GOODWE

User Manual

Grid-Tied PV Inverter

GT Series

(100-125kW)

V1.2-2024-09-25

Trademarks

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Notice

The information in this user manual is subject to change due to product updates or other reasons. This manual cannot replace the product labels or the safety precautions unless otherwise specified. All descriptions in the manual are for guidance only.

CONTENT

1 About This Manual

This manual describes the product information, installation, electrical connection, commissioning, troubleshooting, and maintenance. Read through this manual before installing and operating the product. All the installers and users have to be familiar with the product features, functions, and safety precautions. This manual is subject to update without notice. For more product details and latest documents, visit www.en.goodwe.com.

1.1 Applicable Model

This manual applies to the listed inverters below (GT for short):

Model	Nominal Output Power	Nominal Output Voltage
GW100K-GT	100kW	220/380, 230/400, 3L/N/PE or 3L/PE
GW110K-GT	110kW	
GW125K-GT	125kW	

1.2 Target Audience

This manual applies to trained and knowledgeable technical professionals. The technical personnel has to be familiar with the product, local standards, and electric systems.

1.3 Symbol Definition

Different levels of warning messages in this manual are defined as follows:

DANGER
Indicates a high-level hazard that, if not avoided, will result in death or serious injury.
WARNING
Indicates a medium-level hazard that, if not avoided, could result in death or serious injury.
CAUTION
Indicates a low-level hazard that, if not avoided, could result in minor or moderate injury.
NOTICE
Highlight and supplement the texts. Or some skills and methods to solve product-related problems to save time.

2 Safety Precaution

WARNING

The inverters are designed and tested strictly complies with related safety rules. Read and follow all the safety instructions and cautions before any operations. Improper operation might cause personal injury or property damage as the inverters are electrical equipment.

2.1 General Safety

NOTICE

- The information in this document is subject to change due to product updates or other reasons. This manual cannot replace the product labels or the safety precaution unless otherwise specified. All descriptions here are for guidance only.
- Before installations, read through the user manual to learn about the product and the precautions.
- All installations should be performed by trained and knowledgeable technicians who are familiar with local standards and safety regulations.
- Use insulating tools and wear personal protective equipment when operating the equipment to ensure personal safety. Wear anti-static gloves, cloths, and wrist strips when touching electron devices to protect the inverter from damage.
- Strictly follow the installation, operation, and configuration instructions in this manual. The manufacturer shall not be liable for equipment damage or personal injury if you do not follow the instructions. For more warranty details, visit : https://en.goodwe.com/warranty.asp.

2.2 DC Side

DANGER

- Connect the DC cables using the delivered DC connectors and terminals. The manufacturer shall not be liable for the equipment damage if other connectors or terminals are used.
- Confirm the following information before connecting the PV string to the inverter. Otherwise, the inverter may be damaged permanently or even cause fire and cause personal and property losses. Damage and injury caused by failure to operate in accordance with the requirements of this document or the corresponding user manual are not covered by the warranty.
  - Make sure that the positive pole of the PV string connects to the PV+ of the inverter. And the negative pole of the PV string connects to the PV- of the inverter.
  - Make sure that the open circuit voltage of the PV string connected to each MPPT shall not exceed 1100V.

WARNING

- Ensure that the PV module frames and the PV mounting system are securely grounded.
- Ensure that the DC cables are connected tightly and securely.
- The PV modules used with the inverter must have an IEC61730 class A rating.
- Make sure that the PV strings connected to the same MPPT should contain the same number of identical PV modules.
- To maximize the power generation of the inverter, please ensure that the Vmp of the PV modules connected in series is within the MPPT Voltage Range at Nominal Power of the inverter; to ensure the normal operation of the inverter, please ensure that the input voltage is within the MPPT Operating Voltage Range of the inverter, as shown in the **Technical Parameters**.
- Make sure that the voltage difference between two MPPTs shall be less than 150 V.
- Make sure that the input current of each MPPT does not exceed the Max. Input Current per MPPT, as shown in the the **Technical Parameters**.
- When there are multiple PV strings, please maximize the connections of MPPTs.

2.3 AC Side

WARNING

- The voltage and frequency at the connecting point should meet the on-grid requirements.
- An additional protective device like the circuit breaker or fuse is recommended on the AC side. Specification of the protective device should be at least 1.25 times the Max. output current.
- You are recommended to use copper cables as AC output cables. If you prefer aluminum cables, we remember to use copper to aluminum adapter terminals.

2.4 Inverter Installation

DANGER

- Terminals at the bottom of the inverter cannot bear much load. Otherwise, the terminals will be damaged.
- All labels and warning marks must be clear and distinct after the installation. Do not block, alter, or damage any label.
- Warning labels on the inverter are as follows.

	HIGH VOLTAGE HAZARD. Disconnect all incoming power and turn off the product before working on it.		Delayed discharge. Wait 5 minutes after power off until the components are completely discharged.
	Read through the guide before working on this device.		Potential risks exist. Wear proper PPE before any operations.
	High-temperature hazard. Do not touch the product under operation to avoid being burnt.		Grounding point. Indicates the position for connecting the PE cable.
	CE marking		Do not dispose of the inverter as household waste.Discard the product in compliance with local laws and regulations, or send it back to the manufacturer.

2.5 Personnel Requirements

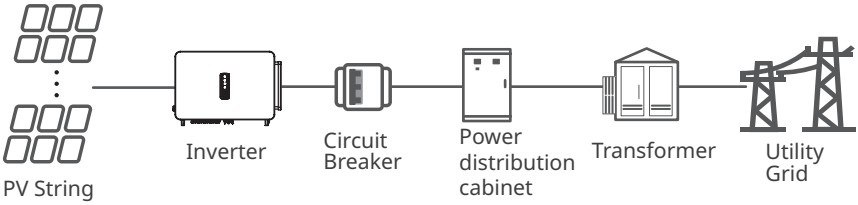
NOTICE

- Personnel who install or maintain the equipment must be strictly trained, learn about safety precautions and correct operations.
- Only qualified professionals or trained personnel are allowed to install, operate, maintain, and replace the equipment or parts.

3 Product Introduction

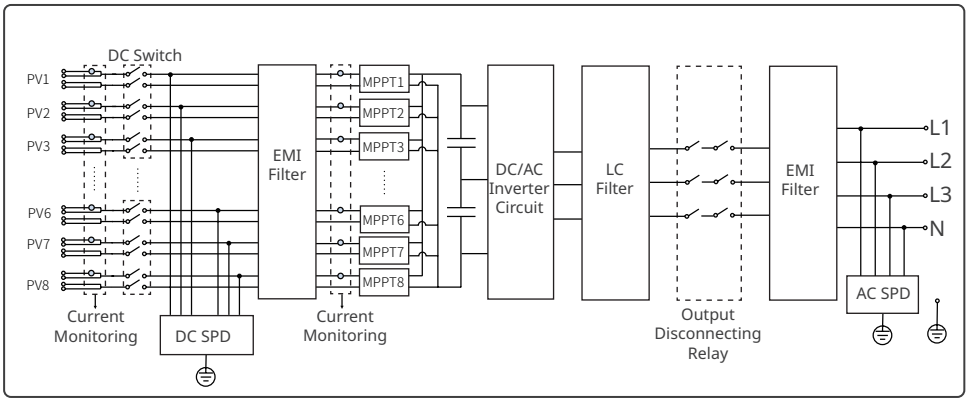
3.1 Application Scenarios

The GT inverter is a three-phase PV string grid-tied inverter. The inverter converts the DC power generated by the PV module into AC power and feeds it into the utility grid. The intended use of the inverter is as follows:

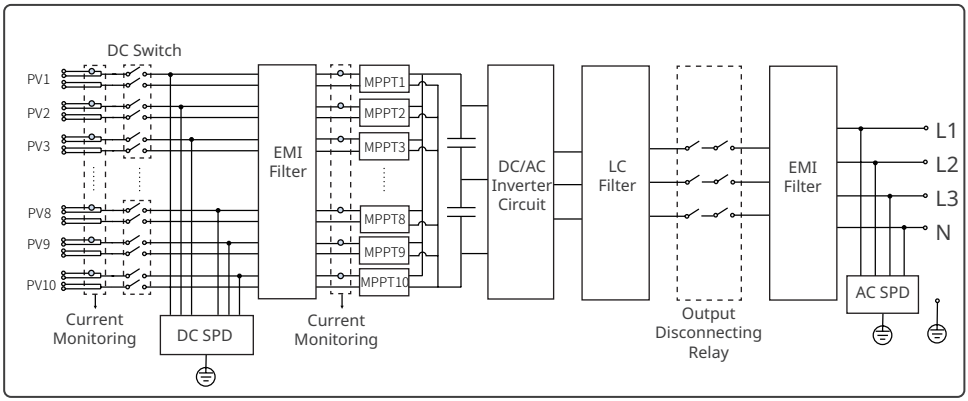


3.2 Circuit Diagram

The circuit diagram of GW100K-GT is as follows.



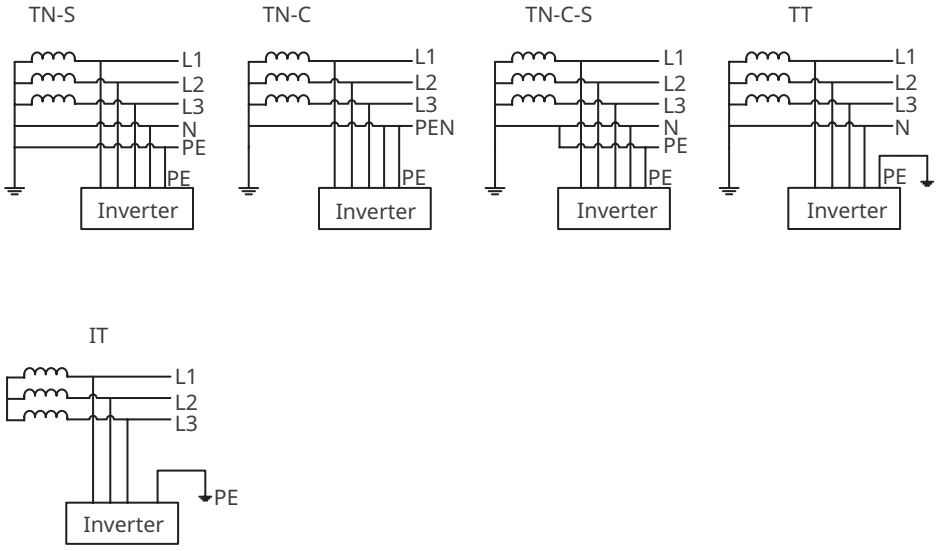
The circuit diagram of GW110K-GT/GW125K-GT is as follows.



3.3 Supported Grid Types

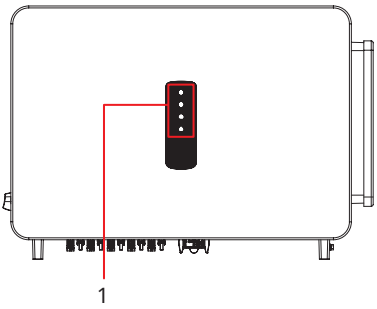
NOTICE
For the TT grid structure, the effective value of the voltage between the neutral wire and the ground wire must be less than 20V.

The grid structures supported by GW100K-GT, GW110K-GT and GW125K-GT are TN-S, TN-C,TN-C-S, TT, IT, as shown in the figure below:

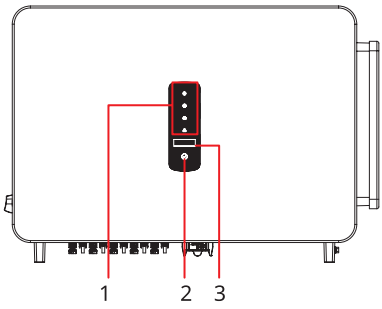


3.4 Appearance

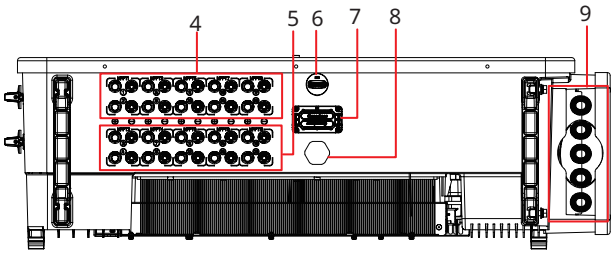
3.4.1 Parts

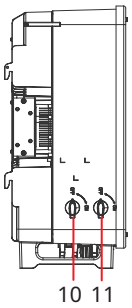


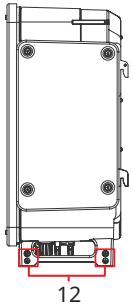
Without LCD



With LCD

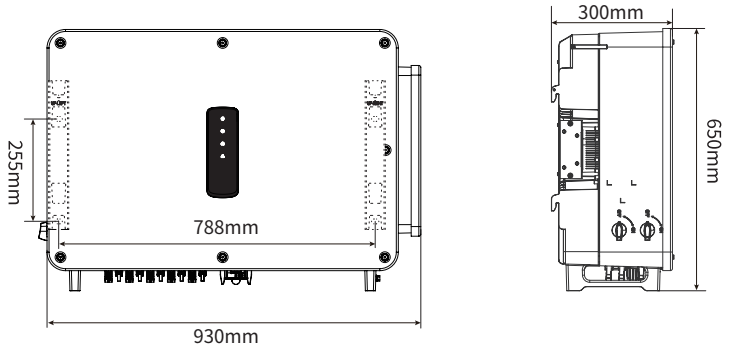






No.	Parts	Description
1	Indicator	Indicates working state of the inverter.
2	Button (optional)	To control contents displayed on the screen.
3	LCD (optional)	To check the parameters of the inverter.
4	DC Input Terminal	To connect the PV module DC input cables. GW100K-GT: MPPT1/3/5/7; GW110K-GT&GW125K-GT: MPPT1/3/5/7/9
5	DC Input Terminal	To connect the PV module DC input cables. GW100K-GT: MPPT2/4/6/8; GW110K-GT&GW125K-GT: MPPT2/4/6/8/10
6	USB Port	To connect the communication moduled such as WiFi, 4G, and so on.
7	Communication Port	Used to connect the RS485 communication cable.
8	Ventilation valve	For waterproofing, ventilation, and to balance the internal and external air pressure.
9	AC Cable Outlet Hole	The outlet of AC cable.
10	DC Switch 2	Start or stop MPPT2/4/6/8 or MPPT2/4/6/8/10 DC input.
11	DC Switch 1	Start or stop MPPT1/3/5/7 or MPPT1/3/5/7/9 DC input.
12	Grounding Point	To connect the PE cable.

3.4.2 Dimensions



3.4.3 Indicators

Indicator	Status	Description
⏻		ON = EQUIPMENT POWER ON
		OFF = EQUIPMENT POWER OFF
▶		ON = THE INVERTER IS FEEDING POWER
		OFF = THE INVERTER IS NOT FEEDING POWER
		SINGLE SLOW FLASH = SELF CHECK BEFORE CONNECTING TO THE GRID
		SINGLE FLASH = CONNECTING TO THE GRID
☁		ON = WIRELESS IS CONNECTED/ACTIVE
		BLINK 1 = WIRELESS SYSTEM IS RESETTING
		BLINK 2 = WIRELESS ROUTER PROBLEM
		BLINK 4 = WIRELESS SERVER PROBLEM
		BLINK = RS485 IS CONNECTED
		OFF = WIRELESS IS NOT ACTIVE
⚠		ON = A FAULT HAS OCCURRED
		OFF = NO FAULT

3.5 Functionalities

AFCI (Optional)

Inverters with AFCI functionality has built-in current sensors to detect the high frequency current signals and decide whether an electric arc occurs. If there is, the inverter is able for self-protection automatically.

Reason to occur electric arcs:
- Damaged connectors in PV system.
- Wrong connected or broken cables.
- Aging connectors and cables.

Method to detect electric arcs:
- When the inverter detects an electric arc, users can check the fault via LCD or SolarGo App.
- When electric arc is detected, the inverter alarms and shuts down for protection. After a while (around 5 minutes in North America and 20 s in other area), the inverter will resume grid connection automatically. If the shutdown protection repeats , please check the inverter wiring to eliminate the electric arc.For details, refer to the **SolarGo App User Manual**.

PID Recovery (Optional)

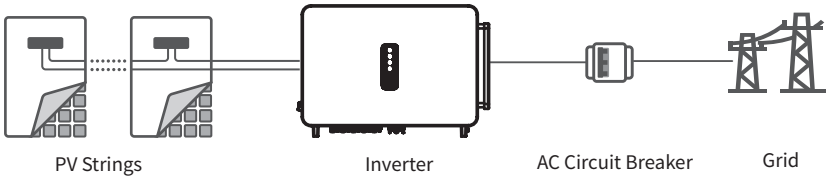
Inverters with integrated PID recovery module can apply high-voltage DC between the negative terminal of the PV string and the ground, to prevent output power reducing in photovoltaic system due to Potential Induced Degradation (PID) effect of PV string. This improves the power generation capacity of the power plant and increases its overall profitability.

Reactive power control At night (SVG, optional)

To improve the power generation performance of the power station at night, the inverter supports night SVG function. Issuing a reactive power compensation command via the power station monitoring platform, which makes the inverter keep working even when there is no active power output.

RSD (Optional)

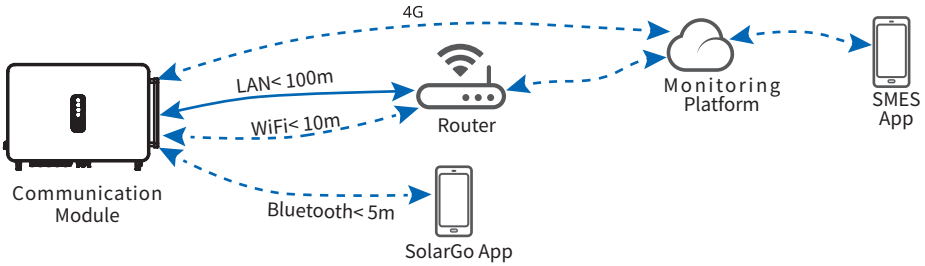
The GoodWe RSD signal transmitter communicate with the RSD (Module-level Smart Controller) installed on the external of the PV strings. In case of an emergency, by the way of turning off the AC circuit breaker at the output side of the inverter, the transmitter will be cut off, consequently the current output of the PV strings will be interrupted.



Communication

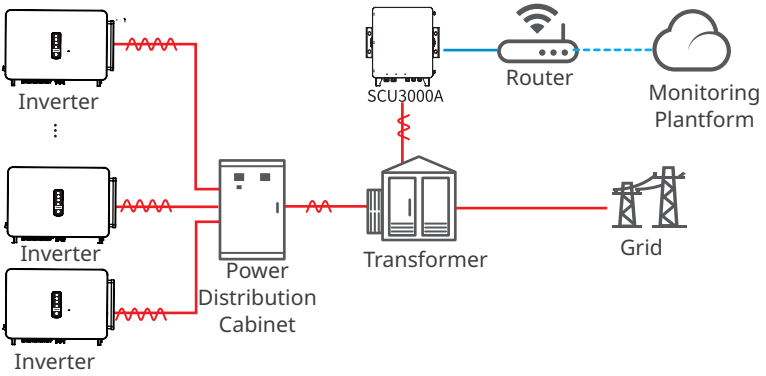
The inverter supports: parameter setting via Bluetooth; connection to the SMES monitoring platform via WiFi, 4G, or WiFi+LAN, thus monitoring the operations of the inverter and the power plant, etc. via SMES App.

- Bluetooth (Optional): meets Bluetooth 5.1 standard.
- WiFi: supports 2.4G frequency band. Set the router to 2.4G or 2.4G/5G coexistence mode. 40 bytes for router wireless signal name maximumly.
- LAN (Optional): supports connecting to the router via LAN communication, and then connecting to the monitoring platform.
- 4G (Optional): supports connected to the monitoring platform via 4G communication.



PLC networking (optional)

Use the existing power cable for communication with no need of additional communication cable.

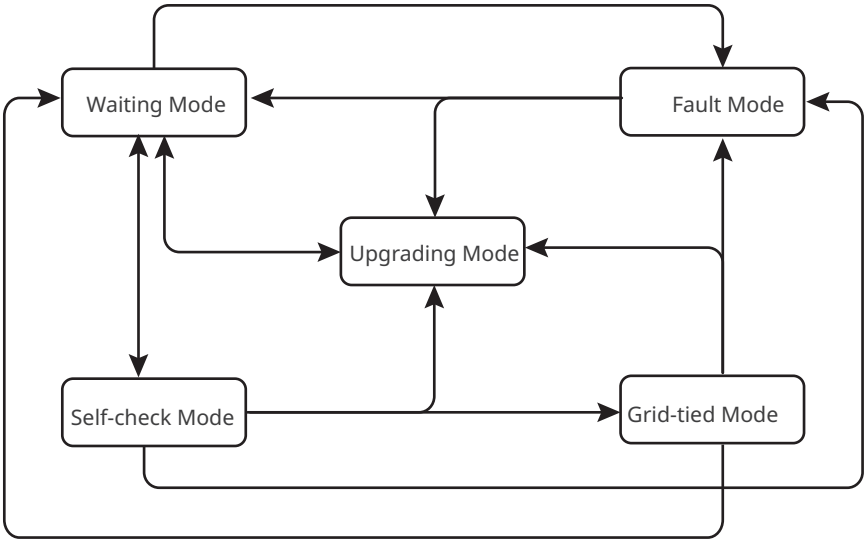


The power cable between inverters and the Smart Communication Unit (SCU3000A) should not exceed 1000 m.

Fuse detection (optional, and only for South Korea)

- The inverter dectects if the fuse is broken. If it is, the inverter will stop the grid tied running for protection. This fault can be checked via LCD or SolarGo App.
- Only when all PV inputs of the inverter have PV strings connected, the fuse detection can be used.

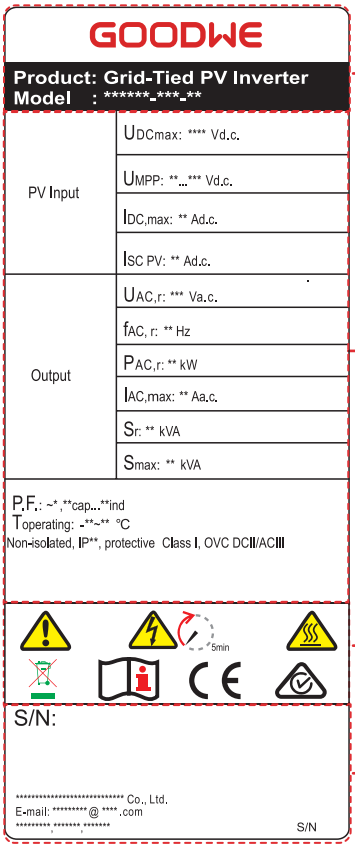
3.6 Inverter Operation Mode



No.	Mode	Description
1	Waiting Mode	Waiting stage after the inverter is powered on. • When the conditions are met, the inverter enters the self-check mode. • If there is a fault, the inverter enters the fault mode. • If received an upgrade request, the inverter enters the upgrading mode.
2	Self-check Mode	Before the inverter starts up, it continuously performs self-check, initialization, etc. • When the conditions are met, the inverter enters the grid-tied mode, and the inverter starts on-grid connection. • If received an upgrade request, the inverter enters the upgrading mode. • If the self-check does not passed, it enters the fault mode.
3	Grid-tied Mode	The inverter has connected to the grid and is operating normally. • If a fault is detected, it enters the fault mode. • If received an upgrade request, the inverter enters the upgrading mode.
4	Fault Mode	If a fault is detected, the inverter enters the fault mode. When the fault is cleared, it enters the waiting mode. When the waiting mode ends, the inverter detects the running status and it enters the next mode.
5	Upgrading Mode	Inverters enter this mode when the firmware update process is initiated. After the upgrading, the inverter enters the waiting mode. When the waiting mode ends, the inverter detects the running status and it enters the next mode.

3.7 Nameplate

The nameplate is for reference only.



Goodwe trademark, product type, and product model

Technical parameters

Safety symbols and certification marks

Contact information and serial number

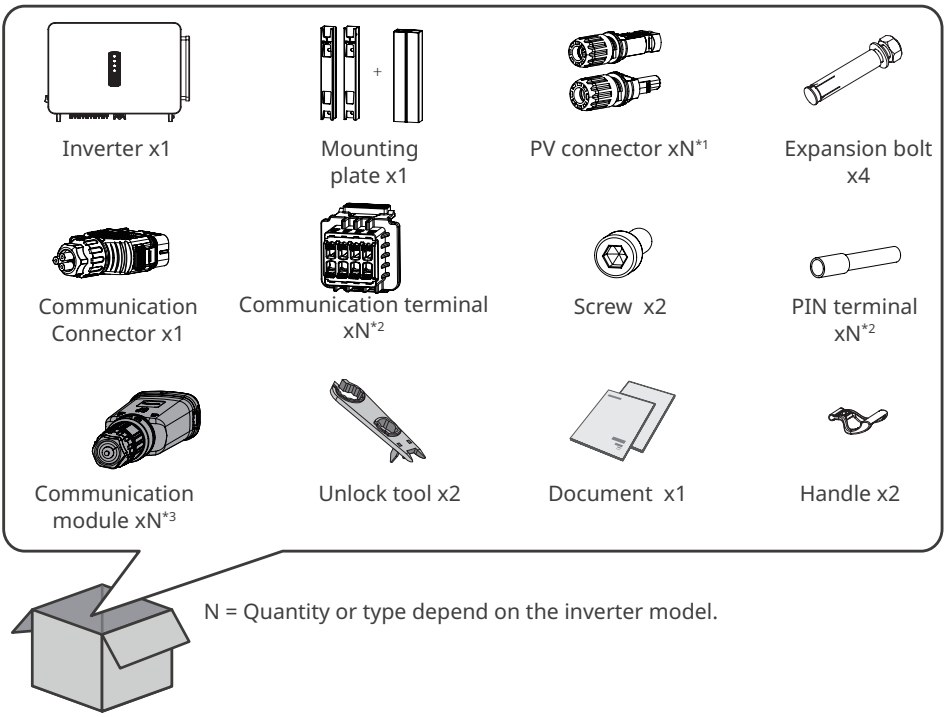
4 Check and Storage

4.1 Check Before Receiving

Check the following items before receiving the product.

1. Check the outer packing box for damage, such as holes, cracks, deformation, and others signs of equipment damage. Do not unpack the package and contact the supplier as soon as possible if any damage is found.
2. Check the inverter model. If the inverter model is not what you requested, do not unpack the product and contact the supplier.
3. Check the deliverables for correct model, complete contents, and intact appearance. Contact the supplier as soon as possible if any damage is found.

4.2 Deliverables



N = Quantity or type depend on the inverter model.

NOTICE

*1 The number of PV connectors equals with the number of the inverter's DC input terminals.
*2 Depending on the selected communication method, the number of built-in communication modules can be either 1 or 2, while the number of pin terminals is between 8 and 16 respectively.
*3 Communication module types are available: WiFi/4G/Bluetooth/WiFi+LAN, etc. The actual delivered type depends on the selected inverter communication method.

4.3 Storage

If the equipment is not to be installed or used immediately, please ensure that the storage environment meets the following requirements:

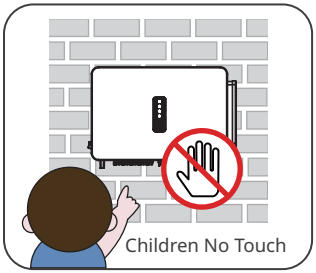
1. Do not unpack the outer package or throw the desiccant away.
2. Store the equipment in a clean place. Make sure the temperature and humidity are appropriate and no condensation.
3. The height and direction of the stacking inverters should follow the instructions on the packing box.
4. The inverters must be stacked with caution to prevent them from falling.
5. If the inverter has been long term stored, it should be checked by professionals before being put into use.

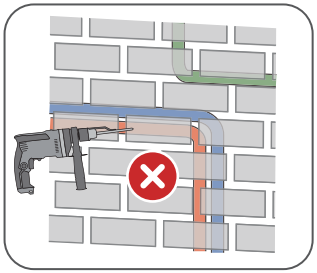
5 Installation

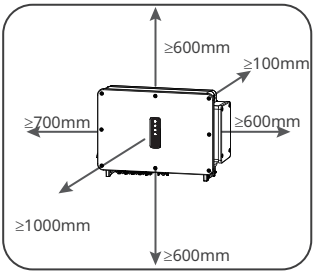
5.1 Installation Requirements

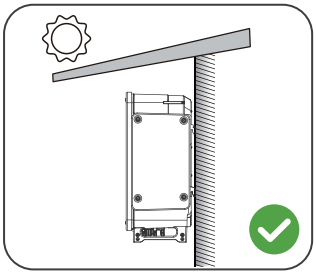
Installation Environment Requirements

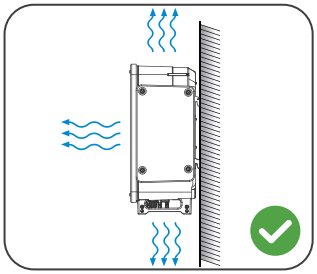
1. Do not install the equipment in a place near flammable, explosive, or corrosive materials.
2. Install the equipment on a surface that is solid enough to bear the inverter weight.
3. Install the equipment in a well-ventilated place to ensure good dissipation. Also, the installation space should be large enough for operations.
4. The equipment with a high ingress protection rating can be installed indoors or outdoors. The temperature and humidity at the installation site should be within the appropriate range.
5. Install the equipment in a sheltered place to avoid direct sunlight, rain, and snow. Build a sunshade if it is needed.
6. Do not install the equipment in a place that is easy to touch, especially within children's reach. High temperature exists when the equipment is working. Do not touch the surface to avoid burning.
7. Install the equipment at a height that is convenient for operation and maintenance, electrical connections, and checking indicators and labels.
8. Inverters installed in salt-damaged areas may suffer from corrosion. Salt-damaged areas refer to areas within 1000 m of the coast or affected by sea winds. The areas affected by sea wind vary depending on meteorological conditions (such as typhoons, seasonal winds) or terrain (with embankments, hills).
9. Install the inverters far away from noise-sensitive areas, such as the residential area, school, hospital etc., in order to avoid the noises bothering people nearby.
10. Install the inverter away from high magnetic field to avoid electromagnetic interference.If there is any radio or wireless communication equipment below 30MHz near the inverter, you have to:
    - Install the inverter at least 30m far away from the wireless equipment.
    - Add a low pass EMI filter or a multi winding ferrite core to the DC input cable or AC output cable of the inverter.
11. Please ensure that there are no obstacles directly in front of the outside fans outlet on the left side of the inverter so that the outside fans can be drawn out normally.

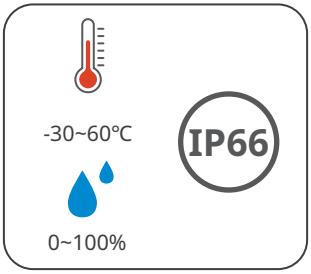


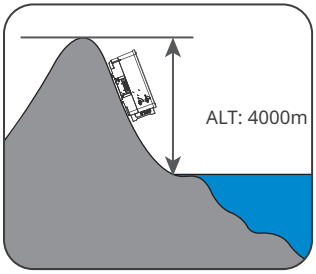










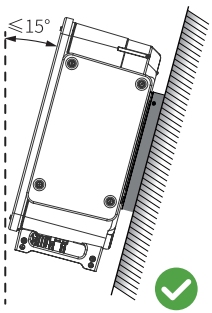


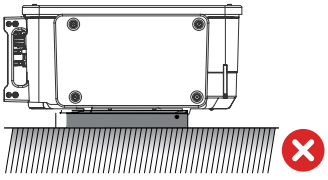
Mounting Support Requirements

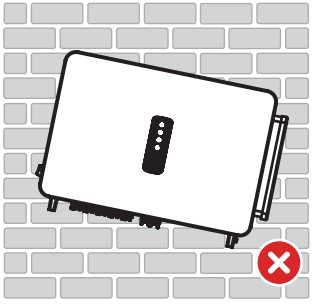
- The mounting support shall be nonflammable and fireproof.
- Make sure that the support surface is solid enough to bear the product weight load.
- Do not install the device on a carrier with poor sound insulation to avoid the noise emitted by the device during operation causing inconvenience to nearby residents.

Installation Angle Requirements

- Install the inverter vertically or at a maximum back tilt of 15 degrees.
- Do not install the inverter upside down, forward tilt, back forward tilt, or horizontally.







Installation Tool Requirements

The following tools are recommended when installing the equipment. Use other auxiliary tools on site if necessary.

5.2 Inverter Installation

5.2.1 Moving the Inverter

⚠ CAUTION

Move the inverter to the site before installation. Follow the instructions below to avoid personal injury or equipment damage.

1. Consider the weight of the equipment before moving it. Assign enough personnel to move the equipment to avoid personal injury.
2. Wear safety gloves to avoid personal injury.
3. Keep balance when moving the equipment.

5.2.2 Installing the Inverter

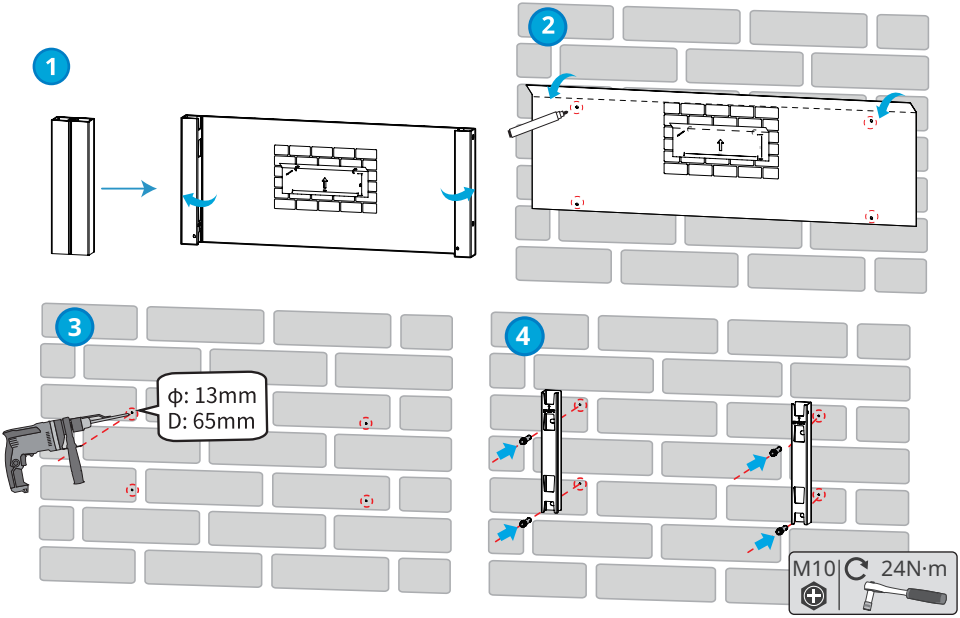
NOTICE

- Avoid the water pipes and cables buried in the wall when drilling holes.
- Wear goggles and a dust mask to prevent the dust from being inhaled or contacting eyes when drilling holes.

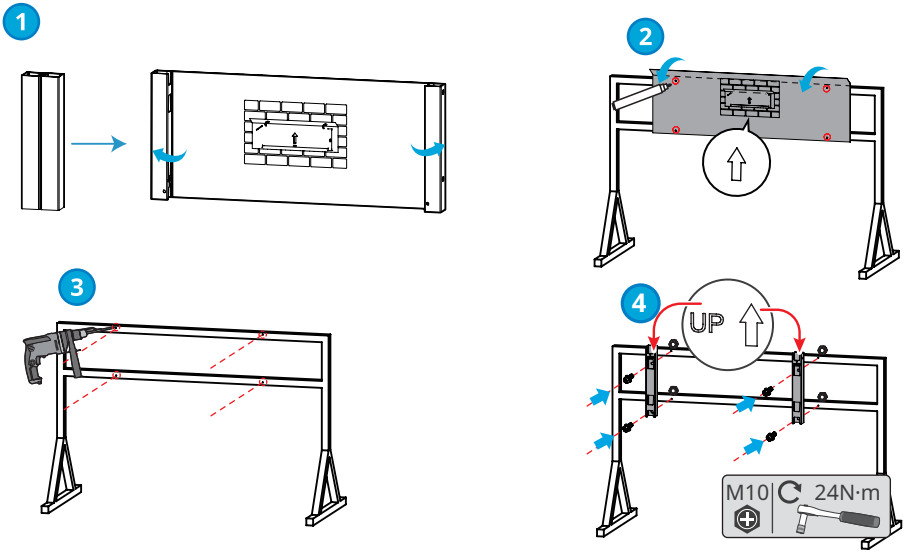
Installing the mounting plate

Step 1 Put the mounting plate on the wall horizontally.
Step 2 Mark positions for drilling holes.
Step 3 Drill holes to a depth of 65mm using the hammer drill. The diameter of the drill bit should be 13mm.
Step 4 Fix the mounting plate on the wall or the bracket.

Mounting on the wall



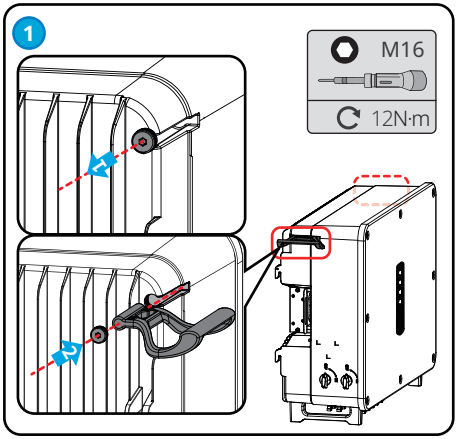
Mounting on the bracket

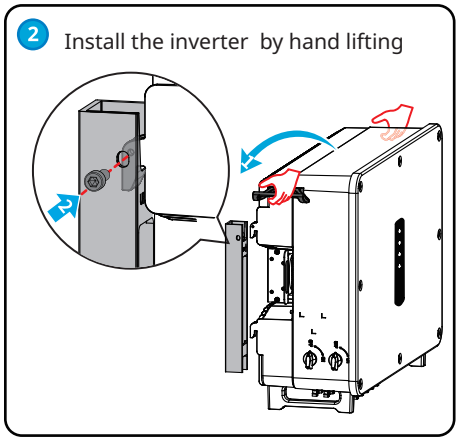


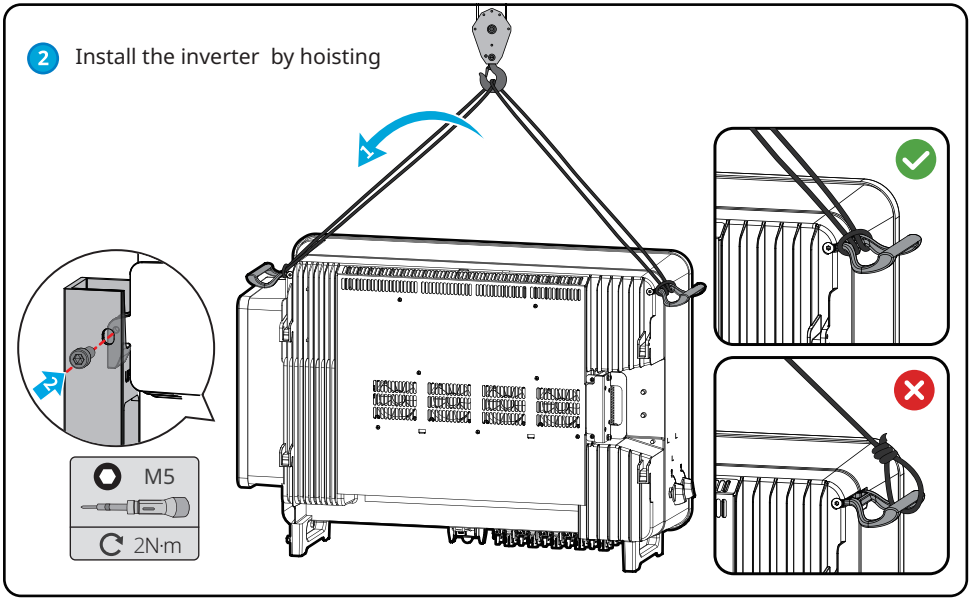
Installing the Inverter

NOTICE
• Prepare the handles or hoisting rings. Contact the dealer or the after-sales center to purchase them if needed. • Confirm the installation of the handles or hoisting rings are secure enough to bear the weight of the inverter.

Step 1 Install and secure the handles to the inverter.
Step 2 Grab the handles to lift the inverter, or hoist the inverter, and place it onto the mounting plate. Tighten the nuts to secure the mounting plate and the inverter.







6 Electrical Connection

6.1 Safety Precautions

DANGER

- Disconnect the DC switch and the AC output switch of the inverter to power off the equipment before any electrical connections. Do not work with power on. Otherwise, an electric shock may occur.
- Perform electrical connections in compliance with local laws and regulations. Including operations, cables, and component specifications.
- If the tension is too large, the cable may be poorly connected. Reserve a certain length of the cable before connecting it to the inverter cable port.

NOTICE

- Wear personal protective equipment like safety shoes, safety gloves, and insulating gloves during electrical connections.
- All electrical connections should be performed by qualified professionals.
- Cable colors in this document are for reference only. The cable specifications should meet local laws and regulations.
- The GW100K-GT, GW110K-GT and GW125K-GT models differ only in the number of MPPTs. The wiring methods are the same. Below is taking the GW110K-GT wiring as an example.

No.	Cable	Type	Cable Specification	
			Outer Diameter (mm)	Cross-sectional Area (mm^2)
1	PE cable	Copper Outdoors cable	11 ~ 32	$S_{PE} \geq S/2$*1
2	AC output cable (multi-core)	Multi-core outdoor cable	22 ~ 64	• Copper core : 70 ~ 240 • Aluminum alloy cable or copper-clad aluminum cable : 95 ~ 240 • PE: $S_{PE} \geq S/2$*1
3	AC output cable (single core)	Single-core outdoor cable	11 ~ 32	• Copper core : 70 ~ 240 • Aluminum alloy cable or copper-clad aluminum cable : 95 ~ 240 • PE: $S_{PE} \geq S/2$*1
4	DC input cable	PV cable that meets 1100V standard.	4.7 ~ 6.4	4 ~ 6
5	RS485 communication cable	Outdoor shielded twisted pair. The cable should meet local requirements.*2	4.5 ~ 6	0.2 ~ 0.5

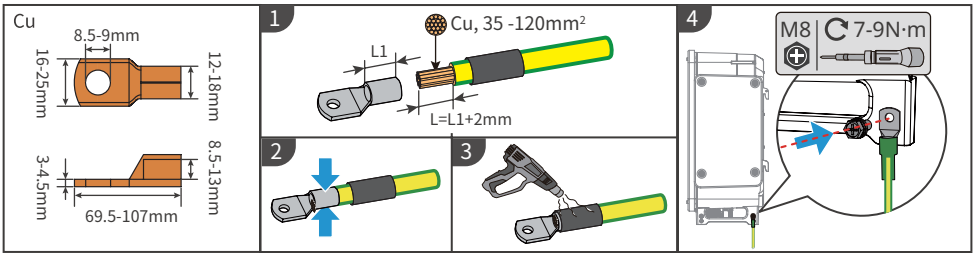
Note:
*1: S_{PE} refers to the cross-sectional area of the protective earth conductor, and S refers to the cross-sectional area of the AC cable conductor.
*2: The total length of the communication cable shall not exceed 1000m.

The values in this table are valid only if the external protective earth conductor is made of 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.

6.2 Connecting the PE Cable

WARNING

- The PE cable connected to the enclosure of the inverter cannot replace the PE cable connected to the AC output port. Both of the two PE cables must be securely connected.
- Make sure that all the grounding points on the enclosures are equipotential connected when there are multiple inverters.
- To improve the corrosion resistance of the terminal, it is recommended to apply silica gel or paint on the ground terminal after installing the PE cable.
- Prepare the PE cable according to the cable specifications and OT grounding terminals according to the following figure.



6.3 Connecting the AC Output Cable

WARNING

- Do not connect loads between the inverter and the AC switch directly connected to it.
- The Residual Current Monitoring Unit (RCMU) is integrated into the inverter. The inverter will disconnect from the utility grid rapidly once it detects any leak current over the permissible range.

Select and Install RCD depending on local laws and regulations. Type A RCDs (Residual Current Monitoring Device) can be connected to the outside of the inverter for protection when the DC component of the leakage current exceeds the limit value. The following RCDs are for reference:

Inverter model	Recommended RCD specifications
GW100K-GT	≥1000mA
GW110K-GT	≥1100mA
GW125K-GT	≥1250mA

An AC circuit breaker should be installed on the AC side to make sure that the inverter can safety disconnect the grid when an exception happens. Select the appropriate AC circuit breaker in compliance with local laws and regulations. Recommended AC circuit breakers:

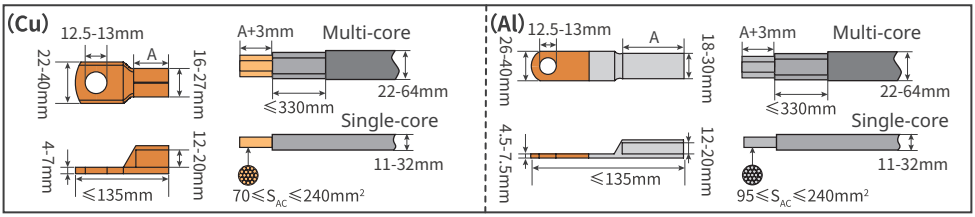
Inverter model	AC circuit breaker
GW100K-GT	200A
GW110K-GT	225A
GW125K-GT	250A

NOTICE

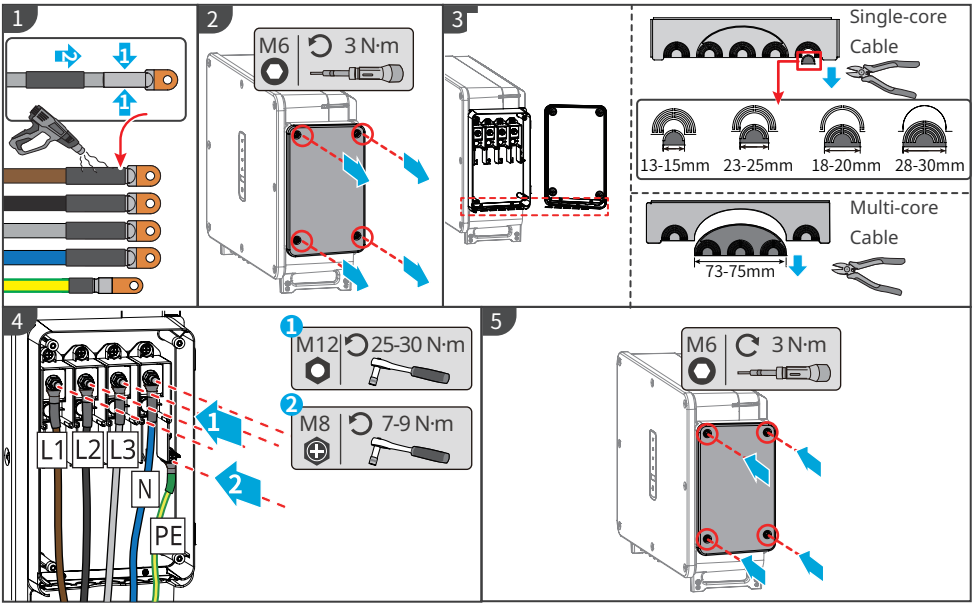
Install one AC circuit breaker for each inverter. Multiple inverters cannot share one AC circuit breaker.

⚠ WARNING

- Pay attention to the silkscreens L1, L2, L3, N, PE on the AC terminal. Connect the AC cables to the corresponding terminals. The inverter may be damaged if the cables are connected inappropriately.
- Make sure that the whole cable cores are inserted into the AC terminal holes. No part of the cable core can be exposed.
- Make sure that the cables are connected securely. Otherwise, the terminal may be too hot to damage the inverter when the inverter is working.
- The AC terminals can be connected in three-phase four-wire or three-phase five-wire. The actual wiring method may be different. The figure below takes the three-phase five-wire as an example.
- Reserve certain length of PE cable. Make ensure that the PE cable is the last one to bear the stress when the AC output cable is under tension.
- The waterproof rubber ring for the AC outlet hole is delivered with the inverter, which is located in the AC wiring box of the inverter. Please select the rubber ring types according to the actual using cables' specification.
- Prepare M8 ground OT terminals and M12 AC OT terminals.
- Use the copper alluminium trasferring terminals when using alluminium cable wiring.



Step 1: Crimp the AC cable OT terminal, and prepare the AC output cable.
Step 2: Remove the AC terminal cover.
Step 3: Select the corresponding hole diameter according to the AC cable diameter specification, and cut off the harf-round part of the plastic pads that is located on the AC terminal cover and inverter.
Step 4: Fasten the AC output cable to the inverter.
Step 5: Tighten the AC terminal cover.



NOTICE

- Make sure that the cables are connected correctly and firmly after connections. Clean all the debris in the maintenance compartment.
- Seal the AC output terminal to ensure the Ingress Protection Rating.

6.4 Connecting the PV Input Cable

⚠ DANGER

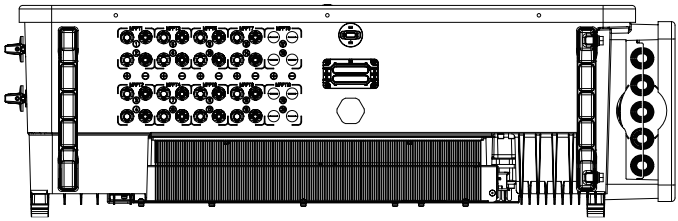
- Do not connect the same PV string to multiple inverters, as this may cause damage to the inverter.
- The PV strings cannot be grounded. Ensure the minimum isolation resistance of the PV string to the ground meets the minimum isolation resistance requirements before connecting the PV string to the inverter.
- Connect the DC cables using the delivered PV connectors.
- Confirm the following information before connecting the PV string to the inverter. Otherwise, the inverter may be damaged permanently or even cause fire and cause personal and property losses. Damage and injury caused by failure to operate in accordance with the requirements of this document or the corresponding user manual are not covered by the warranty.
  - Make sure that the positive pole of the PV string connects to the PV+ of the inverter. And the negative pole of the PV string connects to the PV- of the inverter.
  - Make sure that the open circuit voltage of the PV string connected to each MPPT shall not exceed 1100V.

⚠ WARNING

- Make sure that the PV strings connected to the same MPPT should contain the same number of identical PV modules.
- To maximize the power generation of the inverter, please ensure that the Vmp of the PV modules connected in series is within the MPPT Voltage Range at Nominal Power of the inverter; to ensure the normal operation of the inverter, please ensure that the input voltage is within the MPPT Operating Voltage Range of the inverter, as shown in the **Technical Parameters**.
- Make sure that the voltage difference between two MPPTs shall be less than 150 V.
- Make sure that the input current of each MPPT does not exceed the Max. Input Current per MPPT, as shown in the **Technical Parameters**.
- When there are multiple PV strings, please maximize the connections of MPPTs.

DC Input Terminal Connection Manner

GW100K-GT

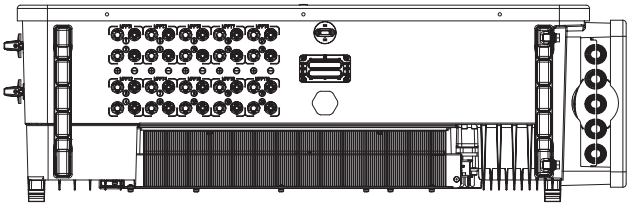


When the quantity of PV strings ≤ 8, connect the PV strings to the inverter from MPPT1 to MPPT8 in turn.
When the quantity of PV strings >8, please follow the table to connect the PV strings to the inverter.

●: Connect 1 PV string
●●: Connect 2 PV strings

Quantity of PV Strings	MPPT1	MPPT2	MPPT3	MPPT4	MPPT5	MPPT6	MPPT7	MPPT8
9	●●	●	●	●	●	●	●	●
10	●●	●●	●	●	●	●	●	●
11	●●	●	●	●	●	●●	●●	●
12	●●	●●	●	●	●●	●●	●	●
13	●●	●	●●	●●	●	●	●●	●●
14	●●	●●	●●	●●	●	●	●●	●●
15	●●	●●	●●	●●	●●	●	●●	●●
16	●●	●●	●●	●●	●●	●●	●●	●●

GW110K-GT, GW125K-GT



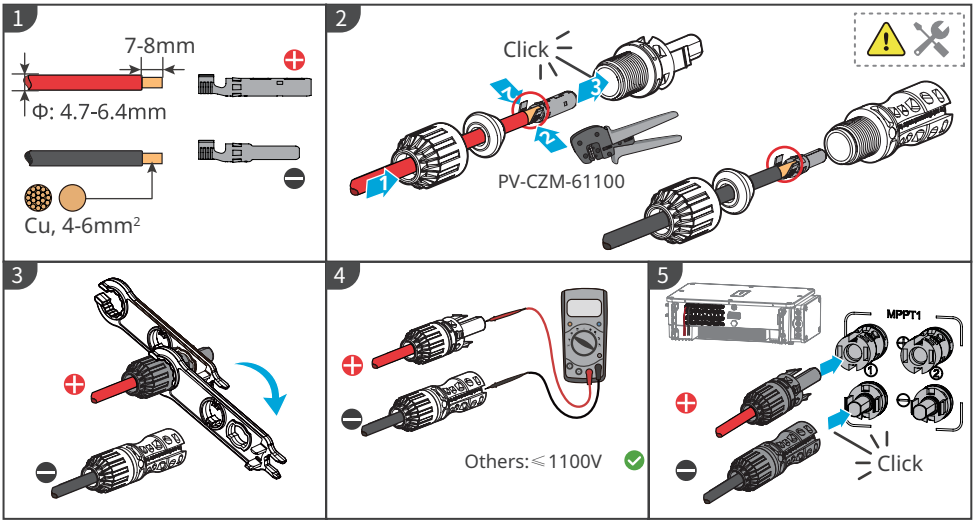
When the quantity of PV strings ≤ 10, connect the PV strings to the inverter from MPPT1 to MPPT10 in turn.
When the quantity of PV strings >10, please follow the table to connect the PV strings to the inverter.

●: Connect 1 PV string
●●: Connect 2 PV strings

Quantity of PV Strings	MPPT1	MPPT2	MPPT3	MPPT4	MPPT5	MPPT6	MPPT7	MPPT8	MPPT9	MPPT10
11	●●	●	●	●	●	●	●	●	●	●
12	●●	●	●	●	●	●	●	●	●	●●
13	●●	●	●	●	●	●●	●●	●	●	●
14	●●	●	●	●●	●	●	●●	●	●	●●
15	●●	●	●	●●	●●	●	●	●●	●●	●
16	●●	●●	●	●	●	●	●●	●●	●●	●●
17	●●	●●	●●	●	●	●	●●	●●	●●	●●
18	●●	●●	●●	●●	●	●	●●	●●	●●	●●
19	●●	●●	●●	●●	●●	●	●●	●●	●●	●●
20	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●

Connecting the DC Input Cable

Step 1 Prepare DC cables.
Step 2 Crimp the DC cable and assemble the PV connectors.
Step 3 Fasten the PV connector.
Step 4 Measure the DC input voltage.
Step 5 Plug the PV connectors into the DC input terminals.

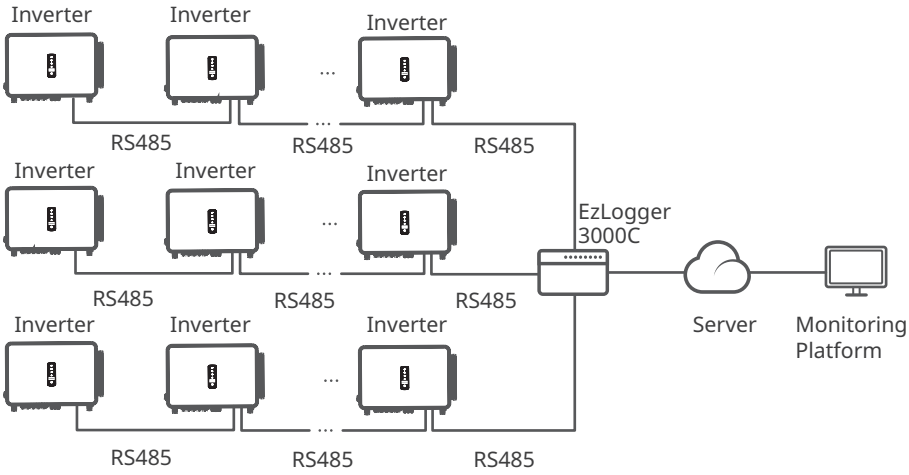


6.5 Communication

6.5.1 RS485 Communication Networking

NOTICE

- If multiple inverters are connected to the EzLogger 3000C for networking, the maximum number of inverters per COM port of the EzLogger 3000C is 20, and the total length of the connecting cable should not exceed 1000m.
- It is recommended to use the communication cable with shielding layer, and make it grounded during wiring.



6.5.2 Power Export Limit

When all loads in the PV system cannot consume the generated electricity, the surplus power will be fed into the grid. In this case, it is possible to monitor the power generation with an smart meter, EzLogger 3000C to control the amount of power fed into the grid.

WARNING

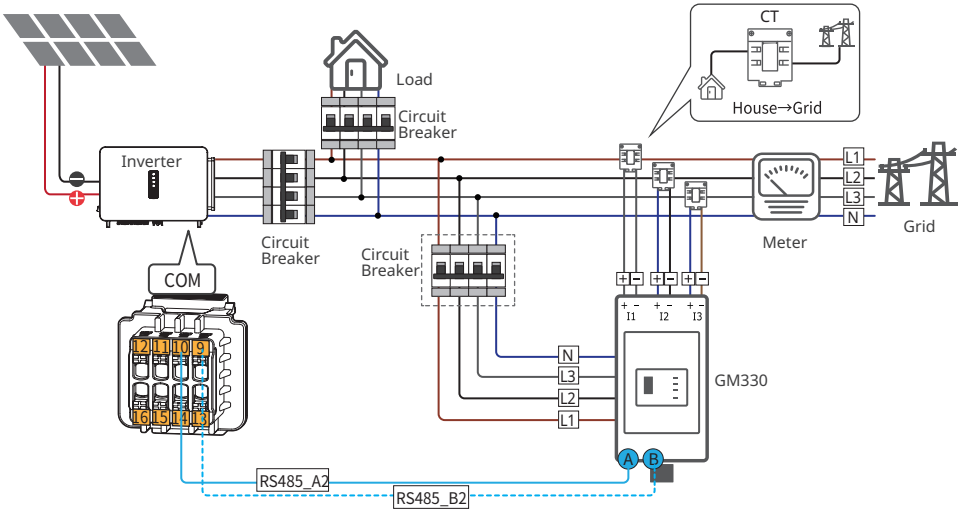
1. The place to snap fit the CT shall be near the grid connection point and the installation direction must be right. “-->” of CT refers that the inverter current flows to the Grid. If CT is installed reversely, the inverter will be triggered with an alarm and unable to realize the power limit function.
2. The CT bore diameter shall be bigger than the outer diameter of AC power cable, to ensure the AC power cable can be inserted into CT.
3. For specific CT wirings, please refer to the documents provided by the respective manufacturer, to ensure that the wiring direction is correct and CT is able to work properly.
4. CT shall be snap fitted on Cable L1, L2 and L3. Do not install it on Cable N.
5. Specification of CT:
   - Choose nA/5A for the current transformation ratio of the CT. (nA: For primary current of the CT, n ranges from 200 to 5000.Set the current value depending on the actual needs.5A: The output current of the secondary current of the CT.)
   - The recommended precision of the CT: 0.5, 0.5s, 0.2, 0.2s. Ensure the sampling error for the CT current shall be ≤ 1%.
6. To ensure the current detection accuracy of the CT, it is recommended that the length of the CT cable should not exceed 30 m and the recommended current carrying ability of the cable is 6 A .

NOTICE

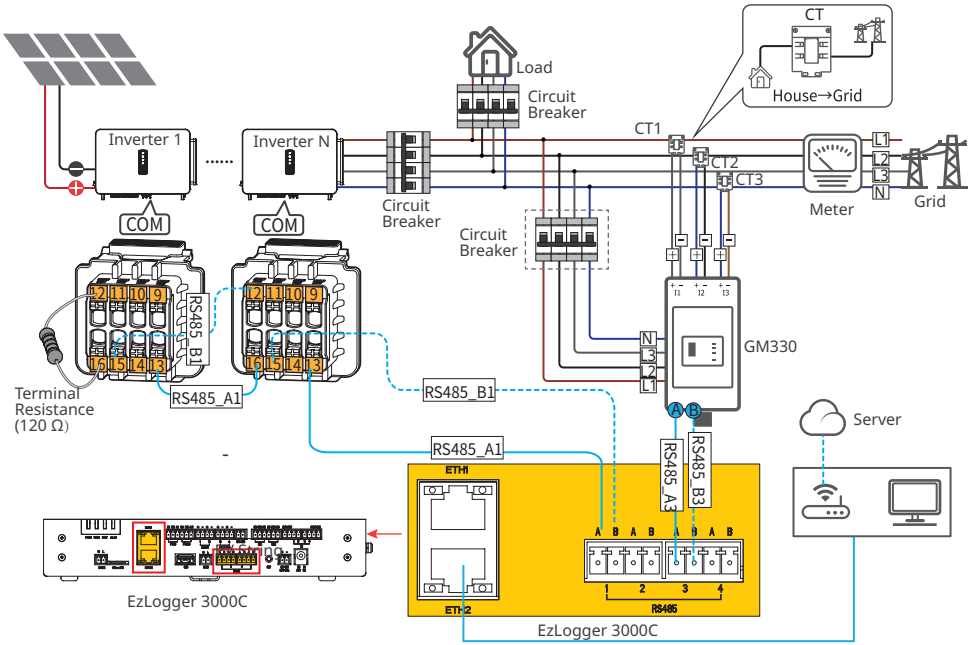
1. Recommended cross-sectional area of the smart meter input power cable: 1mm2(18AWG).
2. For the three-phase three-line grid system, short circuit the N and L2 on the smart meter side and the L2 line of the grid need no CT connected.
3. Set the CT 's turns ratio via SolarGo App. For example, set the CT ratio to 40 if a 200A/5A CT is selected.
4. Scan the QR code below to get more information.

SolarGo App
User Manual

Power export limit of single inveter with GM330



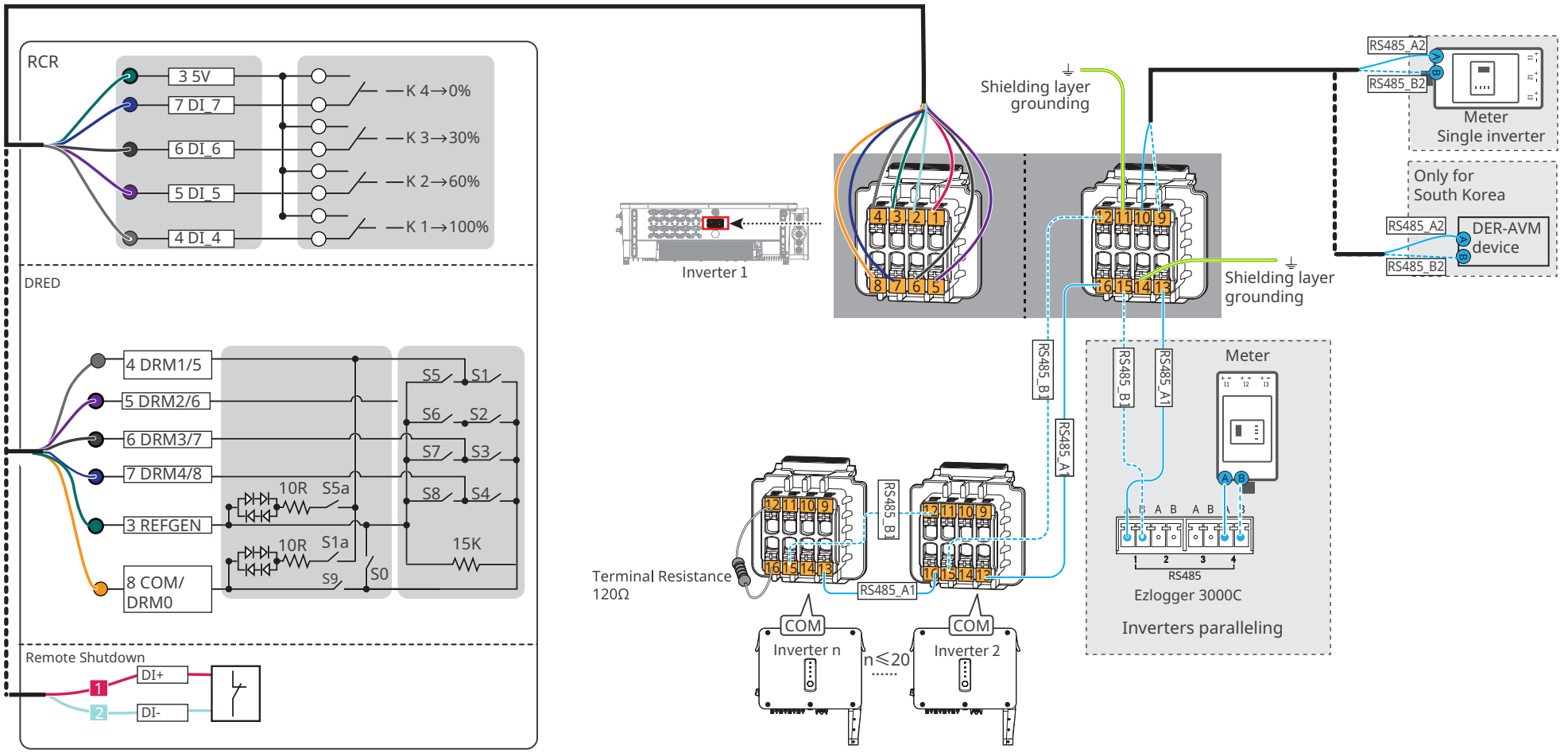
Power export limit of multi inveters with EzLogger 3000C+GM330



6.5.3 Connecting the Communication Cable

NOTICE

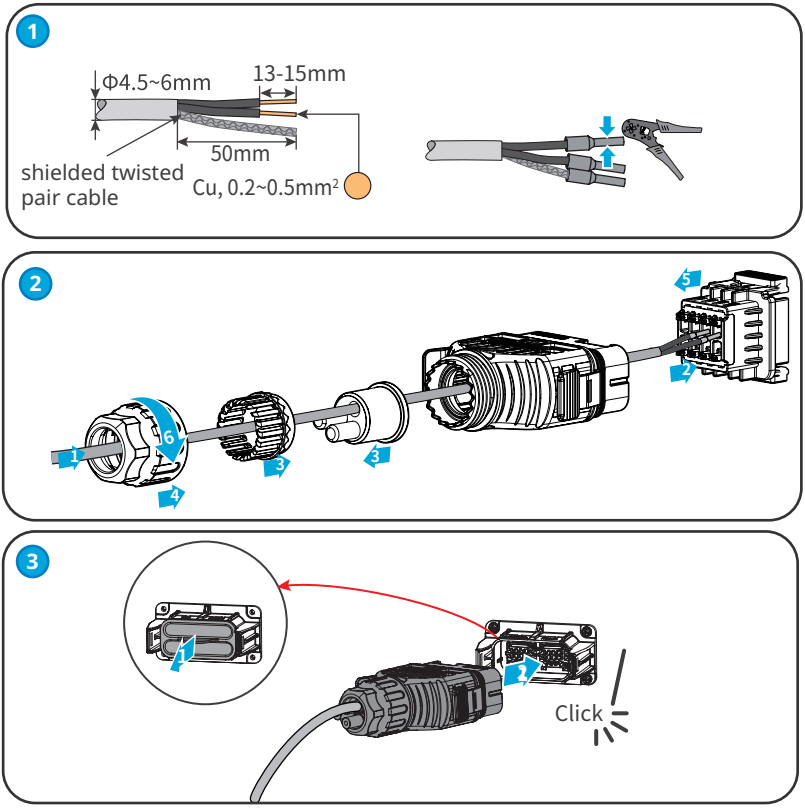
- The communication port can be configured differently according to the regulatory requirements in different regions.
- The remote shutdown function is diabled in default. Enable it via SolarGo App if needed. Detailed steps, refer to **SolarGo App User Manual**.
- When connecting the communication line, make sure that the wiring port definition and the equipment are fully matched, and the cable alignment path should avoid interference sources, power lines, etc., so as not to affect signal reception.
- The unused wire holes must be plugged, to avoid affecting the protection performance of the inverter.
- Below are different configurations for certain regions.
- For multiple inverters networking, to ensure proper communication, please connect a 120 Ω terminal resistance to the communication port of the last inverter.



Step 1: Prepare the communication cable.

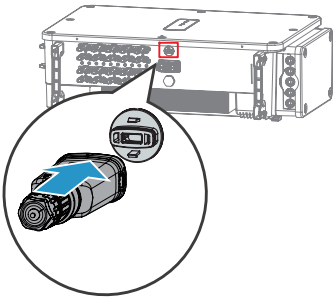
Step 2: Thread the communication cable into the communication connector in sequence, insert communication wires to the communication terminal, and assemble the communication terminal into the communication connecter.

Step 3: Connect the communication connector into the communication port on the inverter.



6.5.4 Installing the Communication Module

Plug a communication module into the inverter to establish a connection between the inverter and the smartphone or web pages. The communication module can be a 4G , WiFi, bluetooth or WiFi+LAN module. Set inverter parameters, check running information and fault information, and observe system status in time via the smartphone or web pages.



NOTICE
Refer to the delivered communication module user manual to get more introduction to the module. For more detailed information, visit https://en.goodwe.com/.

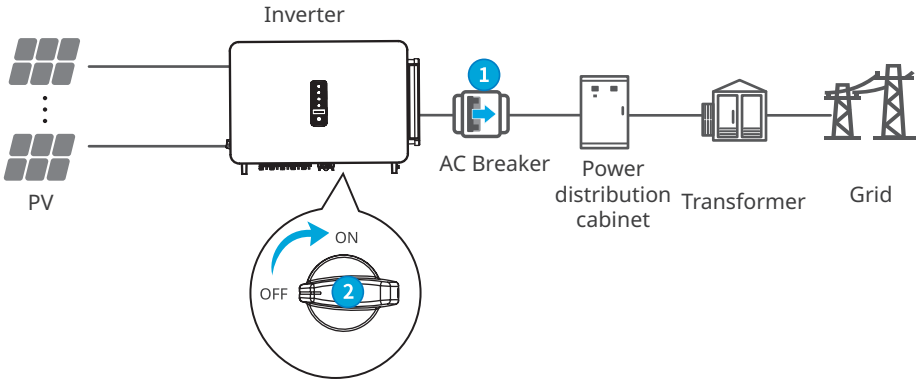
7 Equipment Commissioning

7.1 Check Items before Power On

No.	Check Item
1	The inverter is firmly installed in a clean place where is well-ventilated and easy to operate.
2	The PE cable, DC input cable, AC output cable, and communication cable are connected correctly and securely.
3	Cable ties are routed properly and evenly, and no burrs.
4	Unused ports and terminals are sealed.
5	The voltage and frequency at the connection point meet the on-grid requirements.

7.2 Power On

Step 1 Turn on the AC switch between the inverter and the utility grid.
Step 2 Turn on the DC switch of the inverter.



8 System Commissioning

8.1 Indicators and Button

Indicator	Status	Description
		ON = EQUIPMENT POWER ON
		OFF = EQUIPMENT POWER OFF
		ON = THE INVERTER IS FEEDING POWER
		OFF = THE INVERTER IS NOT FEEDING POWER
		SINGLE SLOW FLASH = SELF CHECK BEFORE CONNECTING TO THE GRID
		SINGLE FLASH = CONNECTING TO THE GRID
		ON = WIRELESS IS CONNECTED/ACTIVE
		BLINK 1 = WIRELESS SYSTEM IS RESETTING
		BLINK 2 = WIRELESS ROUTER NOT CONNECTED
		BLINK 4 = WIRELESS SERVER PROBLEM
		BLINK = RS485 IS CONNECTED
		OFF = WIRELESS IS NOT ACTIVE
		ON = A FAULT HAS OCCURRED
		OFF = NO FAULT

8.2 Setting Inverter Parameters via LCD

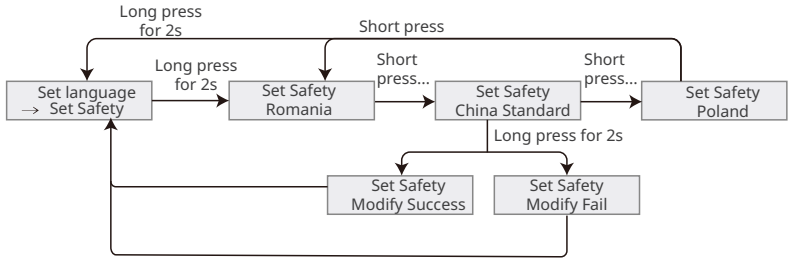
NOTICE

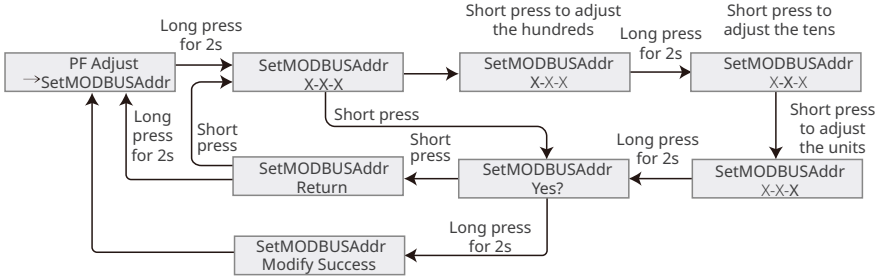
- The screen shots are for reference only. The actual display may differ.
- The name, range, and default value of the parameters is subject to change or adjust. The actual display prevails.
- To prevent the generating capacity from being influenced by wrong parameters, the power parameters should be set by professionals.

LCD Button Description

- Stop pressing the button for a period on any page, the LCD will get dark and go back to the initial page.
- Short press the button to switch menu or adjust parameter values.
- Long press the button to enter the submenu. After adjusting the parameter values, long press to save it.

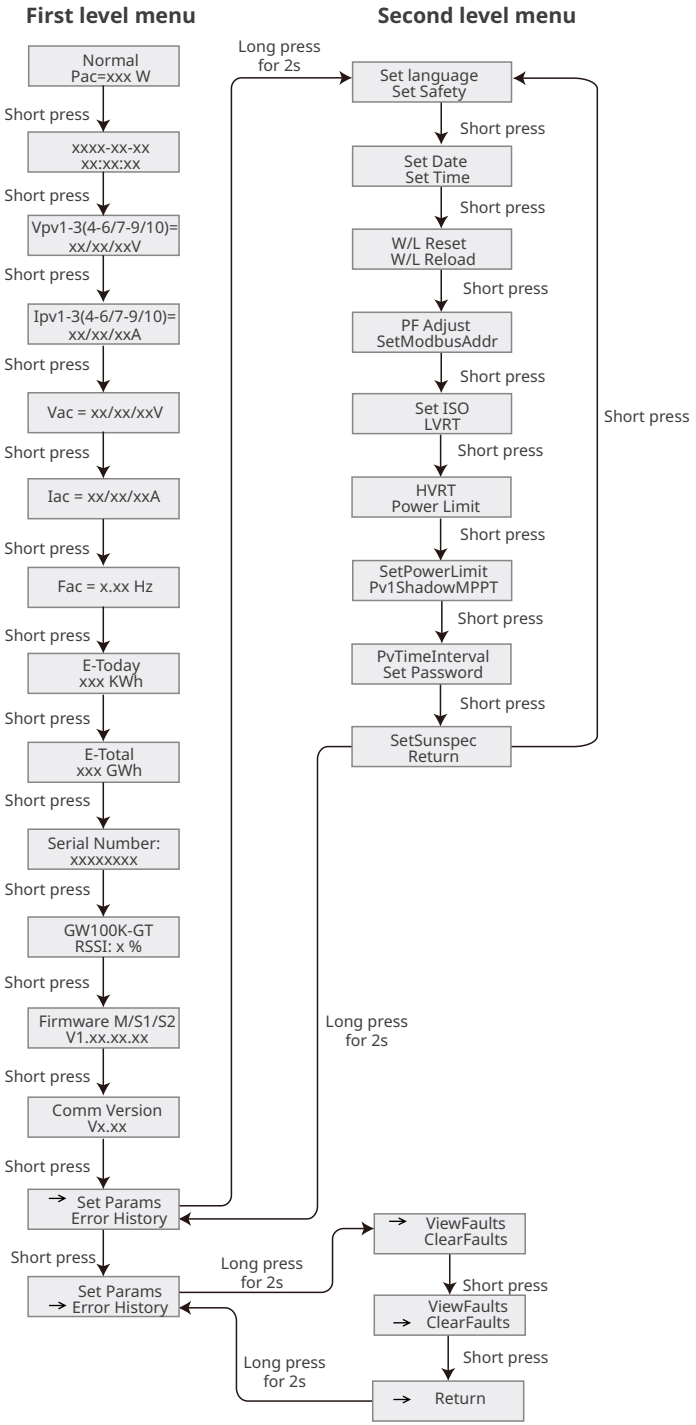
Examples:





8.2.1 LCD Menu Introduction

This part describes the menu structure, allowing you view inverter information and set parameters more conveniently.


First level menu
Second level menu
Normal
Pac=xxx W
Short press
xxxx-xx-xx
xx:xx:xx
Short press
Vpv1-3(4-6/7-9/10)=
xx/xx/xxV
Short press
Ipv1-3(4-6/7-9/10)=
xx/xx/xxA
Short press
Vac = xx/xx/xxV
Short press
Iac = xx/xx/xxA
Short press
Fac = x.xx Hz
Short press
E-Today
xxx KWh
Short press
E-Total
xxx GWh
Short press
Serial Number:
xxxxxxxx
Short press
GW100K-GT
RSSI: x %
Short press
Firmware M/S1/S2
V1.xx.xx.xx
Short press
Comm Version
Vx.xx
Short press
Set Params
Error History
Short press
Set Params
Error History
Long press
for 2s
Set language
Set Safety
Short press
Set Date
Set Time
Short press
W/L Reset
W/L Reload
Short press
PF Adjust
SetModbusAddr
Short press
Set ISO
LVRT
Short press
HVRT
Power Limit
Short press
SetPowerLimit
Pv1ShadowMPPT
Short press
PvTimeInterval
Set Password
Short press
SetSunspec
Return
Short press
Long press
for 2s
Long press
for 2s
ViewFaults
ClearFaults
Short press
ViewFaults
ClearFaults
Short press
Return
Long press
for 2s

8.2.2 Inverter Parameter Introduction

Parameters	Description
Normal	Home page. Indicates the real-time power of the inverter.
2022-02-14 09:01:10	Check the time of the country/region.
VPv1	Check the DC input voltage of the inverter.
IPv1	Check the DC input current of the inverter.
Vac	Check the voltage of the utility grid.
Iac	Check the AC output current of the inverter.
Fac	Check the frequency of the utility grid.
E-Today	Check the generated power of the inverter for that day.
E-Total	Check the total generated power of the inverter.
Serial Number	Check the serial number of the inverter.
GW100K-GT RSSI	Check the signal strength of the communication module.
Firmware M/S1/S2	Check the firmware version.
Comm Version	Check the Comm version.
Set Safety	Set the safety country/region in compliance with the local grid standards and application scenario of the inverter.
Set Date	Set time according to the actual time in the country/region where the inverter is located.
Set Time	
Set Password	The password can be changed. Keep the changed password in mind after changing it. Contact the after-sales service if you forget the password.
W/L Reset	Power off and restart the communication module.
W/L Reload	Restore the factory settings of the communication module. Reconfigure the communication module network parameters after restoring the factory settings,
PF Adjust	Set the power factor of the inverter according to the actual situation.
SetModbusAddr	Set the actual Modbus address.
Set ISO	Indicates the PV-PE insulation resistance threshold value. When the detected value is under the set value, the IOS fault occurs.

Parameters	Description
LVRT	With LVRT on, the inverter will stay connected with the utility grid after a short-term utility grid low voltage exception occurs.
HVRT	With HVRT on, the inverter will stay connected with the utility grid after a short-term utility grid high voltage exception occurs.
Power Limit	Set the power feed back into the utility grid according to the actual situation.
SetPowerLimit	
ShadowMPPT	Enable the shadow scan function if the PV panels are shadowed.
PvTimeInterval	Set the scan time according to the actual needs.
SetSunspec	Set the Sunspec based on the actual communication method.
ViewFaults	Check historical fault records of the inverter.
ClearFaults	Clear historical fault records of the inverter.

8.3 Setting Inverter Parameters via App

SolarGo is an application used to communicate with the inverter via Bluetooth module, WiFi module, Wi-Fi/LAN module, or 4G module. Commonly used functions:

1. Check the operating data, software version, alarms of the inverter, etc.
2. Set grid parameters and communication parameters of the inverter.
3. Maintain the equipment.

For more details, refer to the SolarGo APP User Manual. Scan the QR code or visit https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SolarGo_User%20Manual-EN.pdf to get the user manual.

SolarGo App

SolarGo App User Manual

8.4 Monitoring via SEMS Portal

SEMS Portal is an monitoring platform used to manage organizations/users, add plants, and monitor plant status.
For more details, refer to the SEMS Portal User Manual. Scan the QR code or visit https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SEMS%20Portal-User%20Manual-EN.pdf to get the user manual.

SEMS Portal

SEMS Portal User Manual

9 Maintenance

9.1 Power Off the Inverter

DANGER

- Power off the inverter before operations and maintenance. Otherwise, the inverter may be damaged or electric shocks may occur.
- Delayed discharge. Wait until the components are discharged after power off.

Step 1 (Recommended) sand a command to the inverter for halting the grid via SolarGo APP.
Step 2 Turn off the AC switch between the inverter and the utility grid.
Step 3 Turn off the DC switch of the inverter.

9.2 Removing the Inverter

WARNING

- Make sure that the inverter is powered off.
- Wear proper PPE before any operations.

Step 1 Disconnect all the cables, including DC cables, AC cables, communication cables, the communication module, and PE cables.
Step 2 Handle or hoist the inverter to take it down from the wall or the bracket.
Step 3 Remove the bracket.
Step 4 Store the inverter properly. If the inverter needs to be used later, ensure that the storage conditions meet the requirements.

9.3 Disposing of the Inverter

If the inverter cannot work any more, dispose of it according to the local disposal requirements for electrical equipment waste. Do not dispose of it as household waste.

9.4 Troubleshooting

Perform troubleshooting according to the following methods. Contact the after-sales service if these methods do not work.
Collect the information below before contacting the after-sales service, so tha the problems can be solved quickly.

1. Inverter information like serial number, software version, installation date, fault time, fault frequency, etc.
2. Installation environment, including weather conditions, whether the PV modules are sheltered or shadowed, etc. It is recommended to provide some photos and videos to assist in analyzing the problem.
3. Utility grid situation.

No.	Fault	Cause	Solutions
1	Utility Loss	1. Utility grid power failure. 2. The AC circuit or the AC breaker is disconnected.	1. The alarm will be automatically cleared after the grid power supply restores. 2. Check whether the AC cable is connected and the AC breaker is on.
2	Grid Overvoltage	The grid voltage exceeds the allowed range, or the duration exceeds the setted value of HVRT duration.	1. If occurs occasionaly, it may be caused a short term grid abnormity. The inverter will recover automatically after the grid is normal. 2. If it occurs frequently, please check whether the grid voltage is within the allowed range. • If the grid voltage exceeds the allowed range, please contact local power operator. • If the grid voltage is within the allowable range, please modify the inverter grid overvoltage protection valuewith the consent of the local power operator. 3. If it does not restore for a long time, please check whether the AC side circuit breaker or output cables are connected properly.
3	Grid Rapid Overvoltage	The grid voltage is abnormal or the ultra-high voltage triggers the fault.	

No.	Fault	Cause	Solutions
4	Grid Undervoltage	The grid voltage the allowed range, or the duration exceeds the setted value of LVRT duration.	1. If occurs occasionaly, it may be caused a short term grid abnormity. The inverter will recover automatically after the grid is normal. 2. If it occurs frequently, please check whether the grid voltage is within the allowed range. • If the grid voltage exceeds the allowed range, please contact local power operator. • If the grid voltage is within the allowable range, please modify the inverter grid undervoltage protection value with the consent of the local power operator. 3. If it does not restore for a long time, please check whether the AC side circuit breaker or output cables are connected properly.
5	Grid 10min Overvoltage	The average value of the grid voltage within 10 minutes exceeds the range specified by safety regulations.	1. If occurs occasionaly, it may be caused a short term grid abnormity. The inverter will recover automatically after the grid is normal. 2. If it occurs frequently, please check whether the grid voltage is within the allowed range. • If the grid voltage exceeds the allowed range, please contact local power operator. • If the grid voltage is within the allowable range, please modify the Grid 10min Overvoltage protection value with the consent of the local power operator.
6	Grid Overfrequency	The frequency of the grid exceeds the local grid standard range.	1. If occurs occasionaly, it may be caused a short term grid abnormity. The inverter will recover automatically after the grid is normal. 2. If it occurs frequently, please check whether the grid voltage is within the allowed range. • If the grid voltage exceeds the allowed range, please contact local power operator. • If the grid voltage is within the allowable range, please modify the Grid Overfrequency protection value with the consent of the local power operator.

No.	Fault	Cause	Solutions
7	Grid Underfrequency	The frequency of the grid is below the local grid standard range.	1. If occurs occasionaly, it may be caused a short term grid abnormity. The inverter will recover automatically after the grid is normal. 2. If it occurs frequently, please check whether the grid voltage is within the allowed range. • If the grid voltage exceeds the allowed range, please contact local power operator. • If the grid voltage is within the allowable range, please modify the Grid Underfrequency protection value with the consent of the local power operator.
8	Anti-islanding	The grid has been disconnected. The grid voltage is maintained due to the presence of loads. Grid connection has been stopped based on safety regulations and protection requirements.	The inverter will resume grid reconnection after the grid to return to normal.

No.	Fault	Cause	Solutions
9	LVRT Undervoltage	Abnormal grid, and the abnormal duratin exceeds the specified value of local high voltage safety regulation.	1. If occurs occasionaly, it may be caused a short term grid abnormity. The inverter will recover automatically after the grid is normal. 2. If it occurs frequently, please check whether the grid voltage is within the allowed range. • If no, please contact local power operator. • If yes, please contact the local service center.
10	HVRT Overvoltage	Abnormal grid, and the abnormal duratin exceeds the specified value of local high voltage safety regulation.	
11	Abnormal GFCI 30mA	The insulation impedance pf PV string to ground decreases during the operation of the inverter.	1. If occurs occasionaly, it may be caused a occasional abnormal ouside wiring. The inverter will recover automatically after clear the abnormity. 2. If it occurs frequently or cannot restore for a long time, please check if the insulation impedance of the PV string to the ground is too low.
12	Abnormal GFCI 60mA		
13	Abnormal GFCI 150mA		
14	Abnormal GFCI		
15	Large DC of AC current L1	The DC component of the inverter output current exceeds the local safety regulation's or the inverter's default allowable range.	1. If caused by an external fault (such as the grid abnormality, frequency abnormality, etc.), the inverter will resume normal operation automatically after the fault is cleared. 2. If the alarm occurs frequently or affects the normal power generation, please contact your dealer or after-sales service center.
16	Large DC of AC current L2		
17	Low Insulation Res.	1. The short circuit protection of PV to the ground. 2. The installation environment of PV strings is relatively humid for a long time and the insulation of PE cable is poor.	1. Check the impedance of the PV string to the ground. If there is a short circuit phenomenom, please check the short circuit point and rectify it. 2. Check if the PE cable of the inverter is connected correctly. 3. If it is confirmed that the impedance is indeed lower than the default value in cloudy and rainy days, please reset the "insulation impedance protection value".

No.	Fault	Cause	Solutions
18	Abnormal Ground.	1. The PE cable is not connected. 2. When ground the PV string, the AC output cables L and N of the inverter are reversed.	1. Please confirm if the PE cable of the inverter is not connected properly. 2. Under the scenerio of PV string grounding, please confirm whether the inverter's AC output cables L and Nare reversed.
19	L-PE Short Circuit	The live wire connection of the inverter output terminal is abnormal	1. Check the wiring of the grid side. If the wiring is wrong, please correct it. 2. If the inverter continues to fail to return to normal, please contact after-sales service
20	Anit Reverse power Failure	Abnormal load connection	1. If caused by an external fault, the inverter will resume normal operation automatically after the fault is cleared. 2. If the alarm occurs frequently or affects the normal power generation, please contact your dealer or after-sales service center.
21	Internal Comm Loss	1. Chip has not be powered on 2. Chip program version error	Disconnect the AC side switch and DC side switch, and after 5 minutes, close the AC side switch and DC side switch. If the fault persists, please contact your dealer or after-sales service center.

No.	Fault	Cause	Solutions
22	AC HCT Check abnormal	Abnormal sampling of AC HCT	Disconnect the AC output switch and DC input switch, then connect them 5 minutes later. Contact the dealer or the after-sales service if the problem persists.
23	GFCI HCT Check abnormal	Abnormal sampling of GFCI HCT	
24	Relay Check abnormal	1. The relay is abnormal or short-circuited. 2. The control circuit is abnormal. 3. The AC cable connection is abnormal, like a virtual connection or short circuit.	
25	Internal Fan abnormal	1. The fan power supply is abnormal. 2. Mechanical exception. 3. The fan is aging and damaged.	
26	External Fan abnormal		
27	Flash Fault	Internal storage Flash exception	
28	DC Arc Fault	1. The PV string connection terminal is not securely connected. 2. The DC cable is damaged.	Please check if the DC side is correctly wored according to the guidances of the user manual.
29	AFCI Self-test Fault	Arc detection device is abnormal	Disconnect the AC output switch and DC input switch, then connect them 5 minutes later. Contact the dealer or the after-sales service if the problem persists.
30	Inv Module Overtemperature	1. The inverter is installed in a place with poor ventilation. 2. The ambient temperature exceeds 60℃. 3. A fault occurs in the internal fan of the inverter.	1. Check the ventilation and the ambient temperature at the installation point. 2. If the ventilation is poor or the ambient temperature is too high, improve the ventilation and heat dissipation. 3. Contact the dealer or after-sales service if both the ventilation and the ambient temperature are proper.

No.	Fault	Cause	Solutions
31	1.5V Ref abnormal	The reference circuit is abnormal.	Disconnect the AC output switch and DC input switch, then connect them 5 minutes later. Contact the dealer or the after-sales service if the problem persists.
32	0.3V Ref abnormal	The reference circuit is abnormal.	
33	BUS Overvoltage	1. The PV voltage is too high. 2. The sampling of the inverter BUS voltage is abnormal. 3. The isolation of the transformer of the inverter is poor, so two inverters influence each other when connected to the grid. One of the inverters reports DC Overvoltage.	
34	P-BUS Overvoltage		
35	N-BUS Overvoltage		
36	BUS Overvoltage(Slave CPU 1)		
37	P-BUS Overvoltage(Slave CPU 1)		
38	N-BUS Overvoltage(Slave CPU 1)		
39	PV Input Overvoltage	Excess PV modules are connected in the series, and the open-circuit voltage is higher than the operating voltage.	Check whether the PV string open-circuit voltage meets the maximum input voltage requirements.
40	PV Continuous Hardware Overcurrent	1. Improper PV panels configuration. 2. Internal components of the inverter are damaged.	Disconnect the AC output switch and DC input switch, then connect them 5 minutes later. Contact the dealer or the after-sales service if the problem persists.
41	PV Continuous Software Overcurrent		
42	PV String Reversed (Str1~Str16)	The PV string is connected reversely.	Check if The PV string is connected reversely.

No.	Fault	Cause	Solutions
43	PV voltage Low	Sun light is weak or changing abnormally.	1. If the problem occurs occasionally, the reason might be abnormal sun light. The inverter will recover automatically without manual intervention. 2. If the problem occurs frequently, contact the dealer or the after-sales service.
44	BUS voltage Low		
45	BUS Soft Start Failure	boost driving ciucuit is abnormal.	Disconnect the AC output switch and DC input switch, then connect them 5 minutes later. Contact the dealer or the after-sales service if the problem persists.
46	BUS Voltage Imbalance	1. Abnormal inverter sampling circuit 2. Abnormal hardware.	
47	Gird Phase Lock failure	the grid frequency is unstable.	
48	Inverter Continuous Overcurrent	Short time sudden changes in the grid or load cause the control overcurrent.	If the problem occurs occasionally, ignore it. If the problem occurs frequently, contact the dealer or the after-sales service.
49	Inv Software Overcurrent		
50	R Phase Hardware Overcurrent		
51	S Phase Hardware Overcurrent		
52	T Phase Hardware Overcurrent		
53	PV Hardware Overcurrent	Sun light is weak or changing abnormally.	Disconnect the AC output switch and DC input switch, then connect them 5 minutes later. Contact the dealer or the after-sales service if the problem persists.
54	PV Software Overcurrent		
55	PV HCT Failure	Abnormal boost current sensor	
56	Cavity Overtemperature	1. The inverter is installed in a place with poor ventilation. 2. The ambient temperature exceeds 60℃. 3. A fault occurs in the internal fan of the inverter.	1. Check the ventilation and the ambient temperature at the installation point. 2. If the ventilation is poor or the ambient temperature is too high, improve the ventilation and heat dissipation. 3. Contact the dealer or after-sales service if both the ventilation and the ambient temperature are proper.
57	PV String Loss (Str1~Str16)	The PV string fuse is broken (if any)	Check if the PV string fuse is broken.

9.5 Routine Maintenance

⚠ DANGER

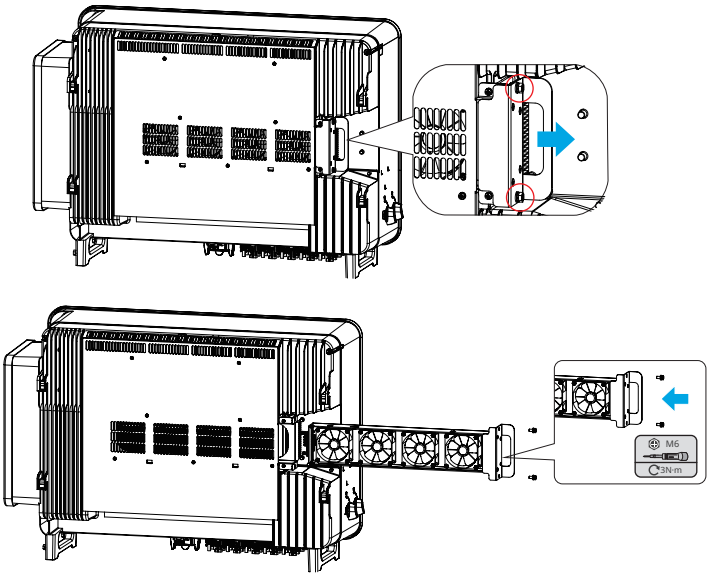
Power off the inverter before operations and maintenance. Otherwise, the inverter may be damaged or electric shocks may occur.

Maintaining Item	Maintaining Method	Maintaining Period
System Clean	Check the heat sink, air intake, and air outlet for foreign matter or dust.	Once 6-12 months
Fan	Check the fan for proper working status, low noise, and intact appearance.	Once a year
DC Switch	Turn the DC switch on and off ten consecutive times to make sure that it is working properly.	Once a year
Electrical Connection	Check whether the cables are securely connected. Check whether the cables are broken, or whether there is any exposed copper core.	Once 6-12 months
Sealing	Check whether all the terminals and ports are properly sealed. Reseal the cable hole if it is not sealed or too big.	Once a year
THDi Test	For Australia requirements, in the THDi test, there should add Zref between inverter and mains. Zref: Zmax or Zref (phase current>16A) Zref: L: 0.24 Ω + j0.15 Ω; N: 0.16 Ω + j0.10 Ω (phase current>16A, <21.7A) Zref: L: 0.15 Ω + j0.15 Ω; N: 0.1 Ω + j0.1 Ω (phase current>21.7A, <75A) Zref: ≥5% Un/Irated+j5% Un/Irated (phase current>75A)	As needed

Follow below steps to maintain the fans of GT inverters:

GT Series inverter is equipped with outside fans on its left side. The fan should be cleaned yearly with a vacuum cleaner. For more thorough cleaning, completely remove the fans.

1. Disconnect the AC breaker first and then disconnect DC breaker.
2. Wait until the residual voltage has been released according to the requirement of the label and until the fans are no longer turning.
3. Disassemble the fans (refer to the below figure).
   - Loosen the screws with a screwdriver, then draw the fans from the cabinet slowly.
   - Draw the fans out as a whole, and do not take the fan out one by one.
4. Clean the ventilation net and the fan with a soft brush, a cloth, or a vacuum cleaner.
5. Reassemble the fans into the inverter housing.



10 Technical Parameters

Technical Data	GW100K -GT	GW110K -GT	GW125K -GT
Input(DC)			
Max.Input Power (kW)	150	165	187.5
Max.Input Voltage(V)	1100	1100	1100
MPPT Operating Voltage Range (V)	180~1000		
MPPT Voltage Range at Nominal Power (V)	500~850		
Start-up Voltage (V)	200		
Nominal Input Voltage (V)	600		
Max. Input Current per MPPT (A)	42		
Max. Short Circuit Current per MPPT (A)	52.5		
Max.Backfeed Current to The Array(A)	0		
Number of MPP Trackers	8	10	10
Number of Strings per MPPT	2		
Output(AC)			
Nominal Output Power (kW)	100*1	110	125
Nominal Output Apparent Power (kVA)	100*1	110	125
Max. AC Active Power (kW)*3	110*1	121*4	137.5*2
Max. AC Apparent Power (kVA)*3	110*1	121*4	137.5*2
Nominal Power at 40°C(kW)	100	110	125
Max Power at 40°C (including AC overload) (kW)	100	110	125
Nominal Output Voltage (V)	220/380, 230/400, 3L/N/PE or 3L/PE		
Output Voltage Range (V)	304~460		
Nominal AC Grid Frequency (Hz)	50/60		
AC Grid Frequency Range (Hz)	45~55/55~65		
Max. Output Current (A)*5	167.1	183.4	199.4
Max. Output Fault Current (Peak and Duration) (A)	364A@5μs		
Inrush Current (Peak and Duration) (A)	120A@1μs		
Nominal Output Current (A)	152.0 @380V 145.0 @400V	167.1 @380V 159.5 @400V	189.9 @380V 181.2 @400V
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
Max. Total Harmonic Distortion	<3%		

Technical Data	GW100K -GT	GW110K -GT	GW125K -GT
Maximum Output Overcurrent Protection (A)	340		
Efficiency			
Max. Efficiency	98.8%	98.8%	99.0%
European Efficiency	98.4%	98.4%	98.5%
CEC Efficiency	98.3%	98.3%	98.4%
Protection			
PV String Current Monitoring	Integrated		
PV Insulation Resistance Detection	Integrated		
Residual Current Monitoring	Integrated		
PV Reverse Polarity Protection	Integrated		
Anti-islanding Protection	Integrated		
AC Overcurrent Protection	Integrated		
AC Short Circuit Protection	Integrated		
AC Overvoltage Protection	Integrated		
DC Switch	Integrated		
DC Surge Protection	Type II or Type I + II (Optional)		
AC Surge Protection	Type II		
AFCI	Optional		
Emergency Power Off	Optional		
Rapid Shutdown	Optional		
Remote Shutdown	Optional		
PID Recovery	Optional		
Reactive Power Compensation at Night	Optional		
Power Supply at Night	Optional		

Technical Data	GW100K-GT	GW110K-GT	GW125K-GT
General Data			
Operating Temperature Range (℃)	-30 ~ +60		
Storage Temperature (℃)	-40 ~ +70		
Relative Humidity	0 ~ 100%		
Max. Operating Altitude (m)	4000		
Cooling Method	Smart Fan Cooling		
User Interface	LED, LCD (Optional) ,WLAN+APP		
Communication	RS485, WiFi or 4G or PLC(Optional)		
Communication Protocols	Modbus-RTU (SunSpec Compliant)		
Weight (Kg)	85	88	88
Dimension (W×H×Dmm)	930 x 650 x 300		
Noise Emission (dB)	<70		
Topology	Non-isolated		
Self-consumption at Night (W)	<2		
Ingress Protection Rating	IP66		
Anti-corrosion Class	C4, C5 (Optional)		
DC Connector	MC4 (4~6mm^2)		
AC Connector	OT/DT terminal (Max. 240mm^2)		
Environmental Category	4K4H		
Pollution Degree	III		
Overvoltage Category	DCII / ACIII		
Protective class	I		
The Decisive Voltage Class (DVC)	PV: C AC: C com: A		
Active Anti-islanding Method	AFDPF + AQDPF		
Country of Manufacture	China		

*1: For Australia, it is 99.99kW/kVA.
*2: For VDE4105, Max. AC Active Power(kW) and Max. AC Apparent Power(kVA): GW125K-GT is 134.9.
*3: For Chile and Brazil Max AC Active Power (kW) and Max. AC Apparent Power (kVA): GW100K-GT is 100, GW110K-GT is 110 and GW125K-GT is 125.
*4: For Australia is 110kW/kVA.
*5: For Australia Max. Output Current (A): GW100K-GT is 145; GW110K-GT is 159.5.

Overvoltage levels:
Overvoltage I: Devices connected to the circuit which can limit instantaneous overvoltage to a relatively low level.
Overvoltage II: Energy-consuming devices powered by fixed power distribution equipment, including appliances, portable tools, and other household and similar equipment. Overvoltage III is also applicable if there are special requirements for the reliability and applicability of the equipment.
Overvoltage III: Devices apply to fixed distribution equipment, including switches in the fixed power distribution equipment and industrial equipment permanently connected to fixed power distribution equipment. The reliability and applicability of the equipment have to meet special requirements.
Overvoltage IV: Devices apply to the power distribution equipment, such as measuring instruments and prepositioned overcurrent protection devices, etc.

Humidity Levels:

Environmental Parameters	Level		
	3K3	4K2	4K4H
Temperature range	0°C - +40°C	-33°C - +40°C	-20°C - +55°C
Humidity range	5% to 85%	15% to 100%	4% to 100%

Environmental levels:
Outdoor inverter: The ambient temperature range is -25°C - +60°C, suitable for an environment with pollution of level 3;
Indoor type II inverter: The ambient temperature range is -25°C - +40°C, suitable for an environment with pollution of level 3;
Indoor type I inverter: The ambient temperature range is 0°C - +40°C, suitable for an environment with pollution of level 2;

Pollution levels:
Pollution level 1: No pollution or dry and non-conductive pollution only;
Pollution level 2: Usually non-conductive pollution only, but there may be temporary conductive pollution caused by condensation;
Pollution level 3: Conductive pollution or non-conductive pollution turns to conductive pollution due to condensation;
Pollution level 4: Persistent conductive pollution, such as pollution caused by conductive dust or rain and snow.

GoodWe Website

GoodWe Technologies Co., Ltd.

No. 90 Zijin Rd., New District, Suzhou, 215011, China

www.goodwe.com

service@goodwe.com

Local Contacts