V1.3 2026-01-26

Commercial & Industrial Grid-tied Inverter

GT G1 100-150kW

- GW100K-GT-L-G10
- GW150K-GT-G10

User Manual

GOODWE

Copyright Statement

NOTICE

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

About This Manual

This document primarily introduces the inverter's product information, installation and wiring, configuration and commissioning, troubleshooting, and maintenance. Please read this manual carefully before installing and using this product to understand the product safety information and familiarize yourself with the product's functions and features. The document may be updated periodically; please obtain the latest version of the materials and more product information from the official website.

Applicable Model

This document applies to the following models of inverters:

model	Nominal output power	Nominal output voltage
GW150K-GT-G10	150kW	220/380V, 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

Applicable Personnel

Only applicable to trained professionals who are familiar with local regulatory standards and electrical systems, and possess specialized knowledge of this product.

Symbol Definition

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

⚠DANGER

Indicates a situation with a high potential hazard, which, if not avoided, will result in death or serious injury.

⚠WARNING

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

⚠CAUTION

Indicates a low-level potential hazard which, if not avoided, could result in moderate or minor injury.

NOTICE

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

Table of Contents

1 Safety Precautions

⚠WARNING

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

1.1 General Safety

NOTICE

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

1.2 DC Side

DANGER

- Please use the DC connector supplied with the unit to connect the inverter DC cables. Using other models of DC connectors may lead to serious consequences. Damage to the equipment caused by this is not within the responsibility of the equipment manufacturer.
- Before connecting the PV string to the inverter, please confirm the following information. Otherwise, it may cause permanent damage to the inverter, and in severe cases, may lead to fire causing personal injury and property damage. Damage or injury caused by not operating in accordance with the requirements of this document or the corresponding user manual is not covered by the warranty.
  - Ensure the positive pole of the PV string is connected to the PV+ terminal of the inverter, and the negative pole of the PV string is connected to the PV- terminal of the inverter.
  - Ensure the open-circuit voltage of the PV string connected to each MPPT does not exceed 1100V. When the input voltage is between 1000V - 1100V, the inverter enters standby mode. When the voltage returns to 180V - 1000V, the inverter will resume normal operation.

WARNING

- Ensure the component frame and mounting system are properly grounded.
- After completing the DC cable connections, ensure the connections are secure and not loose.
- The PV modules used with the inverter must comply with IEC61730 Class A standards.
- PV strings connected to the same MPPT must use the same model and the same number of PV modules.
- To maximize the inverter's power generation efficiency, ensure the maximum power point voltage of the series-connected PV modules is within the inverter's MPPT full-load voltage range.
- Ensure the voltage difference between different MPPT inputs is less than or equal to 150V.
- Ensure the input current per MPPT is less than or equal to the inverter's maximum input current per MPPT. Refer to the technical data.
- When the inverter is connected to multiple PV strings, maximize the number of MPPTs utilized.

1.3 AC Side

⚠WARNING

- Ensure the voltage and frequency at the grid connection point comply with the inverter's grid-connection specifications.
- It is recommended to add protective devices such as circuit breakers or fuses on the AC side of the inverter. The rating of the protective device must be greater than 1.25 times the inverter's maximum output current.
- Copper-core cables are recommended for AC output wiring. If aluminum wires must be used, please connect them using copper-aluminum transition terminals.

1.4 Inverter

⚠DANGER

- During inverter installation, avoid placing weight on the bottom wiring terminals, as this may cause terminal damage.
- After inverter installation, labels and warning signs on the enclosure must remain clearly visible. Do not obstruct, alter, or damage them.
- The warning labels on the inverter enclosure are as follows:

No.	Symbol	Meaning
1		Potential hazard exists during equipment operation. Take protective measures when operating the equipment.
2		High voltage hazard. High voltage is present during equipment operation. Ensure the equipment is powered off before performing any operations.
3		High surface temperature on the inverter. Do not touch during operation to avoid burns.
4		Delayed discharge. After powering off the equipment, wait for 5 minutes until it is fully discharged.

5		Read the product manual thoroughly before operating the equipment.
6		Do not dispose of the equipment as household waste. Dispose of it according to local laws and regulations, or return it to the equipment manufacturer.
7		Grounding point.
8		CE certification mark.

1.5 EU Declaration of Conformity

1.5.1 Equipment with Wireless Communication Modules

Equipment with Wireless Communication Modules sold in the European market must comply 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)

1.5.2 Equipment without wireless communication functions

Devices without wireless communication functions that can be sold in the European market meet the following directive requirements:

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

1.6 Personnel Pequirements

NOTICE

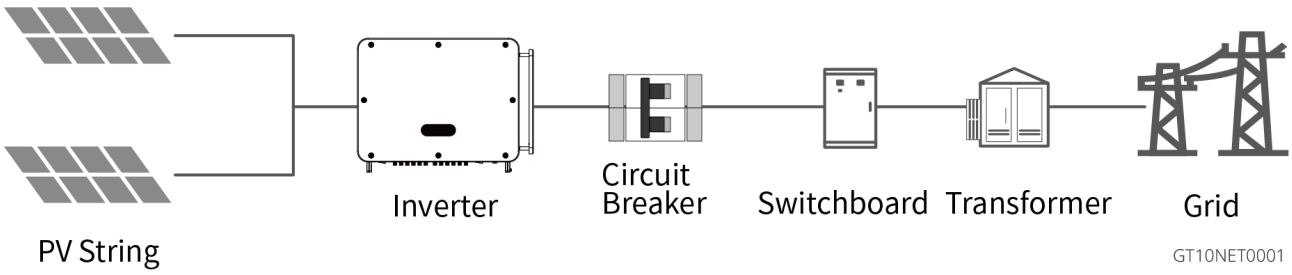
To ensure safety, compliance, and efficiency throughout the entire process of equipment transportation, installation, wiring, operation, and maintenance, all tasks must be performed by professionals or qualified personnel.

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

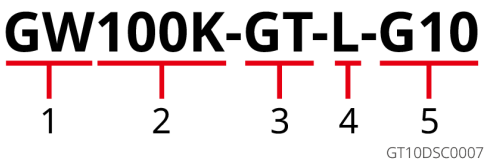
2 Product Introduction

2.1 Application Scenarios

The GT series inverters are three-phase string photovoltaic grid-connected inverters. They convert the direct current (DC) generated by photovoltaic solar panels into alternating current (AC) that meets grid requirements and feeds it into the grid. The main application scenarios for the inverters are as follows:

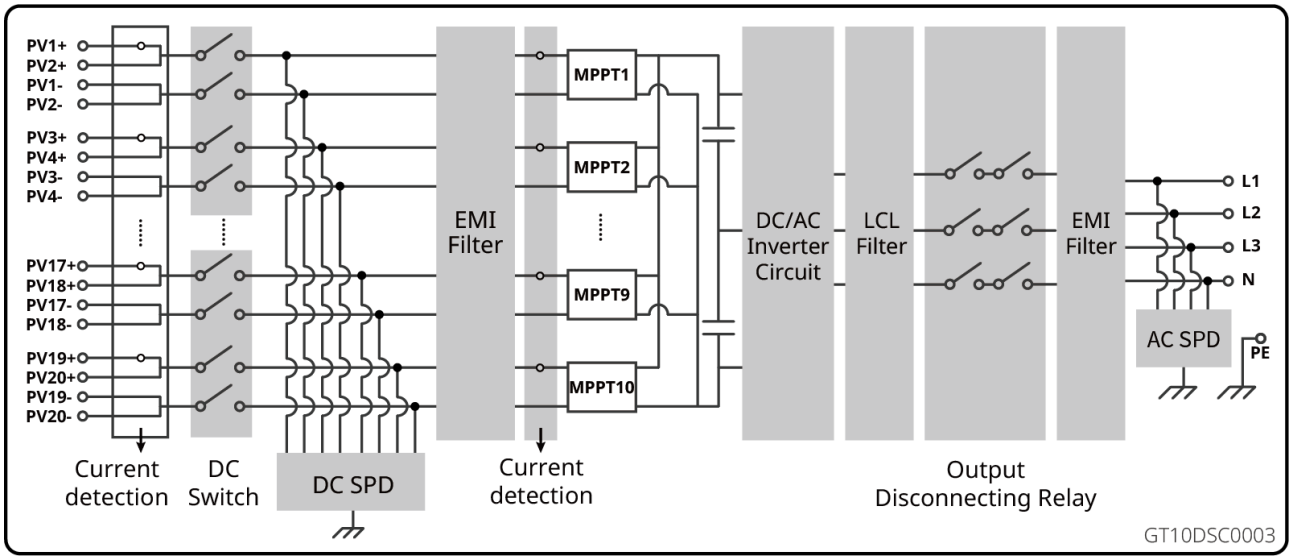


Model Number Meaning



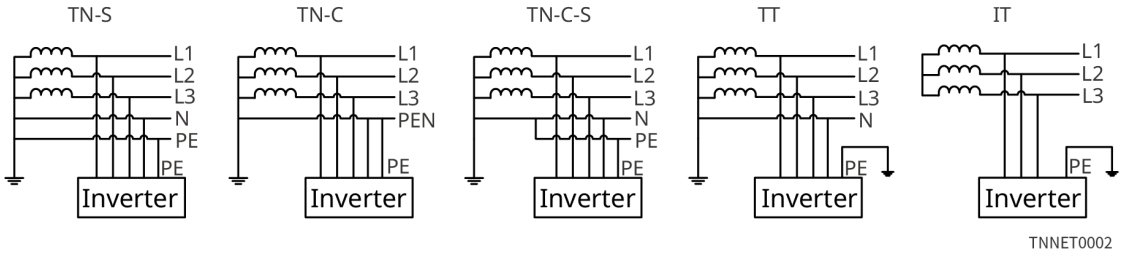
No.	Meaning	Description
1	Brand code	GW: GoodWe
2	Rated Power	150K: Rated Power is 150kW
3	Series code	GT: GT Series
4	Type of Electrical Supply System	L: Low-voltage grid
5	Version code	G10: First-generation product

2.2 Circuit Block Diagram



2.3 Supported Grid Types

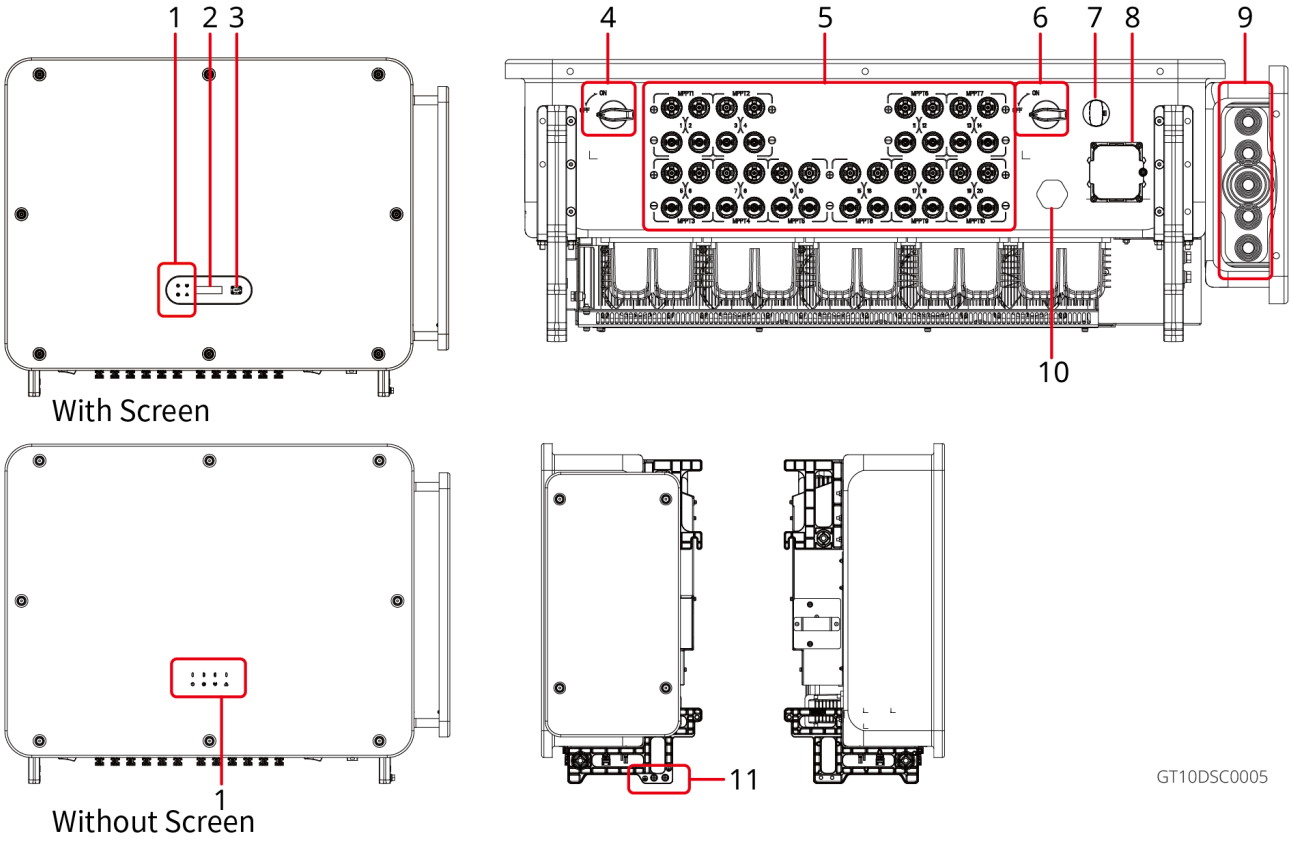
NOTICE
For the TT power grid form, the effective value of voltage between the neutral line and ground line must be less than 20V.



2.4 Appearance & Dimensions

The color and appearance of different inverter models may vary, subject to actual conditions.

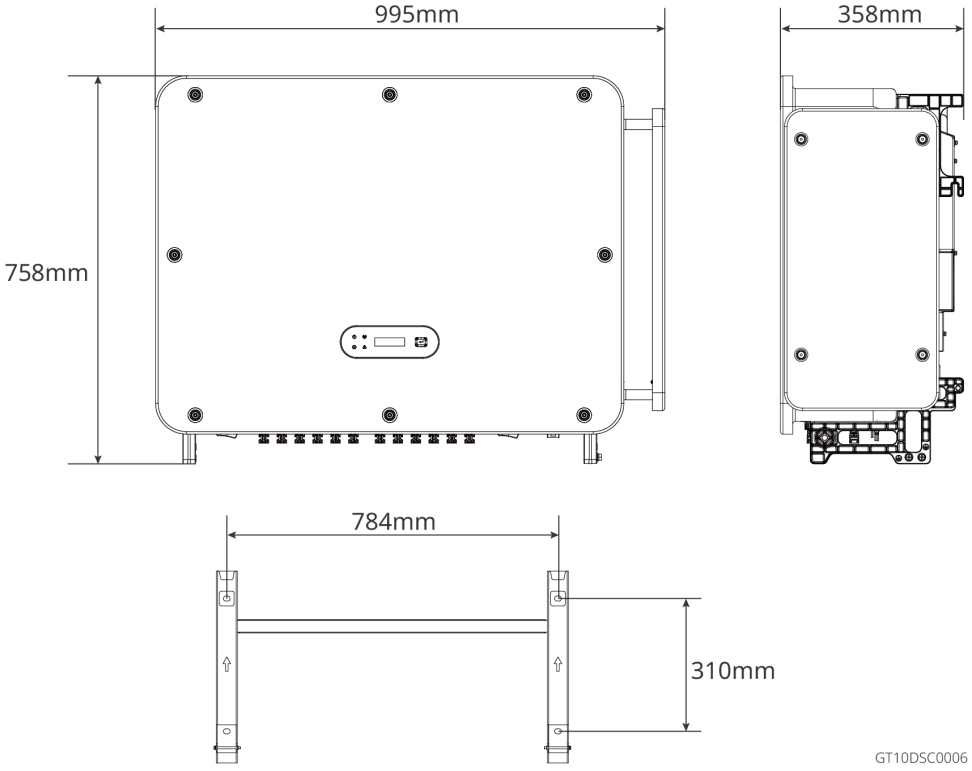
2.4.1 Appearance Description



No.	Component	Description
1	indicator	Indicates the working status of the inverter
2	Display screen (optional)	View inverter-related data (used together with the buttons)
3	Buttons (optional)	Used to operate the display screen (used together with the display screen)
4	DC switch 1	Controls the connection or disconnection of DC input MPPT1-5
5	PV input terminals	Connects to DC input cables from PV modules
6	DC switch 2	Controls the connection or disconnection of DC input MPPT6-10

7	Smart communication stick port	Connects to the smart communication stick. Please select the communication stick type according to actual requirements.
8	Communication Port	Contains multiple communication interfaces, such as RS485, etc., for connecting communication cables with corresponding functions.
9	AC cable outlet hole	AC output cable entry/exit hole
10	Ventilation valve	Waterproof and breathable, balances internal and external air pressure
11	Grounding terminal	Connecting the PE cable

2.4.2 Product Dimensions

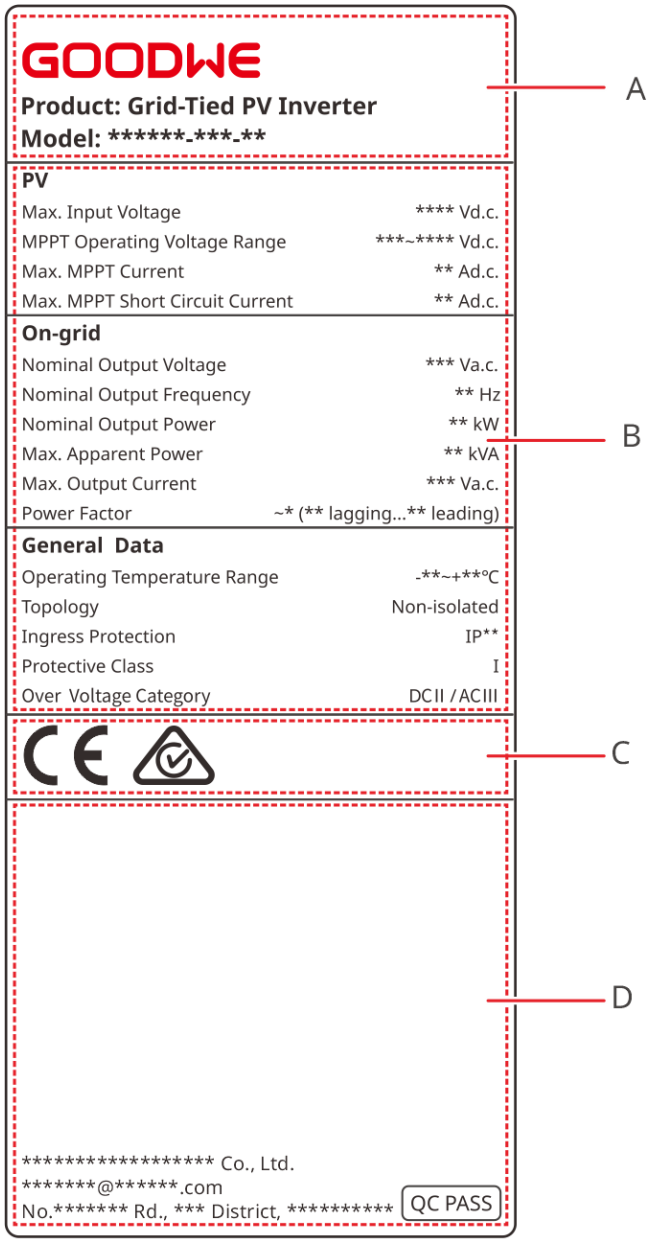


2.4.3 Indicator Light Instructions

Indicator	Status	Description
电源 Power		Steady on: Device powered on
		Off: Device not powered on
运行 Operation		Steady on: Grid normal, grid-connected successfully
		Off: Not grid-connected
		Single slow flash: Self-check before grid connection
		Single fast flash: About to connect to grid
Communication		Steady on: Wireless monitoring normal
		Single flash: Wireless module reset or reconfigured
		Two flashes: Not connected to base station or router
		Four flashes: Not connected to monitoring server
		Flashing: RS485 communication normal
		Off: Wireless module restoring factory settings
故障 Fault		Steady on: System fault
		Off: No fault

2.4.4 Nameplate Specifications

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



GPL00DSC0001

A	B	C	D
GoodWe Trademark and Product Type/Model	Product Technical Specifications	Product Safety Symbols and Certification Marks	Contact Information, Serial Number Details

2.5 Features

AFCI

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

- Damage to connector connections in the photovoltaic system.
- Incorrect or damaged cable connections.
- Aging of connectors and cables.

Fault handling methods:

- The inverter integrates AFCI function, complying with IEC 63027 standard.
- When the inverter detects an arc occurrence, the alarm time and phenomenon can be viewed through the App.
- After the inverter triggers an AFCI alarm, it will shut down for protection. After the alarm is cleared, the inverter automatically reconnects to the grid.
  - Automatic reconnection: If the inverter triggers AFCI alarms <5 times within 24 hours, the alarm can be automatically cleared after five minutes, and the inverter reconnects to the grid;
  - Manual reconnection: After the inverter triggers the 5th AFCI alarm within 24 hours, the alarm must be manually cleared before the inverter can reconnect to the grid. For specific operations, refer to the 'SolarGo APP User Manual'.

model	Label	Description
GW150K-GT-G10	F-I-AFPE-1-4/6/4/6-4	F (Full coverage): Full coverage inverter PV input port I (Integrated): Integrated within the inverter AFPE (arc fault protection equipment): Combines both AFD and AFI arc detection functions 1: One pair of PV input ports (PV+, PV-) connects to one string of PV input 4/6/4/6: Number of PV input ports monitored by one arc detection sensor 4: Quantity of arc detection sensors

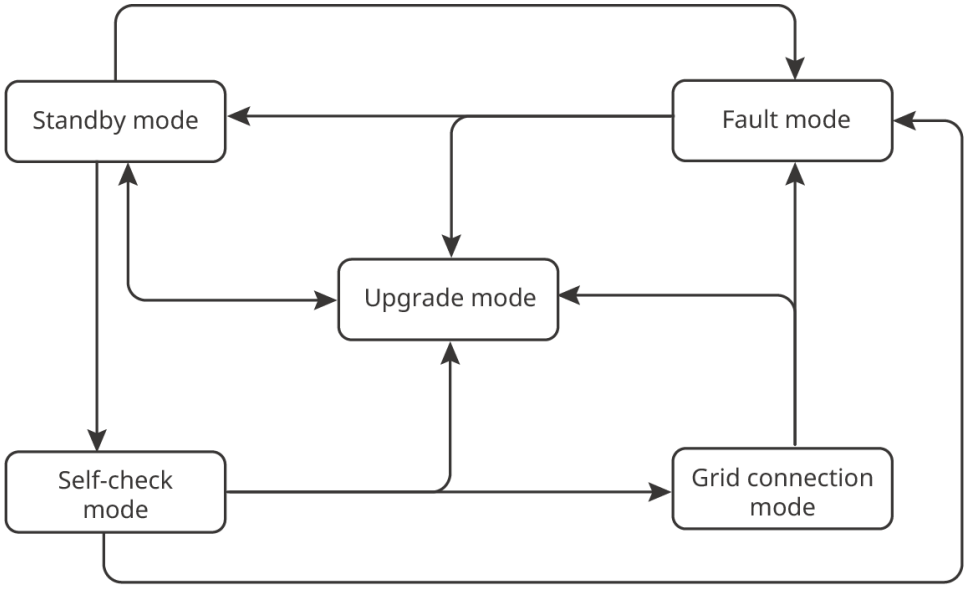
PID Recovery (Optional)
During operation of photovoltaic panels, due to the potential difference between the output electrode and the panel's grounded frame, long-term exposure can lead to a

decrease in panel power generation efficiency, known as Potential Induced Degradation (PID).
The PID function of this device works by increasing the voltage difference between the photovoltaic panel and the frame, making it a positive voltage difference (referred to as raising positive pressure), achieving PID suppression. It is suitable for P-type panels and N-type panels that require raising positive pressure to suppress PID effects. For N-type panels that require reducing negative pressure to suppress PID effects, it is recommended to turn off this function. Whether N-type modules belong to the type that requires raising positive pressure for PID suppression, please consult the module supplier.

Nighttime SVG (Optional)
The nighttime SVG (Static Var Generator) function means that the inverter can still provide reactive power compensation during nighttime or when there is no solar input, to improve the power factor of the grid, reduce grid losses, and maintain voltage stability.

Nighttime Power Supply (Optional)
During nighttime when light is insufficient or absent, the inverter can draw power from the grid to maintain its basic functions (such as monitoring, communication, security modules, etc.) for operations like 24-hour load monitoring and nighttime remote upgrades.

2.6 Inverter Operation Modes



OMNET0001

No.	Component	Description
1	Wait Mode	The waiting phase after the machine is powered on. • When conditions are met, it enters Self-check Mode. • If a fault is detected, the inverter enters Fault Mode. • If an upgrade request is received, it enters Upgrade Mode.
2	Self-check Mode	Before the inverter starts, it continuously performs self-check and initialization. • If conditions are satisfied, it enters On-grid mode, and the inverter starts and operates connected to the grid. • If an upgrade request is received, it enters Upgrade Mode. • If the self-check fails, it enters Fault Mode.
3	On-grid mode	The inverter operates normally connected to the grid. • If a fault is detected, it enters Fault Mode. • If an upgrade request is received, it enters Upgrade Mode.

4	Fault Mode	If a fault is detected, the inverter enters Fault Mode. After the fault is cleared, it enters Wait Mode. After Wait Mode ends, the inverter checks the operating status and then enters the next operating mode.
5	Upgrade Mode	The inverter switches to this state when updating the program. When the program update is complete, it enters Wait Mode. After Wait Mode ends, the inverter checks the operating status and then enters the next operating mode.

3 Check and Storage

3.1 Check Before Receiving

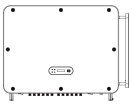
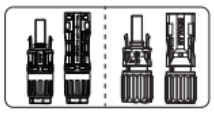
Before signing for the product, please carefully check the following:

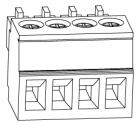
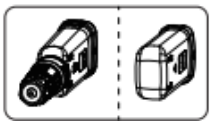
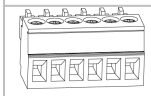
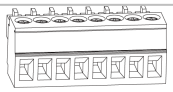
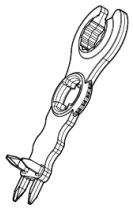
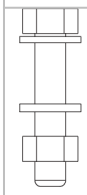
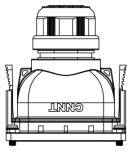
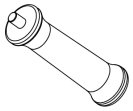
1. Check the outer packaging for any damage, such as deformation, holes, cracks, or any other signs that might indicate damage to the equipment inside the box. If damaged, do not open the packaging and contact your dealer.
2. Check if the inverter model is correct. If it does not match, do not open the packaging and contact your dealer.
3. Check if the type and quantity of delivered items are correct, and if there is any visible damage to their appearance. If damaged, please contact your dealer.

3.2 Deliverables

NOTICE

- When making electrical connections, please use the wiring terminals provided in the shipping box. Damage to the equipment caused by using incompatible connectors is not covered under warranty.
- The quantity of fastening screws and pin terminals provided varies depending on the inverter configuration. Please refer to the actual contents.
- "N" indicates that the quantity of accessories provided is determined by the product configuration.

Part	Quantity	Part	Quantity
	Inverter x 1		Wall Mount Bracket x 1
	2-pin Terminal x N		DC Connector x 20

	4-pin Terminal x N		smart dongle 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 Shield x 1
	Product Documentation x 1		Handle x 1

3.3 Storage

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

1. Ensure the outer packaging box is not removed and the desiccant inside the box is not lost.
2. Ensure the storage environment is clean, with appropriate temperature and humidity ranges, and free from condensation.
3. Ensure the stacking height and direction of the inverters are arranged according to the label instructions on the packaging box.
4. Ensure there is no risk of the stacked inverters tipping over.
5. If the inverter storage time exceeds two years or the idle time after installation exceeds 6 months, it is recommended to have it inspected and tested by professional personnel before putting it into use.
6. To ensure the good electrical performance of the internal electronic components

of the inverter, it is recommended to power it on once every 6 months during storage. If it has not been powered on for more than 6 months, it is recommended to have it inspected and tested by professional personnel before putting it into use.

4 Installation

4.1 Installation Requirements

Installation Environment Requirements

1. The device must not be installed in flammable, explosive, corrosive, or similar environments.
2. The installation carrier must be sturdy and reliable, capable of bearing the weight of the inverter.
3. The installation space must meet the device's ventilation, heat dissipation, and operational space requirements.
4. The device's protection rating is suitable for indoor and outdoor installation, and the environmental temperature and humidity must be within an appropriate range.
5. The inverter should avoid installation environments with direct sunlight, rain, snow accumulation, etc. It is recommended to install in a sheltered location, and if necessary, a sunshade can be constructed.
6. The installation location must be out of reach of children and avoid easily accessible positions. During operation, the device surface may become hot to prevent burns.
7. The device installation height should facilitate operation and maintenance, ensuring that the indicator lights, all labels are easily visible, and the terminal blocks are easy to operate.
8. The inverter installation altitude should be below the maximum operating altitude of 4000m.
9. Inverters installed in salt damage areas may be corroded. Salt damage areas refer to areas within 1000m from the coast or affected by sea breeze. The areas affected by sea breeze vary depending on meteorological conditions (e.g., typhoons, seasonal winds) or terrain (with embankments, hills).
10. Stay away from strong magnetic field environments to avoid electromagnetic interference. If there are radio stations or wireless communication devices below 30MHz near the installation location, please install the device according to the following requirements:

- Add ferrite cores with multiple windings at the inverter's DC input lines or AC output lines, or add low-pass EMI filters.
- The distance between the inverter and the wireless electromagnetic interference

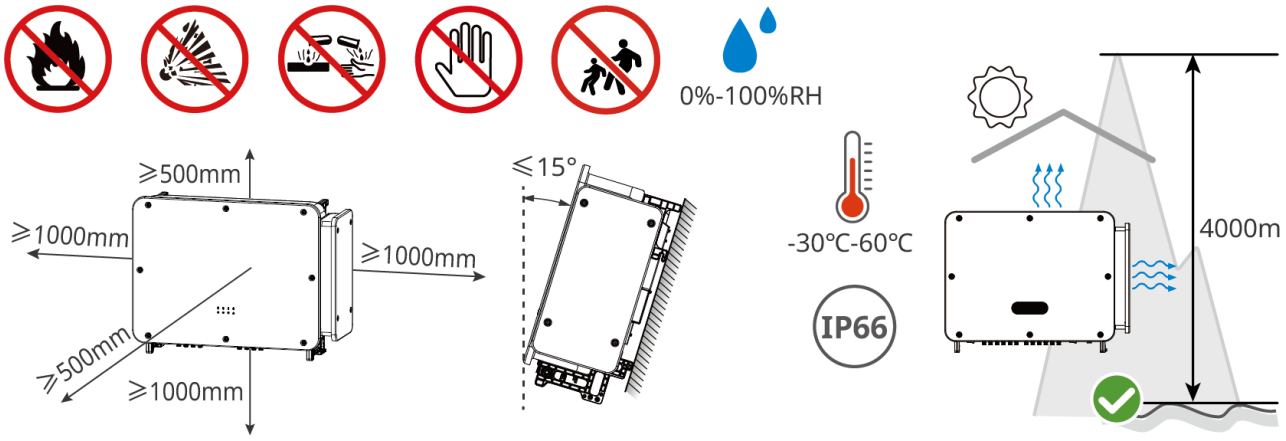
device should exceed 30m.

Installation Carrier Requirements

- The installation carrier must not be made of flammable materials and must have fire-resistant properties.
- Ensure that the installation surface is sturdy and that the carrier meets the load-bearing requirements of the device.
- During operation, the device may generate vibrations. Do not install it on carriers with poor sound insulation to avoid noise from the device disturbing residents in living areas.

Installation Angle Requirements

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

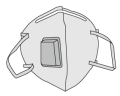
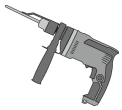
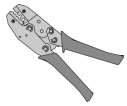
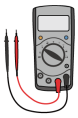
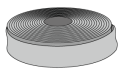


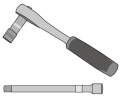
GT10INT0007

Installation Tool Requirements

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

Tool Type	Description	Tool Type	Description

	Insulated gloves, protective gloves		Dust mask
	goggle		Safety shoes
	torque wrench		hammer drill
	diagonal plier		Heat gun
	wire stripper		Terminal crimping tool
	rubber hammer		Marker pen
	multimeter		Heat shrink tubing
	Vacuum cleaner		Level bar
	open-end wrench		Jinko DC unlocking tool

	Socket tool set		

4.2 Installing the Inverter

4.2.1 Inverter Transport

⚠CAUTION

Before installation, the inverter must be transported to the installation site. To avoid personal injury or equipment damage during handling, please note the following:

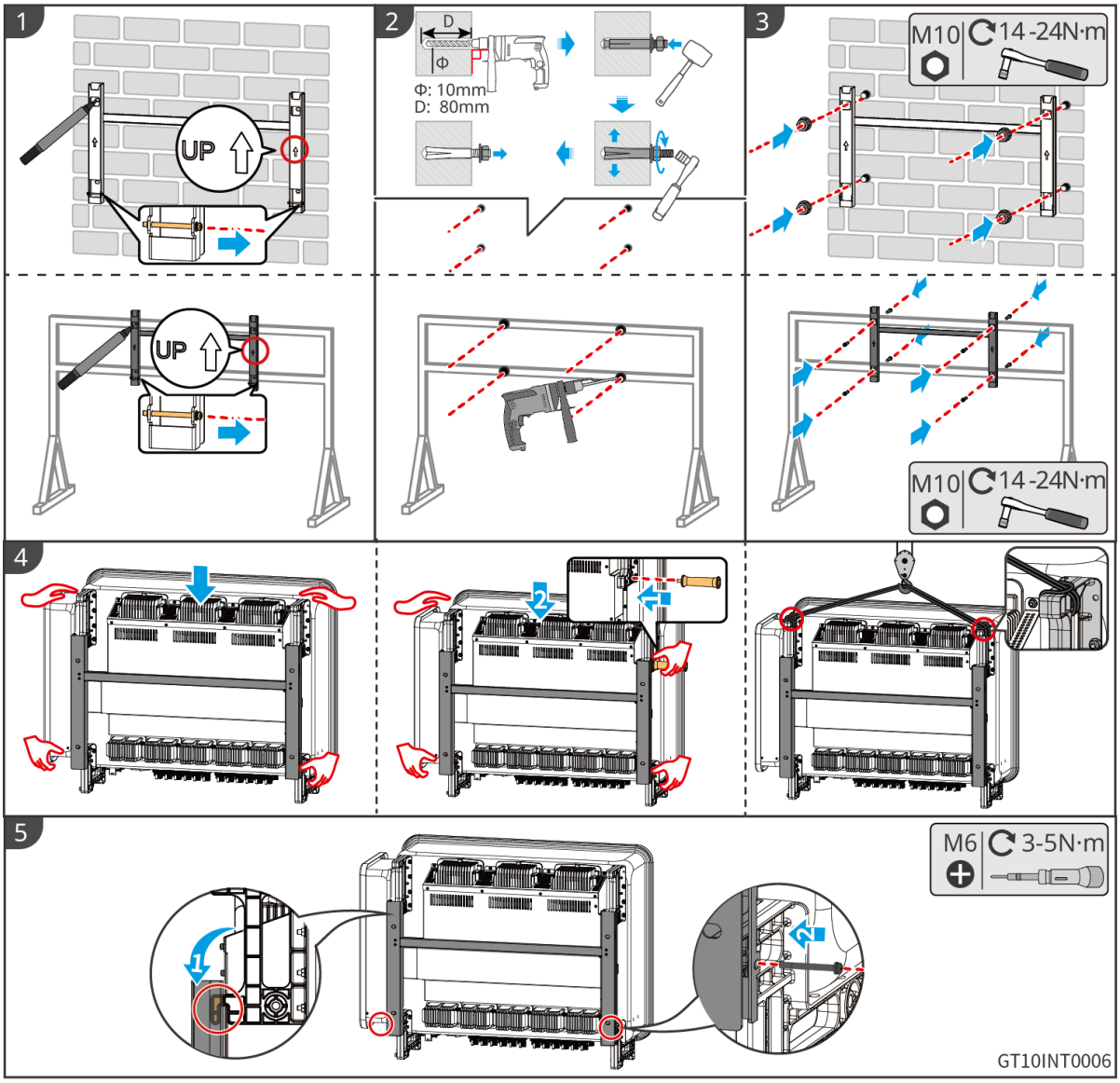
1. Based on the equipment weight, ensure an adequate number of personnel are assigned for handling to prevent the weight from exceeding the safe lifting capacity and causing injury.
2. Wear safety gloves to prevent injury.
3. Ensure the equipment remains balanced during handling to avoid dropping.

4.2.2 Installing the Inverter

NOTICE

- When drilling, ensure that the drilling position avoids water pipes, cables, etc., inside the wall to prevent danger.
- When drilling, please wear safety goggles and a dust mask to avoid inhaling dust into the respiratory tract or getting it into the eyes.
- Ensure that the drilling position avoids water pipes, cables, etc., inside the wall to prevent danger.
- If a bracket is needed to install the inverter, please prepare the bracket yourself and secure it properly.
- If a handle or lifting ring is needed, please contact the after-sales service center to purchase.
- The graphics and appearance in this document are for reference only. Different models or different versions of the same model may have different appearances. Please refer to the actual product.

Step 1: Place the backplate horizontally on the wall or bracket, and use a marker to mark the drilling positions.
Step 2: Use an impact drill with a 10mm diameter drill bit to make the holes, ensuring a depth of approximately 80mm.
Step 3: Use expansion screws to secure the backplate to the wall or bracket.
Step 4: Install the handles or lifting lugs on both sides of the inverter. The installer should carry the inverter by hand using the handles or lift it, then hang the inverter on the wall-mount bracket.
Step 5: Secure the wall-mount bracket and the inverter, ensuring the inverter is firmly installed.


1
UP
2
D
Φ
Φ: 10mm
D: 80mm
3
M10
14-24N·m
UP
M10
14-24N·m
4
2
5
M6
3-5N·m
1
2
GT10INT0006

5 Electrical Connection

5.1 Safety Precautions

DANGER

- Before performing electrical connections, disconnect the DC switch and AC output switch of the inverter to ensure the device is powered off. Live operation is strictly prohibited, otherwise it may cause electric shock and other DANGERs.
- All operations during electrical connections, as well as the specifications of cables and components used, must comply with local laws and regulations.
- If the cable is subjected to excessive tension, it may lead to poor connections. When wiring, please leave a certain length of cable before connecting to the inverter's terminal ports.

NOTICE

- When performing electrical connections, wear personal protective equipment such as safety shoes, protective gloves, and insulated gloves 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. Specific cable specifications must comply with local regulations.
- The appearance of the products in the diagrams of this document is for reference only. The appearance may vary between different models or different versions of the same model. Please refer to the actual product.

Cable Specification Requirements

Cable	Type	Cable Specification	
		Diameter	Conductor Cross-Sectional Area (mm^2)

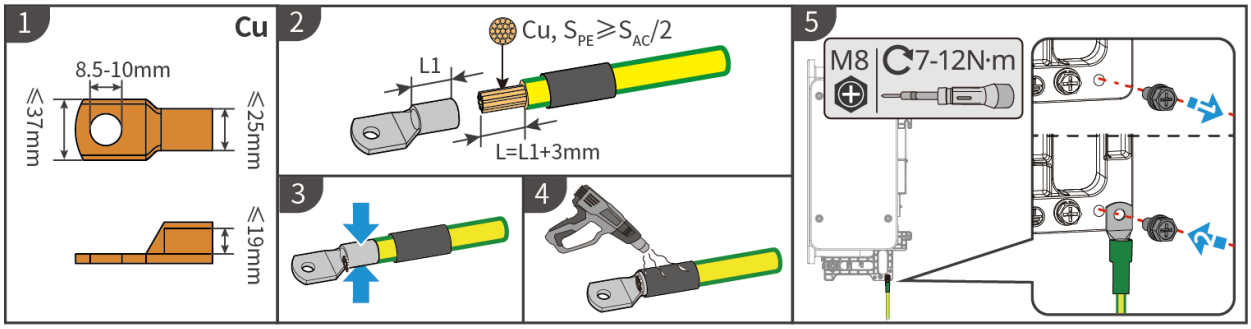
DC cable	PV cable compliant with 1100V standard	4.7 - 6.4	Recommend: 4~6	
AC Cable	Outdoor Single-Core Stranded Copper/Aluminum Cable[1]	14~34	S_{AC}: Copper Core: 95-400	S_{AC}: Aluminum Core: 120-400
	Outdoor Multi-Core Stranded Copper/Aluminum Cable[1]	22~66	S_{AC}: Copper Core: 95-240	S_{AC}: Aluminum Core: 120-240
PE cable	Outdoor Cable	S_{PE}1/2 S_{AC}		
Communication Cable	Outdoor Shielded Twisted Pair (STP) cable compliant with local standards[2]	4~6	0.2~0.5	

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

5.2 Connecting the PE cable

⚠WARNING

- The protective grounding of the chassis cannot replace the protective ground wire of the AC output port. When wiring, ensure the protective ground wires at both locations are reliably connected.
- If there are multiple inverters, ensure all inverter chassis protective grounding points are equipotentially connected.
- To improve the corrosion resistance of the terminals, it is recommended to apply silicone gel or paint on the exterior of the grounding terminal for protection after the protective ground wire connection installation is completed.
- Please prepare the protective ground wire and terminal according to the recommended specifications.
  Grounding wires of other sizes that comply with local standards and safety regulations can also be used for grounding connections. However, any damage caused thereby is beyond the manufacturer's liability.



GT10ELC0008

5.3 Connecting the AC Output Cables

⚠WARNING

- Do not connect any load between the inverter and the AC switch directly connected to the inverter.
- The inverter integrates a Residual Current Monitoring Unit (RCMU). When the inverter detects a leakage current exceeding the permissible value, it will rapidly disconnect from the grid.

Determine whether to install an RCD (Residual Current Device) based on local laws and regulations. The inverter can be connected to an external Type A RCD for protection when the DC component of the leakage current exceeds the limit. The

following RCD specifications are for reference:

Inverter Model	RCD Specification
GW150K-GT-G10	1500mA
GW100K-GT-L-G10	1000mA

NOTICE

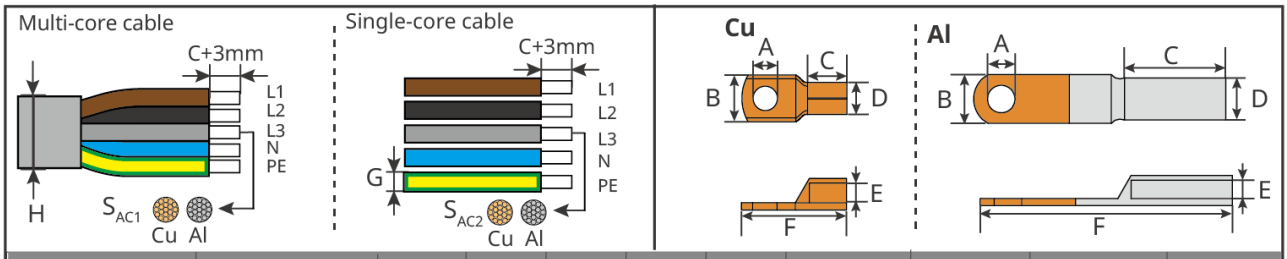
Each inverter must be equipped with an AC output switch. Multiple inverters cannot be connected to a single AC switch simultaneously.

To ensure the inverter can safely disconnect from the grid in case of an abnormality, please install an AC switch on the AC side of the inverter. Select a suitable AC switch according to local regulations. The following switch specifications are for reference:

Inverter Model	AC Switch Specification
GW150K-GT-G10	315A/400V
GW100K-GT-L-G10	

⚠WARNING

- When wiring, ensure the AC output wires fully match the "L1", "L2", "L3", "N", and "PE" ports of the AC terminal block. Incorrect cable connection will damage the inverter.
- Ensure the wire cores are fully inserted into the AC terminal block holes with no exposed parts.
- Ensure the cable connections are tight. Loose connections may cause the terminal block to overheat during operation, resulting in inverter damage.
- The AC output terminal block supports three-phase four-wire and three-phase five-wire configurations. The actual wiring should be based on the specific scenario. This document uses the three-phase five-wire system as an example for description.
- The protective earth (PE) wire length should have some slack. In case the AC output wires are subjected to pulling force due to unforeseen circumstances, ensure the PE wire is the last to bear the stress.
- The waterproof rubber grommets for the AC cable outlet holes are supplied with the inverter and are located in the inverter's AC junction box. Select the corresponding hole on the grommet based on the actual cable specification used.
- Please prepare your own AC wiring OT terminals.
- When using aluminum wires, please connect copper-aluminum transition terminals.

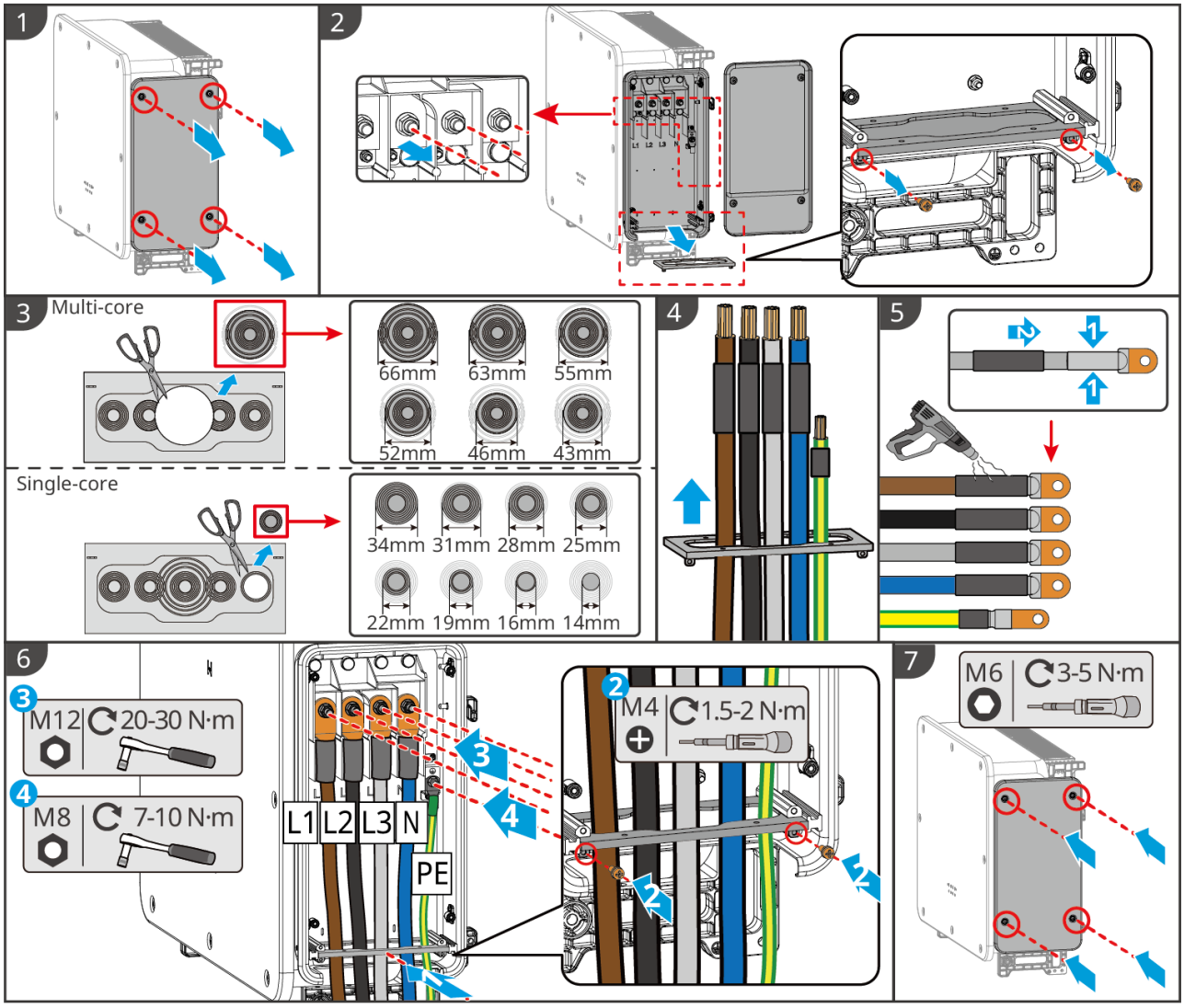


Cable Material	Cable Type	A (mm)	B (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	S_{AC1} (mm²)	S_{AC2} (mm²)
Cu	L1/L2/L3	12.5-14	⩽50	⩽34	⩽27	⩽170	Φ:14-34	Φ:22-66	95-240	95-400
	N	12.5-14	⩽37	⩽25	⩽19	-			$S_{AC1}/2$	$S_{AC2}/2$
	PE	8.5-10								
Al	L1/L2/L3	12.5-14	⩽50	⩽38	⩽27	⩽170	Φ:14-34	Φ:22-66	120-240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

GT10ELC0014

Step 1: Remove the AC wiring cover plate.

Step 2: Remove the nut and plastic grommet.
Step 3: Select the corresponding hole size based on the AC cable gauge, and cut out the cable entry hole on the plastic grommet.
Step 4: Thread the cable through the plastic grommet.
Step 5: Crimp the OT terminal onto the AC cable to assemble the AC output cable.
Step 6: Secure the AC cable to the inverter.
Step 7: Secure the AC wiring cover plate.



GT10ELC0011

5.4 Connecting DC Input Cables

DANGER

1. Do not connect the same PV string to multiple inverters, as this may cause inverter damage.
2. The PV string output does not support grounding. Before connecting the PV string to the inverter, ensure the minimum insulation resistance to ground of the PV string meets the minimum insulation impedance requirement.
3. Use the DC connectors provided in the package to connect the inverter DC cables.
4. Before connecting the PV string to the inverter, verify the following information. Failure to do so may cause permanent damage to the inverter and, in severe cases, lead to fire resulting in personal injury or property loss. Damage or injury caused by not following the requirements in this document or the corresponding user manual is not covered by the warranty.

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

⚠WARNING

- PV strings connected to the same MPPT must use PV modules of the same model and quantity.
- To maximize the inverter's power generation efficiency, ensure the maximum power point voltage of the series-connected PV modules is within the inverter's MPPT full-load voltage range.
- Ensure the voltage difference between different MPPT circuits is less than or equal to 150V.
  Ensure the input current per MPPT circuit is less than or equal to the inverter's maximum input current per MPPT circuit. Refer to the technical data.
- When the inverter is connected to multiple PV strings, maximize the number of MPPT connections.

PV String Connection Method

NOTICE
To achieve optimal power generation, it is recommended to connect the PV strings as follows.

When the number of PV strings ≤ 10, connect the PV strings from MPPT1 to MPPT10 sequentially to the inverter.

When the number of PV strings > 10, please connect the PV strings to the inverter according to the table below.

●: Connect one string of PV

●●: Connect two strings of PV

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 the inverter's DC input terminals do not need to be connected to PV strings, please use waterproof caps to seal the terminals, otherwise, it will affect the equipment's protection rating.

Step 1: Prepare DC cables.

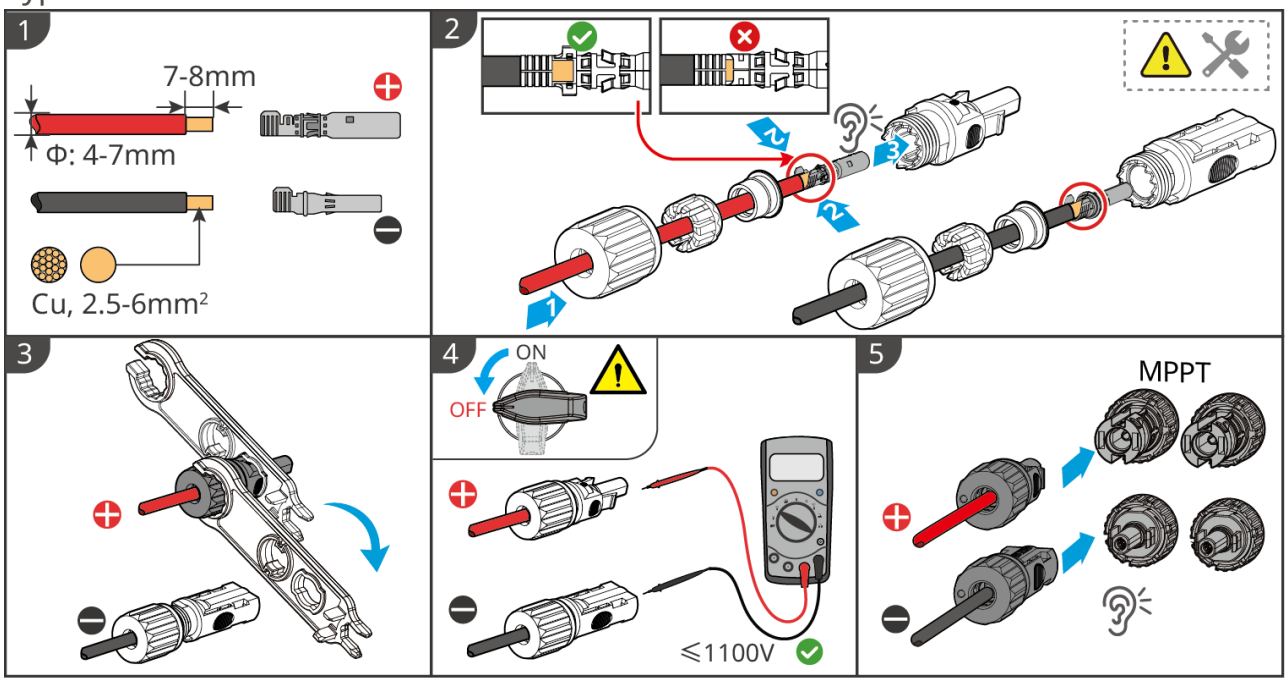
Step 2: Disassemble the DC connector. Crimp the DC terminals, and assemble the DC connector.

Step 3: Tighten the DC connector.

Step 4: Check the DC input voltage.

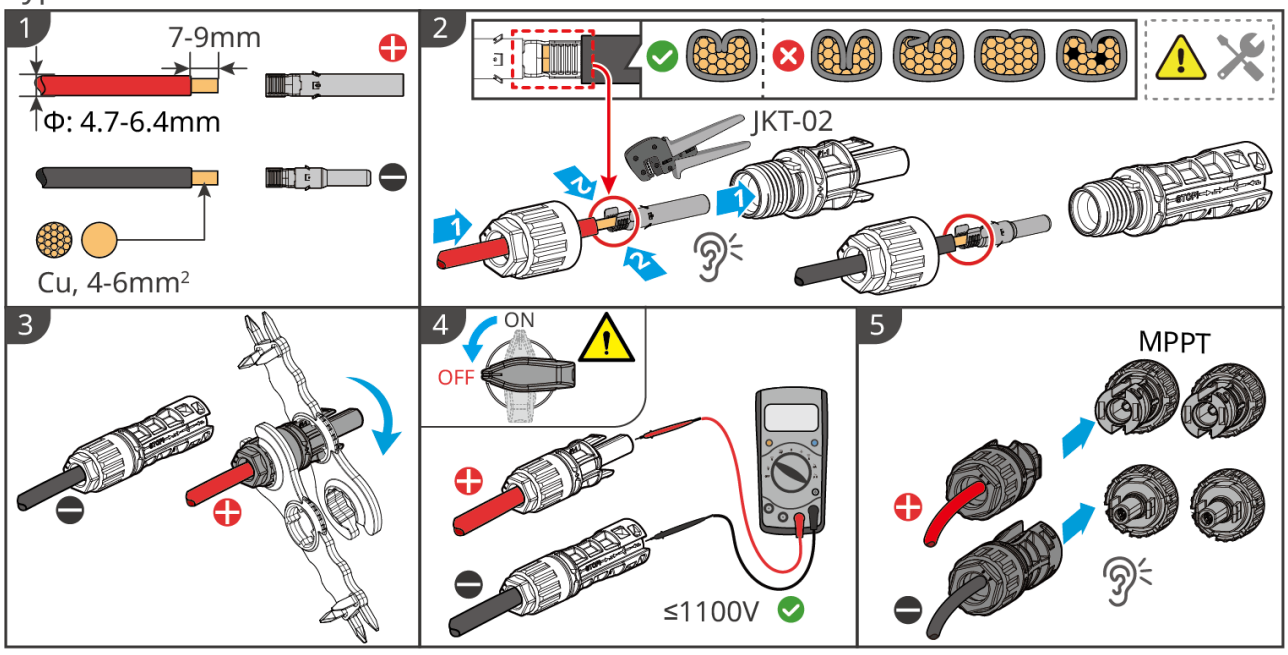
Step 5: Connect the DC connector to the inverter DC terminals.

Type One:



GT10ELC0010

Type Two:

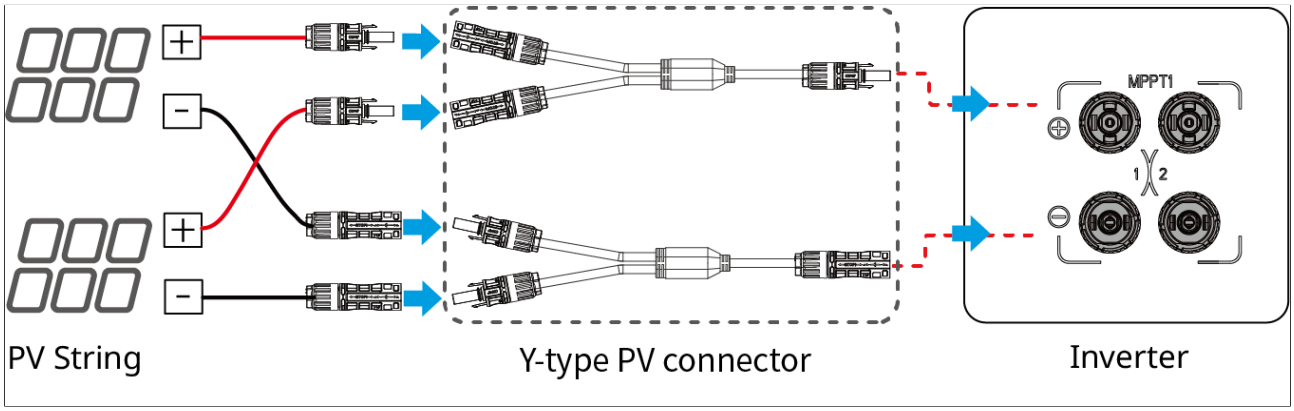


GT10ELC0009

Connect Y-Type PV Connector (Optional)

NOTICE

1. If you need to use a Y-terminal, ensure that the DC connector model of the Y-terminal matches the inverter PV input terminal specifications. Damage caused by using incompatible Y-terminals is not covered by the manufacturer's warranty.
2. Ensure that all photovoltaic strings connected through the Y-terminal on one MPPT have consistent structures, including model, quantity, tilt angle, and azimuth angle, etc.
3. The total current of the strings connected via the Y-terminal must be less than the maximum current per PV input.



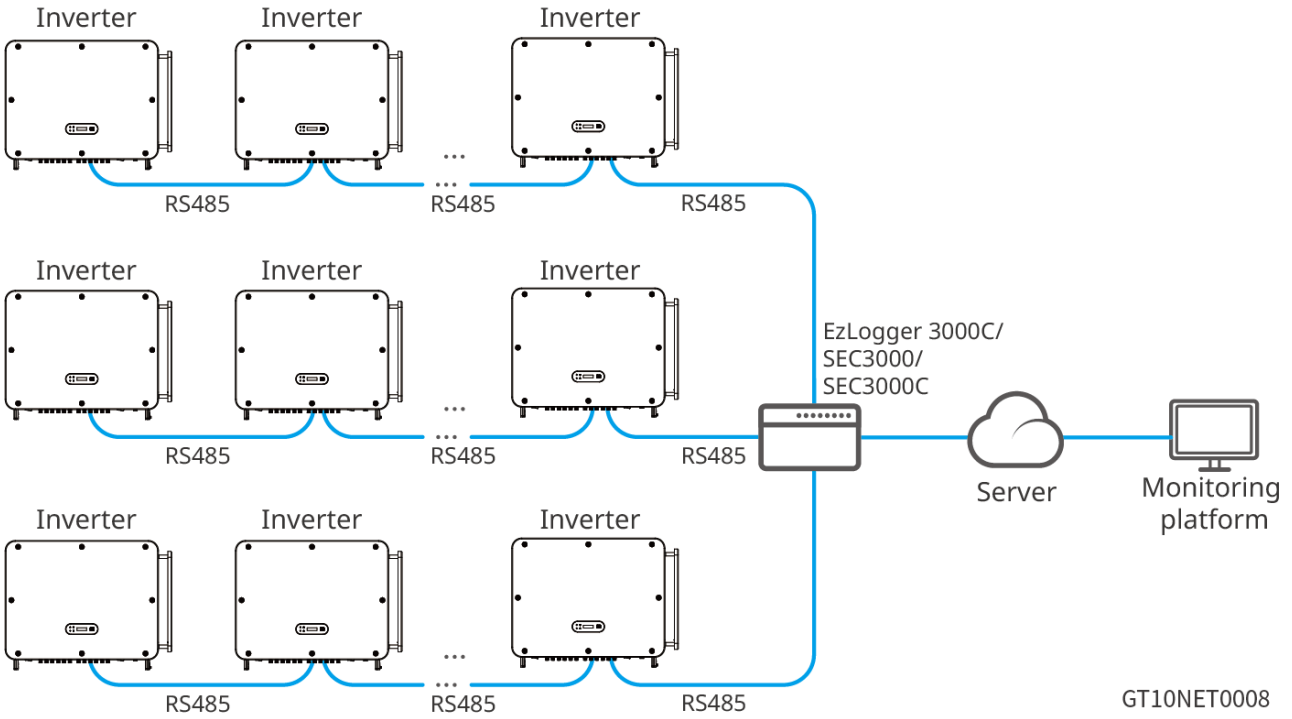
5.5 Communication Connection

- The inverter supports connecting to other inverters, meters, data collectors (EzLogger3000C), smart communication boxes (SEC3000/SEC3000C), etc., via RS485 signals to achieve functions such as parallel unit networking, export power limit, night power supply, etc.
- The inverter supports connecting to a mobile phone or web interface via a smart communication stick to set device-related parameters, view device operation information, error information, and upload system operation information to the monitoring platform for timely understanding of system status.

5.5.1 RS485 Communication Networking Solution

NOTICE

- When using a data collector to network multiple inverters via RS485, each COM port of the data collector can connect multiple inverters. When using EzLogger3000C, up to 20 inverters can be connected per COM port; when using SEC3000/SEC3000C, up to 20 inverters can be connected per COM port. The total length of the RS485 cable for each COM port must not exceed 1000m.
- When multiple inverters are operating in parallel, to ensure normal communication, please configure as follows according to the parallel scheme:
  EzLogger3000C / SEC3000&SEC3000C: Set the terminal resistor DIP switch of the last inverter to ON.
  Ezlink3000: Set the terminal resistor DIP switches of both the first and last inverters to ON.



5.5.2 Export power limit

When a photovoltaic power station generates electricity for self-consumption, and the electrical equipment cannot consume all the electricity, requiring the excess to be fed into the grid, the station's generation can be monitored and the amount fed into the grid can be controlled through smart meters, smart data collectors, smart energy controllers SEC3000/SEC3000C, or the smart communication stick Ezlink 3000.

⚠WARNING

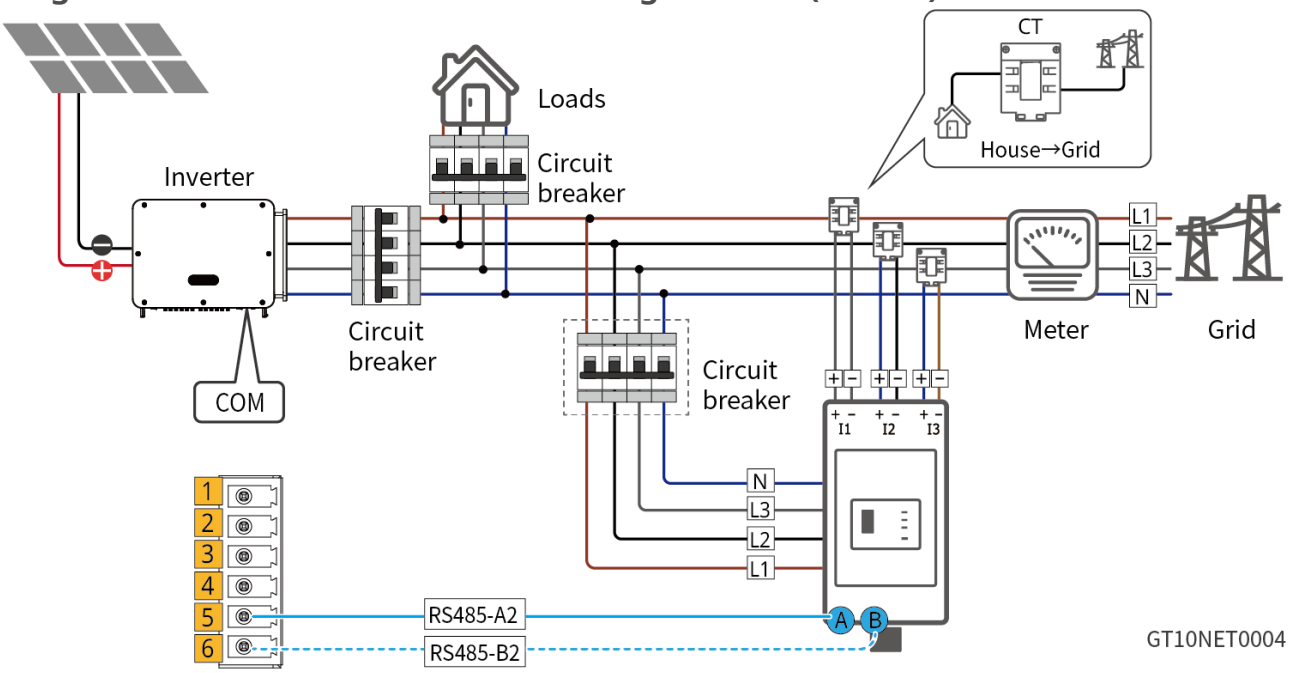
1. The CT installation location should be close to the grid connection point, and the installation direction should be correct. The '-->' in the CT indicates the direction of inverter current pointing to the grid. If reversed, the inverter will trigger an alarm and cannot achieve anti-reverse flow function.
2. The aperture of the CT must be larger than the outer diameter of the AC power line to ensure that the AC power line can pass through the CT.
3. For the specific wiring method of the CT, please refer to the corresponding manufacturer's documentation to ensure correct wiring direction and normal function.
4. The CT should be clamped onto the L1, L2, and L3 cables, and should not be clamped onto the N cable.
5. CT specifications requirements:
   - For the current transformation ratio specification of the CT, please select nA/5A. (nA: CT primary side input current, where n ranges from 200 to 5000, and is selected by the user based on actual needs. 5A: CT secondary side output current.)
   - The accuracy value of the CT is recommended to be selected as 0.5, 0.5s, 0.2, or 0.2s, to ensure that the current sampling error of the CT is ≤1%.
6. To ensure the current detection accuracy of the CT, it is recommended that the CT cable length does not exceed 30m, and the cable's current carrying capacity is recommended to be 6A.

NOTICE

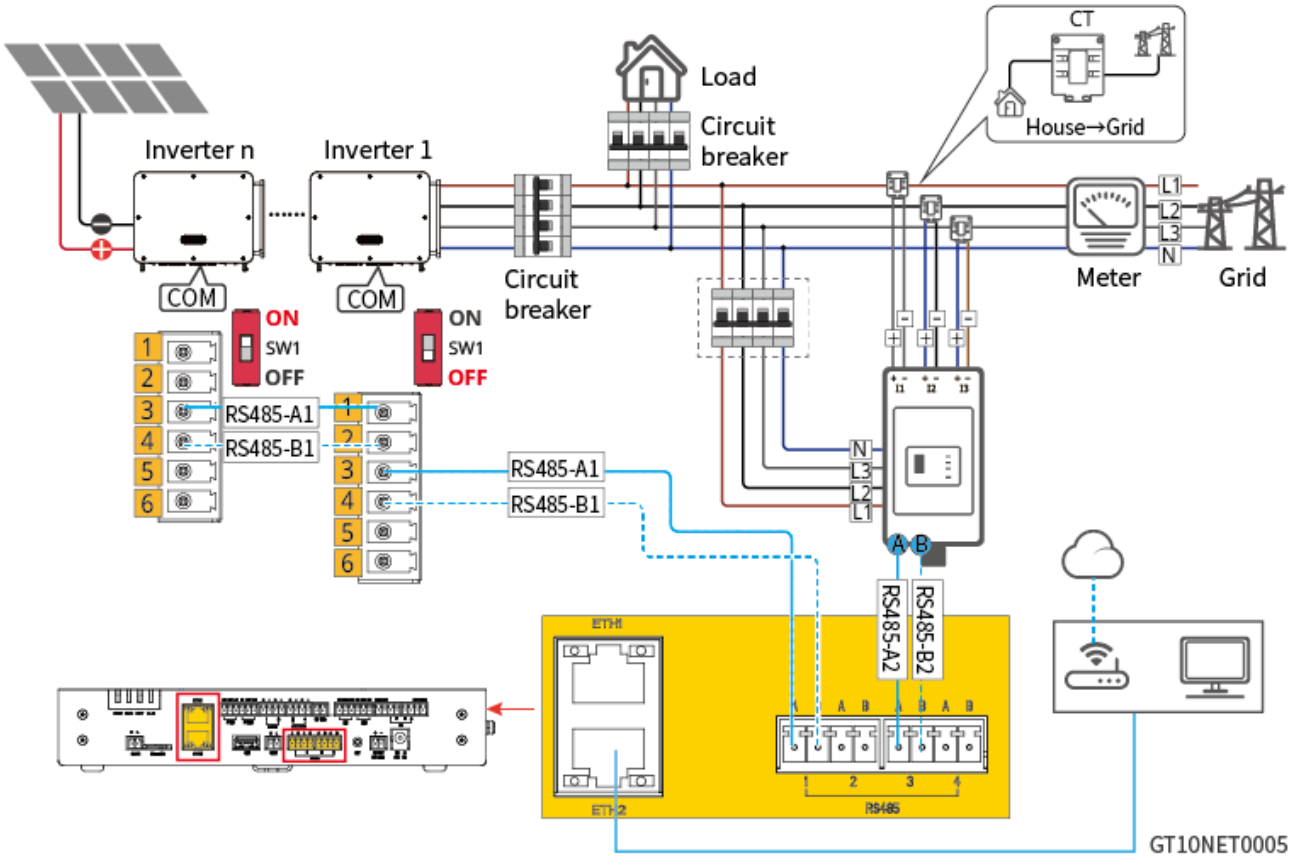
1. Ensure the meter wiring and phase sequence are correct. Recommended cross-sectional area for meter input voltage cables: 1mm² (18AWG).
2. Applicable to GM330 only:

- The external CT ratio can be set via the Solargo App. For example: If a 200A/5A CT is selected, the CT ratio should be set to 40.
- If the grid connection scenario is three-phase three-wire, the N line and L2 line on the meter side must be shorted.
- For detailed setup information, please refer to: SolarGo App User Manual

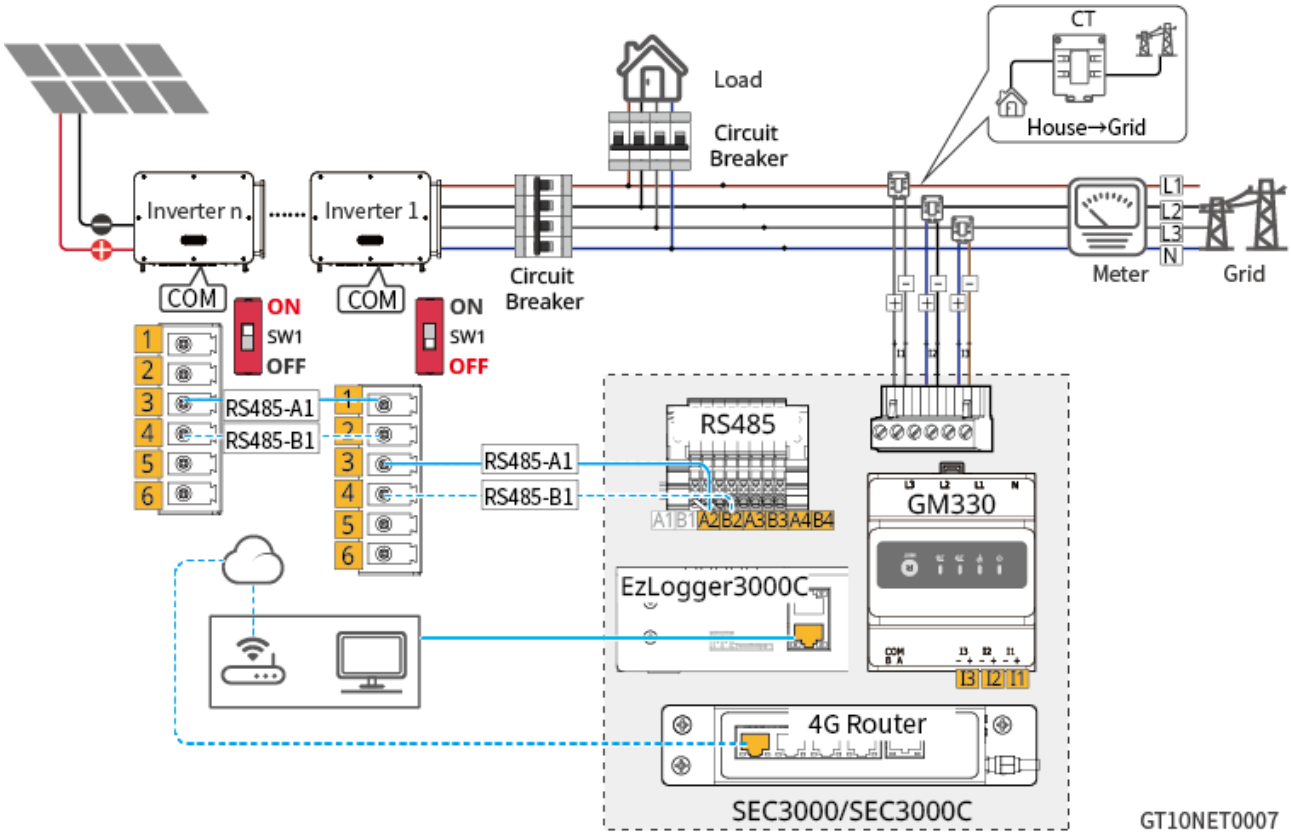
Single-unit Power Limitation Networking Solution (GM330)



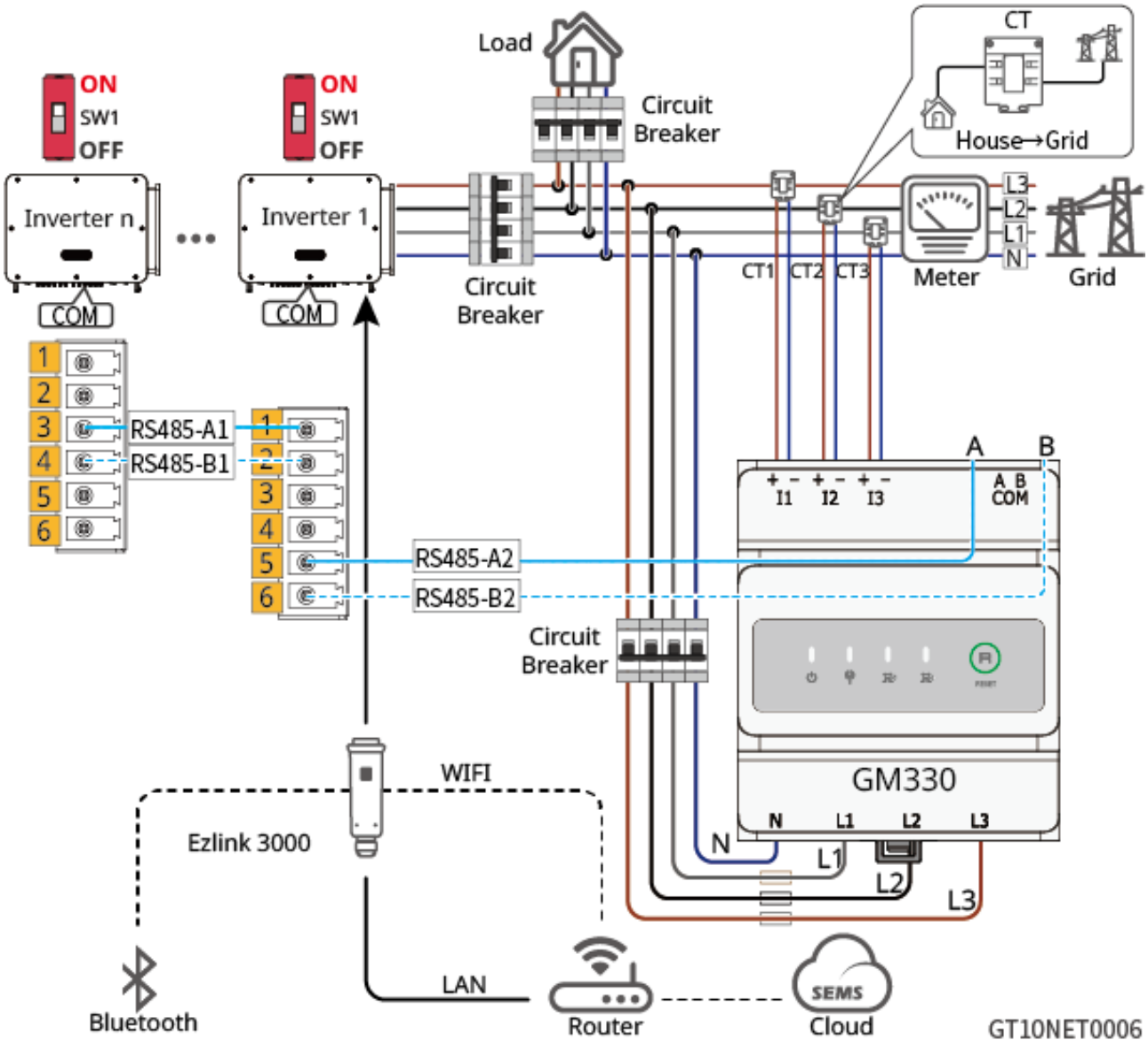
Multi-unit Power Limitation Networking Solution (EzLogger3000C+GM330)



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



Multi-unit Power Limitation Networking Solution (Ezlink3000)

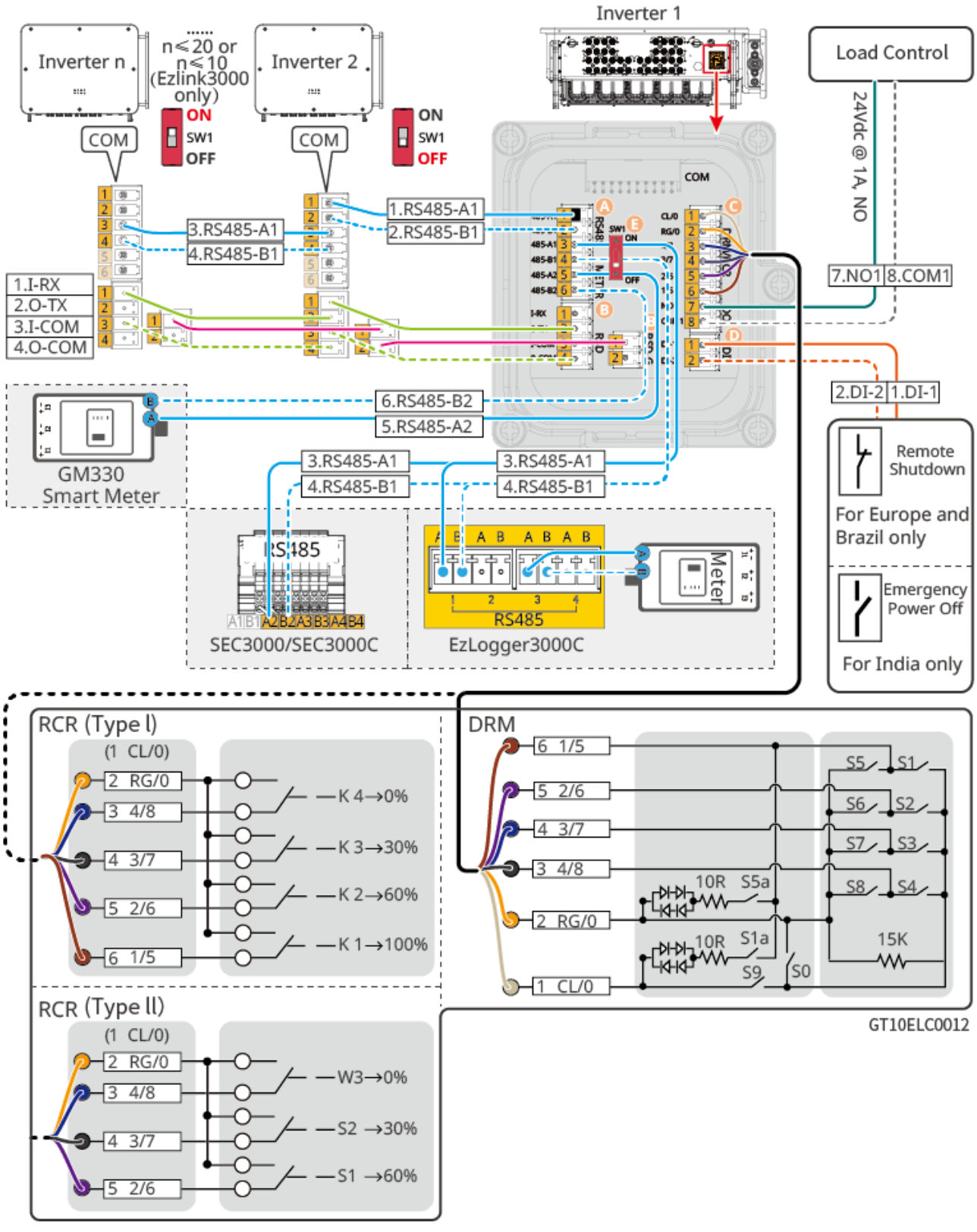


5.5.3 Connect Communication Cable

NOTICE

- When connecting communication cables, ensure the port definitions exactly match the device. Route cables away from interference sources and power lines to avoid affecting signal reception.
- The Remote Shutdown and EPO functions are disabled by default. To use them, please enable them via the SolarGo App. For details, refer to the "SolarGo APP User Manual".
- When multiple inverters operate in parallel, to ensure normal communication, configure as follows based on the parallel scheme:
  EzLogger3000C / SEC3000&SEC3000C: Set the terminal resistor DIP switch of the last inverter to ON.
  Ezlink3000: Set the terminal resistor DIP switches of both the first and the last inverter to ON.

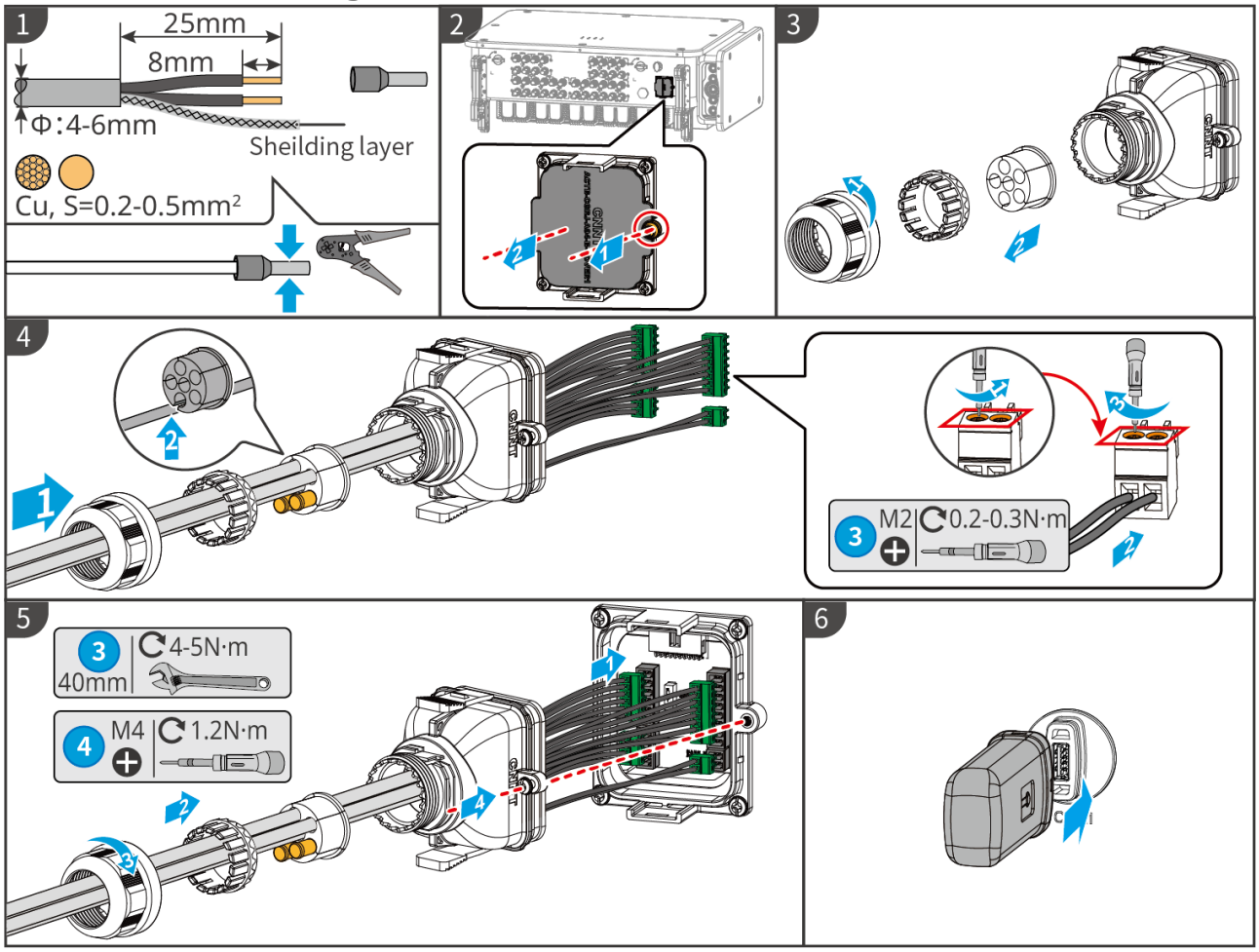
Communication Port



Function	Area	No.	Port Name	Description

RS485	A	1	RS485-A1	Used for communication between multiple inverters, data collectors, and smart communication boxes.
		2	RS485-B1	
		3	RS485-A1	
		4	RS485-B1	
		5	RS485-A2	Used for communication with smart meters.
		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 to DRED device (Australia only) or 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 the startup of diesel generators. DO contact rating is 24VDC@1A, NO normally open contact.
		8	COM1	
Remote Shutdown	D	1	DI-1	Connect to remote shutdown device (Europe or Brazil models only) or emergency shutdown device (India only).
		2	DI-2	

Communication Wiring



GT10ELC0013

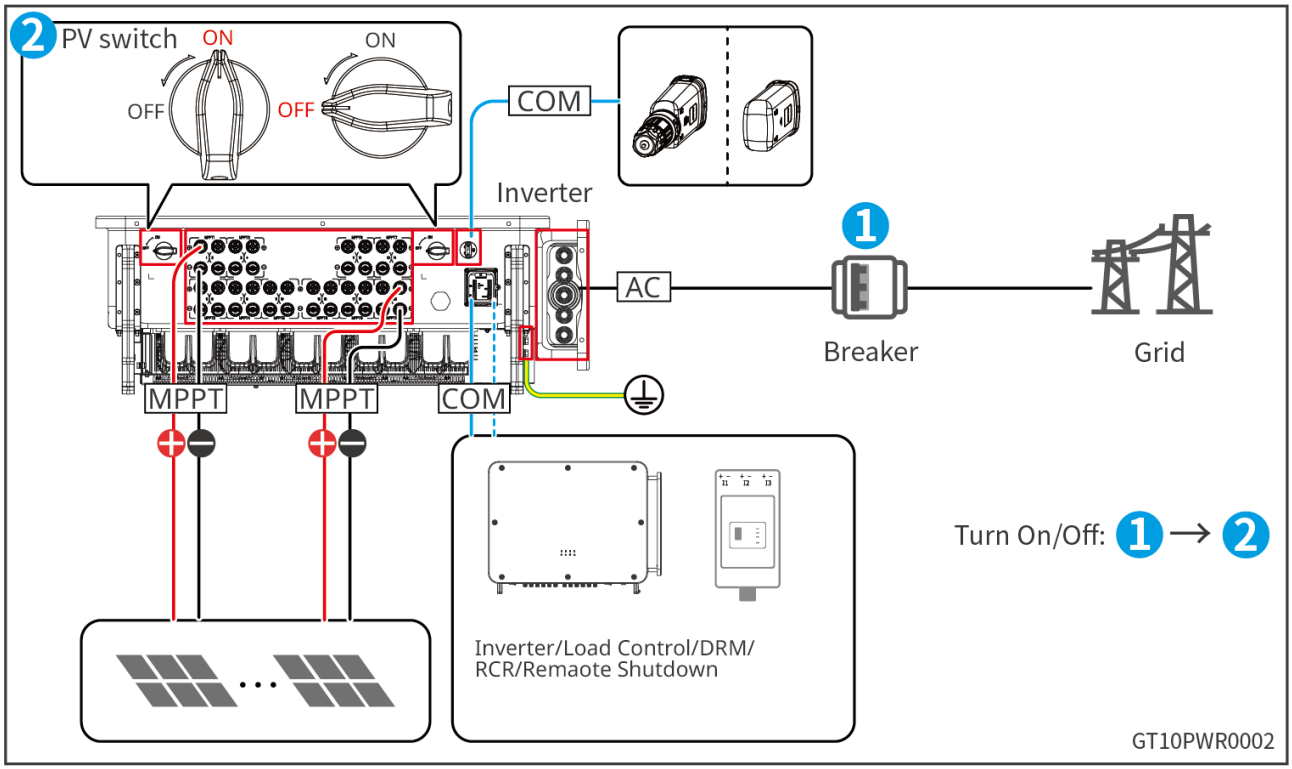
6 Equipment Commissioning

6.1 Pre-power-on Check

No.	Inspection Item
1	The inverter is securely installed, the installation location facilitates operation and maintenance, the installation space allows for ventilation and heat dissipation, and the installation environment is clean and tidy.
2	The PE cable, DC input cable, AC output cable, and communication cable are connected correctly and securely.
3	Cable bundling meets wiring requirements, is reasonably distributed, and shows no damage.
4	Unused ports are sealed.
5	The voltage and frequency at the inverter's grid connection point meet the grid interconnection requirements.

6.2 Equipment Power-On

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


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/Remaote Shutdown
GT10PWR0002

7 System Commissioning

7.1 Setting Inverter Parameters via App

SolarGo App is a mobile application software that can communicate with the inverter via Bluetooth or WiFi. The following are common features:

1. View the inverter's operating data, software version, alarm information, etc.
2. Set the inverter's grid parameters, communication parameters, etc.
3. Maintain the device.

For detailed functions, 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

7.2 Power Plant Monitoring via SEMS+

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

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

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

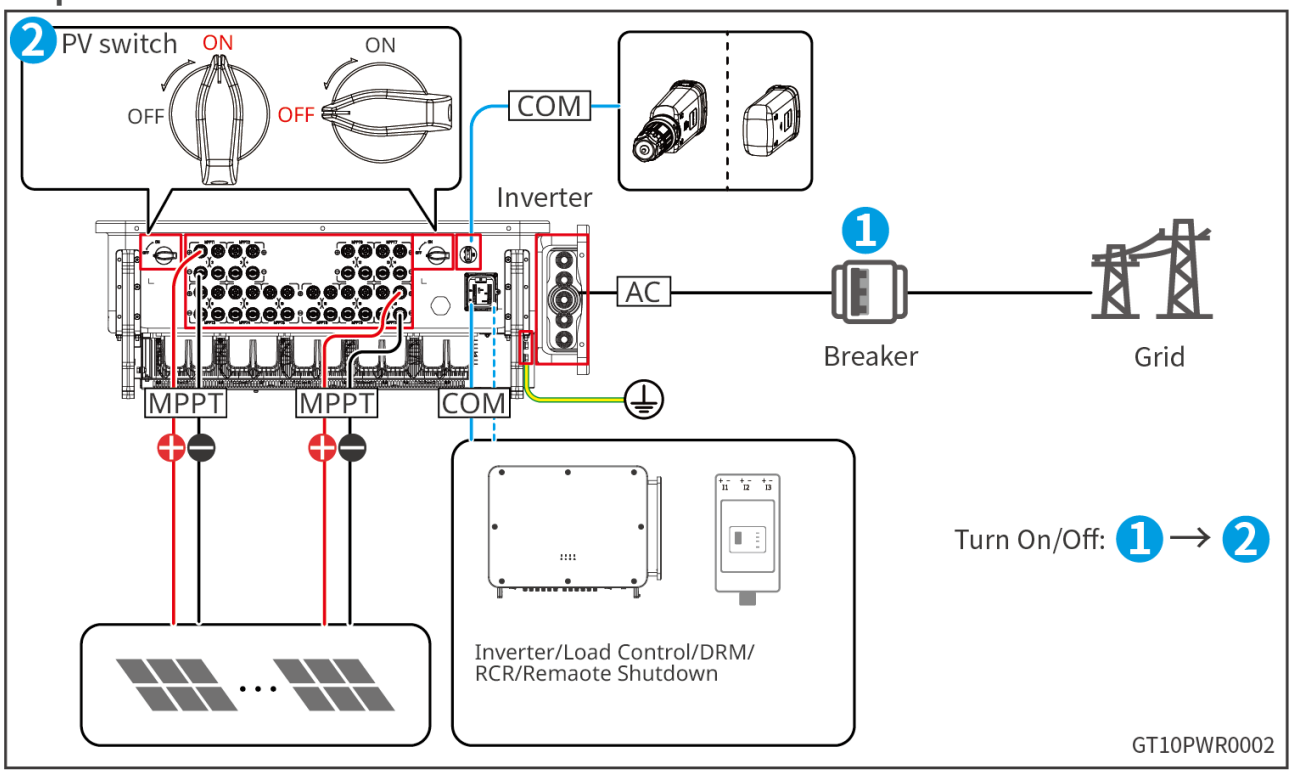
8 Maintenance

8.1 Inverter Shutdown

DANGER

- When performing operation and maintenance on the inverter, please de-energize the inverter. Operating the equipment while energized may cause inverter damage or electric shock DANGER.
- After the inverter is powered off, the internal components require some time to discharge. Please wait according to the label time requirements until the device is completely discharged.

Step 1: Disconnect the AC switch between the inverter and the grid.
Step 2: Disconnect the DC switch of the inverter.



8.2 Inverter Removal

⚠WARNING

- Ensure the inverter is powered off.
- Wear personal protective equipment when operating the inverter.

Step 1: Disconnect all electrical connections of the inverter, including: DC cables, AC cables, Communication cable, smart dongle, PE cable.
Step 2: Remove the inverter from the backplate.
Step 3: Remove the backplate.
Step 4: Store the inverter properly. If the inverter will be put into use later, ensure the storage conditions meet the requirements.

8.3 Scrapped Inverter

When the inverter can no longer be used and needs to be scrapped, please dispose of the inverter according to the electrical waste disposal requirements of the regulations in the country/region where the inverter is located. The inverter must not be disposed of as household waste.

8.4 Troubleshooting

Please follow the methods below for troubleshooting. If the troubleshooting methods cannot help you, please contact the after-sales service center.
When contacting the after-sales service center, please collect the following information to facilitate quick problem resolution.

1. Inverter information, such as: serial number, software version, device installation time, fault occurrence time, fault frequency, etc.
2. Device installation environment, such as: weather conditions, whether components are blocked, have shadows, etc. It is recommended to provide photos, videos, and other files for the installation environment to assist in problem analysis.
3. Grid situation.

No.	Fault Name	Fault Cause	Resolution
1	Grid Power Outage	1. Grid power outage. 2. AC line or AC switch is disconnected.	1. The alarm will disappear automatically after grid power supply is restored. 2. Check if the AC line or AC switch is disconnected.
2	Grid Overvoltage Protection	Grid voltage is higher than the allowable range, or the duration of high voltage exceeds the HVRT set value.	1. If it occurs occasionally, it may be a temporary grid anomaly. The inverter will resume normal operation after detecting a normal grid, requiring no manual intervention. 2. If it occurs frequently, check whether the grid voltage is within the allowable range. • If the grid voltage is outside the allowable range, contact the local power operator. • If the grid voltage is within the allowable range, modify the grid voltage after obtaining approval from the local power operator. 3. If normal operation cannot be restored for a long time, check whether the AC side circuit breaker and output cables are properly connected.

3	Grid Rapid Overvoltage Protection	Grid voltage anomaly or extremely high voltage triggers the fault.	1. If it occurs occasionally, it may be a temporary grid anomaly. The inverter will resume normal operation after detecting a normal grid, requiring no manual intervention. 2. If it occurs frequently, check whether the grid voltage is within the allowable range. • If the grid voltage is outside the allowable range, contact the local power operator. • If the grid voltage is within the allowable range, modify the grid voltage after obtaining approval from the local power operator. 3. If normal operation cannot be restored for a long time, check whether the AC side circuit breaker and output cables are properly connected.

4	Grid Undervoltage Protection	Grid voltage is lower than the allowable range, or the duration of low voltage exceeds the LVRT set value.	1. If it occurs occasionally, it may be a temporary grid anomaly. The inverter will resume normal operation after detecting a normal grid, requiring no manual intervention. 2. If it occurs frequently, check whether the grid voltage is within the allowable range. • If the grid voltage is outside the allowable range, contact the local power operator. • If the grid voltage is within the allowable range, modify the grid voltage after obtaining approval from the local power operator. 3. If normal operation cannot be restored for a long time, check whether the AC side circuit breaker and output cables are properly connected.

5	Grid 10min Overvoltage	The sliding average of grid voltage exceeds the safety regulation range within 10 minutes.	1. If it occurs occasionally, it may be a temporary grid anomaly. The inverter will resume normal operation after detecting a normal grid, requiring no manual intervention. 2. Check if the grid voltage has been running at a high level for a long time. If it occurs frequently, check whether the grid voltage is within the allowable range. • If the grid voltage is outside the allowable range, contact the local power operator. • If the grid voltage is within the allowable range, modify the Grid 10min Overvoltage protection point after obtaining approval from the local power operator.
6	Grid Overfrequency	Grid anomaly, the actual grid frequency is higher than the local grid standard requirements.	1. If it occurs occasionally, it may be a temporary grid anomaly. The inverter will resume normal operation after detecting a normal grid, requiring no manual intervention. 2. If it occurs frequently, check whether the grid frequency is within the allowable range. • If not, contact the local power operator. • If yes, also modify the grid overfrequency protection point after obtaining approval from the local power operator.

7	Grid Underfrequency	Grid anomaly, the actual grid frequency is lower than the local grid standard requirements.	1. If it occurs occasionally, it may be a temporary grid anomaly. The inverter will resume normal operation after detecting a normal grid, requiring no manual intervention. 2. If it occurs frequently, check whether the grid frequency is within the allowable range. • If not, contact the local power operator. • If yes, also modify the grid underfrequency protection point after obtaining approval from the local power operator.
8	LVRT Undervoltage Fault	Grid anomaly, the duration of abnormal grid voltage exceeds the time specified by LVRT.	1. If it occurs occasionally, it may be a temporary grid anomaly. The inverter will resume normal operation after detecting a normal grid, requiring no manual intervention. 2. If it occurs frequently, check whether the grid voltage is within the allowable range. If not, contact the local power operator; if yes, contact your dealer or after-sales service center.
9	HVRT Overvoltage	Grid anomaly, the duration of abnormal grid voltage exceeds the time specified by HVRT.	
10	30mA GFCI Protection	The insulation impedance of the input to ground becomes low during inverter operation.	
11	60mA GFCI Protection		
12	150mA GFCI Protection		

13	GFCI Protection (300mA)		1. If it occurs occasionally, it may be caused by temporary external line anomalies. The inverter will resume normal operation after the fault is cleared, requiring no manual intervention. 2. If it occurs frequently or cannot be restored for a long time, check if the insulation impedance of the PV string to ground is too low.
14	DCI Protection Level1	The DC component of the inverter output current is higher than the safety regulation or the machine's default allowable range.	1. If it is caused by an anomaly introduced by an external fault (such as grid anomaly, frequency anomaly, etc.), the inverter will automatically resume normal operation after the fault disappears, requiring no manual intervention. 2. If the alarm occurs frequently, affecting the normal power generation of the power station, contact your dealer or after-sales service center.
15	DCI Protection Level2		
16	Low Insulation Resistance	1. PV string short-circuited to protective earth. 2. The PV string is installed in a long-term humid environment with poor line-to-ground insulation.	1. Check the impedance of the PV string to protective earth. If a short circuit is found, rectify the short circuit point. 2. Check if the inverter's protective earth wire is correctly connected. 3. If it is confirmed that the impedance is indeed lower than the default value in rainy/overcast conditions, reset the "Insulation Impedance Protection Point".
17	Online Insulation Impedance Low		

18	Grounding Abnormal	1. The inverter's protective earth wire is not connected. 2. When the PV string output is grounded, no isolation transformer is connected on the inverter output side.	1. Confirm whether the inverter's protective earth wire is properly connected. 2. In scenarios where the PV string output is grounded, confirm whether an isolation transformer is connected on the inverter output side.
19	L-PE Short Circuit	Output phase line to PE impedance is low or short-circuited.	Detect the output phase line to PE impedance, locate the position with low impedance and repair it.
20	Hardware Export Limit Protection	Load abnormal fluctuation.	1. If it is caused by an anomaly introduced by an external fault, the inverter will automatically resume normal operation after the fault disappears, requiring no manual intervention. 2. If this alarm occurs frequently, affecting the normal power generation of the power station, contact your dealer or after-sales service center.
21	Internal Comm Loss	1. Chip not powered. 2. Chip firmware version error.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact your dealer or after-sales service center.

22	AC HCT check Abnormal	AC sensor sampling anomaly exists.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact your dealer or after-sales service center.
23	GFCI HCT Check Abnormal	Leakage current sensor sampling anomaly exists.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact your dealer or after-sales service center.
24	Relay Check Abnormal	1. Relay anomaly (relay short circuit). 2. Control circuit anomaly. 3. AC side wiring anomaly (possible loose connection or short circuit).	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact your dealer or after-sales service center.
25	Internal Fan Abnormal	1. Fan power supply anomaly. 2. Mechanical failure (stall). 3. Fan aging damage.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact your dealer or after-sales service center.
26	External Fan Abnormal		
27	Flash R/W Abnormal	Internal storage Flash anomaly.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact your dealer or after-sales service center.

28	DC Arcing Failure	1. DC string connection terminals are not securely connected. 2. DC wiring is damaged.	Check if the string connection wires are normal, and if the wiring is correct and in good contact.
29	AFCI Check Failure	Arcing detection device anomaly.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact your dealer or after-sales service center.
30	INV Module Overtemperature	1. Inverter installation location is not ventilated. 2. Ambient temperature is too high. 3. Internal fan operation is abnormal.	1. Check if the ventilation at the inverter installation location is good, and if the ambient temperature exceeds the maximum allowable ambient temperature range. 2. If ventilation is poor or ambient temperature is too high, improve its ventilation and heat dissipation conditions. 3. If ventilation and ambient temperature are both normal, contact the dealer or after-sales service center.
31	Cabinet Overtemperature		
32	BST Module Overtemperature		
33	Cabinet Under Temperature	Ambient temperature is too low.	1. Detect if the ambient temperature is too low. Wait for the temperature to rise to the machine's operating voltage range, check if the machine works normally. 2. If ventilation and ambient temperature are both normal, contact the dealer/GoodWe Customer Service Center.

34	1.5V Ref Abnormal	Reference circuit fault.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact your dealer or after-sales service center.
35	0.3V Ref Abnormal	Reference circuit fault.	
36	0.8V Ref Abnormal	Reference circuit fault.	
37	Bus Overvoltage	1. PV voltage is too high. 2. Inverter BUS voltage sampling anomaly. 3. The isolation effect of the dual-split transformer at the inverter rear end is poor, causing mutual influence when two inverters are grid-connected, with one inverter reporting DC overvoltage when connecting to the grid.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact your dealer or after-sales service center.
38	P-Bus Overvoltage		
39	N-Bus Overvoltage		
40	PV Input Overvoltage	PV array configuration error, too many PV panels connected in series in the string.	Check the series configuration of the corresponding PV array string to ensure the string's open-circuit voltage does not exceed the inverter's maximum operating voltage.

41	PV Continuous Hardware Overcurrent	1. Module configuration is unreasonable. 2. Hardware damage.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then 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 Continuous Software Overcurrent	1. Module configuration is unreasonable. 2. Hardware damage.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then 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 if the string is reverse connected.
44	PV Voltage Low	Weak or abnormally changing sunlight.	1. If it occurs occasionally, it may be due to abnormal sunlight. The inverter will automatically resume normal operation, requiring no manual intervention. 2. If it occurs frequently, contact the dealer/after-sales service center.
45	Bus Voltage Low	Weak or abnormally changing sunlight.	1. If it occurs occasionally, it may be due to abnormal sunlight. The inverter will automatically resume normal operation, requiring no manual intervention. 2. If it occurs frequently, contact the dealer/after-sales service center.

46	Bus Soft Start Failure	Boost drive circuit anomaly.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact the dealer/after-sales service center.
47	Bus Voltage Imbalance	1. Inverter sampling circuit anomaly. 2. Hardware anomaly.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact the dealer/after-sales service center.
48	Gird Phase Lock Failure	Grid frequency is unstable.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact the dealer/after-sales service center.
49	Inverter Continuous Overcurrent	Short-term sudden changes in the grid or load cause control overcurrent.	Occasional occurrence requires no action; if this alarm occurs frequently, contact the dealer/after-sales service center.
50	INV Software Overcurrent		
51	Phase R INV Hardware Overcurrent		
52	phase S INV Hardware Overcurrent		

53	Phase T INV Hardware Overcurrent		
54	PV Hardware Overcurrent	Weak or abnormally changing sunlight.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact the dealer/after-sales service center.
55	PV Software Overcurrent		
56	PV HCT Failure	Boost current sensor anomaly.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If the fault persists, contact the dealer/GoodWe Customer Service Center.
57	String Missing (String 1~String 20)	String fuse is disconnected (if present).	Check if the fuse is disconnected.
58	String Terminal Temperature High (String 1~String 20)	High terminal temperature detected.	1. Check if the terminal is loose, causing poor contact. 2. If the terminal contact is good and the alarm occurs frequently, contact the dealer/GoodWe Customer Service Center.
59	AC Terminal Temperature High		

8.5 Routine Maintenance

⚠DANGER
When performing operation and maintenance on the inverter, please power it off. Operating the equipment while energized may cause inverter damage or risk of electric shock.

Maintenance Content	Maintenance Method	Maintenance Cycle
System Cleaning	Check the heat sink and air inlet/outlet for foreign objects and dust.	Once every six months to once per year
Fan	Check if the fan operates normally, for any abnormal noise, and if its appearance is normal.	Once per year
DC Switch	Turn the DC switch on and off 10 times consecutively to ensure its normal function.	Once per year
Electrical Connections	Check electrical connections for looseness, and inspect cables for damage or exposed copper.	Once every six months to once per year
Sealing	Check if the sealing of the equipment cable entry holes meets requirements. If gaps are too large or unsealed, reseal them.	Once per year

Fan Maintenance

For fan maintenance, please refer to the following steps:

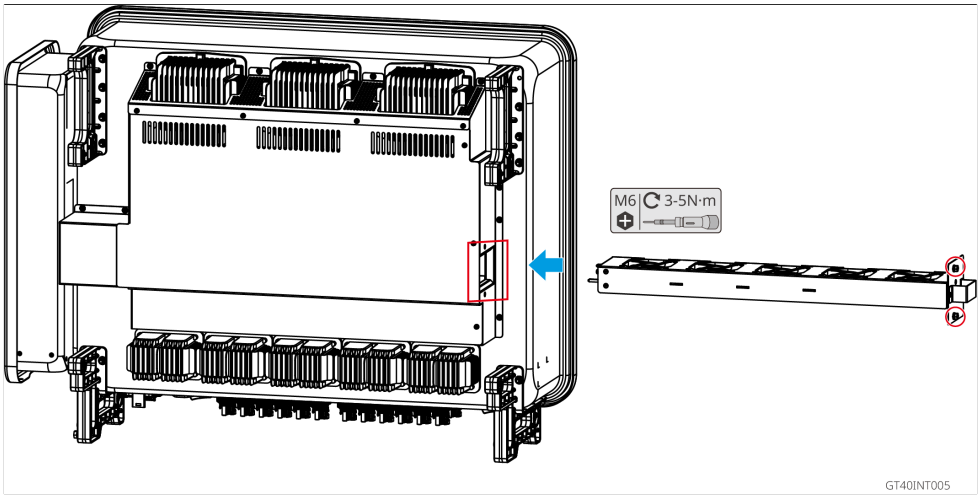
GT series inverters are equipped with an external fan module, which is inserted into the back of the inverter from the left side. This fan needs to be cleaned annually using a vacuum cleaner. For thorough cleaning, please remove the fan from the machine before cleaning.

1. Disconnect the AC switch between the inverter and the grid, and disconnect the DC switch of the inverter.
2. Wait according to the label requirements until the residual voltage is released and the fan stops operating.
3. Clean the fan.

- Use a screwdriver to remove the screws and pull out the fan;
- Please pull out the entire external fan module as a whole, do not pull out individual

fans.

4. Please use a soft bristle brush, cloth, or vacuum cleaner for cleaning.
5. After cleaning, reassemble the fan and tighten the screws.



9 Technical Parameter

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	330~650
	600~850V @480Vac	
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	100*3
Max. AC Apparent Power (kVA)	165	100*3
Nominal Power at 40℃ (kW)	150	100*3
Max. Power at 40℃ (Including AC Overload) (kW)	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
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	251
	238.2A @400Vac	
	229.6A @415Vac	
	198.5A @480Vac	
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	251
	216.5A @400Vac	
	208.7A @415Vac	
	180.4A @480Vac	
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.
*3: 95.6kW/KVA for 220V.
*4: For Brazil, 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.

10 Explanation of Terms

Definition of Overvoltage Categories
Overvoltage Category I: Equipment connected to circuits which have measures to limit transient overvoltages to a relatively low level.
Overvoltage Category II: Energy-consuming equipment supplied from a fixed electrical installation. This category includes appliances, portable tools, and other household and similar loads. If special requirements for reliability and suitability apply to such equipment, Overvoltage Category III is adopted.
Overvoltage Category III: Equipment in fixed electrical installations where reliability and suitability must meet special requirements. This includes switching devices in fixed electrical installations and industrial equipment permanently connected to fixed electrical installations.
Overvoltage Category IV: Equipment used at the origin of the electrical installation, including measuring instruments and primary overcurrent protection devices, etc.

Definition of Wet Location Categories

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

Definition of Environmental Categories:
Outdoor Inverter: Ambient air temperature range -25°C to +60°C, suitable for Pollution Degree 3 environment.
Indoor Type II Inverter: Ambient air temperature range -25°C to +40°C, suitable for Pollution Degree 3 environment.
Indoor Type I Inverter: Ambient air temperature range 0°C to +40°C, suitable for Pollution Degree 2 environment.

Definition of Pollution Degree Categories
Pollution Degree 1: No pollution or only dry, non-conductive pollution.
Pollution Degree 2: Normally only non-conductive pollution occurs. Temporary conductivity caused by condensation must be expected.
Pollution Degree 3: Conductive pollution occurs, or dry non-conductive pollution becomes conductive due to condensation.
Pollution Degree 4: Persistent conductive pollution occurs, for example due to conductive dust or rain or snow.

11 Related Product Manual Acquisition

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

GoodWe Technologies Co., Ltd.
No. 90 Zijin Road, Suzhou New District, Suzhou, China
400-998-1212
www.goodwe.com
service@goodwe.com