GOODWE

User Manual

Grid-Tied PV Inverter

SDT Series

(8-30 kW) G3

V1.5-2024-08-05

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Notice

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

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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 https://en.goodwe.com/.

1.1 Applicable Model

This manual applies to the listed inverters below

Model	Nominal Output Power	Nominal Output Voltage
GW8000-SDT-30	8kW	220/380,230/400,240/415,3L/N/PE or 3L/PE
GW10K-SDT-30	10kW	
GW10K-SDT-EU30	10kW	
GW12K-SDT-30	12kW	
GW15K-SDT-30	15kW	
GW17K-SDT-30	17kW	
GW20K-SDT-30	20kW	
GW23K-SDT-C30	23kW	
GW25K-SDT-C30	25kW	
GW25K-SDT-P30	25kW	
GW27K-SDT-C30	27kW	
GW27K-SDT-P30	27kW	
GW30K-SDT-C30	30kW	
GW12KLV-SDT-C30	12kW	127/220,3L/N/PE or 3L/PE
GW17KLV-SDT-C30	17kW	

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 to comple 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 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.

⚠ WARNING

- Ensure the PV module frames and the PV mounting system are securely grounded.
- Ensure the DC cables are connected tightly and securely. Inappropriate wiring may cause poor contacts or high impedances, and damage the inverter.
- Measure the DC input using the multimeter. The manufacturer shall not be liable for damage caused by reverse connection, overvoltage, and overcurrent.
- Mixing PV modules of different brands or models in the same MPPT or connecting PV modules with different directions or inclination angles in the same PV string may not necessarily damage the inverter, but may lead to a decrease in the system performance.
- The maximum open-circuit voltage of each PV string cannot exceed:
  - 850 V DC for the models of GW12KLV-SDT-C30 and GW17KLV-SDT-C30
  - 1100 V DC for the models except GW12KLV-SDT-C30 and GW17KLV-SDT-C3 (recommend 1045 V considering low termpereture environment).
- It is recommended that the voltage difference between MPPTs shall be less than 160 V.
- It is recommended that the sum of the Imp of the PV strings connected to each MPPT shall not exceed the Max. Input Current per MPPT of the inverter.
- When there are multiple PV strings, it is recommended to maximize the connections of MPPTs.
- The PV modules used with the inverter must have an IEC61730 class A rating.

2.3 AC Side

WARNING

- The voltage and frequency at the connecting point should meet the on-grid requirements.
- Additional protective devices like circuit breakers or fuses are recommended on the AC side. The specification of the protective device should be at least 1.25 times the rated AC output rated current.
- PE cable of the inverter must be connected firmly.
- You are recommended to use copper cables as AC output cables. If you prefer aluminum cables, we recommend 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 user manual 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

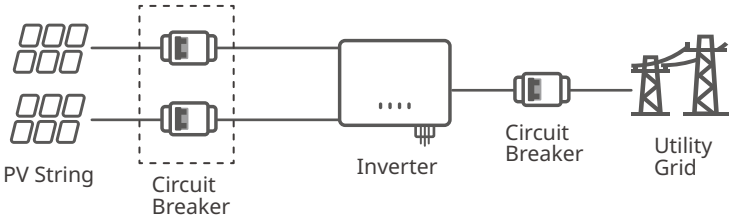
NOTICE

- 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 SDT Series 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:



Model Description

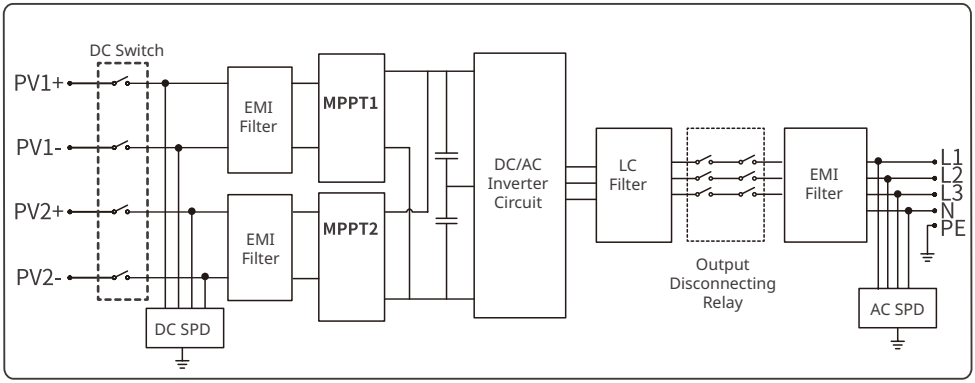
GW12KLV-SDT-C30

1 2 3 4 5

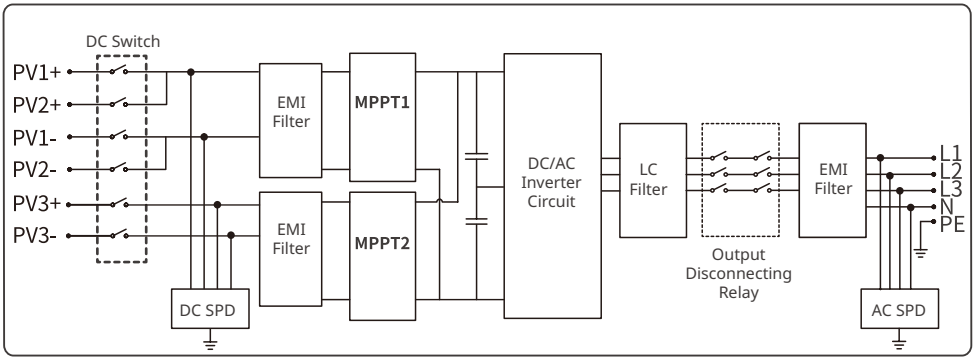
No.	Referring to	Explanation
1	Brand code	GW: GoodWe
2	Rated power	12K: the rated power is 12kW
3	Grid type	LV: Low Voltage Grid
4	Series code	SDT: SDT Series
5	Version code	30, C30, EU30 and P30: the inverter version is 3.0

3.2 Circuit Diagram

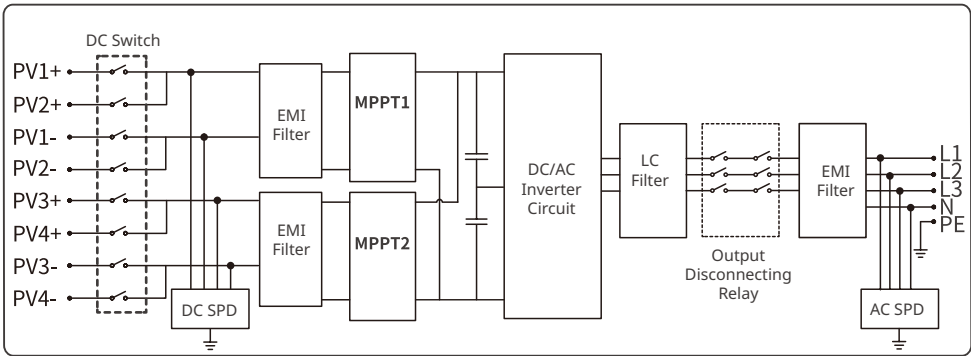
GW8000-SDT-30, GW10K-SDT-30, GW10K-SDT-EU30, GW12K-SDT-30 and GW15K-SDT-30:



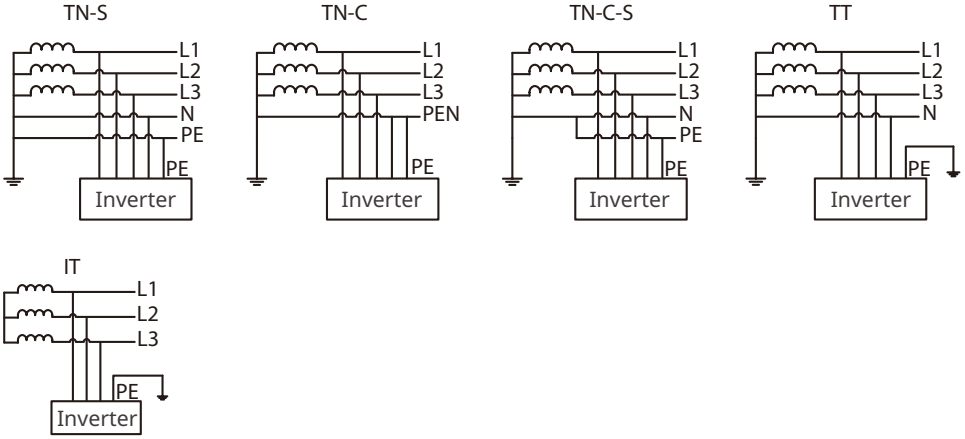
GW12KLV-SDT-C30, GW17K-SDT-30, GW20K-SDT-30, GW23K-SDT-C30, GW25K-SDT-C30 and GW27K-SDT-C30:



GW17KLV-SDT-C30, GW25K-SDT-P30, GW27K-SDT-P30 and GW30K-SDT-C30:



3.3 Supported Grid Types



3.4 Functionalities

Power derating

In order to ensure the safe operation of the inverter and meet local safety regulations, the inverter will automatically reduce the output power when the operating environment is not ideal. The following are the factors that may occur power derating. Please try to avoid them when the inverter is working.

The inverter will shutdown for protection until the AFCI alarms are cleared. After clearing the alarms, the inverter can automatically reconnect to the grid.

- Unfavorable environmental conditions, e.g., direct sunlight, high temperature, etc.
- Inverter's output power percentage has been set.
- Changes in grid voltage and frequency.
- Higher input voltage value.
- Higher input current value.

AFCI Detection (Optional)

Reasons to occur electric arcs.

- Damaged connectors in the PV or battery system.
- Wrong connected or broken cables.
- Aging connectors and cables.

Methods to detect electric arcs

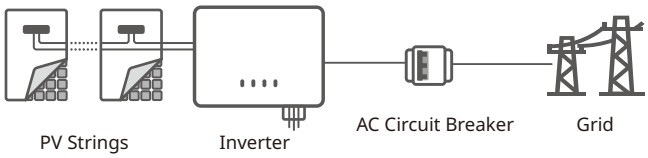
- The inverter has an integrated AFCI function satisfies IEC63027.
- When the inverter detects an electric arc, users can find the time of the fault and the detailed phenomenon through the app.
- The inverter will shutdown for protection until the AFCI alarms are cleared. After clearing the alarms, the inverter can automatically reconnect to the grid.
  - Automatic reconnection: The alarm can be cleared automatically in 5 minutes if the inverter triggers a fault for less than 5 times within 24 hours.
  - Manual reconnection: The inverter will shutdown for protection after the 5th electric arc fault within 24 hours. The inverter cannot work normally until the fault is solved. Please refer to the SolarGo App User Manual for detailed operations.

The AFCI function is disabled by default at the factory. To use it, please enable the "AFCI Detection" function through the "Advanced Settings" interface in the SolarGo App.

Model	GW8000-SDT-30 GW10k-SDT-30 GW10k-SDT-EU30 GW12k-SDT-30 GW15k-SDT-30	GW17k-SDT-30 GW20k-SDT-30 GW12kLV-SDT-C30	GW25k-SDT-C30	GW17kLV-SDT-C30 GW30k-SDT-C30
Classification	F-I-AFPE-1-2-1	F-I-AFPE-1-3-1	F-I-AFPE-1-3-1	F-I-AFPE-1-4-1
Number of monitored strings per input port	1			
Number of input ports per channel	2	3	3	4
Number of monitored channels	1			
Rated channel current	22	54	64	74
Max. current per input port	22			
Rated interruption current	22			

RSD (Optional)

Optionally, inverters with RSD function equips with a built-in signal transmitter to communicate with module-level smart controller installed on the external of the PV strings. In case of an emergency, by turning off the AC circuit breaker at the output side of the inverter, the transmitter inside of the inverter will be cut off, consequently to interrupt the current output of the PV strings.



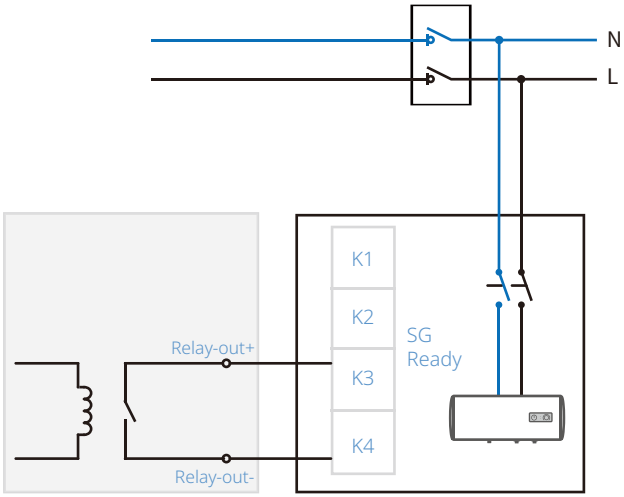
Load Control

The inverter reserves a dry contact controlling port, which supports connecting SG Ready certified heat pumps and controllable loads for controlling load on or off.

The load control methods are as follows:

- Switch control: In this mode, the on/off of the load will be controlled by switch button.
- Time control: In time mode, the time for controlling the load to turn on or off can be set, and the load will automatically turn on or off within the set time period.
- Power control: In this mode, a power value can be set. When the output power of inverter exceeds the set value, the load will be turned on.

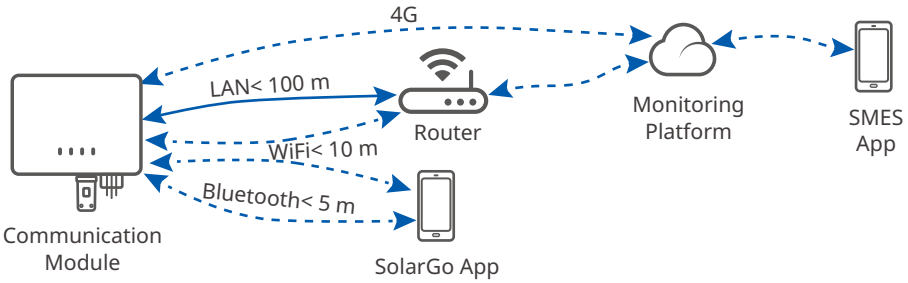
The load control function is disabled by default. If you need to use it, please enable and set the "Load Control" function through the "More" interface on the SolarGo App.



Communications

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

- Bluetooth (optional): meets Bluetooth 5.1 standard.
- WiFi (optional): supports 2.4G frequency band. The router need to be set to 2.4G or 2.4G/5G coexistence mode. The router supports a maximum of 40 bytes for router wireless signal name.
- LAN (optional): supports connecting to the router via LAN communication, and then connecting to the monitoring platform.
- 4G (optional): supports connecting to the monitoring platform via 4G communication.



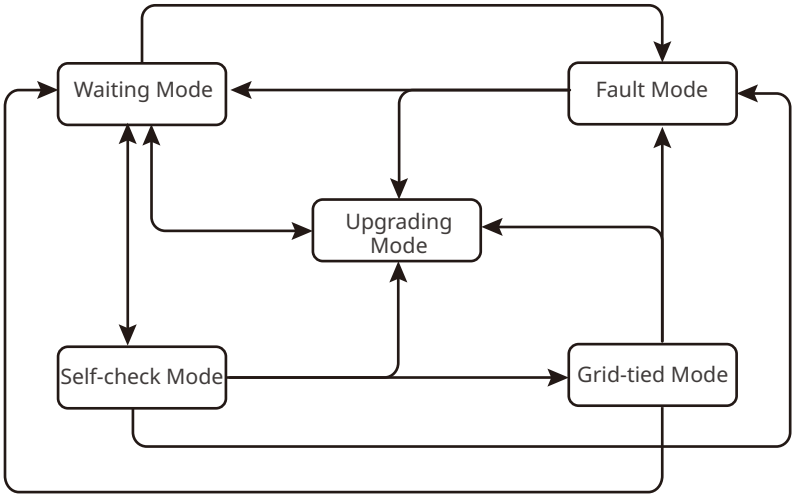
24h Load Monitoring (Optional)

The smart meter measures the data of the grid side and transmits it to the inverter. The inverter transmits the grid side date and the power generation date to the monitoring platform via a communication module, and then monitoring platform calculates the load power consumption and the 24H load monitoring is realized.

Power Supply at Night (Optional)

When the PV modules stop working due to insufficient sunlight at night, the inverter can take power from the grid side to achieve functions such as night monitoring and remote upgrading at night.

3.5 Inverter Operation Mode

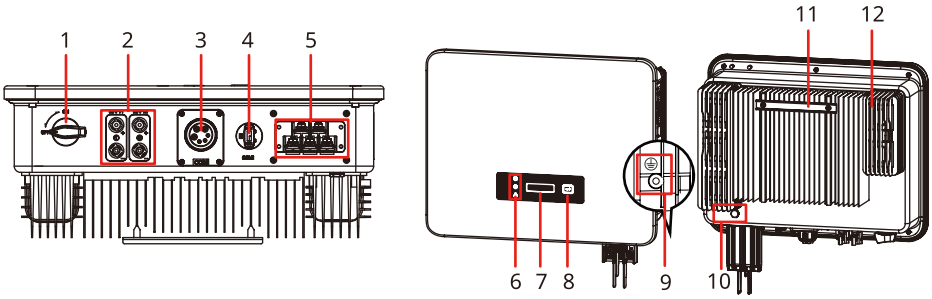


No.	Mode	Description
1	Waiting Mode	Waiting stage after the inverter is powered on. • When the conditions are met, the inverter enters the self-check mode. • If there is a fault, the inverter enters the fault mode. • If received an upgrade request, the inverter enters the upgrading mode.
2	Self-check 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.

3.6 Appearance

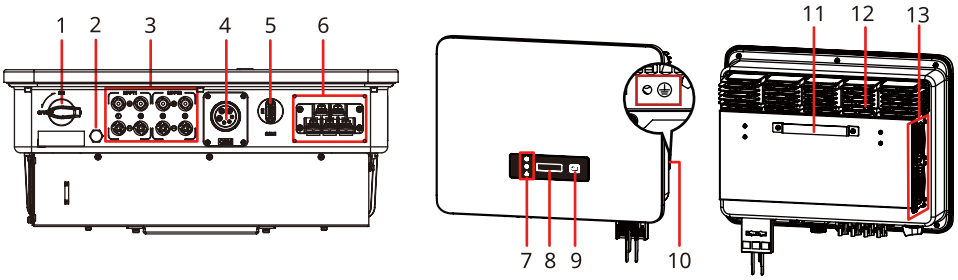
3.6.1 Parts

China Version (8-15kW)



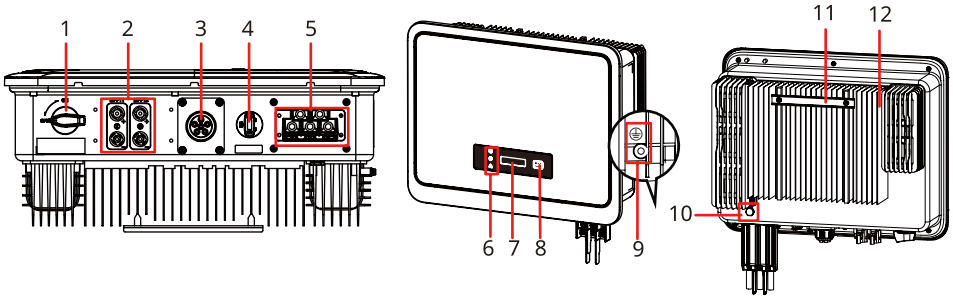
No.	Parts	Description
1	DC Switch	To start or stop DC input.
2	PV Input Terminal	To connect the PV module DC input cables.
3	Communication Terminal	To connect the communication cable such as RS485, smart meter, Emergency Power Off, Remote Shutdown, Dry Contact, DRED(for Australia only) or RCR(for Germany only).
4	Communication Module Terminal	• To connect the communication moduled such as WiFi, LAN, Bluetooth or 4G. • To connect USB flash drive for local software upgrating.
5	AC Output Terminal	To connect AC output cable. Connect the inverter and the utility grid.
6	Indicator	To indicate working state of the inverter.
7	LCD (optional)	To check the parameters of the inverter.
8	Button (optional)	To control contents displayed on the screen.
9	Grounding Point	To connect the PE cable.
10	Ventilation Valve	-
11	Mounting Plate	To mount the inverter.
12	Heat Sink	For the ventilation of the inverter.

China Version (17-30kW)



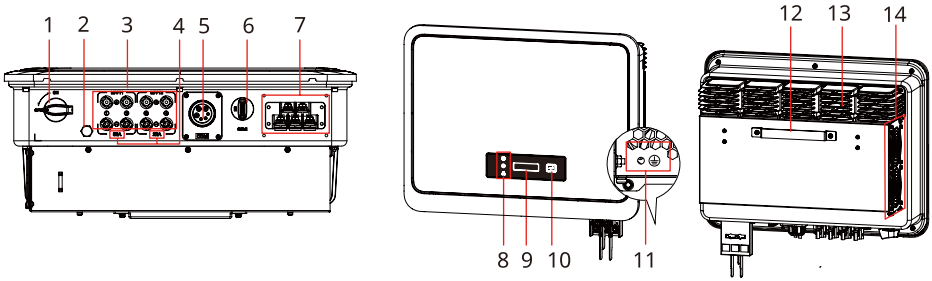
No.	Parts	Description
1	DC Switch	To start or stop DC input.
2	Ventilation Valve	-
3	PV Input Terminal	• To connect the PV module DC input cables. • GW25K-SDT-P30, GW27K-SDT-P30, GW30K-SDT-C30: 4 x PV+/PV-, other models: 3 x PV+/PV-
4	Communication Terminal	To connect the communication cable such as RS485, smart meter, Emergency Power Off, Remote Shutdown, Dry Contact, DRED(for Australia only) or RCR(for Germany only).
5	Communication Module Terminal	• To connect the communication moduled such as WiFi, LAN, Bluetooth or 4G. • To connect USB flash drive for local software upgrating.
6	AC Output Terminal	To connect AC output cable. Connect the inverter and the utility grid.
7	Indicator	To indicate working state of the inverter.
8	LCD (optional)	To check the parameters of the inverter.
9	Button (optional)	To control contents displayed on the screen.
10	Grounding Point	To connect the PE cable.
11	Mounting Plate	To mount the inverter.
12	Heat Sink	For the ventilation of the inverter.
13	Fan	• For the ventilation of the inverter. • GW17K-SDT-30 and GW20K-SDT-30: outside fan x 1, other models: outside fan x 2.

Non-China (GW8000-SDT-30, GW10K-SDT-30, GW10K-SDT-EU30, GW12K-SDT-30, GW15K-SDT-30)



No.	Parts	Description
1	DC Switch	To start or stop DC input.
2	PV Input Terminal	To connect the PV module DC input cables.
3	Communication Terminal	To connect the communication cable such as RS485, smart meter, Emergency Power Off, Remote Shutdown, Dry Contact, DRED(for Australia only) or RCR(for Germany only).
4	Communication Module Terminal	• To connect the communication moduled such as WiFi, LAN, Bluetooth or 4G. • To connect USB flash drive for local software upgrating (for Non-Brazil machines). • To connect to a computer via RS485-USB cable for function configuration(for Brazil only).
5	AC Output Terminal	Used to connect AC output cable. Connect the inverter and the utility grid.
6	Indicator	To indicate working state of the inverter.
7	LCD (optional)	To check the parameters of the inverter.
8	Button (optional)	To control contents displayed on the screen.
9	Grounding Point	To connect the PE cable.
10	Ventilation Valve	-
11	Mounting Plate	To mount the inverter.
12	Heat Sink	For the ventilation of the inverter.

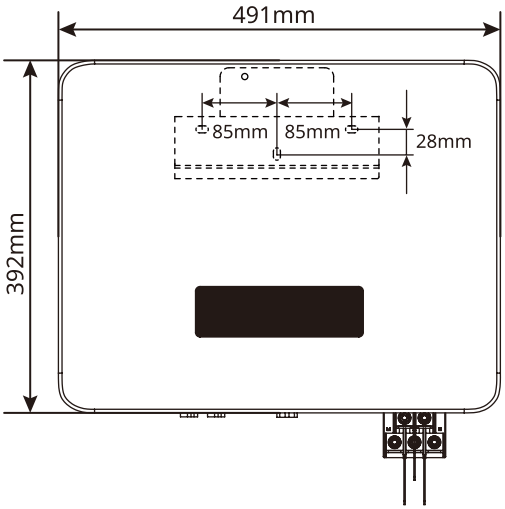
Non-China (GW12KLV-SDT-C30, GW17K-SDT-30, GW17KLV-SDT-C30, GW20K-SDT-30, GW25K-SDT-C30, GW30K-SDT-C30)

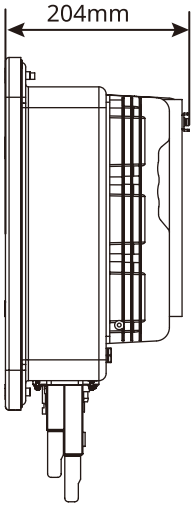


No.	Parts/Printed Word	Description
1	DC Switch	To start or stop DC input.
2	Ventilation Valve	-
3	PV Input Terminal	• To connect the PV module DC input cables. • GW25K-SDT-P30, GW27K-SDT-P30, GW30K-SDT-C30: 4 x PV+/PV-, other models: 3 x PV+/PV-
4	Value of Max. Input Current per MPPT	The maximum current that ports of each inverter MPPT can accept. The value varies for different models of inverters. Please refer to the technical parameter of the inverter for the specific value.
5	Communication Terminal	To connect the communication cable such as RS485, smart meter, Emergency Power Off, Remote Shutdown, Dry Contact, DRED(for Australia only) or RCR(for Germany only).
6	Communication Module Terminal	• To connect the communication moduled such as WiFi, LAN, Bluetooth or 4G. • To connect USB flash drive for local software upgrating(for Non-Brazil machines). • To connect to a computer via RS485-USB cable for function configuration(for Brazil only).
7	AC Output Terminal	Used to connect AC output cable. Connect the inverter and the utility grid.
8	Indicator	To indicate working state of the inverter.
9	LCD (optional)	To check the parameters of the inverter.
10	Button (optional)	To control contents displayed on the screen.
11	Grounding Point	To connect the PE cable.
12	Mounting Plate	To mount the inverter.
13	Heat Sink	For the ventilation of the inverter.
14	Fan	• For the ventilation of the inverter. • GW17K-SDT-30 and GW20K-SDT-30: outside fan x 1, other models: outside fan x 2.

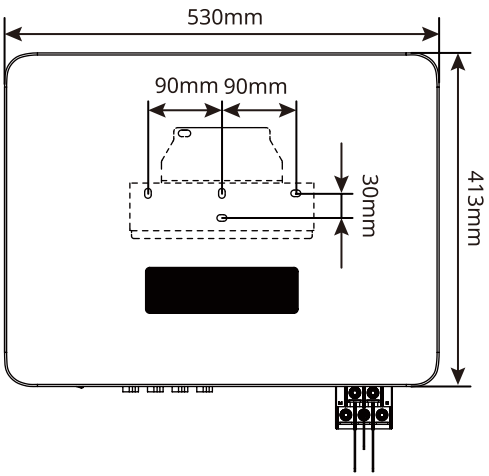
3.6.2 Dimensions

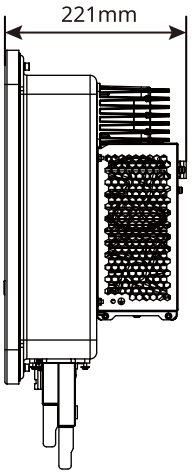
China Version (8-15kW)



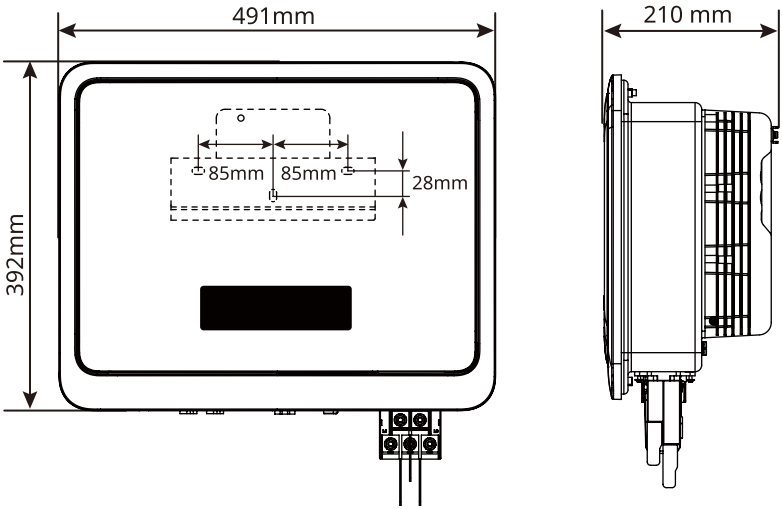


China Version (17-30kW)

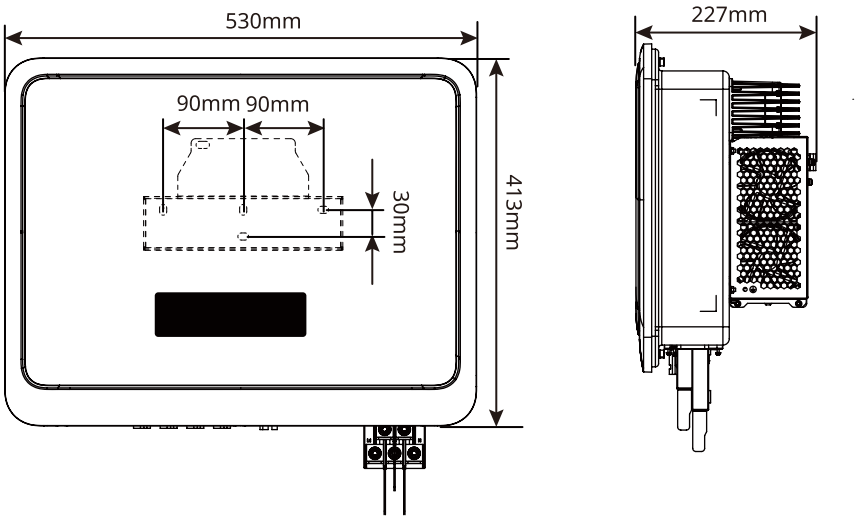




Non-China Version(GW8000-SDT-30, GW10K-SDT-30, GW10K-SDT-EU30, GW12K-SDT-30, GW15K-SDT-30)



Non-China Version(GW12KLV-SDT-C30, GW17K-SDT-30, GW17KLV-SDT-C30, GW20K-SDT-30, GW25K-SDT-C30, GW30K-SDT-C30)



3.6.3 Indicators

Inverters Designed with LCD

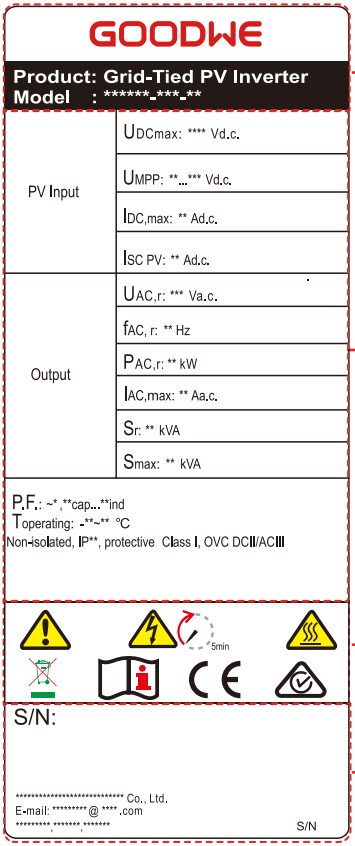
Indicator	Status	Description
		ON = WIRELESS IS CONNECTED/ACTIVE
		BLINK 1 = WIRELESS SYSTEM IS RESETTING
		BLINK 2 = NOT CONNECTED TO THE ROUTER OR BASE STATION
		BLINK 4 = NOT CONNECTED TO MONITORING SERVER
		BLINK = RS485 IS CONNECTED
		OFF = WIRELESS IS RESTORING FACTORY DEFAULT SETTING
		ON = THE INVERTER IS FEEDING POWER
		OFF = THE INVERTER IS NOT FEEDING POWER AT THE MOMENT
		ON = A FAULT HAS OCCURRED
		OFF = NO FAULT

Inverters Designed without LCD

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 IS NOT CONNECTED TO ROUTER OR BASE STATION
		BLINK 4 = NOT CONNECTED TO MONITORING SERVER
		BLINK = RS485 IS CONNECTED
		OFF = WIRELESS IS RESTORING FACTORY DEFAULT SETTING
		ON = A FAULT HAS OCCURRED
		OFF = NO FAULT

3.6.4 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

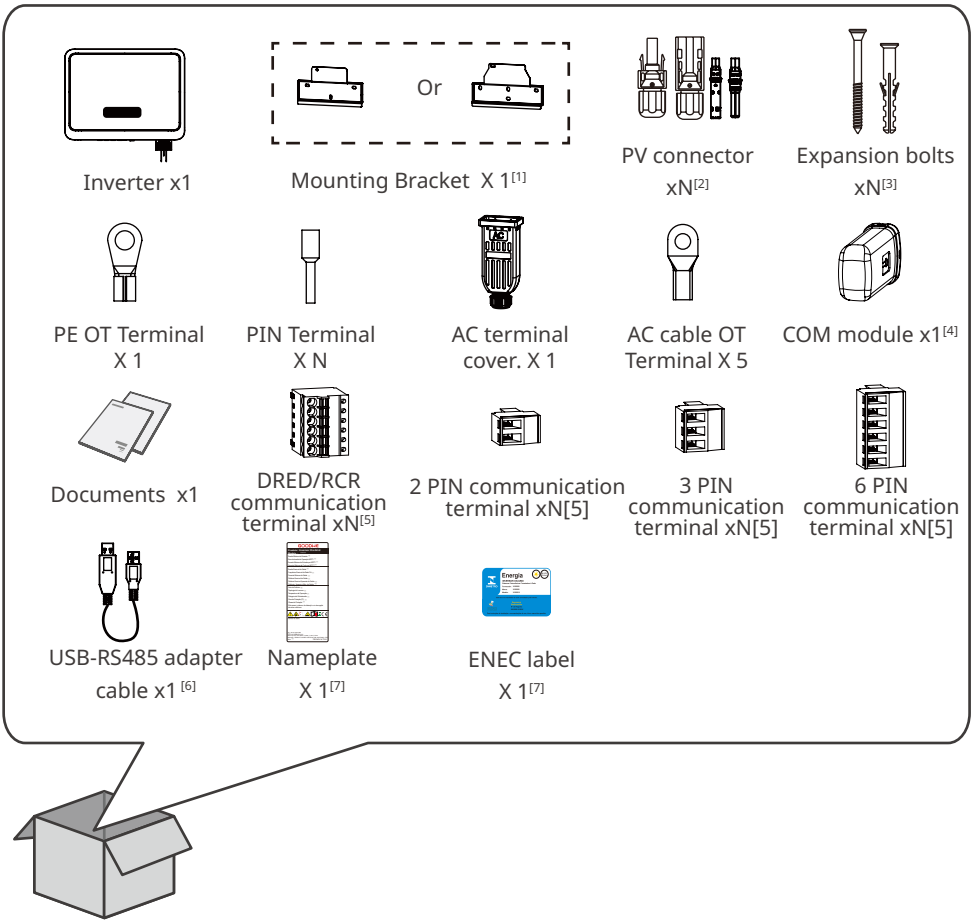
4 Check and Storage

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



NOTICE

[1] The type of the mounting plate epends on the model of the inverter.
[2] The number of PV connectors equals with the number of the inverter's DC input terminals.
[3] The number of expansion bolts depends on the inverter model.
[4] Communication module types are available: WiFi/4G/Bluetooth/LAN. The actual delivered type depends on the selected inverter communication method.
[5] The number of communication connector and PIN terminals matches the selected communication method. The number of 2 PIN terminals, 3 PIN terminals or DRED/RCR communication terminals varies for difference communication configuration.
[6] USB-RS485 conversion cable is for Brazil inverters only.
[7] For the Brazil model of GW12KLV-SDT-C30 and GW17KLV-SDT-C30 only.

4.3 Storage

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

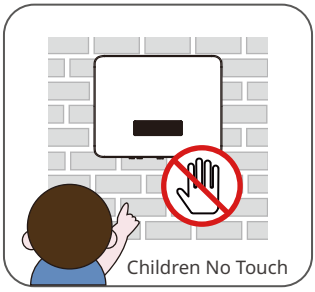
1. Do not unpack the outer package or throw the desiccant away.
2. Store the equipment in a clean place. Make sure the temperature and humidity are appropriate and no condensation.
3. The height and direction of the stacking inverters should follow the instructions on the packing box.
4. The inverters 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.

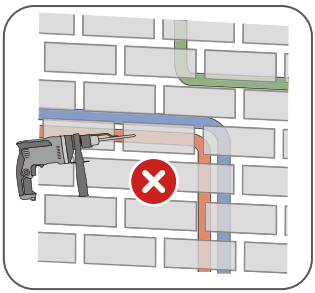
5 Installation

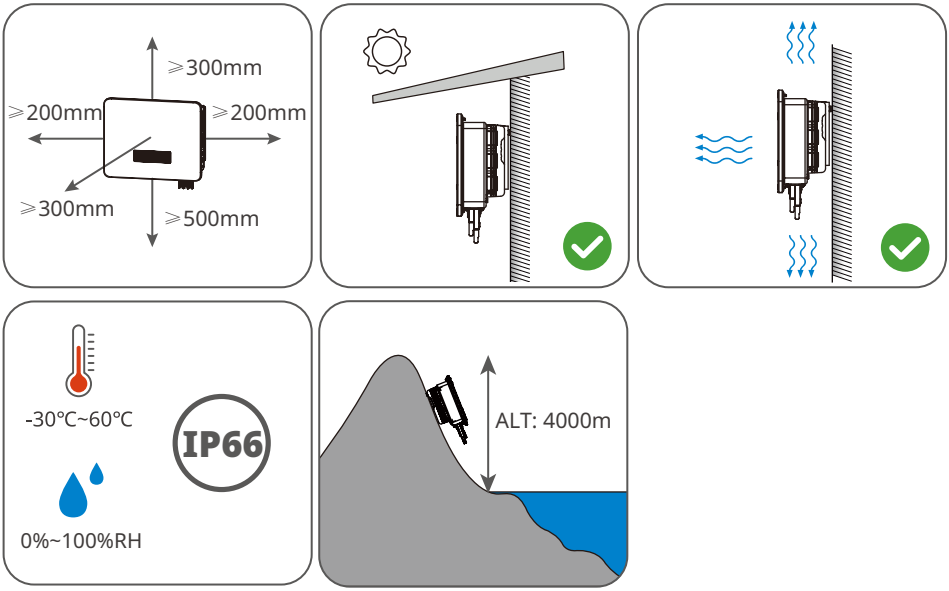
5.1 Installation Requirements

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. The invertert should be installed in a place with the altitude lower than the maximum operating altitude of 4000 m. When the altitude is higher than 2000 m, the inverter will be derated.
9. 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).
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:
    - Add a low pass EMI filter or a multi winding ferrite core to the DC input cable or AC output cable of the inverter.
    - Install the inverter at least 30m far away from the wireless equipment.





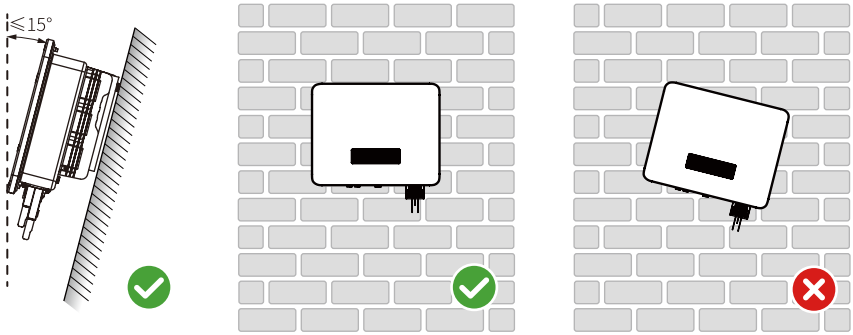


Mounting Support Requirements

- 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 product on the support with poor sound insulation to avoid the noise generated by the working product, which may annoy the residents nearby.

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.

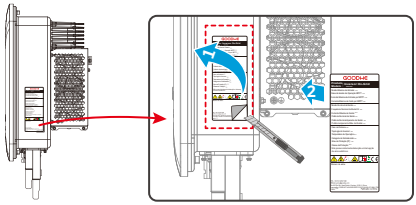
5.2.2 Installing the Inverter

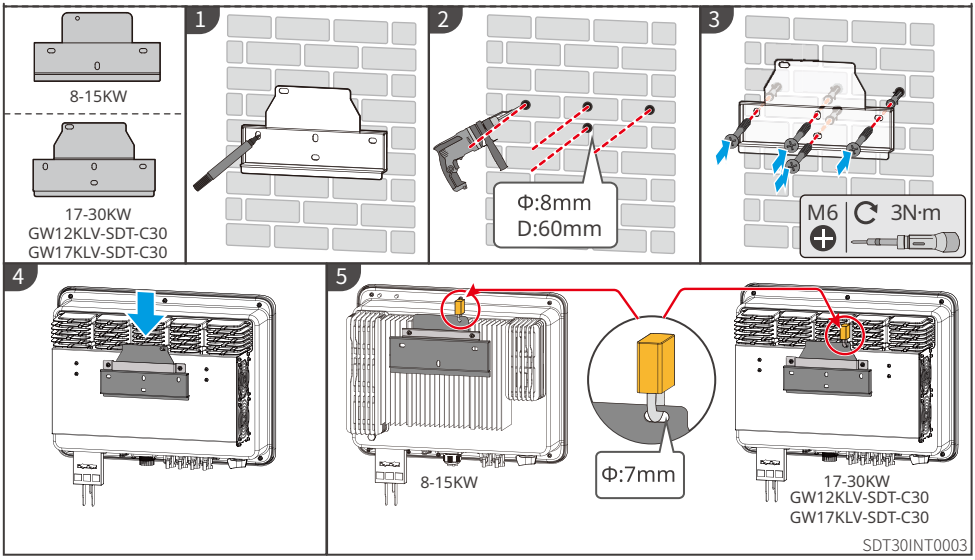
NOTICE
• Avoid the water pipes and cables buried in the wall when drilling holes. • Wear goggles and a dust mask to prevent the dust from being inhaled or contacting eyes when drilling holes. • The anti-theft lock of appropriate size should be prepared by customers.

Step 1 (Optional, For Brazil Only) For 127V/220V grid, replace the nameplate on the inverterwith the nameplate delivered.
Step 2 Put the mounting plate on the wall horizontally and mark positions for drilling holes.
Step 3 Drill holes to a depth of 60 mm using the hammer drill. The diameter of the drill bit should be 8 mm.
Step 4 Secure the mounting plate using the expansion bolts.
Step 5 Install the inverter on the mounting plate. Tighten the nuts to secure the mounting plate and the inverter.
Step 6 Install the anti-theft lock.

(For Brazil 127V/220V Grid only) Nameplate replacement

GW20K-SDT-30 → GW12KLV-SDT-C30
GW30K-SDT-C30 → GW17KLV-SDT-C30





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.

Cable Requirements

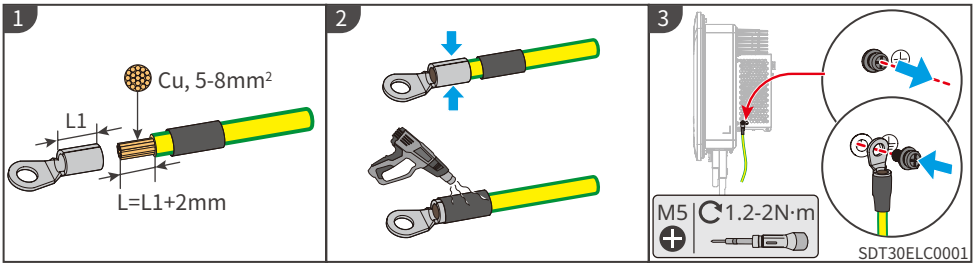
<table>
<tr><th rowspan="2">Cable</th><th rowspan="2">Type</th><th colspan="3">Cable Specification</th></tr>
<tr><th>Outer Diameter (mm)</th><th colspan="2">Cross-sectional Area (mm²)</th></tr>
<tr><td>DC input cable (MC4)</td><td rowspan="2">PV cable that meets 1100V standard.</td><td>6.1 - 8</td><td colspan="2">Recommended: 4 - 6</td></tr>
<tr><td>DC input cable (Jinko)</td><td>5.5 - 8</td><td colspan="2">Recommended: 4 - 6</td></tr>
<tr><td rowspan="2">AC output cable</td><td rowspan="2">Four-core/Five-core Copper/ Aluminum cable[1]</td><td rowspan="2">18 - 30</td><td>For Brazil LV inverters, Aluminum cable:
• GW12KLV-SDT-C30: 16 - 25
• GW17KLV-SDT-C30: 25</td><td>For Brazil LV inverters, Copper cable: GW12KLV-SDT-C30, GW17KLV-SDT-C30: 16 - 25</td></tr>
<tr><td>For other inverters, Aluminum cable
• 8-15kW: 10 - 16
• 17-25kW: 16 - 25
• 27-30kW: 25</td><td>For other inverters, Copper cable
• 8-15kW: 6 - 10
• 17-30kW: 16 - 25</td></tr>
<tr><td>PE cable</td><td>Outdoors cable</td><td>-</td><td>Aluminum wire
8 - 13</td><td>Copper wire
5 - 8</td></tr>
<tr><td>Communication cable</td><td>Outdoor shielded twisted pair. The cable should meet local requirements.[2]</td><td>4.5 - 7</td><td colspan="2">0.2 - 0.5</td></tr>
<tr><td colspan="5">Note:
[1]: When use Aluminum cable, please use a copper-aluminum transfer terminal.
[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.</td></tr>
</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: 300 mA.

NOTICE

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

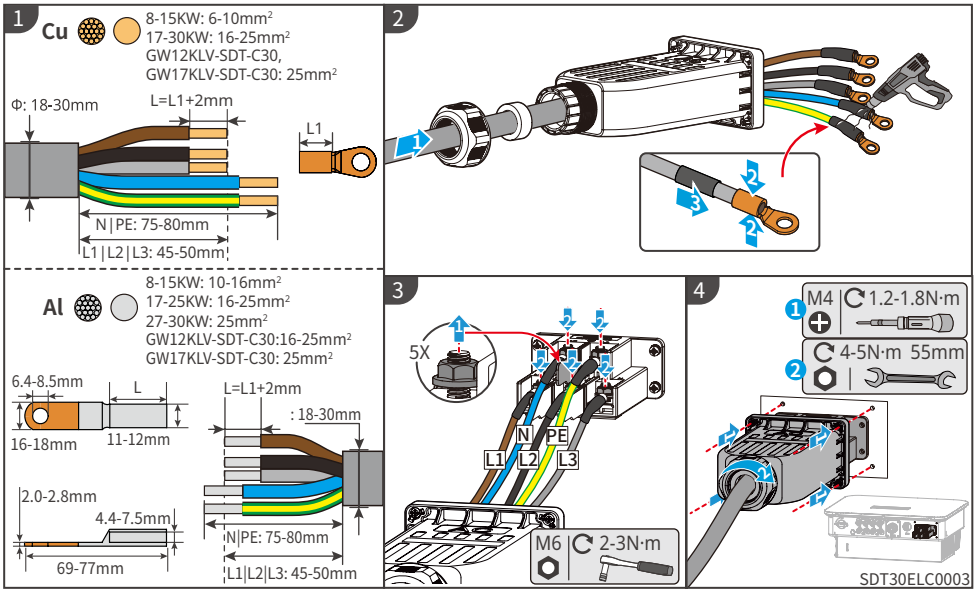
An AC circuit breaker should be installed on the AC side to make sure that the inverter can safely disconnect the grid when an exception happens. Select the appropriate AC circuit breaker in compliance with local laws and regulations. Recommended AC circuit breakers:

Inverter model	AC circuit breaker
GW8000-SDT-30/GW10K-SDT-30/GW10K-SDT-EU30	20 A
GW12K-SDT-30/GW15K-SDT-30/GW17K-SDT-30	32 A
GW12KLV-SDT-C30/GW20K-SDT-30	40 A
GW23K-SDT-C30/GW25K-SDT-C30/GW25K-SDT-P30	50 A
GW17KLV-SDT-C30/GW27K-SDT-C30/GW27K-SDT-P30/GW30K-SDT-C30	60 A

⚠ 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.
- Use the copper-to-aluminum adapter terminals when using alluminium cable wiring.

Step 1 Prepare the AC cable.
Step 2 Disassemble the AC terminal cover.Crimp the AC cable into the OT terminals, and lead the crimped cable into the AC cable.
Step 3 Remove the wiring baffle on the AC terminal block and the cable fixing screws.Tighten AC cable into the AC terminal block.
Step 4 Tighten the AC terminal cover into the inverter.



6.4 Connecting the PV Input Cable

DANGER

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.

1. Make sure that the max short circuit current and the max input voltage per MPPT are within the permissible range.
2. 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.

⚠ WARNING

1. The maximum open-circuit voltage of each PV string cannot exceed:
   - 850 V DC for the models of GW12KLV-SDT-C30 and GW17KLV-SDT-C30
   - 1100 V DC for the models except GW12KLV-SDT-C30 and GW17KLV-SDT-C3 (recommend 1045 V considering low termpereture environment).
2. It is recommended that the voltage difference between MPPTs shall be less than 160 V.
3. It is recommended that the sum of the Imp of the PV strings connected to each MPPT shall not exceed the Max. Input Current per MPPT of the inverter.
4. When there are multiple PV strings, it is recommended to maximize the connections of MPPTs.
5. Mixing PV modules of different brands or models in the same MPPT or connecting PV modules with different directions or inclination angles in the same PV string may not necessarily damage the inverter, but may lead to a decrease in the system performance.
6. Connect the DC cables using the delivered PV connectors. The manufacturer shall not be liable for the damage if other connectors are used.
7. 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.
8. The DC input cable should be prepared by customers.
9. Recommended DC input cable type: the outdoor photovoltaic cable that meets the maximum input voltage.

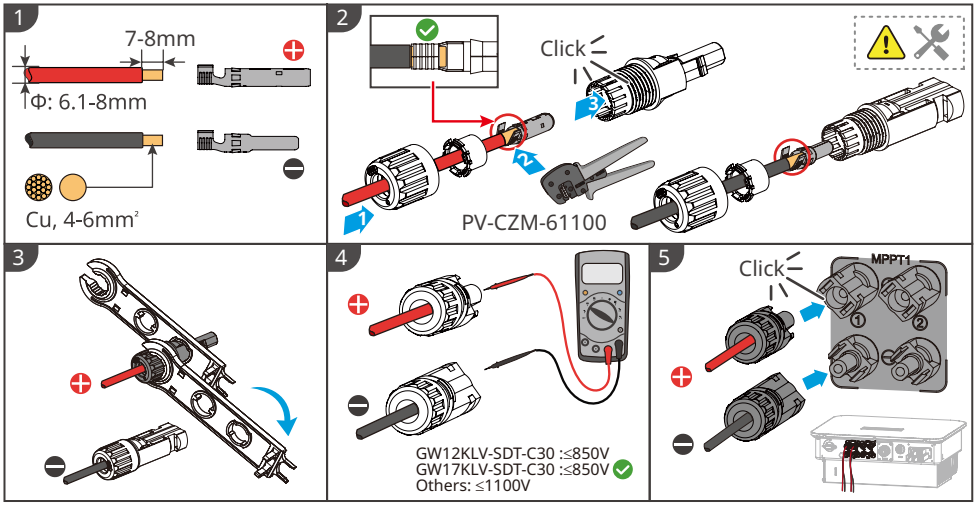
NOTICE

Seal the PV input terminals using waterproof covers when they are not to be used. Otherwise, the ingress protection rating will be influenced.

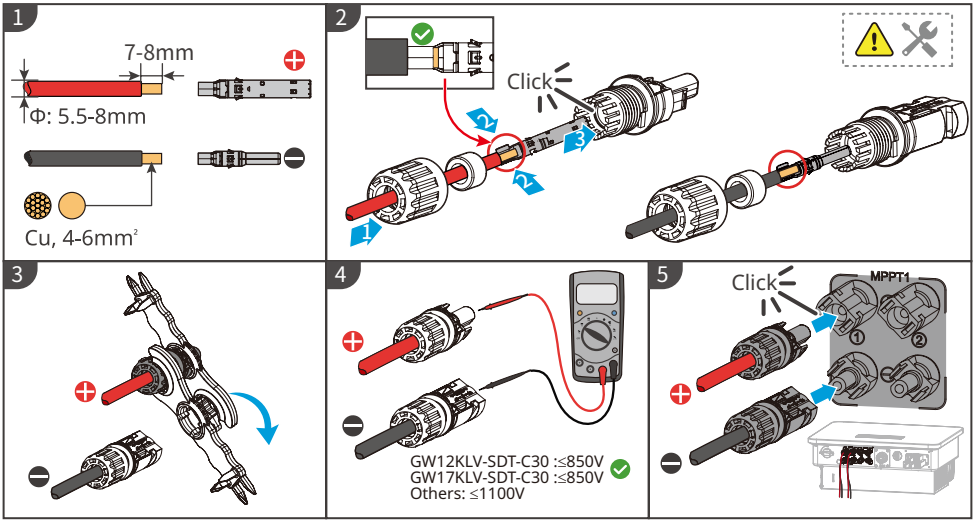
Connecting the DC Input Cable

Step 1 Prepare DC cables.
Step 2 Disassemble the PV connectors.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.

MC4 DC Connector

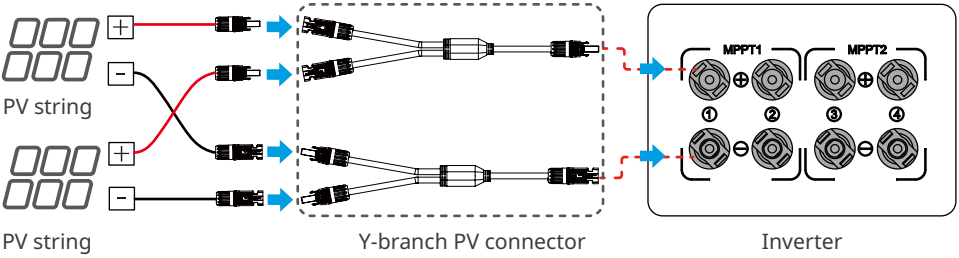


Jinko DC Connector



Conect Y-Branch PV Connectors(Optional)

NOTICE
If it is needed, please use the Y-branch PV connector that is with the same model or specification of the inverter PV connector. The manufacturer shall not be liable for inverter damage caused by using incompatible Y-branch PV connector.

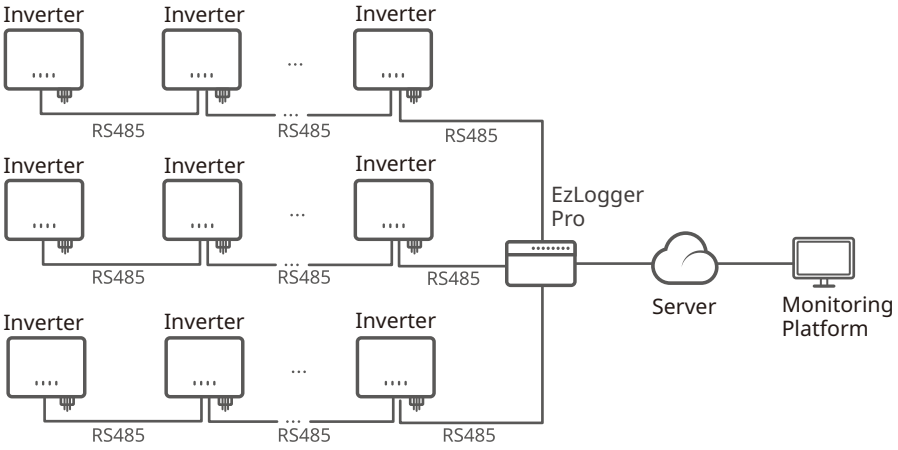


PV string　　Y-branch PV connector　　Inverter

6.5 Communication

6.5.1 RS485 Communication Networking

NOTICE
If multiple inverters are connected to a Smart DataLogger for networking, the maximum number of inverters per COM port of the Smart DataLogger is 20, and the total length of the connecting cable should not exceed 1000 m.

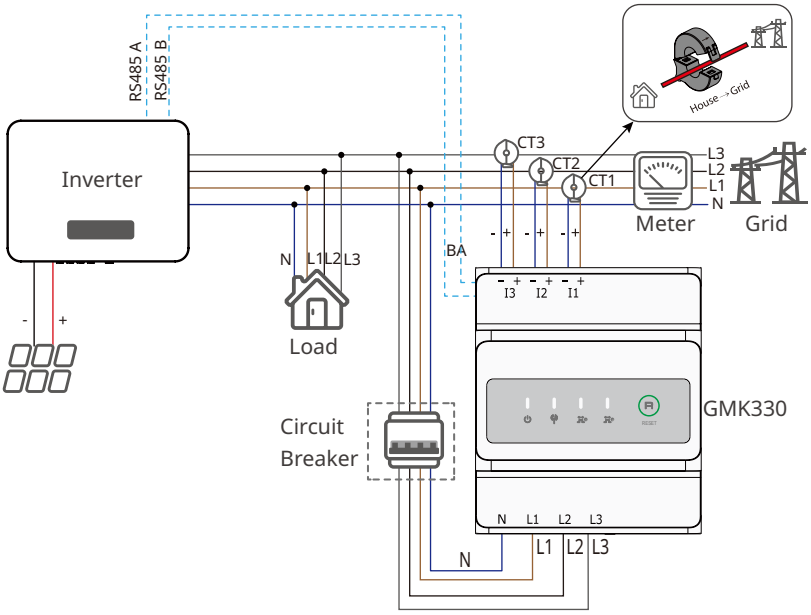


6.5.2 Power Limit Networking

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, Smart DataLogger, or SEC1000 (smart energy controller) to control the amount of power fed into the grid.

Power limit networking with single inveter (GMK330)

NOTICE
Recommended cross-sectional area of the smart meter input power cable: 1mm^2 (18AWG).



Power limit networking with single inveter (GM330)

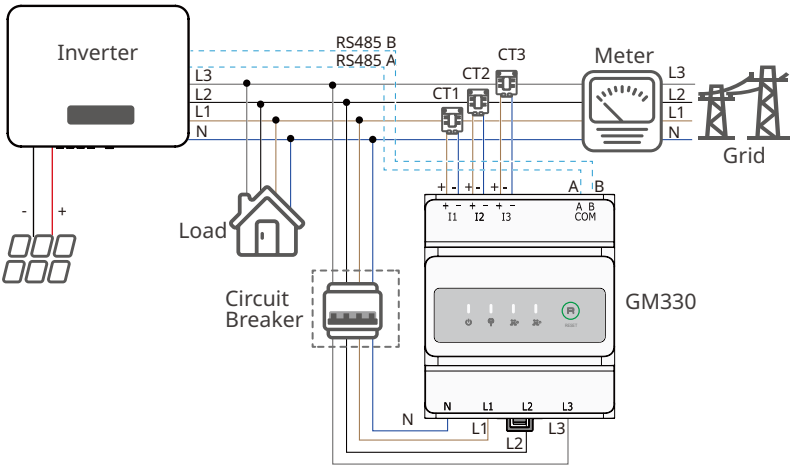
WARNING

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.

NOTICE

1. Recommended cross-sectional area of the smart meter input power cable: 1mm2(18AWG).
2. Set the CT 's turns ratio via SolarGo App. For example, set the CT ratio to 40 if a 200A/5A CT is selected.
3. Scan the QR code below to get more information.

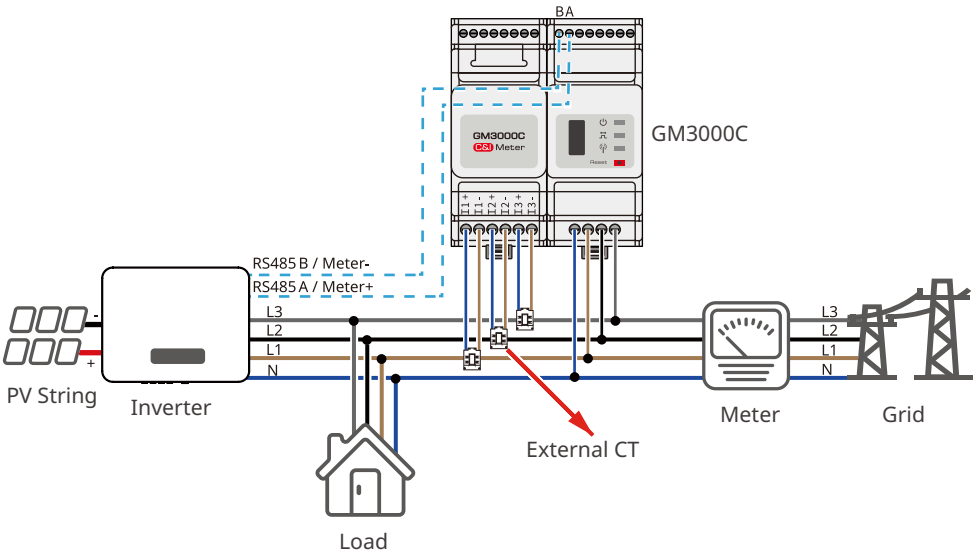
SolarGo App
User Manual



Power limit networking with single inveter (GM3000C)

WARNING

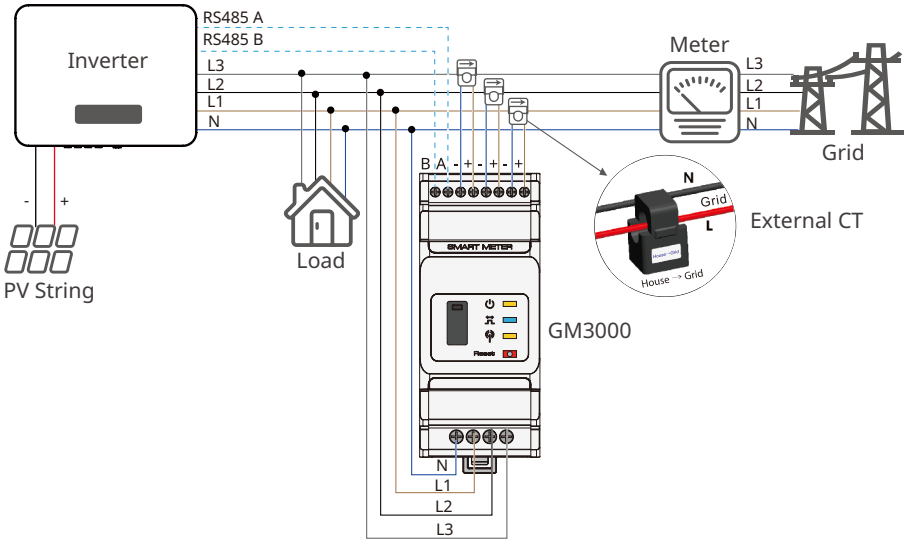
1. The place to snap fit the CT shall be near the grid connection point and the installation direction must be right. "-->" of CT refers that the inverter current flows to the Grid. If CT is installed reversely, the inverter will be triggered with an alarm and unable to realize the power limit function.
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. Prepare CT by yourself for external installation when selecting 3000C smart meter. Specification of CT:
   - Choose nA/5A for the current transformation ratio of the external CT. (n refers to CT primary input current value, which is between 200 - 5000, chosen by the user according to the actual conditions. 5A refers to CT secondary output current value.)
   - The sampling error for the CT current shall be ≤ 1% (the recommended precision is 0.5, 0.5s, 0.2, or 0.2s).
   - The recommended wire diameter for the CT secondary output cable is 1.5mm, corresponding to 1.5mm² in cross-sectional area.
6. The load current of any phase shall be more than 120A.



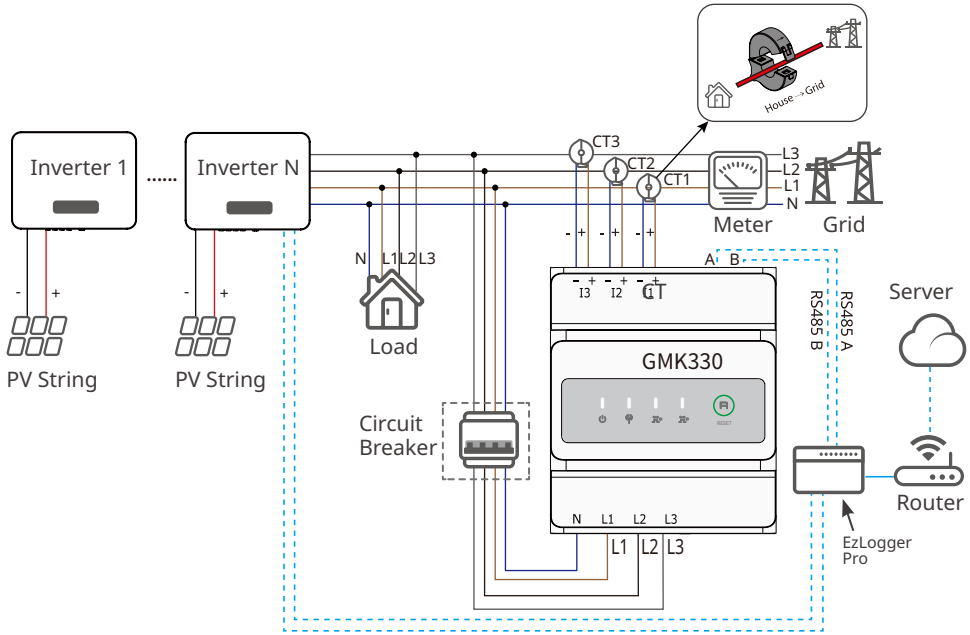
Power limit networking with single inveter (GM3000)

WARNING

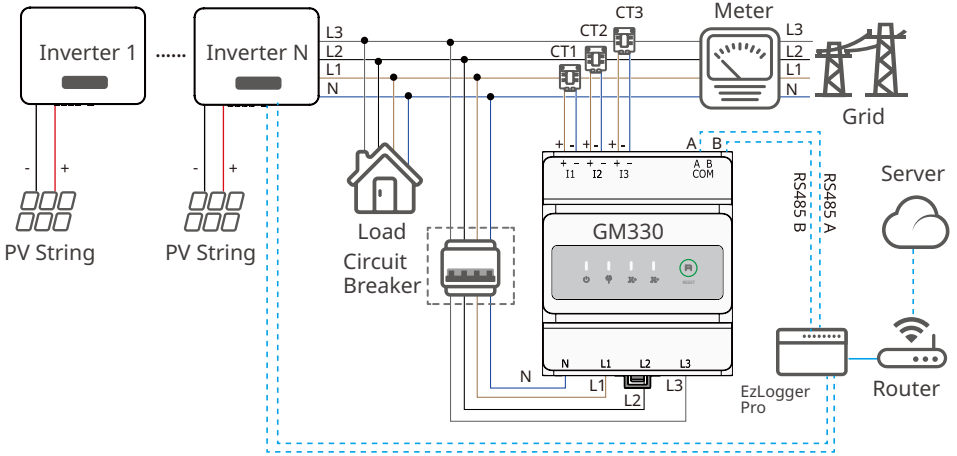
1. Make sure the CT direction is right during installing. If CT is installed reversely, the inverter will be triggered with an alarm and unable to realize the power limit function.
2. CT shall be snap fitted on Cable L1, L2 and L3. Do not fit it on Cable N.
3. Select whether to use GM3000 smart meter according to the maximum over current, the cables or the copper busbar in the system. For details, please consult GoodWe Solar Academy for help. CT is delivered with the smart meter.
4. The load current of each phase shall be less than 120A.



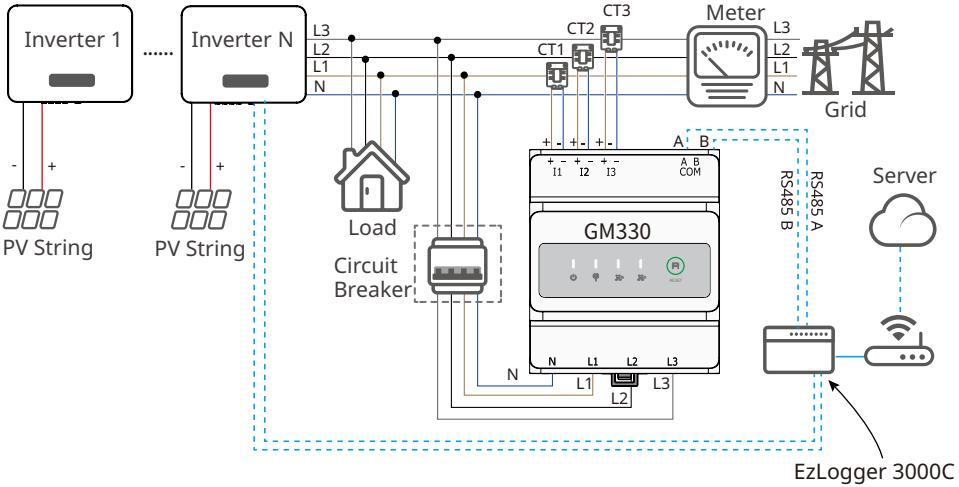
Power limit networking with multi inveter (EzLogger Pro+GMK330)



Power limit networking with multi inveter (EzLogger Pro+GM330)



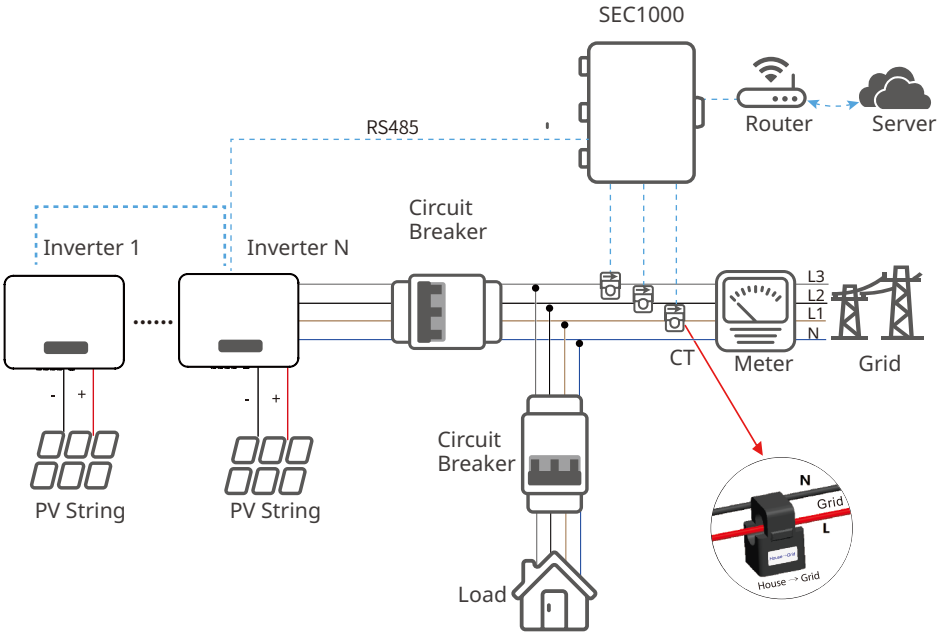
Power limit networking with multi inveter (EzLogger 3000C+GM330)



Power limit networking with multi inveter (SEC1000)

WARNING

1. Connect SEC1000 AC cable to a 3L/N/PE Grid. The voltage of the Grid shall be within allowable voltage sampling scope of SEC1000.
2. The place to snap fit the CT shall be near the Grid-Tied entry point. Make sure the connecting direction is right. If CT is installed reversely, it is unable to realize the power limit function.
3. Prepare CT by yourself for external installation when selecting SEC1000.
4. 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.
5. 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.
6. CT shall be snap fitted on Cable L1, L2 and L3. Do not fit it on Cable N.
7. The load current of any phase shall be more than 120A.

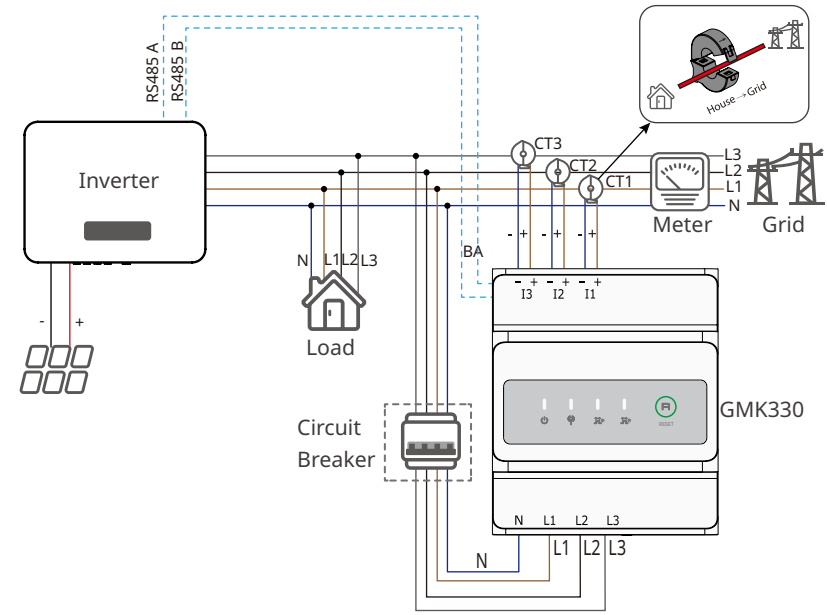


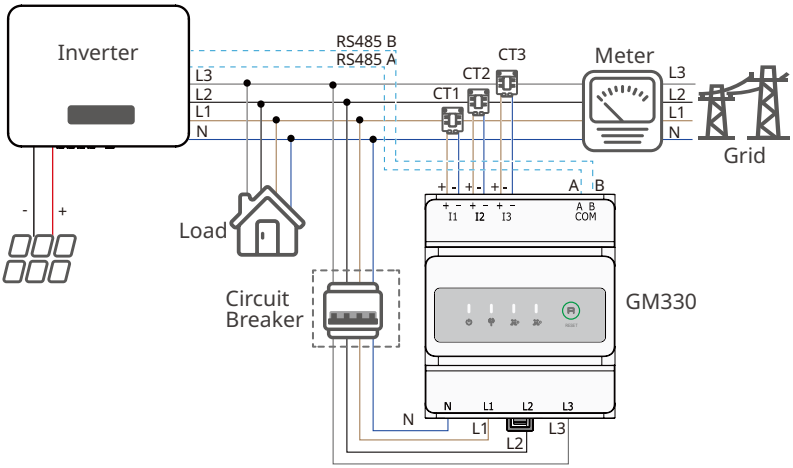
Based on the external CT test current, the recommended CT specification are:

No.	Current Scope	Description	Note
1	I_{max}< 250A	CT 200A Acrel/AKH-0.66 (200A/5A)	CT for power limit, closed type (born dimension 31mm*11mm, Φ22mm)
		CT 250A/5A Acrel/AKH-0.66-K-30x20-250/5	CT for power limit, open type (opening size 32mm*22mm), 0.5% in precision
		CT 250A/5A Acrel/AKH-0.66-K-60x40-250/5	CT for power limit, open type (opening size 62mm*42mm), 1.0% in precision
2	250A ≤ I_{max}< 1000A	CT 1000A/5A Acrel/AKH-0.66-K-60x40-1000/5	CT for power limit, open type (opening size 62mm*42mm), 0.5% in precision
		CT 1000A/5A Acrel/AKH-0.66-K-80x40-1000/5	CT for power limit, open type (opening size 82mm*42mm), 0.5% in precision
		CT 1000A/5A Acrel/AKH-0.66-K-80x80-1000/5	CT for power limit, open type (opening size 82mm*42mm), 0.5% in precision
3	1000A ≤ Imax < 5000A	CT 5000A/5A Acrel/AKH-0.66-K-140x60-5000/5	CT for power limit, open type (opening size 142mm*62mm), 0.2% in precision
		CT 5000A/5A Acrel/AKH-0.66-K-160x80-5000/5	CT for power limit, open type (opening size 162mm*82mm), 0.2% in precision

6.5.3 24H Load Monitoring

The smart meter such as GMK330, GM330 GM3000 and GM3000C measures the data of the grid side and transmits it to the inverter. The inverter transmits the grid side date and the power generation date to the monitoring platform via a communication module, and then monitoring platform calculates the load power consumption and the 24H load monitoring is realized.

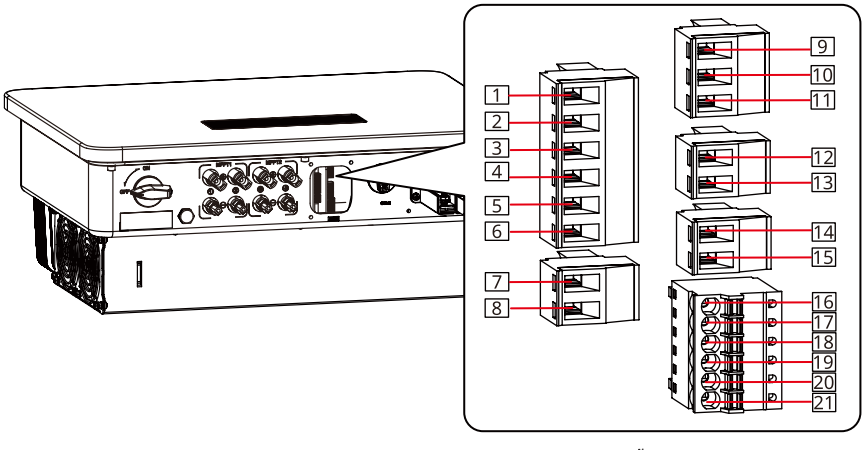




6.5.4 Connecting the Communication Cable

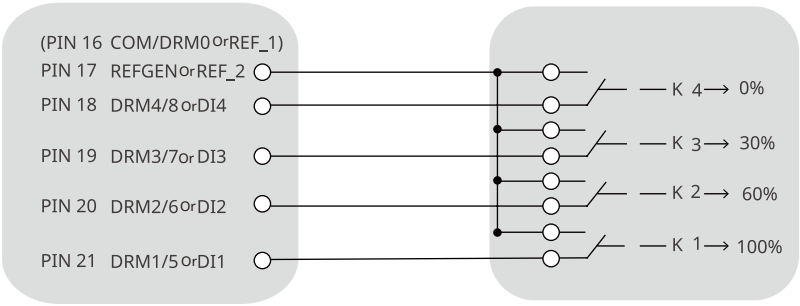
NOTICE

- 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.
  - When connecting the Dry Contact 1 communication cable, please use the 3 PIN communication terminal.
  - When connecting Remote Shutdown, Emergency Power Off, Dry Contact 2 or Dry Contact 3 communication cables, please use the 2 PIN communication terminals.
  - When connecting RS485 and meter communication cables, please use the 6 PIN communication terminals.
  - When connecting the DRED/RCR communication cable, please use the DRED/RCR communication terminal.-
- The remote shutdown and DRED/RCR functions are diabled in default. Enable it via SolarGo App if needed. Detailed steps, refer to **SolarGo App User Manual**.

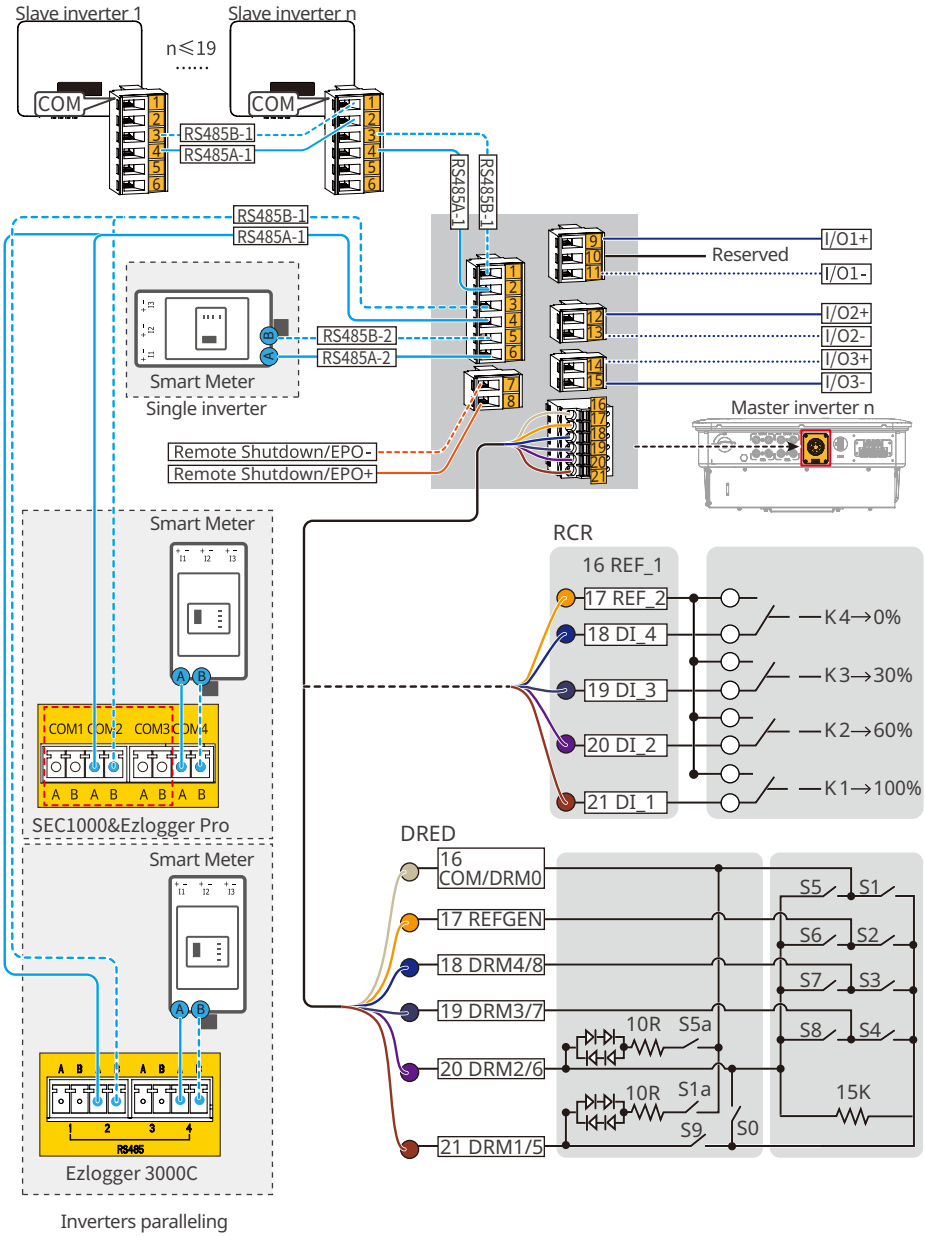


Function	Terminal	Definition	Description
RS485	RS485	1: RS485 - 2: RS485 + 3: RS485 - 4: RS485 +	To connect with the RS 485 port of multi inverters or the smart DataLogger.
Smart Meter	Meter	5: Meter - 6: Meter +	For the power limit function with Smart Meter and CT.

Function	Terminal	Definition	Description
EPO/ Remote Shutdown	Remote Shutdown/ EPO	7: Remote Shutdown/ EPO - 8: Remote Shutdown/ EPO +	For remote shutdown(Only for Europe), For Emergency Power Off (Only for India).
Dry Contact 1	I/O	9: I/O1+ 10: Reserved 11: I/O1-	To receive the Dry Contact signal (220V) Only for oversea model.
Dry Contact 2	I/O	12: I/O2+ 13: I/O2-	To receive Dry Contact signal (24V) Only for oversea model.
Dry Contact 3	I/O	14: I/O3+ 15: I/O3-	To receive Dry Contact signal (24V) Only for oversea model.
DRED/RCR	DRED/RCR	16: COM/DRM0 or REF_1 17: REFGEN or REF_2 18: DRM4/8 or DI 4 19: DRM3/7 or DI 3 20: DRM2/6 or DI 2 21: DRM1/5 or DI 1	DRED (Demand Response Enabling Device): to provide DRED signal control port (For Australia Only). RCR (Ripple Control Receiver): to provide RCR signal control port (For Europe Only).

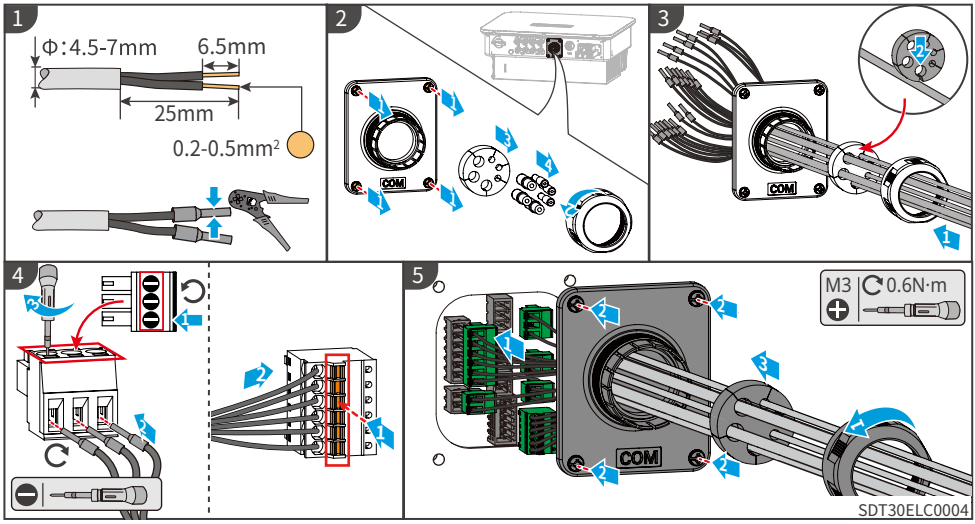


Cable: Outdoor shielded twisted pair. The cable should meet local requirements.



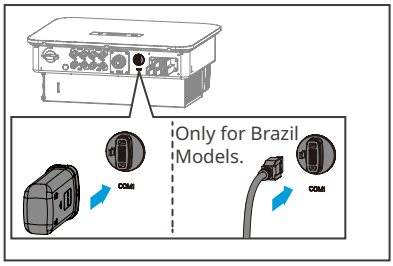
SDT30NET0001

Step 1 Prepare the communication cable.
Step 2 Disassemble the integrated communication connector of the user end in order.
Step 3-4 Connect the communication cable to the communication terminal and fasten it.
Step 5 Connect the communication terminal to the inverter.



Installing the Communication Module

A communication module can be plugged into the inverter to establish a communication between the inverter and the smartphone or web pages. The communication module can be a Bluetooth module, GPRS module, 4G module, Wi-Fi Kit module, WiFi/LAN Kit module, WiFi Kit-20 module or WiFi/LAN Kit-20 module. You can 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

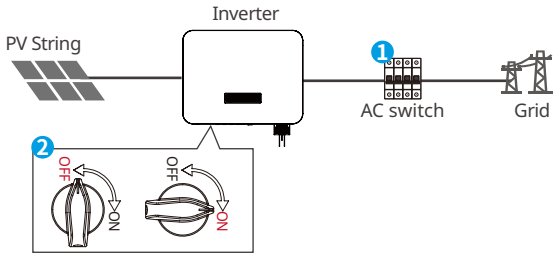
7.1 Check Items before Power On

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 between the inverter and the PV String.



8 System Commissioning

8.1 Setting Inverter Parameters via LCD

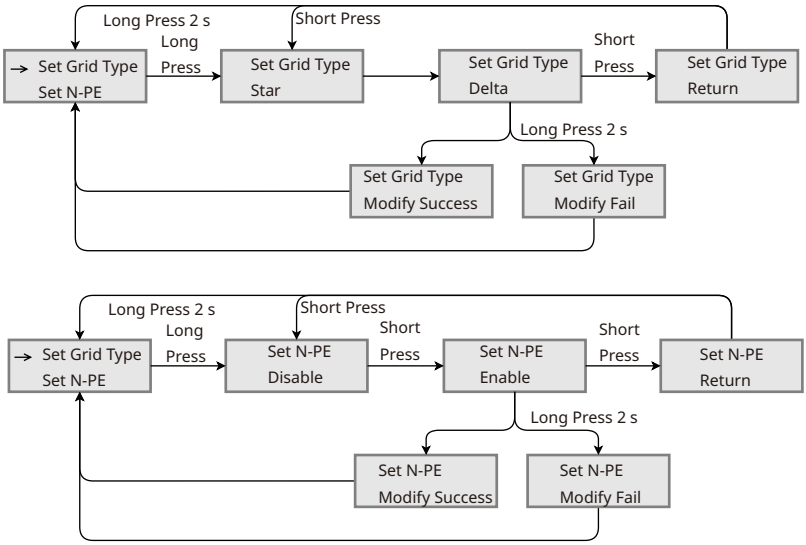
NOTICE

- Inverter software version shown in this document is V1.00.00. 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.
- the power parameters should be set by professionals to prevent the generating capacity from being influenced by wrong parameters

LCD Button Description

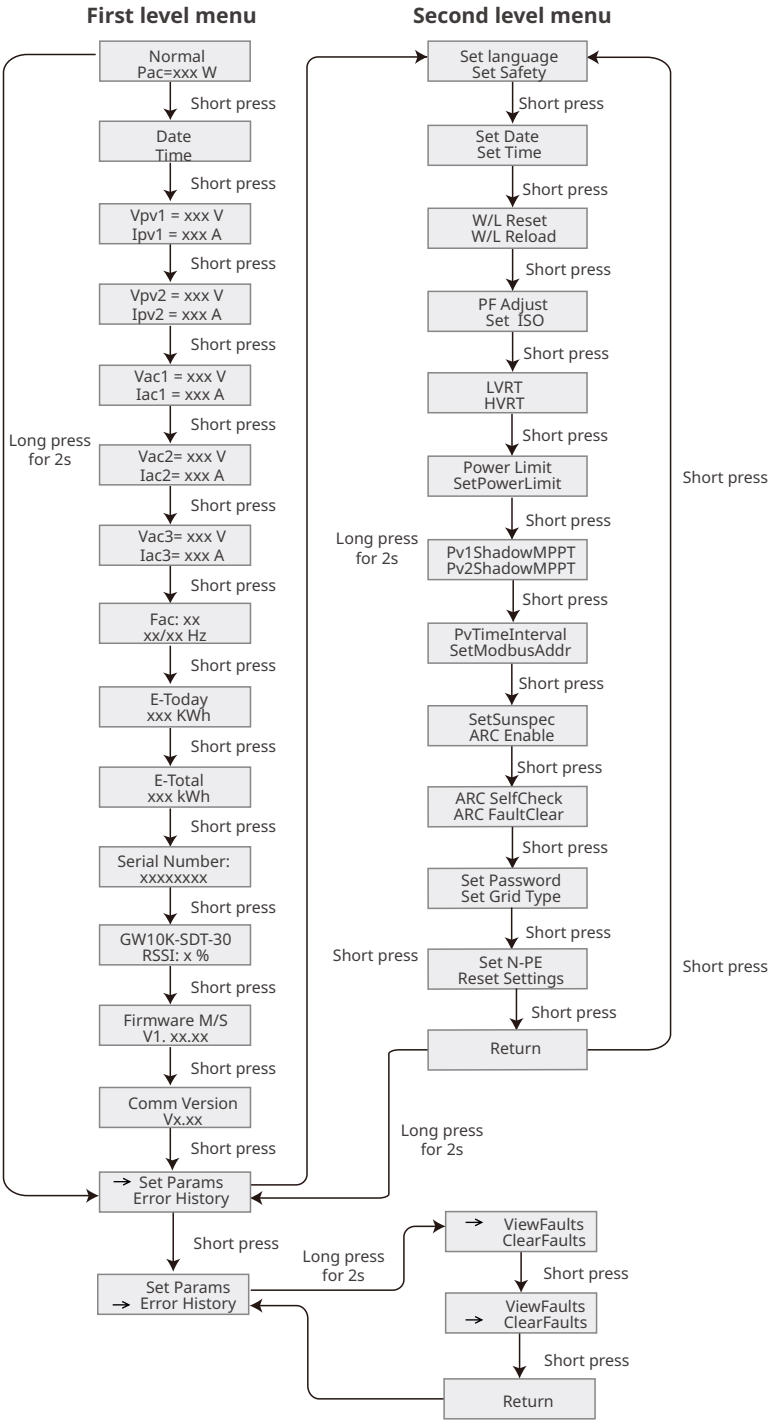
- Stop pressing the button for a period on any page, the LCD will get dark and go back to the initial page.
- Short press the button to switch menu or adjust parameter values.
- Long press the button to enter the submenu. After adjusting the parameter values, long press to save it.

Examples:



8.1.1 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
Date
Time
Short press
Vpv1 = xxx V
Ipv1 = xxx A
Short press
Vpv2 = xxx V
Ipv2 = xxx A
Short press
Vac1 = xxx V
Iac1 = xxx A
Short press
Long press
for 2s
Vac2= xxx V
Iac2= xxx A
Short press
Vac3= xxx V
Iac3= xxx A
Short press
Fac: xx
xx/xx Hz
Short press
E-Today
xxx KWh
Short press
E-Total
xxx kWh
Short press
Serial Number:
xxxxxxxx
Short press
GW10K-SDT-30
RSSI: x %
Short press
Firmware M/S
V1. xx.xx
Short press
Comm Version
Vx.xx
Short press
→ Set Params
Error History
Short press
Set Params
→ Error History
Set language
Set Safety
Short press
Set Date
Set Time
Short press
W/L Reset
W/L Reload
Short press
PF Adjust
Set ISO
Short press
LVRT
HVRT
Short press
Power Limit
SetPowerLimit
Short press
Long press
for 2s
Pv1ShadowMPPT
Pv2ShadowMPPT
Short press
PvTimeInterval
SetModbusAddr
Short press
SetSunspec
ARC Enable
Short press
ARC SelfCheck
ARC FaultClear
Short press
Set Password
Set Grid Type
Short press
Short press
Set N-PE
Reset Settings
Short press
Short press
Return
Long press
for 2s
Long press
for 2s
→ ViewFaults
ClearFaults
Short press
→ ViewFaults
ClearFaults
Short press
Return

8.1.2 Inverter Parameter Introduction

Parameters	Description
Normal	Home page. Indicates the real-time power of the inverter.
Date Time	Check the time of the country/region.
VPv	Check the DC input voltage of the inverter.
IPv	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.
GW10K-SDT-30 RSSI	Check the signal strength of the communication module.
Firmware M/S	Check the firmware version.
Comm Version	Check the communication version.
Set Language	Set the display language.
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	
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.

Parameters	Description
Set ISO	Indicates the PV-PE insulation resistance threshold value. When the detected value is under the set value, the IOS fault occurs.
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 fed back into the utility grid according to the actual situation.
SetPowerLimit	
Pv1ShadowMPPT	Enable the shadow scan function if the PV panels are shadowed.
Pv2ShadowMPPT	
PvTimeInterval	Set the scan time according to the actual need.
SetModbusAddr	Set the actual Modbus address.
SetSunspec	Set the Sunspec based on the actual communication method.
ARC Enable	The function is optional and off by default. Please open or close it according to actual need.
ARC SelfCheck	Detect if the ARC function is normal.
ARC FaultClear	Clear the ARC Fault.
Set Password	The password can be adjusted. Please record the new password and if you lose the password, please contact the after-sales service center.
Set Grid Type	Set the grid type according to the actual situation. Star and Delta grid are supported.
Set N-PE	To enable the detection of N line to ground insulation resistance.
Reset Settings	Restore part of factory settings.
ViewFaults	Check historical fault records of the inverter.
ClearFaults	Clear historical fault records of the inverter.

8.2 Setting Inverter Parameters via App

SolarGo is an application used to communicate with the inverter via Bluetooth module, WiFi module module, 4G module or GPRS 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

8.3 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 (Optional) Issue a command to the inverter for halting the grid connection.
Step 2 Turn off the AC switch between the inverter and the utility grid.
Step 3 Turn off the DC switch of the inverter.
Step 4 (Optional) Turn off the DC switch between the inverter and the PV string.

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 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.

No.	Fault	Cause	Solutions
3	Grid Rapid Overvoltage	The grid voltage is abnormal or the ultra-high voltage triggers the fault.	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 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.
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.

No.	Fault	Cause	Solutions
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.

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

10 Technical Parameters

Technical Data	GW8000-SDT-30	GW10K-SDT-30	GW10K-SDT-EU30	GW12K-SDT-30
Input				
Max.Input Power (W)*2	12000	15000	15000	18000
Max.Input Voltage(V)	1100	1100	1100	1100
MPPT Operating Voltage Range (V)	140~1000	140~1000	140~1000	140~1000
MPPT Voltage Range at Nominal Power (V)	250~850	310~850	310~850	380~850
Start-up Voltage (V)	160			
Nominal Input Voltage (V)	600	600	600	600
Max. Input Current per MPPT (A)	22			
Max. Short Circuit Current per MPPT (A)	27.5			
Max.Backfeed Current to The Array(A)	0	0	0	0
Number of MPP trackers	2	2	2	2
Number of Strings per MPPT	1	1	1	1
Output				
Nominal Output Power (W)	8000	10000	10000	12000
Nominal Output Apparent Power (VA)	8000	10000	10000	12000
Max. AC Active Power (W)*3	8800	11000	10000	13200
Max. AC Apparent Power (VA)	8800	11000	10000	13200
Nominal Power at 40°C(W)	8000	10000	10000	12000
Max Power at 40°C (including AC overload) (W)	8000	10000	10000	12000
Nominal Output Voltage (V)	220/380,230/400,240/415, 3L/N/PE or 3L/PE			
Output Voltage Range (V)	180~280 (According to local standard)			
Nominal AC Grid Frequency (Hz)	50 / 60	50 / 60	50 / 60	50/60
AC Grid Frequency Range (Hz)	45~55 / 55-65			
Max. Output Current (A)*4	13.4	16.7	15.2	20.0

Max. Output Fault Current (Peak and Duration) (A)	42 (at 6.5μs)			67 (at 6.5μs)
Inrush Current (Peak and Duration) (A)	23.7 (at 50μs)			
Nominal Output Current (A)*4	11.6	14.5	14.5	17.4
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)			
Max. Total Harmonic Distortion	<3%			
Maximum output overcurrent protection(A)	42	42	42	67
Efficiency				
Max. Efficiency	98.5%			
European Efficiency	98.0%			98.2%
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 III (Type II Optional)			
AC Surge Protection	Type III (Type II Optional)			
AFCI	Optional			
Emergency Power Off	Optional			
Rapid Shutdown	Optional			
Remote Shutdown	Optional			
PID Recovery	Optional			
Power Supply at Night	Optional			
General Data				
Operating Temperature Range (℃)	-30~+60			

Derating Temperature (℃)	45	
Storage Temperature (℃)	-30~+70	
Relative Humidity	0~100%	
Max. Operating Altitude (m)	4000	
Cooling Method	Natural Convection	
User Interface	LED, LCD (Optional), WLAN+APP	
Communication	RS485, WiFi, LAN or 4G or Bluetooth(Optional)	
Weight (Kg)	14.7	16.2
Dimension (W×H×Dmm)	491×392×210	
Noise Emission (dB)	<30	
Topology	Non-isolated	
Night Power Consumption (W)	<1	
Ingress Protection Rating	IP66	
Anti-corrosion Class	C4,C5(Optional)	
DC Connector	MC4(4~6mm^2)	
AC Connector	OT terminal (Max.10 mm^2)	OT terminal (Max. 16 mm^2)
Environmental Category	4K4H	
Pollution Degree	III	
Overvoltage Category	DC II / AC III	
Protective class	I	
The Decisive Voltage Class (DVC)	PV:C AC:C Com:A	
Active Anti-islanding Method	AFDPF + AQDPF *1	
Country of Manufacture	China	

*1: AFDPF: Active Frequency Drift with Positive Feedback, AQDPF: Active Q Drift with Positive Feedback.
*2: For Brazil Max. Input Power (W), GW8000-SDT-30 is 14400, GW10K-SDT-30 is 18000, GW12K-SDT-30 is 21600, GW15K-SDT-30 is 27000, GW17K-SDT-30 is 30600, GW20K-SDT-30 is 36000, GW12KLV-SDT-C30 is 21600, GW17KLV-SDT-C30 is 30600, GW25K-SDT-C30 is 45000, GW30K-SDT-C30 is 54000
*3: For Brazil and Chile, the Max. AC Active Power (W): GW8000-SDT-30 is 8000, GW10K-SDT-30 is 10000, GW12K-SDT-30 is 12000, GW15K-SDT-30 is 15000, GW17K-SDT-30 is 17000, GW20K-SDT-30 is 20000, GW12KLV-SDT-C30 is 12000, GW17KLV-SDT-C30 is 17000, GW25K-SDT-C30 is 25000, GW30K-SDT-C30 is 30000
*4: For Brazil and Chile, Max. Output Current (A) and Nominal Output Current (A): GW8000-SDT-30 is 12.1, GW10K-SDT-30 is 15.2, GW12K-SDT-30 is 18.2, GW15K-SDT-30 is 22.7, GW17K-SDT-30 is 25.8, GW20K-SDT-30 is 30.3, GW12KLV-SDT-C30 is 33.3, GW17KLV-SDT-C30 is 50.0, GW25K-SDT-C30 is 37.9, GW30K-SDT-C30 is 45.5.

Technical Data	GW15K-SDT-30	GW17K-SDT-30	GW20K-SDT-30	GW12KLV-SDT-C30
Input				
Max.Input Power (W)*2	22500	25500	30000	18000
Max.Input Voltage(V)	1100			850
MPPT Operating Voltage Range (V)	140~1000			140~700
MPPT Voltage Range at Nominal Power (V)	480~850	520~850	520~850	260~600
Start-up Voltage (V)	160			
Nominal Input Voltage (V)	600			420
Max. Input Current per MPPT (A)	22	32/22		
Max. Short Circuit Current per MPPT (A)	27.5	40/27.5		
Max.Backfeed Current to The Array(A)	0			
Number of MPP trackers	2			
Number of Strings per MPPT	1	2/1		
Output				
Nominal Output Power (W)	15000	17000	20000	12000
Nominal Output Apparent Power (VA)	15000	17000	20000	12000
Max. AC Active Power (W)*3	16500	18700	22000	12000
Max. AC Apparent Power (VA)	16500	18700	22000	12000
Nominal Power at 40°C(W)	15000	17000	20000	12000
Max Power at 40°C (including AC overload) (W)	15000	17000	20000	12000
Nominal Output Voltage (V)	220/380,230/400,240/415, 3L/N/PE or 3L/PE			127/220, 3L/N/PE or 3L/PE
Output Voltage Range (V)	180~280 (according to local standard)			114~139(according to local standard)
Nominal AC Grid Frequency (Hz)	50 / 60	50 / 60	50 / 60	60
AC Grid Frequency Range (Hz)	45~55 / 55-65			59.5~60.2
Max. Output Current (A)*4	25.0	28.3	33.3	33.3

Max. Output Fault Current (Peak and Duration) (A)	67 (at 6.5μs)	73 (at 6.5μs)		
Inrush Current (Peak and Duration) (A)	23.7 (at 50μs)	30.2 (at 50μs)		
Nominal Output Current (A)*4	21.8	24.7	29.0	29.0
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)			
Max. Total Harmonic Distortion	<3%			
Maximum output overcurrent protection(A)	67	73		
Efficiency				
Max. Efficiency	98.5%			98.2%
European Efficiency	98.2%			97.2%
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 III (Type II Optional)			Type II
AC Surge Protection	Type III (Type II Optional)			
AFCI	Optional			
Emergency Power Off	Optional			
Rapid Shutdown	Optional			
Remote Shutdown	Optional			
PID Recovery	Optional			
Power Supply at Night	Optional			
General Data				
Operating Temperature Range (℃)	-30~+60			

Derating Temperature (℃)	45	
Storage Temperature (℃)	-30~+70	
Relative Humidity	0~100%	
Max. Operating Altitude (m)	4000	
Cooling Method	Natural Convection	Smart Fan Cooling
User Interface	LED, LCD (Optional), WLAN+APP	
Communication	RS485, WiFi, LAN or 4G or Bluetooth(Optional)	
Weight (Kg)	16.2	17.1
Dimension (W×H×Dmm)	491×392×210	530×413×227
Noise Emission (dB)	<30	<45
Topology	Non-isolated	
Night Power Consumption (W)	<1	
Ingress Protection Rating	IP66	
Anti-corrosion Class	C4,C5(Optional)	
DC Connector	MC4(4~6mm^2)	
AC Connector	OT terminal (Max. 16 mm^2)	OT terminal (Max. 25 mm^2)
Environmental Category	4K4H	
Pollution Degree	III	
Overvoltage Category	DC II / AC III	
Protective class	I	
The Decisive Voltage Class (DVC)	PV:C AC:C Com:A	
Active Anti-islanding Method	AFDPF + AQDPF *1	
Country of Manufacture	China	

*1: AFDPF: Active Frequency Drift with Positive Feedback, AQDPF: Active Q Drift with Positive Feedback.
*2: For Brazil Max. Input Power (W), GW8000-SDT-30 is 14400, GW10K-SDT-30 is 18000, GW12K-SDT-30 is 21600, GW15K-SDT-30 is 27000, GW17K-SDT-30 is 30600, GW20K-SDT-30 is 36000, GW12KLV-SDT-C30 is 21600, GW17KLV-SDT-C30 is 30600, GW25K-SDT-C30 is 45000, GW30K-SDT-C30 is 54000
*3: For Brazil and Chile, the Max. AC Active Power (W): GW8000-SDT-30 is 8000, GW10K-SDT-30 is 10000, GW12K-SDT-30 is 12000, GW15K-SDT-30 is 15000, GW17K-SDT-30 is 17000, GW20K-SDT-30 is 20000, GW12KLV-SDT-C30 is 12000, GW17KLV-SDT-C30 is 17000, GW25K-SDT-C30 is 25000, GW30K-SDT-C30 is 30000
*4: For Brazil and Chile, Max. Output Current (A) and Nominal Output Current (A): GW8000-SDT-30 is 12.1, GW10K-SDT-30 is 15.2, GW12K-SDT-30 is 18.2, GW15K-SDT-30 is 22.7, GW17K-SDT-30 is 25.8, GW20K-SDT-30 is 30.3, GW12KLV-SDT-C30 is 33.3, GW17KLV-SDT-C30 is 50.0, GW25K-SDT-C30 is 37.9, GW30K-SDT-C30 is 45.5.

Technical Data	GW17KLV-SDT-C30	GW25K-SDT-C30	GW30K-SDT-C30
Input			
Max.Input Power (W)*2	25500	37500	45000
Max.Input Voltage(V)	850	1100	1100
MPPT Operating Voltage Range (V)	140~700	140~1000	140~1000
MPPT Voltage Range at Nominal Power (V)	260~500	550~850	550~850
Start-up Voltage (V)	160		
Nominal Input Voltage (V)	420	600	600
Max. Input Current per MPPT (A)	42/32	42/22	42/32
Max. Short Circuit Current per MPPT (A)	52.5/40	52.5/27.5	52.5/40
Max.Backfeed Current to The Array(A)	0	0	0
Number of MPP trackers	2	2	2
Number of Strings per MPPT	2	2/1	2
Output			
Nominal Output Power (W)	17000	25000	30000
Nominal Output Apparent Power (VA)	17000	25000	30000
Max. AC Active Power (W)*3	17000	27500	33000
Max. AC Apparent Power (VA)	17000	27500	33000
Nominal Power at 40°C(W)	17000	25000	30000
Max Power at 40°C (including AC overload) (W)	17000	25000	30000
Nominal Output Voltage (V)	127/220,3L/N/PE or 3L/PE	220/380,230/400,240/415, 3L/N/PE or 3L/PE	
Output Voltage Range (V)	114~139(according to local standard)	180~280 (according to local standard)	
Nominal AC Grid Frequency (Hz)	60	50 / 60	50 / 60
AC Grid Frequency Range (Hz)	59.5~60.2	45~55 / 55-65	
Max. Output Current (A)*4	50.0	41.7	50.0

Max. Output Fault Current (Peak and Duration) (A)	115 (at 6.5μs)	95 (at 6.5μs)	115 (at 6.5μs)
Inrush Current (Peak and Duration) (A)	29.4 (at 50μs)		
Nominal Output Current (A)*4	43.5	36.3	43.5
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
Max. Total Harmonic Distortion	<3%		
Maximum output overcurrent protection(A)	115	95	115
Efficiency			
Max. Efficiency	97.5%	98.6%	98.6%
European Efficiency	96.9%	98.2%	98.3%
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	Type III (Type II Optional)	
AC Surge Protection	Type III (Type II Optional)		
AFCI	Optional		
Emergency Power Off	Optional		
Rapid Shutdown	Optional		
Remote Shutdown	Optional		
PID Recovery	Optional		
Power Supply at Night	Optional		
General Data			
Operating Temperature Range (℃)	-30~+60		

Derating Temperature (℃)	45		
Storage Temperature (℃)	-30~+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, LAN or 4G or Bluetooth(Optional)		
Weight (Kg)	20.5	19.7	20.5
Dimension (W×H×Dmm)	530×413×227		
Noise Emission (dB)	<45		
Topology	Non-isolated		
Night Power Consumption (W)	<1		
Ingress Protection Rating	IP66		
Anti-corrosion Class	C4,C5(Optional)		
DC Connector	MC4(4~6mm^2)		
AC Connector	OT terminal (Max. 25 mm^2)		
Environmental Category	4K4H		
Pollution Degree	III		
Overvoltage Category	DC II / AC III		
Protective class	I		
The Decisive Voltage Class (DVC)	PV:C AC:C Com:A		
Active Anti-islanding Method	AFDPF + AQDPF *1		
Country of Manufacture	China		

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*3: For Brazil and Chile, the Max. AC Active Power (W): GW8000-SDT-30 is 8000, GW10K-SDT-30 is 10000, GW12K-SDT-30 is 12000, GW15K-SDT-30 is 15000, GW17K-SDT-30 is 17000, GW20K-SDT-30 is 20000, GW12KLV-SDT-C30 is 12000, GW17KLV-SDT-C30 is 17000, GW25K-SDT-C30 is 25000, GW30K-SDT-C30 is 30000
*4: For Brazil and Chile, Max. Output Current (A) and Nominal Output Current (A): GW8000-SDT-30 is 12.1, GW10K-SDT-30 is 15.2, GW12K-SDT-30 is 18.2, GW15K-SDT-30 is 22.7, GW17K-SDT-30 is 25.8, GW20K-SDT-30 is 30.3, GW12KLV-SDT-C30 is 33.3, GW17KLV-SDT-C30 is 50.0, GW25K-SDT-C30 is 37.9, GW30K-SDT-C30 is 45.5.

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