered off to avoid electric shock hazards. During operation of the equipment, strictly comply with all safety precautions in this manual and the safety signs on the equipment.

 DANGER

- This energy storage system is heavy equipment. During installation and maintenance, use appropriate equipment and tools and take Protection measures. Improper operation may cause personal injury or product damage.
- Without official authorization from the equipment manufacturer, do not disassemble, modify, or repair the battery or control box; otherwise, electric shock hazards may occur or equipment damage may result. Losses caused by this are not within the scope of the equipment manufacturer's responsibility.
- 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 use sharp objects to pierce the equipment enclosure. Do not place the battery in fire; otherwise, there is a risk of battery explosion.
- Do not place the battery in a high-temperature environment. Ensure there is no heat source near the battery and that it is not exposed to direct sunlight. If the ambient temperature exceeds 60°C, a fire may occur.
- If the battery or control box has obvious defects, cracks, damage, or other conditions, do not use it.
- Battery damage may cause electrolyte leakage.
- Do not move the battery system while the battery is operating.
- Pay attention to the positive and negative poles when installing the battery system. Do not reverse the positive and negative poles; otherwise, it may cause a short circuit, resulting in personal injury or property damage.
- It is strictly prohibited to short-circuit the positive and negative poles of the battery. Battery Short Circuit may cause personal injury; the instantaneous high current caused by a short circuit can release a large amount of energy and may cause a fire.
- When operating the equipment, ensure that the equipment is not damaged and the system has no faults; otherwise, there may be a risk of electric shock and fire.
- During equipment operation, do not open the equipment cabinet door or touch any terminals or components. Otherwise, there is a risk of electric shock.
- During equipment operation, the enclosure temperature may exceed 60°C. Do not touch the enclosure before it has cooled; do not install it within reach of non-professional personnel.
- During battery system operation, do not plug or unplug terminals and

DANGER

connecting cables; otherwise, it may cause a safety hazard.

- During battery system operation, if any abnormality occurs, immediately power off the battery system and promptly contact relevant personnel for handling.
- The battery DC circuit breaker shall comply with the requirements of AS/NZS 5139.

WARNING

- Ensure the battery is charged promptly after discharge; otherwise, over-discharge may cause battery damage.
Do not charge or discharge the battery at a current exceeding the rated charge/discharge current.
- Battery Current may be affected by factors such as temperature, humidity, weather conditions, etc., which may cause battery current limiting and affect load-carrying capability.
- If the battery cannot be started, contact the after-sales service center as soon as possible. Otherwise, the battery may be permanently damaged.
- If a battery module needs to be replaced or added, please contact the after-sales service center.
- Avoid charging the battery at low temperatures; otherwise, the battery system capacity may be reduced.
- Do not place unrelated objects into any part of the battery cabinet.

NOTICE

Emergency measures for emergency situations:

- Battery electrolyte leakage

If the battery module leaks electrolyte, avoid contact with the leaked liquid or gas. Electrolyte is corrosive; contact may cause skin irritation and chemical burns. If you accidentally come into contact with the leaked substance, perform the following actions:

- Inhalation: Evacuate from the contaminated area and seek medical attention immediately.
- Eye contact: Flush with clean water for at least 15 minutes and seek medical attention immediately.
- Skin contact: Thoroughly wash the contacted area with soap and clean water and seek medical attention immediately.
- Ingestion: Induce vomiting and seek medical assistance immediately.

- Fire

- When the battery temperature exceeds 150°C, there is a risk of battery fire, and a burning battery may release toxic and harmful gases.
- To avoid fire, ensure that 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 European Declaration of Conformity (Battery)

Batteries that can be sold on the European market meet the requirements of the following directives:

- 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 battery products meet the hazardous substance limit requirements specified in this regulation.

More EU Declarations of Conformity can be obtained from [the official website](#).

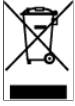
1.5 Safety Symbols and Certification Mark Explanation

DANGER

- After the equipment is installed, the labels and warning signs on the enclosure must remain clearly visible and must not be obscured, altered, or damaged.
- The following descriptions of enclosure warning labels are for reference only. Please refer to the actual labels used on the equipment.

No.	Symbol	Meaning
1		Potential hazards exist during equipment operation. Take proper protective measures when operating the equipment.
2		High voltage hazard. High voltage is present during equipment operation. Before operating the equipment, ensure that it has been de-energized.
3		The inverter surface is hot. Do not touch it while the equipment is running; otherwise, burns may result.
4		Use the equipment properly. Using it under extreme conditions may present an explosion hazard.

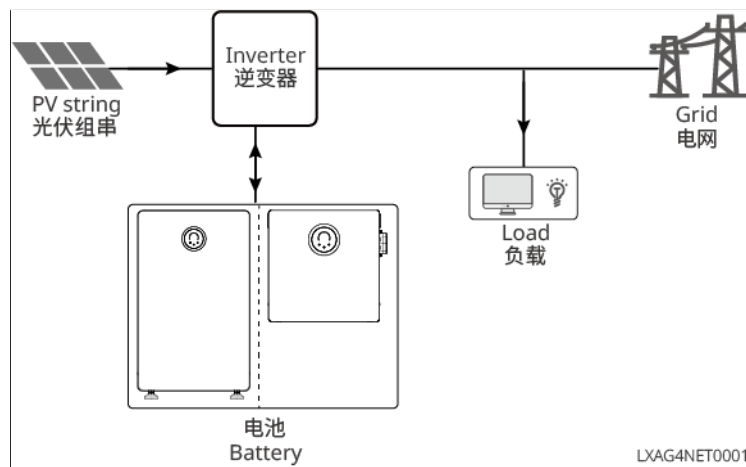
No.	Symbol	Meaning
5		The battery contains flammable materials. Fire hazard.
6		The equipment contains corrosive electrolyte. Avoid contact with leaked electrolyte or vapors.
7		Delayed discharge. After the equipment is powered off, wait 5 minutes until the equipment is fully discharged.
8		Keep the equipment away from open flames or ignition sources.
9		Keep the equipment out of reach of children.
10		Do not extinguish with water.
11		Do not lift the equipment after the battery system wiring is completed or while the battery system is in operation.
12		Do not disassemble
13		Before operating the equipment, read the product manual carefully.
14		During equipment operation, do not directly disconnect or plug/unplug the DC terminals.

No.	Symbol	Meaning
15		Wear personal protective equipment (PPE) during installation, operation, and maintenance.
16	 	The equipment must not be disposed of as household waste. Dispose of it in accordance with local laws and regulations, or return it to the equipment manufacturer.
17		Protection grounding conductor connection point.
18		Recycling symbol.
19		CE Certification Mark.
20		TUV Mark.
21		RCM Mark.

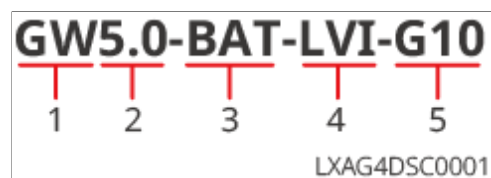
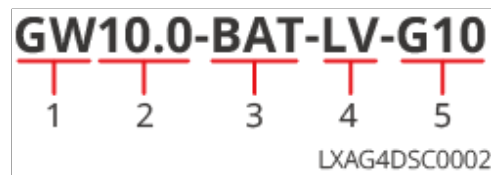
2 Product Introduction

2.1 Product Overview

The LXA G4 battery system (hereinafter referred to as the battery system) is a core component of the energy storage system and can work in coordination with hybrid inverters to enable the storage and release of electrical energy.



Model Description



Identification	Meaning	Description
1	Brand Code	GW: GOODWE
2	Energy level	10.0: Rated energy is 10 kWh 5.0: Rated energy is 5 kWh
3	Product category	BAT: Battery
4	Voltage level	- LV: Low-voltage battery - LVI: Low-voltage battery for indoor use
5	Version Code	G10: First-generation product

2.2 Appearance Introduction

2.2.1 GW5.0-BAT-LVI-G10

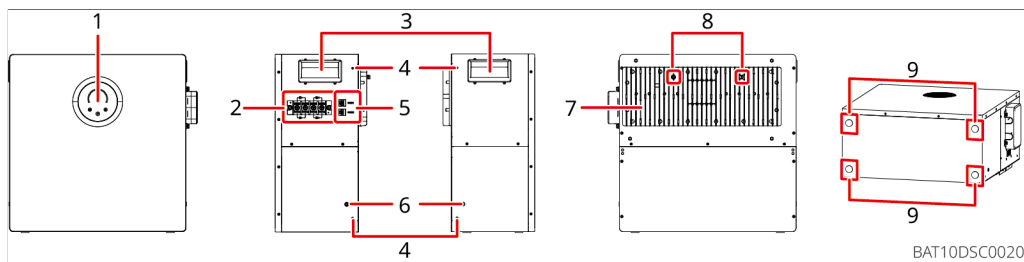


Figure1 Component Introduction

No.	Component/Silkscreen	Description
1	Indicators and Buttons	- The indicator light indicates the battery operating status - The button controls battery power on/off
2	Battery DC port	Connect the battery power cable
3	Handle slot	For carrying the battery
4	Mounting hole	Used to secure batteries to each other during stacking or to secure the anti-tip bracket
5	Communication port	Connect the communication cable or terminating resistor
6	Protection Grounding Terminal	Connect the enclosure Protection ground cable
7	Heat sink	Battery heat dissipation
8	Back mounting plate mounting hole	Install the battery back mounting plate
9	Anti-slip pad application position	During floor-standing installation, anti-slip pads need to be attached to the bottommost battery

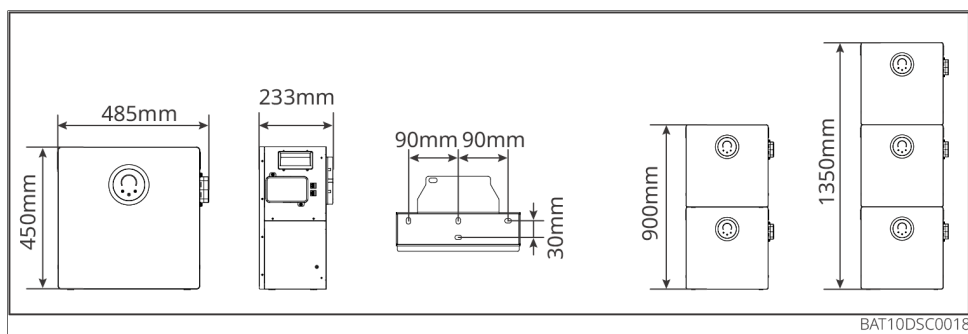


Figure2 Battery Dimensions

2.2.2 GW10.0-BAT-LV-G10

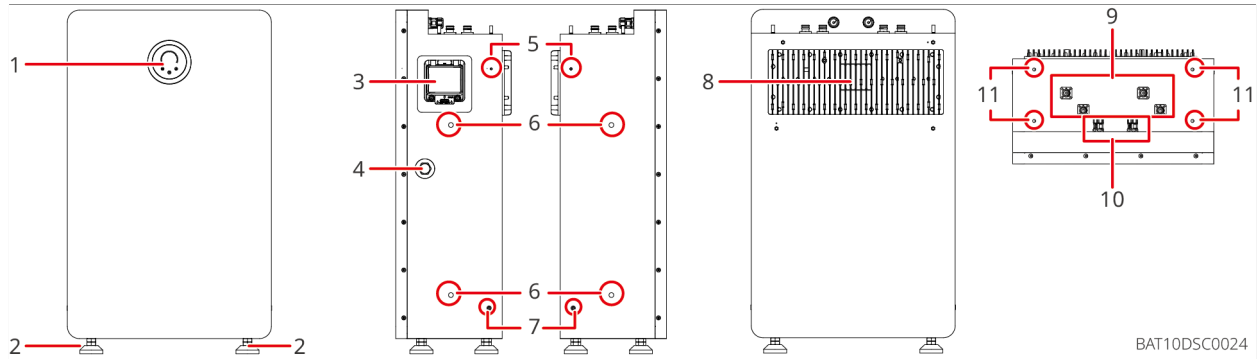


Figure3 Component Introduction

No.	Component/Silkscreen	Description
1	Indicators and Buttons	- The indicator light indicates the battery operating status - The button controls battery power on/off
2	Adjustable feet	Used when the battery is floor-mounted
3	Battery circuit breaker	Opens and closes the battery internal circuit
4	Explosion-proof vent valve	Balances the internal and external air pressure of the battery to prevent explosion
5	Anti-tip bracket mounting holes	Used to secure the battery to the wall
6	Lifting handle mounting holes	Used to install lifting handles for manual handling of the battery
7	Protection Grounding Terminal	Connect the enclosure Protection ground cable
8	Heat sink	Battery heat dissipation

No.	Component/Silkscreen	Description
9	Battery DC port	Connect the battery power cable
10	Communication port	Connect the communication cable or terminating resistor
11	Decorative cover mounting holes	Used to secure the battery decorative cover

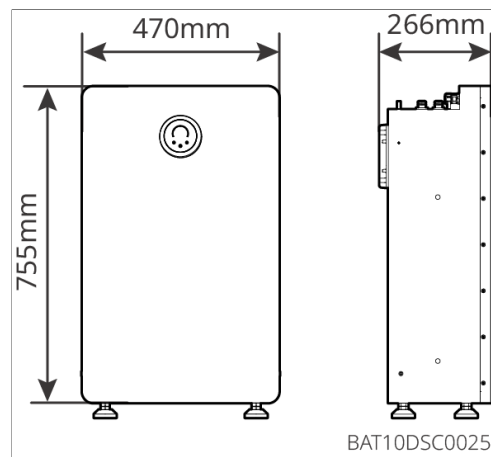
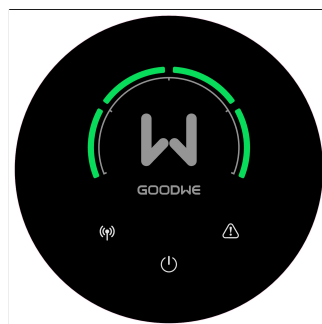
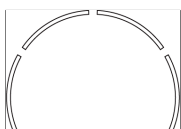
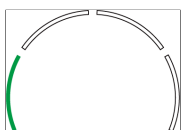
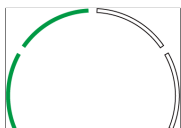
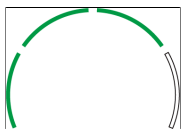
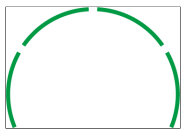


Figure4 Battery Dimensions

2.3 Indicator Light Introduction

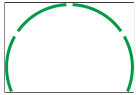


Normal status

Indicat or light name	Indicator light status		System status
SOC indicat or light		SOC indicator light off	SOC=0%
		SOC indicator light green segment steady on	0% < SOC ≤ 25%
			25% < SOC ≤ 50%
			50% < SOC ≤ 75%
			75% < SOC ≤ 100%
	SOC indicator light green flashing		Battery system is in discharging state
Running indicator light + touch button		White steady on	System working normally
		White flashing	System preparing

Indicat or light name	Indicator light status		System status
Commu nication light		White steady on	PCS communication normal

Abnormal status

Indicat or light name	Indicator light status		Corresponding status of other indicators	System status
SOC indicat or light		SOC indicator light green segment steady on	 Off  Red steady on	Level 3 and above system fault Determine the fault type based on the SOC indicator display pattern, and handle it according to the recommended methods in the troubleshooting chapter.
Commu nication light		Off	/	PCS Comm Loss
System alarm indicator		White steady on	/	Level 2 system alarm and undervoltage faults at Levels 2, 3, and 4

3 Equipment Inspection and Storage

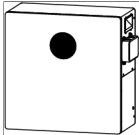
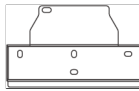
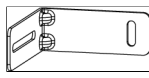
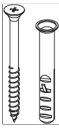
3.1 Equipment Inspection

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

- Check whether the outer packaging is damaged, such as deformation, holes, cracks, or other signs that may cause damage to the equipment in the packaging box. If there is any damage, do not open the packaging and contact your dealer.
- Check whether the equipment model is correct. If there is any discrepancy, do not open the packaging and contact your dealer.

3.2 Battery Deliverables

3.2.1 Battery Delivery Items (GW5.0-BAT-LVI-G10)

Component	Description	Component	Description
	Battery x 1		Back mounting plate x 1
	Mounting bracket x 1		Anti-tip bracket x 2
	Expansion bolt x 4		Expansion screw x 2

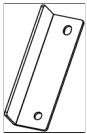
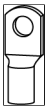
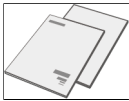
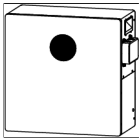
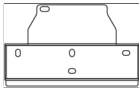
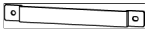
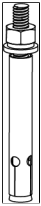
Component	Description	Component	Description
	Stacking fixing bracket x 2		Fastening screw x 7
	Rubber washer x 5		Grounding cable x 1
	Positive and negative power cable 1m x 1 Optional shipment		OT terminal x 4
	Communication cable 0.9m x 1		Battery busbar connection terminating resistor x 1
	Documentation x 1	-	-

Table20 Type I

Component	Description	Component	Description
	Battery x 1		Back mounting plate x 1
	Mounting bracket x 1		Expansion bolt x 4

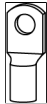
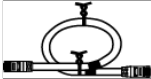
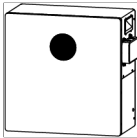
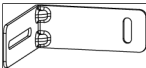
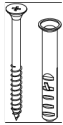
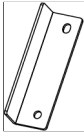
Component	Description	Component	Description
	Fastening screw x 3		Grounding cable x 1
	Positive and negative power cable 1m x 1 Optional shipment		OT terminal x 4
	Communication cable 0.9m x 1		Battery busbar connection terminating resistor x 1
	Documentation x 1	-	-

Table21 Type II

Component	Description	Component	Description
	Battery x 1		Anti-tip bracket x 2
	Expansion screw x 2		Stacking fixing bracket x 2
	Rubber washer x 5		Fastening screw x 5

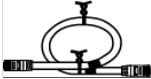
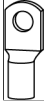
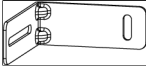
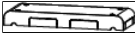
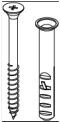
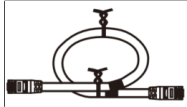
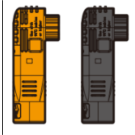
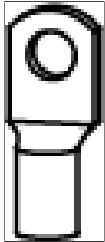
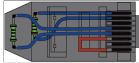
Component	Description	Component	Description
	Positive and negative power cable 1m x 1 Optional shipment		Grounding cable x 1
	Communication cable 0.9m x 1		OT terminal x 4
	Battery busbar connection terminating resistor x 1		Documentation x 1

Table22 Type III

3.2.2 Battery Delivery Items (GW10.0-BAT-LV-G10)

Component	Description	Component	Description
	Battery x 1		Anti-tip bracket x 2
	Decorative cover x 1		Lifting handle x 2
	Expansion screw x 2		Fastening screw x 7

Component	Description	Component	Description
	Rubber plug x 4		Grounding cable x 1
	Positive and negative power cable 1m x 1 - China: Partially standard - Other regions: Standard		Communication cable 0.9m x 1
 	Battery positive and negative connection terminal x 1 25-8 OT terminal x 2 - China: Partially standard - Other regions: None		Battery busbar connection terminating resistor x 1

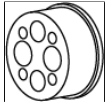
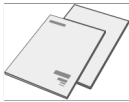
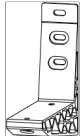
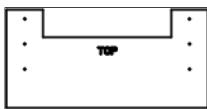
Component	Description	Component	Description
	Tubular terminal x 2 When the battery is directly connected to an ET LV series inverter, the battery cable on the inverter side must use this tubular terminal.		Seal ring x 2 When the battery is directly connected to an ET LV series inverter, the seal ring inside the cable gland on the inverter side must be replaced with a dedicated seal ring.
	Seal ring x 1 When the battery is directly connected to an ES UNIQ 8-12kW series inverter, the seal ring inside the cable gland on the inverter side must be replaced with a dedicated seal ring.		Documentation x 1

Table23 Battery accessory list

Component	Description	Component	Description
	Mounting bracket x 2		Mounting bracket marking paper x 1

Component	Description	Component	Description
	M10 expansion bolt x 6		M10 fastening screw x 2

Table24 Wall-mounted installation accessory kit (purchased separately)

3.3 Device Storage

NOTICE

[1] The storage time starts from the SN date on the battery outer packaging. After exceeding the storage period, charge/discharge maintenance is required. (Battery maintenance time = SN date + charge/discharge maintenance period). For the method to check the SN date, refer to: [10.2.SN Code Meaning\(Page 77\)](#)。

[2] After charge/discharge maintenance is qualified, if a Maintaining Label is affixed to the outer box, update the maintenance information on the Maintaining Label. If there is no Maintaining Label, record the maintenance time and battery SOC yourself and keep the data properly to facilitate maintenance record retention.

If the equipment is not put into use immediately, store it according to the following requirements. After long-term storage, the equipment can only be used again after inspection and confirmation by professional personnel.

To ensure battery performance and service life, avoid long-term idle storage.

Prolonged storage may cause deep discharge of the battery, resulting in irreversible chemical loss, capacity degradation, or even complete failure; timely use is recommended. If the battery needs to be stored for a long time, perform maintenance according to the following requirements:

- Initial battery storage SOC range: 30%~40%
- Recommended Storage Temperature: 0~35°C
- Charge/discharge maintenance period^[1]: -20~35°C, ≤12 months; 35~45°C, ≤6 months
- Battery maintenance method^[2]: For maintenance methods, consult your dealer or after-sales service center.

Packaging requirements:

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

Environmental requirements:

1. Ensure the equipment is stored in a cool place and away from direct sunlight.
2. Ensure the storage environment is clean, with appropriate temperature and humidity ranges and no condensation. If there is condensation at the equipment ports, do not install the equipment.
3. Ensure the equipment is kept away from flammable, explosive, corrosive, and other such items during storage.

Stacking requirements:

1. Ensure that the stacking height and orientation of the inverter comply with the label instructions on the packaging box.
2. Ensure that there is no tipping risk after the inverter is stacked.

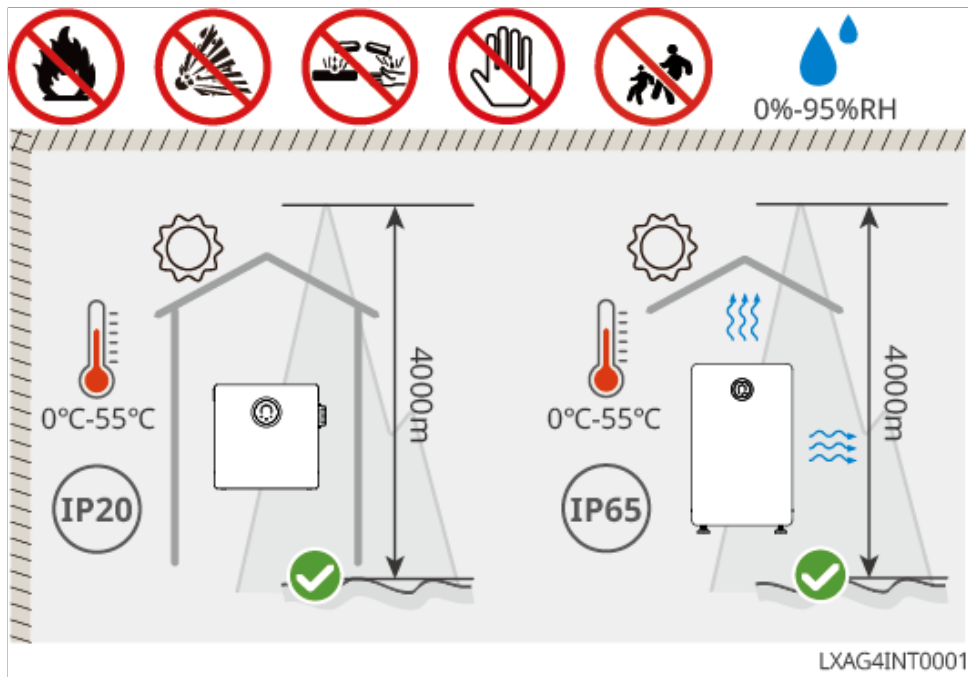
4 Installation

4.1 Installation Requirements

4.1.1 Environmental Requirements

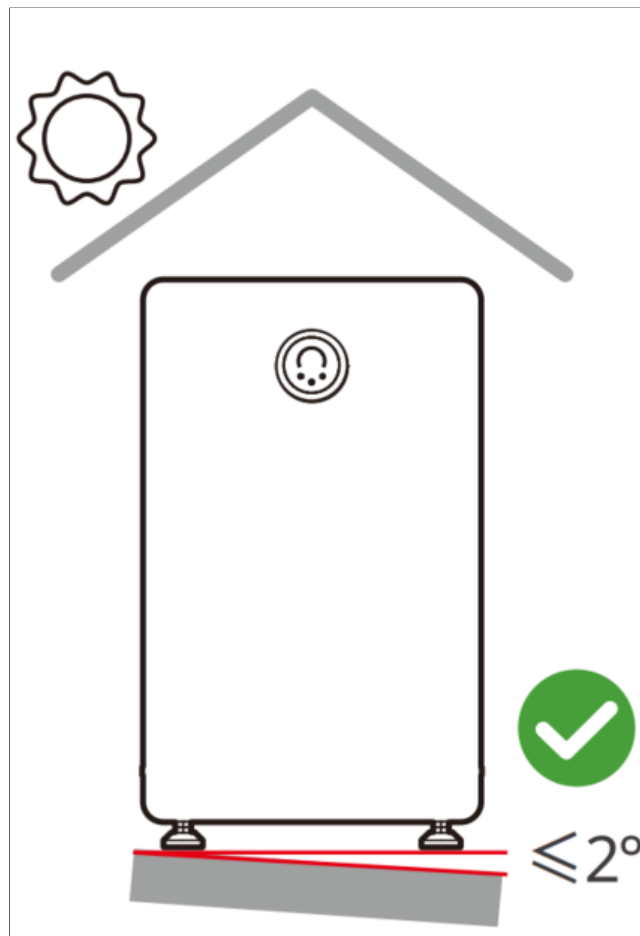
1. Installation site selection must strictly comply with local laws and regulations and relevant industry standards. The equipment must not be installed in flammable, explosive, or corrosive environments and should be installed near a fire hydrant.
2. The temperature and humidity of the equipment installation environment must be within the appropriate range.
3. The installation location must be out of the reach of children and avoid locations that are easily touched.
4. When the equipment is running, the enclosure temperature may exceed 60°C. Do not touch the enclosure before it has cooled to prevent burns.
5. It is recommended that the equipment be installed away from environments exposed to direct sunlight, rain, snow accumulation, etc., and a sheltered location should be preferred. If these cannot be completely avoided, ensure that conditions such as temperature and humidity of the installation environment always remain within the range permitted by the equipment specifications.
6. The installation space must meet the device ventilation and heat dissipation requirements and operation space requirements.
7. The equipment installation site should avoid areas directly exposed to cold air, such as air conditioner outlets. Excessive local temperature differences may cause condensation inside the equipment, thereby damaging the equipment.
8. The installation environment must meet the equipment's Ingress Protection Rating. The GW5.0-BAT-LVI-G10 has an Ingress Protection Rating of IP20 and can only be installed indoors; the GW10.0-BAT-LV-G10 has an Ingress Protection Rating of IP65 and can be installed both indoors and outdoors.
9. Flood control and drainage should be considered at the installation site:
 - Low-lying areas and areas prone to flooding should be avoided. The equipment installation location must be at least 250 mm above the local historical highest water level.

- Wind and waves from rivers, lakes, and seas may affect the device. The foundation should be at least 0.6 m above the historical highest wave level.
 - If a large amount of water flows into or through the equipment installation area at the site, drainage facilities should be provided.
 - For installation sites prone to water accumulation, waterproofing measures should be taken, including but not limited to installing water barriers, providing drainage systems, or raising the foundation.
10. The equipment must be installed at a height convenient for operation and maintenance, ensuring that the equipment indicators and all labels are easy to view, and the wiring terminals are easy to operate.
 11. The equipment installation altitude shall be lower than the Max. Operating Altitude.
 12. Before installing the equipment outdoors in salt-damage areas, consult the equipment manufacturer. Salt-damage areas mainly refer to areas within 500 m of the coast; the affected area is related to sea breeze, precipitation, terrain, and other conditions.
 13. If the equipment is installed in public places other than work and living areas (such as parking lots, stations, factories, etc.), install a protective fence around the exterior of the equipment and erect safety warning signs for isolation. Unauthorized personnel must be prohibited from approaching the equipment to avoid personal injury or property damage during equipment operation caused by accidental contact by non-professionals or other reasons.
 14. Keep away from strong magnetic field environments to avoid electromagnetic interference. If there is a radio station or wireless communication equipment below 30 MHz near the installation location, the distance between the equipment and the wireless electromagnetic interference equipment must exceed 30 m.



4.1.2 Angle Requirements

Install the battery system vertically. Do not invert, place horizontally, or side-mount the system.



4.1.3 Foundation Requirements

- The equipment should be installed on hardened ground or other non-combustible surfaces.
- The bottom of the foundation pit must be reinforced and filled to ensure that the foundation is solid, flat, level, and dry and has sufficient load-bearing capacity; foundations with depressions, subsidence, or tilting are considered unacceptable.
- The foundation should be designed to prevent water accumulation and moisture, preventing cables from aging or short-circuiting due to moisture and affecting normal equipment operation.
- The drawings are for reference only. Construction personnel should review and adjust them according to the actual conditions of the installation site, geological conditions, and seismic requirements.

4.1.4 Space Requirements

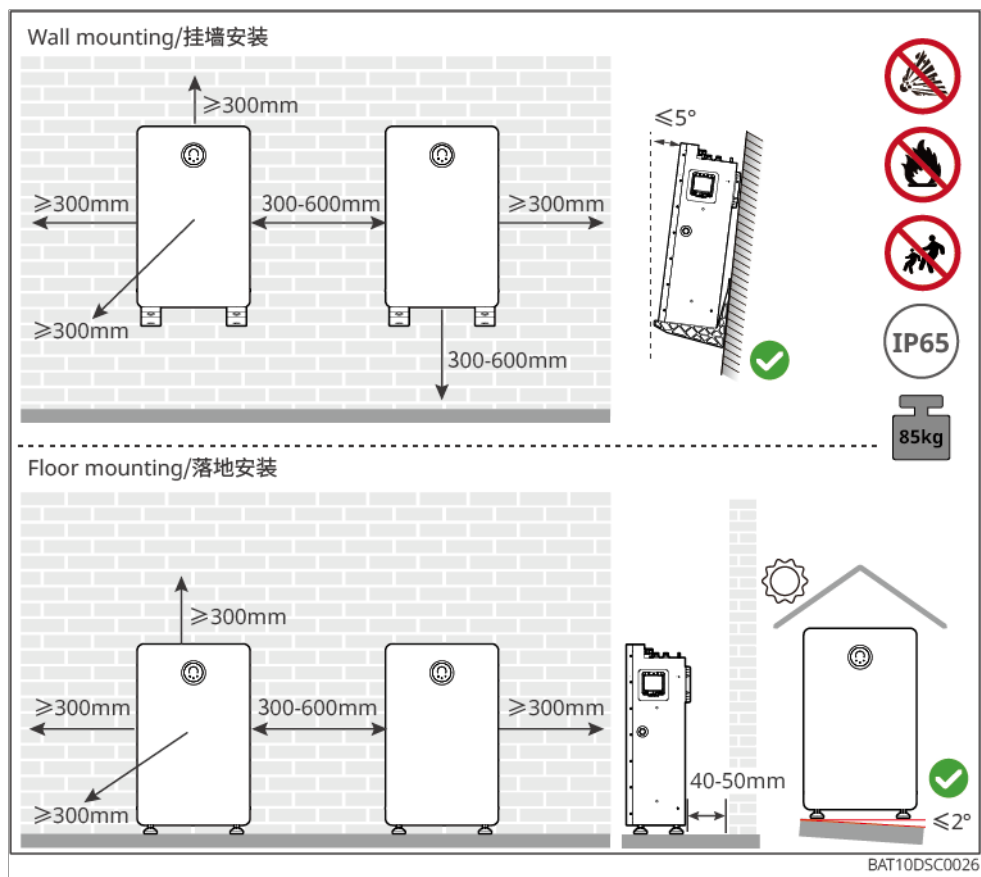


Figure5 GW10.0-BAT-LV-G10

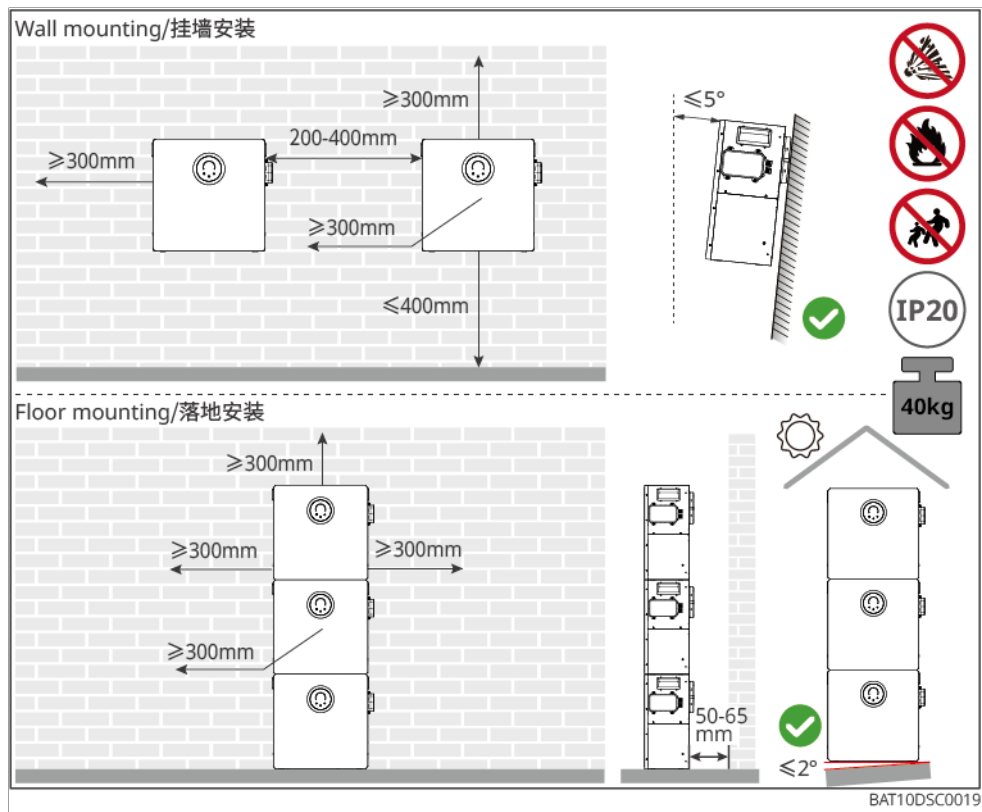
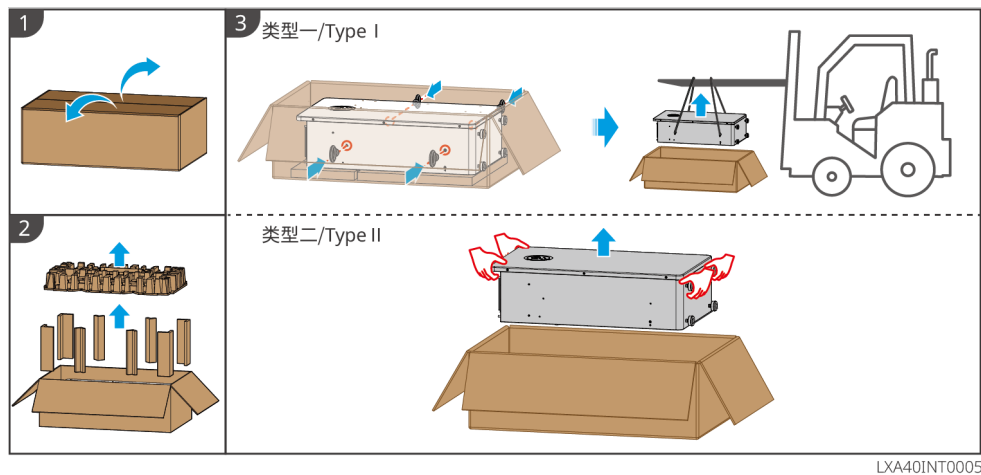


Figure6 GW5.0-BAT-LVI-G10

4.2 Equipment Handling

⚠ CAUTION

1. During transportation, turnover, installation, and other operations, the laws, regulations, and relevant standard requirements of the country/region must be met.
2. Before installation, the equipment must be transported to the installation site. During transportation, to avoid personal injury or equipment damage, please pay attention to the following:
 - a. Please assign corresponding personnel according to the equipment Weight to prevent the equipment from exceeding the human-carryable Weight range and causing personal injury.
 - b. Wear safety gloves to avoid injury.
 - c. Ensure the equipment remains balanced during handling to avoid dropping.
 - d. The battery system can be removed from the packaging box using a crane or hoisting method and transported to the installation site.
 - Crane requirements for GW10.0-BAT-LV-G10: load-bearing capacity ≥ 180 kg
 - When transporting the equipment by hoisting, use flexible slings or straps. Requirements for the lifting rings and hoisting ropes of GW10.0-BAT-LV-G10: Lifting rings: 4 M10 lifting rings, lifting ring load-bearing capacity ≥ 260 kg; Hoisting rope: 1 piece, rope length ≥ 2.5 m, hoisting rope load-bearing capacity ≥ 600 kg

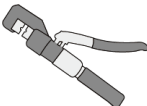
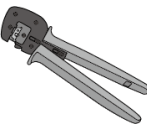
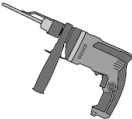
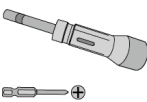
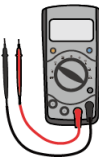
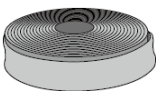


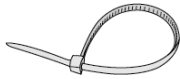
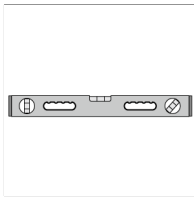
4.3 Tool Requirements

NOTICE

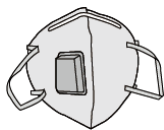
During installation, it is recommended to use the following installation tools. If necessary, other auxiliary tools can be used on site.

Installation Tools

Tool Type	Description	Tool Type	Description
	Diagonal Pliers		RJ45 Crimping Tool
	Wire Stripper		YQK-70 Hydraulic Crimping Tool
	Open-end Wrench		PV Terminal Crimping Tool PV-CZM-61100
	Impact Drill (Φ8 mm Drill Bit)		Torque Wrench
	Rubber Mallet		Socket Wrench Set
	Marker		Multimeter Range ≤1100V
	Heat-shrink tubing		Heat Gun

Tool Type	Description	Tool Type	Description
	Cable Ties		Vacuum Cleaner
	Spirit Level		

Personal Protective Equipment

Tool Type	Description	Tool Type	Description
	Insulating gloves, protective gloves		Dust mask
	Safety goggles		Safety Shoes

4.4 Battery Installation

 **WARNING**

- When installing the battery system, ensure the installation is level and secure. When using anti-tip brackets, the anti-tip brackets should be vertically flush against the wall and the surface of the battery system.
- When drilling with an impact drill, use cardboard or other covers to shield the battery system to prevent foreign objects from entering the equipment and causing equipment damage.
- After marking the drilling positions with a marker, move the battery system away to avoid equipment damage caused by the impact drill being too close to the battery system when drilling.

4.4.1 GW5.0-BAT-LVI-G10

NOTICE

- The battery supports floor-standing installation and wall-mounted installation. Please select according to the actual usage scenario.
- Floor-standing installation supports stacking of up to 3 batteries.
- For stacked installation, apply anti-slip stickers only to the bottom battery; do not apply them to the other batteries to avoid affecting fixation between batteries.

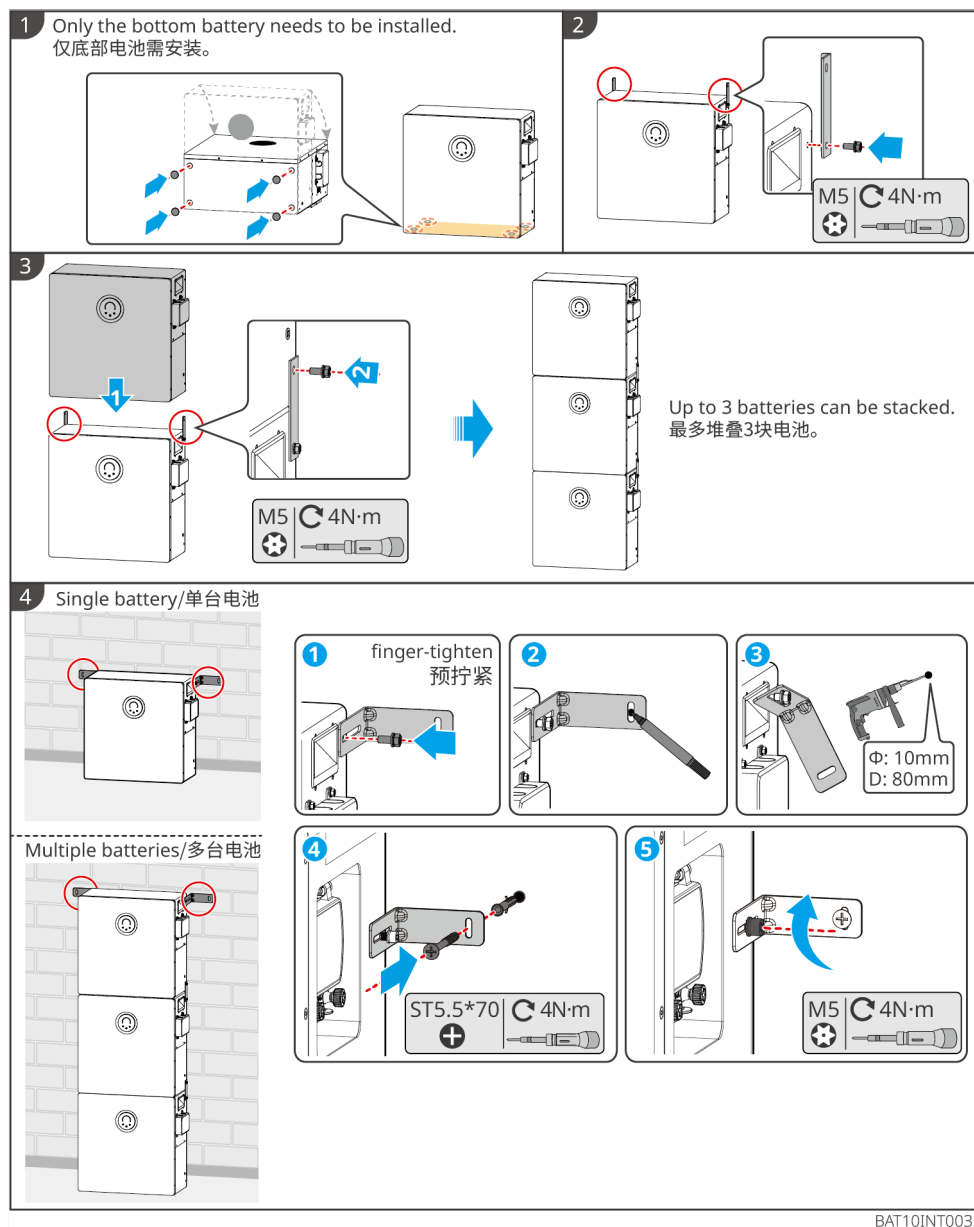


Figure7 Floor-standing Installation

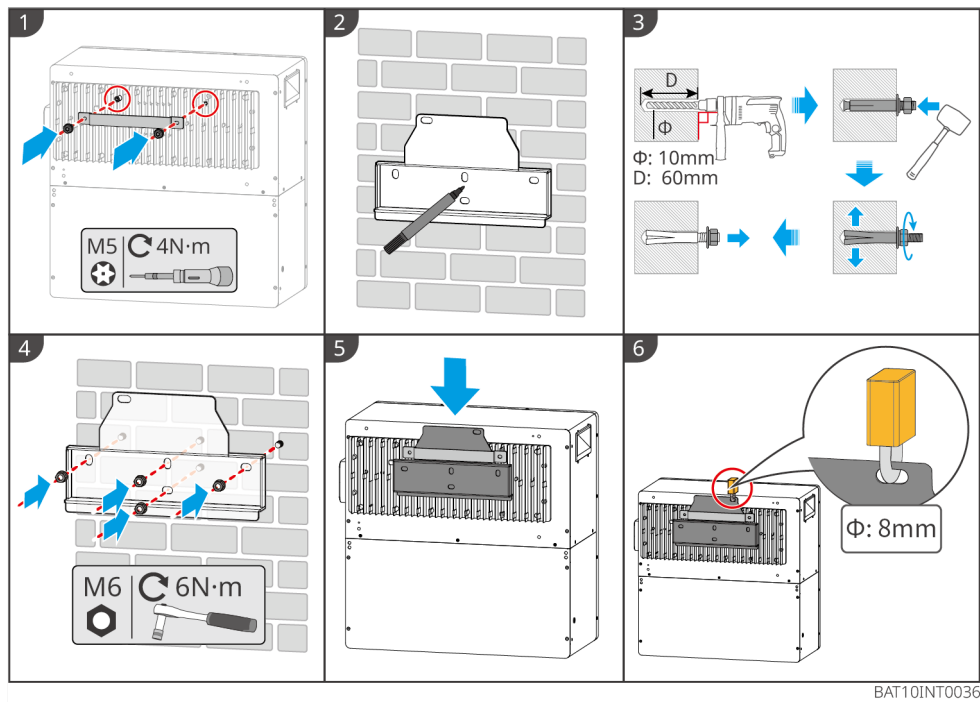


Figure8 Wall-mounted Installation

4.4.2 GW10.0-BAT-LV-G10

NOTICE

- The battery supports two Mounting Method types: floor-standing and wall-mounted. Stacking installation is not allowed. Please select according to the actual usage scenario.
- If wall-mounted installation is required, please contact your dealer to purchase the wall bracket installation kit.

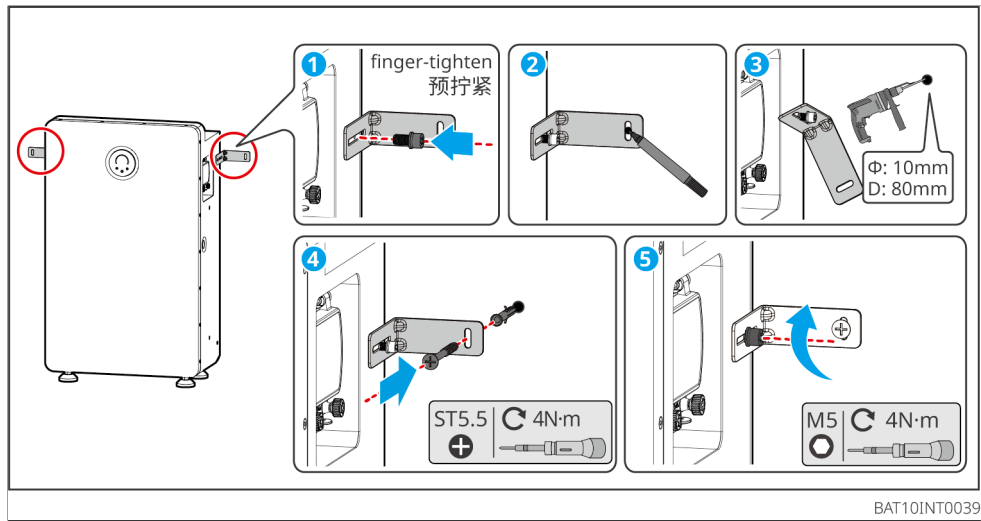


Figure9 Floor-standing Installation

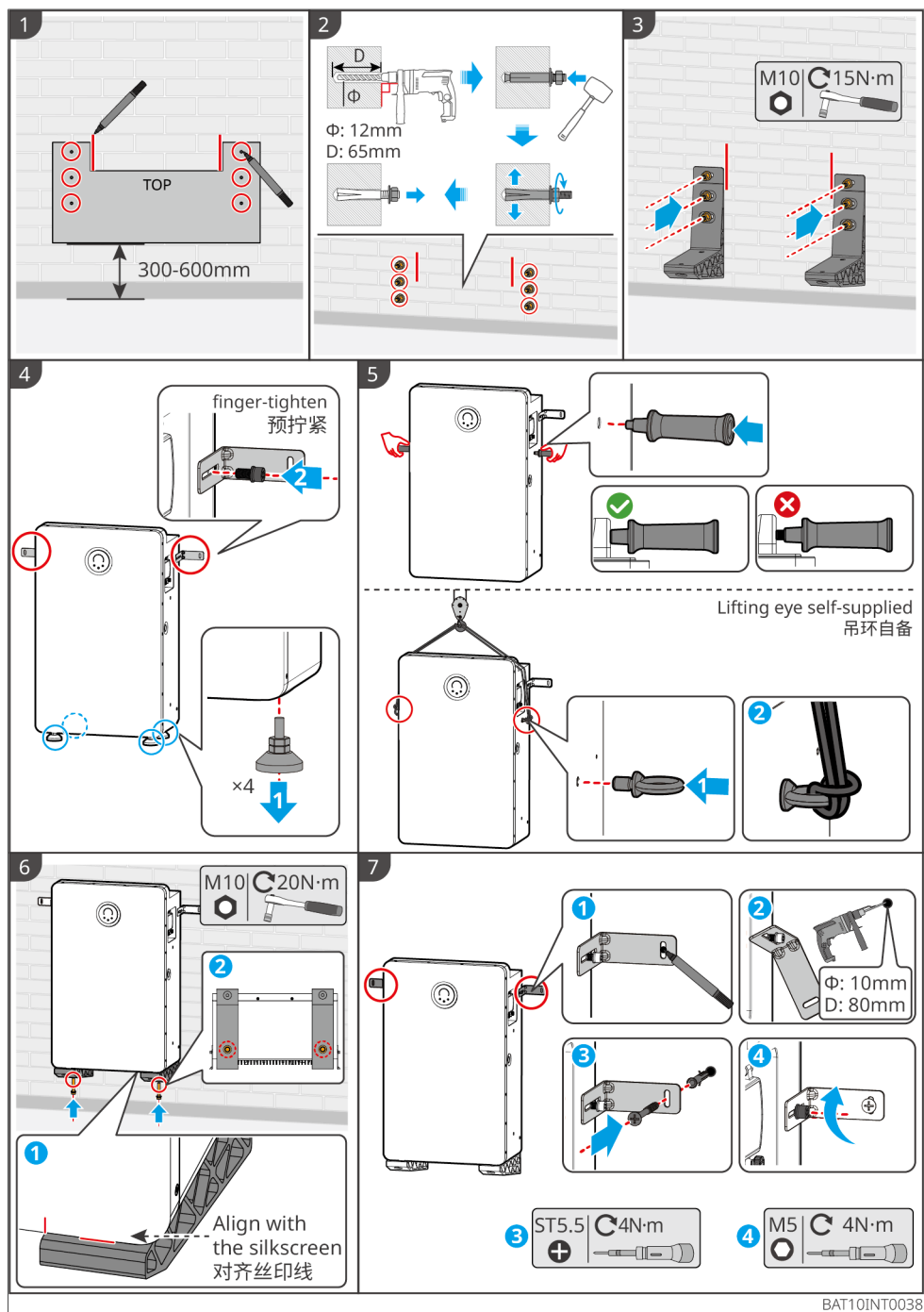


Figure10 Wall-mounted Installation

5 Electrical Connection

DANGER

- All operations during the electrical connection process and the specifications of the cables and components used must comply with local laws and regulations.
- Before making electrical cable connections, ensure that all upstream switches of the equipment are disconnected.
- Before performing electrical connections, ensure that the equipment is completely powered off. Live-line operation is strictly prohibited; otherwise, hazards such as electric shock may occur.
- Cables of the same type should be bundled together and routed separately from cables of different types. Do not intertwine or cross-route them.
- If a cable is subjected to excessive tensile force, it may cause poor connections. When wiring, leave a certain length of cable slack before connecting it to the equipment wiring terminals.
- When crimping wiring terminals, ensure that the conductor portion of the cable is in full contact with the terminal. Do not crimp the cable insulation together with the terminal; otherwise, the equipment may fail to operate, or after operation, unreliable connections may cause overheating and damage to the equipment terminal block.
- Using cables in a high-temperature environment may cause aging or damage to the insulation layer. The distance between the cable and heat-generating components or the periphery of heat source areas must be at least 30 mm.
- Before operating the equipment, ensure that it is reliably grounded and that relevant protective measures are taken. Otherwise, there may be a risk of electric shock.

NOTICE

- Before electrical connections, wear personal protective equipment such as safety shoes, protective gloves, and insulating gloves as required.
- Only trained professionals are permitted to perform electrical connections and other related operations.
- The cable colors in the figures in this document are for reference only. Specific cable specifications must comply with local regulatory requirements.
- GW5.0-BAT-LVI-G10 and GW10.0-BAT-LV-G10 can be mixed and matched.

GW5.0-BAT-LVI-G10

- Daisy-chain connection mode: Up to 3 batteries can be connected.

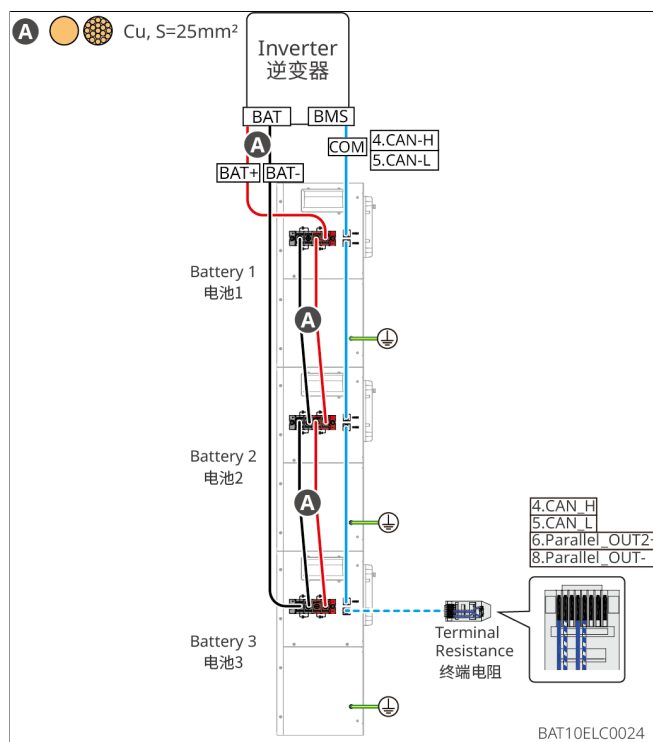


Figure11 GW5.0-BAT-LVI-G10: Daisy-chain wiring method

- Third-party busbar wiring method: Up to 12 batteries can be connected.

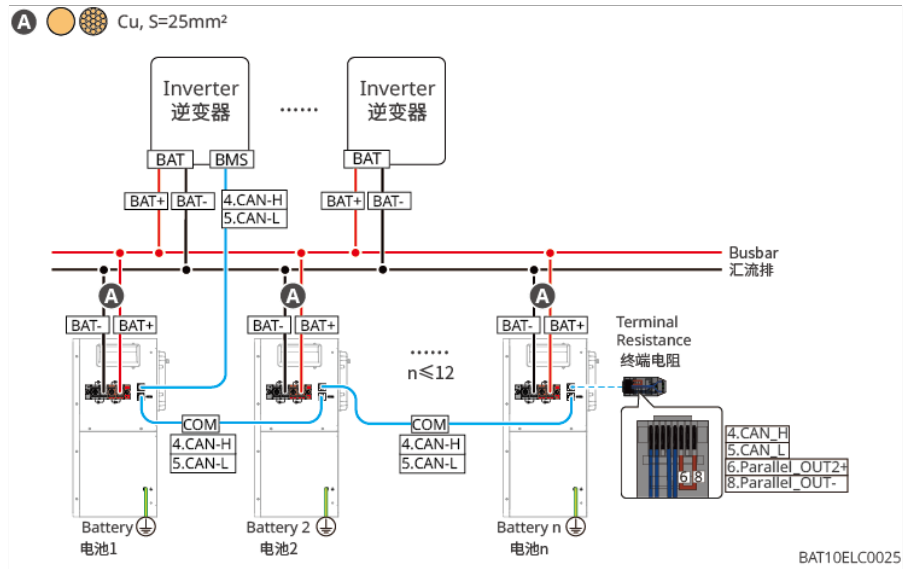


Figure12 GW5.0-BAT-LVI-G10: Third-party busbar wiring method

GW10.0-BAT-LV-G10

- Daisy-chain connection mode: Up to 3 batteries can be connected.

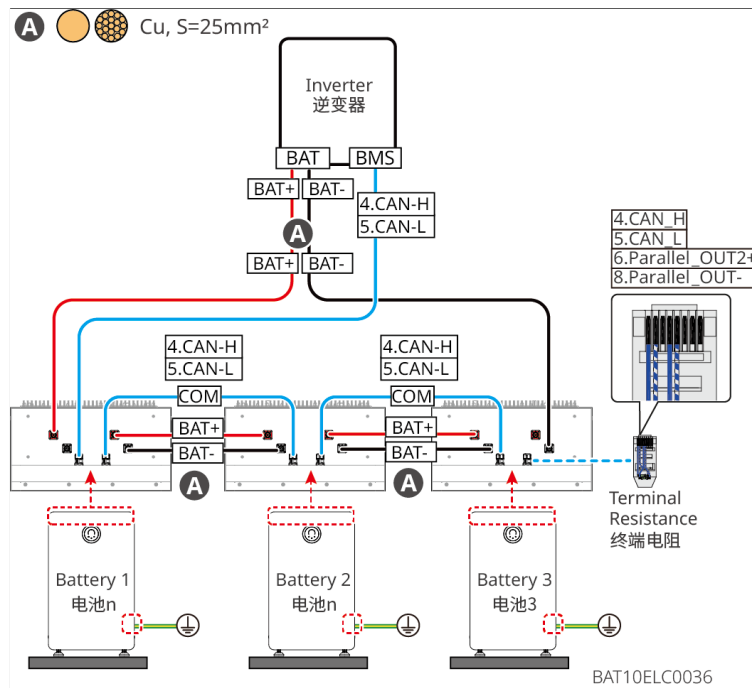


Figure13 GW10.0-BAT-LV-G10: Daisy-chain wiring method

- Third-party busbar wiring method: Up to 12 batteries can be connected.

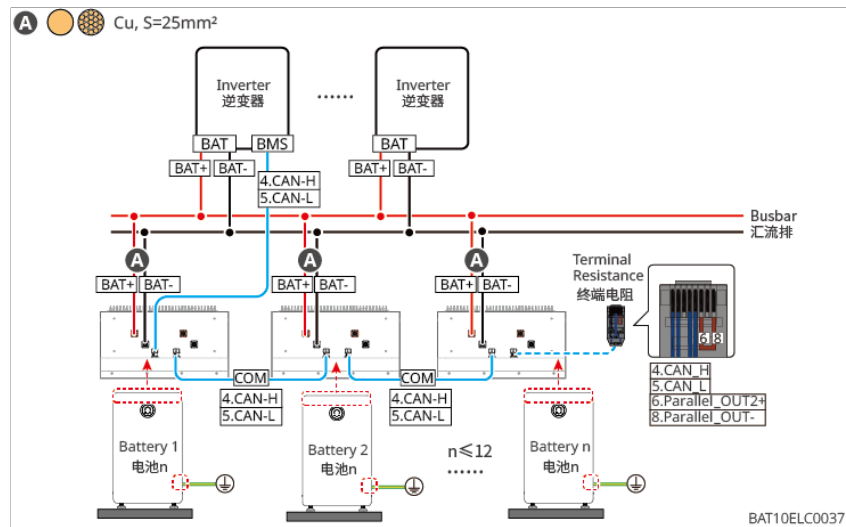


Figure14 GW10.0-BAT-LV-G10: Third-party busbar wiring method

5.1 Preparation Before Wiring

Cable Preparation

No.	Cable	Recommended Specifications	Description
1	Protection ground wire	- Single-core Outdoor Copper Cable - Conductor cross-sectional area: 10 mm²	Shipped with the box

No.	Cable	Recommended Specifications	Description
2	Battery DC cable	• Single-core Outdoor Copper Cable • Battery cluster paralleling cable requirements: ◦ Conductor cross-sectional area: 25 mm²	• GW5.0-BAT-LVI-G10: ◦ Accessory acquisition (optional 1 m) ◦ Battery parallel cluster cable: Contact your dealer to purchase a 2 m parallel cluster cable or purchase connection terminals • GW10.0-BAT-LV-G10: ◦ Inverter connecting cable: Accessory acquisition (standard 1 m) ◦ Battery parallel cluster cable: Contact your dealer to purchase a 1 m parallel cluster cable or purchase connection terminals
3	BMS communication cable	-	Shipped with the box

5.2 Connecting the Protection Ground Cable

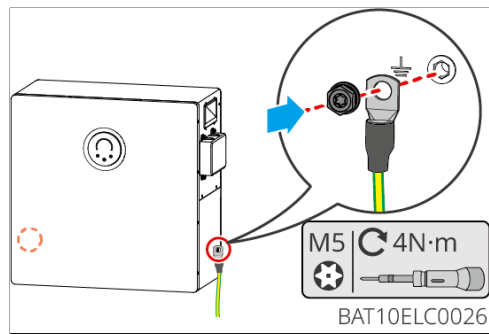


Figure15 GW5.0-BAT-LVI-G10 battery grounding

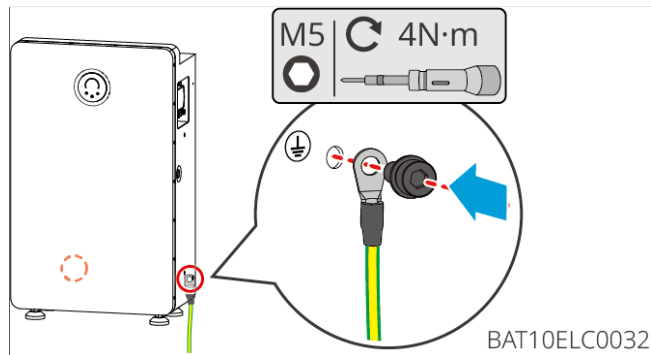


Figure16 GW10.0-BAT-LV-G10 battery grounding

5.3 Connecting the Power Cables

 WARNING

- Use a multimeter to measure the positive and negative terminals of the DC cables, and ensure that the positive and negative terminals are correct and not reversed; and that the voltage is within the allowable range.
- When wiring, the battery cables must match the "BAT+", "BAT-", and grounding ports on the battery terminals exactly. Incorrect cable connections will cause equipment damage.
- Ensure that the wire core is fully inserted into the terminal wiring hole with no exposed part.
- Ensure that the cables are securely connected; otherwise, during equipment operation, the terminals may overheat and cause equipment damage.
- When the inverter is directly connected to the battery, if the length of the power connection cables shipped with the battery is insufficient for the application, prepare your own cables and re-terminate them. When connecting the inverter to each battery, use the terminals shipped with the inverter.

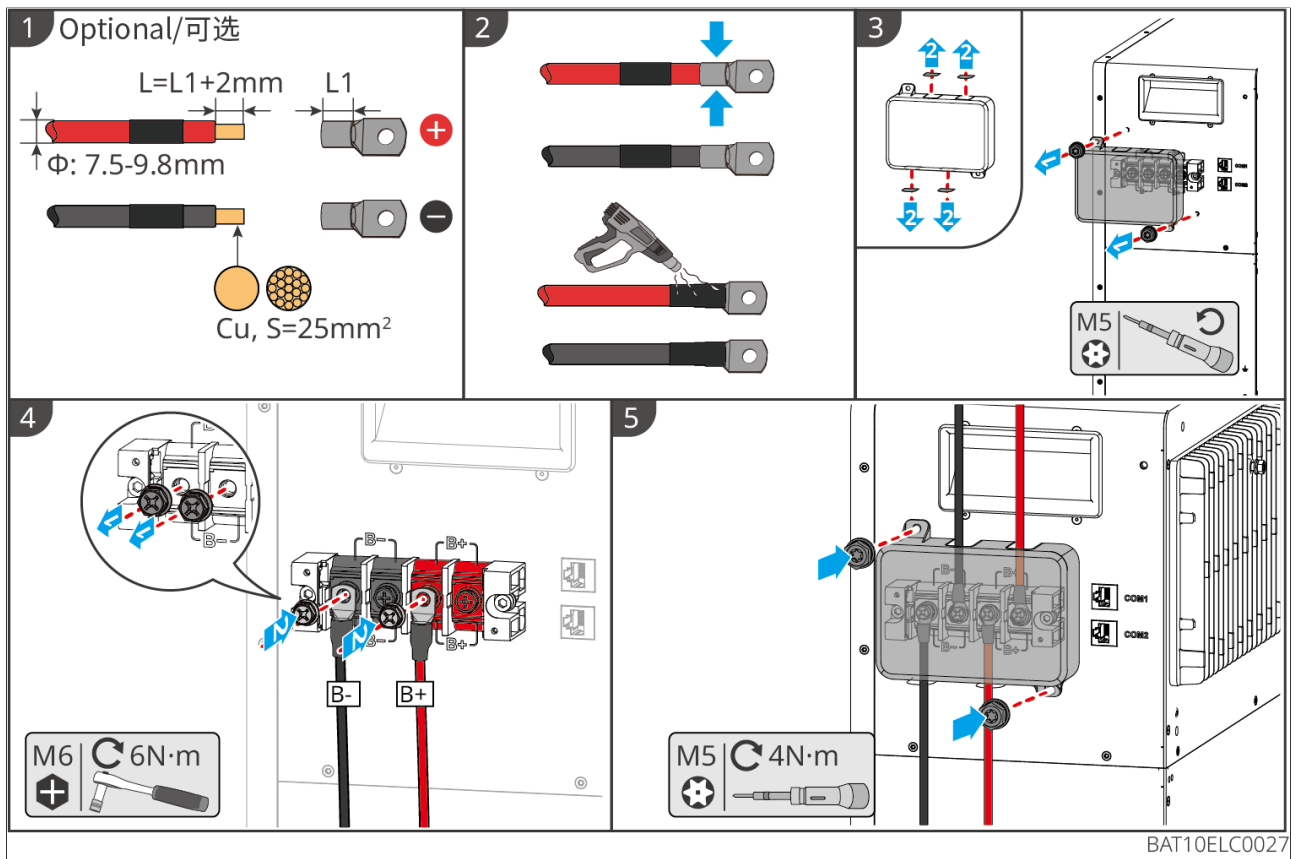


Figure17 Battery-side Cable Fabrication Method (GW5.0-BAT-LVI-G10)

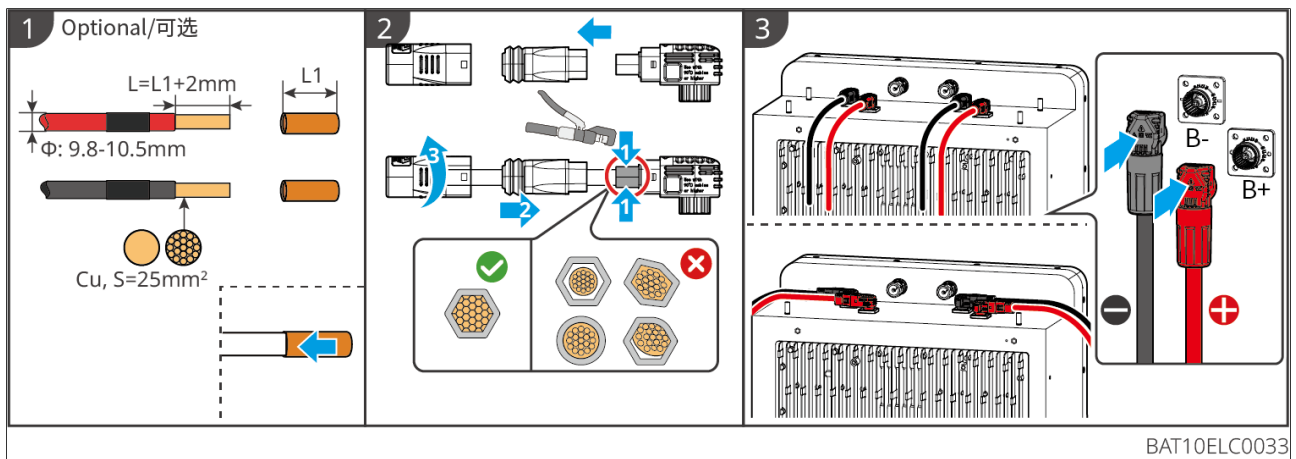


Figure18 Battery-side Cable Fabrication Method (GW10.0-BAT-LV-G10)

5.4 Connect Communication Cables

NOTICE

- BMS battery communication cables are shipped with the box. It is recommended to use the BMS battery communication cable shipped with the box. If the communication cable shipped with the box cannot meet the requirements, prepare your own shielded network cable and shielded RJ45 connectors.
- The battery has a built-in terminating resistor; if an optional third-party busbar is used, the terminating resistor on the device body must be removed, and the terminating resistor supplied with the matching accessory kit must be used instead.

PIN	COM1	COM2	Description
1	RS485A	RS485A	Reserved
2	RS485B	RS485B	
3	-	-	-
4	CAN_H	CAN_H	Connect to the inverter communication port or the battery parallel-cluster communication port
5	CAN_L	CAN_L	
6	Parallel OUT2+	Parallel OUT2+	Battery parallel-cluster communication port
7	-	-	-
8	Parallel OUT-	Parallel OUT-	Battery parallel-cluster communication port

Table38 Communication Port Definition

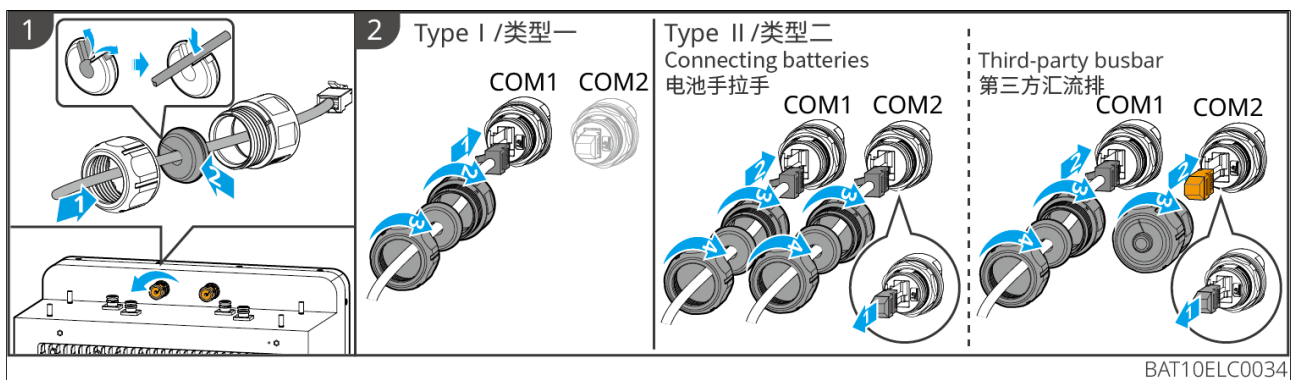


Figure19 GW10.0-BAT-LV-G10

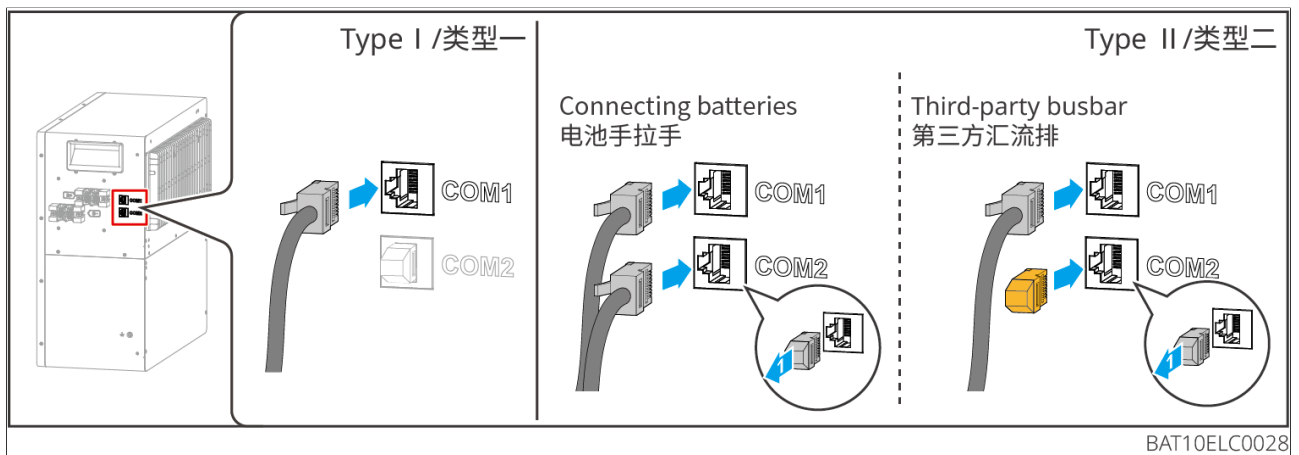


Figure20 GW5.0-BAT-LVI-G10

5.5 Operations After Wiring

NOTICE

After completing the battery system wiring, be sure to install the decorative cover; select the corresponding decorative cover installation scheme according to the on-site cable routing method.

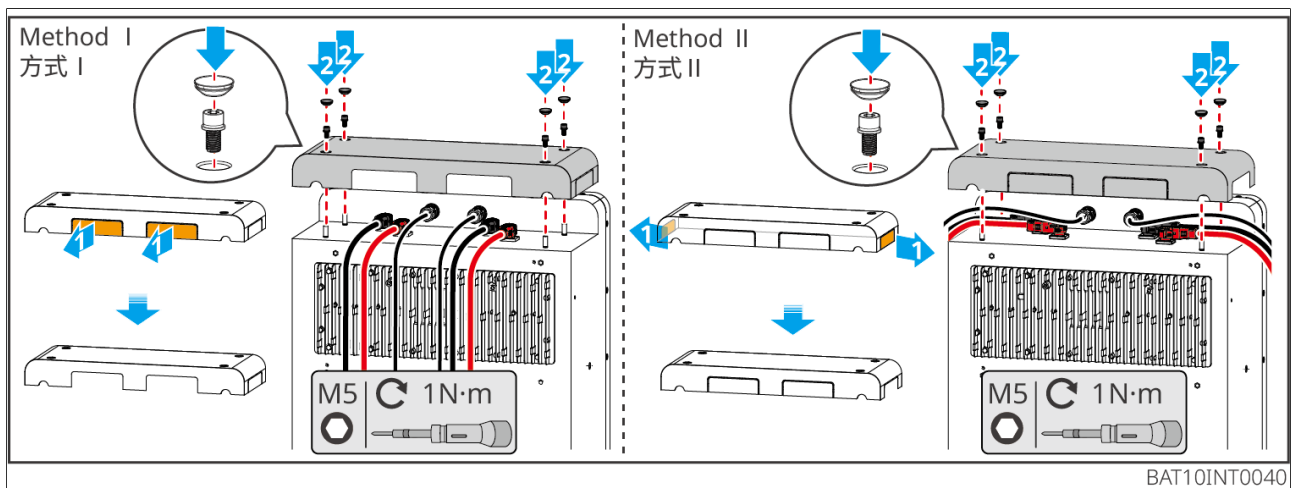


Figure21 GW10.0-BAT-LV-G10

6 System Trial Run

6.1 Checks Before System Power-On

No.	Check Item
1	The equipment is installed securely; the installation position facilitates operation and maintenance; the installation space facilitates ventilation and heat dissipation; and the installation environment is clean and tidy.
2	The Protection ground wire, DC cables, AC cables, communication cables, and terminal resistor are connected correctly and securely.
3	Cables are bound in accordance with routing requirements, reasonably distributed, and free from damage.
4	For unused cable holes and ports, ensure that the terminals provided in the accessories are used for reliable connection, and that they are sealed.
5	Ensure that used cable holes are sealed.

6.2 Equipment Power-On

! WARNING

- Battery Black Start Application Scenarios:
 - The inverter must be activated by the battery.
 - In the absence of an inverter, battery charge/discharge management, etc. is required.
- After the battery system starts normally, ensure that communication between the inverter and the battery system is normal within 15 minutes. If the inverter and battery system cannot communicate normally, the battery system switch will automatically open and the battery system will be powered off.
- When multiple batteries are connected in parallel clusters in the system, starting any one battery during initial power-on will wake up all batteries. After the batteries are powered off and then powered on again, each battery must be restarted one by one; alternatively, after allowing them to stand for 15 minutes, start any one battery to wake up all batteries.

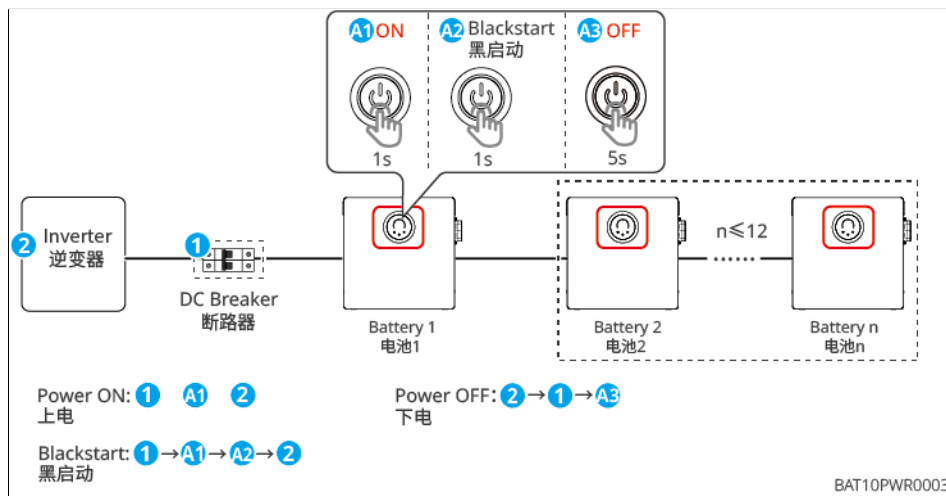


Figure22 GW5.0-BAT-LVI-G10 Power-On/Off

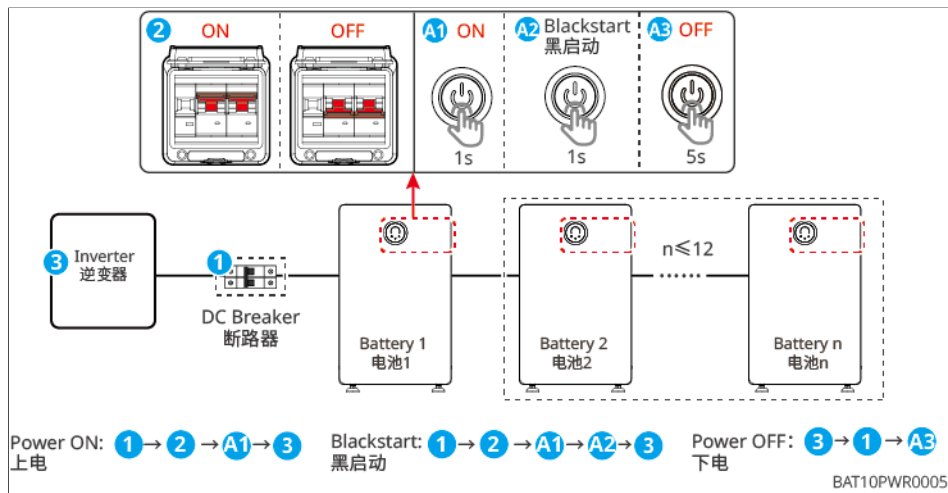


Figure23 GW10.0-BAT-LV-G10 Power-On/Off

Power-on procedure

1. Close the switch between the inverter and the battery. (Select according to local regulations.)
2. Start the battery system.
 - Normal Battery Startup
 - GW5.0-BAT-LVI-G10: Short press the multifunction buttons on all batteries for ≤ 1 s.
 - GW10.0-BAT-LV-G10: Close the air switches of all batteries, and short press the multifunction buttons on all batteries for ≤ 1 s.
 - Battery Black Start
 - GW5.0-BAT-LVI-G10: After short pressing the multifunction buttons on all batteries for 1 s, short press the multifunction button on any one battery for 1 s.
 - GW10.0-BAT-LV-G10: Close the integrated circuit breakers of all batteries, and short press the multifunction button indicators on all batteries for 1 s, then short press the multifunction button on any one battery for 1 s.
3. Close the inverter-side switch.

7 System Commissioning and Monitoring

7.1 Use the SEMS+ App for Device Commissioning and Plant Monitoring

SEMS+ App is a software for remote plant monitoring or local device commissioning. It supports installers or owners:

- Remotely monitor plant operation and set plant and device operating parameters.
- Connect to devices locally, view device operation status, and set device parameters.

Download and Install SEMS+ App

Phone requirements:

- Mobile phone OS requirements: Android 7.0 and above, iOS 15.1 and above.
- The mobile phone supports a web browser and Internet connection.
- The mobile phone supports WLAN/Bluetooth.

Download methods:

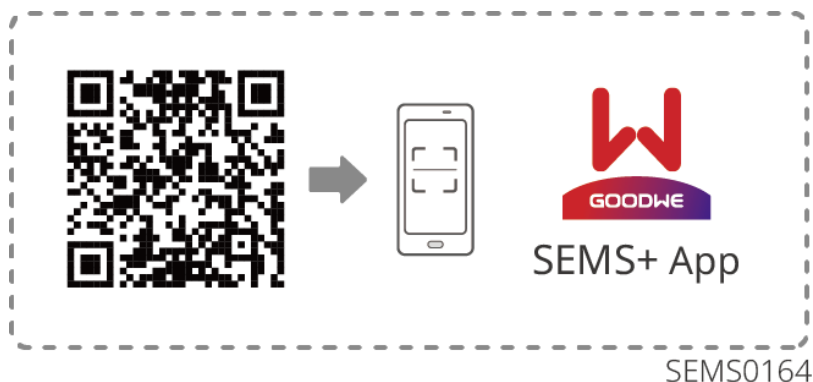
Method 1:

Search for SEMS+ in Google Play, App Store, Huawei, Honor, Xiaomi, OPPO, and vivo app stores to download and install it.



Method 2:

Scan the QR code below to download and install.



For detailed functions, refer to the [SEMS+ App User Manual](#). The user manual can be obtained from the official website or by scanning the QR code below.



SEMS+ App User Manual

7.2 Device Commissioning and Plant Monitoring via SEMS+ WEB

SEMS+ WEB is a monitoring platform that can communicate via WiFi or LAN. The following are the common functions of SEMS+ WEB:

1. Manage organization or user information, etc.
2. Add and monitor plant information, etc.
3. Maintain devices.

For detailed functions, refer to [SEMS+ WEB User Manual](#).



SEMS+ WEB User Manual

8 System Maintenance

8.1 Device Power-Off

DANGER

- When operating and maintaining devices in the system, power off the system. Operating devices while energized may cause equipment damage or electric shock hazards.
- After the device is powered off, the internal components take some time to discharge. Wait according to the time required on the label until the device is fully discharged.
- When shutting down the battery system, strictly comply with the battery system power-off requirements to prevent damage to the battery system.
- When there are multiple batteries in the system, powering off any one battery will power off all batteries.

NOTICE

- Circuit breakers between the inverter and the battery, and between battery systems, must be installed in accordance with local laws and regulations.
- To ensure effective protection of the battery system, keep the cover of the battery system switch closed. The protective cover can close automatically after being opened. If the battery system switch will not be used for a long time, secure it with screws.

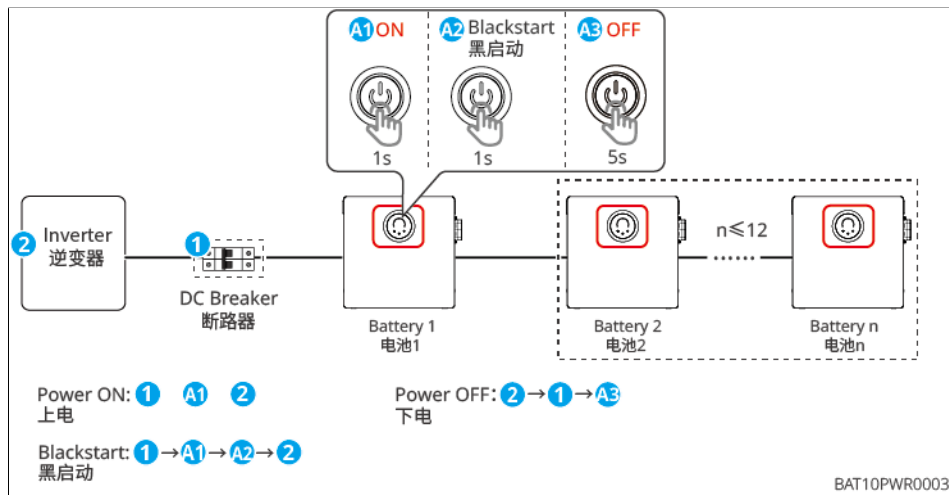


Figure24 GW5.0-BAT-LVI-G10 Power-On/Off

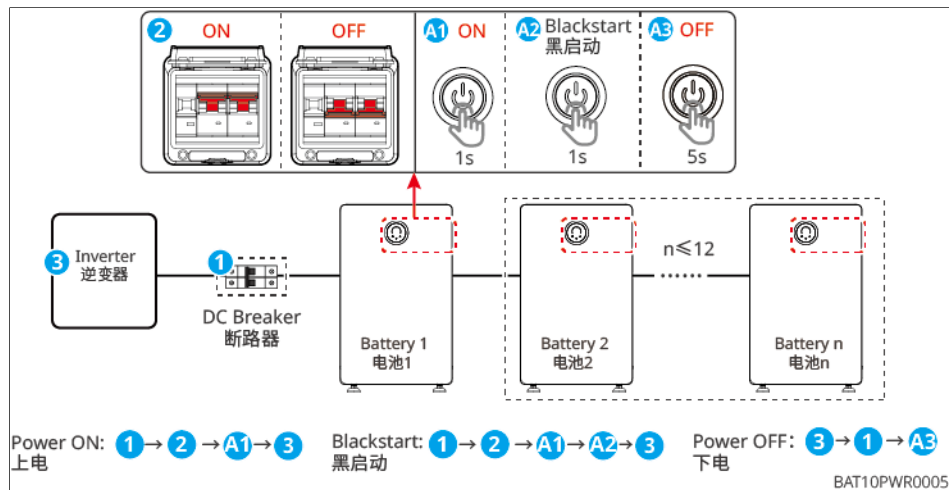


Figure25 GW10.0-BAT-LV-G10 Power-On/Off

Power-off procedure

1. Disconnect the inverter-side circuit breaker.
2. (Select according to local regulations) Disconnect the switch between the inverter and the battery.
3. Power off the battery system:
 - a. GW5.0-BAT-LVI-G10: Press and hold the multi-function button on any battery for more than 5 seconds to power off all batteries.
 - b. GW10.0-BAT-LV-G10: Press and hold the battery system button on any battery for at least 5 seconds; the integrated circuit breaker of the battery system will automatically open, and all batteries will be powered off.

8.2 Equipment Dismantling

DANGER

- Before dismantling, ensure that the equipment is de-energized.
- When operating the equipment, wear personal protective equipment (PPE).
- When removing terminal blocks, use proper removal tools to avoid damaging the terminals or equipment.
- Unless otherwise specified, the equipment dismantling procedure is the reverse of the installation procedure, and this document will not repeat the details.

1. Power off the system.
2. Use labels to mark the cable types of the cables connected in the system.
3. Disconnect the connecting cables of the inverter, battery, and smart meter in the system, such as: DC cables, AC cables, communication cables, and Protection ground cables.
4. Remove equipment such as the smart communication stick, inverter, battery, and smart meter.
5. Store the equipment properly. If it will be used later, ensure that the storage conditions meet the requirements.

8.3 Equipment Scrapping

When the equipment can no longer be used and needs to be scrapped, dispose of it in accordance with the electrical waste disposal requirements of the laws and regulations of the country/region where the equipment is located. Do not dispose of the equipment as household waste.

8.4 Regular Maintenance

⚠ WARNING

- If any problem that may affect the battery or system is found, please contact after-sales personnel; unauthorized disassembly is prohibited.
- If the copper wire inside the conductive cable is exposed, do not touch it. High voltage danger. Contact after-sales personnel. Unauthorized disassembly is prohibited.
- In case of any other emergency, contact after-sales personnel immediately, operate under the guidance of after-sales personnel, or wait for after-sales personnel to operate on site.

Mainten ance item	Maintenance method	Maintena nce period	Maintenance purpose
System cleaning	Check whether the installation space meets the requirements and whether debris has accumulated around the equipment.	Once every 6 months	Prevent smoke exhaust failure.
System Installatio n	Check whether the equipment is installed securely and whether the fastening screws are loose. Check the equipment for external damage or deformation.	Once every 6 months to once a year	Confirm the stability of the equipment installation.
Electrical Connectio n	Check whether the electrical connections are loose, whether the cables are damaged, and whether copper is exposed.	Once every 6 months to once a year	Confirm the reliability of the electrical connections.
Battery maintenan ce	If the battery has not been used for a long time or is not fully charged, periodic charging of the battery is recommended.	Once every 15 days	Protection of battery service life.

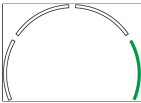
8.5 Troubleshooting

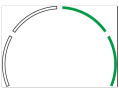
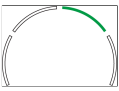
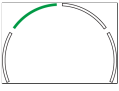
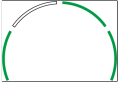
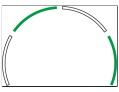
Please perform troubleshooting according to the following methods. If the troubleshooting methods cannot help you, please contact the after-sales service center.

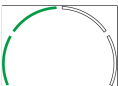
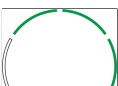
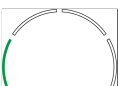
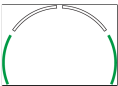
When contacting the after-sales service center, please collect the following information to facilitate quick problem resolution.

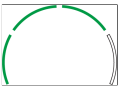
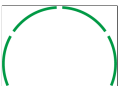
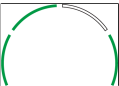
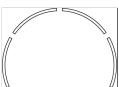
1. Energy storage system information, such as: serial number, software version, equipment installation time, fault occurrence time, fault occurrence frequency, etc.
2. Equipment installation environment, such as weather conditions, etc. For the installation environment, it is recommended to provide photos, videos, and other files to assist in problem analysis.
3. Grid conditions.

When the battery alarm indicator displays red , troubleshoot the fault in conjunction with the SOC indicator display status.

No.	SOC indicator light	Fault Name	Solution
1		Battery Over Voltage	1. Check via the App whether the inverter Charging Current limit is 0. If it is 0, please confirm whether the communication cable connection between the battery and the inverter is reliable and communication is normal 2. Power off and let it stand for 5 minutes. After restarting, confirm whether the fault persists 3. If the fault is not cleared, please contact the after-sales service center
		Battery Undervoltage	

2		Battery Overcurrent	1. Check via the App whether the battery model is correct. Confirm whether the real-time battery current is greater than the Charging Current limit or the Discharge Current Limit value; if it is, please contact the after-sales service center 2. If it is less than the limit, power off the battery or upgrade the firmware, and after restarting, confirm whether the fault continues to occur 3. If the fault is not cleared, please contact after-sales
3		Battery Overtemperature	Power off and let it stand for 60 minutes to wait for the temperature to recover. If the problem still exists after restarting, please contact the after-sales service center
		Battery Undertemperature	
		Battery Terminal Overtemperature	
4		Battery Imbalance	Power off and let it stand for 30 minutes. If the problem still exists after restarting, please contact the after-sales service center
		SOH Too Low Fault	
5		Pre-charging Failure Fault	1. Confirm whether the battery output terminal and the inverter are connected in reverse 2. Power off and let it stand for 5 minutes. If the problem still exists after restarting, please contact the after-sales service center
6		Sampling line fault	Confirm whether the battery circuit breaker is closed. If the battery circuit breaker is already closed and the problem still exists, please contact the after-sales service center

7		Relay or MOS overtemperature	Power off and let it stand for 30 minutes. If the problem still exists after restarting, please contact the after-sales service center
		Output Port Over-temperature	1. Check whether the battery power cable is locked securely 2. Power off and let it stand for 5 minutes. If the problem still exists after restarting, please contact the after-sales service center
8		MOS Cannot Close	Power off and let it stand for 5 minutes. If the problem still exists after restarting, please contact the after-sales service center
		Heating module MOS open circuit	
9		MOS stuck	Power off and let it stand for 5 minutes. If the problem still exists after restarting, please contact the after-sales service center
		Heating module MOS stuck	
10		Parallel cluster fault	1. Confirm whether the type and installation position of the terminal resistor are correct 2. Confirm that the communication cable between batteries and the communication cable between the battery and the inverter are reliably connected and communication is normal 3. Use the battery SN code to confirm whether the cells in the parallel clusters are consistent 4. If the fault persists, please contact the after-sales service center
11		BMU communication fault	Restart the battery. If the problem persists after restart, please contact the after-sales service center

12		Hardware Overcurrent Fault	Restart the battery. If the problem persists after restart, please contact the after-sales service center
		DCDC Failure	
13		Microelectronics Fault	1. Upgrade the software 2. Power off and let it stand for 5 minutes. If the problem still exists after restarting, please contact the after-sales service center
		Cell temperature abnormal	
		Heating film three-terminal abnormal	
14		MCU communication loss fault	Restart the battery. If the problem persists after restart, please contact the after-sales service center
		EPO Fault	
		Software Failure	
15		Air switch stuck fault	Power off and let it stand for 5 minutes. If the problem still exists after restarting, please contact the after-sales service center
16		Software and hardware version mismatch	

9 Technical Specifications

9.1 GW5.0-BAT-LVI-G10

Technical Data	GW5.0-BAT-LVI-G10
Battery Type	LFP (LiFePO ₄)
Rated Capacity (Ah)	314
Rated Energy (kWh)	5.0
Usable Energy (kWh)*1	≥4.6
Nominal Voltage (Battery) (V)	16
Voltage Range (Battery) (V)	14.35~18.05
Max.Input current(System) (A)	46
Max. Output current (System) (A)	50
Operating Voltage Range (System) (V)	45~60
Max. Input Power (System) (kW)*2	2.5
Max. Output Power (System) (kW)*2	2.5
Peak Output Power (System) (kW)*2	3.75kW (3s) 3.25kW (10s)
Charging Temperature Range (°C)	0~ +55
Discharging Temperature Range (°C)	-20~ +55
Relative Humidity	5-85%
Max. Operating Altitude (m)	4000
Communication	CAN

Technical Data		GW5.0-BAT-LVI-G10
Weight (kg)		≤40
Useable Extinguishing Agent		CO ₂ , H ₂ O
Crucial Material		LiFePO ₄ , C, Cu, LiPF ₆ , Al, (C ₃ H ₆) _n
Ingress Protection		IP20
Protective Class		I
Dimensions (W×H×D mm)		485*450*233
Storage Temperature (°C)		-20 ~45
Max. Storage time		-20-35°C≤12months 35-45°C ≤ 6 months
Scalability		≤12P
Mounting Method		Wall-Mounted, Floor-Mounted, Stack
Cycle Life		≥10000
Country of Manufacture		China
Standard and Certification	Safety	IEC 62619, IEC 63056, IEC 60730
	EMC	EN IEC 61000-6-1, EN IEC 61000-6-2, EN IEC 61000-6-3, EN IEC 61000-6-4
	Transportation	UN38.3 , MSDS

Technical Data	GW5.0-BAT-LVI-G10
*1: Test Conditions: 100% DOD (battery voltage range 2.87–3.61 V); GW5.0-BAT-LVI-G10 battery system were tested under 1.25 kW charge/discharge power (25±2°C) (system in early service life). Available energy is based on the initial design value. Actual available energy may vary depending on charge/discharge rates, environmental conditions (such as temperature), and transportation and storage factors. *2: Max.Input Power/Max.Output Power/Peak Output Power derating will occur related to Temperature and SOC. *3: Based on test data under specific laboratory conditions.	

9.2 GW10.0-BAT-LV-G10

Technical Data	GW10.0-BAT-LV-G10
Battery Type	LFP (LiFePO ₄)
Rated Capacity (Ah)	314
Rated Energy (kWh)	10.0
Usable Energy (kWh)*1	≥9.2
Nominal Voltage(V) (Battery)	32
Operating Voltage Range(V) (System)	45~60
Voltage Range(V) (Battery)	28.70~36.10
Max.Input current(System) (A)	92
Max. Output current (System) (A)	100
Max. Input Power (System) (kW)*2	5
Max. Output Power (System) (kW)*2	5
Peak Output Power (System) (kW)*2	7.5kW (3s) 6.5kW (10s)

Technical Data		GW10.0-BAT-LV-G10
Charging Temperature Range (°C)		0~ +55 (standard) -20~ +55 (optional)
Discharging Temperature Range (°C)		-20~ +55
Relative Humidity		4-100%
Max. Operating Altitude (m)		4000
Communication		CAN
Weight (kg)		85
Useable Extinguishing Agent		CO ₂ , H ₂ O
Crucial Material		LiFePO ₄ , C, Cu, LiPF ₆ , Al, (C ₃ H ₆) _n
Ingress Protection		IP65
Protective Class		I
Dimensions (W×H×D mm)		≤470*755*266
Optional Function Configuration		Heating / Aerosol fire
Storage Temperature (°C)		-20 ~45
Max. Storage time		-20-35°C≤12months 35-45°C ≤ 6 months
Scalability		≤12P
Mounting Method		Wall-Mounted, Floor-Mounted, Stack
Cycle Life		≥10000
Country of Manufacture		China
	Safety	IEC62619, IEC60730, IEC63056, CE

Technical Data		GW10.0-BAT-LV-G10
Standard and Certification	EMC	EN IEC 61000-6-1, EN IEC 61000-6-2, EN IEC 61000-6-3, EN IEC 61000-6-4
	Transportation	UN38.3
*1: Test conditions, 100% DOD (cell 2.87~3.61V voltage range), GW10.0-BAT-LV-G10 based on 2.5kW charge & discharge at 25±2°C for battery system at the beginning of life. Usable energy is defined by its initial design value. Actual available energy may vary depending on charge/discharge rate, environmental conditions (e.g. temperature), transport and storage factors. *2: Max.Input Power/Max.Output Power/Peak Output Power derating will occur related to Temperature and SOC. *3: Based on test data under specific laboratory conditions.		

10 Appendix

10.1 Terminology Explanation

- **Overvoltage Category Explanation**

- **Overvoltage Category I:** Equipment connected to circuits with measures to limit transient overvoltages to a suitably low level.
- **Overvoltage Category II:** Energy-consuming equipment supplied from a fixed distribution installation. Such equipment includes appliances, portable tools, and other household and similar loads. If special requirements are imposed on the reliability and availability of such equipment, Overvoltage Category III is used.
- **Overvoltage Category III:** Equipment in fixed distribution installations, where the reliability and availability of the equipment must meet special requirements. It includes switchgear and industrial equipment permanently connected to fixed distribution installations.
- **Overvoltage Category IV:** Equipment used upstream in the power supply of the distribution installation, including measuring instruments and primary overcurrent Protection equipment, etc.

- **Definitions of Wet Location Categories**

Environmental Parameters	Level		
	3K3	4K2	4K4H
Temperature Range	0~+40°C	-33~+40°C	-33~+40°C
Humidity Range	5% to 85%	15% to 100%	4% to 100%

- **Environmental Category Explanation:**

- **Outdoor inverter:** ambient air temperature range -25 to +60°C, suitable for environments with Pollution Degree 3;
- **Indoor Type II inverter:** ambient air temperature range -25 to +40°C, suitable for environments with Pollution Degree 3;
- **Indoor Type I inverter:** ambient air temperature range 0 to +40°C, suitable for environments with Pollution Degree 2;

- **Pollution Degree Category Explanation**

- **Pollution Degree 1:** No pollution or only dry, non-conductive pollution;
- **Pollution Degree 2:** Normally, only non-conductive pollution occurs, but

temporary conductive pollution caused by condensation must be taken into account;

- **Pollution Degree 3:** Conductive pollution occurs, or dry non-conductive pollution becomes conductive due to condensation;
- **Pollution Degree 4:** Persistent conductive pollution, such as pollution caused by conductive dust, rain, or snow.

10.2 Meaning of Battery SN Code

*****2388*****
 └─┘
 11-14位

LXD10DSC0002

Digits 11-14 of the product SN code are the production time code.

The production date in the figure above is 2023-08-08

- The 11th and 12th digits are the last two digits of the production year; for example, 2023 is represented by 23;
- The 13th digit is the production month; for example, August is represented by 8; Details are as follows:

Month	January-September	October	November	December
Month code	1~9	A	B	C

- The 14th digit is the production day; for example, the 8th day is represented by 8; Numeric characters are used preferentially; for example, 1-9 represent days 1-9, A represents day 10, and so on. The letters I and O are not used to avoid confusion. Details are as follows:

Production day	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9
----------------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Code	1	2	3	4	5	6	7	8	9
------	---	---	---	---	---	---	---	---	---

Production day	Day 10	Day 11	Day 12	Day 13	Day 14	15th	16th h	17th h	18th h	19th h	20th h
Code	A	B	C	D	E	F	G	H	J	K	L

Production day	21st	22nd	23rd	24th	25th	26th h	27th h	28th h	29th h	30th h	31st
Code	M	N	P	Q	R	S	T	U	V	W	X

11 Contact Details

GoodWe Technologies Co., Ltd.
No. 90 Zijin Rd., New District, Suzhou, China
en.goodwe.com
service@goodwe.com