V2.0-2026-01-20

Hybrid Inverter

EH Series/EH Plus Series
3.6-6kW User Manual

GOODWE

Copyright Statement

NOTICE

Due to product version upgrades or other reasons, the content of this document will be updated periodically. Unless otherwise agreed, the content of this document cannot replace the Safety Precautions in the product label. All descriptions in this document are provided for guidance only.

Table of Contents

1 Preface

This document primarily introduces the product information of Inverter, Installation wiring, configuration of Commissioning, fault troubleshooting, and maintenance. Before Installation or using this product, please carefully read this manual 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 and more product information from the official website.

1.1 Applicable Model

This document applies to the following Inverter of model:

model	Nominal output power	Nominal output voltage
GW3600-EH	3.6kW	230/220V
GW5000-EH	5kW	
GW6000-EH	6kW	
GW3600N-EH	3.6kW	
GW5000N-EH	5kW	
GW6000N-EH	6kW	

1.2 Applicable personnel

Only for use by professionals who are familiar with local regulatory standards and electrical systems, have undergone specialized training, and possess in-depth knowledge of this product.

1.3 Symbol Definition

To better utilize this manual, the following symbols are used to highlight important information. Please carefully read the symbols and their descriptions.

DANGER
Indicates a highly potential DANGER, which, if not avoided, will result in death or serious injury.
WARNING
Indicates a moderate potential for DANGER. If not avoided, it may result in death or serious injury.
CAUTION
Indicates a low potential for DANGER. If not avoided, it may result in moderate or minor injury to personnel.
NOTICE
Emphasis and supplementation of content, may also provide tips or tricks for optimizing product use, helping you solve a problem or save time.

2 Safety Precautions

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

⚠WARNING

Inverter has been strictly designed in accordance with safety regulations and passed all required tests. However, as electrical equipment, relevant safety instructions must be followed before performing any operations. Improper handling may result in serious injury or property damage.

2.1 General Safety

NOTICE

- Due to product version upgrades or other reasons, the content of this document will be updated periodically. Unless otherwise agreed, the content of this document cannot replace the Safety Precautions in the product label. All descriptions in this document are provided for guidance only.
- Before operating the Installation equipment, please read this document carefully to understand the product and NOTICE precautions.
- All operations of the equipment must be performed by professional and qualified electrical technicians who are well-versed in the relevant standards and safety regulations of the project location.
- When operating equipment, use insulated tools and wear personal protective equipment to ensure personal safety. When handling electronic components, wear anti-static gloves, wrist straps, and clothing to prevent Protection from electrostatic damage.
- Unauthorized disassembly or modification may cause equipment damage, which is not covered by the warranty.
- Damage to equipment or personal injury caused by failure to install, use, or configure the device in accordance with this document or the corresponding user manual is not covered by the warranty. For more product warranty information, please visit the official website:https://www.goodwe.com/warrantyrelated.html.

2.2 PV String Safety

⚠DANGER

Please use the DC cable terminal provided with the package to connect Inverter DC cable. Using other DC cables terminal that are also model may lead to severe consequences, resulting in equipment damage beyond the manufacturer's liability.

⚠WARNING

- Ensure the module frame and mounting system are properly grounded.
- After connecting the DC cable, ensure the cables are securely fastened and free from looseness.
- Use a multimeter to measure the positive and negative poles of the DC cable, ensuring correct polarity without reverse connection; and confirm that the voltage is within the allowable range.
- Do not connect the same PV string to multiple Inverter, as this may cause damage to the Inverter.

2.3 Inverter

⚠DANGER

- During the InverterInstallation process, avoid subjecting the bottom wiring terminal to load-bearing stress, as this may result in terminal damage.
- After InverterInstallation, the labels and warning signs on the enclosure must remain clearly visible. Covering, altering, or damaging them is prohibited.
- The warning labels on the Inverter enclosure are as follows:

No.	Symbol	meaning
1		Potential DANGER exists during equipment operation. Please take protective measures when operating the equipment.
2		High voltage DANGER. High voltage is present during equipment operation. Ensure the equipment is POWER OFF before performing any operations.
3		Inverter surface is at high temperature. Do not touch during operation to avoid burns.
4		delayed discharge. After the equipment is power off, please wait for 5 minutes until the device is completely Discharge.
5		Before operating the equipment, please read the product manual carefully.
6		The equipment must not be disposed of as household waste. Please handle it in accordance with local laws and regulations or return it to the equipment manufacturer.
7		grounding point
8		CE marking.

2.4 Battery Safety

WARNING

- The Battery used in conjunction with Inverter must be approved by the Inverter manufacturer. The list of approved Battery can be obtained through the official website.
- Before operating the Installation equipment, carefully read the corresponding user manual for Battery to understand the product and business matters. Strictly follow the requirements outlined in the Battery user manual.
- If the Battery is fully Discharge, please strictly follow the corresponding model user manual to perform Charge on the Battery.
- Batterycurrent may be affected by factors such as temperature, Humidity, and weather conditions, which could lead to Battery current limiting and impact 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.
- Use a multimeter to measure the positive and negative poles of the DC cable, ensuring correct polarity; and confirm that the voltage is within the allowable range.
- Do not connect the same Battery group to multiple Inverters, as this may cause damage to the Inverter.

2.5 personnel requirements

NOTICE

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

1. Qualified personnel or professionals include:
   - Personnel who have mastered the equipment's working principles, system structure, knowledge of risks and hazards, and have received professional operational training or possess extensive practical experience.
   - Personnel who have received relevant technical and safety training, possess certain operational experience, are aware of the potential DANGER that specific tasks may pose to themselves, and can take protective measures to minimize risks to themselves and others.
   - Qualified electrical technician compliant with the regulations of the respective country/region.
   - Hold a degree in Electrical Engineering/Advanced Diploma in Electrical Discipline or equivalent/Professional qualification in the electrical field, with 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 special equipment operation 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. Equipment and component replacement shall only be performed by authorized personnel.

2.6 EU Declaration of Conformity

2.6.1 Equipment with Wireless Communication Modules

GoodWe Technologies Co., Ltd. hereby declares that the Equipment with Wireless Communication Modules available for sale in the European market complies with the following directives:

- Radio Equipment Directive 2014/53/EU (RED)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863

(RoHS)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

2.6.2 No Equipment with Wireless Communication Modules

GoodWe Technologies Co., Ltd. hereby declares that the non-Equipment with Wireless Communication Modules products sold in the European market comply with 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)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

MoreEUDeclaration of Conformity, available from the official website:https://en.goodwe.com.

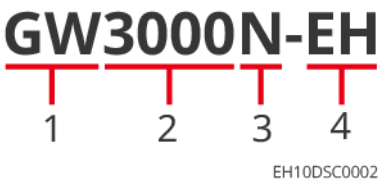
3 Product Introduction

3.1 Product Overview

Function Overview

Inverter controls and optimizes power through an integrated energy management system in photovoltaic systems. The electricity generated by the photovoltaic system can be used to power loads, stored in Battery, or exported to Utility grid, among other functions.

model meaning



No.	meaning	Instructions
1	Brand code	GW: GoodWe
2	Nominal power	3000: Nominal power is 3000W 5000: Nominal power is 5000W 6000: Nominal power is 6000W
3	Product Features	N: Boost current version
4	Series code	EH: EH Series Single-Phase hybrid inverter

3.1.1 Function Overview

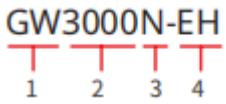
Inverter controls and optimizes power through an integrated energy management system in photovoltaic systems. The electricity generated by the photovoltaic system can be supplied to loads, stored in Battery, or exported to Utility grid.

3.1.2 model Description

This document applies to the following Inverter of model:

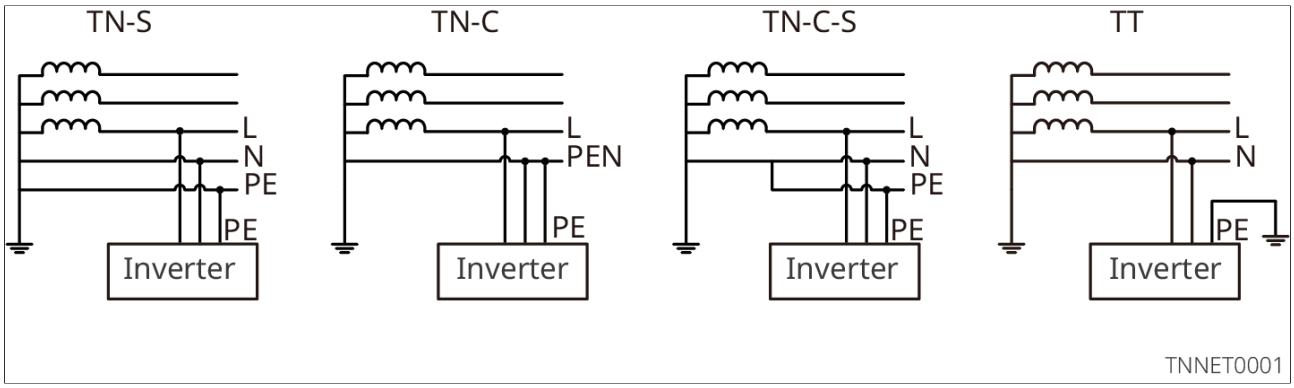
- GW3600-EH
- GW5000-EH
- GW6000-EH
- GW3600N-EH
- GW5000N-EH
- GW6000N-EH

model meaning



No.	meaning	Description
1	Brand code	GWGoodWe
2	Nominal power	3000: Nominal power is 3000W 5000: The Nominal power is 5000W. 6000: Nominal power is 6000W
3	Product Characteristics	N: Boost current version
4	Series code	EH: EH Series Single-Phase hybrid inverter

3.1.3 Supported Grid Types

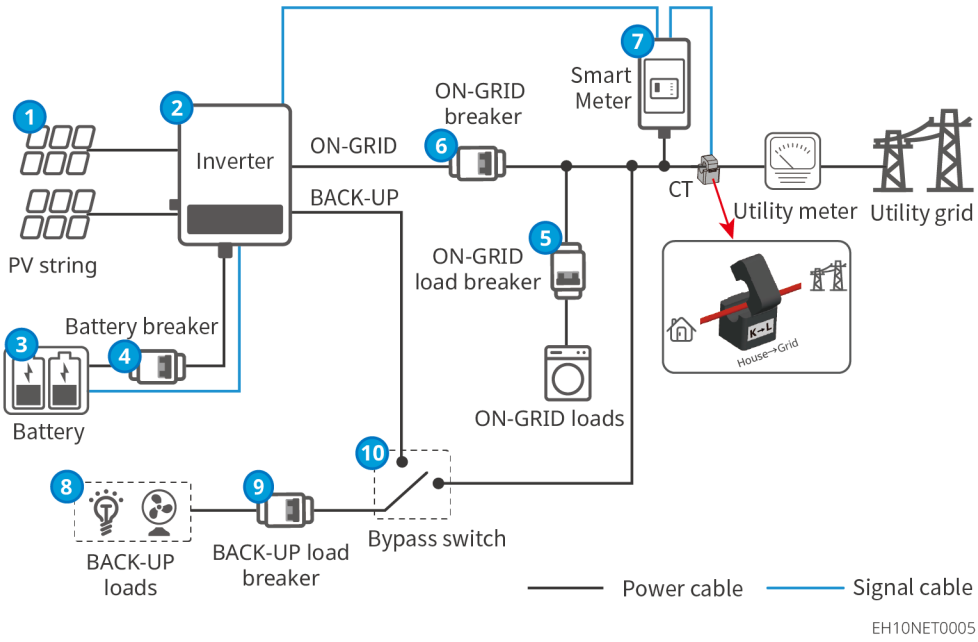


3.2 Application Scenarios

WARNING

- PV systems are not suitable for connecting to equipment that relies on stable power supply, such as life-sustaining medical devices, etc. Please ensure that the system POWER OFF does not cause personal injury.
- In photovoltaic systems, it is advisable to avoid using loads with high starting current, such as large Power water pumps, as they may cause instantaneous Power to exceed limits, leading to off-grid output failure.
- In photovoltaic systems, if a Battery is not configured, the use of the BACK-UP function is not recommended. Any resulting risks to the system's power usage will fall outside the warranty coverage provided by the equipment manufacturer.
- BACK-UP does not support connection to autotransformer or isolation transformers.
- Batterycurrent may be affected by factors such as temperature, Humidity, and weather conditions, which could lead to Battery current limiting and impact load capacity.
- Inverter features UPS functionality with a switching time of <10ms.
- When a single overcurrent Protection occurs in Inverter, Inverter can automatically restart. If it occurs multiple times, the restart time of Inverter will be extended. To restart Inverter as soon as possible, you can immediately restart Inverter via the App.
- During a power outage, if the load capacity exceeds the Inverter Nominal power, the Inverter off-grid function will automatically shut down. To restart, large loads must be turned off to ensure the load Power is less than Inverter Nominal power.
- Inverter can power common household loads normally when operating in off-grid mode, such as:
  - Inductive load: Supports the use of a 1.5P non-inverter air conditioner. Connecting two or more non-inverter air conditioners may cause unstable UPS operation.
  - Capacitive load: Total Power ≤ 0.6 × InverterNominal output power.

self use solution



No.	Component	Instructions
1	PV string	A PV string is composed of photovoltaic modules connected in series.
2	Inverter	Supports EH series and EHPlus series Inverter.
3	Battery	Selection is based on the matching list of Inverter and Battery. The approved Battery list can be obtained from the official website.
4	Battery switch	Recommended specifications: Rated current ≥ 40A, Rated voltage ≥ 600V.
5	ON-GRID load	The specifications should be determined based on the actual load requirements.
6	Grid-Tied	• Customer-provided AC breaker. Recommended specifications for use: GW3600-EH, GW3600N-EH, GW5000-EH, GW5000N-EH: Rated current ≥50A, rated voltage ≥230V. • GW6000-EH, GW6000N-EH: Rated current ≥ 63A, Rated voltage > 230V.

No.	Component	Instructions
7	Smart Meter	Purchased from Slave inverter manufacturers, recommended model: GM3000/GM1000.
8	BACK-UP Loads	• Supports connection of backup loads, such as loads requiring 24-hour power supply or other critical loads. • BACK-UP does not support connection to autotransformer or isolation transformers.
9	BACK-UP Loads circuit breaker	Customer provides AC breaker. Recommended specifications for use: • GW3600-EH, GW3600N-EH, GW5000-EH, GW5000N-EH: Rated current ≥50A, rated voltage ≥230V. • GW6000-EH, GW6000N-EH: Rated current ≥ 63A, Rated voltage ≥ 230V.
10	Single Pole Double Throw (SPDT) switch	To ensure that the Inverter power off backup load can continue to operate during maintenance, a single-pole double-throw (SPDT) switch is recommended for Installation. Recommended specifications are as follows: • GW3600-EH, GW3600N-EH, GW5000-EH, GW5000N-EH: Rated current ≥50A, Rated voltage ≥230V. • GW6000-EH, GW6000N-EH: Rated current ≥63A, Rated voltage >230V.

3.3 Operating mode

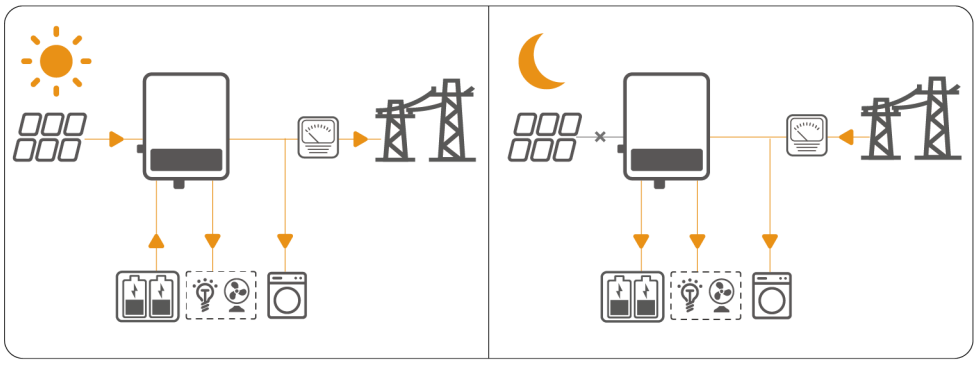
3.3.1 System operating mode

Economic Mode

NOTICE

- The Economic Mode can only be selected if it complies with local laws and regulations, such as whether Utility grid is allowed to supply power to Battery charge. If not, this mode should not be used.
- It is recommended to use Economic Mode in scenarios with significant differences between peak and off-peak electricity prices.

- Daytime: When electricity prices are at peak, prioritize using Battery to power the load, and sell any surplus electricity to Utility grid.
- Nighttime: When electricity rates are in the off-peak period, you can set the Utility grid to the Battery charge time for Battery to perform Charge.



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Self-Use Mode

NOTICE

- Solar power generation prioritizes self use, with excess electricity supplied to Battery charge; during nighttime when there is no solar power generation, Battery is used to power the loads; improving the self use rate of the solar power generation system to save on electricity costs.
- Suitable for regions with high electricity prices and minimal or no feed-in tariff subsidies for solar power generation.

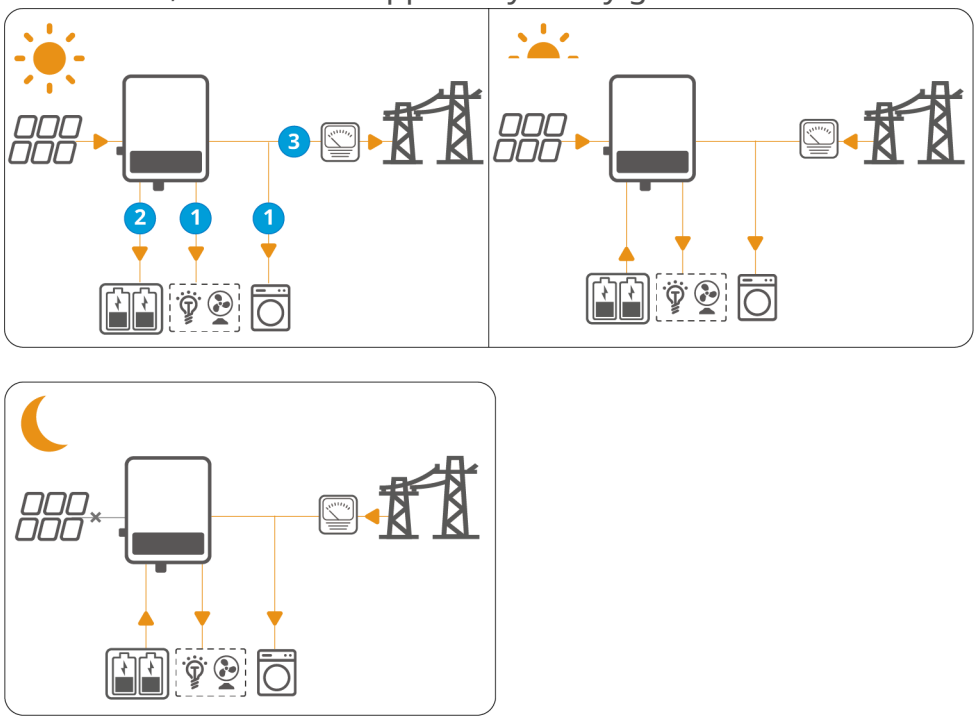
Daytime

- When the electricity generated by the PV system is sufficient, the power produced by the PV system is prioritized to supply the household load, with the excess

electricity directed to the Battery charge, and any remaining power sold to the Utility grid.
- When the power generated by the PV system is insufficient, priority is given to using Battery power to supply the load such as Battery insufficient. If that is not available, the load is then powered by Utility grid.

Nighttime

- If Battery has sufficient power, the load is supplied by Battery. If Battery insufficient, the load is supplied by Utility grid.



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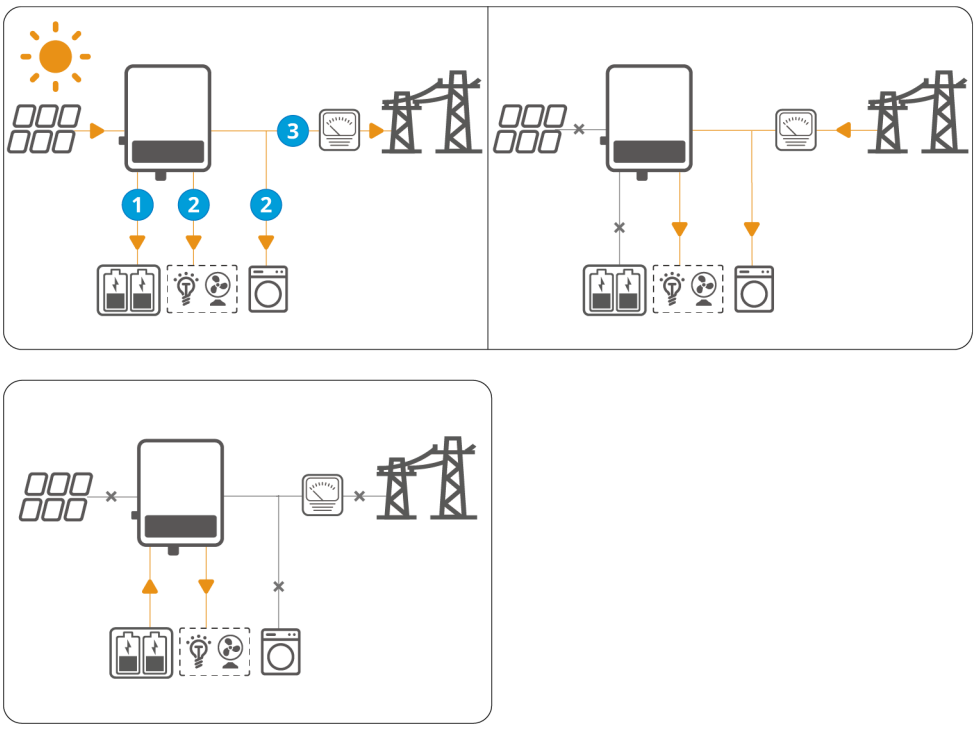
Back-up Mode

NOTICE

- Back-up Mode is primarily suitable for scenarios with unstable Utility grid and critical loads. When Grid disconnected occurs, Inverter switches to off-grid operation mode to supply power to the load. When Utility grid is restored, the Inverter operation mode switches back to on-grid operation.
- When the Battery discharge reaches the cutoff SOC, it no longer Discharge. When there is sunlight the next day and the Battery charge is charged to a certain level, the Battery starts to supply power to the load.

- When the electricity generated in the photovoltaic system is sufficient, the power produced by the photovoltaic system is prioritized for Battery charge, with any excess electricity supplied to the load, and the remaining power sold to Utility grid.
- When there is no PV power generation in the photovoltaic system:
  - Under normal conditions, Utility grid supplies power to Load consumption. (If local laws and regulations prohibit Utility grid from providing power to Battery charge, this scenario should not be used.)
  - When Utility grid is abnormal, Inverter enters off-grid operation mode, and the load is powered by Battery.



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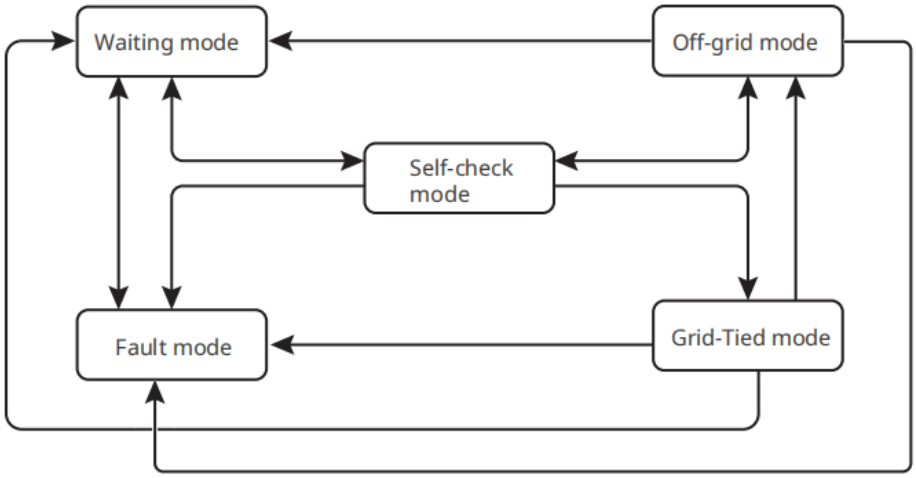
3.3.2 Inverter Operation Mode



No.	Component	Instructions
1	Standby mode	Machine power on post-waiting phase • When the conditions are met, enter the self-test mode. • If there is fault, Inverter enters fault mode.
2	Self-test mode	Inverter performs continuous self-check and initialization before startup. • If the conditions are met, proceed to On-grid mode, Inverter initiates on-grid operation. • If no Utility grid is detected, enter off-grid mode, and Inverter operates off-grid; if Inverter does not have off-grid functionality, enter standby mode. • If the self-test fails, it enters fault mode.
3	On-grid mode	Inverter operates normally under on-grid. • If Utility grid is detected to be absent, the system will enter the off-grid operation mode. • If a fault is detected, the system enters fault mode. • If the Utility grid condition is detected to not meet the on-grid requirements and the off-grid output function is not enabled, the system enters standby mode.

No.	Component	Instructions
4	Off-grid mode	When Grid disconnected, the Inverter operating mode switches to off-grid mode, continuing to supply power to the load. • If fault is detected, enter fault mode. • If it is detected that the Utility grid condition does not meet the on-grid requirements and the off-grid output function is not enabled, the system enters standby mode. • If the Utility grid condition is detected to meet the on-grid requirements and the off-grid output function is enabled, the system will enter the self-test mode.
5	fault mode	If fault is detected, Inverter enters fault mode. After fault is cleared, it enters standby mode.

3.4 Features

Power derating

To ensure the safe operation of Inverter, the Inverter will automatically reduce the output Power when the operating environment is not ideal.

The following are factors that may cause Power derating. Please try to avoid them during operation.

- Adverse environmental conditions, such as direct sunlight, high temperatures, etc.
- The output Inverter percentage of Power has been set.
- Over-frequency load shedding.
- The voltage value is relatively high.
- The input current value is high.

Earth Fault Alarm

Reserve Inverter and port to achieve grounding fault alarm function.

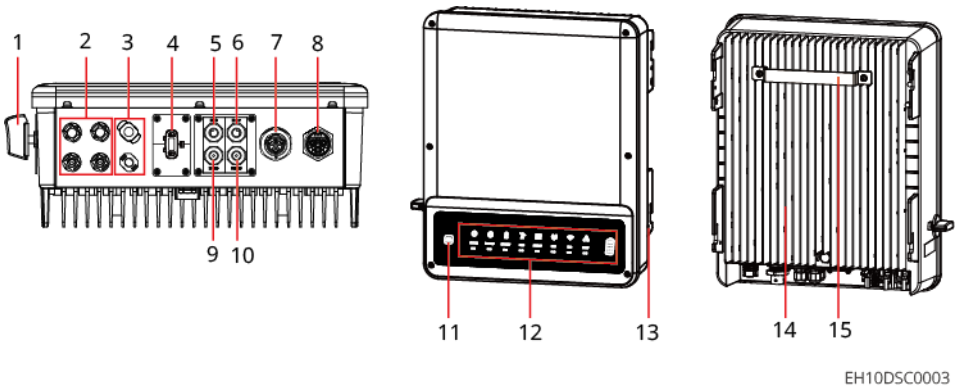
When a ground fault occurs, the ground fault LED will light up. At the same time, the system will send an alarm notification email to the customer's preset mailbox.

To avoid missing the fault prompt, please position the Inverter Installation in a location where it is easy to observe the indicator.

3.5 Appearance Description

3.5.1 Appearance Description

Appearance Introduction

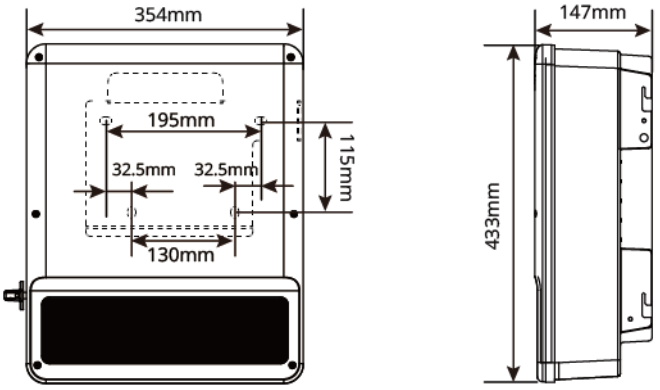


No.	Component	No.	Component
1	DC switch [1]	2	PV DC Input (PV1/PV2)
3	Energy Storage DC Input (BAT+/-)	4	Communication Module Interface (WiFi or LAN)
5	BMS Communication port	6	METER communication port
7	Backup Output	8	On-Grid Output
9	DRED communication port	10	RS485 communication
11	WiFi reset button	12	indicator
13	Grounding terminal	14	heat sink
15	Mounting bracket	-	-

[1] If the Inverter is not equipped with a DC switch, an additional DC breaker must be installed. This DC breaker should comply with AU/NZ Certification; meet the AS60947.3:2018 standard; be classified as DC-PV2; and the Ingress Protection Rating and characteristics should be suitable for specific conditions, such as outdoor use,

direct sunlight exposure, and installation on non-combustible material surfaces.

3.5.2 dimension



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3.5.3 indicator Description

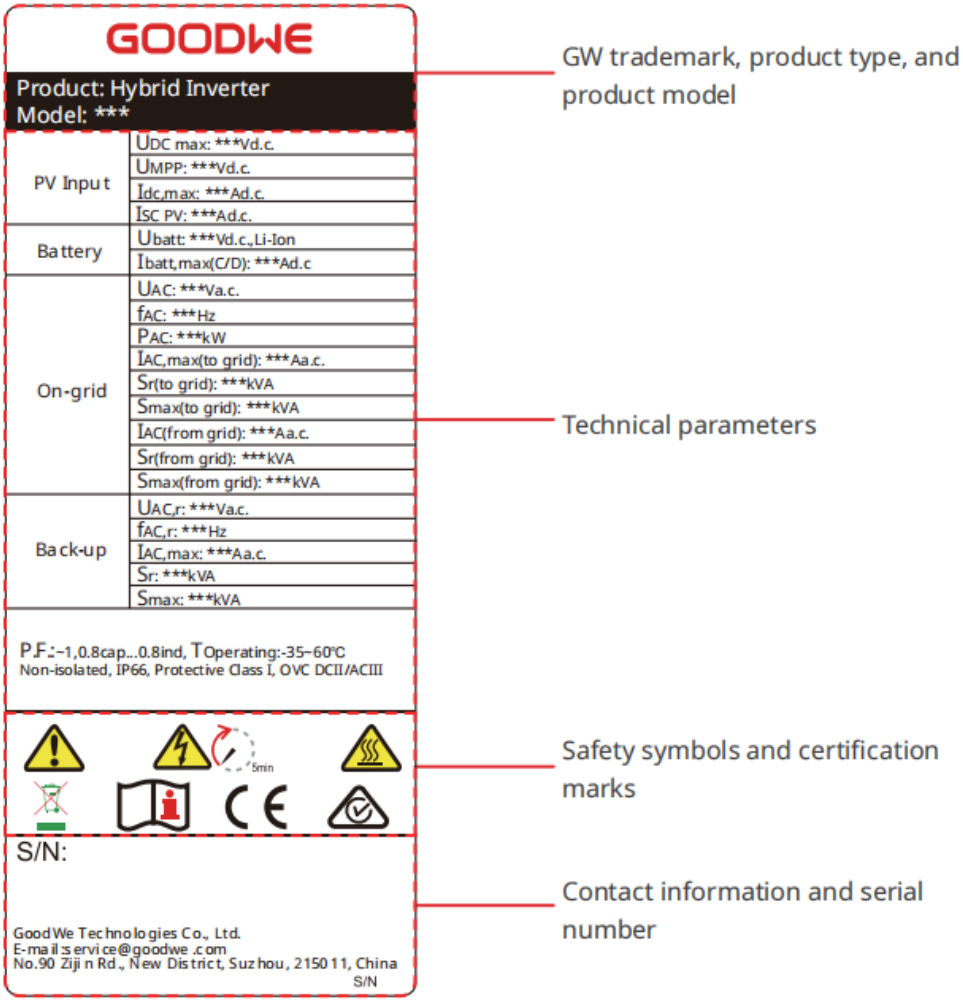
indicator	Status	Instructions
SYSTEM		Constant On = System Ready
		Single flash = System is starting up
		Off = System not operational
BACK-UP		Standby = BACKUP function is ready
		Backup function is disabled
BATTERY		Always On=Battery charge
		Single flash=Battery discharge
		Double flashing = Battery Low battery/Low SOC
		Off = Battery Disconnected/Malfunctioning
GRID		Always On = Utility grid Connected, Normal Operation

indicator	Status	Instructions
		Flicker = Utility grid normal, but failed to on-grid
		Extinguish = Utility grid failed to operate normally
ENERGY		Always On = buy power from the grid / Power Purchase
		Single flash = to Grid connected/no buy no sell
		Double flashing = to Grid connected/sell electricity
		Off = Not on-grid, or system not operational
COM		Constant On = Normal communication between BMS and energy meter
		Single flash = Meter communication normal, BMS disconnected
		Double flashing = BMS normal, meter communication disconnected
		Extinguish = Both BMS and meter connections are disconnected
WiFi		Always on = WiFi normal, connected
		Single flash = WiFi is resetting
		Double flashing = WiFi not connected to Router
		Four flashes = WiFiServer issue
		Off=WiFi not functioning properly
FAULT		Constant On

indicator	Status	Instructions
	▮▮▮▮▮▮▮▮▮▮▮▮	Single flash = BACKUP overload/reduce load
	▮▮▮▮ ▮▮▮▮ ▮▮▮▮	Four flashes = abnormal meter detection result
	————————	Off = No fault

3.5.4 Nameplate description

The nameplate is for reference only; please refer to the actual product.



4 Check and Storage

4.1 Inspection before signing for receipt

Before signing for the product, please carefully inspect the following items:
1. Inspect the outer packaging for any damage, such as deformation, punctures, cracks, or other signs that may indicate potential harm to the equipment inside the box. If damage is found, do not open the packaging and contact your distributor.
2. Check whether the Invertermodel is correct. If there is any discrepancy, do not open the packaging and contact your dealer.
3. Check whether the deliverables type and quantity are correct and whether there is any damage to the appearance. If damaged, please contact your distributor.

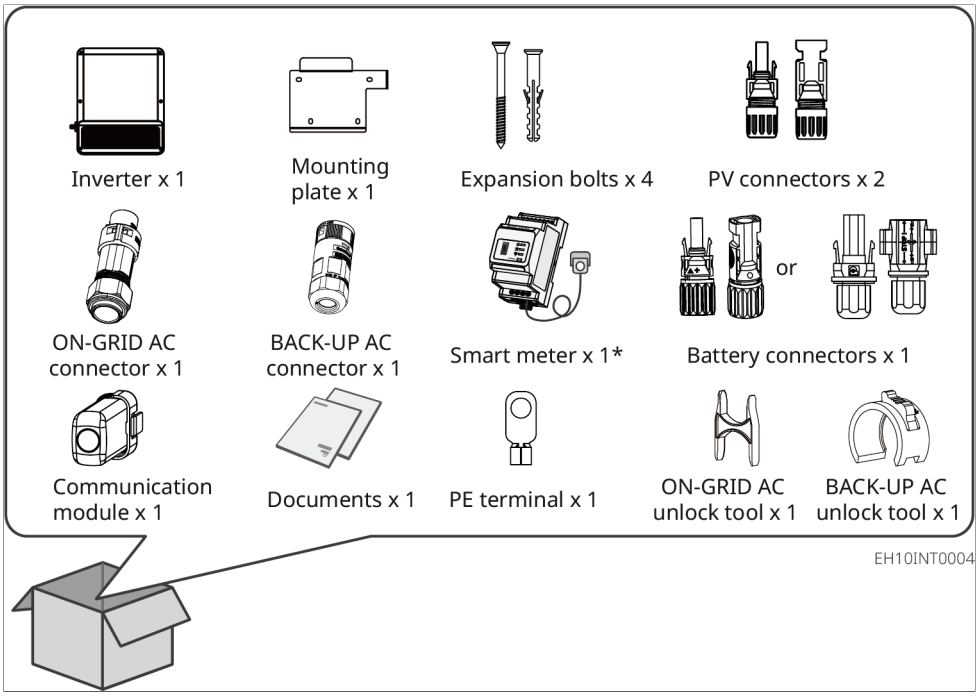
4.2 deliverables

WARNING

For electrical connections, please use the terminal blocks provided with the shipment. Damage to the equipment caused by using incompatible connectors is not covered under warranty.

NOTICE

- The configuration varies, and the quantities of the included expansion bolt, PV DC input terminal, Battery DC input terminal, ON-GRID connector removal tools, and BACK-UP connector removal tools may differ. Please refer to the actual contents.
- The Battery-Ready model does not come with a meter. If required, please contact the manufacturer or distributor for purchase.



4.3 Storage

NOTICE
The storage time of Inverter should not exceed two years. If the storage period exceeds two years, it must undergo inspection and testing by qualified personnel before being put into use.

If the Inverter is not put into use immediately, please store it according to the following requirements:

1. Ensure the outer packaging box is not dismantle, and the desiccant inside the box is not missing.
2. Ensure the storage environment is clean, with an appropriate temperature range and no condensation.
3. Ensure that the Inverter stack height and orientation are positioned according to the instructions on the packaging label.
4. Ensure there is no risk of tipping after Inverterstack.
5. After long-term storage, the Inverter must be inspected and confirmed by qualified personnel before it can be put back into use.

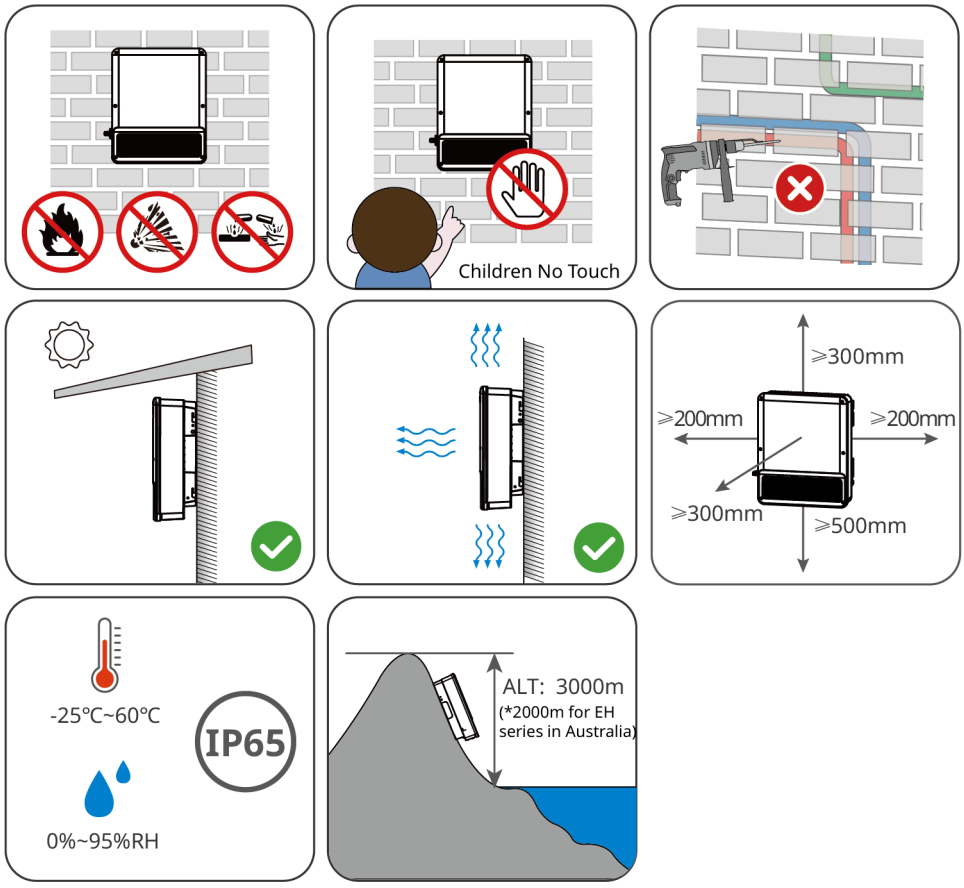
5 Installation

5.1 Installation Requirements

5.1.1 Installation Environment Requirements

1. The equipment must not be operated in flammable, explosive, or corrosive environments.
2. Installation Location should be kept out of reach of children and avoid Installation in easily accessible locations. The surface may become hot during operation to prevent burns.
3. Installation Location Please avoid water pipes and cables inside the wall to prevent DANGER when drilling holes.
4. Inverter should be protected from direct sunlight, rain, snow accumulation, and other Installation conditions. It is recommended to install them in a shaded Installation Location, and if necessary, a sunshade can be constructed.
5. The Installation space must meet the ventilation and heat dissipation requirements of the equipment as well as the operational space requirements.
6. The equipment Ingress Protection Rating must meet indoor and outdoor Installation, Installation environmental temperature Humidity requirements within the appropriate range.
7. The equipment Installation height should facilitate operation and maintenance, ensuring that the equipment indicator and all labels are easily visible, and the wiring terminal is easy to operate.
8. The altitude of the photovoltaic power station is below 3000m.
9. Keep away from strong magnetic fields to avoid electromagnetic interference. If there are radio or wireless communication devices below 30MHz near the Installation Location, please Installation the equipment according to the following requirements:

- Add ferrite cores with multiple turns on the Inverter DC input or AC output lines, or incorporate a low-pass EMI Filter.
- The distance between Inverter and the wireless electromagnetic interference equipment exceeds 30m.



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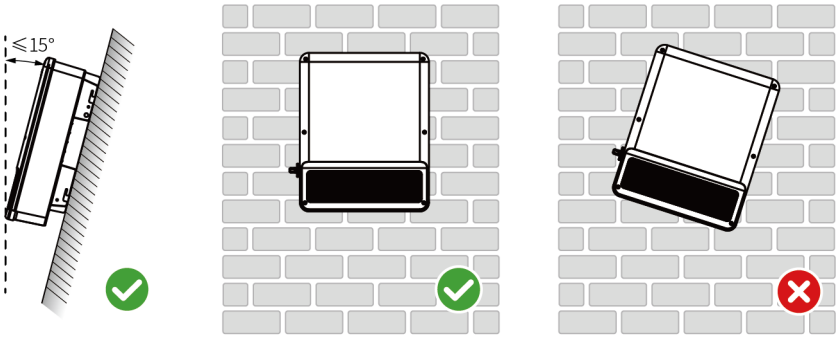
5.1.2 Carrier requirements

- The carrier must not be made of flammable materials and must possess fire-resistant properties.
- Please ensure that the Installation carrier is sturdy and reliable, capable of supporting the Weight of Inverter.
- During operation, the equipment may generate vibrations. Do not Installation it on a carrier with poor sound insulation to avoid disturbing residents in living areas with the Noise Emission produced during operation.

5.1.3 Installation angle requirement

- Recommended Inverter Installation angle: vertical or tilted backward ≤15°.
- Do not invert, tilt forward, tilt backward beyond the specified angle, or place the Inverter horizontally Installation.



5.1.4 InstallationTool Requirements

When Installation, it is recommended to use the following Installation tools. Other auxiliary tools may be used on-site if necessary.

5.2 Installing the Inverter

5.2.1 Handling Inverter

⚠CAUTION

- During transportation, handling, and Installation operations, all applicable national and regional laws, regulations, and relevant standards must be complied with.
- Before Installation, the Inverter must be transported to the Installation location. To prevent personal injury or equipment damage during transportation, please NOTICE the following matters:
  1. Please assign corresponding personnel according to the equipment Weight to prevent the equipment from exceeding the Weight range that can be manually handled, thereby avoiding injury to personnel.
  2. Please wear safety gloves to avoid injury.
  3. Please ensure the equipment remains balanced during transportation to avoid falling.

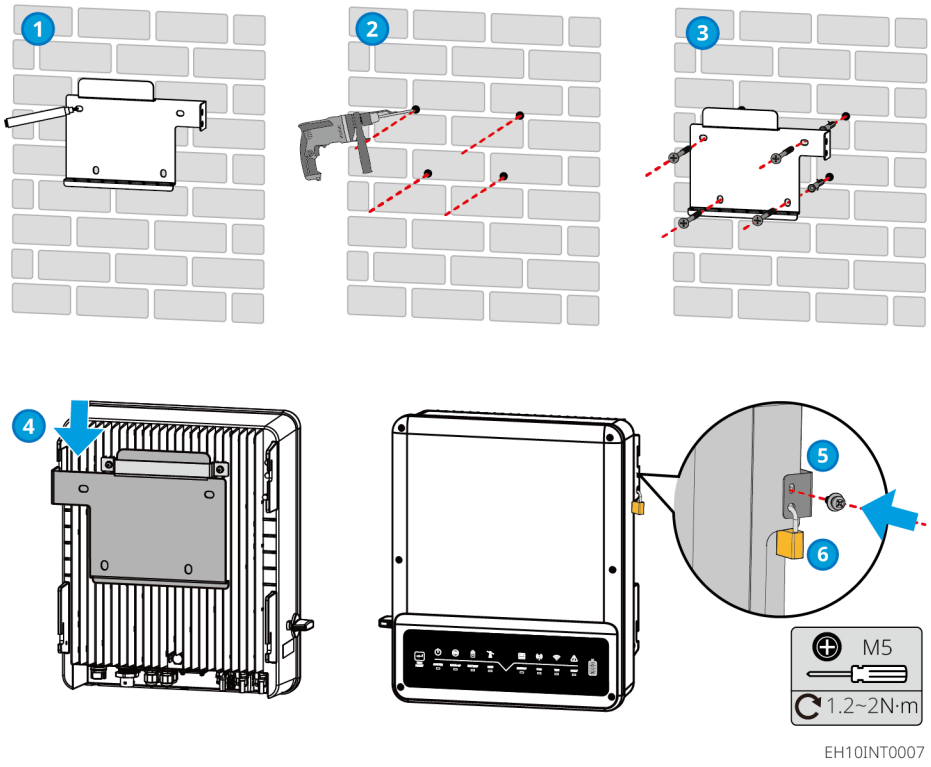
5.2.2 Installing the Inverter

NOTICE

- When drilling holes, ensure the drilling location avoids water pipes, cables, etc. inside the wall to prevent DANGER.
- When drilling, wear goggle and a dust mask to prevent dust from entering the respiratory tract or falling into the eyes.
- Ensure the Inverter Installation is securely fastened to prevent falling and injuring personnel.
- Please bring your own DC switch lock.

1. Place the mounting plate horizontally on the wall and mark the drilling positions with a marker pen.
2. Use a hammer drill with an 8mm drill bit to create holes, ensuring a depth of approximately 80mm.
3. Use expansion bolt to secure the Inverter mounting plate bracket to the wall.
4. (Australia only) Installation DC switch lock, ensuring the DC switch remains in the "OFF" position during Installation process.
5. Mount the Inverter onto the backplate.

6. Secure the fixed backplate with Inverter, ensuring the Inverter Installation is stable.
7. Anti-theft lock.



6 Electrical connection

6.1 Application Appliance Wiring Diagram

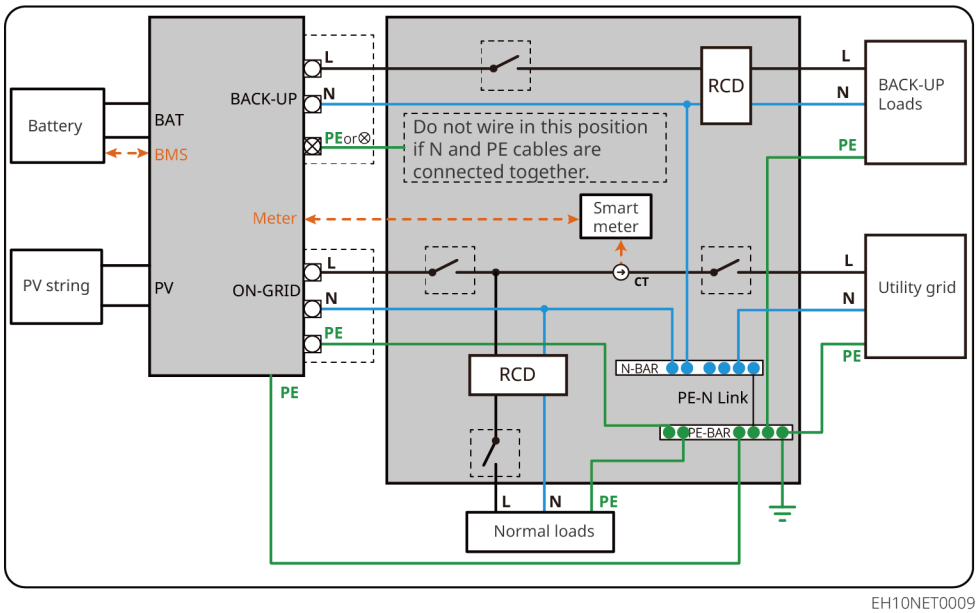
NOTICE

- According to the regulatory requirements of different regions, the wiring methods of the N line and PE line for Inverter ON-GRID and BACK-UP port vary. Specific configurations must comply with local regulations.
- The ON-GRID and BACK-UP AC port have built-in relays. When the Inverter operates in off-grid mode, the built-in ON-GRID relay remains open; when the Inverter is in on-grid operation mode, the built-in ON-GRID relay remains closed.
- When the Inverterpower on, the BACK-UP AC port is live. If maintenance is required on the BACK-UP Loads, please Inverterpower off to avoid the risk of electric shock.

N and PE wires are connected together in the distribution box wiring.

NOTICE

The following wiring methods are applicable to regions such as Australia and New Zealand.



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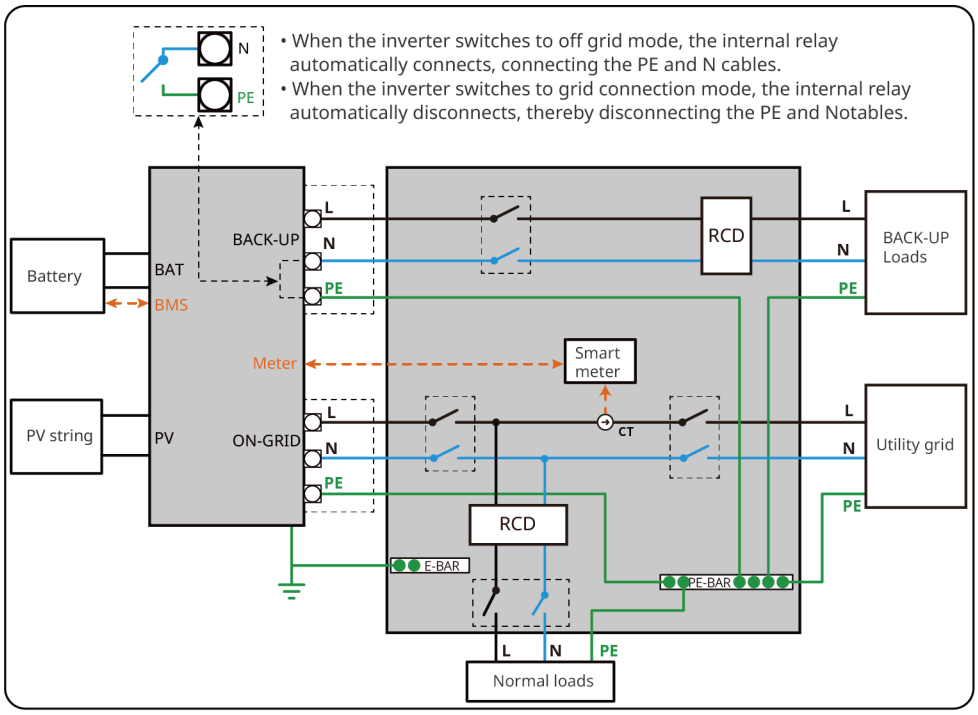
The N and PE wires are separately connected in the distribution box.

NOTICE

The following wiring methods apply to regions other than Australia, New Zealand, etc.



EH10NET0010

6.2 Safety Precautions

DANGER

- All operations during the electrical connection process, as well as the specifications of the cables and components used, must comply with local laws and regulations.
- Before performing electrical connections, please disconnect the Inverter's DC switch and AC output switch to ensure the equipment is POWER OFF. Live operation is strictly prohibited, as it may lead to electric shock or other DANGER.
- Cables of the same type should be bundled together and arranged separately from different types of cables. Intertwining or cross-arrangement between them is strictly prohibited.
- If the cable is subjected to excessive tension, it may result in poor connections. When wiring, leave a certain length of the cable before connecting it to the Inverter terminal port.
- When crimp wiring terminal, ensure that the conductor part of the cable makes full contact with the terminal terminal. Do not crimp the cable insulation together with the terminal terminal, as this may cause the equipment to malfunction or lead to unreliable connections, resulting in overheating and potential damage to the inverter's terminal terminal block.

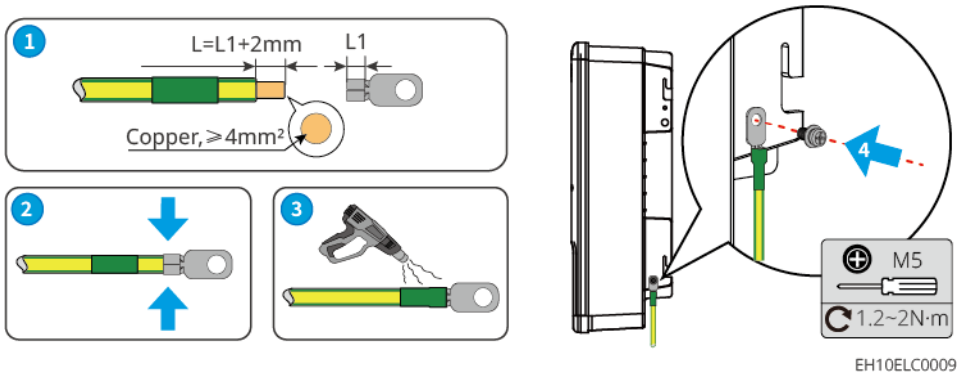
NOTICE

- When performing electrical connections, wear safety shoes, protective gloves, insulating gloves, etc. as required.
- Only qualified personnel are permitted to perform electrical connection operations.
- The cable colors in the diagrams of this document are for reference only. The actual cable specifications must comply with local regulatory requirements.

6.3 Connecting the PE cable

WARNING

- The Protection grounding of the chassis enclosure cannot replace the PE cable of the AC output port. When wiring, ensure that the PE cable at both locations is reliably connected.
- When multiple Inverter are installed, ensure that all Inverter chassis enclosures are connected to the Protection Grounding point for equipotential bonding.
  To improve the corrosion resistance of terminal, it is recommended to apply silica gel or paint on the exterior of Grounding terminal after completing the connection of Installation to PE cable.
  Please prepare your own PE cable, recommended specifications:
  - Type: Outdoor single core Copper Wire
  - Cross-sectional area: 4mm^2



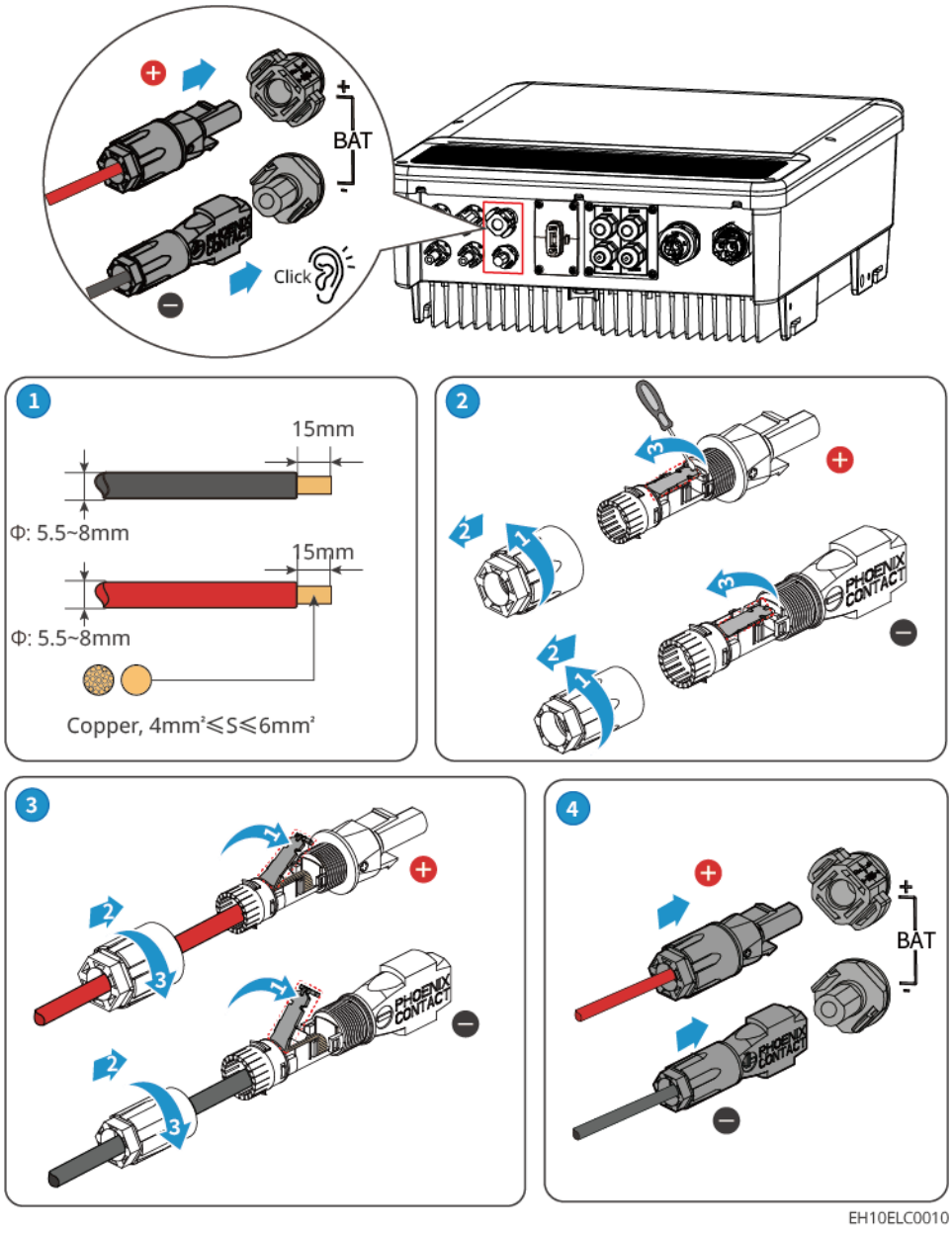
6.4 Connect the DC input line (PV)

DANGER

- Do not connect the same PV string to multiple Inverter, as this may cause damage to the Inverter.
- Before connecting the PV string to the Inverter, please verify the following information. Failure to do so may result in permanent damage to the Inverter, and in severe cases, may cause a fire leading to personal injury or property loss.
  1. Please ensure that both Max. Short Circuit Current per MPPT and Max.Input Voltage are within the allowable range of Inverter.
  2. Please ensure that the positive terminal of the PV string is connected to the PV+ of Inverter, and the negative terminal of the PV string is connected to the PV of Inverter.

WARNING

The PV string output does not support grounding. Before connecting the PV string to Inverter, ensure that the the minimum insulation resistance of the PV string meets the minimum insulation resistance requirement R (R = Max.Input Voltage/30mA).



6.5 Connecting the Battery Cable

NOTICE

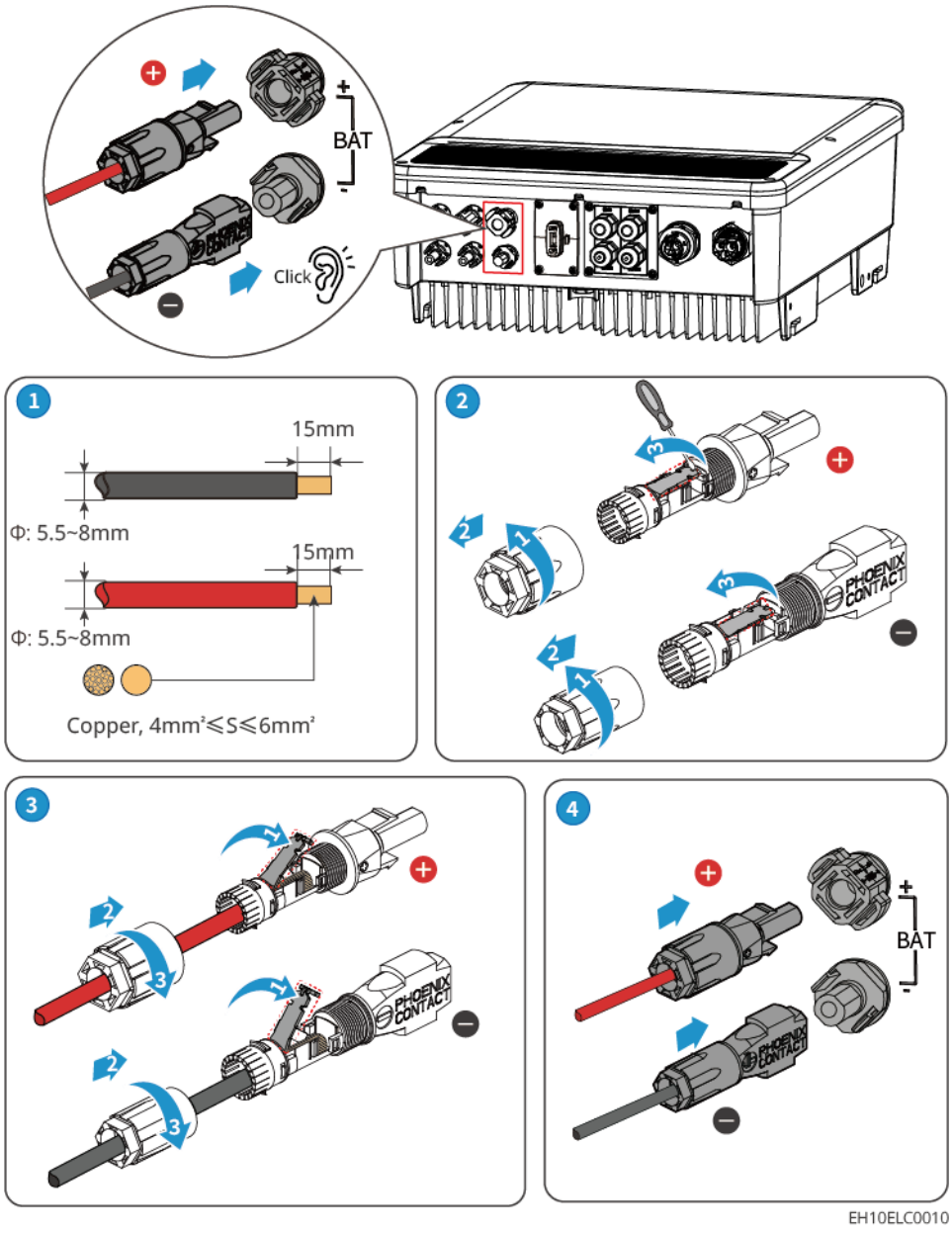
- For Battery-Ready models, if you need to use the Battery related functions, please contact the manufacturer to activate the power capability first. Before activating the Battery function, do not connect the Battery to the Inverter, otherwise the Inverter will stop working.
- When not connected to Battery, ensure that the Battery connection is properly sealed with port.

DANGER

- The Battery used in conjunction with Inverter must be approved by the Inverter manufacturer. The list of approved Battery can be obtained through the official website.
- A short circuit may cause personal injury. The instantaneous high current generated by a short circuit can release a large amount of energy, potentially leading to a fire.
- Before Connecting the Battery Cable, ensure that both the Inverter and Battery are POWER OFF, and that the upstream and downstream switches of the equipment are disconnected.
- When the Inverter is running, it is prohibited to connect or disconnect the Battery cable. Violation of this rule may result in electric shock DANGER.
- Do not connect the same Battery group to multiple Inverters, as this may cause damage to the Inverter.
- Do not connect any load between the Inverter and Battery.
- When Connecting the Battery Cable, use insulated tools to prevent accidental electric shock or Battery short circuit.
- Please ensure that Batteryopen-circuit voltage is within the allowable range of Inverter.

WARNING

- During wiring, ensure that the Battery wire fully matches the "BAT+", "BAT-", and grounding port of the Battery terminal. Incorrect cable connections may result in equipment damage.
- Please ensure the conductor is fully inserted into the terminal terminal hole without any exposure.
- Ensure the cable connections are securely fastened; otherwise, overheating of the terminal terminals may occur during equipment operation, leading to device damage.
- If the Battery does not have a built-in DC breaker, please connect an external DC breaker. Recommended specifications: 40A/600V.



6.6 Connect AC line

NOTICE

- Each Inverter must be equipped with an AC output switch, and multiple Inverter cannot be connected to the same AC Switch simultaneously. Do not connect any load between the Inverter and the AC Switch directly connected to the Inverter.
- To ensure the Inverter can safely disconnect from the Utility grid in case of an abnormality, please connect the AC Switch to the AC side of the Inverter. Select the appropriate AC Switch according to local regulations.
- The PE cable of the AC cable should be longer than the N and L lines. When the AC cable slips off or is pulled out, the Protection grounding conductor can bear the strain last.
- The form of AC terminal Protection cover removal is subject to the actual product.

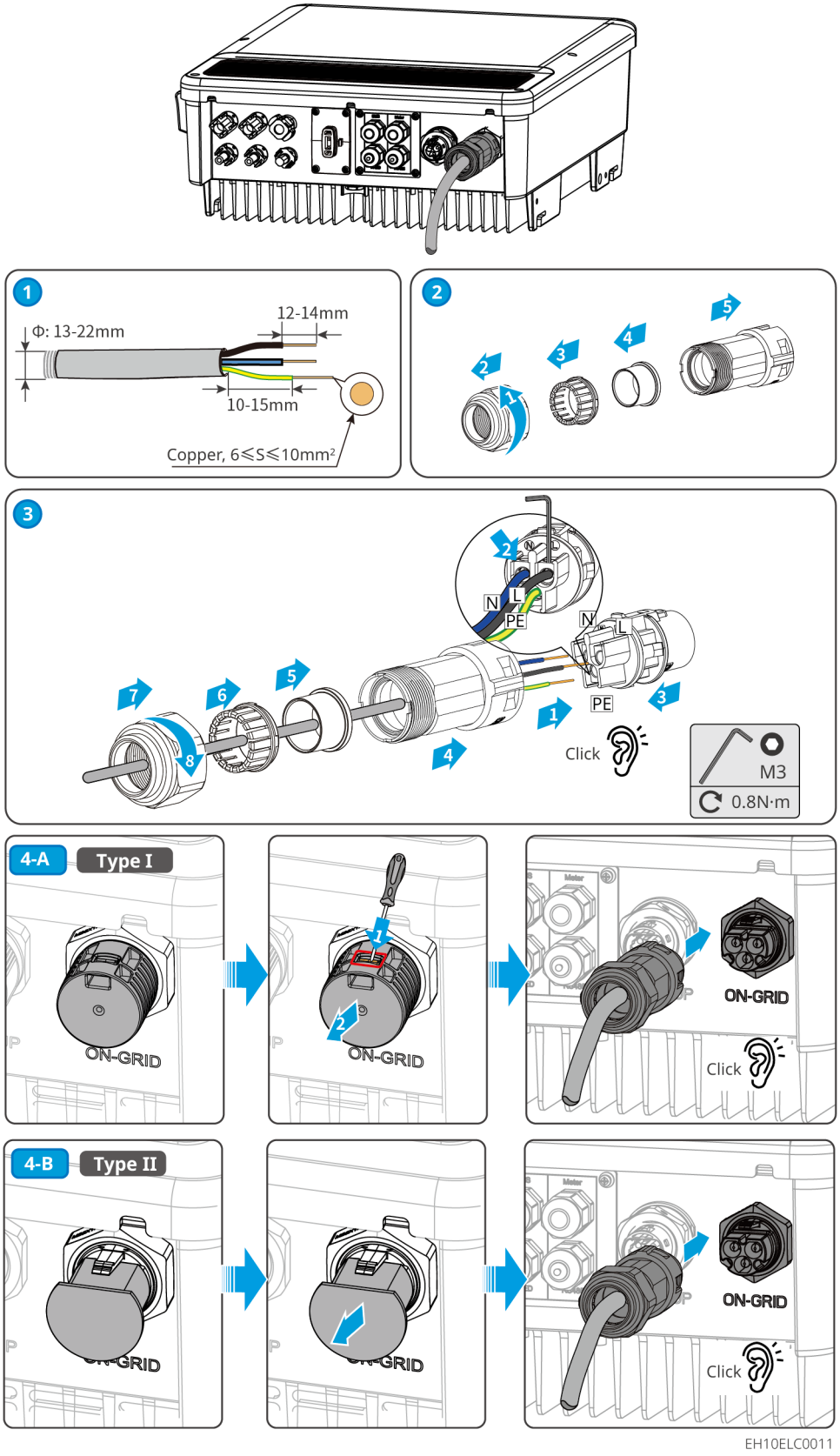
WARNING

- During wiring, ensure the AC cables are correctly matched to the "L," "N," and "PE" terminals of the AC terminal. Incorrect cable connections may result in equipment damage.
- Ensure the conductor is fully inserted into the terminal terminal hole with no exposed strands.
- Ensure the cable connections are securely fastened; otherwise, overheating at the terminal terminals may occur during equipment operation, leading to device damage.
- Even if the BACK-UP port is not in use, the back-up connector from the accessory box must still be installed on the BACK-UP port to ensure port protection and eliminate any risk of electric shock to personnel.

WARNING

- It is prohibited to directly connect a generator to the AC side.
- The Inverter has an integrated residual current monitoring unit (RCMU). When a leakage current current exceeding the permissible value is detected, the Inverter will quickly disconnect from the Utility grid.
- The ON-GRID and BACK-UP AC port have built-in relays. When the Inverter is in off-grid mode, the built-in ON-GRID relay remains open; when the Inverter operates in on-grid mode, the built-in ON-GRID relay is closed.
- When the Inverter power on, the BACK-UP AC port is live. If maintenance is required on the BACK-UP Loads, please power off the Inverter to avoid electric shock.
- Select whether to connect the Residual Current Monitoring device (RCD) according to local laws and regulations. The inverter can be externally connected to a Type A RCD, which will perform Protection when the DC component of leakage current exceeds the limit. The recommended RCD specification is: ≥30mA.
- When the application scenario does not require Connecting the AC Cable, the ON-GRID and BACK-UP connectors must be Installation to ensure that the port is Protection, eliminating the risk of electric shock.

6.6.1 Connect to AC line (ON-GRID)



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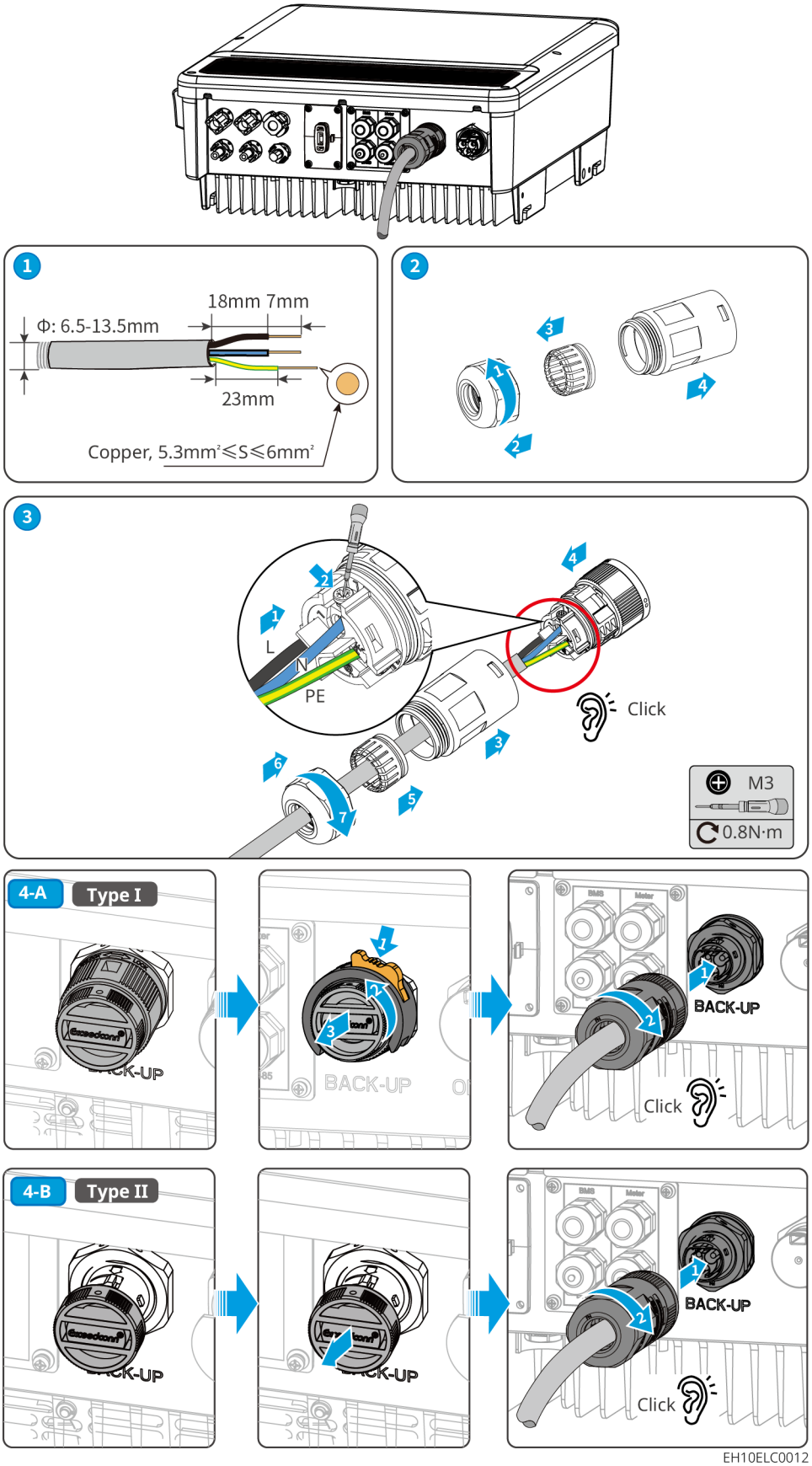
6.6.2 Connect AC line (BACK-UP)

NOTICE

- Please ensure that the PE cable connection of the BACK-UP is correct and secure. Otherwise, the BACK-UP function may malfunction in the event of Utility gridfault.
- The BACK-UP side must not be connected to Utility grid or other Inverter.
- For ease of maintenance, it is recommended to install a double-pole triple-throw (DP3T) switch on the BACK-UP side.

WARNING

- If the off-grid side does not use AC breaker, electrical short circuits may damage Inverter, and the off-grid function of Inverter cannot be turned off during on-grid.
- Recommended breaker specification: 32A/230V.



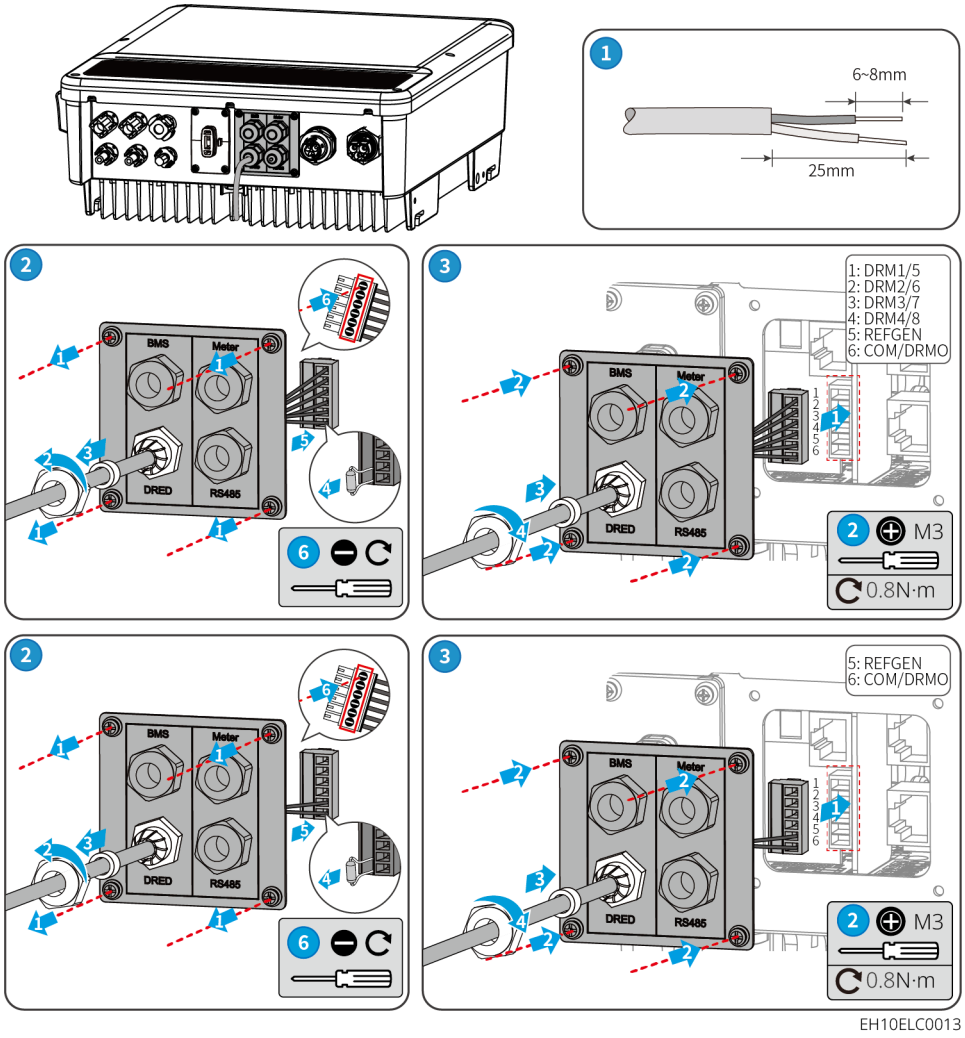
EH10ELC0012

6.7 communication connection

6.7.1 Connection Communication cable

NOTICE

- When connecting Communication cable, ensure the wiring port definition fully matches the equipment. The cable routing path should avoid interference sources, power cable, etc., to prevent affecting signal reception.
- The DRED function is applicable in Australia and New Zealand. When connecting the DRED Communication cable cable, please use a 6PIN communication terminal and prepare your own Communication cable cable and third-party DRED equipment.
- When connecting the remote shutdown Communication cable cable, please prepare your own Communication cable cable and connect it to the 2PIN of the communication terminal.
- The communication terminal is equipped with resistors. When in use, the resistors should be dismantle and stored properly.



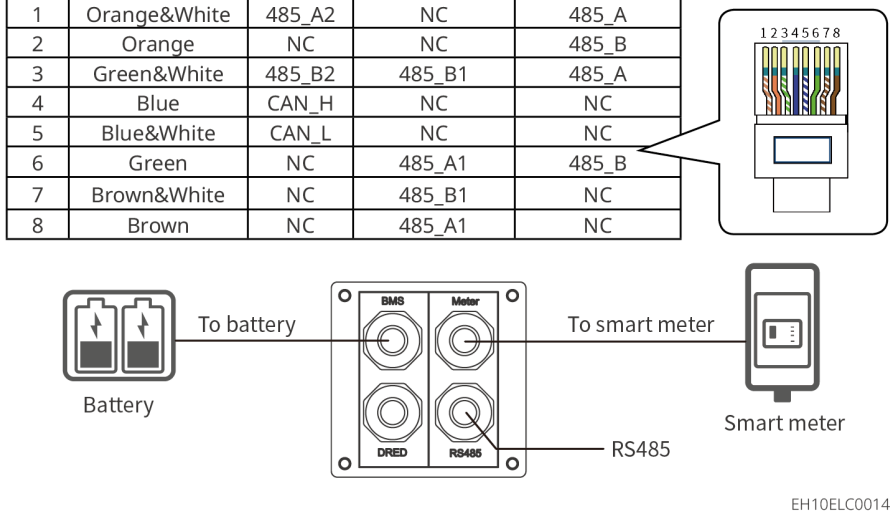
EH10ELC0013

6.7.2 Connect to the meter or Battery Communication cable (optional)

NOTICE

- The energy meter and CT are shipped with the cabinet, and the relevant parameters have been preset at the factory. Please do not modify them.
- The box comes with a BMS Battery Communication cable and a Communication cable between the meter and Inverter. For Battery Ready models, please prepare a BMS Battery Communication cable no longer than 5 meters.
- The meter included in the shipment is intended for use with a single Inverter only. Do not connect one meter to multiple Inverter. If you require meters for multiple Inverter, please contact the manufacturer to purchase additional meters separately.
- Please ensure the CT connection direction is correct and connected to the correct phase line, such as CT1 to L1, CT2 to L2, and CT3 to L3. For specific operations, please refer to the meter manual.
- Battery and meter communication support connection standard RJ45RJ45 connector, defined as follows: port

No.	Color	BMS	Smart meter	RS485
1	Orange&White	485_A2	NC	485_A
2	Orange	NC	NC	485_B
3	Green&White	485_B2	485_B1	485_A
4	Blue	CAN_H	NC	NC
5	Blue&White	CAN_L	NC	NC
6	Green	NC	485_A1	485_B
7	Brown&White	NC	485_B1	NC
8	Brown	NC	485_A1	NC

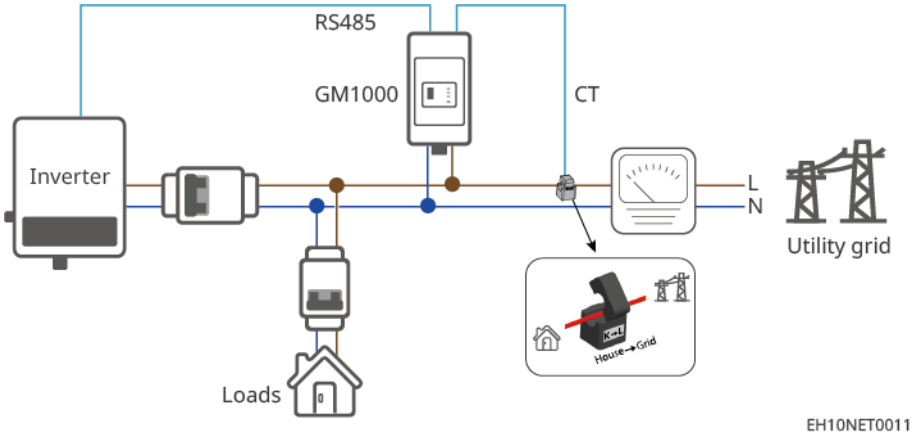


NOTICE

The meter can be configured to achieve power limit functionality, with the specific networking scheme as follows.

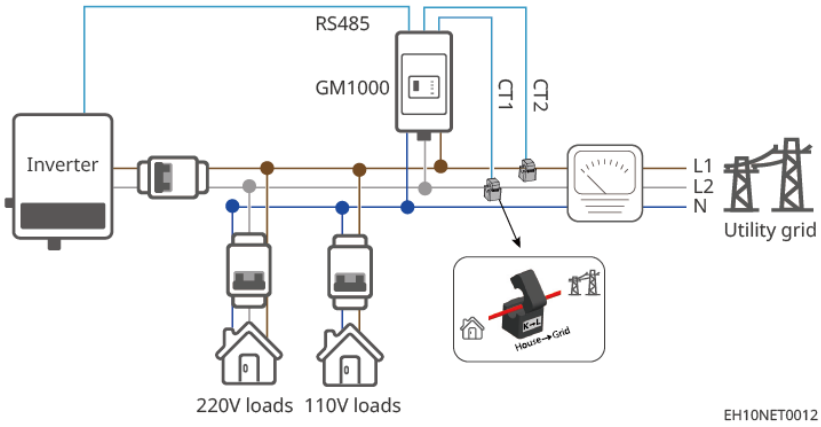
Grid Connection Scheme (Single-Phase Scenario)

When the load used is a single-phase load, the EH and EH Plus series Inverter can be paired with the GM1000 meter to achieve the power limit function.



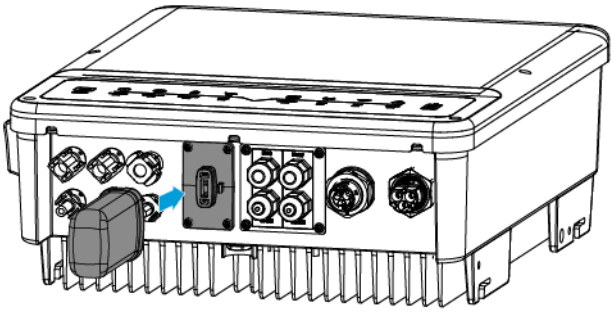
Grid Connection Scheme (Split-Phase Scenario)

When the load used is a split-phase load, the EH and EH Plus series Inverter can be paired with the GM3000 meter to achieve power limit functionality.



6.7.3 Installationsmart dongle(optional)

Inverter supports connecting to mobile phones or WEB interfaces via Bluetooth, WiFi, LAN, and 4Gsmart dongle to configure device parameters, view operational information and error messages, and promptly monitor system status.
WiFi Kit, Wi-Fi/LAN Kit module: Optional.



EH10ELC0015

Reset and Reload WiFi

Press the WiFi reset button briefly, and the WiFi indicator will blink for a few seconds until the WiFi module reboots completely.

Press and hold the WiFi reset button, and the WiFiindicator will continue to flash alternately until the WiFi is reconfigured or the module is restored to factory settings.

If you encounter the following WiFi function issues, you can reset or reload the WiFi module.

- Unable to connect to PV Master app;
- No Solar-WiFi signal detected;
- Wi-Fi disconnection and other configuration issues.

7 Equipment trial operation

7.1 pre-operation inspection

Serial number	Inspection Items
1	Inverter Installation is sturdy, Installation Location facilitates operation and maintenance, Installation space allows for ventilation and heat dissipation, Installation environment is clean and tidy.
2	The PE cable, DC input line, AC output line, and Communication cable are correctly and securely connected.
3	The cable ties meet the wiring requirements, are reasonably distributed, and show no signs of damage.
4	Ensure that unused through-holes are sealed with Installation waterproof covers.
5	The Inverter and Frequency of the on-grid access point comply with the on-grid requirements.

7.2 Equipment power on

1. Close the Inverter ON-GRID side AC breaker.
2. Close Inverter BACK-UP side AC breaker.
3. Close the energy storage breaker between Inverter and Battery.
4. Closing the Inverter of the DC switch.

8 System Commissioning

8.1 indicator and Button Introduction

indicator	Status	Description
SYSTEM		Constant On = System Ready
		Single flash = System is starting up
		Off = System not operational
BACK-UP		Standby = BACKUP function is ready
		Backup function is disabled
BATTERY		Always On=Battery charge
		Single flash=Battery discharge
		Double flashing = Battery Low battery/Low SOC
		Off = Battery Disconnected/Malfunctioning
GRID		Always On = Utility grid Connected, Normal Operation
		Flicker = Utility grid normal, but failed to on-grid
		Extinguish = Utility grid failed to operate normally
ENERGY		Always On = buy power from the grid / Power Purchase
		Single flash = to Grid connected/no buy no sell

indicator	Status	Description
		Double flashing = to Grid connected/sell electricity
		Off = Not on-grid, or system not operational
COM		Constant On = Normal communication between BMS and energy meter
		Single flash = Meter communication normal, BMS disconnected
		Double flashing = BMS normal, meter communication disconnected
		Extinguish = Both BMS and meter connections are disconnected
WiFi		Always on = WiFi normal, connected
		Single flash = WiFi is resetting
		Double flashing = WiFi not connected to Router
		Four flashes = WiFiServer issue
		Off=WiFi not functioning properly
FAULT		Constant On
		Single flash = BACKUP overload/reduce load
		Four flashes = abnormal meter detection result
		Extinguish = No fault

8.2 Set the Inverter parameters via the SolarGo App

SolarGo AppA device that can be controlled via Bluetooth signals,WiFiMobile application software for communication with Inverter. Common features include:

1. View the operating data, software version, alarm information, etc. of Inverter.
2. Set the Inverter parameters, communication parameters, etc. for Utility grid.
3. Maintenance equipment.

For details, please refer to the "SolarGo APP User Manual. The User Manual can be obtained from the official website or by scanning the QR code below.

SolarGo App

SolarGo App User Manual

8.3 Power Plant Monitoring via SEMS Portal

The SEMS Portal is a monitoring platform that can communicate with devices via WiFi, LAN, or 4G. Below are the commonly used features of the Xiaogu Cloud Window:

1. Manage organizations or user information, etc.
2. Add, monitor power station information, etc.
3. Maintenance equipment.

SEMS Portal App

9 Maintenance

9.1 Inverter power off

DANGER

- When performing operation and maintenance on Inverter, ensure the Inverter is power off. Operating live equipment may cause Inverter damage or electric shock DANGER.
- After Inverter POWER OFF, the internal components Discharge require a certain amount of time. Please wait until the equipment is fully Discharge according to the time specified on the label.

1. Disconnect the Inverter ON-GRID side AC breaker.
2. Disconnect the Inverter BACK-UP side AC breaker.
3. Disconnect the energy storage breaker between Inverter and Battery.
4. Disconnect the DC switch of Inverter.

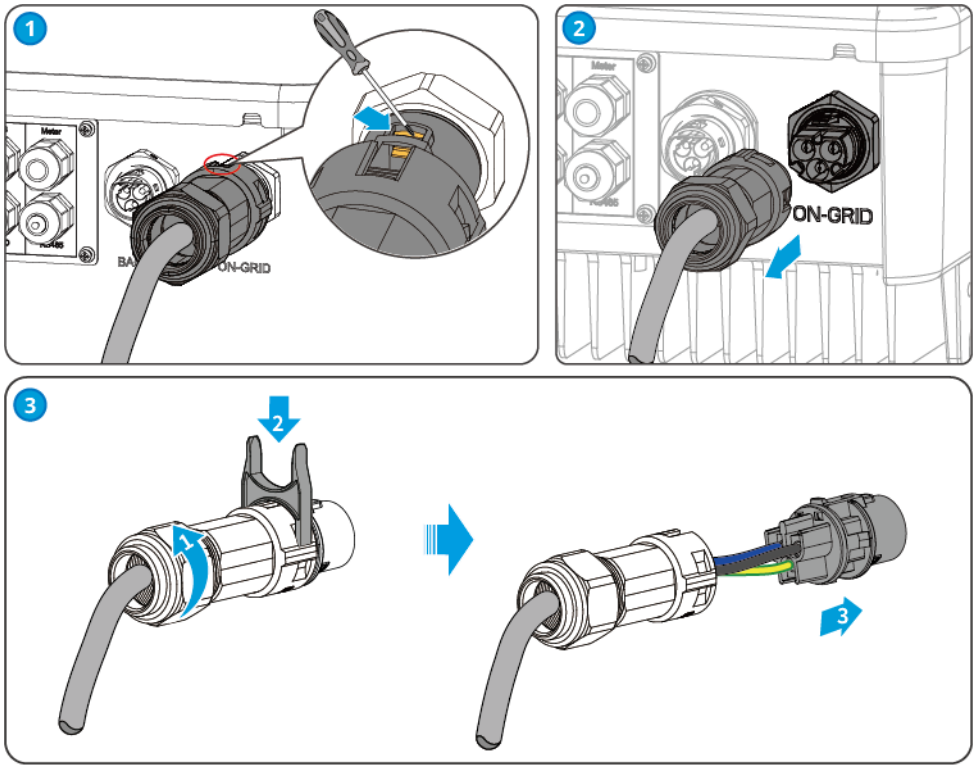
9.2 dismantleInverter

WARNING

- Ensure that the Inverter is already POWER OFF.
- When operating Inverter, please wear personal protective equipment.

1. Disconnect all electrical connections of Inverter, including: DC cables, AC cables, Communication cable, smart dongle, PE cable.
2. Remove the Inverter from the mounting plate.
3. dismantlemounting plate.
4. Store the Inverter properly. If the Inverter is to be put into use again, ensure the storage conditions meet the requirements.

dismantleON-GRID AC terminal



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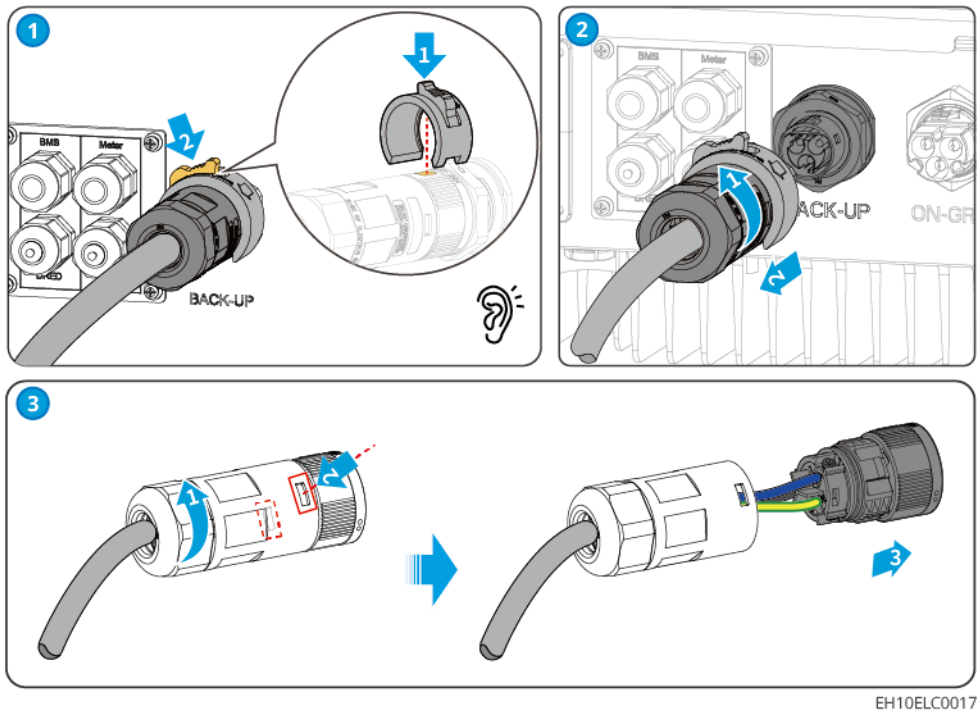
dismantle BACK-UP AC terminal



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9.3 Scrap Inverter

When Inverter can no longer be used and needs to be scrapped, it must be disposed of in accordance with the electrical waste disposal requirements of the regulations in the country/region where Inverter is located. Inverter should not be treated as household waste.

9.4 Inverter fault

fault code	fault name	fault cause	Troubleshooting recommendation
F01	Grid disconnected	1. Utility grid power outage 2. AC line or AC Switch disconnected.	1. The alarm automatically disappears after Grid connected recovery. 2. Check if the AC line or AC Switch is disconnected.
F02	Utility grid overvoltage Protection	Utility gridvoltage exceeds the allowable range, or the duration of overvoltage surpasses the high voltage ride-through setting.	1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. If it occurs frequently, check whether Utility gridvoltage is within the allowable range. • If Utility gridvoltage exceeds the permissible range, please contact the local power operator.

fault code	fault name	fault cause	Troubleshooting recommendation
			• If the Utility gridvoltage is within the allowable range, it is necessary to modify the InverterUtility grid overvoltage Protection point after obtaining consent from the local power operator.HVRTEnable or disable the Utility grid overvoltage Protection function. 3. If the issue persists for an extended period, please check whether the AC-side breaker and output cables are properly connected.
F03	Under-voltage	Utility gridvoltage is below the permissible range, or the duration of low voltage exceeds the low voltage ride-through setting.	1. If it occurs occasionally, it may be due to a temporary anomaly in the Utility grid. The Inverter will resume normal operation after detecting that the Utility grid is functioning properly, without requiring manual intervention. 2. If it occurs frequently, check whether Utility grid and voltage are within the allowable range.

fault code	fault name	fault cause	Troubleshooting recommendation
			• If Utility gridvoltage exceeds the permissible range, please contact the local power operator. • If Utility gridvoltage is within the allowable range, it is necessary to modify the InverterUtility grid undervoltage Protection point after obtaining consent from the local power operator.LVRTEnable or disable the Utility grid under-voltage Protection function. 3. If the issue persists for an extended period, please check whether the AC-side breaker and output cables are properly connected.
F04	Overvoltage fast Protection	Utility gridvoltage detection shows abnormality or ultra-high voltage triggers fault.	1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention.

fault code	fault name	fault cause	Troubleshooting recommendation
			2. If it occurs frequently, check whether Utility gridvoltage is within the allowable range. • If Utility gridvoltage exceeds the permissible range, please contact the local power operator. • If Utility gridvoltage is within the allowable range, it is necessary to modify the InverterUtility grid undervoltage Protection point after obtaining consent from the local power operator.LVRTEnable or disable the Utility grid undervoltage Protection function. 3. If the issue persists for an extended period, please check whether the AC-side breaker and output cables are properly connected.

fault code	fault name	fault cause	Troubleshooting recommendation
F05	10minOvervoltage Protection	In10minThe sliding average of Utility gridvoltage exceeds the safety regulation limits.	1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. Check if Utility gridvoltage is operating at a high voltage for an extended period. If this occurs frequently, verify whether Utility gridvoltage is within the allowable range. • If Utility gridvoltage exceeds the permissible range, please contact the local power operator. • If Utility gridvoltage is within the allowable range, the Utility grid must be modified with the consent of the local power operator.10minOvervoltage point.

fault code	fault name	fault cause	Troubleshooting recommendation
F06	overfrequency	Utility grid anomaly: Utility grid actual Frequency exceeds local Utility grid standard requirements.	1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. If it occurs frequently, check whether Utility gridFrequency is within the allowable range. • If Utility gridFrequency exceeds the permissible range, please contact the local power operator. • If the Utility gridFrequency is within the allowable range, the Utility grid over-frequency Protection point needs to be modified after obtaining consent from the local power operator.

fault code	fault name	fault cause	Troubleshooting recommendation
F07	Utility grid Underfrequency Protection	Utility grid anomaly: Utility grid actual Frequency is lower than local Utility grid standard requirement.	1. If it occurs occasionally, it may be due to a temporary anomaly in the Utility grid. The Inverter will resume normal operation after detecting that the Utility grid is functioning properly, without requiring manual intervention. 2. If it occurs frequently, check whether Utility grid and Frequency are within the allowable range. • If Utility gridFrequency exceeds the permissible range, please contact the local power operator. • If the Utility gridFrequency is within the allowable range, it is necessary to modify the Utility grid over-frequency Protection point after obtaining consent from the local power operator.

fault code	fault name	fault cause	Troubleshooting recommendation
F08	Utility grid frequency shift Protection	Utility grid anomaly: Utility grid actual Frequency variation rate does not comply with local Utility grid standard.	1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. If it occurs frequently, check whether Utility grid and Frequency are within the allowable range. • If Utility gridFrequency exceeds the permissible range, please contact the local power operator. • If Utility gridFrequency is within the allowable range, please contact your dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F163	Utility grid phase shift Protection	Utility grid anomaly: Utility grid voltage phase variation rate does not comply with local Utility grid standards.	1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. If it occurs frequently, check whether the Utility grid Frequency is within the allowable range. • If Utility gridFrequency exceeds the permissible range, please contact the local power operator. • If the Utility gridFrequency is within the allowable range, please contact your dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F09	Islanding Protection	Utility grid has been disconnected. Due to the presence of load, Utility grid voltage is maintained. According to safety regulation Protection, on-grid is stopped.	1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. If it occurs frequently, check whether Utility grid and Frequency are within the allowable range. • If Utility gridFrequency exceeds the permissible range, please contact the local power operator. • If Utility gridFrequency is within the allowable range, please contact your dealer or after-sales service center.
F10	undervoltage ride-through	Utility grid anomaly: Utility gridvoltage exceeds the specified high-low transition duration.	

fault code	fault name	fault cause	Troubleshooting recommendation
F11	ride-through overvoltage	Utility grid anomaly: Utility grid voltage exceeds the specified duration for high-low transitions.	1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. If this occurs frequently, please check whether Utility grid, voltage, and Frequency are within the allowable range and stable. If not, contact the local power operator; if yes, contact your dealer or after-sales service center.
F43	Waveform detection abnormality	Utility grid anomaly: Utility grid voltage detection triggered fault due to abnormality.	
F44	Utility grid phase loss Protection	Utility grid anomaly: Utility gridvoltage has a single-phase voltage dip.	

fault code	fault name	fault cause	Troubleshooting recommendation
F45	Utility gridvoltage imbalance	Excessive phase difference in Utility grid and voltage.	1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. If it occurs frequently, please check whether the Utility grid, voltage, and Frequency are within the allowable range and stable. If not, contact the local power operator; if yes, contact your dealer or after-sales service center.
F46	Utility grid phase fault	Inverter and Utility grid wiring abnormality: wiring is not in positive sequence	1. Check whether the wiring of Inverter and Utility grid is in positive sequence. After the wiring is corrected (e.g., by swapping any two live wires), fault will automatically disappear. 2. If the fault persists despite correct wiring, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F47	Grid disconnected Fast Protection	Quickly shut down the output upon detecting the Grid disconnected operating condition.	1. After Grid connected is restored, fault automatically disappears.
F48	Utility grid neutral line loss	Split-phase Utility grid neutral wire loss	1. The alarm automatically disappears after Grid connected recovery. 2. Check if the AC line or AC Switch is disconnected.
F160	EMS/Forced off-grid	EMSIssue forced off-grid command, but the off-grid function is not enabled.	Enable off-grid function
F161	Passive Islanding	-	-
F162	Grid type error	Actual Grid type (two-phase or split-phase) does not match the set safety regulations.	Switch the corresponding safety regulations according to the actual Grid type.

fault code	fault name	fault cause	Troubleshooting recommendation
F12	30mAGfciProtection	During operation, the input-to-ground insulation resistance becomes low.	1. If it occurs occasionally, it may be caused by temporary abnormalities in the external circuit. It will return to normal operation after fault is cleared, without requiring manual intervention. 2. If the issue occurs frequently or cannot be resolved for an extended period, please check whether the PV String ground impedance is too low.
F13	60mAGfciProtection	During operation, the input-to-ground insulation resistance becomes low.	1. If it occurs occasionally, it may be caused by temporary abnormalities in the external circuit. It will return to normal operation after fault is cleared, without requiring manual intervention. 2. If the issue occurs frequently or cannot be resolved for an extended period, please check whether the PV String ground impedance is too low.

fault code	fault name	fault cause	Troubleshooting recommendation
F14	150mAGfciProtection	During operation, the input-to-ground insulation resistance becomes low.	1. If it occurs occasionally, it may be caused by temporary abnormalities in the external circuit. It will return to normal operation after fault is cleared, without requiring manual intervention. 2. If the issue occurs frequently or cannot be resolved for an extended period, please check whether the PV String ground impedance is too low.
F15	Gfcislowly varying Protection	During operation, the input-to-ground insulation resistance of Inverter becomes low.	1. If it occurs occasionally, it may be caused by temporary abnormalities in the external circuit. It will return to normal operation after fault is cleared, without requiring manual intervention. 2. If the issue occurs frequently or cannot be resolved for an extended period, please check whether the PV String ground impedance is too low.

fault code	fault name	fault cause	Troubleshooting recommendation
F16	DCIPrimary Protection	The DC component of the inverter output current exceeds the safety regulations or the default allowable range of the equipment.	1. If the abnormality is caused by external fault, the Inverter will automatically resume normal operation after the fault disappears, without requiring manual intervention. 2. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the dealer or after-sales service center.
F17	DCISecondary Protection	The DC component of the inverter output current exceeds the safety regulations or the default allowable range of the machine.	1. If the abnormality is caused by an external fault, the Inverter will automatically resume normal operation after the fault disappears, without requiring manual intervention. 2. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F18	insulation resistance low	1. PV String is short-circuited to ground with Protection. 2. The environment of PV StringInstallation is consistently humid, and the line-to-ground insulation is poor. 3. Batteryport line-to-ground insulation resistance is low.	1. Check the impedance between PV String/Battery port and ground Protection. A resistance greater than 80kΩ is normal. If the measured resistance is less than 80kΩ, locate and rectify the short-circuit point. 2. Check if the Inverter's PE cable is properly connected. 3. If it is confirmed that the impedance is indeed lower than the default value in rainy weather, please reset the "Inverter insulation resistance Protection point" via the App. Australia and New Zealand markets Inverter, when insulation resistance fault occurs, can also issue alarms through the following methods: 1. Inverter is equipped with a buzzer. When a fault occurs, the buzzer will sound continuously for 1 minute. If the fault is not resolved, the buzzer will sound again every 30 minutes.

fault code	fault name	fault cause	Troubleshooting recommendation
			2. If Inverter is added to the monitoring platform and the alarm notification method is configured, alarm information can be sent to customers via email.
F19	System grounding abnormality	1. The Inverter's PE cable is not connected. 2. When the output of PV String is grounded, the output side of Inverter is not connected to an isolation transformer.	1. Please confirm whether the Inverter of PE cable is not connected properly. 2. In the scenario where the output of PV String is grounded, please confirm whether the output side of Inverter is connected to an isolation transformer.
F49	Live wire to ground short circuit	Output phase line toPELow impedance or short circuit	Detect output phase line toPEImpedance, identify Locations with low impedance should be identified and repaired.

fault code	fault name	fault cause	Troubleshooting recommendation
F50	DCVPrimary Protection	Abnormal load fluctuation	1. If the abnormality is caused by external fault, the Inverter will automatically resume normal operation after the fault disappears, without requiring manual intervention. 2. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the dealer or after-sales service center.
F51	DCVSecondary Protection	Abnormal load fluctuation	1. If the abnormality is caused by external fault, the Inverter will automatically resume normal operation after the fault disappears, without requiring manual intervention. 2. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F20	Hardware power limit Protection	Abnormal load fluctuation	1. If the abnormality is caused by external fault, the Inverter will automatically resume normal operation after the fault disappears, without requiring manual intervention. 2. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the dealer or after-sales service center.
F21	Internal communication link failure	Reference specific subcode reason	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F52	Leakage currentGFCIMultiple fault shutdowns	North American safety standards require that after multiple fault, the system must not recover automatically and requires manual intervention or waiting.24hPost-recovery	1. Please check if the PV String ground impedance is too low.

fault code	fault name	fault cause	Troubleshooting recommendation
F53	DC arcAFCIMultiple fault shutdowns	North American safety regulations require that after multiple fault, the system must not recover automatically and requires manual intervention or waiting.24hPost-recovery	1. After the machine is re-on-grid, check whether the voltage current of each circuit is abnormally reduced to zero. 2. Check if the DC-side terminal is securely connected.
F54	External communication link failure	Inverter External device communication lost, possibly due to peripheral power supply issues, Communication Protocols mismatch, or unconfigured corresponding peripherals.	Judgment is made based on the actual model and detection enable bits; peripherals not supported by certain models will not be detected.
F55	Back-upport Overload fault	1. Prevent Inverter from continuous overload output.	1. Disconnect some off-grid loads to reduce the off-grid output power of the Inverter.

fault code	fault name	fault cause	Troubleshooting recommendation
F56	Back-upovervoltage	2. Prevent damage to the load caused by overvoltage in the Inverter output.	1. If it occurs occasionally, it may be caused by load switching and does not require manual intervention. 2. If it occurs frequently, please contact the dealer or after-sales service center.
F107	Synchronization timeout in on-grid fault	Abnormal occurrence in carrier synchronization on-grid	1Check if the synchronization line connection is normal. 2Check if the master-slave settings are normal. 3Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F57	External connectionBoxfault	Waiting for grid disconnectionBoxExcessive relay switching time	1. InspectionBoxIs it functioning properly; 2. InspectionBoxIs the communication wiring correct?
-	Generator fault		

fault code	fault name	fault cause	Troubleshooting recommendation
F22	Generator waveform detection fault	1. This fault will always be displayed when the generator is not connected. 2. During generator operation, failure to meet generator safety regulations will trigger this fault.	1. When the generator is not connected, ignore this fault; 2. The occurrence of this fault when the generator experiences fault is normal. After the generator recovers, wait for a period of time, and the fault will automatically clear. 3. The fault will not affect the normal operation of the off-grid mode. 4. The generator and Utility grid are connected simultaneously and meet safety requirements. Utility grid prioritizes on-grid and will operate in the Utility grid on-grid state.
F23	Abnormal generator connection		
F24	Generator voltage low		
F25	Generator voltage High		
F26	Generator Frequency low		
F27	Generator Frequency high		
F109	External connectionSTSfault	Inverter andSTSAbnormal connection cable	Check the Inverter andSTSIs the wiring sequence of the harness connections one-to-one corresponding in order?
F58	CTMissing fault	CTConnection wire disconnected (Japanese safety standard requirement)	InspectionCTIs the wiring correct.

fault code	fault name	fault cause	Troubleshooting recommendation
F110	power limitfault	1. Fault reporting and disconnection from grid 2. meterUnstable communication 3. Reverse power flow condition occurs	1. Check if there are any other error messages in the Inverter. If so, perform targeted troubleshooting. 2. InspectionmeterIs the connection reliable? 3. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the dealer or after-sales service center.
F111	Bypassoverload	-	-
F112	Black start	-	-
F28	Parallel operationIOSelf-check abnormality	Parallel communication cable is not securely connected or parallel operation issueIOChip damage	Check if the parallel communication cable is securely connected, then recheck.IOCheck if the chip is damaged, and if so, replace it.IOChip.
F59	Parallel operationCANCommunication abnormality	Parallel communication line is not securely connected or some machines are offline.	Check whether all machines are power on and ensure the parallel communication cables are securely connected.

fault code	fault name	fault cause	Troubleshooting recommendation
F29	Parallel connection Utility grid reversed polarity	Some machines have the Utility grid line connected in reverse with others.	Reconnect the Utility grid line.
F60	Parallel operationBack-upreverse connection	Partial machinesbackupLine reversed with other connections	reconnectionbackupLine.
F61	Inverter soft start failure	Inverter soft start failure during off-grid cold start	Check whether the inverter module of the machine is damaged.
F113	Off-grid output instantaneous overvoltage fault	-	-
F30	AC sensor self-check abnormality	AC sensor has abnormal sampling	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F62	AC Sensor	HCTSensor abnormality detected	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F31	Leakage current sensor self-check abnormal	Leakage current sensor sampling anomaly detected	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F63	Leakage current sensor	Leakage current sensor is abnormal	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F32	Relay self-check abnormality	Relay abnormality, reason: 1Relay abnormality (relay short circuit) 2Relay sampling circuit abnormal. 3Abnormal AC side wiring (possible loose connection or short circuit)	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F64	Relay	1Relay abnormality (relay short circuit) 2Relay sampling circuit abnormality. 3Abnormal AC side wiring (possible loose connection or short circuit phenomenon)	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F164	DC arc fault (string)17~32)	1DC side connection terminal loose; 2DC side connection terminal loose contact; 3Core damage and poor contact	1After the machine is re-on-grid, check whether the voltage current of each circuit is abnormally reduced to zero. 2Check if the DC-side terminal is securely connected.
F165	DC arcfault (string)33~48)	1DC side connection terminal loose; 2DC side connection terminal loose contact; 3Core damage and poor contact	1After the machine is re-on-grid, check whether the voltage current of each circuit abnormally decreases or becomes zero. 2Check if the DC-side terminal is securely connected.
F33	FlashRead/Write Error	Possible causes: flashContent has changed;flashEnd of life;	1. Upgrade to the latest version of the program 2. Contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F42	DC arcfault (string)1~16)	1DC side connection terminal loose; 2DC side connection terminal loose contact; 3Core damage and poor contact	1After the machine is re-on-grid, check whether the voltage current of each circuit is abnormally reduced to zero; 2Check if the DC side terminal is securely connected.
F34	DC combiner box self-check	During the arc self-check process, the arc module failed to detect the arc fault.	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F65	AC terminal temperature too high	AC terminal temperature too high, possible causes: 1InverterInstallation Location non-ventilated. 2Ambient temperature is too high. 3Internal fan operation abnormal.	

fault code	fault name	fault cause	Troubleshooting recommendation
F35	Cavity temperature too high	Cavity temperature too high, possible causes: 1InverterInstallation Location non-ventilated. 2Ambient temperature is too high. 3Internal fan operation abnormal.	1Check whether the ventilation of InverterInstallation Location is adequate and whether the ambient temperature exceeds the maximum allowable range. 2If there is no ventilation or the ambient temperature is too high, please improve the ventilation and heat dissipation conditions. 3If ventilation and ambient temperature are both normal, please contact the dealer or after-sales service center.
F66	INVModule temperature too high	Inverter module temperature too high, possible causes: 1InverterInstallation Location not ventilated. 2Ambient temperature is too high. 3Internal fan operation abnormal.	

fault code	fault name	fault cause	Troubleshooting recommendation
F67	BoostModule temperature too high	BoostModule temperature too high, possible causes: 1InverterInstallation Location non-ventilated. 2Ambient temperature is too high. 3Internal fan operation abnormal.	
F68	Output filter capacitor overtemperature	Output filter capacitor temperature is too high, possible causes: 1InverterInstallation Location non-ventilated. 2Ambient temperature is too high. 3Internal fan operation abnormal.	

fault code	fault name	fault cause	Troubleshooting recommendation
F114	Relay2	Relay abnormality, reason: 1Relay abnormality (relay short circuit) 2Relay sampling circuit abnormality. 3Abnormal AC side wiring (possible loose connection or short circuit)	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F69	PV IGBT Short circuit	Possible causes: 1. IGBTshort circuit 2Abnormal sampling circuit	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F70	PV IGBTopen circuit voltage	1. Software issue causing no wave transmission. 2. Drive circuit abnormality 3. IGBTOpen circuit	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F71	NTCAbnormall	NTCTemperature sensor abnormality detected	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F72	Wave Transmission Anomalyfault	PWMAbnormal waveform detected	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F73	CPUInterruption exception	CPUInterruption anomaly	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F74	Microelectronics fault	Functional safety detects an anomaly	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F75	PV HCTfault	boostcurrent sensor anomaly	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F76	1. 5VBaseline anomaly	Reference circuit	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F77	0. 3VBenchmark anomaly	Reference circuit	
F78	CPLDVersion identification error	CPLDVersion identification error	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F79	CPLDCommunicatio n fault	CPLDandDSPComm unication content error or timeout	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F80	Model Identification fault	Regarding the fault of model identification error	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F115	SVGPrecharge failure	SVGPrecharge hardware failure	Contact the dealer or after-sales service center.
F116	nightSVG PIDPrevent fault	PIDPrevent hardware anomalies	Contact the dealer or after-sales service center.
F117	DSPVersion identification error	DSPSoftware version identification error	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F36	Bus overvoltage		Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F81	Upper Bus Overvoltage		
F82	Lower busbar overvoltage		
F83	Busbar Overvoltage (AuxiliaryCPU1)		
F84	Upper busbar overvoltage (secondary)CPU1)		

fault code	fault name	fault cause	Troubleshooting recommendation
F85	Lower busbar overvoltage (auxiliaryCPU1)	BUSOvervoltage, possible causes: 1. PVvoltage too high 2InverterBUSSampling anomaly 3The rear-end double-split Inverter has poor isolation, causing mutual interference between the two Inverter on-grid. One of the Inverter reports a DC overvoltage when on-grid.	
F86	Busbar overvoltage (auxiliaryCPU2)		
F87	Upper busbar overvoltage (secondary)CPU2)		
F88	Lower busbar overvoltage (auxiliary)CPU2)		
F89	Upper Bus Overvoltage(CPLD)		
F90	Lower Busbar Overvoltage (CPLD)		
F118	MOSContinuous overvoltage	1. Software issue causes the inverter drive to shut down earlier than the flyback drive. 2. Inverter drive circuit abnormality prevents turn-on. 3. PVvoltage too high 4. MosSampling anomaly	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F119	Busbar short circuit	1. Hardware damage	In case of occurrenceBUSAfter a short circuit fault, the Inverter remains in an off-grid state. Please contact the dealer or after-sales service center.
F120	Busbar sampling abnormality	1. BusSampling hardware	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F121	DCSide sampling anomaly	1. Bus sampling hardware 2. Batteryvoltage Sampling Hardware fault 3. Dcrly relay fault	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F37	PVInput overvoltage	PVInput voltage is too high, possible causes: Incorrect PV array configuration, with too many PV Battery panels connected in series, causing the open-circuit voltage of the string to exceed the maximum operating voltage of the Inverter.	Check the series configuration of the corresponding PV array string to ensure that the open-circuit voltage of the string does not exceed the maximum working voltage of the Inverter. Once the PV array is correctly configured, the Inverter alarm will automatically disappear.
F38	PVContinuous hardware overcurrent	1. Unreasonable module configuration 2. Hardware damage	Disconnect the AC output side switch and DC input side switch,5After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F39	PVContinuous software overcurrent	1. Unreasonable module configuration 2. Hardware damage	
F91	Flying capacitor software overvoltage	Flying capacitor overvoltage, possible causes: 1. PVvoltage too high 2Flying capacitor sampling anomaly	

fault code	fault name	fault cause	Troubleshooting recommendation
F92	Flying capacitor hardware overvoltage	Flying capacitor overvoltage, possible causes: 1. PVvoltage too high 2Flying capacitor sampling anomaly	Disconnect the AC output side switch and DC input side switch,5After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F93	Flying capacitor undervoltage	Flying capacitor undervoltage, possible causes: 1. PVEnergy deficiency; 2Flying capacitor sampling anomaly	
F94	Flying capacitor precharge failure	Flying capacitor precharge failure, possible causes: 1. PVEnergy deficiency; 2InverterFlying capacitorvoltagesampling anomaly	
F95	The flying capacitor cannot be precharged.	1. Unreasonable control loop parameters 2. Hardware damage	
F96	String overcurrent(String1~16)		

fault code	fault name	fault cause	Troubleshooting recommendation
F97	String overcurrent(String17~32)	Possible causes: 1. String Overcurrent 2. String current sensor anomaly	
F40	String reverse connection(String1~16)	PVString reverse connection	Check whether the string is reversed.
F98	String reverse connection(String17~32)	PVString reverse connection	Check if the strings are reverse-connected.
F99	String loss(String1~16)	String fuse disconnected (if applicable)	Check if the fuse is blown.
F100	String loss(String17~32)	String fuse disconnected (if applicable)	Check if the fuse is blown.

fault code	fault name	fault cause	Troubleshooting recommendation
F122	PVAccess mode setting error	PVThere are three access modes in total, with four channels.MPPTFor example: 1. Parallel mode: that isAAAAMode(homologous mode),PV1-PV4homologous4RoadPVConnect the same photovoltaic panel 2. Partial Parallel Mode: i.e.AACCMode,PV1andPV2Homologous connection,PV3andPV4homologous connection 3. Stand-alone mode: i.e.ABCDMode(non-homologous),PV1、PV2、PV3、PV4Independent connection,4RoadPVEach connected to a photovoltaic panel IfPVThe actual connection mode and equipment	InspectionPVIs the access mode correctly set?ABCD、AACC、AAAA), reset in the correct mannerPVConnection mode. 1. Confirm the actual connection of each circuitPVIs the connection correct. 2. IfPVCorrectly connected, passedAppor screen to check the current settingsPVCheck if the "connection mode" corresponds to the actual connection mode. 3. If the currently setPVThe access mode does not match the actual access mode and needs to be adjusted.Appor screen willPVThe "connection mode" is set to the mode consistent with the actual situation. After the setup is completed, thePVandACPower supply disconnection and restart. 4. After the setup is completed, if the currentPVThe access mode is consistent with the

fault code	fault name	fault cause	Troubleshooting recommendation
		configurationPVThis fault will be reported if the access modes do not match.	actual access mode, but this fault is still reported. Please contact the dealer or after-sales service center.
-	String reverse connection(String33~48)	PVString reverse connection	Check if the strings are reverse-connected.
-	String loss(String33~48)	String fuse disconnected (if applicable)	Check if the fuse is blown.
-	String overcurrent(String33~48)	Possible causes: 1. String Overcurrent 2. String current sensor anomaly	

fault code	fault name	fault cause	Troubleshooting recommendation
F123	Multi-channel PV phase error	Incorrect PV input mode setting	Check whether the PV connection mode is correctly set (ABCD, AACC, AAAA) and reconfigure the PV connection mode in the correct manner. 1. Verify that each connected PV string is correctly wired. 2. If the PV is correctly connected, check whether the currently set "PV connection mode" corresponds to the actual connection mode via the App or screen. 3. If the currently set "PV Connection Mode" does not match the actual connection mode, it is necessary to set the "PV Connection Mode" to the mode consistent with the actual situation via the App or screen. After completing the setting, disconnect the PV and AC power supply and restart. 4. After completing the setup, if the current "PV Connection Mode" matches the actual connection mode but this fault alarm persists, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F101	Battery1Precharge resistor	Battery1Pre-Charge circuit fault (such as pre-Charge resistor burnout, etc.)	Check whether the pre-Charge circuit is in good condition. Only after Battery power on, verify whether the Battery voltage matches the busbar voltage. If they do not match, please contact the dealer or after-sales service center.
F102	Battery1Relay	Battery1The relay fails to operate normally.	After Battery power on, check whether the Battery relay operates and if a closing sound is heard. If it does not function, please contact the distributor or after-sales service center.
F103	Battery1overvoltage at connection point	Battery1The input voltage exceeds the rated range of the machine.	Verify if Batteryvoltage is within the machine's rated range.
F104	Battery2Precharge fault	Battery2Pre-Charge circuit fault (such as pre-Charge resistor burnout, etc.)	Check if the pre-Charge circuit is functioning properly. Only after Battery power on, verify whether the Battery voltage matches the busbar voltage. If they do not match, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F105	Battery2Relay	Battery2The relay fails to operate properly.	After Battery power on, check whether the Battery relay operates and if the closing sound is heard. If it does not function, please contact the dealer or after-sales service center.
F106	Battery2overvoltage at connection point	Battery2The input voltage exceeds the rated range of the machine.	Verify if Batteryvoltage is within the machine's rated range.
F124	Battery1Reverse connection fault	Battery1Reverse polarity of positive and negative terminals	Check whether the polarity of Battery and the machine terminals is consistent.
F125	Battery2Reverse polarity fault	Battery2Reverse polarity of positive and negative terminals	Check whether the polarity of the Battery and machine terminals is consistent.
F126	Abnormal Access	Abnormal access	Check if the Battery is functioning properly.
-	BMS status bit error	BMS Module	Disconnect the AC output side switch and DC input side switch, then close the AC output side switch and DC input side switch after 5 minutes. If fault persists, please contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F127	Battery Heat Sink Over Temperature	Battery temperature is too high, possible causes: 1InverterInstallation Location not ventilated. 2Ambient temperature is too high. 3Internal fan operation abnormal.	
F128	Reference voltage anomaly	Reference circuit	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F129	Cavity temperature too low	Cavity temperature is too low, possible causes: 1. The ambient temperature is too low.	
F130	ACsideSPDfault	ACFailure of lateral lightning protection device	ReplacementACSide lightning protection device.
F131	DCsideSPDfault	DCFailure of lateral lightning protection device	replacementDCSide lightning protection device.

fault code	fault name	fault cause	Troubleshooting recommendation
F132	Internal fan anomaly	Internal fan abnormality, possible causes: 1Abnormal fan power supply; 2Mechanical fault(Locked rotor); 3Fan aging and damage.	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or after-sales service center.
F133	External fan anomaly	External fan abnormality, possible causes: 1Abnormal fan power supply; 2Mechanical fault(Locked rotor); 3Fan aging and damage.	
F134	PIDDiagnosis abnormality	PIDHardware fault orPVvoltage too highPIDSuspend	PVOvervoltage caused by voltagePIDSuspend WARNING without processing,PIDHardware fault can be turned off by closingPIDSwitch Reopen ClearPIDfault, replacementPIDinstallation

fault code	fault name	fault cause	Troubleshooting recommendation
F135	Trip switch tripping	Possible causes: Overcurrent orPVReverse connection causes the trip switch to trip.	Please contact the dealer or after-sales service center. The reason for disconnection is due to an occurrence.PVShort circuit or reverse connection, need to check for any historical issues.PVShort circuit or historyPVReverse connection of WARNING. If present, maintenance personnel should inspect the corresponding issue.PVSituation. After the inspection is completed and no fault is found, the trip switch can be manually closed, and then pass through.AppInterface Clear History fault Operation Clears This WARNING.

fault code	fault name	fault cause	Troubleshooting recommendation
F136	HistoryPV IGBT short circuit	Possible causes: Overcurrent caused the trip switch to open.	Please contact the dealer or after-sales service center. Maintenance personnel must follow the historicalPVShort circuit WARNING subcode, check for short circuit occurrenceBoostCheck if there is any fault in the hardware and external string; after confirming there is no fault, it can be passed.AppInterface Clear History fault Operation Clears This WARNING.
F137	historyPVReverse connection WARNING(String1~16)	Possible causes: OccurrencePVReverse connection causes the trip switch to trip.	Contact the dealer or after-sales service center. Maintenance personnel must follow the historicalPVReverse connection WARNING subcode, check whether the corresponding string has a reverse connection, inspectPVIs there a voltage difference in the panel configuration? After checking and confirming no fault, it can proceed.AppInterface Clear History fault Operation Clears This WARNING.

fault code	fault name	fault cause	Troubleshooting recommendation
F138	HistoryPVReverse polarity WARNING(String17~32)	Possible causes: OccurrencePVReverse connection causes the trip switch to trip.	Contact the distributor or after-sales service center. Maintenance personnel should follow the historicalPVReverse polarity WARNING subcode, check whether the corresponding string has reverse polarity, inspectPVIs there a voltage difference in the panel configuration? After checking and confirming there is no fault, it can be approved.AppInterface Clear History fault Operation Clears This WARNING.
F139	FlashRead/Write Error	Possible causes: flashContent has changed;flashEnd of life;	1. Upgrade to the latest version of the program. 2. Contact the dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F140	Meter Communication Abnormal Alarm	This WARNING may only be reported after enabling the power limit function. Possible causes: 1. Meter not connected; 2. The communication line connection between the meter and Inverter is incorrect.	Check the meter wiring and ensure the meter is correctly connected. If fault persists after inspection, please contact the dealer or after-sales service center.
F141	PVPanel type identification failed	PVPanel identification hardware anomaly	Contact the dealer or after-sales service center.
F142	String mismatch	PVString mismatch, same stringMPPTThe configurations of the next two strings are different.	Check the two strings of open-circuit voltage, and configure the strings with the same open-circuit voltage to the same circuit.MPPTUnder prolonged string mismatch, there are potential safety hazards.
F143	CTNot connected	CTNot connected	InspectionCTWiring.
F144	CTReverse connection	CTreverse connection	InspectionCTWiring.
F145	Ground wire missing/PE Loss	Ground wire not connected	Check the ground wire.

fault code	fault name	fault cause	Troubleshooting recommendation
F146	String temperature high(String1~8)	37176RegisterPVterminal temperature alarm subcode1Set position	-
F147	String temperature high(String9~16)	37177registerPVterminal temperature alarm subcode2Set	-
F148	String terminal temperature high(String17~20)	37178RegisterPVterminal temperature alarm subcode3Set position	-
F149	historyPVReverse polarity WARNING(String33~48)	Possible causes: OccurrencePVReverse connection causes the trip switch to trip.	Please contact the dealer or after-sales service center; maintenance personnel should follow the historicalPVReverse polarity WARNING subcode, check whether the corresponding string has reverse polarity, inspectPVIs there a voltage difference in the panel configuration? After checking and confirming there is no fault, it can be approved.AppInterface Clear History fault Operation Clears This WARNING.
F150	Battery1voltage low	Batteryvoltage is below the set value	-
F151	Battery2voltage low	Batteryvoltage below the set value	-

fault code	fault name	fault cause	Troubleshooting recommendation
F152	Battery power supply voltage low	Non-Charge mode, voltage below shutdown voltage	-
F153	1 High	-	-
F154	Battery2voltageHigh	-	-
F155	Online detection of low insulation resistance	PV String is short-circuited to ground relative to Protection. 2. The environment of PV StringInstallation is consistently humid, and the line-to-ground insulation is poor.	1. Check the impedance between PV String and the ground of Protection. If a short circuit is found, rectify the short circuit point. 2. Check if the Inverter's PE cable is properly connected. 3. If it is confirmed that the impedance is indeed lower than the default value under rainy conditions, please reset the "insulation resistanceProtection point".
F156	Microgrid Overload WARNING	Backup terminal input current is too large	Occasional occurrences do not require handling; if this alarm appears frequently, please contact the dealer or after-sales service center.
F157	Manual reset	-	-

fault code	fault name	fault cause	Troubleshooting recommendation
F158	Generator phase abnormality	-	-
F159	Reuse port configuration exception	Reuse (Generator) port configured as a microgrid or large load, but actually connected to a generator.	Use the App to modify the reuse (generator) port configuration.
F41	Generator port overload	1. Off-grid side output exceeds the specifications stated in the technical documentation. 2. Off-grid side short circuit 3. Off-grid terminal voltage too low 4. When acting as a high-power load port, the load exceeds the specifications outlined in the datasheet.	By verifying the data, confirm the output parameters such as voltage, current, and Power on the off-grid side to identify the cause of the issue.
F108	DSP communication fault	-	-

fault name	fault cause	Troubleshooting recommendation
Parallel communication timeout shutdown	In parallel operation, if the slave unit exceeds400No communication from the host within seconds.	Check whether the parallel communication harness is securely connected and verify that the slave addresses are not duplicated.
One-key shutdown and stop	Check if the one-touch shutdown function is enabled via the App.	Deactivate one-touch shutdown.
Offline shutdown	-	-
Remote shutdown	-	-
Child node communication	Internal communication exception	Restart the machine and observe whether the fault is eliminated.
Diesel generator communication	Abnormal communication link between the control board and the diesel generator	1. Check the link communication harness and observe whether fault is eliminated; 2. Attempt to restart the machine and observe whether the fault is eliminated; 3. If the fault persists after restarting, please contact the after-sales service center.
Battery overvoltage Protection	1. The voltage of a single cell is too high. 2. voltage collection line anomaly	

fault name	fault cause	Troubleshooting recommendation
	Battery total pressure too high 2. Abnormal voltage collection line	Record the fault phenomenon, restart the Battery, wait for a few minutes, and confirm whether the fault disappears. If the problem persists after restarting, please contact the after-sales service center.
Undervoltage	1. Single cell voltage too low 2. Abnormal voltage collection line	
	1. Battery Total pressure too low 2. Abnormal voltage collection line	
overcurrent	1. Chargecurrent is too large, Battery current limiting is abnormal: temperature and voltage value mutation 2. Inverter response anomaly	
	Battery dischargecurrent is too large	
Over-temperature	1. Ambient temperature is too high 2. Temperature sensor abnormality	
	1. Ambient temperature is too high 2. Temperature sensor abnormality	
low-temperature	1. Ambient temperature is too low 2. Temperature sensor abnormality	
	1. Ambient temperature is too low 2. Temperature sensor abnormality	
Pole Over-temperature Alarm	Pole temperature too high	

fault name	fault cause	Troubleshooting recommendation
Battery imbalance Protection	1. Excessive temperature difference in different stages. Battery will impose restrictions on Battery Power, that is, limit the charging Discharge current. Therefore, this issue is generally unlikely to occur. 2. The capacity of the battery cell degrades, leading to excessive internal resistance, which causes significant temperature rise and large temperature differences during current. 3. Poor welding of battery cell tabs, leading to excessive current and rapid temperature rise in the cell. 4. Temperature sampling issue; 5. Loose power cable connection	
	1. Inconsistent aging levels of battery cells 2. Issues with the board chips can also lead to excessive voltage differences in the battery cells. 3. Imbalance issues in the battery pack can also lead to excessive voltage differences between cells. 4. Harness issue causing	
	1. Inconsistent aging levels of battery cells 2. Issues with the board chips can also lead to excessive voltage differences between battery cells. 3. Imbalance issues in the battery pack can also lead to excessive voltage differences between cells. 4. Harness issues causing	

fault name	fault cause	Troubleshooting recommendation
Insulation Resistance	Insulation resistance failure	Check if the ground wire is properly connected and restart the Battery. If the issue persists after restarting, please contact the after-sales service center.
Precharge failure	Precharge failure	It indicates that during the precharge process, the voltage across the precharge MOS consistently exceeds the specified threshold. After powering off and restarting, observe whether this fault persists, and check whether the wiring is correct and if the precharge MOS is damaged.
Harvesting line	Battery acquisition line poor contact or disconnected	Check the wiring and restart the Battery. If the issue persists after restarting, please contact the after-sales service center.
	Single voltage collection line poor contact or disconnection	
	Single temperature acquisition line poor contact or disconnected	

fault name	fault cause	Troubleshooting recommendation
	Dual-channel current comparison error is too large, or current acquisition line circuit is abnormal	Check the wiring and restart the Battery. If the issue persists after restarting, please contact the after-sales service center.
	Dual-channel voltage comparison error is too large, or the comparison error between MCU and AFE voltage is too large, or the voltage acquisition line loop is abnormal.	
	Temperature acquisition circuit loop abnormal or poor contact, disconnected	
	Overvoltage level 5 or overtemperature level 5, fuse the three-terminal fuse	To fuse the three-section fuse, it is necessary to contact the after-sales service center to replace the main control board.
Relay or MOSFET overtemperature	Relay or MOSFET overtemperature	The fault indicates that the MOSFET temperature has exceeded the specified threshold. Power off and let it stand for 2 hours to allow temperature recovery.
Shunt Over-temperature	Shunt Over-temperature	The fault indicates that the temperature of the shunt tube has exceeded the specified threshold. Power off and let it stand for 2 hours to wait for temperature recovery.

fault name	fault cause	Troubleshooting recommendation
BMS1 Other fault1 (Residential Storage Category)	Relay or MOSFET open circuit	1. Upgrade the software, power off and let it sit for 5 minutes, then check if fault persists after restarting. 2. If the issue persists, replace the Battery package.
	Relay or MOS short circuit	1. Upgrade the software, power off and let it sit for 5 minutes, then check if fault persists after restarting. 2. If the issue persists, replace the Battery package.
	Communication abnormality between the master cluster and slave cluster, or inconsistency of battery cells among clusters.	1. Check the Battery information and software version of the slave unit, as well as whether the communication line connection with the master unit is normal. 2. Upgrade the software
	Battery system circuit harness abnormality, resulting in interlocking signal failing to form a closed loop.	Check if the Terminal resistor Installation is correct

fault name	fault cause	Troubleshooting recommendation
	BMS and PCS communication abnormality	1. Verify that the communication line interface definition between Inverter and Battery is correct; 2. Please contact the after-sales service center to check the backend data and verify whether the Inverter and Battery software are correctly matched.
	Abnormal communication harness between BMS master and slave control	1. Check the wiring and restart the Battery; 2. Upgrade the Battery. If the issue persists after restarting, please contact the after-sales service center.
	Main-negative chip communication loss	
	Circuit breaker, shunt trip abnormal	Let the system remain powered off for 5 minutes, then restart and check if fault persists. 2. Check for looseness or misalignment of the blind-mate connectors and communication pins at the bottom of the PACK and PCU.

fault name	fault cause	Troubleshooting recommendation
	MCU self-test failed	Upgrade the software and restart the Battery. If the issue persists after restarting, contact the after-sales service center.
	1. The software version is too low or the BMS board is damaged. 2. The number of Inverter parallel units is large, and the Battery experiences excessive impact during pre-charging.	1. Upgrade the software and observe whether fault persists. 2. In the case of parallel operation, perform a black start on Battery first, then start Inverter.
	Internal fault of MCU	Upgrade the software and restart the Battery. Typically, this issue is caused by a damaged MCU or external component. If the problem persists after restarting, please contact the after-sales service center.
	Total control current exceeds the specified threshold	1. Let the system remain idle and shut down for 5 minutes, then restart to check if fault persists. 2. Check if the Inverter is set with an excessively large Power, causing it to exceed the bus load.

fault name	fault cause	Troubleshooting recommendation
	Cell inconsistency in parallel clusters	Confirm whether the cells in the cluster Battery are consistent.
	Cluster Battery reverse polarity of positive and negative terminals	Check whether the positive and negative poles of the string combiner box are reversed.
	Severe overheating or overvoltage triggering the fire protection system	Contact the after-sales service center.
System Air Conditioning fault	Abnormal failure of air conditioning	Try restarting the system. If the fault persists, please contact the after-sales service center.
	Cabinet door not closed	Check whether the cabinet door is properly closed.
	Power supply voltage too high	Verify that the power supply voltage value meets the air conditioning input voltage requirements, and proceed with re-power on only after confirmation.
	Insufficient power supply	
	No voltage Input	
	Unstable power supply	
	Compressor voltage instability	Try restarting the system. If fault persists, please contact the after-sales service center.
	Sensor poor contact or damaged	
	Abnormal air conditioning fan	
	There is an abnormality in the voltage or current inside the DCDC.	

fault name	fault cause	Troubleshooting recommendation
BMS1 Other fault2 (Residential Storage Category)	DCDC overload or heat sink temperature too high	Refer to the specific DCfault content for details.
	Abnormal cell acquisition or inconsistent aging levels	Please contact the after-sales service center.
	Fan operation not executed properly	Please contact the after-sales service center.
	Output port screw loose or poor contact	1. Battery Shut down, check wiring and output port screw status 2. After confirmation, restart the Battery and observe whether the fault persists. If it does, please contact the after-sales service center.
	Battery has been used for too long or the battery cell is severely damaged.	Please contact the after-sales service center to replace the pack.
	1. The software version is too low or the BMS board is damaged. 2. The number of Inverter parallel units is large, and the Battery experiences excessive impact during pre-charging.	Upgrade the software and observe whether fault persists. 2. In the case of parallel operation, perform a black start on Battery before starting Inverter.
	Heating film damaged	Please contact the after-sales service center.
	The heating film's three-terminal fuse is blown, rendering the heating function unusable.	Please contact the after-sales service center.

fault name	fault cause	Troubleshooting recommendation
	Software model, Cell Type, hardware model mismatch	Check whether the software model, serial number (SN), Cell Type, and hardware model are consistent. If they are inconsistent, please contact the after-sales service center.
	Thermal management board communication disconnection	Let the system remain powered off for 5 minutes, then restart and check if fault persists. 2. If the fault is not restored, contact after-sales service to replace the pack.
	Thermal management board communication disconnection	Let the system remain powered off for 5 minutes, then restart and check if fault persists. 2. If the fault is not restored, contact after-sales service to replace the pack.

fault name	fault cause	Troubleshooting recommendation
	Thermal management board communication disconnection	Let the system remain powered off for 5 minutes, then restart and check if fault persists. 2. If the fault is not restored, contact after-sales service to replace the pack.
	pack fan fault signal trigger	Let the system remain powered off for 5 minutes, then restart and check if fault persists. 2. If the fault is not restored, contact after-sales service to replace the pack.
DCDC	Output portvoltage too high	Check the output portvoltage. If the output portvoltage is normal and the fault still cannot be resolved after restarting Battery, please contact the after-sales service center.

fault name	fault cause	Troubleshooting recommendation
	The DCDC module detected that the Battery voltage exceeded the maximum Charge voltage.	Stop Charge and Discharge when SOC drops below 90% or remains idle for 2 hours. If the issue persists and restarting fault does not resolve it, please contact the after-sales service center.
	Radiator temperature too high	Let the radiator stand for 1 hour to allow the temperature to drop. If the issue persists and restarting fault does not resolve it, please contact the after-sales service center.
	Battery dischargecurrent is too large	Check if the load exceeds the Battery's Discharge capacity. Turn off the load or stop the PCS for 60 seconds. If the issue persists after restarting the fault, please contact the after-sales service center.
	Output port power harness positive and negative poles are reversed with the combiner box Battery or PCS.	Turn off the Battery manual switch, check if the output port wiring is correct, and restart the Battery.

fault name	fault cause	Troubleshooting recommendation
	The output Power relay cannot close.	Check whether the output port wiring is correct and if there is a short circuit. If the issue persists after restarting fault, please contact the after-sales service center.
	Power device temperature too high	Let the Battery stand for 1 hour to allow the temperature of internal Power components to decrease. If the issue persists and restarting the fault does not resolve it, please contact the after-sales service center.
	Relay sticking	Restart fault still exists. Please contact the after-sales service center.
Inter-cluster circulation	1. Cell imbalance 2. First power on undercharge correction	-
BMS1 Other fault3 (Large Storage Category)	Communication exception with Linux module	1. Check if the communication link is functioning properly. 2. Upgrade the software, restart the Battery, and observe whether the fault persists. If it does, please contact the after-sales service center.

fault name	fault cause	Troubleshooting recommendation
	Excessive temperature rise of battery cells	Abnormal battery cell, contact after-sales service to replace the pack.
	SOC below 10%	Perform Charge on Battery.
	SN writing does not comply with the rules	Check if the SN digits are normal. If abnormal, please contact the after-sales service center.
	1. Battery Intra-cluster daisy chain communication anomaly 2. Inconsistent aging levels of battery cells within Battery clusters	1. Check the contact condition of a single cluster Battery pack. 2. Confirm the usage of each cluster, such as cumulative charging capacity, cycle count, etc. 3. Please contact the after-sales service center.
	High Humidity within the pack	-
	Fuse tripped	Contact after-sales service to replace the pack.
	Low battery level	Perform Charge on Battery.
BMS1 Other fault4 (Large Storage Category)	Circuit Breaker Abnormality	Contact after-sales service to replace the pack.

fault name	fault cause	Troubleshooting recommendation
	External device abnormality	Contact after-sales service to replace the pack.
Contactor fault1	-	-
Contactor fault 2	-	-
Overload (Jinggui)	Continuous overload (exceeding 690 kVA) for 10s	Please contact the after-sales service center.
Overload (Smart Inverter)	Continuous overload (exceeding 690KVA) for 10s	Please contact the after-sales service center.
Host ACpower on communication with the meter is abnormal.	1. The meter may not be connected to the host. 2. The communication cable of the meter may be loose.	1. Check if the meter is connected to the main unit. 2. Check if the meter communication cable is loose.
Parallel system slave with meter abnormality	The meter is connected to the slave unit.	Set the meter connection machine as the master.
Slave AC power on communication timeout with master for more than 10 minutes	1. Incorrect slave address setting 2. Slave communication line is loose	1. Check whether the slave address is duplicated. 2. Check if the parallel communication cable is loose.

9.5 Routine Maintenance

WARNING

- Ensure the Inverter is POWER OFF.
- When operating Inverter, please wear personal protective equipment.

Maintenance content	Maintenance method	Maintenance cycle
System cleaning	Check for any foreign objects or dust in the heat sink and air inlet/outlet.	Once every six months to once a year
DC switch	Open and close the DC switch 10 times consecutively to ensure the DC switch function operates normally.	Once per year
Electrical connection	Check for loose electrical connections, inspect the cable appearance for any damage, and look for exposed copper.	Once every six months to once a year
Sealing	Check whether the cable entry hole Sealing of the equipment meets the requirements. If the gap is too large or unsealed, resealing is required.	Once per year
THDi Test	According to Australian requirements, in THDi testing, Inverter and Utility grid Zref needs to be added in between. L:0.24 Ω + j0.15 Ω; N:0.16 Ω +j0.10 Ω L:0.15 Ω + j0.15 Ω ; N:0.1 Ω + j0.1 Ω	Subject to demand.

10 technical parameter

10.1 Technical Parameters

Technical Data	GW3600N-EH	GW5000N-EH	GW5000N-EH-BE	GW6000N-EH
Battery Input Data				
Battery Type	Li-Ion	Li-Ion	Li-Ion	Li-Ion
Nominal Battery Voltage (V)	350	350	350	350
Battery Voltage Range (V)	85~460	85~460	85~460	85~460
Start-up Voltage (V)	85	85	85	85
Number of Battery Input	1	1	1	1
Max. Continuous Charging Current (A)	25	25	25	25
Max. Continuous Discharging Current (A)	25	25	25	25
Max. Charge Power (W)	6000	6000	6000	6000
Max. Discharge Power (W)	3600	5000	5000	6000
PV String Input Data				
Max. Input Power (W)*1	5400	7500	7500	9000

Technical Data	GW3600N-EH	GW5000N-EH	GW5000N-EH-BE	GW6000N-EH
Max. Input Voltage (V)	580	580	580	580
MPPT Operating Voltage Range (V)	100~550	100~550	100~550	100~550
MPPT Voltage Range at Nominal Power	150~550	210~550	210~550	250~550
Start-up Voltage (V)	85	85	85	85
Nominal Input Voltage (V)	380	380	380	380
Max. Input Current per MPPT (A)	16	16	16	16
Max. Short Circuit Current per MPPT (A)	21.2	21.2	21.2	21.2
Max. Backfeed Current to The Array (A)	0	0	0	0
Number of MPP Trackers	2	2	2	2
Number of Strings per MPPT	1	1	1	1
AC Output Data (On-grid)				
Nominal Output Power (W)	3600	5000	5000	6000

Technical Data	GW3600N-EH	GW5000N-EH	GW5000N-EH-BE	GW6000N-EH
Max. Output Power (W)	3600/3960*2	5000/5500*2	5000	6000/6600*2
Nominal Apparent Power Output to Utility Grid (VA)*3	3600	5000	5000	6000
Max. Apparent Power Output to Utility Grid (VA)*3	3600/3960*2	5000/5500*2	5000	6000/6600*2
Nominal Apparent Power from Utility Grid (VA)	7200	10000	10000	12000
Max. Apparent Power from Utility Grid (VA)	7200 (Charging 3.6kW, Backup Output 3.6kW)	10000 (Charging 5kW, Backup Output 5kW)	10,000 (Charging 5kW, Backup Output 5kW)	12000 (Charging 6kW, Backup Output 6kW)
Nominal Output Voltage (V)	230/220*7	230/220*7	230	230/220*7
Output Voltage Range (V)	0~300	0~300	0~300	0~300
Nominal AC Grid Frequency (Hz)	50/60	50/60	50/60	50/60
AC Grid Frequency Range (Hz)	45~65	45~65	45~65	45~65

Technical Data	GW3600N-EH	GW5000N-EH	GW5000N-EH-BE	GW6000N-EH
Max. AC Current Output to Utility Grid (A)	16/18[*2]	21.7/24[*2]	21.7	26.1/28.7[*2]/27.3[*8]
Max. AC Current From Utility Grid (A)	32	43.4	43.4	52.2
Nominal AC Current From Utility Grid (A)	32	43.4	43.4	52.2
Max. Output Fault Current (Peak and Duration) (A)	65A@5us	65A@5us	65A@5us	65A@5us
Inrush Current (Peak and Duration) (A)	65A@5us	65A@5us	65A@5us	65A@5us
Nominal Output Current (A)	15.6	21.7	21.7	26.1
Power Factor	~1 (Adjustable from 0.8 leading to 0.8lagging)			
Max. Total Harmonic Distortion	<3%	<3%	<3%	<3%
Maximum Output Overcurrent Protection (A)	17.2	23.9	23.9	28.7
Type of Voltage (a.c. or d.c.)	a.c.	a.c.	a.c.	a.c.
AC Output Data (Back-up)				

Technical Data	GW3600N-EH	GW5000N-EH	GW5000N-EH-BE	GW6000N-EH
Back-up Nominal Apparent Power (VA)	3600	5000	5000	6000
Max. Output Apparent Power without Grid(VA)	3600 (4320@60sec)	5000 (6000@60sec)	5000 (6000@60sec)	6000 (7200@60sec)
Max. Output Apparent Power with Grid(VA)	3600	5000	5000	6000
Nominal Output Current (A)	15.7	21.7	21.7	26.1
Max. Output Current (A)	15.7	21.7	21.7	26.1
Max. Output Fault Current (Peak and Duration) (A)	65A@5us	65A@5us	65A@5us	65A@5us
Inrush Current (Peak and Duration) (A)	65A@5us	65A@5us	65A@5us	65A@5us
Maximum Output Overcurrent Protection (A)	18.8	26.1	26.1	31.3
Nominal Output Voltage (V)	230(±2%)	230(±2%)	230(±2%)	65A@5us
Nominal Output Frequency (Hz)	50/60(+0.2%)	50/60(+0.2%)	50/60(+0.2%)	65A@5us

Technical Data	GW3600N-EH	GW5000N-EH	GW5000N-EH-BE	GW6000N-EH
Output THDv (@Linear Load)	<3%	<3%	<3%	65A@5us
Efficiency				
Max. Efficiency	97.6%	97.6%	97.6%	97.6%
European Efficiency	97.0%	97.0%	97.0%	97.0%
Max. Battery to AC Efficiency	96.6%	96.6%	96.6%	96.6%
MPPT Efficiency Protection	99.9%	99.9%	99.9%	99.9%
Protection				
PV String Current Monitoring	Integrated	Integrated	Integrated	Integrated
PV Insulation Resistance Detection	Integrated	Integrated	Integrated	Integrated
Residual Current Monitoring	Integrated	Integrated	Integrated	Integrated
PV Reverse Polarity Protection	Integrated	Integrated	Integrated	Integrated
Battery Reverse Polarity Protection	Integrated	Integrated	Integrated	Integrated
Anti-islanding Protection	Integrated	Integrated	Integrated	Integrated
AC Overcurrent Protection	Integrated	Integrated	Integrated	Integrated

Technical Data	GW3600N-EH	GW5000N-EH	GW5000N-EH-BE	GW6000N-EH
AC Short Circuit Protection	Integrated	Integrated	Integrated	Integrated
AC Overvoltage Protection	Integrated	Integrated	Integrated	Integrated
DC Switch	Integrated	Integrated	Integrated	Integrated
DC Surge Protection	Type II	Type II	Type II	Type II
AC Surge protection	Type III	Type III	Type III	Type III
Remote Shutdown	Integrated	Integrated	Integrated	Integrated
General Date				
Operating Temperature Range (°C)	-25~+60	-25~+60	-25~+60	-25~+60
Relative Humidity	0~95%	0~95%	0~95%	0~95%
Max. Operating Altitude (m)	3000*10	3000*10	3000*10	3000*10
Cooling Method	Natural Convection	Natural Convection	Natural Convection	Natural Convection
User Interface	LED, APP	LED, APP	LED, APP	LED, APP
Communication with BMS*4	RS485, CAN	RS485, CAN	RS485, CAN	RS485, CAN
Communication with Meter	RS485	RS485	RS485	RS485

Technical Data	GW3600N-EH	GW5000N-EH	GW5000N-EH-BE	GW6000N-EH
Communication with Portal	WiFi / Ethernet (Optional)	WiFi / Ethernet (Optional)	WiFi / Ethernet (Optional)	WiFi / Ethernet (Optional)
Weight (kg)	17	17	17	17
Dimension (WxHxD mm)	354x433×147	354x433×147	354x433×147	354x433×147
Noise Emission (dB)	<35	<35	<35	<35
Topology	Non-isolated	Non-isolated	Non-isolated	Non-isolated
Self-consumption at Night (W)*5	<10	<10	<10	<10
Ingress Protection Rating	IP65	IP65	IP65	IP65
DC Connector	MC4 (4~6 mm^2)	MC4 (4~6 mm^2)	MC4 (4~6 mm^2)	MC4 (4~6 mm^2)
AC Connector	Quick Plug	Quick Plug	Quick Plug	Quick Plug
Environmental Category	4K4H	4K4H	4K4H	4K4H
Pollution Degree	III	III	III	III
Overvoltage Category	DC II / AC III	DC II / AC III	DC II / AC III	DC II / AC III
Protective Class	I	I	I	I
Storage Temperature (°C)	-40~+85	-40~+85	-40~+85	-40~+85

Technical Data	GW3600N-EH	GW5000N-EH	GW5000N-EH-BE	GW6000N-EH
The Decisive Voltage Class (DVC)	Battery: C PV: C AC: C Com: A	Battery: C PV: C AC: C Com: A	Battery: C PV: C AC: C Com: A	Battery: C PV: C AC: C Com: A
Mounting Method	Wall Mounted	Wall Mounted	Wall Mounted	Wall Mounted
Active Anti-islanding Method	AFDPF+ AQDPF*9	AFDPF+ AQDPF*9	AFDPF+ AQDPF*9	AFDPF+ AQDPF*9
Type of Electrical Supply System	Single phase TN/TT system	Single phase TN/TT system	Single phase TN/TT system	Single phase TN/TT system
Country of Manufacture	China	China	China	China
Certification*6				
Grid Standards	VDE-AR-N 4105, G98, G100, CEI 0-21,AS/NZS477.2, NRS097-2-1			
Safety Regulation	IEC/EN 62109-1&2			
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4,EN 61000-4-16,EN 61000-4-18, EN 61000-4-29			

*1:in Australia, for most of the PV module, the max input power can achieve 2*Pn,Such as the max. input power of GW3600N-EH can achieve 7200W.
*2: For CEl 0-21.
*3: The grid feed in power for VDE-AR-N 4105 and NRS097-2-1 is limited 4600VA.
*4: CAN communication is configured by default. If 485 communication is used, please replace the corresponding communication line.
*5: No Back-up Output.
*6: Not all certifications & standards listed, check the official webssite for details
*7: For Brazil, the voltage is 220V.
*8: For Brazil, the current is 27.3A.

*9: AFDPF: Active Frequency Drift with Positive Feedback, AQDPF: Active Q Drift with Positive Feedback.
*10: 2000m for Australia.

Technical Data	GW3600-EH	GW5000-EH-BE	GW5000-EH	GW6000-EH
Battery Input Data				
Battery Type	Li-Ion	Li-Ion	Li-Ion	Li-Ion
Nominal Battery Voltage (V)	350	350	350	350
Battery Voltage Range (V)	85~460	85~460	85~460	85~460
Max. Continuous Charging Current (A)	25	25	25	25
Max. Continuous Discharging Current (A)	25	25	25	25
Max. Charge Power (W)	3600	5000	5000	6000
Max. Discharge Power (W)	3600	5000	5000	6000
PV String Input Data				
Max. Input Power (W)	4800	6650	6650	8000
Max. Input Voltage (V)	580	580	580	580
MPPT Operating Voltage Range (V)	100~550	100~550	100~550	100~550
MPPT Voltage Range at Nominal Power	150~550	210~550	210~550	250~550

Technical Data	GW3600-EH	GW5000-EH-BE	GW5000-EH	GW6000-EH
Start-up Voltage (V)	90	90	90	90
Nominal Input Voltage (V)	380	380	380	380
Max. Input Current per MPPT (A)	12.5	12.5	12.5	12.5
Max. Short Circuit Current per MPPT (A)	15.2	15.2	15.2	15.2
Max. Backfeed Current to The Array (A)	0	0	0	0
Number of MPP Trackers	2	2	2	2
Number of Strings per MPPT	1	1	1	1
AC Output Data (On-grid)				
Nominal Output Power (W)	3600	5000	5000	6000
Nominal Apparent Power Output to Utility Grid (VA)*3	3600	5000	5000	6000
Max. Apparent Power Output to Utility Grid (VA)*3	3600	5000	5000	6000
Nominal Apparent Power from Utility Grid (VA)	7200	10000	10000	12000

Technical Data	GW3600-EH	GW5000-EH-BE	GW5000-EH	GW6000-EH
Max. Apparent Power from Utility Grid (VA)	7200(Charging 3.6kw, Backup Output 3.6kw)	10000 (Charging 5kW, Backup Output 5kW)	10,000 (Charging 5kW, Backup Output 5kW)	12,000 (Charging 6kW, Backup Output 6kW)
Nominal Output Voltage (V)	230/220*5	230	230/220*5	230/220*5
Output Voltage Range (V)	0~300	0~300	0~300	0~300
Nominal AC Grid Frequency (Hz)	50/60	50/60	50/60	50/60
AC Grid Frequency Range (Hz)	45~65	45~65	45~65	45~65
Max. AC Current Output to Utility Grid (A)	16	21.7	21.7	26.1/27.3*6
Max. AC Current From Utility Grid (A)	32	43.4	43.4	52.2
Max. Output Fault Current (Peak and Duration) (A)	65A@5us	65A@5us	65A@5us	65A@5us
Inrush Current (Peak and Duration) (A)	65A@5us	65A@5us	65A@5us	65A@5us
Nominal Output Current (A)	15.6	21.7	21.7	26.1
Power Factor	Adjustable from 0.8 leading to 0.8 lagging			
Max. Total Harmonic Distortion	<3%	<3%	<3%	<3%

Technical Data	GW3600-EH	GW5000-EH-BE	GW5000-EH	GW6000-EH
Maximum Output Overcurrent Protection (A)	40	54	54	65
AC Output Data (Back-up)				
Back-up Nominal Apparent Power (VA)	3600	5000	5000	6000
Max. Output Apparent Power without Grid(VA)	3600 (43200@60sec)	5000 (6000@60sec)	5000 (6000@60sec)	6000 (7200@60sec
Nominal Output Current (A)	15.7	21.7	21.7	26.1
Max. Output Current (A)	15.7	21.7	21.7	26.1
Max. Output Fault Current (Peak and Duration) (A)	19@60s	26@60s	26@60s	31@60s
Inrush Current (Peak and Duration) (A)	65@5us	65A@5us	65A@5us	A@5us
Maximum Output Overcurrent Protection (A)	16	21.7	21.7	26.1
Nominal Output Voltage (V)	230(±2%)	230(±2%)	230(±2%)	230(±2%)
Nominal Output Frequency (Hz)	50/60(+0.2%)	50/60(+0.2%)	50/60(+0.2%)	50/60(+0.2%)
Output THDv (@Linear Load)	<3%	<3%	<3%	<3%

Technical Data	GW3600-EH	GW5000-EH-BE	GW5000-EH	GW6000-EH
Efficiency		50/60(+0.2%)		
Max. Efficiency	97.6%	97.6%	97.6%	97.6%
European Efficiency	97.0%	97.0%	97.0%	97.0%
Max. Battery to AC Efficiency	96.6%	96.6%	96.6%	96.6%
MPPT Efficiency	99.9%	99.9%	99.9%	99.9%
Protection				
PV Insulation Resistance Detection	Integrated	Integrated	Integrated	Integrated
Residual Current Monitoring	Integrated	Integrated	Integrated	Integrated
Battery Reverse Polarity Protection	Integrated	Integrated	Integrated	Integrated
Anti-islanding Protection	Integrated	Integrated	Integrated	Integrated
AC Overcurrent Protection	Integrated	Integrated	Integrated	Integrated
AC Short Circuit Protection	Integrated	Integrated	Integrated	Integrated
AC Overvoltage Protection	Integrated	Integrated	Integrated	Integrated
General Date				
Operating Temperature Range (°C)	-25~+60	-25~+60	-25~+60	-25~+60
Relative Humidity	0~95%	0~95%	0~95%	0~95%

Technical Data	GW3600-EH	GW5000-EH-BE	GW5000-EH	GW6000-EH
Max. Operating Altitude (m)	3000*8	3000*8	3000*8	3000*8
Cooling Method	Natural Convection	Natural Convection	Natural Convection	Natural Convection
User Interface	LED, APP	LED, APP	LED, APP	LED, APP
Communication with BMS*4	RS485, CAN	RS485, CAN	RS485, CAN	RS485, CAN
Communication with Meter	RS485	RS485	RS485	RS485
Communication with Portal	WiFi / Ethernet (Optional)	WiFi / Ethernet (Optional)	WiFi / Ethernet (Optional)	WiFi / Ethernet (Optional)
Weight (kg)	17	17	17	17
Dimension (WxHxD mm)	354x433×147	354x433×147	354x433×147	354x433×147
Noise Emission (dB)	<35	<35	<35	<35
Topology	Non-isolated	Non-isolated	Non-isolated	Non-isolated
Self-consumption at Night (W)*5	<10	<10	<10	<10
Ingress Protection Rating	IP65	IP65	IP65	IP65
DC Connector	MC4 (4~6 mm^2)	MC4 (4~6 mm^2)	MC4 (4~6 mm^2)	MC4 (4~6 mm^2)
AC Connector	Quick Plug	Quick Plug	Quick Plug	Quick Plug
Environmental Category	4K4H	4K4H	4K4H	4K4H

Technical Data	GW3600-EH	GW5000-EH-BE	GW5000-EH	GW6000-EH
Pollution Degree	III	III	III	III
Overvoltage Category	DC II / AC III	DC II / AC III	DC II / AC III	DC II / AC III
Protective Class	I	I	I	I
Storage Temperature (°C)	-40~+85	-40~+85	-40~+85	-40~+85
The Decisive Voltage Class (DVC)	Battery: C PV: C AC: C Com: A	Battery: C PV: C AC: C Com: A	Battery: C PV: C AC: C Com: A	Battery: C PV: C AC: C Com: A
Mounting Method	Wall Mounted	Wall Mounted	Wall Mounted	Wall Mounted
Active Anti-islanding Method	AFDPF+ AQDPF*7	AFDPF+ AQDPF*7	AFDPF+ AQDPF*7	AFDPF+ AQDPF*7
Type of Electrical Supply System	Single phase TN/TT system	Single phase TN/TT system	Single phase TN/TT system	Single phase TN/TT system
Country of Manufacture	China	China	China	China
Certification*4				
Grid Standards	VDE-AR-N 4105, G98, G100, CEI 0-21,AS/NZS477.2, NRS097-2-1			
Safety Regulation	IEC/EN 62109-1&2			
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4,EN 61000-4-16,EN 61000-4-18, EN 61000-4-29			

*1: The grid feed in power for VDE-AR-N 4105 and NRS097-2-1 islimited 4600VA

*2: CAN communication is configured by default. If 485 comrmunication is used,

please replace the corresponding communication line
*3: No Back-up Output.
*4: Not all certifications & standards listed, check the officialwebsite for details.
*5: For Brazil, the voltage is 220V.
*6: For Brazil, the current is 27.3A
*7: AFDPF: Active Frequency Drift with Positive Feedback, ACDPF: Active Q Drift with Positive Feedback.
*8: 2000m for Australia.