Grid-Tied PV Inverter

DNS Series (3.6-6.0kW) G4

User Manual

V1.1-2025-06-04

Copyright Statement:

NOTICE

The information in this user manual is subject to change due to product updates or other reasons. This guide cannot replace the product labels otherwise specified. All descriptions here 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
GW3.6K-DNS-CN-G40	3.6kW	220V，L/N/PE
GW4.2K-DNS-CN-G40	4.2kW	
GW5K-DNS-CN-G40	5kW	
GW6K-DNS-CN-G40	6kW	
GW3K-DNS-G40	3kW	220V/230V/220V，L/N/PE
GW3.6K-DNS-G40	3.6kW	
GW4.2K-DNS-G40	4.2kW	
GW5K-DNS-G40	5kW	
GW6K-DNS-G40	6kW	
GW3.1K-DNS-L-G40	3.1kW	127V，L/N/PE

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 complying 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 user manual is subject to change due to product updates or other reasons. This guide cannot replace the product labels otherwise specified. All descriptions here are for guidance only.
- Before installations, read through the user manual. For additional information, please see the user manual.
- 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, clothes, and wrist strap when touching electronic components to protect the inverter from damage.
- Unauthorized disassembly or refit may cause damage to the device, and such damage is not covered by the warranty.
- 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, please visit https://www.goodwe.com/warrantyrelated.html

2.2 DC Side

WARNING

- Ensure the component frames and the bracket system are securely grounded.
- Ensure the DC cables are connected tightly, securely and correctly.
- Measure the DC cable using the multimeter to avoid reverse polarity connection. Also, the voltage should be under the max DC input voltage. The manufacturer shall not be liable for the damage

caused by reverse connection and extremely high voltage.

- Do not connect the same PV string to multiple inverters. Otherwise, the inverters may be damaged.
- The PV dongles used with the inverter must have an IEC61730 class A rating.

2.3 AC Side

WARNING

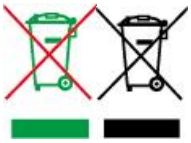
- The voltage and frequency at the connection point meet the inverter grid connection requirements
- Additional protective devices like circuit breakers or fuses are recommended on the AC side. Specification of the protective device should be at least 1.25 times the maximum output current.
- Make sure that all the groundings are tightly connected.
- You are recommended to use copper cables as AC output cables. If you prefer aluminum cables, remember to use copper to aluminum adapter terminals.

2.4 Inverter Installation

DANGER

- Do not apply mechanical load to the terminals, otherwise the terminals can be damaged.
- All labels and warning marks should be visible after the installation. Do not scrawl, damage, or cover any label on the device.
- Connect the inverter cables using the delivered PV connectors. The manufacturer shall not be liable for the equipment damage if connectors of other models are used.
- Warning labels on the inverter are as follows.

No.	Symbol	Definition
1		Potential risks exist. Wear proper PPE before any operations.
2		DANGER High voltage hazard. Disconnect all incoming power and turn off the product before working on it.

3		High-temperature hazard. Do not touch the product under operation to avoid being burnt.
4		Delayed discharge. Wait 5 minutes after power off until the components are completely discharged.
5		Read through the user manual before working on this device.
6		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.
7		Grounding point.
8		CE Mark.
9		RCM Mark.

2.5 EU Declaration of Conformity

2.5.1 The inverter with wireless communication

The inverter with wirelesssmar dongles sold in the European market meets the requirements of the following directives:

- Radio Equipment Directive 2014/53/EU (RED)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

2.5.2 The inverter without wireless communication

The inverter without wirelesssmar dongles sold in the European market meets the requirements of the following directives:

- Electromagnetic compatibility Directive 2014/30/EU (EMC)

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

2.6 Personnel Requirements

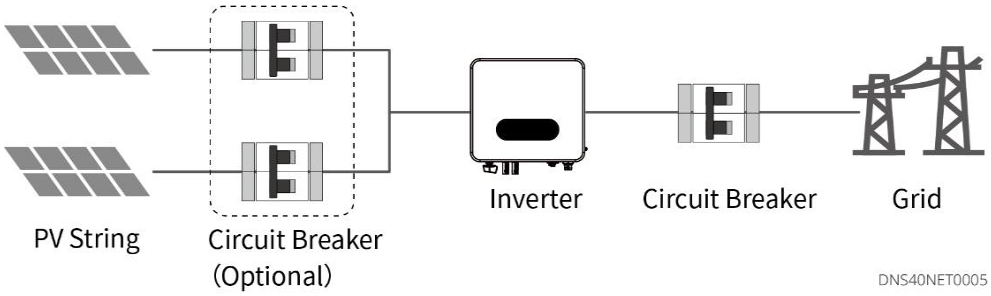
NOTICE
• Personnel who install or maintain the equipment must be strictly trained, learn about safety precautions and correct operations. • Only qualified professionals or trained personnel are allowed to install, operate, maintain, and replace the equipment or parts.

3 Product Introduction

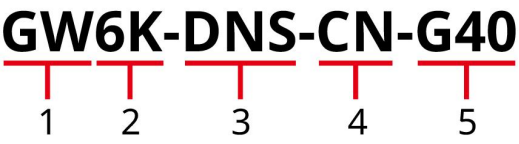
3.1 Introduction

The DNS Series inverters are single-phase PV string grid-tied inverters.The inverters can convert the DC power generated by the PV dongle into AC power for loads or the grid.

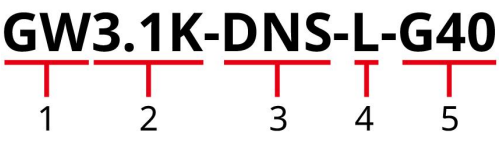
The intended use of the inverter is as follows:



Model Description



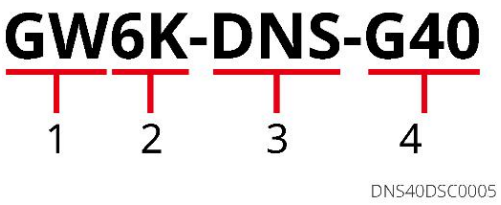
DNS40DSC0001



DNS40DSC0006

No.	Definition	Explanation
1	Brand code	GW: GoodWe
2	Nominal Power	6K：the nominal power is 6kW 5K：the nominal power is 5kW 4.2K：the nominal power is 4.2kW 3.6K：the nominal power is 3.6kW 3.1K：the nominal power is 3.1kW
3	Series code	DNS：DNS Series
4	Special Country Code	CN: Chinese Edition

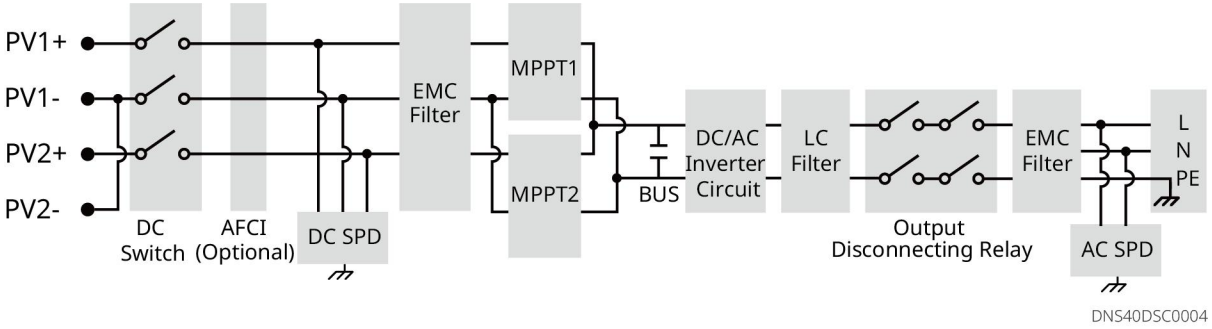
	Product Feature Code	L: Low Voltage
5	Version code	G40：The inverter version is 4.0



DNS40DSC0005

No.	Definition	Explanation
1	Brand code	GW: GoodWe
2	Nominal Power	6K：the nominal power is 6kW 3K：the nominal power is 3kW 3.6K：the nominal power is 3.6kW 4.2K：the nominal power is 4.2kW 5K：the nominal power is 5kW
3	Series code	DNS：DNS Series
4	Version code	G40：The inverter version is 4.0

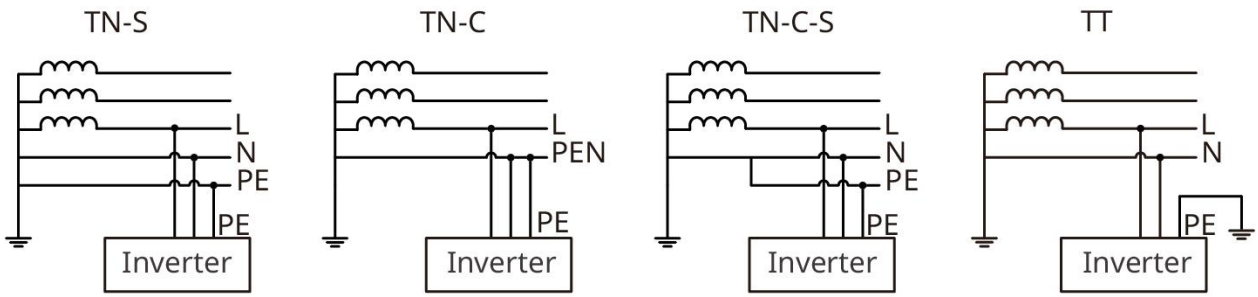
3.2 Circuit Diagram



DNS40DSC0004

3.3 Supported Grid Types

For the grid type with neutral wire, the N to ground voltage must be less than 10V.



3.4 Features

NOTICE
The specific functional configuration shall be subject to the actual model.

AFCI(Arc Fault Circuit Interrupter)

The AFCI function is used to detect the arc faults on the DC side of the inverter. When an arc fault occurs, the inverter will automatically provide protection.

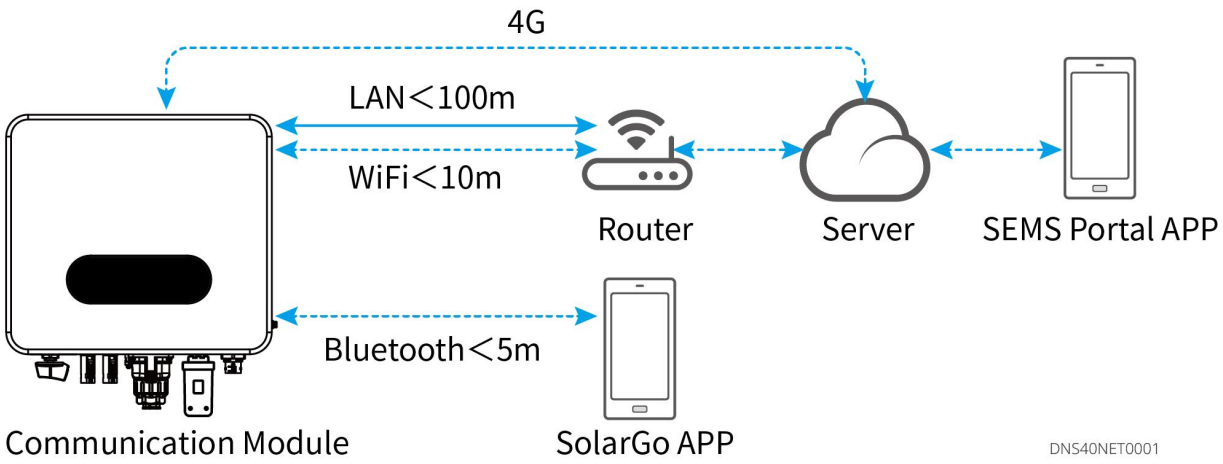
Reasons for the occurrence of electric arcs:

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

Communications

The inverter supports parameter setting via Bluetooth in the near proximity. It also supports connecting to the monitoring platform via WiFi or LAN or 4G, so as to monitor the operation status of the inverter, the operation conditions of the power station, etc.

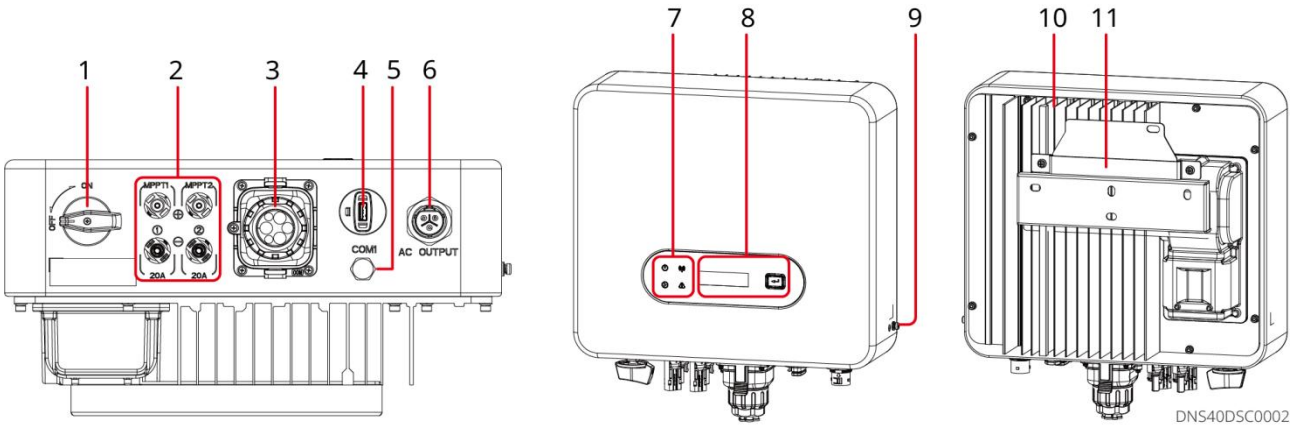
- Bluetooth: meets Bluetooth 5.1 standard.
- WiFi/LAN2.0 (Optional): Wireless IEEE 802.11 b/g/n @2.4 GHz; Ethernet with 10M/100Mbps adaptive speed. If a third-party monitoring platform is to be used, this platform must support the ModbusTCP communication protocol.
- 4G (Optional): It supports connection to a third-party monitoring platform via the MQTT communication protocol.



3.5 Appearance

There may be differences in the appearance and color of the product, and it refers to the actual situation.

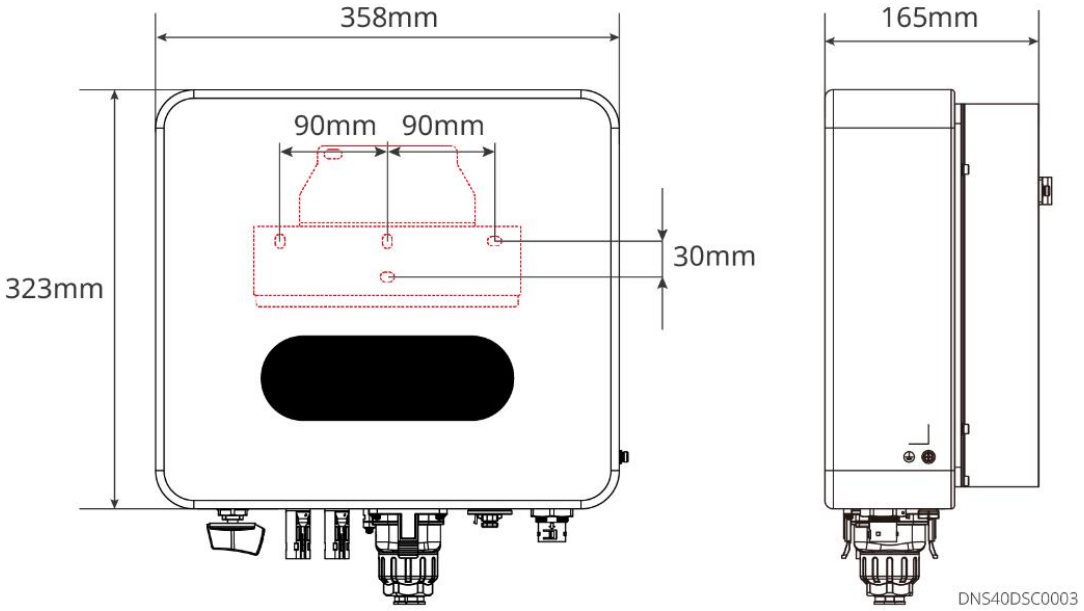
3.5.1 Parts



No.	Components / Silk Screen Printing	Explanation
1	DC Switch	Start or stop DC input.
2	PV Input Terminal	Used to connect the PV dongle DC input cables.
3	Communication Terminal	To connect communication lines such as load control, CT (optional), RS485 (electric meter), remote shutdown/emergency shutdown (for India), DRED (Australia) / RCR (Europe), etc.
4	Communication Dongle Terminal	● To connect the smart dongle such as 4G、WiIFi/LAN,etc. The dongle type may differ depending on actual needs. ● To connect USB flash drive for local software upgrading.

		• To connect the USB-RS485 cable in Brazil.
5	Ventilation Valve	-
6	AC Terminal	To connect the AC output cable. It can link the inverter with the utility grid.
7	Indicator	Indicates working state of the inverter.
8	LCD and Button (optional)	• Used to check the parameters of the inverter. • Used to select menus displayed on the screen.
9	Grounding Point	To connect the PE cable
10	Heat sink	Used to cool the inverter.
11	Mounting Plate	Used to install the inverter.

3.5.2 Dimensions



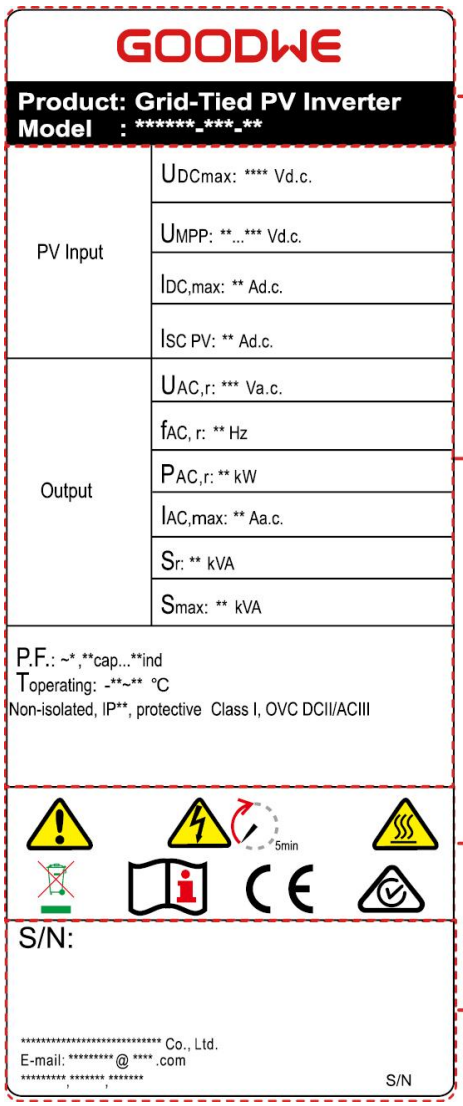
3.5.3 Indicator Description

Indicator	Status	Description
Power	▬▬	STEADY ON = EQUIPMENT POWER ON
	___	OFF = EQUIPMENT POWER OFF
Operating	▬▬	STEADY ON = THE INVERTER IS FEEDING POWER
	___	OFF = THE INVERTER IS NOT FEEDING POWER

		SINGLE SLOW BLINKING = SELF CHECK BEFORE CONNECTING TO THE GRID
		SINGLE FAST BLINKING = CONNECTING TO THE GRID
Communications		STEADY ON= WIRELESS IS CONNECTED/ACTIVE
		SINGLE FAST BLINKING= WIRELESS SYSTEM IS RESETTING
		BLINK 2 = WIRELESS IS NOT CONNECTED TO ROUTER OR BASE STATION
		BLINK 4 = NOT CONNECTED TO SERVER
		SINGLE SLOW BLINKING = RS485 IS CONNECTED
		OFF = WIRELESS IS RESTORING FACTORY DEFAULT SETTING
Faulty		STEADY ON = A FAULT HAS OCCURRED
		OFF = NO FAULT

3.5.4 Nameplate

The nameplate is for reference only.



GW trademark, product type, and product model

Technical parameters

Safety symbols and certification marks

Contact information and serial number

4 Check and Storage

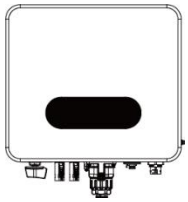
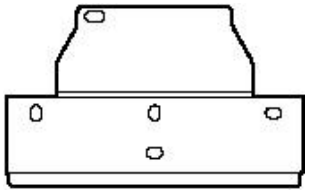
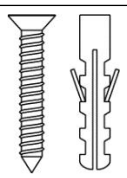
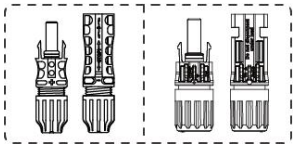
4.1 Check Before Receiving

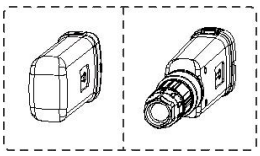
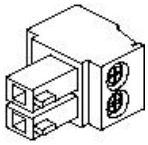
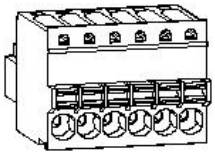
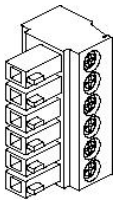
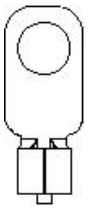
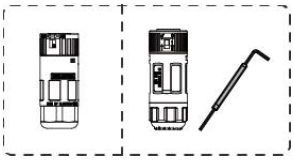
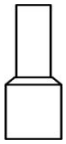
Check the following items before receiving the product.

1. Check the outer packing box for damage, such as holes, cracks, deformation, and other 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]. Smart dongle types: WiFi/LAN, 4G, etc. The actual delivered type depends on the selected inverter communication method.
[2]. The number of communication terminals and PIN terminals shall match the selected communication mode. You may confirm it according to the communication configuration. The configuration of the inverter is different, and the number of 2 PIN terminals and DRED/RCR communication terminals varies for difference communication configuration. You may refer to the actual situation.
[3]. The protocol converter connection cable is only available for shipping within China.

Parts	Quantity	Parts	Quantity
	Inverter x 1		Mounting plate x 1
	Expansion bolts x 4		PV terminals x 2

	COM dongle x1[1]		(optional) CT x 1
	2PIN communication terminals x N[2]		6PIN RS485 communication terminal x 1
	DRED/RCR communication terminals x N[2]		PIN communication terminals x N[2]
	Grounding OT terminal x 1		AC connector x 1
	AC PIN Terminals x 3		Documents x 1
	Protocol converter connection cable (inverter side) x 1[3]		Protocol converter connection cable (protocol converter side) x 1[3]

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 stored for more than two years or has not been in operation for more than six months after installation, it is recommended to be inspected and tested by professionals before being put into use.

6. To ensure good electrical performance of the internal electronic components of the inverter, it is recommended to power it on every 6 months during storage. If it has not been powered on for more than 6 months, it is recommended to to be inspected and tested by professionals before being put into use.

5 Installation

5.1 Installation Requirements

Installation Environment Requirements

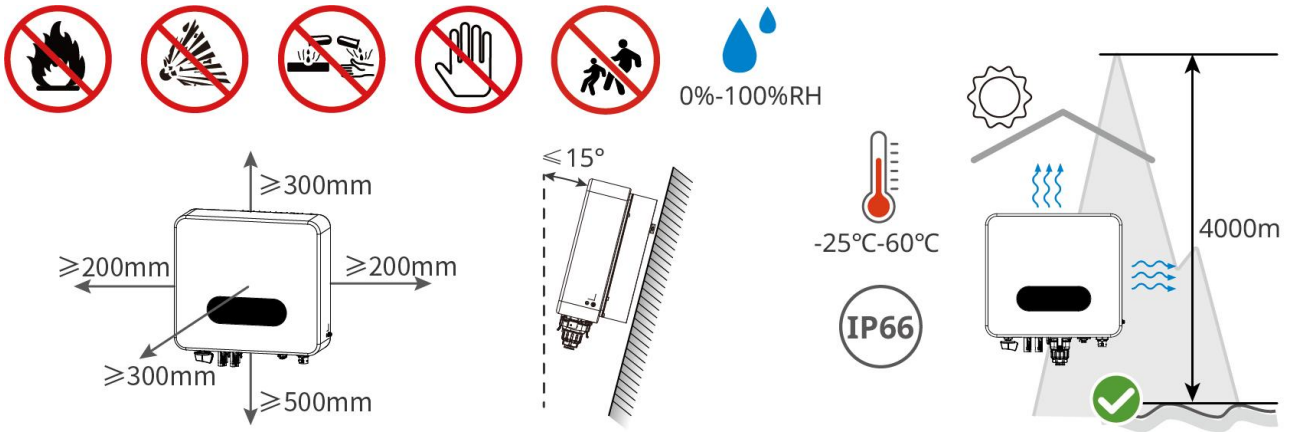
1. Do not install the equipment in a place near flammable, explosive, or corrosive materials.
2. Install the equipment on a surface that is solid enough to bear the inverter weight.
3. Install the equipment in a well-ventilated place to ensure good dissipation. Also, the installation space should be 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 altitude to install the inverter shall be lower than the maximum working altitude 4000m.
9. The inverter is easy to be corroded when installed in salt areas. A salt area refers to the region within 1000 meters offshore or affected by the sea breeze. The area prone to the sea breeze varies depending on weather conditions (e.g. typhoon, monsoon) or terrain (such as dams and hills).
10. Install the product away from electromagnetic interference. If there are radio stations or wireless communication equipment below 30 MHz near the installation location, please install the equipment as follows:
    - Add a multi-turn winding ferrite core at the DC input line or AC output line of the inverter, or add a low-pass EMI filter.
    - The distance between the inverter and the wireless EMI equipment is more than 30m.

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

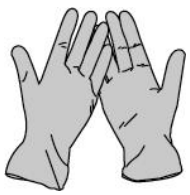
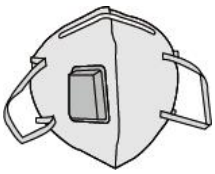
- Install the inverter vertically or at a maximum back tilt of 15 degrees.
- Do not install the inverter upside down, forward tilt, back forward tilt, or horizontally.

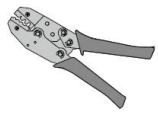
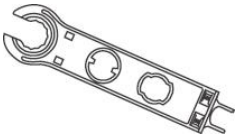
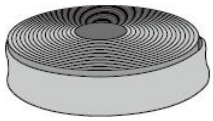
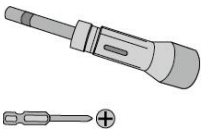


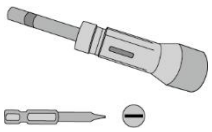
DNS40INT0001

Installation Tool Requirements

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

Tool Types	Explanation	Tool Types	Explanation
	Goggles		Safety shoes
	Insulating gloves, Protective gloves		Dust mask

	Terminal crimping tool		Diagonal pliers
	Wire stripper		Hammer drill
	Heat gun	 or 	DC wiring wrench
	Marker		Level
	Heat shrink tube		Rubber hammer
	Vacuum cleaner		Multimeter
	Cable tie		Torque wrench M3/M5

	Screwdriver	-	-

5.2 Inverter Installation

5.2.1 Moving the Inverter

CAUTION

- Operations such as transportation, turnover, installation and so on must meet the requirements of the laws and regulations of the country or region where inverters are installed.
- 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 to avoid falling down 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 DC switch lock is prepared by the customer(Australia only).
- The anti-theft lock of appropriate size should be prepared by customers. Otherwise it is unable to finish the installation if the size is inappropriate.
- Make sure the inverter is firmly installed in case of falling down.

Step 1 Put the mounting plate on the wall horizontally and mark positions for drilling holes.

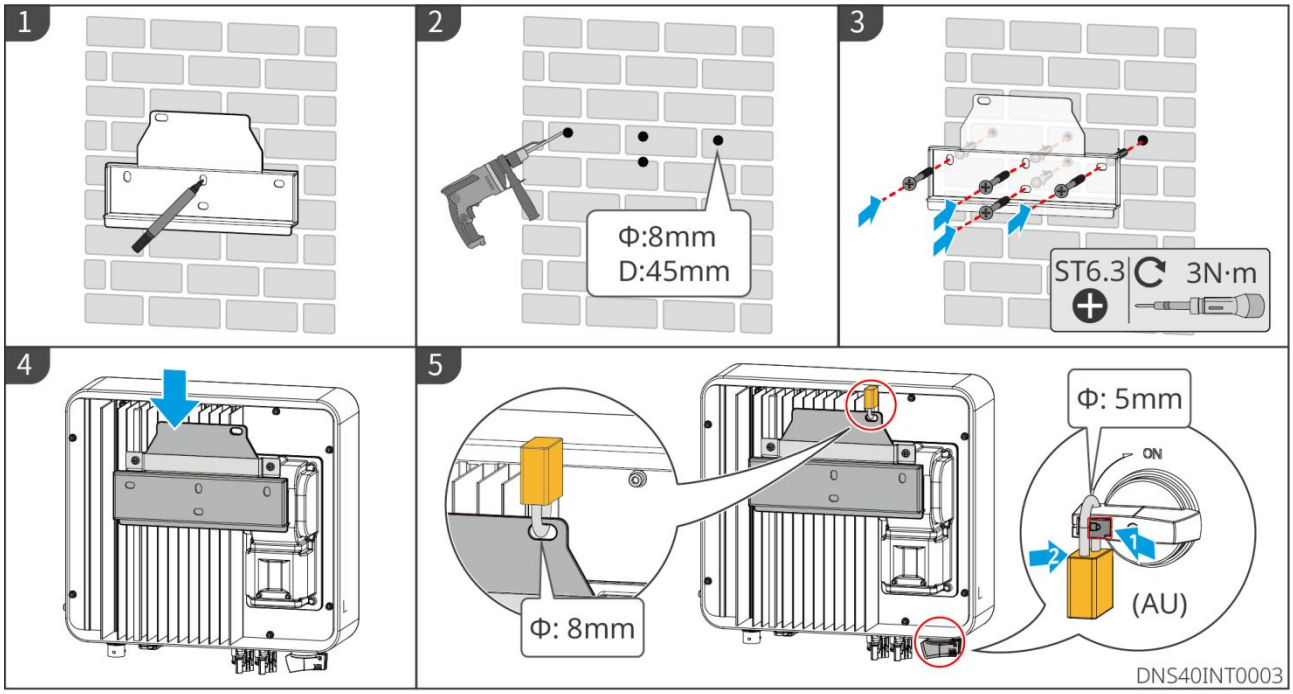
Step 2 Drill holes to a depth of 45mm using the hammer drill. The diameter of the drill bit should be

8mm.

Step 3 Secure the mounting plate using the expansion bolts.

Step 4 Install the inverter on the mounting plate.

Step 5 Install the anti-theft lock with a hole diameter of 8mm. Install DC switch locks (Australia only) with a hole diameter of 5mm.



6 Electrical Connection

6.1 Safety Precautions

DANGER

- Disconnect the DC switch and the AC output switch of the inverter to power off the inverter 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 cable bears too much tension, the connection may be poor. Reserve a certain length of the cable before connecting it to the inverter cable port.

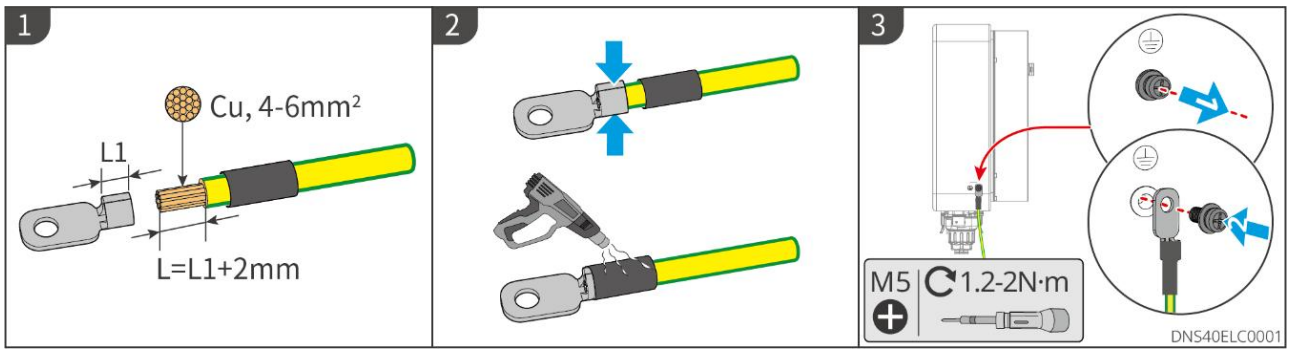
NOTICE

- Wear personal protective equipment like safety shoes, protective 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 shall meet local laws and regulations.

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. Make sure that both of the two PE cables are 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, you are recommended to apply silica gel or paint on the ground terminal after installing the PE cable.
- The PE cable is prepared by the customer. Recommended specifications:
  - Type: single-core outdoor copper cable
  - Conductor cross-sectional area: 4-6mm^2



6.3 Connecting the AC Output Cable

WARNING

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

NOTICE

- Install one AC circuit breaker for each inverter. Multiple inverters cannot share one AC circuit breaker.
- Seal the AC output terminals with waterproof covers when they are not to be used. Otherwise, the ingress protection rating will be influenced.

An AC circuit breaker shall 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
GW3.6K-DNS-CN-G40	25A
GW4.2K-DNS-CN-G40	32A
GW5K-DNS-CN-G40	32A
GW6K-DNS-CN-G40	40A
GW3K-DNS-G40	25A
GW3.6K-DNS-G40	25A

GW4.2K-DNS-G40	32A
GW5K-DNS-G40	32A
GW6K-DNS-G40	40A
GW3.1K-DNS-L-G40	32A

A type A RCD(Residual Current Device) shall be added to protect the equipment when the DC component of the leakage current exceeds limits. It is recommended to use an RCD (Residual Current Device) with a specification of 300mA.

NOTICE

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

WARNING

- Pay attention to the silkscreens L, 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.

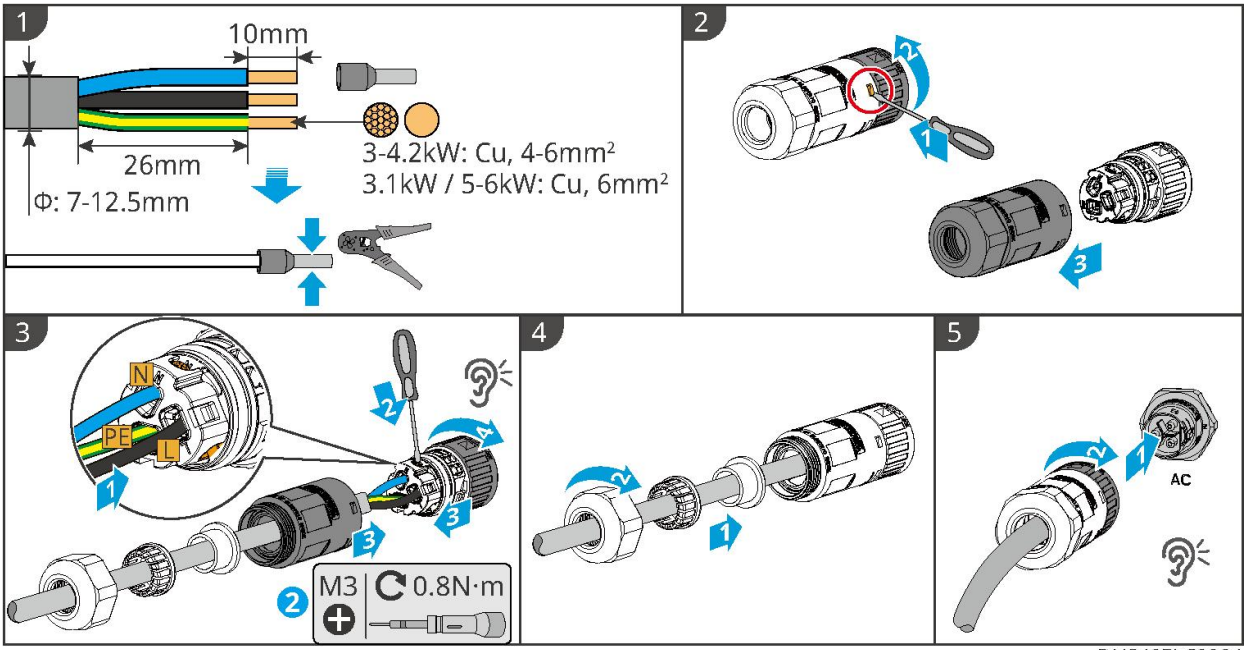
Step 1 Prepare the AC output cables.

Step 2 Disassemble the AC connector.

Step 3 Insert the AC output cables into the AC connector.

步骤4 组合交流连接器。

Step 5 Plug the AC connector into the inverter.



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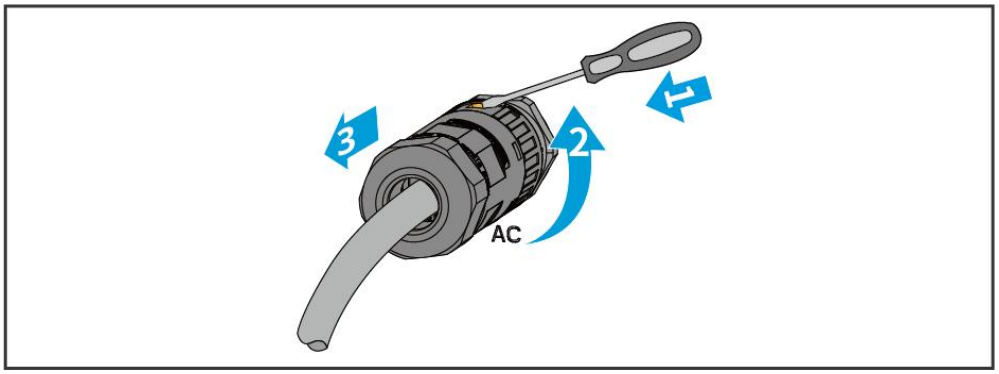
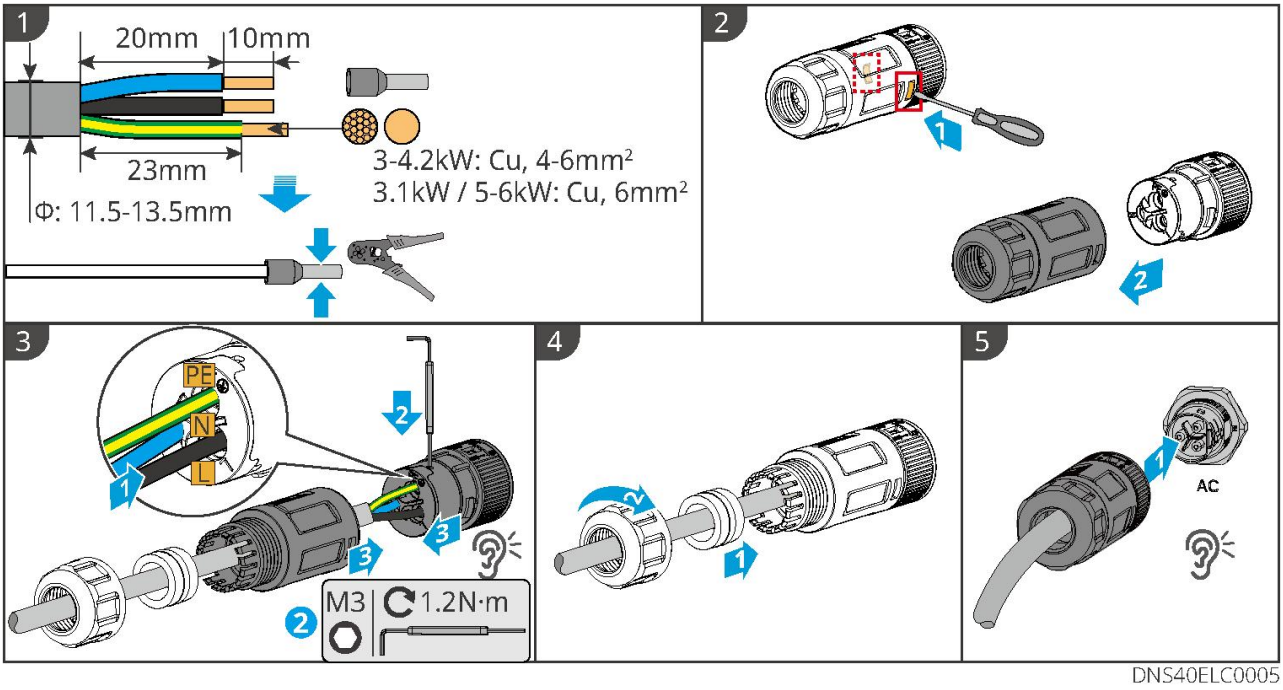
Disconnect AC connector

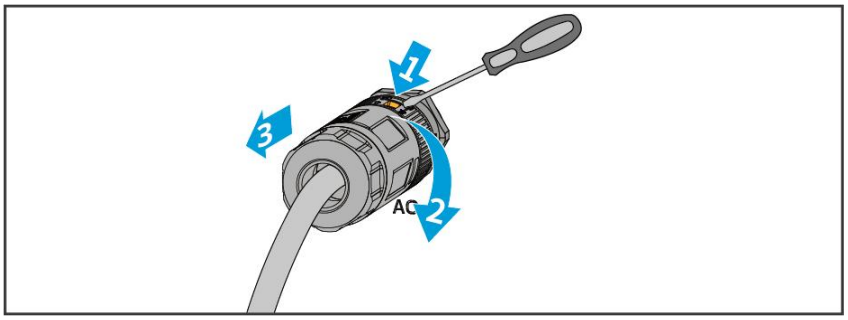
Type I:



Type II:



Disconnect AC connector



NOTICE

- Make sure that the cable is connected correctly and securely. Clear the debris after completing the connection.
- Seal the AC output terminal to ensure the ingress protection rating.

6.4 Connecting the DC Input Cable(PV)

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

- Mixing PV dongles of different brands or models in the same MPPT or connecting PV dongles 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.
- When the Max. Input Voltage of the inverter is 600V, please make sure that the open circuit voltage of the PV string connected to each MPPT shall not exceed 600V. When the input voltage ranges from 560 V to 600 V, the inverter will enter the standby state. When the input voltage returns to the MPPT operating voltage range of 40 V to 560 V, the inverter will resume normal operating state.
- It is recommended that the voltage difference between different MPPT circuits does not exceed 150V.
- 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 of 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.
- The DC input cable is prepared by the customer.

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

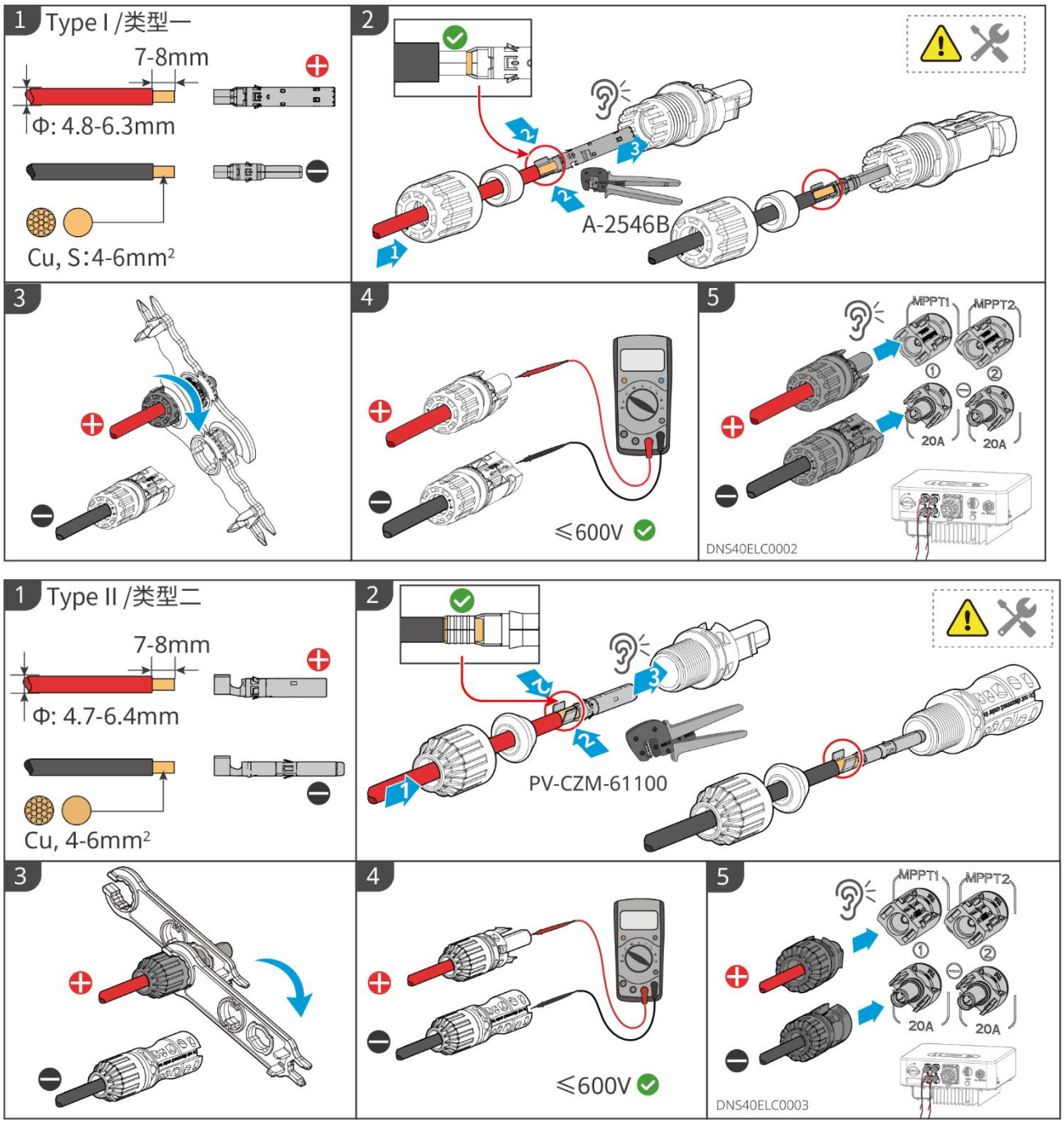
Step 1 Prepare DC cables.

Step 2 Crimp the crimp contacts and assemble the DC connectors.

Step 3 Fasten the PV connector.

Step 4 Measure the DC input voltage.

Step 5 Connect the DC connectors to the DC terminals of the inverter.



6.5 Communication

6.5.1 Communication Network Introduction

Export Power Limit Networking

NOTICE

- Connecting the inverter to a smart meter or CT (Current Transformer) enables the functions of output power limitation and load monitoring.
- Please enable the "Grid-connected Power Limitation" function through the SolarGo App.

The PV station generates power for self-consumption. When the load cannot consume all the generated power, the inverter can monitor the on-grid electric data in real-time and adjust the output power via a smart meter to avoid the surplus current feeding back to the utility grid.

WARNING

1. When the single intervert is installed for the first time, it’ s unnecessary to pay attention to the CT sampling current direction; when the CT is replaced or maintained at a later stage, please use **the meter/CT-assisted detection** function on the SolarGo App to make the inverter re-adapt to the CT sampling current direction.
2. In the multi inverters scenario, CT installation position should be close to the grid connection point. The correct installation direction refers to that “-->” in CT is the direction of inverter current pointing to the grid. The inverter will be triggered with an alarm if CT is installed reversely. It is unable to realize the power limit function.
3. The aperture of the CT should be larger than the outer diameter of the AC power line to ensure that the AC power line can pass through the CT.
4. CT shall be snap fitted on Cable L. Do not fit it on Cable N.
5. The CT (Current Transformer) shipped with the inverter has the following specifications: sampling range of 90A, transformation ratio of 1000:1, and cable length of 5m.
6. GM330:
7. 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.)
8. 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%.
9. 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 current-carrying capacity of the cable be 6A.
10. Please ensure that the meter wiring and phase sequence are correct. Recommended cross-sectional area of the smart meter input power cable: 1mm^2(18AWG).
11. An Ezlink3000 need to be used to realize the export power limit of multiple inverter paralleling. If you need to use it, please contact the after-sales service or the dealer for purchase.
12. Plug a smart dongle into the inverter to establish a connection between the inverter and the

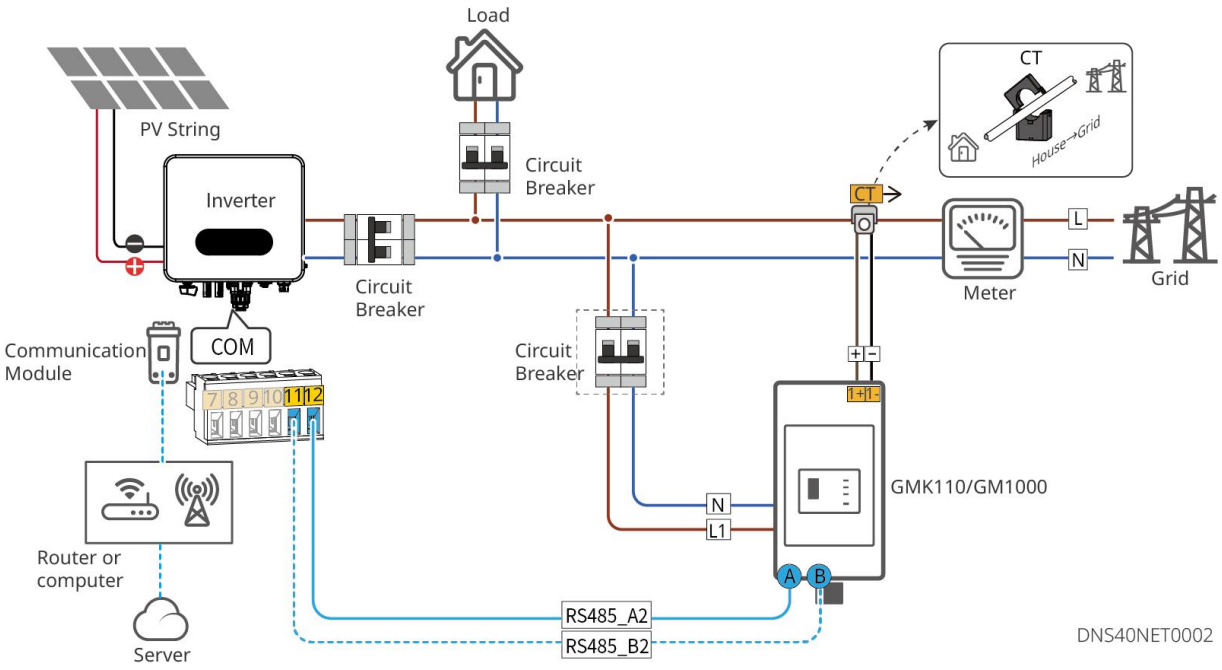
smartphone or web pages through 4G, WiFi/LAN smart dongles to set relevant inverter parameters, check running information and fault information, and observe system status in time via the smartphone or web pages.

13. When there is only one inverter in the system, the 4G Kit-CN-G20, 4G Kit-CN-G21, WiFi/LAN Kit-20 or WiFi Kit-20 smart dongles can be used.
14. When multiple inverters are connected in a parallel system, the Ezlirk3000 should be installed to the master inverter.

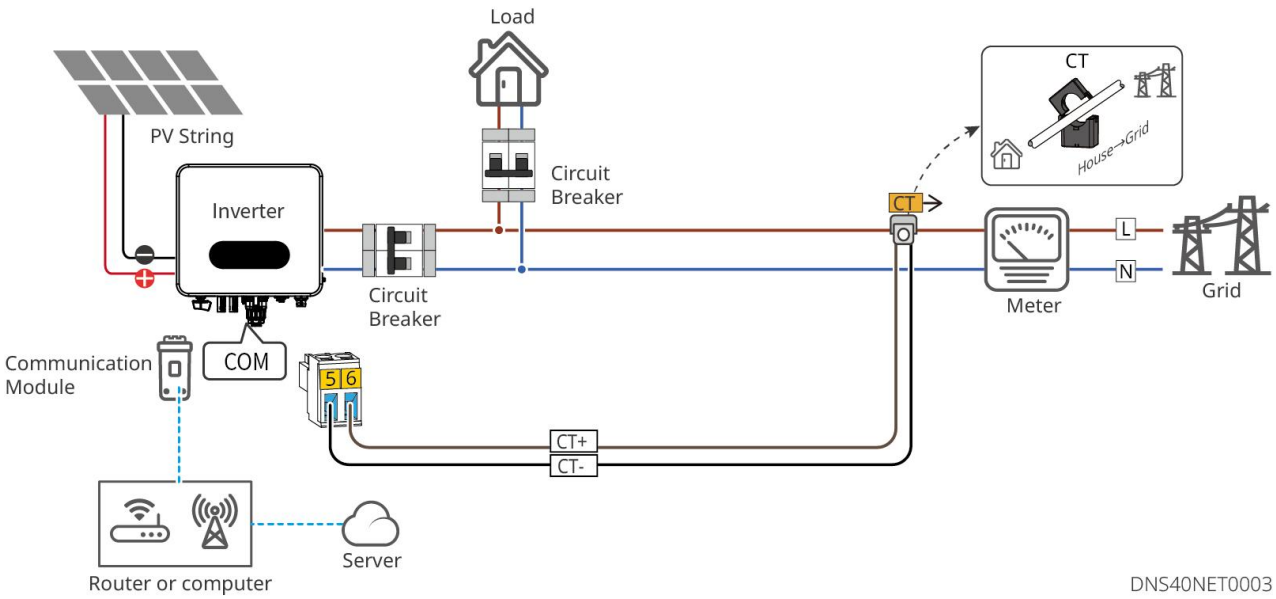
NOTICE

The meter is mainly used for export power control of the grid-connection point. The measured power generation and power consumption can only be used as a reference and cannot serve as the basis for electricity bill metering. The electricity bill metering should be based on the metering meter of the power grid company.

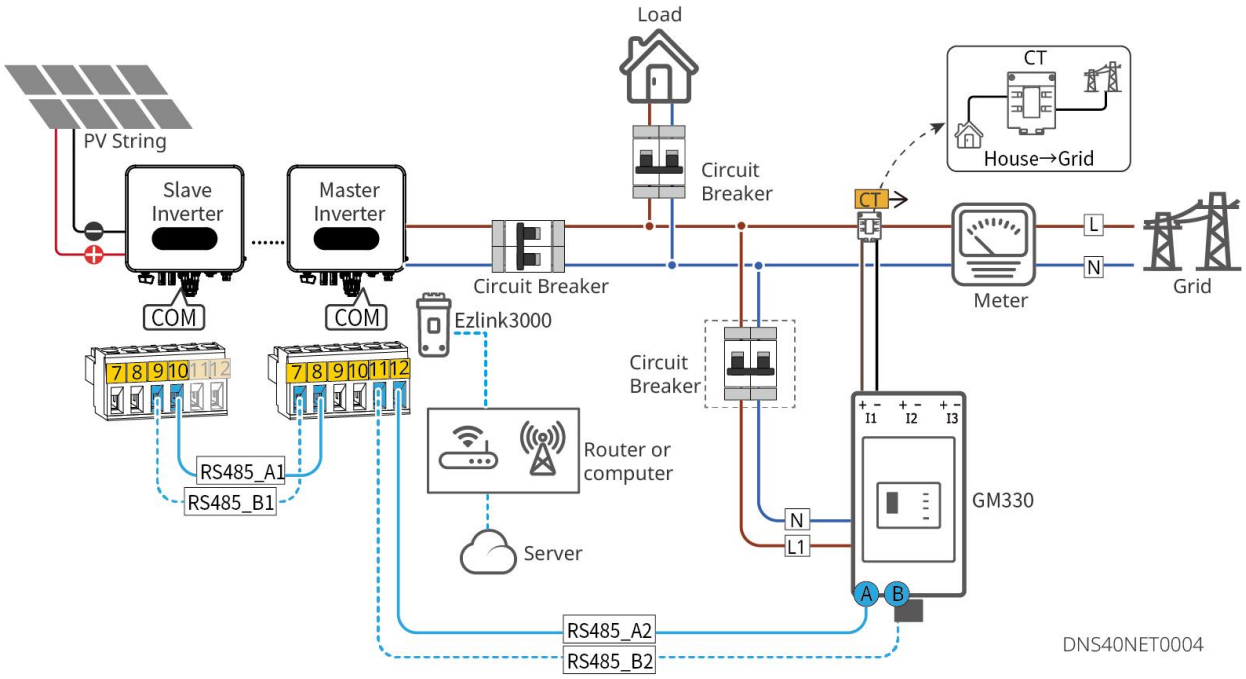
Single-Inverter Export Power Limit Network (GM1000/GMK110)



Single-Inverter Export Power Limit Network (CT shipped with the inverter)



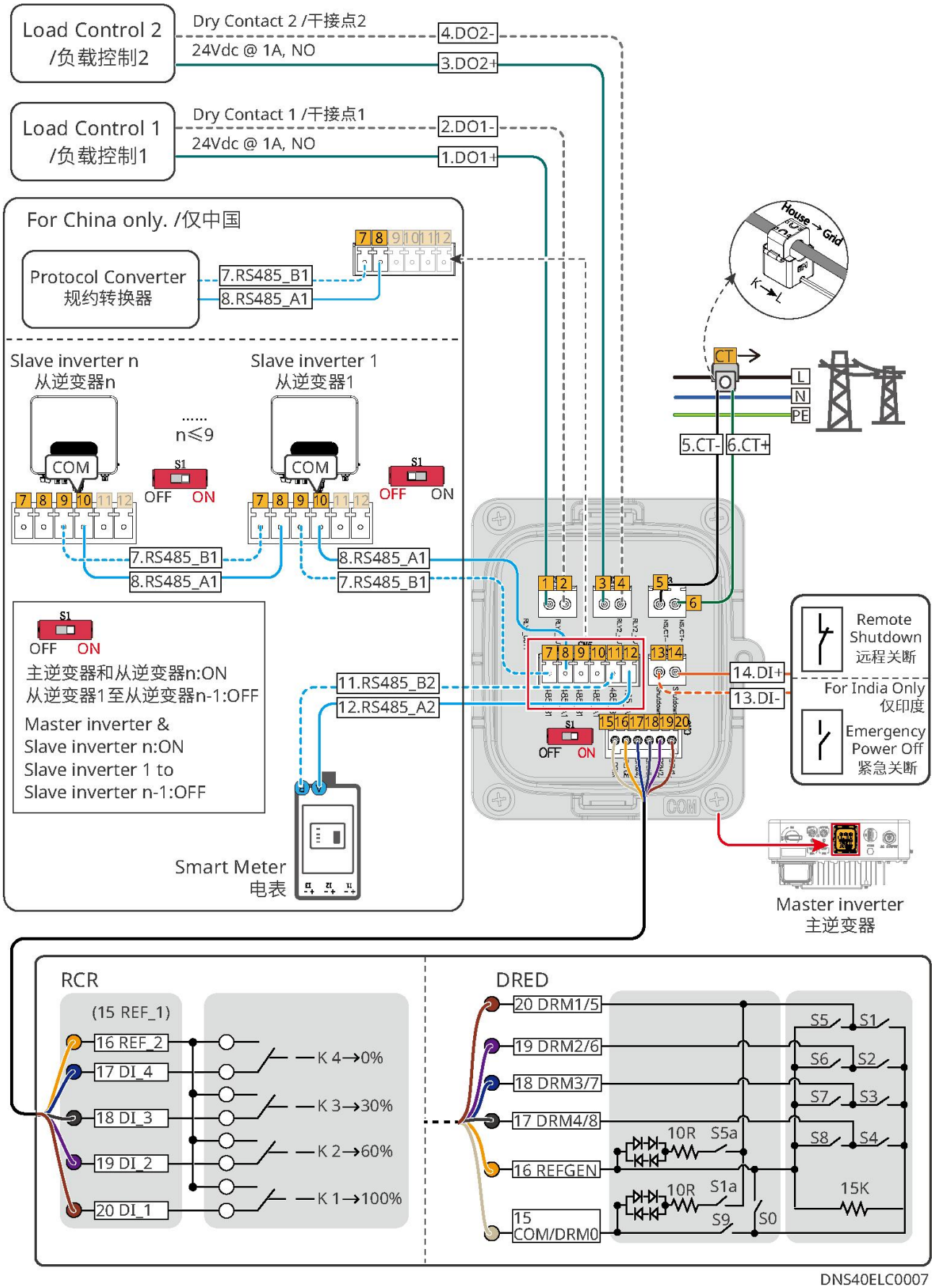
Multi-Inverter Export Power Limit Network (GM330 + Ezlink3000)



NOTICE

After completing cable connections, set related parameters via LCD or SolarGo app to enable export power limit control or output power limit control.

6.5.2 Connecting the Communication Cable



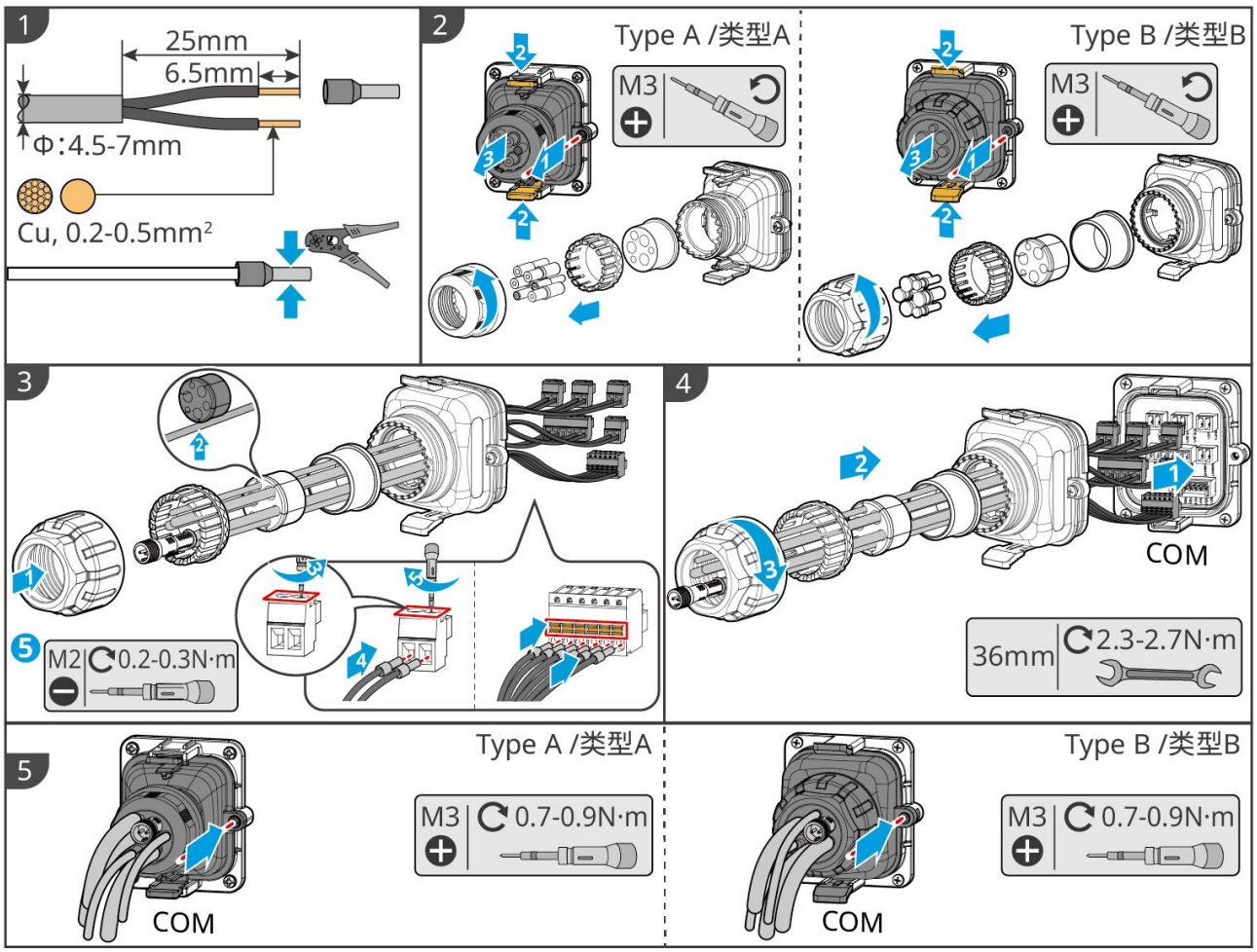
DNS40ELC0007

No.	Function	Description
1-4	Load control (optional)	● It supports connection with dry contact signals to achieve functions such as load control. The capacity of the DO contact is 24VDC@1A, and it is a NO (Normally Open) contact. ● It supports the connection of SG Ready heat pumps and controls the heat pumps through dry contact signals.
5-6	CT connection port (CT)	It is used for single-inverter export output power limit.
7-10	Parallel communication port or protocol converter communication port (RS485-1)	● Used for communication between multiple inverters connected in parallel or connecting protocol converters (China only). ● The inverter connects to the protocol converter and uses the same set of RS485 ports for parallel scenario. If you need to connect to the protocol converter, you cannot use the parallel inverter function; in the parallel scenario, you cannot connect to the protocol converter.
11-12	Meter connection port (RS485-2)	The inverter is paired with a meter to achieve the function of preventing output power limit. If you need supporting equipment, you can contact the inverter manufacturer for purchase.
13-14	Remote shutdown or emergency power-off (India)	After the emergency switch sends a shutdown signal, the AC side of the inverter will automatically disconnect, and the grid-connection will stop. An external emergency shutdown switch is required.
15-20	DRED (Australia) or RCR (Europe) connection port	● DRED (Demand Response Enabling Device): It provides a DRED signal control port to meet the DRED grid regulation requirements in Australia and New Zealand. The functions of DRM1-4 are reserved, and users need to prepare their own DRM devices. ● RCR (Ripple Control Receiver): It provides an RCR signal control port to meet the grid

		regulation requirements in regions such as Germany.
S1	Terminal resistance DIP switch	• The inverter is equipped with an RS485 terminal resistor, and the terminal resistance DIP switch is turned on by default. • “ON”:ON, “1”:OFF • Operation method: Open the outer cover of the communication port and use an insulated pick to switch the terminal resistance DIP switch to “1” (OFF).

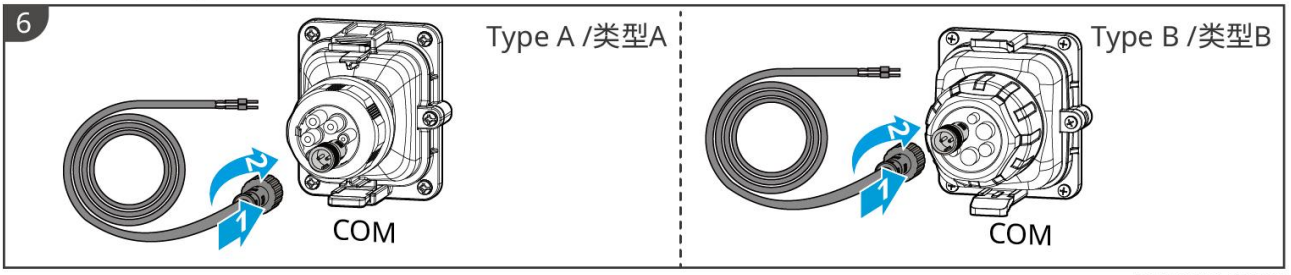
NOTICE

- Make sure that the communication device is connected to the right terminal. Route the communication cable far away from any interference source or power cable to prevent the signal from being influenced.
- Connect the remote shutdown/emergency shutdown (India), CT, and load control communication cables using 2PIN communication terminals.
- Connect RS485 (meter), DRED/RCR communication cables using 6PIN communication terminals.
- If you need to use the DRED, RCR or remote shutdown function, turn it on in the SolarGo App after wiring.
- Do not turn on the function in the SolarGo App if the inverter is not connected to DRED, RCR or remote shutdown devices, or the inverter won't be able to connect to the grid.
- Get more detailed information about thesmar dongle from the official website.
- The USB-RS485 adapter cable is only for Brazilian models. Contact after-sales service if you need to use it.
- Communication cable requirement: The RS485 communication cable should be an outdoor shielded twisted-pair cable meeting local standards.



DNS40ELC0006

(For China only./仅中国)



DNS40ELC0008

7 Equipment Commissioning

7.1 Check Before Power ON

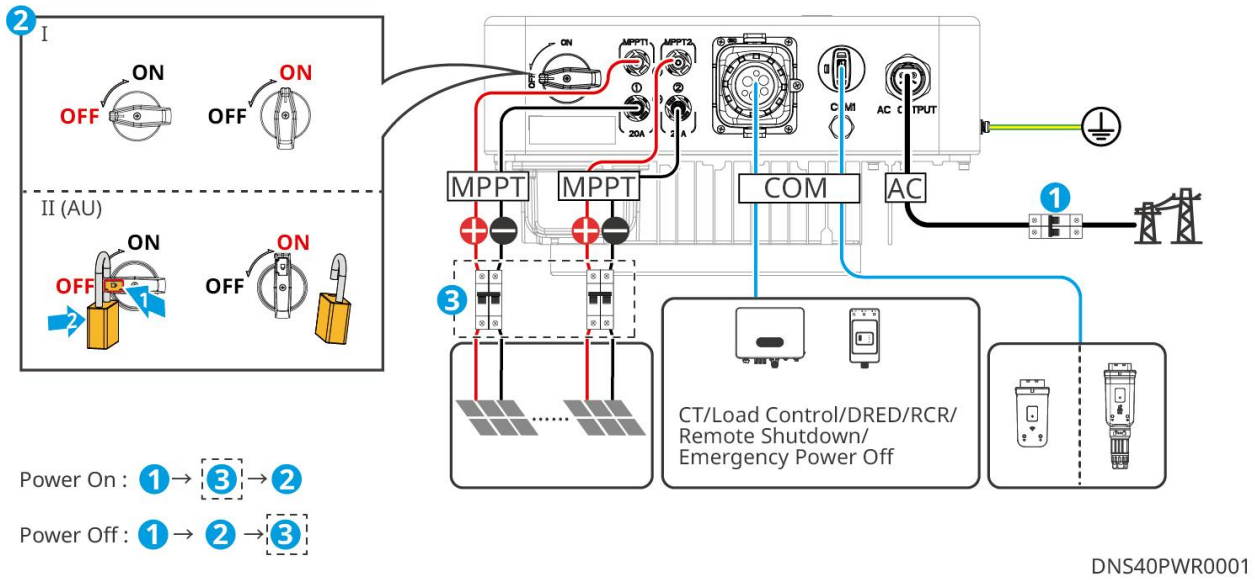
No.	Checking Item
1	The product is firmly installed at a clean place that is well-ventilated and easy-to operate.
2	The PE, DC input, AC output, and communication cables are connected correctly and securely.
3	Cable ties are intact, routed properly and evenly.
4	Unused ports and terminals are sealed.
5	The voltage and frequency at the connection point meet the inverter grid connection 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 dongles.

Step 3 Turn on the DC switch of the inverter.



DNS40PWR0001

8 System Commissioning

8.1 Indicators and Buttons

Indicator	Status	Description
Power		STEADY ON = EQUIPMENT POWER ON
		OFF = EQUIPMENT POWER OFF
Operating		STEADY ON = THE INVERTER IS FEEDING POWER
		OFF = THE INVERTER IS NOT FEEDING POWER
		SINGLE SLOW BLINKING = SELF CHECK BEFORE CONNECTING TO THE GRID
		SINGLE FAST BLINKING = CONNECTING TO THE GRID
Communications		STEADY ON= WIRELESS IS CONNECTED/ACTIVE
		SINGLE FAST BLINKING= WIRELESS SYSTEM IS RESETTING
		BLINK 2 = WIRELESS IS NOT CONNECTED TO ROUTER OR BASE STATION
		BLINK 4 = NOT CONNECTED TO SERVER
		SINGLE SLOW BLINKING = RS485 IS CONNECTED
		OFF = WIRELESS IS RESTORING FACTORY DEFAULT SETTING
Faulty		STEADY ON = A FAULT HAS OCCURRED
		OFF = NO FAULT

8.2 Setting Inverter Parameters via LCD

NOTICE

- Inverter firmware version shown in this document is V1.00.00. Coummunication version: V1.00. The screenshots are for reference only. The actual interface may differ.
- The name, range, and default value of the parameters are subject to change or adjustment. The

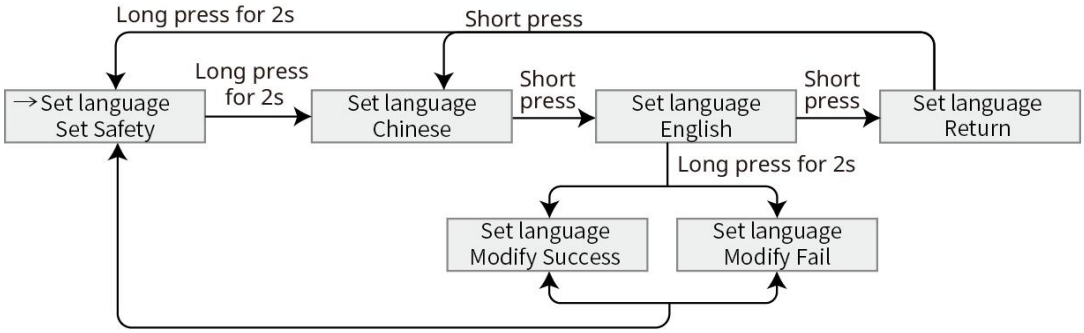
actual display prevails.

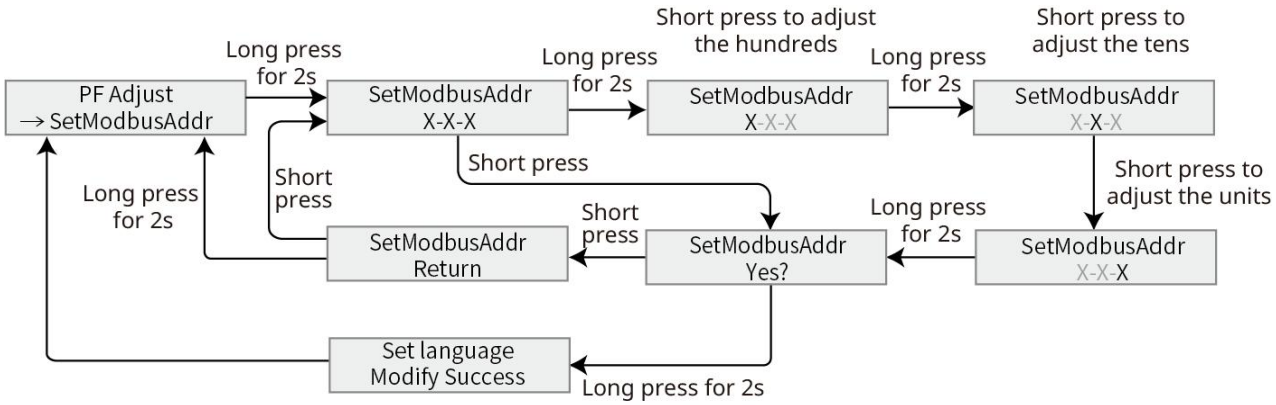
- The power parameters should be set by professionals. It is to prevent the generating capacity from being influenced by wrong parameters.

LCD Button Description

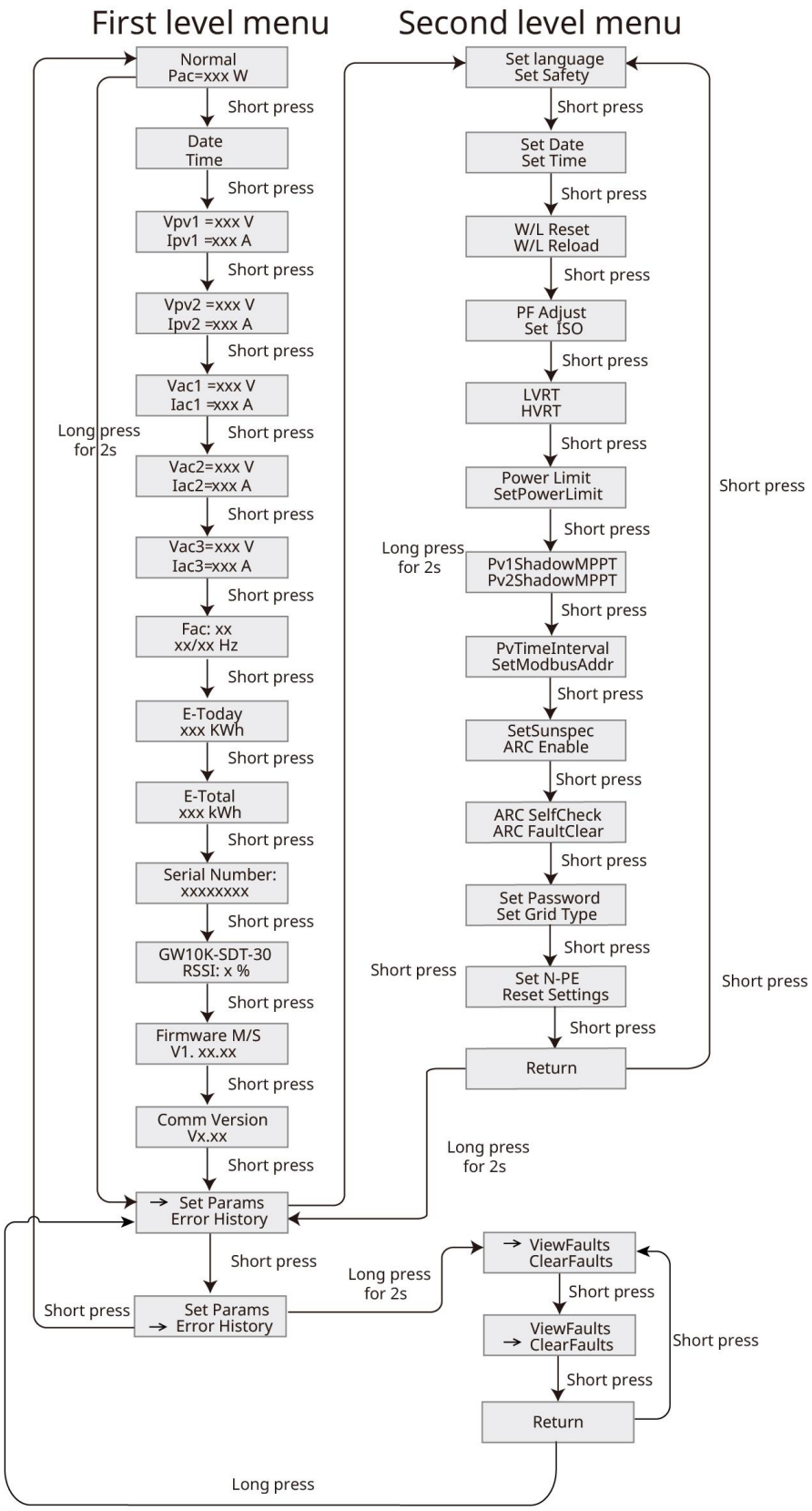
- Stop pressing the button for a period on any page, the LCD will get dark and go back to the initial page.
- Short press the button to switch menu or adjust parameter values.
- Long press the button to enter the submenu. After adjusting the parameter values, long press to set it.

Examples:





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



8.2 Setting Inverter Parameters via SolarGo App

SolarGo app is a mobile application that communicates with the inverter via Bluetooth dongle, WIFi dongle or GPRS dongle. Commonly used functions are as follows:

1. Check the operating data, software version, alarms, etc.
2. Set grid parameters, communication parameters, etc.
3. Equipment maintenance.

For more details, refer to the SolarGo APP User Manual.

Get the user manual from the official site or by scanning the QR code below.

SolarGo App

SolarGo App user manual

8.3 Monitoring via SEMS Portal

SEMS Portal is a monitoring platform that can communicate with devices via WiFi, LAN or 4G. Commonly used functions are as follows:

1. Management of organization or user information.
2. Addition and monitoring of power station information.
3. Equipment maintenance.

SEMS Portal App

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 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 switch between the inverter and the PV dongles.

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 Dongle, 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 anymore, dispose of it according to the local disposal requirements for electrical equipment waste. The inverter cannot be disposed of together with 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 that 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 dongles 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 fails. 2. The AC circuit or the AC breaker is disconnected.	1. The alarm is automatically cleared after the grid power supply is restored. 2. Check whether the AC cable is connected and the AC breaker is on.
2	Grid Overvoltage	The grid voltage exceeds the permissible range, or the duration of high voltage exceeds the requirement of HVRT.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. If the problem occurs frequently, check whether the grid voltage is within the permissible range. • Contact the local power company if the grid voltage exceeds the permissible range. • Modify the overvoltage protection threshold, HVRT or disable the overvoltage protection function after obtaining the consent of the local power company if the grid frequency is within the permissible range. 3. Check whether the AC breaker and the output cables are connected securely and correctly if the problem persists.

3	Grid Rapid Overvoltage	The grid voltage is abnormal or ultra-high.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. Check whether the grid voltage has been operating at a relatively high level for a long time. If the problem occurs frequently, check whether the grid voltage is within the permissible range. • Contact the local power company if the grid voltage exceeds the permissible range. • Modify the grid overvoltage rapid protection threshold after obtaining the consent of the local power company if the grid voltage is within the permissible range. 3. Check whether the AC breaker and the output cables are connected securely and correctly if the problem persists.
4	Grid Undervoltage	The grid voltage is lower than the permissible range, or the duration of low voltage exceeds the requirement of LVRT.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. If the problem occurs frequently, check whether the grid voltage is within the permissible range. • Contact the local power company if the grid voltage exceeds the permissible range. • Modify the undervoltage protection

			threshold, LVRT or disable the undervoltage protection function after obtaining the consent of the local power company if the grid frequency is within the permissible range. 3. Check whether the AC breaker and the output cables are connected securely and correctly if the problem persists.
5	Grid 10min Overvoltage	The moving average of grid voltage in 10min exceeds the range of safety requirements.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. Check whether the grid voltage has been operating at a relatively high level for a long time. If the problem occurs frequently, check whether the grid voltage is within the permissible range. • Contact the local power company if the grid voltage exceeds the permissible range. • 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	Utility grid exception. The actual grid frequency exceeds the requirement of the local grid standard.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. If the problem occurs frequently, check whether the grid frequency is within the

			permissible 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.
7	Grid Underfrequency	Utility grid exception. The actual grid frequency is lower than the requirement of the local grid standard.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. If the problem occurs frequently, check whether the grid frequency is within the permissible 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 utility grid is disconnected. The utility grid is disconnected according to the safety regulations, but the grid voltage is maintained due to the loads.	The inverter will resume grid reconnection after the grid to return to normal.
9	LVRT Undervoltage	Utility grid exception. The duration of the utility grid exception exceeds the set time	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after
10	HVRT		

	Overvoltage	of LVRT.	detecting that the utility grid is normal. 2. If the problem occurs frequently, check whether the grid voltage is within the permissible range. If not, contact the local power company. If yes, contact the dealer or the after-sales service.
11	Abnormal GFCI 30mA	The input insulation impedance becomes low when the inverter is working.	1. If the problem occurs occasionally, it may be caused by a cable exception. The inverter will recover automatically after the problem is solved. 2. Check whether the impedance between the PV string and PE is too low if the problem occurs frequently or persists.
12	Abnormal GFCI 60mA		
13	Abnormal GFCI 150mA		
14	Abnormal GFCI		
15	Large DC of AC current L1	The DC component of the output current exceeds the safety range or default range.	1. If the problem is caused by an external fault like a utility grid exception or frequency exception, the inverter will recover automatically after solving the problem. 2. If the problem occurs frequently and the PV station cannot work properly, contact the dealer or the after-sales service.
16	Large DC of AC current L2		
17	Low Insulation Res.	1. The PV string is short-circuited to PE. 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 phenomenon, please check the short circuit point and rectify it. 2. Check whether the PE cable 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".
18	Abnormal Ground	1. The PE cable of the inverter is not connected well. 2. The L cable and N cable are connected reversely when output of the PV string is grounded.	1. Check whether the PE cable of the inverter is connected properly. 2. Check whether the L cable and N cable are connected reversely if output of the PV string is grounded.
19	L-PE Short Circuit	The live wire connection of the inverter output terminal is abnormal	Check the wiring of the grid side. If the wiring is wrong, please correct it.
20	Anti Reverse power Failure	Abnormal fluctuation of load	1. If the exception is caused by an external fault, the inverter will recover automatically after solving the problem. 2. If the problem occurs frequently and the PV station cannot work properly, contact the dealer or the after-sales service.
21	Internal Comm Loss	1. Chip has not be powered on 2. Chip program version error	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.
22	AC HCT Check abnormal	The sampling of the AC HCT 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.
23	GFCI HCT Check abnormal	The sampling of the GFCI HCT 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.
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.	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.
25	Internal Fan abnormal	1. The fan power supply is abnormal. 2. Mechanical exception. 3. The fan is aging and 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.
26	Flash Fault	The internal Flash storage 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.
27	DC Arc Fault	1. The DC terminal is not firmly connected. 2. The DC cable is broken.	Read the Quick Installation Guide and check whether the cables are connected properly.
28	AFCI Self-test Fault	AFCI detection 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.
29	Inv Dongle Overtemperature	1. The inverter is installed in a place with poor ventilation. 2. The ambient temperature exceeds 60℃.	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

		3. A fault occurs in the internal fan of the inverter.	ventilation and heat dissipation. 3. Contact the dealer or after-sales service if both the ventilation and the ambient temperature are proper.
30	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.
31	0.3V Ref abnormal		
32	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.	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.
33	BUS Overvoltage(Slave CPU 1)		
34	PV Input Overvoltage	The PV array configuration is not correct. Too many PV panels are connected in series in the PV string.	Check the serial connection of the PV array. Make sure that the open circuit voltage of the PV string is not higher than the maximum operating voltage of the inverter.
35	PV Continuous Hardware Overcurrent	1. The PV configuration is not proper. 2. The hardware is 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.
36	PV Continuous Software Overcurrent	1. The PV configuration is not proper. 2. The hardware is 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.
37	PV String Reversed(String1~String16)	The PV string is connected reversely.	Check whether PV strings are connected reversely.
38	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.
39	BUS 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.
40	BUS Soft Start Failure	Boost driving 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.
41	Gird Phase Lock failure	The grid frequency is unstable.	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.
42	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.
43	Inv Software		

	Overcurrent		
44	R Phase Hardware Overcurrent		
45	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.
46	PV Software Overcurrent		
47	PV HCT Failure	Abnormal boost current sensor	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.
48	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.
49	Incorrect PV Access Mode Setting	The actual PV access mode of the PV panels does not match the PV access mode set in the device.	Check whether the PV access mode is set correctly. If it is incorrect, please reset the PV access mode in the correct way. 1. Confirm whether each PV string actually connected is properly connected. 2. If the PV strings are correctly connected, check through the App or the screen whether the currently set "PV access mode" corresponds to the actual access mode.

			3. If the currently set "PV access mode" does not match the actual access mode, you need to set the "PV access mode" to a mode consistent with the actual situation through the App or the screen. After the setting is completed, disconnect the AC output side switch and the DC input side switch, and then close the AC output side switch and the DC input side switch again after 5 minutes. 4. After the setting is completed, if the current "PV access mode" is consistent with the actual access mode, but this fault is still reported, please contact the distributor or our company's customer service center.

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
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

9.6 Inverter Software Version Upgrade

To connect USB flash drive for local software upgrading.
Before upgrading the device using a USB flash drive, please contact the after-sales service center to obtain the software upgrade package and upgrade method.

10 Technical Parameters

Technical Data	GW3K-DNS-G40	GW3.6K-DNS-G40	GW4.2K-DNS-G40
Input			
Max. Input Power (W) *2	6,000	7,200	8,400
Max. Input Voltage (V) *3	600	600	600
MPPT Operating Voltage Range (V)	40~560	40~560	40~560
MPPT Voltage Range at Nominal Power (V)	100~500	120~500	140~500
Start-up Voltage (V)	50	50	50
Nominal Input Voltage (V)	360	360	360
Max. Input Current per MPPT (A)	20	20	20
Max. Short Circuit Current per MPPT (A)	26	26	26
Max.Backfeed Current to The Array (A)	0	0	0
Number of MPPT trackers	2	2	2
Number of Strings per MPPT	1	1	1
Output			
Nominal Output Power (W)	3,000	3,600	4200
Nominal Output Apparent Power (VA)	3,000	3,600	4200
Max. AC Active Power (W)	3,000	3,600	4,200

Max. AC Apparent Power (VA)	3,000	3,600	4,200
Nominal Output Voltage (V)	220/230/240,L/N/PE		
Output Voltage Range (V)	196~311 (According to local standard)		
Nominal AC Grid Frequency (Hz)	50/60	50/60	50/60
AC Grid Frequency Range (Hz)	45~55 / 55~65	45~55 / 55~65	45~55 / 55~65
Max. Output Current (A)	13.7	16.4	19.1
Max. Output Fault Current(peak and duration) (A/μs)	42/4	42/4	55/4
Inrush Current(peak and duration) (A/ms)	28.1/12	28.1/12	28.1/12
Nominal Output Current (A)	13.7@220V 13.1@230V 12.5@240V	16.4@220V 15.7@230V 15.0@240V *1	19.1@220V 18.3@230V 17.5@240V
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
Max. Total Harmonic Distortion	<3%		
Efficiency			
Max. Efficiency	98.1%	98.1%	98.1%
European Efficiency	97.2%	97.2%	97.3%
Protection			
PV String Current Monitoring	Integrated		
DC Insulation Resistance Detection	Integrated		

Residual Current Monitoring Unit	Integrated
DC Reverse Polarity Protection	Integrated
Anti-islanding Protection	Integrated
PV String Current Monitoring	Integrated
DC Insulation Resistance Detection	Integrated
Residual Current Monitoring Unit	Integrated
DC Reverse Polarity Protection	Integrated
Anti-islanding Protection	Integrated
AC Overcurrent Protection	Integrated
AC Short Circuit Protection	Integrated
AC Overvoltage Protection	Integrated
DC Switch	Integrated（PV II Optional）
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Arc Fault Circuit Interrupter	Optional
Emergency Power Off	Optional
Rapid Shutdown	Optional
Remote Shutdown	Optional

Power Supply at Night	Optional
General Data	
Operating Temperature Range (℃)	- 25 ~ 60
Relative Humidity	0 ~ 100%
Max. Operating Altitude (m)	< 4000
Cooling Method	Natural Convection
Display	LED+LCD/WiFi+APP/Bluetooth+APP
Communication	RS485, WIFI, LAN, Bluetooth，4G
Communication Protocol	Modbus,Sunspec
Weight (Kg)	9.2
Dimension （W×H×Dmm）	358*323*165
Topology	Transformerless
Night Power Consumption (W)	< 1
Ingress Protection Rating	IP66
Anti-corrosion Class	C4
DC Connector	MC4（4-6mm²）
AC Connector	Plug and play connector (Max.6 mm²)
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
Country of Manufacture ((Only for Australia))	China

Technical Data	GW5K-DNS-G40	GW6K-DNS-G40
Input		
Max. Input Power (W) *2	10,000	12,000
Max. Input Voltage (V) *3	600	600
MPPT Operating Voltage Range (V)	40~560	40-560
MPPT Voltage Range at Nominal Power (V)	165~500	195-500
Start-up Voltage (V)	50	50
Nominal Input Voltage (V)	360	360
Max. Input Current per MPPT (A)	20	20
Max. Short Circuit Current per MPPT (A)	26	26
Max.Backfeed Current to The Array (A)	0	0
Number of MPPT trackers	2	2
Number of Strings per MPPT	1	1
Output		
Nominal Output Power (W)	5,000	6,000
Nominal Output Apparent Power (VA)	5,000	6,000

Max. AC Active Power (W)	5,000	6,000
Max. AC Apparent Power (VA)	5,000	6,000
Nominal Power at 40℃(W)(Only for Brazil)	5,000	6,000
Max Power at 40℃ (Including AC Overload)(W)(Only for Brazil)	5,000	6,000
Nominal Output Voltage (V)	220/230/240,L/N/PE	
Output Voltage Range (V)	196~311 (According to local standard)	
Nominal AC Grid Frequency (Hz)	50/60	
AC Grid Frequency Range (Hz)	45~55 / 55~65	
Max. Output Current (A)	22.8	27.3
Max. Output Fault Current(peak and duration) (A/μs)	55/4	66/4
Inrush Current(peak and duration) (A/ms)	28.1/12	28.1/12
Nominal Output Current (A)	22.8@220V 21.8@230 20.9@240	27.3@220V 26.1@230V 25.0@240V
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)	
Max. Total Harmonic Distortion	<3%	
Efficiency		
Max. Efficiency	98.1%	98.1%
European Efficiency	97.4%	97.4%
Protection		
PV String Current Monitoring	Integrated	

DC Insulation Resistance Detection	Integrated
Residual Current Monitoring Unit	Integrated
DC Reverse Polarity Protection	Integrated
Anti-islanding Protection	Integrated
AC Overcurrent Protection	Integrated
AC Short Circuit Protection	Integrated
AC Overvoltage Protection	Integrated
DC Switch	Integrated(PV II Optional)
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Arc Fault Circuit Interrupter	Optional
Emergency Power Off	Optional
Rapid Shutdown	Optional
Remote Shutdown	Optional
Power Supply at Night	Optional
General Data	
Operating Temperature Range (℃)	- 25~60
Relative Humidity	0~100%
Max. Operating Altitude (m)	< 4000
Cooling Method	Natural Convection

Display	LED+LCD/WiFi+APP/Bluetooth+APP
Communication	RS485, WIFI, LAN, Bluetooth，4G
Communication Protocol	Modbus,Sunspec
Weight (Kg)	9.2
imension (W×H×Dmm)	358*323*165
Topology	Transformerless
Night Power Consumption (W)	< 1
Ingress Protection Rating	IP66
Anti-corrosion Class	C4
DC Connector	MC4 (4-6mm²)
AC Connector	Plug and play connector (Max.6 mm²)
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
Country of Manufacture(Only for Australia)	China

Technical Data	**GW3.1K-DNS-L-G40**
Input	

Max. Input Power (W)	6,200
Max. Input Voltage (V)	550
MPPT Operating Voltage Range (V)	40~480
MPPT Voltage Range at Nominal Power (V)	110V~420V
Start-up Voltage (V)	50
Nominal Input Voltage (V)	230
Max. Input Current per MPPT (A)	20
Max. Short Circuit Current per MPPT (A)	26
Max.Backfeed Current to The Array (A)	0
Number of MPPT trackers	2
Number of Strings per MPPT	1
Output	
Nominal Output Power (W)	3,100
Nominal Output Apparent Power (VA)	3,100
Max. AC Active Power (W)	3,100
Max. AC Apparent Power (VA)	3,100
Nominal Power at 40℃(W)(Only for Brazil)	3,100
Max Power at 40℃ (Including AC Overload)(W)(Only for Brazil)	3,100
Nominal Output Voltage (V)	127V,L/N/PE
Output Voltage Range (V)	114~139
Nominal AC Grid Frequency (Hz)	60
AC Grid Frequency Range (Hz)	59.5~60.2
Max. Output Current (A)	24.4
Max. Output Fault Current(peak and duration) (A/us)	55/4
Inrush Current(peak and duration) (A/ms)	15.6/12
Nominal Output Current (A)	24.4
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)
Max. Total Harmonic Distortion	<3%
Efficiency	

Max. Efficiency	96.4%
European Efficiency	95.9%
Protection	
PV String Current Monitoring	Integrated
DC Insulation Resistance Detection	Integrated
Residual Current Monitoring Unit	Integrated
DC 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 Arrester	Type II
AC Surge Arrester	Type II
DC Arc Fault Circuit Interrupter	Integrated
Emergency Power Off	Optional
Rapid Shutdown	Optional
Remote Shutdown	Optional
Power Supply at Night	Optional
General Data	
Operating Temperature Range (℃)	- 25~60
Relative Humidity	0~100%
Max. Operating Altitude (m)	4000
Cooling Method	Natural Convection
Display	LED, LCD (Optional),WLAN+APP
Communication	RS485, WIFI, LAN, Bluetooth, 4G
Communication Protocol	Modbus-RTU (SunSpec Compliant)
Weight (Kg)	9.2
imension (W×H×Dmm)	358*323*165
Topology	Transformerless

Night Power Consumption (W)	<1
Ingress Protection Rating	IP66
Anti-corrosion Class	C4
DC Connector	MC4(4-6mm²)
AC Connector	Plug and play connector (Max.6 mm²)
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
Country of Manufacture(Only for Australia)	China

*1： About GW3600-DNS-G40 for the UK market,both nominal output current and max output current are 16A

*2： The actual value depends on the specific input power of PV panel

*3: When the input voltage ranges from 560 V to 600 V, the inverter will enter the standby state. When the input voltage returns to the MPPT operating voltage range of 40 V to 560 V, the inverter will resume normal operating state.

11 Explanation of Terms

Overvoltage Category Definition

Category I: applies to equipment connected to a circuit where measures have been taken to reduce transient overvoltage to a low level.

Category II: applies to equipment not permanently connected to the installation. For example, appliances, portable tools and other plug-connected equipment;

Category III: applies to fixed downstream equipment, including the main distribution board. For example, switchgear and other equipment in an industrial installation

Category IV: applies to the upstream equipment in the power supply of the distribution device, including measuring instruments and upstream over-current protection devices.

Definition of Types of Damp Places

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

Definition of Environmental Category:

Outdoor Inverter: The ambient air temperature range is -25 to +60℃, and it is suitable for environments with pollution degree 3.

Indoor Type II Inverter: The ambient air temperature range is -25 to +40℃, and it is suitable for environments with pollution degree 3.

Indoor Type I Inverter: The ambient air temperature range is 0 to +40℃, and it is suitable for environments with pollution degree 2.

Definition of Pollution Degree Categories:

Pollution Degree 1: No pollution or only dry non-conductive pollution.

Pollution Degree 2: In general, there is only non-conductive pollution, but the transient conductive pollution caused by occasional condensation must be taken into account.

Pollution Degree 3: There is conductive pollution, or the non-conductive pollution becomes conductive pollution due to condensation.

Pollution Degree 4: Persistent conductive pollution, such as pollution caused by conductive dust or rain and snow.

12 Obtaining of Relevant Product Manuals

Name of the Document	Official Website Link
Quick Installation Guide for EzLink3000	https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_EzLink_Quick%20Installation%20Guide-EN.pdf
Quick Installation Guide for 4G Kit - CN - G20 & 4G Kit - CN - G21	https://www.goodwe.com/Ftp/Installation-instructions/4G-KIT.pdf
WiFi/LAN Kit-20 & WiFi Kit-20 Quick Installation Guide	https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_WiFi-LAN-Kit-20_WiFi-Kit-20_Quick-Installation-Guide-POLY.pdf
GMK110 to GMK110D Quick Installation Guide	https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_GM1000%20&%20GM3000%20&%20GM1000D_Quick%20Installation%20Guide-POLY.pdf
GM1000& GM3000& Quick Installation Guide for GM1000	https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_GM1000%20&%20GM3000%20&%20GM1000D_Quick%20Installation%20Guide-POLY.pdf
GMK330, GMK360, GM330 Quick Installation Guide	https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_Smart%20Meter-EU_Quick%20Installation%20Guide-POLY.pdf