V1.5-2026-10-22

Commercial & Industrial Grid-tied Inverter

GT G1 100-150kW

· GW100K-GT-L-G10

· GW150K-GT-G10

User Manual

GOODWE

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NOTICE

This document may be updated periodically due to product version upgrades or other reasons. Unless otherwise specified, the content of this document does not replace the safety precautions on the product labels. All descriptions in this document are for guidance only.

Preface

Overview

This manual mainly describes the inverter's product information, transportation and storage, installation and wiring, configuration and commissioning, troubleshooting, and maintenance. Before installing or using the product, read this manual carefully to understand the product safety information and become familiar with its functions and features. Keep this manual in a safe place for future reference.

The illustrations in this manual are for conceptual reference only and may differ from the actual product. The actual product shall prevail.

This manual is updated periodically,Please obtain the latest version of the materials and more product information from the official website: en.goodwe.com.

Applicable Products

This document applies to the following inverter models:

Model	Rated Output Power	Rated Output Voltage
GW150K-GT-G10	150kW	220/380 V, 3L/N/PE or 3L/PE (China)
		220/380, 230/400, 240/415, 277/480V, 3L/N/PE or 3L/PE (Overseas)
GW100K-GT-L-G10	100kW	127/220V, 133/230V, 3L/N/PE or 3L/PE

Definition of Symbols

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

⚠WARNING

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

⚠CAUTION

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

NOTICE

Emphasizes or supplements information, and may also provide tips or tricks for optimizing product use to help you solve a problem or save time.

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1 Safety Precautions

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

⚠WARNING

The equipment has been designed and tested in strict accordance with safety regulations. However, as electrical equipment, it must be handled in compliance with the relevant safety instructions. Improper operation may result in serious injury or property damage.

1.1 General Safety

⚠DANGER

- Before making electrical connections, disconnect all upstream switches to ensure that the equipment is de-energized. Live work is strictly prohibited, as it may result in electric shock or other hazards.
- For equipment that supports PV string connections, the PV inputs have a low surge current withstand capability. Never use a DC voltage source to power the equipment directly through the PV ports. If power must be supplied through the PV ports, follow the steps below. Damage resulting from failure to follow these instructions is considered damage caused by improper operation and is not covered by the product warranty.
  1. First, limit the DC voltage source output current to within the maximum input current allowed at the PV ports.
  2. Then close the inverter's DC switch.
  3. Finally, slowly increase the DC source output voltage from 0 to the target value at a rate of ≤50 V/s.
- To prevent personal injury or equipment damage caused by live operation, a circuit breaker must be installed on the equipment's voltage input side.
- All activities, including transportation, storage, installation, operation, use, and maintenance, must comply with applicable laws, regulations, standards, and codes.

⚠DANGER

- The specifications of cables and components used for electrical connections must comply with local laws, regulations, standards, and codes.
- Use the cable connectors supplied with the equipment to connect its cables. The equipment manufacturer is not liable for equipment damage caused by using connectors of other models.
- Ensure that all equipment cables are connected correctly and securely, with no loose connections. Improper wiring may result in poor contact or equipment damage.
- The equipment protective earth conductor must be securely connected.
- To protect the equipment and its components from damage during transport, ensure that transport personnel are professionally trained. Record the handling steps during transport, keep the equipment balanced, and prevent it from falling.
- The equipment is heavy. Assign an appropriate number of personnel based on its weight to avoid exceeding safe manual handling limits and causing injury.
- Ensure that the equipment is placed securely and is not tilted. If it tips over, it may cause equipment damage or personal injury.

⚠WARNING

- During equipment installation, do not place any load on the wiring terminals, as this may damage them.
- Avoid applying excessive tension to cables, as this may result in poor connections. Leave an appropriate length of cable when wiring to ensure that the cables are not taut.
- Secure and support cables properly to prevent cable weight, tension, bending force, torsion, or other external mechanical stress from acting on terminals or connectors over time.
- Ensure that the protective earth conductor is securely connected and has sufficient slack. If subjected to unexpected tension or other external mechanical stress, the protective earth conductor must not disconnect before the other conductors.
- Bundle cables of the same type together. Route different types of cables at least 30 mm apart; do not intertwine or cross them.
- Using cables in high-temperature environments may cause their insulation to age or become damaged. Keep cables at least 30 mm away from heating components or the perimeter of heat-source areas.

NOTICE

- This document may be updated periodically due to product version upgrades or other reasons. Unless otherwise specified, the content of this document does not replace the safety precautions on the product labels. All descriptions in this document are for guidance only.
- Before installing the equipment, read this document carefully to understand the product and its precautions.
- All work on the equipment must be performed by qualified electrical professionals who are familiar with the applicable standards and safety codes in the project location.
- When working on the equipment, use insulated tools and wear personal protective equipment to ensure personal safety. When handling electronic components, wear anti-static gloves and a wrist strap, and use anti-static clothing to protect the equipment from electrostatic discharge damage.
- Unauthorized disassembly or modification may damage the equipment. Such damage is not covered by the warranty.
- The equipment manufacturer is not liable for equipment damage or personal injury resulting from installation, use, or configuration that does not comply with this document or the applicable user manual. For more information about the product warranty, visit the official website:https://www.goodwe.com/warrantyrelated.html。

1.2 Personnel Requirements

NOTICE

To ensure safe, compliant, and efficient equipment transportation, installation, wiring, operation, and maintenance, all work must be performed by professional or qualified personnel.

1. Qualified or authorized personnel include:
   - Personnel who understand the equipment's operating principles, system structure, and relevant risks and hazards, and who have received professional operating training or have extensive practical experience.
   - Personnel who have received relevant technical and safety training, have some operating experience, can recognize the hazards that specific tasks may pose to them, and can take protective measures to minimize risks to themselves and others.
   - Qualified electrical personnel meeting the regulatory requirements of the country/region where the work is performed.
   - Personnel holding a degree in electrical engineering, an advanced diploma in an electrical discipline, or an equivalent qualification; or professionally qualified in the electrical field, with at least 2/3/4 years of experience in testing and supervising work in accordance with electrical equipment safety standards.
2. Personnel performing special tasks, such as electrical work, work at height, or operation of special equipment, must hold valid qualification certificates required at the equipment's location.
3. Medium-voltage equipment must be operated by a licensed high-voltage electrician.
4. Only authorized personnel may replace equipment and components.

1.3 PV String Safety

⚠WARNING

- Ensure that the module frames and mounting system are properly grounded.
- After connecting the DC cables, ensure that all connections are secure and tight. Improper wiring may result in poor contact or high impedance and damage the inverter.
- Use a multimeter to measure the positive and negative poles of the DC cables. Ensure that the polarity is correct and not reversed, and that the voltage is within the allowable range.
- Use a multimeter to measure the DC cables. Ensure that the polarity is correct and not reversed, and that the voltage is below the maximum DC input voltage. The equipment manufacturer is not liable for damage caused by reverse polarity or overvoltage.
- PV string outputs do not support grounding. Before connecting a PV string to the inverter, ensure that the minimum insulation resistance to ground of the PV string meets the minimum insulation resistance requirement (R = maximum input voltage (V)/30 mA).
- Do not connect the same PV string to multiple inverters, as this may damage the inverters.
- PV modules used with the inverter must comply with IEC 61730 Class A.
- When the PV string input voltage or input current is high, the inverter output power may be derated.

1.4 Inverter Safety

⚠WARNING

- Ensure that the voltage and frequency at the point of grid connection comply with the inverter's grid connection specifications.
- It is recommended to install protective devices such as a circuit breaker or fuse on the AC side of the inverter. The rating of the protective device must be greater than 1.25 times the maximum AC output current of the inverter.
- If the inverter triggers an arc fault alarm fewer than five times within 24 hours, the alarm can be cleared automatically. After the fifth arc fault alarm, the inverter will shut down for protection. The fault must be cleared before the inverter can resume normal operation.
- If no battery is configured in the PV system, using the BACK-UP function is not recommended; otherwise, there may be a risk of power loss in the system.
- Changes in grid voltage and frequency may cause the inverter output power to be derated.

1.5 EU Declaration of Conformity

1.5.1 Devices with Wireless Communication Functions

GoodWe Technologies Co., Ltd. hereby declares that devices with wireless communication functions offered for sale in the European market comply with the requirements of 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)

1.5.2 Devices Without Wireless Communication Functions

GoodWe Technologies Co., Ltd. hereby declares that devices without wireless communication functions offered for sale in the European market comply with the requirements of the following directives:

- Electromagnetic compatibility Directive 2014/30/EU (EMC)
- Electrical Apparatus Low Voltage Directive 2014/35/EU (LVD)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

1.6 Safety Symbols and Certification Marks

⚠DANGER

- After installation, labels and warning signs on the enclosure must remain clearly visible. Do not cover, alter, or damage them.
- The following descriptions of enclosure warning labels are for reference only. Refer to the labels actually affixed to the equipment.

No.	Symbol	Description
1		Potential hazards exist while the equipment is operating. Use appropriate protection when operating the equipment.
2		High-voltage hazard. High voltage is present while the equipment is operating. Ensure the equipment is de-energized before working on it.
3		The equipment surface becomes hot. Do not touch the equipment while it is operating, or burns may result.
4		Use the equipment as intended. Use under extreme conditions may create a risk of explosion.
5		The battery contains flammable materials. Keep away from fire.
6		The equipment contains corrosive electrolyte. Avoid contact with leaking electrolyte or vapors.

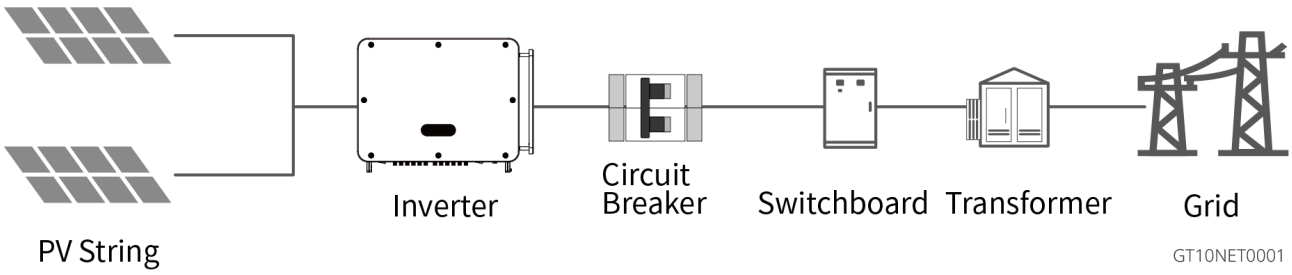
No.	Symbol	Description
7		Delayed discharge. After de-energizing the equipment, wait 5 minutes for it to fully discharge.
8		Keep the equipment away from open flames and sources of ignition.
9		Keep the equipment out of reach of children.
10		Use the equipment as intended. Use under extreme conditions may create a risk of explosion.
11		The battery contains flammable materials. Keep away from fire.
12		Do not lift the equipment after the battery system has been wired or while it is operating.
13		Do not extinguish with water.
14	 	Read the product manual carefully before operating the equipment.
15		Wear personal protective equipment during installation, operation, and maintenance.
16		Do not dispose of the equipment as household waste. Dispose of it in accordance with local laws and regulations, or return it to the equipment manufacturer.
17		Protective earth connection point.

No.	Symbol	Description
18		Recycling symbol. Place the equipment in the appropriate collection location and recycle it in accordance with local environmental regulations.
19		CE marking.
20		RCM marking.

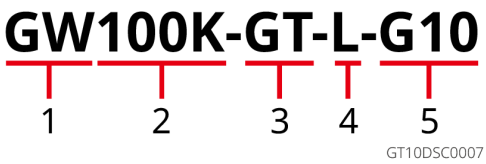
2 Product Overview

2.1 Application Scenarios

The GT series inverters are three-phase string-type grid-tied PV inverters. They convert the DC power generated by PV modules into AC power that meets grid requirements and feed it into the grid. The inverters are primarily used in the following scenarios:

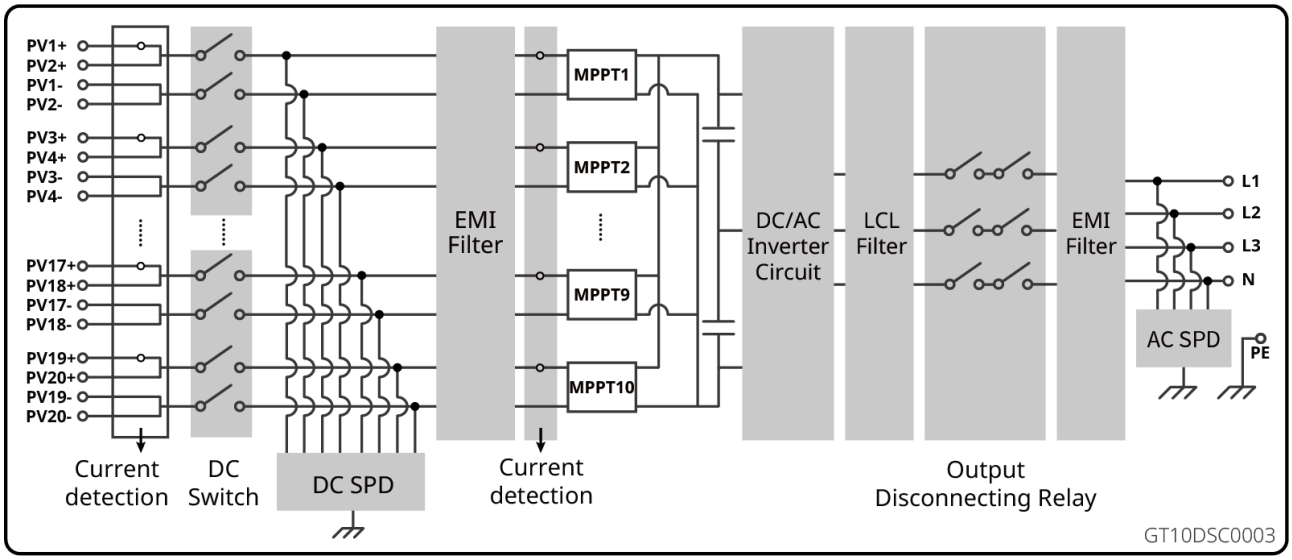


Model Description



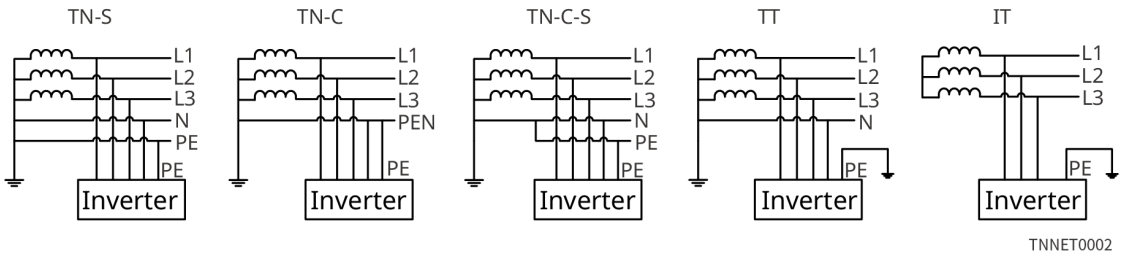
No.	Description	Description
1	Brand Code	GW: GoodWe
2	Rated Power	150K: Rated power of 150 kW
3	Series Name	GT: GT series
4	Grid Type	L: Low-voltage grid
5	Version Code	G10: First-generation product

2.2 Circuit Diagram



2.3 Supported Grid Types

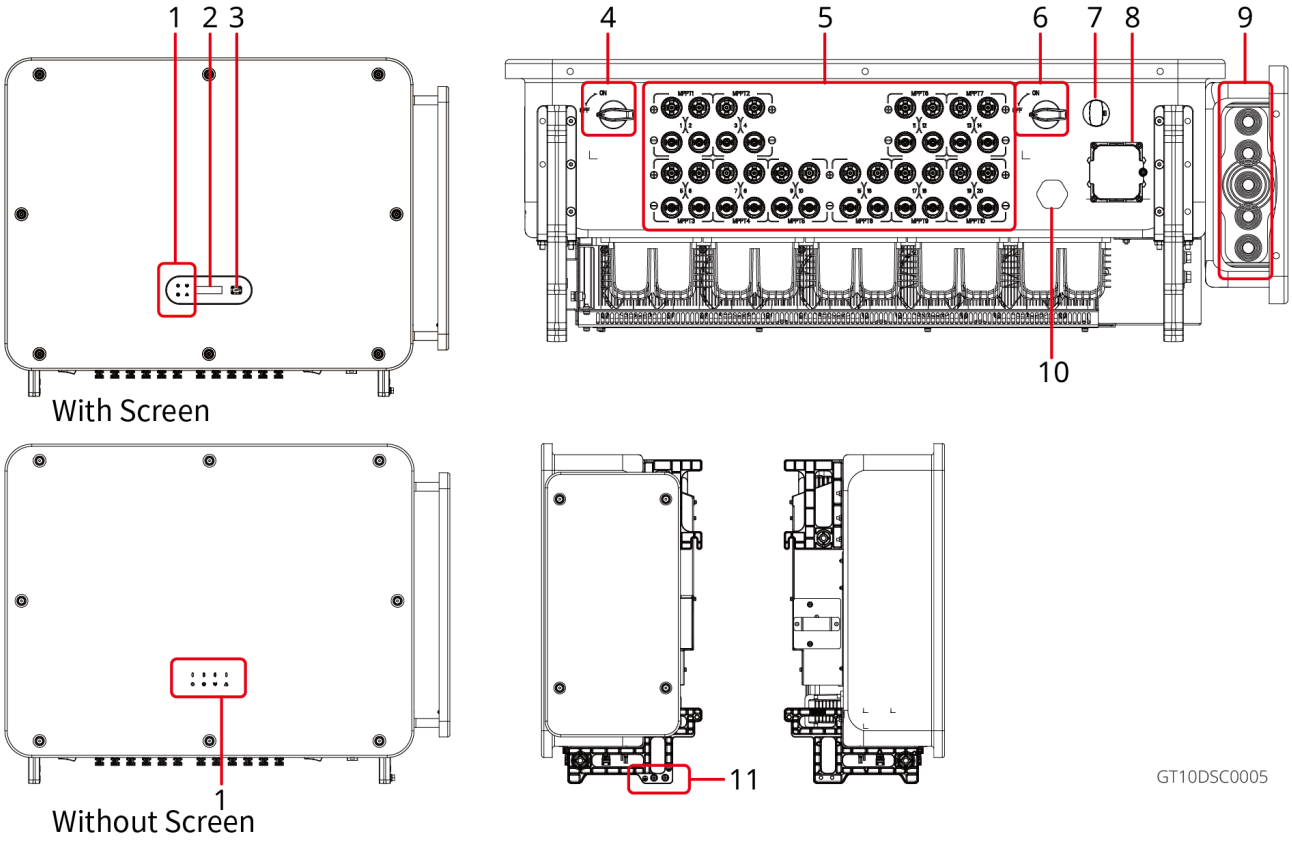
NOTICE
For a TT grid configuration, the RMS voltage between the neutral and ground conductors must be less than 20 V.



2.4 Appearance and Dimensions

The color and appearance may vary between inverter models. Refer to the actual product.

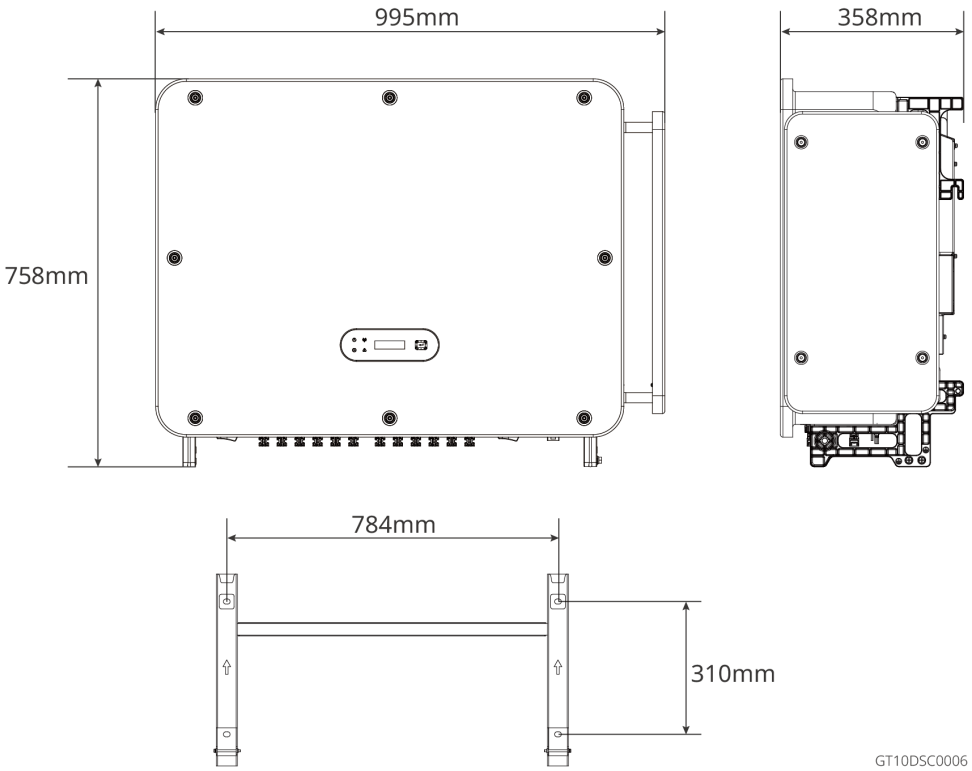
2.4.1 Appearance



No.	Component	Description
1	Indicator	Indicates the inverter operating status
2	Display (optional)	View inverter data (used with the buttons)
3	Buttons (optional)	Operate the display (used with the display)
4	DC switch 1	Connect or disconnect MPPT 1–5 from the DC input
5	PV input terminals	For connecting DC input cables from PV modules
6	DC Switch 2	Controls connection/disconnection of DC inputs for MPPTs 6–10
7	Smart communication stick port	For connecting a smart communication stick. Select the communication stick type according to actual requirements.

8	Communication Port	Includes multiple communication interfaces, such as RS485, for connecting communication cables for the corresponding function.
9	AC cable entry hole	AC output cable entry/exit hole
10	Breather valve	Provides waterproof ventilation to balance internal and external air pressure
11	Protective earth terminal	Connecting the Protective Earth Conductor

2.4.2 Product Dimensions



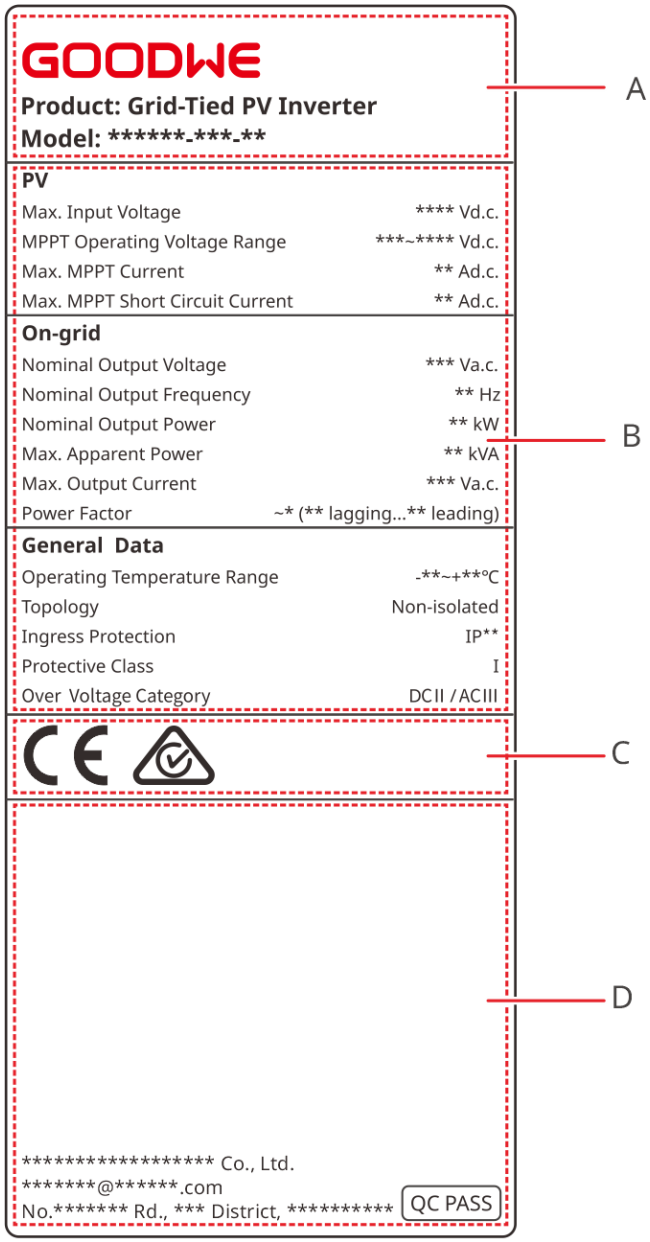
2.4.3 Indicator Description

Indicator	Status	Description
		Steady on: The device is powered on

电源 Power		Off: The device is not powered on
运行 Operation		Steady on: The grid is normal and grid connection is successful
		Off: Not connected to the grid
		One slow flash: Pre-grid-connection self-check
		One quick flash: About to connect to the grid
Communication		Steady on: Wireless monitoring is operating normally
		One flash: Wireless module reset or reboot
		Two flashes: Not connected to a base station or router
		Four flashes: Not connected to the monitoring server
		Flashing: RS485 communication is operating normally
		Off: The wireless module is restoring its factory settings
故障 Fault		Steady on: System fault
		Off: No fault

2.4.4 Nameplate Description

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



GPL00DSC0001

A	B	C	D
GoodWe trademark, product type, and model	Product Technical Specifications	Product Safety Symbols and Certification Marks	Contact Information and Serial Number

2.5 Features

AFCI

The inverter integrates an AFCI circuit protection device to detect arc faults and quickly disconnect the circuit when one is detected, thereby preventing electrical fires.
Causes of arc faults:

- Damaged connections between connectors in the PV system.
- Incorrectly connected or damaged cables.
- Aged connectors or cables.

Troubleshooting:

- The inverter integrates AFCI functionality and complies with IEC 63027.
- When the inverter detects an arc fault, you can use the app to view the time of the alarm and the alarm details.
- If the inverter triggers an AFCI alarm, it will shut down for protection. After the alarm is cleared, the inverter will automatically reconnect to the grid and resume operation.
  - Automatic reconnection: If the inverter triggers an AFCI alarm fewer than 5 times within 24 hours, the alarm will be cleared automatically after five minutes, and the inverter will reconnect to the grid and resume operation;
  - Manual reconnection: If the inverter triggers its fifth AFCI alarm within 24 hours, the alarm must be cleared manually before the inverter can reconnect to the grid and resume operation. For details, refer to the SolarGo App User Manual.

Model	Labels	Description
GW150K-GT-G10	F-I-AFPE-1-4/6/4/6-4	F (Full coverage): Covers all inverter PV input ports I (Integrated): Integrated into the inverter. AFPE (arc fault protection equipment): Combines the two arc detection functions of AFD and AFI 1: One pair of PV input terminals (PV+, PV–) connected to one PV string 4/6/4/6: Number of PV input ports monitored by one arc detection sensor 4: Number of arc detection sensors

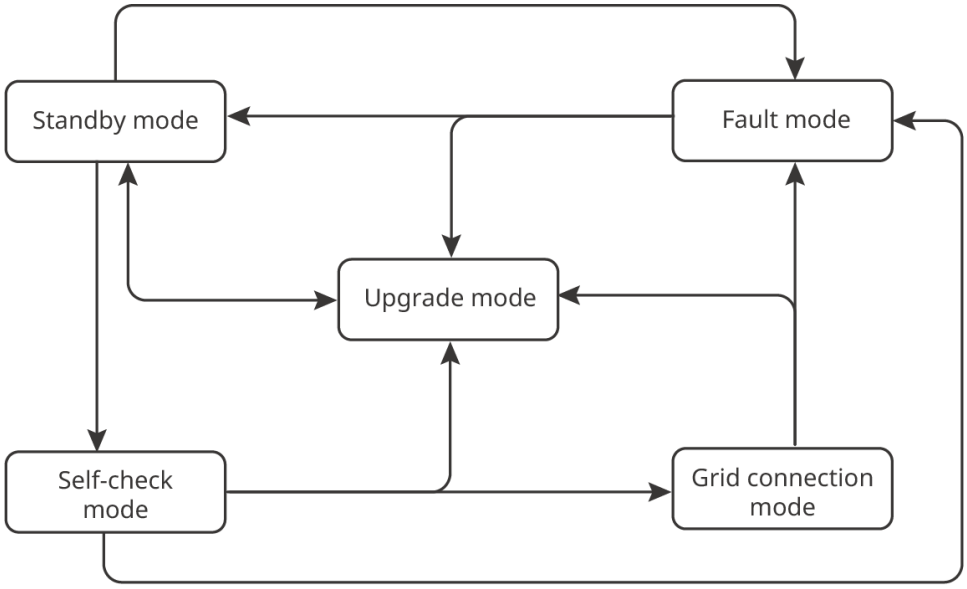
PID recovery (optional)

During PV module operation, the potential difference between the output electrodes and the grounded module frame can, over time, reduce power generation efficiency. This phenomenon is known as potential-induced degradation (PID).
The inverter's PID function suppresses PID by raising the voltage of the PV modules relative to their frames, creating a positive voltage bias (referred to as positive-bias elevation). It is suitable for P-type modules and N-type modules that require a raised positive bias to suppress PID. For N-type modules that require a reduced negative bias to suppress PID, it is recommended that this function be disabled. Consult the module supplier to determine whether an N-type module requires a raised positive bias for PID suppression.

Nighttime SVG (optional)
The nighttime SVG (Static Var Generator) function allows the inverter to provide reactive power compensation at night or when there is no solar input, improving the grid power factor, reducing grid losses, and maintaining voltage stability.

Nighttime power supply (optional)
When sunlight is insufficient or unavailable at night, the inverter can draw power from the grid to maintain essential functions, such as monitoring, communications, and safety modules. This enables functions such as 24-hour load monitoring and remote nighttime upgrades.

2.6 Inverter Operating Modes



OMNET0001

No.	Component	Description
1	Standby mode	The inverter enters the waiting phase after power-on. • When the conditions are met, the inverter enters self-check mode. • If a fault occurs, the inverter enters fault mode. • If an upgrade request is received, the inverter enters upgrade mode.
2	Self-check mode	Before startup, the inverter continuously performs self-checks, initialization, and other processes. • If the conditions are met, the inverter enters grid-connected mode and starts grid-connected operation. • If an upgrade request is received, the inverter enters upgrade mode. • If the self-check fails, the inverter enters fault mode.
3	Grid-connected mode	The inverter is operating normally in grid-connected mode. • If a fault is detected, the inverter enters Fault Mode. • If an upgrade request is received, the inverter enters upgrade mode.

4	Fault Mode	If a fault is detected, the inverter enters Fault Mode. Once the fault is cleared, it enters Standby Mode. After Standby Mode ends, the inverter checks its operating status and then enters the next operating mode.
5	Upgrade Mode	The inverter enters this state while its firmware is being updated. Once the update is complete, it enters Standby Mode. After Standby Mode ends, the inverter checks its operating status and then enters the next operating mode.

3 Equipment Inspection and Storage

3.1 Equipment Inspection

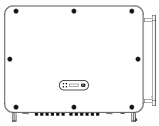
Before accepting the product, carefully check the following:

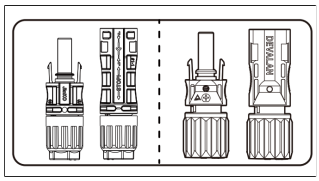
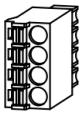
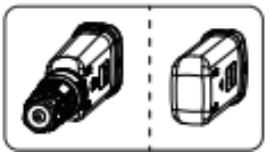
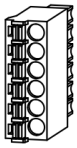
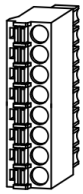
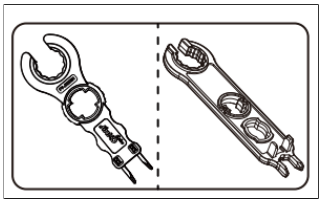
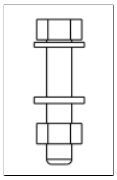
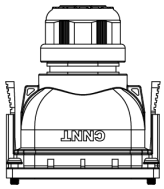
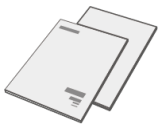
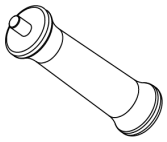
1. Check the outer packaging for damage, such as deformation, punctures, cracks, or any other signs that may indicate damage to the equipment inside. If damaged, do not open the package and contact your distributor.
2. Check that the inverter model is correct. If it does not match, do not open the package and contact your distributor.
3. Check that the type and quantity of the delivered items are correct and that they are undamaged. If anything is damaged, contact your distributor.

3.2 Items Supplied

NOTICE

- When making electrical connections, use the terminals supplied with the product. Equipment damage caused by using incompatible connectors is not covered by the warranty.
- The number of fasteners and pin terminals supplied varies depending on the inverter configuration. Please refer to the actual items supplied.
- N indicates that the quantity of accessories supplied depends on the product configuration.

Component	Quantity	Component	Quantity
	Inverter x 1		Mounting bracket x 1

	2-pin terminal x N		DC connector x 16 or DC connector x 14
	4-pin terminal x N		Smart communication stick x 1
	6-pin terminal x 1		8-pin terminal x N
	Tubular terminal x N		DC connector wrench x 2
	Combination screw x 4		Communication protective cover x 1
	Product documentation x 1		Handle x 1

N≥0: Quantity depends on the product configuration

3.3 Equipment Storage

If the equipment will not be put into operation immediately, store it according to the following requirements:

1. Ensure that the outer packaging is not opened and that the desiccant inside the package is intact.
2. Ensure that the storage environment is clean, with suitable temperature and humidity and no condensation.
3. Stack the inverters in the orientation and to the maximum height specified on the packaging labels.
4. Ensure that the stacked inverters are stable and cannot topple.
5. If the inverter has been in storage for more than two years, or has been installed but not operated for more than 6 months, have it inspected and tested by qualified personnel before use.
6. To ensure that the inverter's internal electronic components remain in good electrical condition, it is recommended that the inverter be energized once every 6 months during storage. If it has not been energized for more than 6 months, have it inspected and tested by qualified personnel before use.

4 Installation

4.1 Installation Requirements

Installation Environment Requirements

1. Do not install the equipment in environments that are flammable, explosive, or corrosive.
2. The mounting structure must be sturdy and reliable and capable of supporting the inverter's weight.
3. The installation space must meet the equipment's ventilation, heat dissipation, and operating clearance requirements.
4. The equipment's ingress protection rating is suitable for indoor and outdoor installation. The temperature and humidity at the installation site must be within the specified range.
5. Install the inverter in a location protected from direct sunlight, rain, and snow accumulation. Installation in a sheltered location is recommended; install a sunshade if necessary.
6. Install the inverter out of children's reach and avoid locations where it can be easily touched. The surface may become hot during operation, posing a burn hazard.
7. Install the equipment at a height that allows easy operation and maintenance. Ensure that the indicator lights and all labels are easy to see, and that the terminals are easy to access.
8. The inverter installation altitude must be below its maximum operating altitude of 4000 m.
9. Inverters installed in salt-affected areas are subject to corrosion. Salt-affected areas are those within 1000 m of the coast or exposed to sea breezes. The areas affected by sea breezes vary depending on weather conditions (such as typhoons and seasonal winds) and terrain (such as the presence of dikes or hills).
10. Keep the equipment away from strong magnetic fields to avoid electromagnetic interference. If a radio station or wireless communication equipment operating below 30 MHz is located near the installation site, install the equipment as follows:

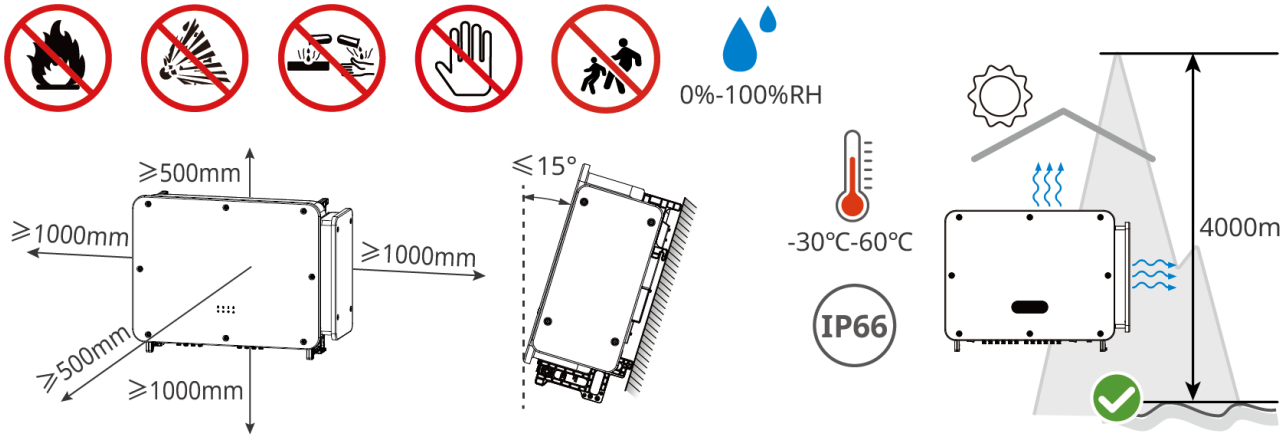
- Install a ferrite core with multiple turns on the inverter's DC input cables or AC output cables, or install a low-pass EMI filter.
- Maintain a distance of more than 30 m between the inverter and wireless equipment that may cause electromagnetic interference.

Mounting Structure Requirements

- The mounting structure must not be made of flammable materials and must be fire-resistant.
- Ensure that the mounting surface is sturdy and capable of supporting the equipment's weight.
- The equipment vibrates during operation. Do not install it on a structure with poor sound insulation, as operating noise may disturb residents in living areas.

Installation Angle Requirements

- Recommended inverter installation angle: vertical or tilted backward ≤ 15°.
- Do not install the inverter upside down, tilted forward, tilted backward beyond the specified angle, or horizontally.



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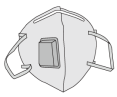
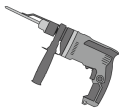
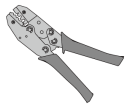
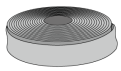
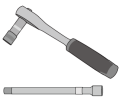
Installation Tool Requirements

The following installation tools are recommended. Other auxiliary tools may be used on site as needed.

Tool Type	Description	Tool Type	Description
	Insulated gloves, protective gloves		Dust mask
	Safety goggles		Safety shoes

	Torque wrench		Hammer drill
	Diagonal cutters		Heat gun
	Wire stripper		Terminal crimping tool
	Rubber mallet		Marker
	Multimeter		Heat-shrink tubing
	Vacuum cleaner		Spirit level
	Open-end wrench		Jinko DC release tool
	Socket tool		

4.2 Installing the Inverter

4.2.1 Moving the Inverter

⚠CAUTION

Before installation, move the inverter to the installation location. To prevent personal injury or equipment damage during handling, observe the following precautions:

1. Assign enough personnel according to the equipment weight to ensure it does not exceed the weight that can be safely handled, which could otherwise cause injury if dropped.
2. Wear safety gloves to prevent injury.
3. Keep the equipment balanced during transport to prevent it from falling.

4.2.2 Installing the Inverter

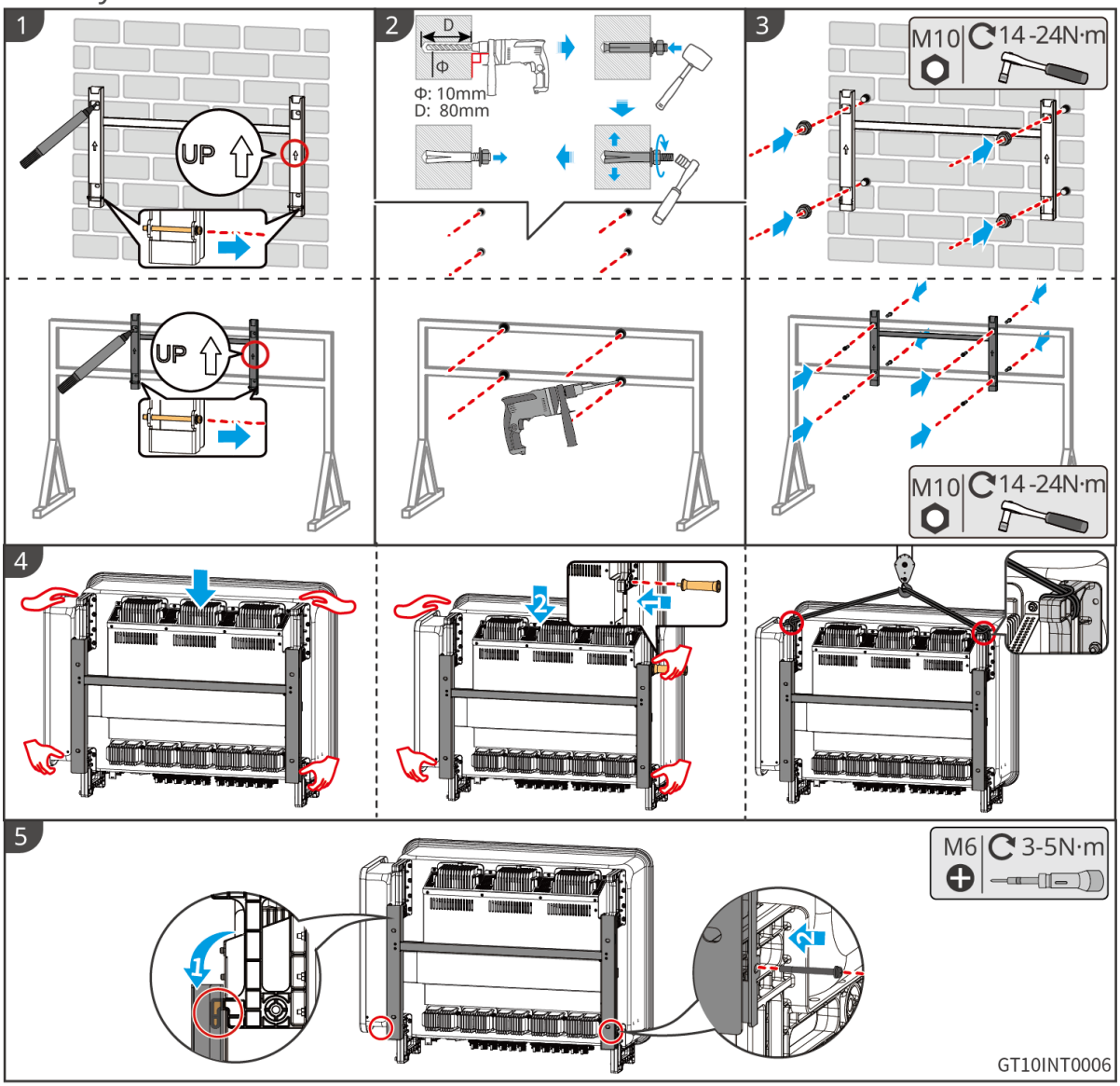
NOTICE

- When drilling, make sure the drilling locations avoid water pipes, cables, and other objects inside the wall to prevent hazards.
- When drilling, wear safety goggles and a dust mask to prevent dust from entering your respiratory tract or eyes.
- Make sure the drilling locations avoid water pipes, cables, and other objects inside the wall to prevent hazards.
- If a mounting bracket is required to install the inverter, provide the bracket yourself and secure it properly.
- To purchase handles or lifting eyes, contact the after-sales service center.
- The illustrations in this document are for reference only. Appearance may vary between different models or versions of the same model. Refer to the actual product.

Step 1: Place the backplate horizontally against the wall or on the mounting bracket, and mark the drilling locations with a marker.
Step 2: Use a hammer drill with a 10 mm drill bit to drill holes approximately 80 mm deep.
Step 3: Use expansion bolts to secure the backplate to the wall or mounting bracket.
Step 4: Install handles or lifting eyes on both sides of the inverter. Have the installers carry or hoist the inverter using the handles or lifting eyes, then hang it on the wall-

mounted bracket.

Step 5 : Secure the wall-mounted bracket to the inverter and make sure the inverter is firmly installed.



5 Electrical Connections

5.1 Safety Precautions

DANGER

- Before making electrical connections, turn off the inverter's DC switch and AC output switch, and make sure the equipment is de-energized. Never perform work on energized equipment, as this may result in electric shock or other hazards.
- All operations performed and the specifications of cables and components used during electrical connection must comply with local laws and regulations.
- Excessive tension on a cable may result in a poor connection. When wiring, leave sufficient cable slack before connecting the cable to the inverter terminal.

NOTICE

- When making electrical connections, wear personal protective equipment as required, including safety shoes, protective gloves, and insulating gloves.
- Only qualified personnel may perform electrical connection work.
- The cable colors in the illustrations in this document are for reference only. Actual cable specifications must comply with local regulations.
- The illustrations in this document are for reference only. Appearance may vary between different models or versions of the same model. Refer to the actual product.

Cable Specification Requirements

Cable	Type	Cable Specifications	
		Diameter	Conductor cross-sectional area (mm^2)

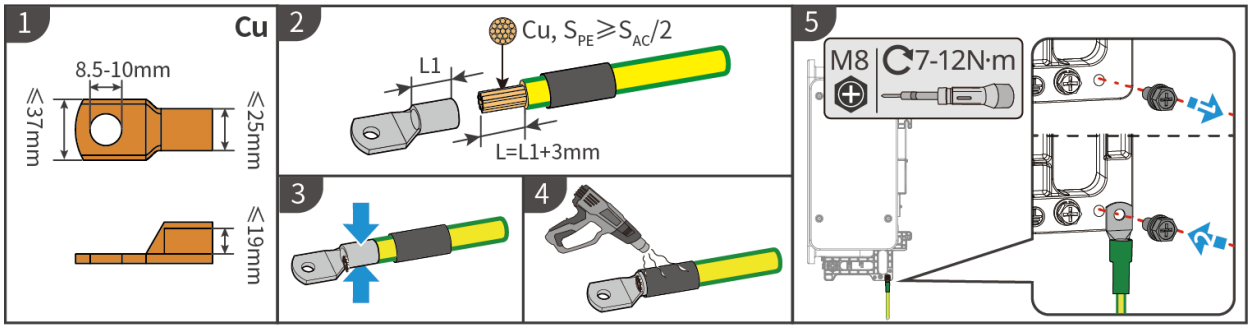
DC cable	PV cable compliant with the 1100 V standard	4.7 - 6.4	Recommended: 4–6	
AC cable	Outdoor single-core stranded copper/aluminum cable[1]	14~34	S_{AC}: Copper core: 95–400	S_{AC}: Aluminum core: 120–400
	Outdoor multicore stranded copper/aluminum cable[1]	22~66	S_{AC}: Copper core: 95–240	S_{AC}: Aluminum core: 120–240
Protective earth conductor	Outdoor cable	S_{PE}1/2 S_{AC}		
Communication cable	Outdoor shielded twisted-pair cable compliant with local standards[2]	4~6	0.2~0.5	

Note: [1] When using aluminum cable, connect it using a copper-aluminum transition terminal.
[2] The total communication cable length must not exceed 1000 m.
[3] The values in this table are valid only when the external protective earthing conductor is made of the same metal as the phase conductor. Otherwise, the cross-sectional area of the external protective earthing conductor must provide equivalent conductivity to that specified in this table.

5.2 Connecting the Protective Earth Conductor

⚠WARNING

- The protective earthing of the enclosure does not replace the protective earth conductor at the AC output port. When wiring, ensure that the protective earth conductors at both locations are securely connected.
- If multiple inverters are installed, ensure that the protective earthing points on all inverter enclosures are equipotentially bonded.
- To improve the corrosion resistance of the terminal, after completing the protective earth conductor connection, apply silicone sealant or paint to the outside of the grounding terminal for protection.
- Prepare the protective earth conductor and terminals according to the recommended specifications.
  Grounding conductors of other sizes that comply with local standards and safety regulations may also be used for the grounding connection. However, the equipment manufacturer is not liable for any damage resulting from this.



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5.3 Connecting the AC Output Cables

⚠WARNING

- Do not connect a load between the inverter and the AC switch directly connected to the inverter.
- The inverter has an integrated residual current monitoring unit (RCMU). If the inverter detects leakage current exceeding the permitted value, it will quickly disconnect from the grid.

Determine whether to install an RCD (residual current device) in accordance with local laws and regulations. An external Type A RCD can be connected to the inverter to provide protection when the DC component of the leakage current exceeds the

limit. The following RCD specifications are for reference:

Inverter model	RCD specifications
GW150K-GT-G10	1500mA
GW100K-GT-L-G10	1000mA

NOTICE

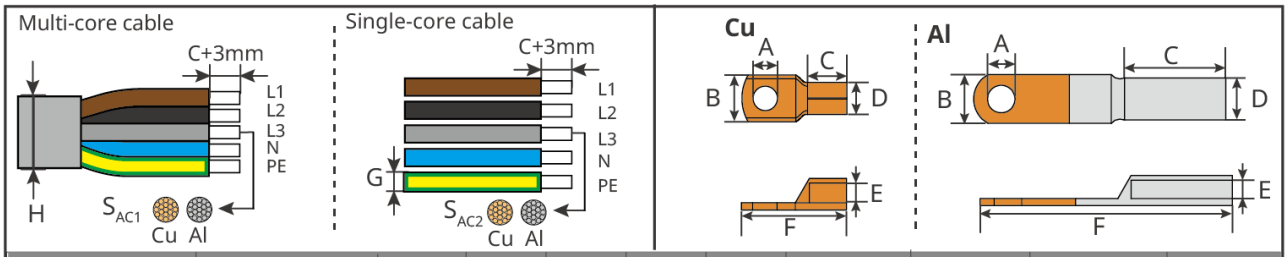
Each inverter must be equipped with an AC output switch. Multiple inverters must not be connected to the same AC switch.

To ensure that the inverter can be safely disconnected from the grid in the event of an abnormal condition, install an AC switch on the AC side of the inverter. Select a suitable AC switch in accordance with local regulations. The following switch specifications are for reference:

Inverter model	AC switch specifications
GW150K-GT-G10	315A/400V
GW100K-GT-L-G10	

⚠WARNING

- When wiring, match the AC output cable conductors exactly to the "L1," "L2," "L3," "N," and "PE" terminals on the AC terminal block. Incorrect cable connections will damage the inverter.
- Ensure that the conductor cores are fully inserted into the wiring holes of the AC terminal block, with no exposed conductor.
- Ensure that the cables are securely connected; otherwise, the wiring terminals may overheat during operation and damage the inverter.
- The AC output terminals support three-phase, four-wire and three-phase, five-wire connection configurations. The applicable configuration depends on the actual wiring scenario. This document uses the three-phase, five-wire configuration as an example.
- Leave sufficient slack in the protective earth conductor to ensure that it is the last conductor to bear the load if the AC output cable is subjected to tension due to force majeure.
- The waterproof silicone grommet for the AC cable outlet is supplied with the inverter and is located in the inverter's AC wiring compartment. Select the grommet opening that matches the cable size used.
- Provide your own OT terminals for the AC connections.
- When using aluminum conductors, connect copper-to-aluminum transition terminals.



Cable Material	Cable Type	A (mm)	B (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	S_{AC1} (mm²)	S_{AC2} (mm²)
Cu	L1/L2/L3	12.5-14	⩽50	⩽34	⩽27	⩽170	Φ:14-34	Φ:22-66	95-240	95-400
	N	12.5-14	⩽37	⩽25	⩽19	-			$S_{AC1}/2$	$S_{AC2}/2$
	PE	8.5-10								
Al	L1/L2/L3	12.5-14	⩽50	⩽38	⩽27	⩽170	Φ:14-34	Φ:22-66	120-240	120-400
	N	12.5-14	⩽37	⩽27	⩽19	⩽133			$S_{AC1}/2$	$S_{AC2}/2$

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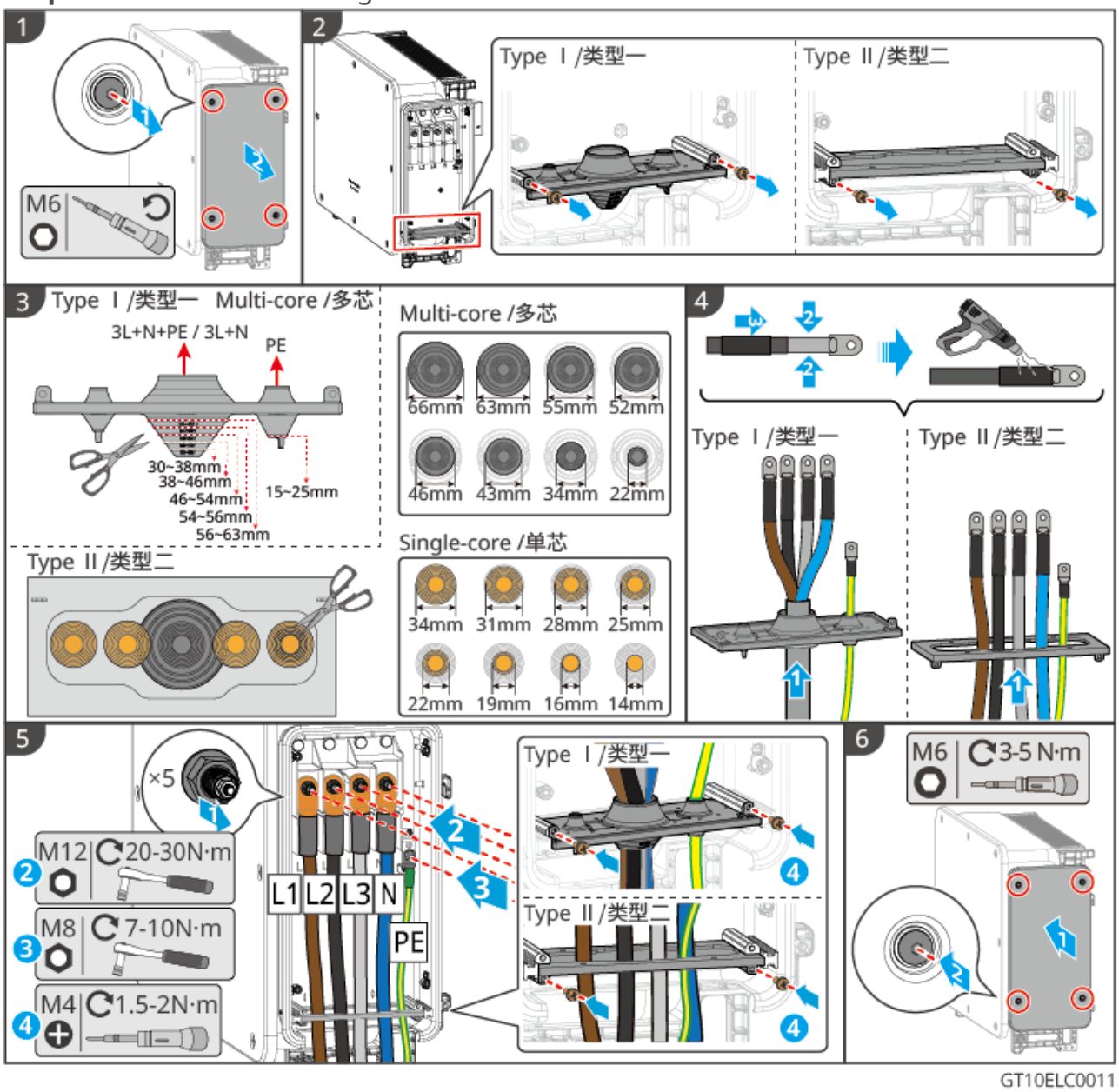
Step 1: Remove the AC wiring cover.

Step 2: Remove the nut and silicone grommet.

Step 3: Select the opening that matches the AC cable diameter, then cut out the corresponding cable entry hole in the silicone grommet.
Step 4: Pass the cable through the silicone grommet.
Step 5: Crimp the OT terminal onto the AC cable to prepare the AC output cable.
Step 6: Secure the AC cable to the inverter.
Step 7: Secure the AC wiring cover.



5.4 Connecting the DC Input Cables

DANGER

1. Do not connect the same PV string to multiple inverters, as this may damage the inverters.
2. PV strings do not support grounding. Before connecting PV strings to the inverter, ensure that their minimum insulation resistance to ground meets the minimum insulation resistance requirement.
3. Use the DC connectors supplied with the inverter to connect the inverter's DC cables.
4. Before connecting PV strings to the inverter, verify the following. Failure to do so may cause permanent damage to the inverter and, in severe cases, fire resulting in personal injury or property damage. Damage or injury caused by failure to follow this document or the applicable user manual is not covered by the warranty.

- Ensure that the positive terminal of each PV string is connected to the inverter's PV+ terminal and the negative terminal to the PV– terminal.
- Ensure that the open-circuit voltage of the PV strings connected to each MPPT does not exceed 1100 V. When the input voltage is between 1000 V and 1100 V, the inverter enters standby mode. When the voltage returns to 180 V–1000 V, the inverter resumes normal operation.

WARNING

- PV strings connected to the same MPPT must use PV modules of the same model and quantity.
- To maximize inverter power generation efficiency, ensure that the maximum power point voltage of the PV modules connected in series is within the inverter's MPPT full-load voltage range.
- Ensure that the voltage difference between different MPPTs is less than or equal to 150 V.
  Ensure that the input current of each MPPT is less than or equal to the inverter's maximum input current per MPPT. See Technical Data.
- When connecting multiple PV strings to the inverter's DC inputs, maximize the number of MPPTs used.

PV string connection configuration

NOTICE
For optimal power generation, connect the PV strings as follows.

If there are 10 or fewer PV strings, connect them to the inverter in sequence from MPPT1 to MPPT10.
If there are more than 10 PV strings, connect them to the inverter as shown in the table below.

●:Connect a stringPV string

●●: Connect two PV strings

Number of PV strings	MPPT 1	MPPT 2	MPPT 3	MPPT 4	MPPT 5	MPPT 6	MPPT 7	MPPT 8	MPPT 9	MPPT 10
11	●●	●	●	●	●	●	●	●	●	●
12	●●	●●	●	●	●	●	●	●	●	●
13	●●	●●	●●	●	●	●	●	●	●	●
14	●●	●●	●●	●●	●	●	●	●	●	●
15	●●	●●	●●	●●	●	●	●●	●	●	●
16	●●	●●	●●	●●	●	●	●●	●●	●	●
17	●●	●●	●●	●●	●	●	●●	●●	●	●●
18	●●	●●	●●	●●	●	●	●●	●●	●●	●●
19	●●	●●	●●	●●	●●	●	●●	●●	●●	●●
20	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●

NOTICE
If no PV string is to be connected to an inverter DC input terminal, seal the terminal with a waterproof cap; otherwise, the equipment's ingress protection rating may be affected.

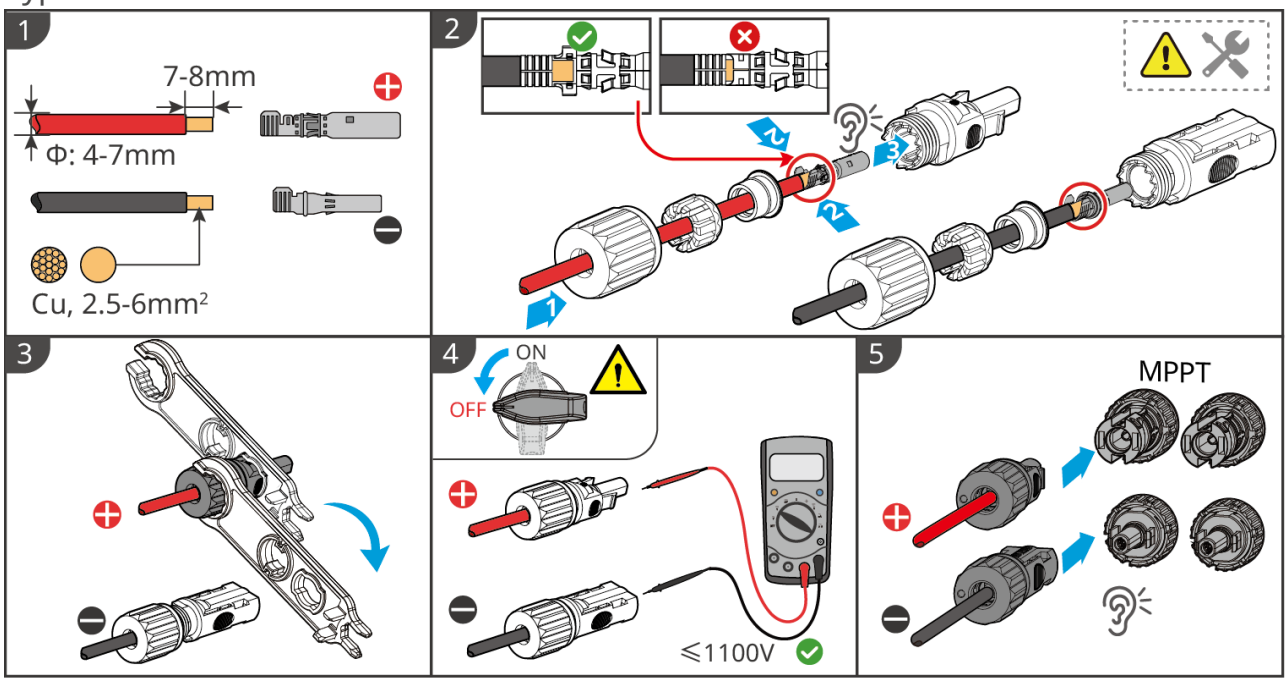
Step 1: Prepare the DC cables.
Step 2: Disassemble the DC connector. Crimp the DC terminals and assemble the DC connector.

Step 3: Tighten the DC connector.

Step 4: Measure the DC input voltage.

Step 5: Connect the DC connectors to the inverter's DC terminals.

Type 1:



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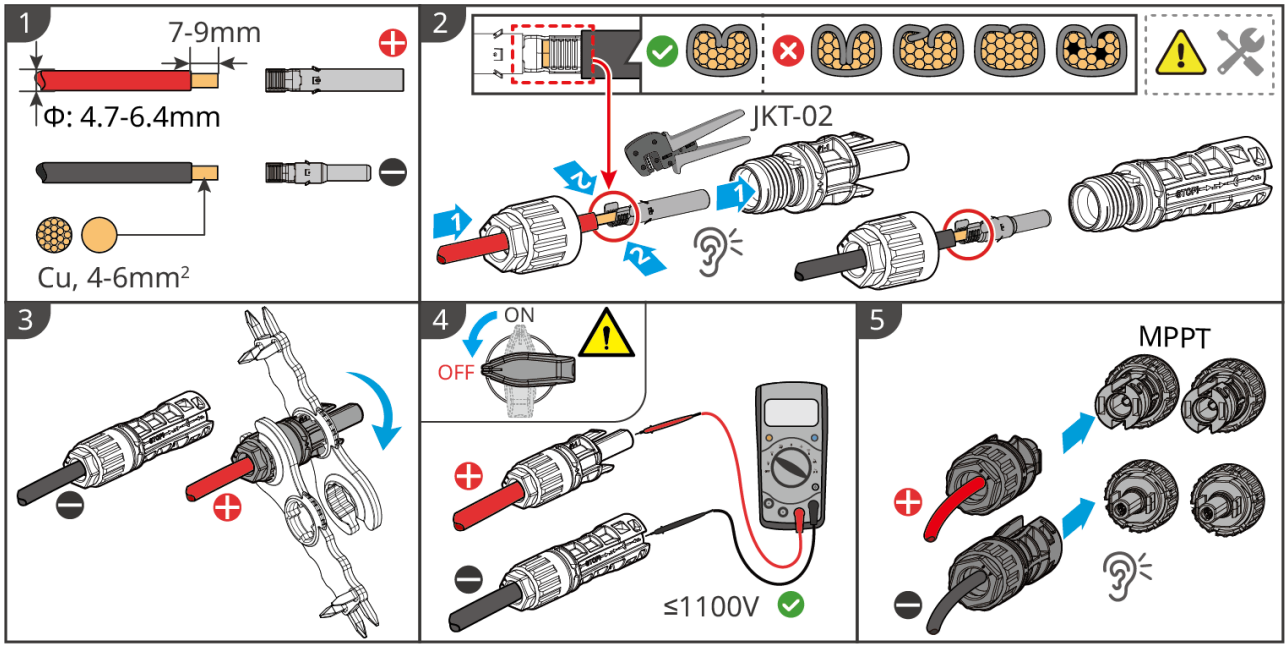
Type II:



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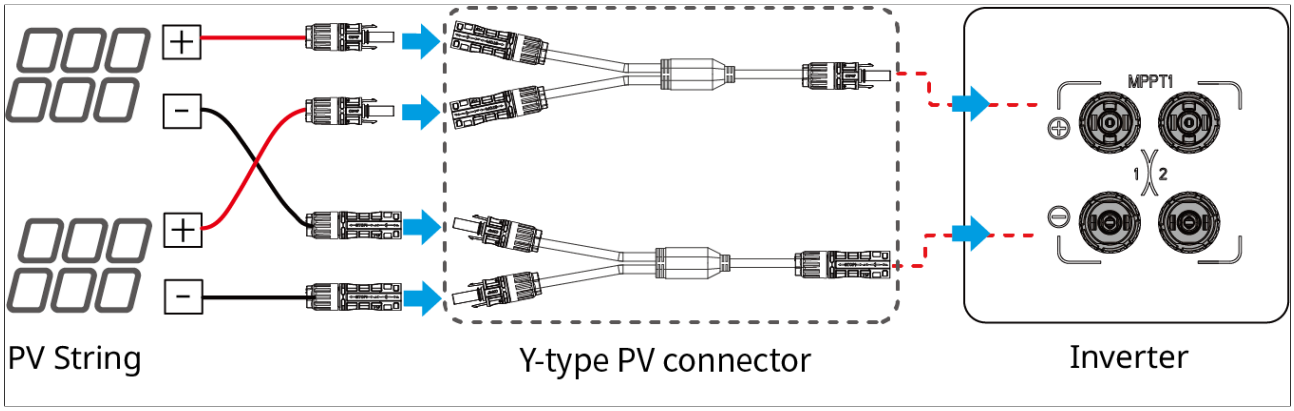
Y-type PVconnector (optional)

NOTICE

1. If Y-type connectors are used, ensure that their DC connector type matches the specifications of the inverter PV input terminals. Equipment damage caused by incompatible Y-type connectors is not covered by the equipment manufacturer's warranty.
2. Ensure that all PV strings connected to a single MPPT via Y-type connectors have the same configuration, including module type, number of modules, tilt angle, and azimuth.
3. The total current of the strings connected via Y-type connectors must be less than the maximum current per PV input.



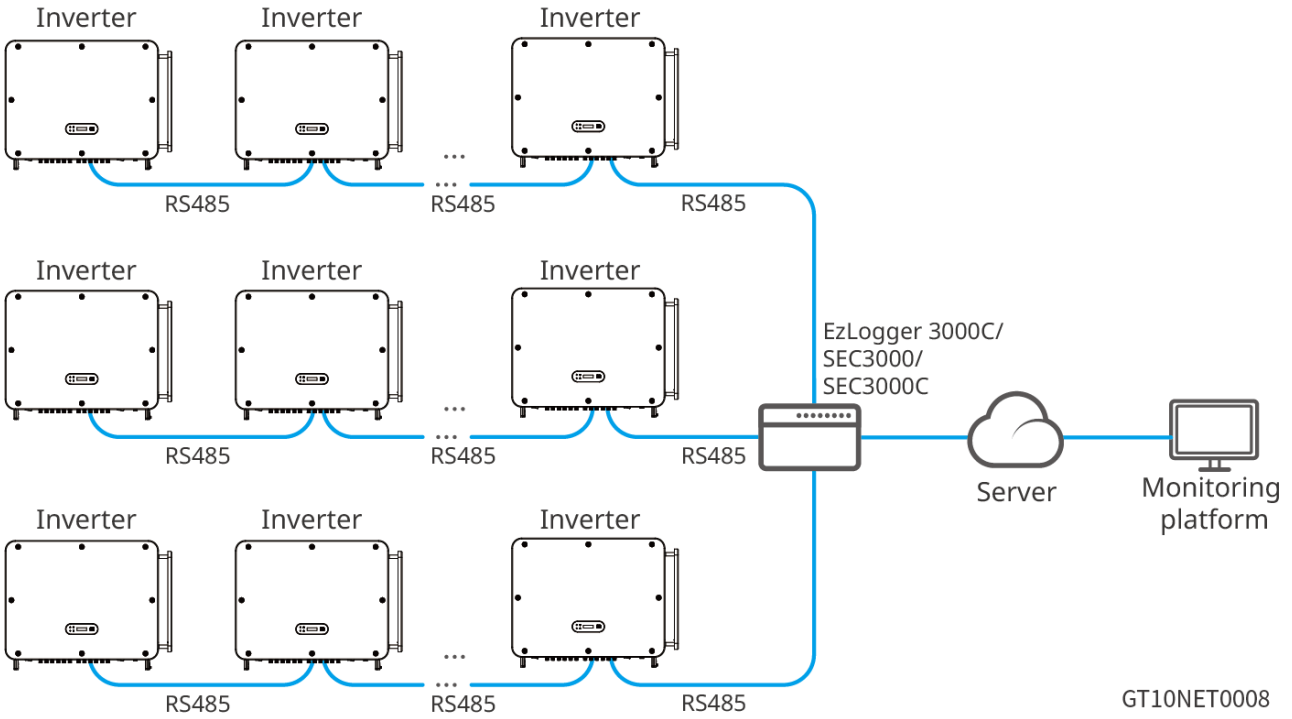
5.5 Communication Connections

- The inverter supports connection to other inverters, meters, data loggers (EzLogger3000C), Smart Communication Boxes (SEC3000/SEC3000C), and other devices via RS485, enabling functions such as parallel system networking, grid feed-in power limitation, and nighttime power supply.
- The inverter supports connection to a mobile phone or web interface via a smart communication dongle, allowing users to configure device parameters, view operating and error information, and upload system operating data to a monitoring platform to keep track of system status.

5.5.1 RS485 Communication Network Topology

NOTICE

- When multiple inverters are networked over RS485 using a data logger, multiple inverters can be connected to each COM port of the data logger. With EzLogger3000C, up to 20 inverters can be connected to each COM port. With SEC3000/SEC3000C, up to 20 inverters can be connected to each COM port. The total RS485 cable length for each COM port must not exceed 1000 m.
- When multiple inverters operate in parallel, configure the following settings according to the parallel system configuration to ensure reliable communication:
  Smart Data Logger / Smart Energy Controller: Set the termination resistor DIP switch on the last inverter to ON
  Ezlink3000: Set the termination resistor DIP switches on both the first and last inverters to ON



5.5.2 Grid Feed-in Power Limitation

When a PV plant's generation is used for self-consumption but the loads cannot consume all the generated power, the excess power must be fed into the grid. A smart meter, smart data logger, Smart Energy Controller SEC3000/SEC3000Cor smart communication dongle Ezlink 3000 can be used to monitor the plant's power generation and control the amount of power fed into the grid.

⚠WARNING

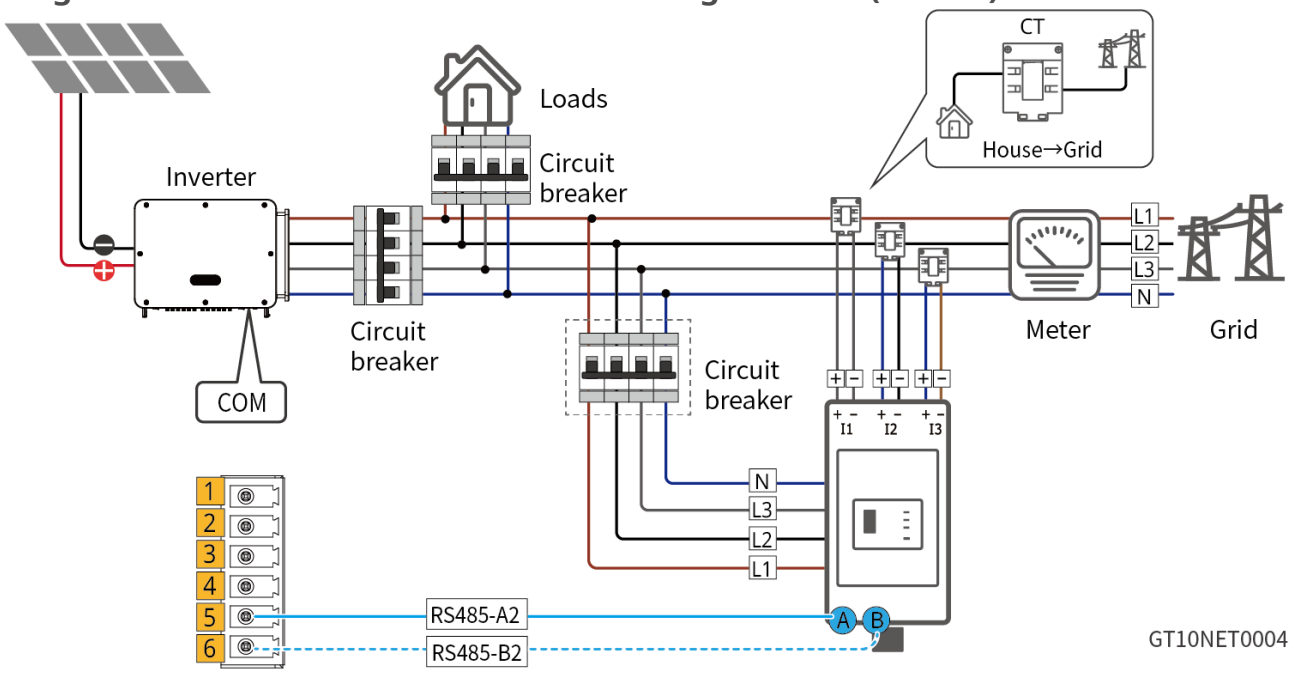
1. Install the CT close to the point of interconnection and ensure it is oriented correctly. The "-->" marking on the CT indicates the direction of current flow from the inverter to the grid. If installed in the reverse direction, the inverter will trigger an alarm and the export limitation function will not work.
2. The CT aperture must be larger than the outside diameter of the AC power cable to allow the cable to pass through the CT.
3. For details on CT wiring, refer to the relevant manufacturer's documentation and ensure that the wiring direction is correct for proper operation.
4. Clamp the CT around the L1, L2, and L3 cables. Do not clamp it around the N cable.
5. CT Specifications:
   - Select a CT current ratio of nA/5A. (nA: CT primary-side input current; n ranges from 200 to 5000 and should be selected by the user according to actual requirements. 5A: CT secondary-side output current.)
   - A CT accuracy class of 0.5, 0.5s, 0.2, or 0.2s is recommended to ensure that the CT current measurement error is ≤1%.
6. To ensure CT current measurement accuracy, the CT cable length should not exceed 30 m. A cable ampacity of 6 A is recommended.

NOTICE

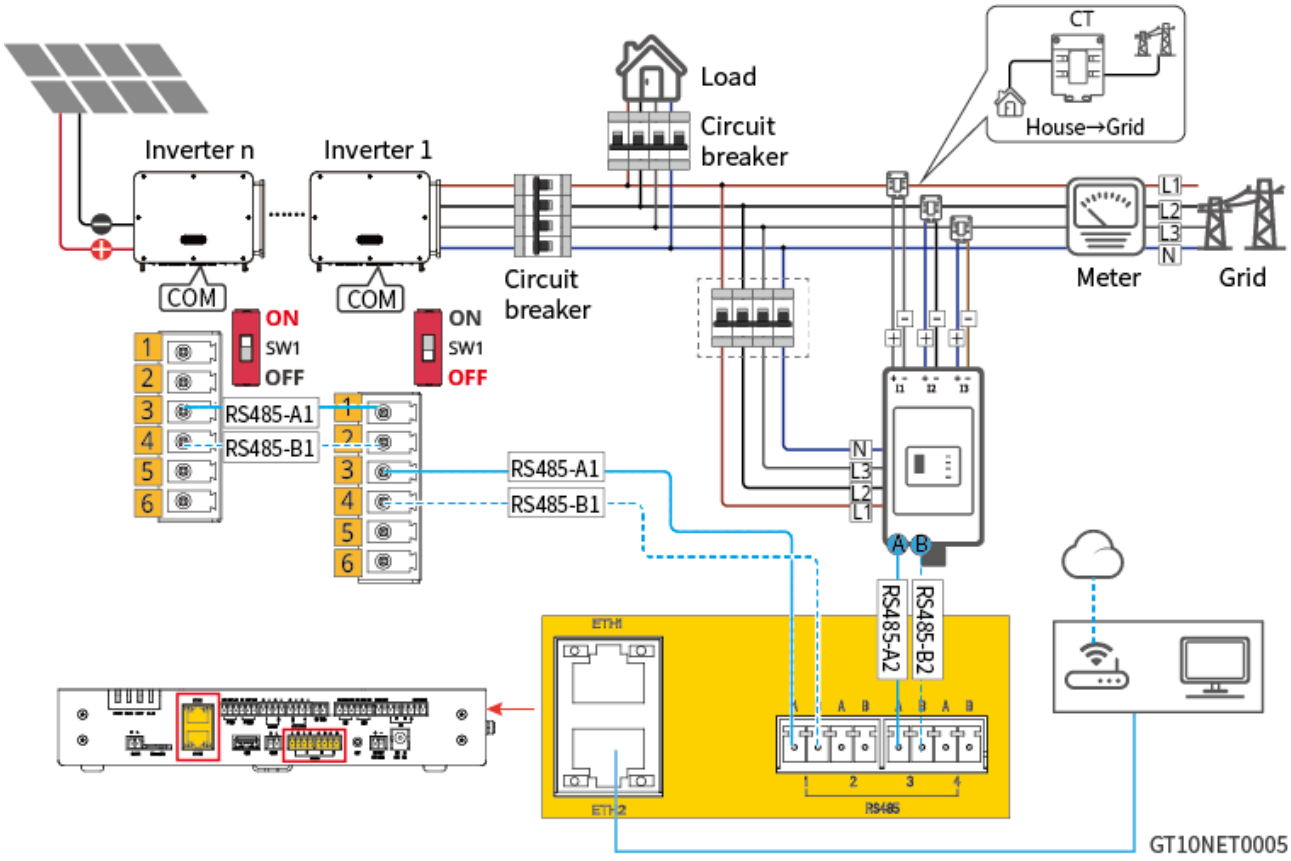
1. Ensure that the meter wiring and phase sequence are correct. The recommended cross-sectional area for the meter voltage input cable is 1 mm^2 (18 AWG).
2. Applicable to GM330 only:

- The external CT ratio can be configured using the SolarGo App. For example, if a 200 A/5 A CT is used, set the CT ratio to 40.
- For a three-phase, three-wire networking configuration, short-circuit the N and L2 terminals on the meter side.
- For detailed configuration instructions, refer to the SolarGo App User Manual

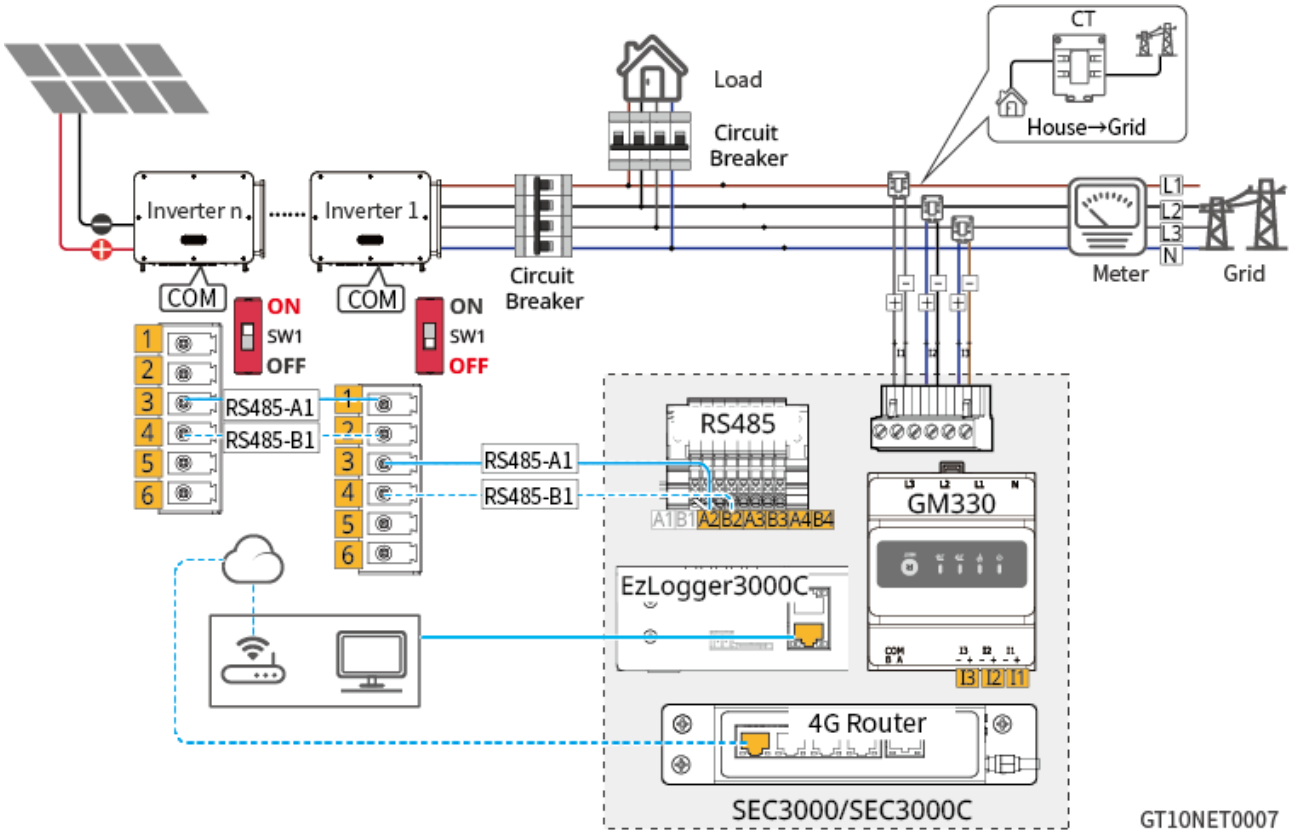
Single-Inverter Power LimitationNetworking Solution (GM330)



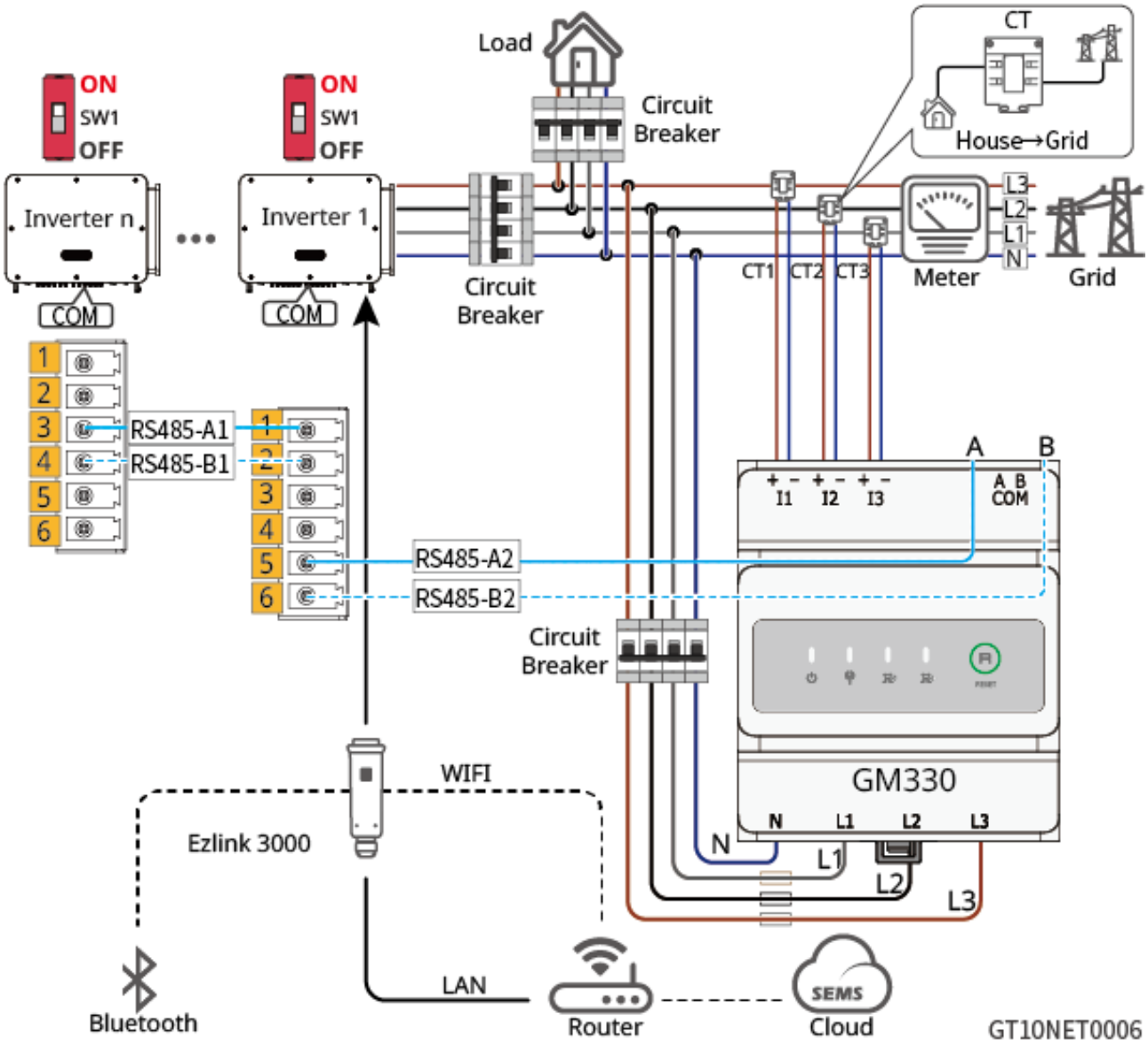
Multi-Inverter Power Limitation Networking Solution (EzLogger3000C+GM330)



Multi-Inverter Power Limitation Networking Solution (SEC3000/SEC3000C)



Multi-Inverter Power Limitation Networking Solution (Ezlink3000)

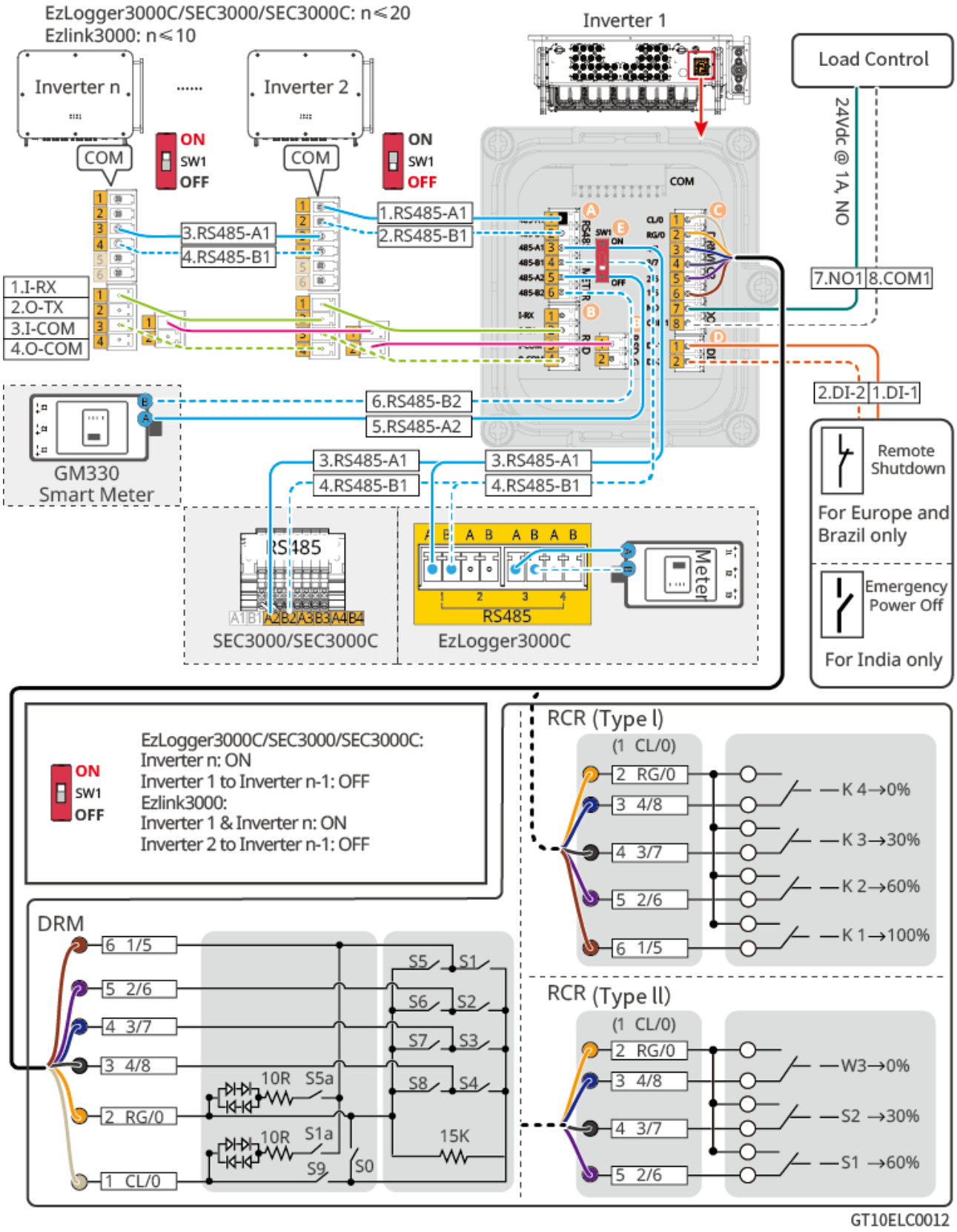


5.5.3 Connecting Communication Cables

NOTICE

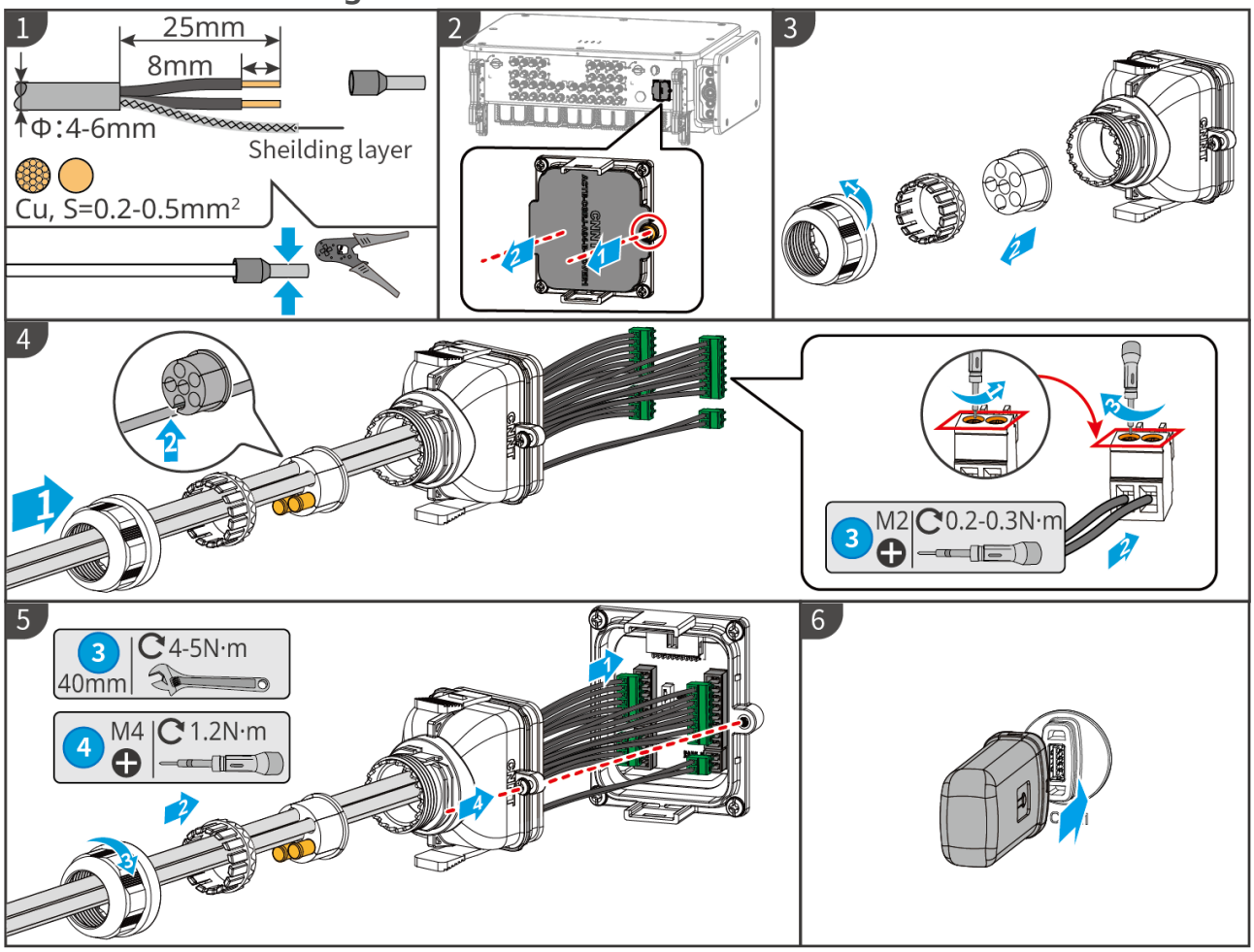
- When connecting communication cables, ensure that the terminal definitions exactly match those of the device. Route cables away from sources of interference, such as power cables, to avoid affecting signal reception.
- Remote shutdown and EPO functions are disabled by default. To use them, enable them in the SolarGo App. For details, refer to the SolarGo App User Manual.
- When multiple inverters operate in parallel, configure the following settings according to the parallel system configuration to ensure reliable communication:
  Smart Data Logger / Smart Energy Controller: Set the termination resistor DIP switch on the last inverter to ON
  Ezlink3000: Set the termination resistor DIP switches on both the first and last inverters to ON

Communication Port


EzLogger3000C/SEC3000/SEC3000C: n≤20
Ezlink3000: n≤10
Inverter n
Inverter 2
Inverter 1
COM
ON
SW1
OFF
1.RS485-A1
2.RS485-B1
3.RS485-A1
4.RS485-B1
1.I-RX
2.O-TX
3.I-COM
4.O-COM
6.RS485-B2
5.RS485-A2
GM330
Smart Meter
RS485
A1B1A2B2A3B3A4B4
SEC3000/SEC3000C
EzLogger3000C
Meter
Load Control
24Vdc @ 1A, NO
7.NO1
8.COM1
2.DI-2
1.DI-1
Remote Shutdown
For Europe and Brazil only
Emergency Power Off
For India only
EzLogger3000C/SEC3000/SEC3000C:
Inverter n: ON
Inverter 1 to Inverter n-1: OFF
Ezlink3000:
Inverter 1 & Inverter n: ON
Inverter 2 to Inverter n-1: OFF
DRM
6 1/5
5 2/6
4 3/7
3 4/8
2 RG/0
1 CL/0
10R
S5a
S1a
S9
S0
15K
S5
S1
S6
S2
S7
S3
S8
S4
RCR (Type I)
(1 CL/0)
2 RG/0
3 4/8
4 3/7
5 2/6
6 1/5
K 4→0%
K 3→30%
K 2→60%
K 1→100%
RCR (Type II)
(1 CL/0)
2 RG/0
3 4/8
4 3/7
5 2/6
W3→0%
S2 →30%
S1 →60%
GT10ELC0012

Function	Area	No.	Port Name	Description
RS485	A	1	RS485-A1	Used for communication with multiple inverters, data loggers, and smart communication boxes
		2	RS485-B1	
		3	RS485-A1	
		4	RS485-B1	
		5	RS485-A2	Used for communication with a smart meter
		6	RS485-B2	
RSD (Rapid Shutdown)	B	1	I-RX	Used for parallel communication between multiple inverters when implementing the RSD function.
		2	O-TX	
		3	I-COM	
		4	O-COM	
		1	RSD-GND	
		2	RSD-GND	
DRM/RCR	C	1	CL/0	Connect a DRED device (Australia only) or an RCR device (Europe only)
		2	RG/0	
		3	4/8	
		4	3/7	
		5	2/6	
		6	1/5	
Dry Contact		7	NO1	Used to control diesel generator startup. The DO contact rating is 24 VDC at 1 A, NO (normally open).
		8	COM1	
Remote Shutdown	D	1	DI-1	Connect a remote shutdown device (European or Brazilian models only) or an emergency shutdown device (India only).
		2	DI-2	

Communication Wiring



GT10ELC0013

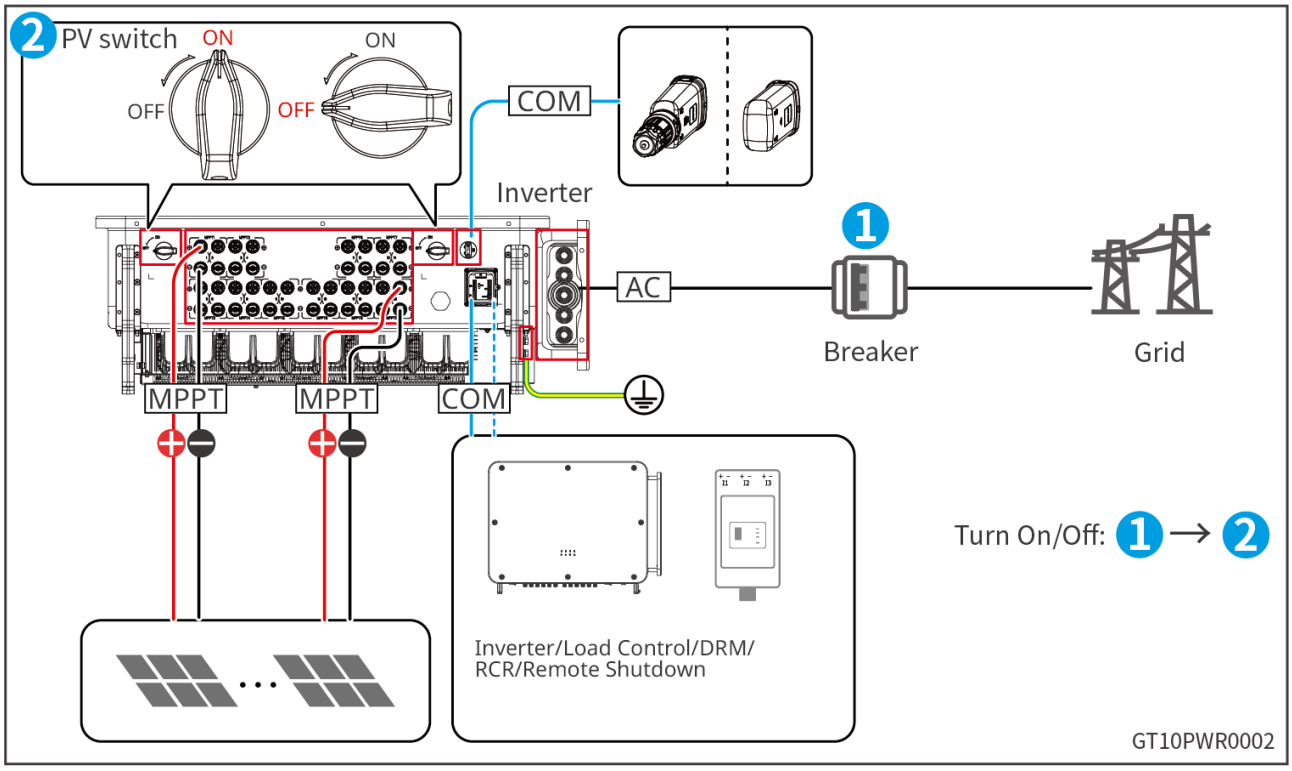
6 Equipment Commissioning

6.1 Pre-Energization Inspection

No.	Inspection Item
1	The inverter is securely installed, its location allows for easy operation and maintenance, the installation clearance allows for ventilation and heat dissipation, and the installation environment is clean and tidy.
2	The protective earth, DC input, AC output, and communication cables are connected correctly and securely.
3	Cables are secured and routed as required, are arranged properly, and are undamaged.
4	Unused ports are sealed.
5	The voltage and frequency at the inverter grid connection point meet grid-connection requirements.

6.2 Energizing the Equipment

Step 1: Close the AC switch between the inverter and the grid.
Step 2: Close the inverter's DC switch.


2
PV switch
ON
OFF
ON
OFF
COM
Inverter
AC
1
Breaker
Grid
MPPT
MPPT
COM
Turn On/Off: 1 → 2
Inverter/Load Control/DRM/
RCR/Remote Shutdown
GT10PWR0002

7 System Commissioning

7.1 Configuring Inverter Parameters via the App

SolarGo is a mobile app that communicates with inverters via Bluetooth or Wi-Fi. Its commonly used functions include:

1. Viewing inverter operating data, software versions, alarm information, and more.
2. Configuring inverter grid parameters, communication parameters, and more.
3. Maintaining the equipment.

For detailed information about the functions, see the SolarGo App User Manual. You can download the user manual from the official website or scan the QR code below.

SolarGo App

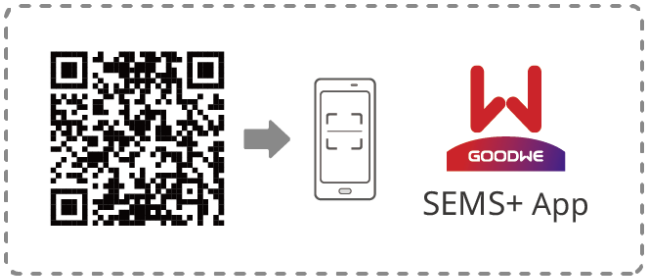
SolarGo App User Manual

7.2 Monitoring the PV Plant via SEMS+

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

1. Manage organizations, user information, and more.
2. Add and monitor PV plant information, and more.
3. Maintaining the equipment.

Scan the QR code below to download and install.



SEMS0164

For details about the functions, see the SEMS+ User Manual. The user manual is available on the official website or by scanning the QR code below.

8 System Maintenance

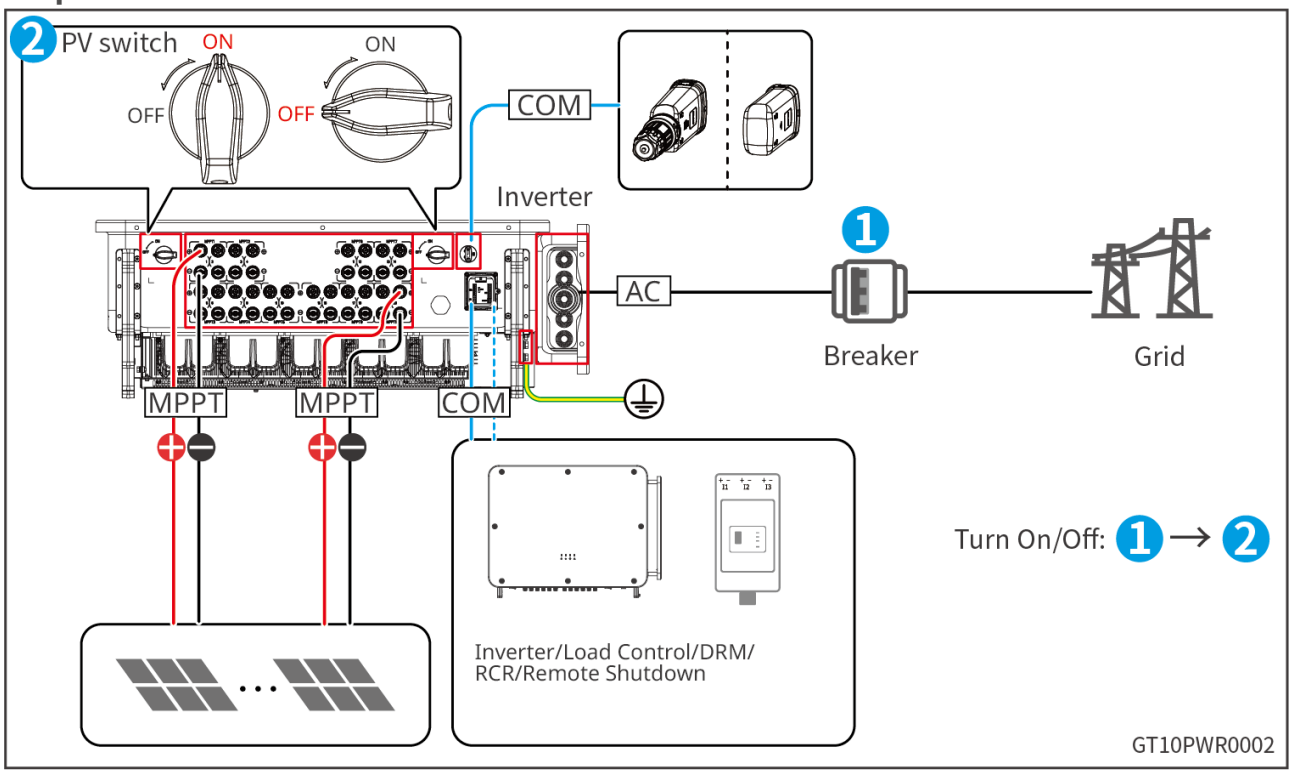
8.1 De-Energizing the Inverter

DANGER

- Before performing maintenance on the inverter, power it off. Working on energized equipment may damage the inverter or pose an electric shock hazard.
- After the inverter is powered off, its internal components take some time to discharge. Wait until the equipment has fully discharged, as specified on the label.

Step 1: Open the AC switch between the inverter and the grid.

Step 2: Turn off the inverter's DC switch.



8.2 Removing the Inverter

⚠WARNING

- Make sure the inverter is powered off.
- Wear personal protective equipment when working on the inverter.

Step 1: Disconnect all electrical connections to the inverter, including the DC cables, AC cables, communication cables, communication module, and protective earth cable.
Step 2: Remove the inverter from the mounting bracket.
Step 3: Remove the mounting bracket.
Step 4: Store the inverter properly. If it will be used again, ensure that the storage conditions meet the requirements.

8.3 Decommissioning the Inverter

If the inverter can no longer be used and must be disposed of, follow the electrical waste disposal requirements specified by the laws and regulations of the country/region where the inverter is located. Do not dispose of the inverter as household waste.

8.4 Troubleshooting

Troubleshoot using the methods below. If these methods do not resolve the issue, contact the after-sales service center.
When contacting the after-sales service center, collect the following information to help resolve the issue quickly.

1. Inverter information, such as the serial number, software version, equipment installation date, time of fault occurrence, and fault frequency.
2. Equipment installation environment, such as weather conditions and whether the PV modules are obstructed or shaded. Photos, videos, or other files showing the installation environment can help with troubleshooting.
3. Grid conditions.

No.	Fault Name	Fault Cause	Corrective Action
1	Grid Power Failure	1. Grid power outage. 2. The AC line or AC switch is disconnected.	1. The alarm will clear automatically once grid power is restored. 2. Check whether the AC line or AC switch is disconnected.
2	Grid Overvoltage Protection	The grid voltage is above the allowable range, or the duration of the overvoltage exceeds the high-voltage ride-through setting.	1. If this occurs occasionally, it may be due to a brief grid abnormality. The inverter will resume normal operation after detecting that the grid is normal; no manual intervention is required. 2. If this occurs frequently, check whether the grid voltage is within the permitted range. • If the grid voltage is outside the allowable range, contact your local utility. • If the grid voltage is within the allowable range, adjust the grid voltage only with approval from your local utility. 3. If normal operation does not resume after an extended period, check that the AC-side circuit breaker and output cables are properly connected.

3	Fast Grid Overvoltage Protection	A grid abnormality or excessively high voltage has triggered a fault.	1. If this occurs occasionally, it may be due to a brief grid abnormality. The inverter will resume normal operation after detecting that the grid is normal; no manual intervention is required. 2. If this occurs frequently, check whether the grid voltage is within the permitted range. • If the grid voltage is outside the allowable range, contact your local utility. • If the grid voltage is within the allowable range, adjust the grid voltage only with approval from your local utility. 3. If normal operation does not resume after an extended period, check that the AC-side circuit breaker and output cables are properly connected.

4	Grid Undervoltage Protection	The grid voltage is below the allowable range, or the duration of the undervoltage exceeds the low-voltage ride-through setting.	1. If this occurs occasionally, it may be due to a brief grid abnormality. The inverter will resume normal operation after detecting that the grid is normal; no manual intervention is required. 2. If this occurs frequently, check whether the grid voltage is within the permitted range. • If the grid voltage is outside the allowable range, contact your local utility. • If the grid voltage is within the allowable range, adjust the grid voltage only with approval from your local utility. 3. If normal operation does not resume after an extended period, check that the AC-side circuit breaker and output cables are properly connected.

5	10-Minute Overvoltage Protection	The 10-minute sliding average of the grid voltage is outside the range specified by the applicable standards.	1. If this occurs occasionally, it may be due to a brief grid abnormality. The inverter will resume normal operation after detecting that the grid is normal; no manual intervention is required. 2. Check whether the grid voltage remains high over an extended period. If this occurs frequently, check whether the grid voltage is within the allowable range. • If the grid voltage is outside the allowable range, contact your local utility. • If the grid voltage is within the allowable range, adjust the 10-minute grid overvoltage protection threshold only with approval from your local utility.
6	Grid Overfrequency Protection	The grid is abnormal: its actual frequency is higher than the local grid standard requires.	1. If this occurs occasionally, it may be due to a brief grid abnormality. The inverter will resume normal operation after detecting that the grid is normal; no manual intervention is required. 2. If this occurs frequently, check whether the grid frequency is within the allowable range. • If not, contact your local utility. • If it is, adjust the grid overfrequency protection threshold only with approval from your local utility.

7	Grid Underfrequency Protection	The grid is abnormal: its actual frequency is lower than the local grid standard requires.	1. If this occurs occasionally, it may be due to a brief grid abnormality. The inverter will resume normal operation after detecting that the grid is normal; no manual intervention is required. 2. If this occurs frequently, check whether the grid frequency is within the allowable range. • If not, contact your local utility. • If it is, adjust the grid underfrequency protection threshold only with approval from your local utility.
8	Voltage Ride-Through Undervoltage Fault	Grid fault: the grid voltage has remained abnormal longer than the LVRT-specified duration.	1. If this occurs occasionally, it may be due to a brief grid abnormality. The inverter will resume normal operation after detecting that the grid is normal; no manual intervention is required. 2. If this occurs frequently, check whether the grid voltage is within the permitted range. If it is not, contact your local utility. If it is, contact your dealer or after-sales service center.
9	Voltage ride-through overvoltage fault	Grid fault: the grid voltage has remained abnormal longer than the HVRT-specified duration.	
10	30 mA GFCI protection	During inverter operation, the input-to-ground insulation resistance is low.	1. If this occurs occasionally, it may be caused by a temporary external circuit fault. The inverter will resume normal operation once the fault is cleared; no manual intervention is required. 2. If this occurs frequently or does not clear for an extended period, check whether the PV string-to-ground insulation resistance is too low.
11	60 mA GFCI protection		
12	150 mA GFCI protection		

13	GFCI gradual-change protection		
14	DCI Level 1 protection	The DC component of the inverter output current exceeds the range permitted by safety regulations or the machine's default settings.	1. If the abnormality is caused by an external fault (such as a grid or frequency fault), the inverter will automatically resume normal operation once the fault clears; no manual intervention is required. 2. If this alarm occurs frequently and affects normal power generation at the plant, contact your dealer or after-sales service center.
15	DCI Level 2 protection		
16	Low insulation resistance	1. A PV string is short-circuited to protective earth. 2. The PV string installation environment is persistently humid, and the wiring has poor insulation to ground.	1. Check the impedance between the PV string and protective earth. If a short circuit is found, correct the short-circuit fault. 2. Check that the inverter's protective earth conductor is connected correctly. 3. If you confirm that the impedance is indeed below the default value in rainy conditions, reset the "Insulation Resistance Protection Threshold."
17	Low online insulation resistance		

18	System grounding fault	1. The inverter's protective earth conductor is not connected. 2. When the PV string output is grounded, no isolation transformer is connected on the inverter output side.	1. Check whether the inverter's protective earth conductor is connected correctly. 2. If the PV string output is grounded, check whether an isolation transformer is connected on the inverter output side.
19	Live conductor-to-ground short circuit	Low impedance or short circuit between an output phase conductor and PE	Measure the impedance between the output phase conductors and PE, locate any points with low impedance, and repair them.
20	Hardware anti-backflow protection	Abnormal load fluctuations	1. If the abnormality is caused by an external fault, the inverter will automatically resume normal operation once the fault is cleared; no manual intervention is required. 2. If this alarm occurs frequently and affects normal power generation at the plant, contact your distributor or after-sales service center.
21	Internal communication link failure	1. Chip is not powered on 2. Chip program version error	Open the AC output-side switch and DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your distributor or after-sales service center.
22	AC sensor self-test abnormality	Abnormal sampling by the AC sensor	Open the AC output-side switch and DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your distributor or after-sales service center.

23	Leakage current sensor self-test abnormality	Abnormal sampling by the leakage current sensor	Open the AC output-side switch and DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your distributor or after-sales service center.
24	Relay self-test abnormality	1. Relay abnormality (relay short circuit) 2. Control circuit abnormality 3. Abnormal AC-side wiring (possible loose connection or short circuit)	Open the AC output-side switch and DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your distributor or after-sales service center.
25	Internal fan abnormality	1. Fan power supply abnormality 2. Mechanical fault (locked rotor) 3. Fan wear or damage	Open the AC output-side switch and DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your distributor or after-sales service center.
26	External fan abnormality		
27	Flash read/write error	Internal Flash storage abnormality	Open the AC output-side switch and DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your distributor or after-sales service center.

28	DC arc fault	1. DC string connector terminals are not securely connected. 2. DC wiring is damaged.	Check that the string cables are in good condition, correctly wired, and making good contact.
29	DC arc-fault self-test failure	Arc-fault detection device abnormality	Open the AC output-side switch and DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your distributor or after-sales service center.
30	INV power module overtemperature	1. The inverter installation location is poorly ventilated. 2. The ambient temperature is too high. 3. The internal fan is malfunctioning.	1. Check whether the inverter installation location is well ventilated and whether the ambient temperature exceeds the maximum permitted ambient temperature range. 2. If ventilation is inadequate or the ambient temperature is too high, improve ventilation and heat dissipation. 3. If ventilation and ambient temperature are both normal, contact your dealer or after-sales service center.
31	Cavity temperature too high		
32	BST module temperature too high		
33	Cavity temperature too low	Ambient temperature too low	1. Check whether the ambient temperature is too low. Wait for the temperature to rise into the inverter's operating temperature range and check whether the inverter operates normally. 2. If ventilation and ambient temperature are both normal, contact your dealer/GoodWe Customer Service Center.

34	1.5 V reference abnormality	Reference circuit fault	Open the AC output-side switch and DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your distributor or after-sales service center.
35	0.3 V reference abnormality	Reference circuit fault	
36	0.8 V reference abnormality	Reference circuit fault	
37	DC bus overvoltage	1. PV voltage too high 2. Abnormal inverter BUS voltage sampling 3. Poor isolation performance of the dual-split transformer downstream of the inverter causes interference between two inverters when they are connected to the grid. One inverter reports a DC overvoltage fault when connecting to the grid.	AC output-side switch and DC input-side switch. If the fault persists, contact your dealer or after-sales service center.
38	Upper DC bus overvoltage		
39	Lower DC bus overvoltage		

40	PV input overvoltage	Incorrect PV array configuration; too many PV modules are connected in series in the string.	Check the series configuration of the corresponding PV array string and ensure that its open-circuit voltage does not exceed the inverter's maximum operating voltage.
41	Persistent PV hardware overcurrent	1. Improper module configuration 2. Hardware damaged	Open the AC output-side switch and DC input-side switch. After 5 minutes, close the AC output-side switch and DC input-side switch. If the fault persists, contact your dealer or after-sales service center.
42	PV Sustained Software Overcurrent	1. Improper module configuration 2. Hardware damaged	Open the AC output-side switch and DC input-side switch. After 5 minutes, close the AC output-side switch and DC input-side switch. If the fault persists, contact your dealer or after-sales service center.
43	String Reverse Polarity (String 1–String 20)	PV String Reverse Polarity	Check whether any strings are connected with reverse polarity.
44	Low PV Voltage	Low irradiance or abnormal changes in irradiance	1. If this occurs occasionally, it may be caused by abnormal irradiance. The inverter will automatically resume normal operation; no manual intervention is required. 2. If this occurs frequently, contact your dealer or after-sales service center.

45	Low DC Bus Voltage	Low irradiance or abnormal changes in irradiance	1. If this occurs occasionally, it may be caused by abnormal irradiance. The inverter will automatically resume normal operation; no manual intervention is required. 2. If this occurs frequently, contact your dealer or after-sales service center.
46	DC Bus Soft Start Failure	Boost Drive Circuit Fault	Open the AC output-side switch and the DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your dealer or after-sales service center.
47	DC Bus Voltage Imbalance	1. Inverter sampling circuit fault. 2. Hardware fault.	Open the AC output-side switch and the DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your dealer or after-sales service center.
48	Grid Phase-Locked Loop Failure	Grid frequency is unstable	Open the AC output-side switch and the DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your dealer or after-sales service center.
49	Sustained Inverter Overcurrent	A brief change in the grid or load caused control overcurrent	No action is required if this occurs occasionally. If this alarm occurs frequently, contact your dealer or after-sales service center.
50	Inverter Software Overcurrent		
51	R-Phase Inverter Hardware Overcurrent		

52	S-Phase Inverter Hardware Overcurrent		
53	T-Phase Inverter Hardware Overcurrent		
54	PV Single-Event Hardware Overcurrent	Low irradiance or abnormal changes in irradiance	Open the AC output-side switch and the DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your dealer or after-sales service center.
55	PV Single-Event Software Overcurrent		
56	PV HCT Fault	Boost Current Sensor Fault	Open the AC output-side switch and the DC input-side switch. After 5 minutes, close both switches. If the fault persists, contact your dealer or our customer service center.
57	String Lost (String 1–String 20)	String fuse open (if applicable)	Check whether the fuse is open
58	High string terminal temperature (String 1–String 20)	Excessive terminal temperature detected	1. Check whether the terminals are loose or making poor contact. 2. If the terminals are making good contact but the alarm occurs frequently, contact your dealer or GoodWe Customer Service Center.

59	AC terminal temperatur e too high		

8.5 Periodic Maintenance

DANGER

Before performing maintenance on the inverter, power it off. Working on energized equipment may damage the inverter or pose an electric shock hazard.

Maintenance Item	Maintenance Procedure	Maintenance Interval
System Cleaning	Check the heatsink and air inlets/outlets for foreign objects and dust.	Once every 6 months to once a year
Fan	Check that the fan operates normally, makes no unusual noise, and is in good condition.	Once a year
DC Switch	Switch the DC switch on and off 10 times in succession to ensure it functions properly.	Once a year
Electrical Connections	Check electrical connections for looseness and cables for visible damage or exposed copper.	Once every 6 months to once a year
Sealing	Check that the seals around the equipment cable entry holes meet the requirements. If gaps are too large or the holes are unsealed, reseal them.	Once a year

Fan Maintenance

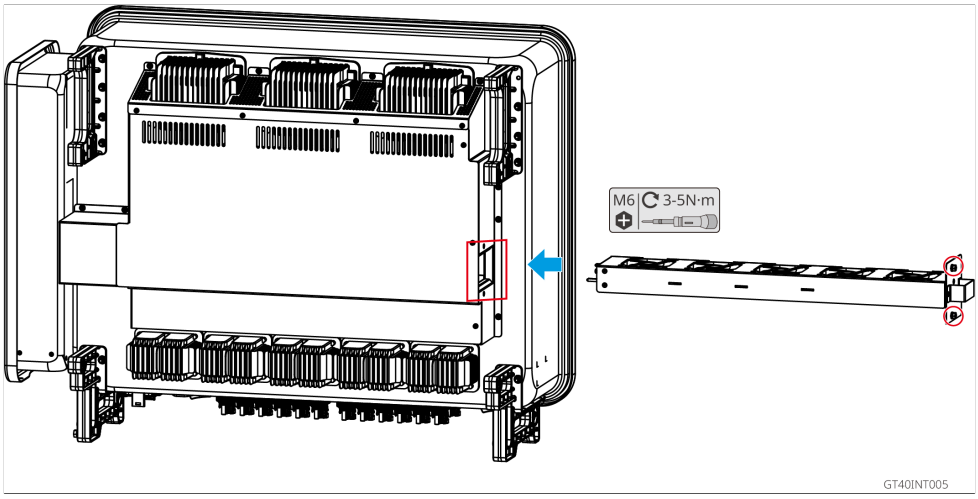
Refer to the following steps for fan maintenance:
GT series inverters are equipped with an external fan module that slides into the back of the inverter from the left side. Clean this fan with a vacuum cleaner once a year. For thorough cleaning, remove the fan from the unit before cleaning it.

1. Disconnect the AC switch between the inverter and the grid, then disconnect the inverter's DC switch.

2. Wait for the residual voltage to dissipate and the fan to stop, as indicated on the label.
3. Clean the fan.

- Use a screwdriver to remove the screws and pull out the fan;
- Pull out the entire external fan module; do not remove individual fans.

4. Clean with a soft-bristled brush, cloth, or vacuum cleaner.
5. After cleaning, reassemble the fan and tighten the screws.



9 Technical Specifications

Technical Data	GW150K-GT-G10	GW100K-GT-L-G10
Input		
Max. Input Power (kW)	225	180
Max. Input Voltage (V)	1100*1	900
MPPT Operating Voltage Range (V)*2	180~1000	180~900
MPPT Voltage Range at Nominal Power (V)	500~850V@380V/400/415Vac 600~850V @480Vac	330~650
Start-up Voltage (V)	200	200
Nominal Input Voltage (V)	600V@380/400/415Vac, 720V @480Vac	370
Max. Input Current per MPPT (A)	42	42
Max. Short Circuit Current per MPPT (A)	52.5	52.5
Max. Backfeed Current to The Array (A)	0	0
Number of MPP Trackers	10	10
Number of Strings per MPPT	2	2
Output		
Nominal Output Power (kW)	150	100*3

Nominal Output Apparent Power (kVA)	150	100*3
Max. AC Active Power (kW)	165*6	100*3
Max. AC Apparent Power (kVA)	165*6	100*3
Nominal Power at 40℃ (kW) For Brazil only	150	100*3
Max. Power at 40℃ (Including AC Overload) (kW) For Brazil only	150	100*3
Nominal Output Voltage (V)	220/380,230/400, 240/415, 277/480V, 3L/N/PE or 3L/PE	127/220V,133/230V, 3L/N/PE or 3L/PE*7
Output Voltage Range (V)	323~528	176~253
Nominal AC Grid Frequency (Hz)	50/60	50/60
AC Grid Frequency Range (Hz)	45-55/55-65	45~55/55~65
Max. Output Current (A)	250.7A @380Vac 238.2A @400Vac 229.6A @415Vac 198.5A @480Vac	251
Max. Output Fault Current (Peak and Duration) (A)	460@5μs	460@5μs
Inrush Current (Peak and Duration)(A)	120@1μs	120@1μs

Nominal Output Current (A)	227.9A @380Vac 216.5A @400Vac 208.7A @415Vac 180.4A @480Vac	251
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)	~1 (Adjustable from 0.8 leading to 0.8 lagging)
Max. Total Harmonic Distortion	<3%	<3%
Maximum Output Overcurrent Protection (A)	460	460
Efficiency		
Max. Efficiency	99.0%	98.8%
European Efficiency	98.5%	98.3%
CEC Efficiency	98.5%	98.3%
Protection		
PV String Current Monitoring	Integrated	Integrated
PV Insulation Resistance Detection	Integrated	Integrated
Residual Current Monitoring	Integrated	Integrated
PV Reverse Polarity Protection	Integrated	Integrated
Anti-islanding Protection	Integrated	Integrated
AC Overcurrent Protection	Integrated	Integrated
AC Short Circuit Protection	Integrated	Integrated

AC Overvoltage Protection	Integrated	Integrated
DC Switch	Integrated	Integrated
DC Surge Protection	Type II (Type I + II Optional)	Type II (Type I + II Optional)
AC Surge Protection	Type II	Type II
AFCI*4	Optional	Optional
Emergency Power Off	Optional	/
Rapid Shutdown	Optional	Optional
Remote Shutdown*5	Optional	Optional
PID Recovery	Optional	Optional
Reactive Power Compensation at Night	Optional	/
Power Supply at Night	Optional	Optional
I-V Curve Scan	Optional	Optional
General Data		
Operating Temperature Range (℃)	-30 ~ +60	-30 ~ +60
Storage Temperature (℃)	-40 ~ +70	-40 ~ +70
Relative Humidity	0 ~ 100%	0 ~ 100%
Max. Operating Altitude (m)	4000	4000
Cooling Method	Smart Fan Cooling	Smart Fan Cooling
User Interface	LED, LCD (Optional) , APP	LED, LCD (Optional) , APP

Communication	RS485, WiFi+LAN+Bluetooth, 4G+Bluetooth	RS485, WiFi+LAN+Bluetooth, 4G+Bluetooth
Communication Protocols	Modbus-RTU (SunSpec Compliant), Modbus-TCP	Modbus-RTU (SunSpec Compliant), Modbus-TCP
Weight (kg)	≤99	≤99
Dimension (W×H×D mm)	995×758×358	995×758×358
Noise Emission (dB)	<65	<65
Topology	Non-isolated	Non-isolated
Self-consumption at Night (W)	<2	<2
Ingress Protection Rating	IP66	IP66
Anti-corrosion Class	C4，C5 (Optional)	C4，C5 (Optional)
DC Connector	MC4 (4~6mm²)	MC4 (4~6mm²)
AC Connector	OT/DT terminal (Max. 400 mm²)	OT/DT terminal (Max. 400 mm²)
Environmental Category	4K4H	4K4H
Pollution Degree	III	III
Overvoltage Category	DCII / ACIII	DCII / ACIII
Protective Class	I	I
The Decisive Voltage Class (DVC)	PV：C	PV：C
	AC：C	AC：C
	com：A	com：A

Active Anti-islanding Method	AFDPF + AQDPF	AFDPF + AQDPF
Country of Manufacture	China	China

*1: When the input voltage ranges from 1000V to 1100V, the inverter will enter the standby state. When the input voltage returns to the MPPT operating voltage range, the inverter will resume normal operating state.

*2: Please refer to the user manual for the MPPT Voltage Range at Nominal Power.(Note for the brochure on the official website)

*3: 95.6kW/KVA for 220V, 90.4kW/kVA for 208V.

*4: For Brazil and Mexico, AFCI: Integrated.

*5: For Brazil, Remote Shutdown: Integrated.

*6: For Chile and Sri Lanka, Max. AC Active Power (kW) and Max. AC Apparent Power (kVA): 150kW/kVA.

*7: For some regions, Nominal Output Voltage (V): 120/208, 3L/N/PE or 3L/PE.

10 Terminology

Definitions of overvoltage categories
Overvoltage category I: Equipment connected to circuits that incorporate measures to limit transient overvoltages to a relatively low level.
Overvoltage category II: Energy-consuming equipment supplied by fixed electrical installations. This category includes appliances, portable tools, and other household and similar loads. Where special requirements apply to the reliability and suitability of such equipment, overvoltage category III applies.
Overvoltage category III: Equipment in fixed electrical installations, for which reliability and suitability must meet special requirements. This includes switching devices in fixed installations and industrial equipment permanently connected to fixed installations.
Overvoltage category IV: Equipment used at the supply source of an electrical installation, including measuring instruments and upstream overcurrent protection devices.

Definitions of wet-location categories

Environmental parameter	Class		
	3K3	4K2	4K4H
Temperature range	0~+40℃	-33~+40℃	-33~+40℃
Humidity range	5% to 85%	15% to 100%	4% to 100%

Description of environmental categories:
Outdoor inverter: Ambient air temperature range of -25 to +60°C; suitable for environments with Pollution Degree 3;
Indoor Type II inverter: Ambient air temperature range of -25 to +40°C; suitable for environments with Pollution Degree 3;
Indoor Type I inverter: Ambient air temperature range of 0 to +40°C; suitable for environments with Pollution Degree 2;

Description of pollution degree categories
Pollution Degree 1: No pollution or only dry, non-conductive pollution;
Pollution Degree 2: Normally, only non-conductive pollution is present; however, temporary conductivity caused by condensation must be taken into account;
Pollution Degree 3: Conductive pollution is present, or non-conductive pollution becomes conductive due to condensation;
Pollution Degree 4: Persistent conductive pollution, such as pollution caused by conductive dust, rain, or snow.

11 How to Obtain Related Product Manuals

Document name	Official website link
4G Kit-CN-G20 or 4G Kit-CN-G21-21 Quick Installation Guide	GW_4G Communication Module_Quick Installation Guide)
SEC3000 User Manual	GW_SEC3000 Series_User Manual
EzLogger3000C User Manual	EzLogger3000C User Manual
GMK330 & GMK360 & GM330 Quick Installation Guide	GW_GMK330 GMK360 GM330_Quick Installation Guide

12 Contact Information

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