

G series
7K/7.5K/8K/9K/10K/11K/12K

Grid-Connected Inverter *Installation and Operation Manual*

Contents

1. Introduction	3
1.1 Product Description	3
1.2 Unpacking inspection.....	4
1.3 Packaging	4
1.4 Optional Packaging	5
1.5 Inverter Storage	6
2. Safety Instructions	7
2.1 Safety Symbols	7
2.2 General Safety Instructions	7
2.3 Notice For Use.....	8
3. Overview	9
3.1 Front Panel Display	9
3.2 LED Status Indicator Lights	9
3.3 Keypad	10
3.4 LCD	10
4. Installation	11
4.1 Select Location for the Inverter	11
4.2 Mounting the Inverter.....	13
4.3 Electrical Connections	15
4.3.1 Connect PV side of inverter	15
4.3.2 Connect grid side of inverter	18
4.3.3 External ground connection	20
4.3.4 Max. overcurrent protection device (OCPD).....	21
4.3.5 Inverter monitoring connection	22
4.3.6 CT connections (optional)	23
4.3.7 DRED port connections(optional).....	24
5. Start & Stop	25
5.1 Start the Inverter	25
5.2 Stop the Inverter	25

Contents

6.Operation26

 6.1 SETUP-Technicians Only27

 6.2 Inquire28

 6.3 Statistics28

7.Maintenance29

8.Trouble shooting29

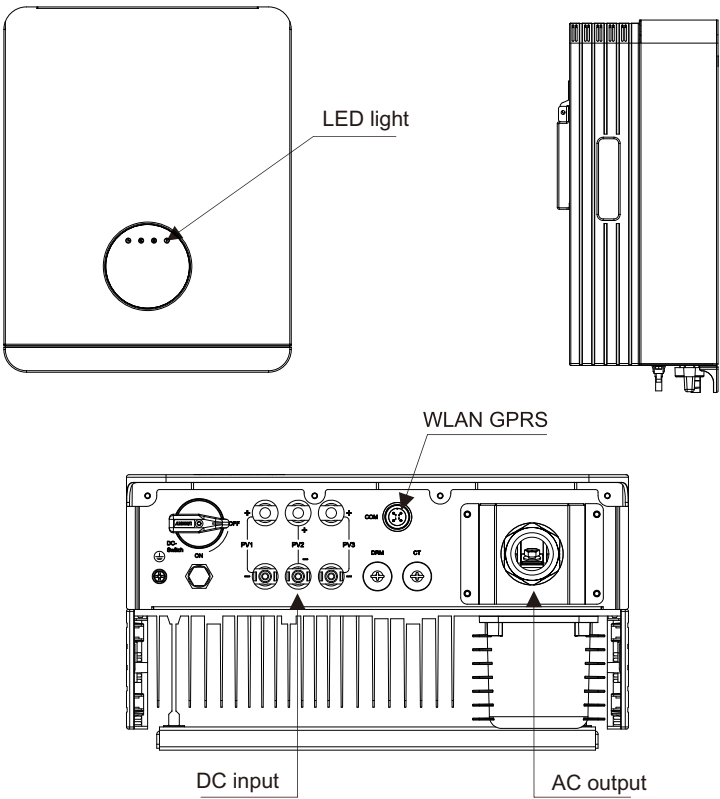
9.Specifications33

10.Quality Assurance41

01 Introduction

1.1 Product Description

G series single phase inverters integrate DRM and backflow power control function , that could suitable for smart grid requirement.



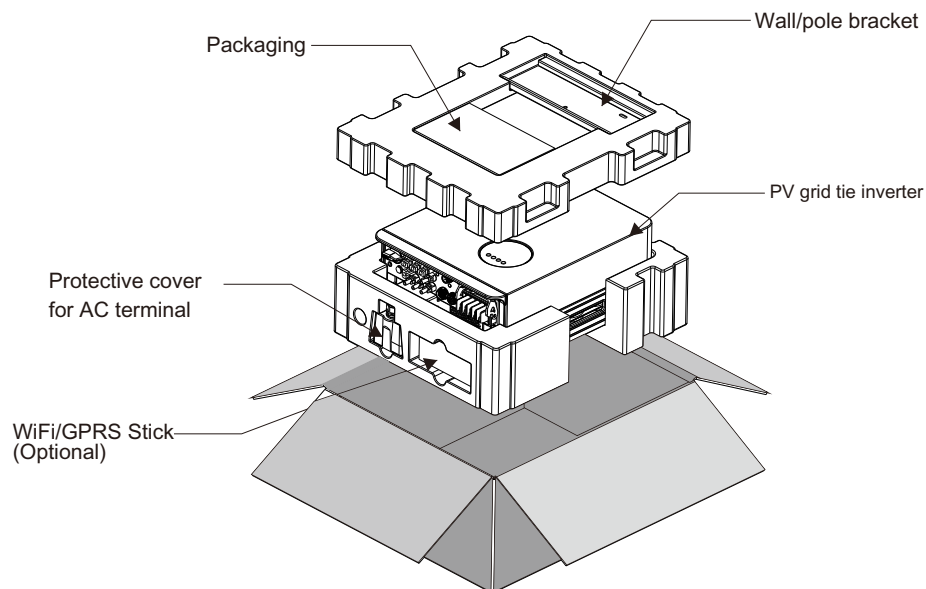
▲ Figure 1.1 Bottom side view

Object	Description	DVC class	Object	Description	DVC class
1	PV	DVC C	2	AC OUTPUT	DVC C
3	DRM	DVC A	4	CT	DVC A
5	COM	DVC A			

1.2 Unpacking Inspection

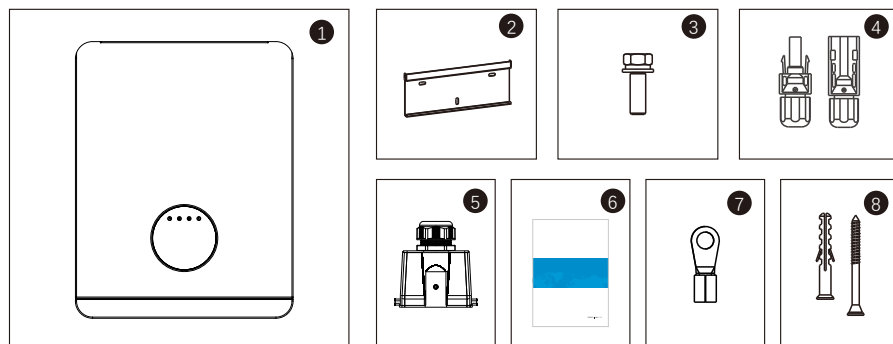
Before opening the inverter package, please check whether the outer package is damaged.

After opening the package, please check whether the inverter appearance is damaged or lack of accessories. The placement of accessories is as follows:



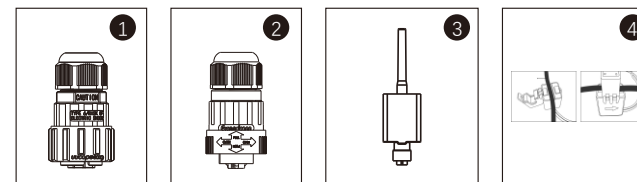
1.3 Packaging

When you receive the inverter, ensure that all the parts listed below are included:



Part #	Description	Model	Number
1	PV grid tie inverter		1
2	Wall/pole bracket		1
3	Locking screws		6
4	PV connection terminal (+,-)	MPPT:2	2
		MPPT:3	3
5	Protective cover for AC terminal		1
6	Manual		1
7	OT terminal		4
8	Self tapping screw and expansion pipe		3/3

1.4 Optional Packaging

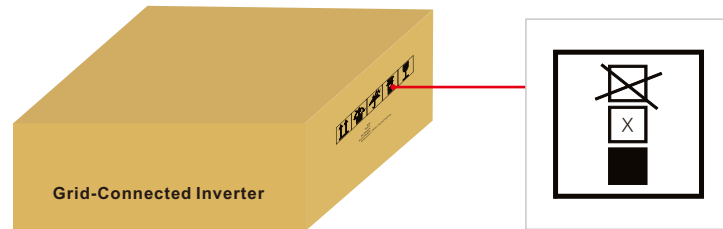


Part #	Description	Number
1	DRM connector	1
2	CT connector	1
3	WiFi/GPRS Stick	1
4	1xCT and com cable	1

1.5 Inverter Storage

Proper storage is required if the inverter is not installed immediately.

- Store the inverter in the original packing case .
- The storage temperature must be always between -40°C and $+70^{\circ}\text{C}$, and the storage relative humidity must be always between 0 and 95%, non-condensing.
- In case of stacking storage, the number of stacking layers should never exceed the limit marked on the outer side of the packing case.



- The packing case should be upright.
- If the inverter has been stored more than half a year, the qualified personnel should thoroughly check and test it before using.

02 Safety Instructions

Improper use may result in potential electric shock hazards or burns. This manual contains important instructions that should be followed during installation and maintenance. Please read these instructions carefully before use and keep them for future reference.

Contact the nearest hazardous waste disposal station when the products or components are discarded.

2.1 Safety Symbols

Safety symbols used in this manual, which highlight potential safety risks and important safety information, are listed as follows:



WARNING:

WARNING symbol indicates important safety instructions, which if not correctly followed, could result in serious injury or death.



NOTE:

NOTE symbol indicates important safety instructions, which if not correctly followed, could result in some damage or the destruction of the inverter.



CAUTION:

CAUTION, RISK OF ELECTRIC SHOCK symbol indicates important safety instructions, which if not correctly followed, could result in electric shock.



CAUTION:

CAUTION, HOT SURFACE symbol indicates safety instructions, which if not correctly followed, could result in burns.

2.2 General Safety Instructions



WARNING:

Only devices in compliance with SELV may be connected to the RS485 and USB interfaces.



WARNING:

Please don't connect PV array positive(+) or negative(-) to ground, it could cause serious damage to the inverter.



WARNING:

Electrical installations must be done in accordance with the local and national electrical safety standards.



WARNING:

Do not damage the grounding conductor, and do not operate the product before the grounding conductor is properly installed. Failure to follow these instructions may result in personal injury or product damage. Please select a measuring device with an appropriate range. Overvoltage may damage the measuring device and cause personal injury.



WARNING:

External protective earthing terminal shall meet at least one of the following requirements:

- When the cross-sectional area of the earthing cable is $\geq 10\text{mm}^2$ (copper) or $\geq 16\text{mm}^2$ (aluminum), it is recommended that both the external protective earthing terminal and the AC side earthing terminal are grounded.
- When the cross-sectional area of the earthing cable is $< 10\text{mm}^2$ (copper) or $< 16\text{mm}^2$ (aluminum), **ensure that** both the external protective earthing terminal and the AC side earthing terminal are grounded.

If alternative earthing methods comply with local standards and relevant safety regulations, the connection may be performed according to such standards and regulations. Our company shall not be held liable for any consequences that may arise therefrom.



WARNING:

Do not touch any inner live parts until 5 minutes after disconnection from the utility grid and the PV input.

WARNING:

To reduce the risk of fire, over-current protective devices (OCPD) are required for circuits connected to the Inverter.
The DC OCPD shall be installed per local requirements. All photovoltaic source and output circuit conductors shall have disconnects that comply with the NEC Article 690, Part II.

CAUTION:

Risk of electric shock. Do not remove cover. There is no user serviceable parts inside. Refer servicing to qualified and accredited service technicians.

CAUTION:

The PV array (Solar panels) supplies a DC voltage when they are exposed to sunlight.

CAUTION:

Risk of electric shock from energy stored in capacitors of the Inverter. Do not remove cover for 5 minutes after disconnecting all power sources(service technician only).
Warranty may be voided if the cover is removed without unauthorized.
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

CAUTION:

The surface temperature of the inverter can reach up to 75°C (167 F).
To avoid risk of burns, do not touch the surface of the inverter while it is operating.
Inverter must be installed out of the reach of children.



PV module used with inverter must have an IEC 61730 Class A rating.

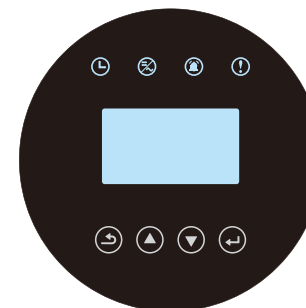
2.3 Notice For Use

The inverter has been constructed according to the applicable safety and technical guidelines. Use the inverter in installations that meet the following specifications only:

1. Permanent installation is required.
2. The electrical installation must meet all the applicable regulations and standards.
3. The inverter must be installed according to the instructions stated in this manual.
4. The inverter must be installed according to the correct technical specifications.
5. To startup the inverter, the Grid Supply Main Switch (AC) must be switched on, before the solar panel's DC isolator shall be switched on. To stop the inverter, the Grid Supply Main Switch (AC) must be switched off before the solar panel's DC isolator shall be switched off.
6. The machine damage caused by the burst grounding fault of the inverter during grid-connected operation is not covered by the warranty.

03 Over view

3.1 Front Panel Display



▲ Figure 3.1 Front Panel Display

3.2 LED Status Indicator Light

The LED status indicator can display red and green. When the indicator light is on, it indicates that there is power. When the indicator light is red, it indicates the alarm state; when the indicator light is green, it indicates the operation state.

Light	Status	Description
	ON	CHECKING: The device is checking.
	ON	Generating: The device is generating the power.
	Twinkle	Generating: flashing indicates that the inverter is being connected to the power grid.
	Twinkle	Alarm: the inverter has an alarm signal.
	ON	FAULT: A fault occurs and the device is not generating.

▲ Table 3.1 status indicator

3.3 Keypad

There are four keys in the front panel of the Inverter from left to right: ESC, UP, DOWN and ENTER keys. The keypad is used for:

- Scrolling through the displayed options (the UP and DOWN keys);
- Access to modify the adjustable settings (the ESC and ENTER keys).

3.4 LCD

The four-line Liquid Crystal Display (LCD) is located on the front panel of the Inverter, which shows the following information:

- Inverter operation status and data;
- Service messages for operator;
- Alarm messages and fault indications.

You can also get information via WiFi / GPRS.

04 Installation

4.1 Select a Location for the Inverter

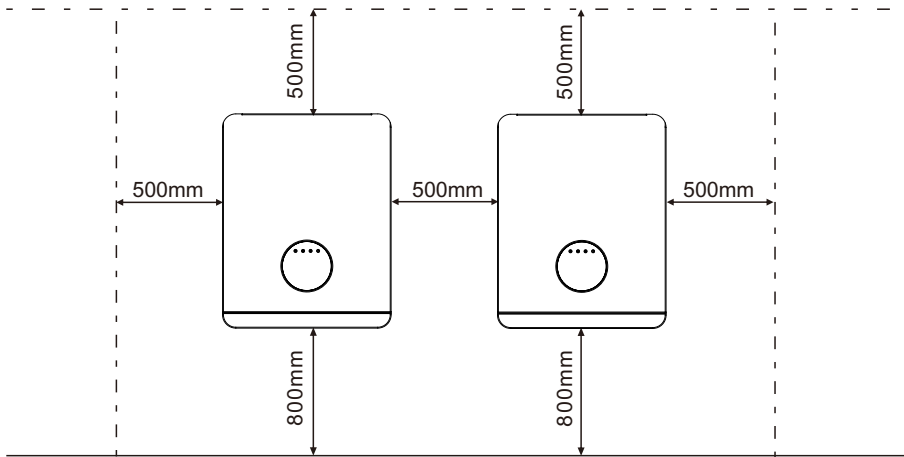
To select location for the inverter, the following criteria should be considered:

- Do not install in small closed spaces where air can not circulate freely. To avoid overheating, always make sure the flow of air around the inverter is not blocked.
- Exposure to direct sunlight will increase the operational temperature of the inverter and may cause output power limiting. Company recommends inverter installed to avoid direct sunlight or raining.
- To avoid overheating ambient air temperature must be considered when choosing the inverter installation location. Company recommends using a sun shade minimizing direct sunlight when the ambient air temperature around the unit exceeds 104°F/40°C.



▲ Figure4.1 Recommended Installation locations

- Install on a wall or strong structure capable of bearing the weight.
- Install vertically with a maximum incline of $\pm 5^\circ$. If the mounted inverter is tilted to an angle greater than the maximum noted, heat dissipation can be inhibited, and may result in less than expected output power.
- When 1 or more inverters are installed in one location, a minimum 500mm clearance should be kept between each inverter or other object (if a canopy is added, a distance of 500mm must also be kept, it is necessary to install the canopy first and then fix the inverter to avoid the blocking of the fan caused by the cement debris falling during drilling). The bottom of the inverter should be 800mm clearance to the ground.



▲ Figure 4.2 Inverter Mounting clearance

- Visibility of the LED status indicator lights and the LCD located at the front panel of the inverter should be considered.
- Adequate ventilation must be provided if the inverter is to be installed in a confined space.

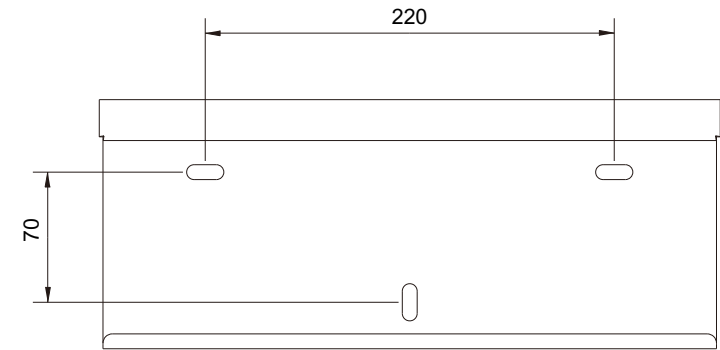


NOTE:

Nothing should be stored on or placed against the inverter.
It is not allowed to lay the machine horizontally for a long time, which will affect the heat dissipation.

4.2 Mounting the Inverter

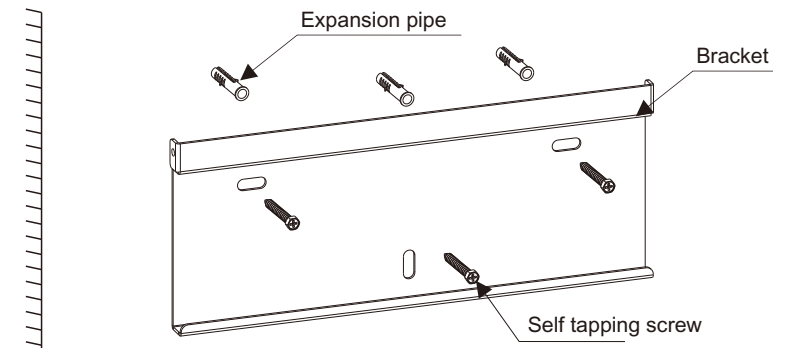
Dimensions of wall bracket:



▲ Figure 4.3 Inverter wall mounting

Please see Figure 4.4 and Figure 4.5 for instruction on mounting the inverter.

The inverter shall be mounted vertically. The steps to mount the inverter are listed below:
1. According to Figure 4.2, select the bracket mounting height and mark the mounting hole. After marking, punch the hole according to the mark. For brick wall drilling, expansion bolts shall be suitable for fixing.



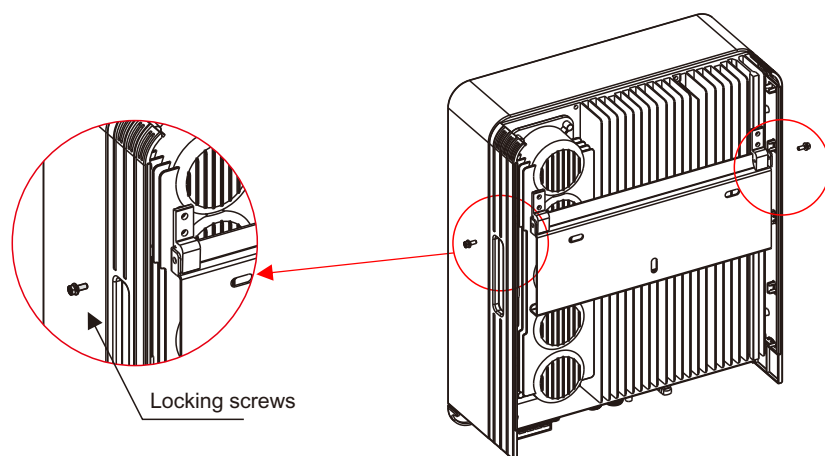
▲ Figure 4.4 Inverter wall mounting

2. Make sure that the bracket is horizontal and the mounting hole (as shown in Figure 4.4) is correctly marked, and drive the expansion pipe into the wall with a hammer.
3. Use the suitable screws to fix the bracket to the wall.

**WARNING:**

The inverter must be mounted vertically.

4. Lift up the inverter (be careful to avoid body strain), and align the back bracket on the inverter with the convex section of the mounting bracket. Hang the inverter on the mounting bracket and make sure the inverter is secure (see Figure 4.5).



▲ Figure 4.5 Wall Mount Bracket

5. Use M4 screws in accessory to lock the inverter to the mount bracket.

4.3 Electrical Connections

4.3.1 Connect PV side of inverter

The electrical connection of the inverter must follow the steps listed below:

1. Switch the Grid Supply Main Switch (AC) OFF.
2. Switch the DC Isolator OFF.
3. Assemble PV input connector to the Inverter.



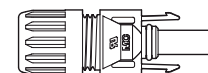
Check whether the polarity of the connecting cable of the photovoltaic string is correct, and ensure that the open circuit voltage under any condition does not exceed the upper limit of the inverter input value of 1100V.



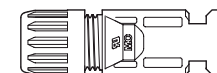
Please don't connect PV array positive or negative pole to the ground, it could cause serious damages to the inverter.



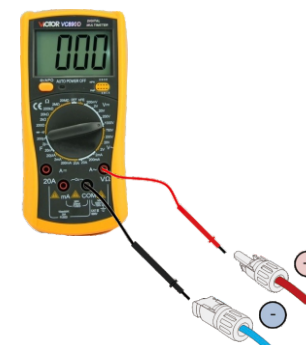
Before connection, please make sure the polarity of the output voltage of PV array matches the "PV+" and "PV-" symbols.



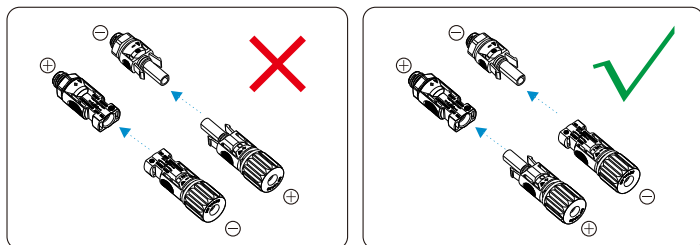
▲ Figure 4.6 PV+ Connector



▲ Figure 4.7 PV- Connector



Check the positive and negative polarity of the PV strings, and connect the PV connectors to the right terminals. Serious damages to the inverter and connector over temperature may occur.



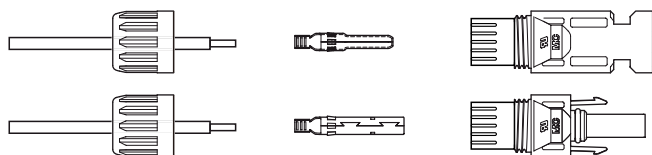
Please use approved DC cable for PV system.

Cable type	Cross section	
	Range	Recommended value
Industry generic PV cable(model:PV1-F)	4.0-6.0 (12-10AWG)	4.0 (12AWG)

▲ Table 4.1 DC cable

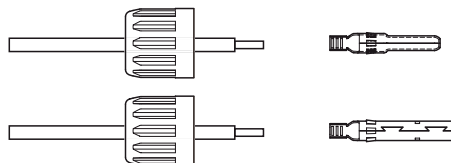
The steps to assemble the DC connectors are listed as follows:

1. Strip off the DC wire for about 7mm, Disassemble the connector cap nut.



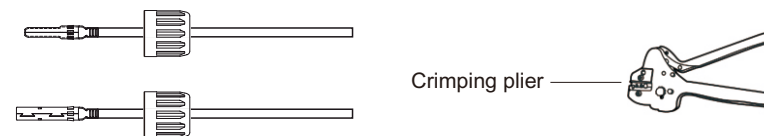
▲ Figure 4.8 Disassemble the Connector Cap nut

2. Insert the wire into the connector cap nut and contact pin.



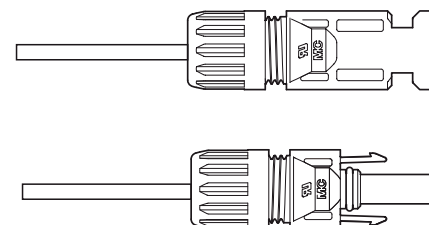
▲ Figure 4.9 Insert the Wire into the Connector Cap nut and contact pin

3. Crimp the contact pin to the wire using a proper wire crimper.



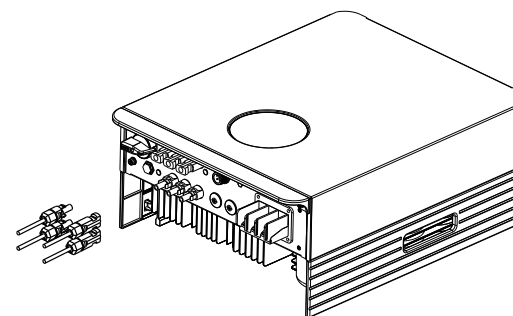
▲ Figure 4.10 Crimp the contact pin to the wire

4. Insert the contact pin to the top part of the connector and screw up the cap nut to the top part of the connector.



▲ Figure 4.11 Connector with Cap nut Screwed on

5. Then connect the DC connectors to the inverter. Small click will confirm connection.

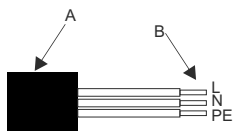


▲ Figure 4.12 Connect the DC Connectors to the Inverter

4.3.2 Connection of AC output

WARNING:


There are "L" "N" "PE" symbols marked inside the connector, the Line wire of grid must be connected to "L" terminal; the Neutral wire of grid must be connected to "N" terminal; the Earth of grid must be connected to "PE"



Object	Description	Value
A	External diameter	10mm
B	Copper conductor cross-section	4mm ²

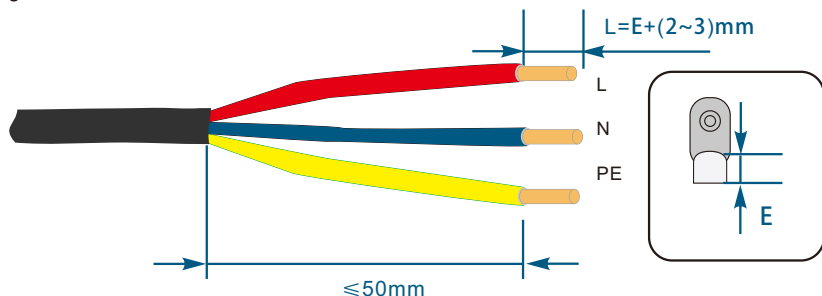
Model	Cable outer diameter range	Cross section Range	Recommended cable section wire diameter
7K-12K	φ18~φ25mm	10-16mm ²	16mm ²

▲ Table 4.2 AC cable

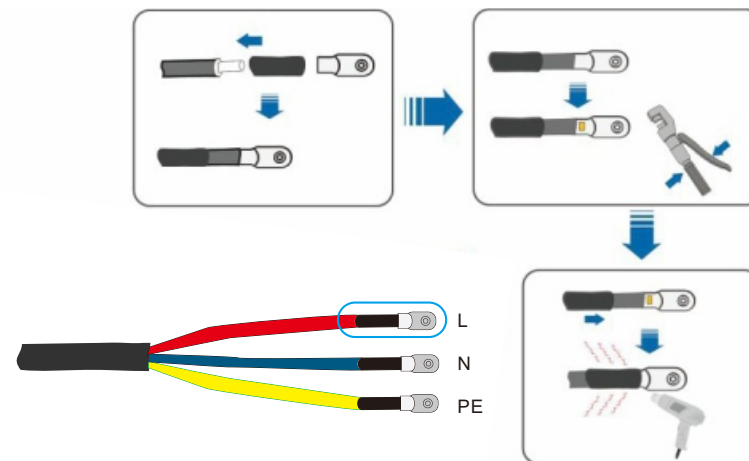
Connect grid side of inverter

1. First check the AC circuit breaker and disconnect the inverter and the grid
2. Use wire stripper to peel the outer surface of the cable for about 50 mm, and then peel off the wire skin of 3 wires, as shown in the figure below;

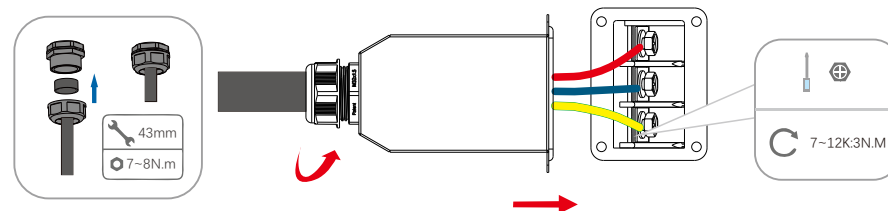
Step 1. Strip the protection layer and insulation layer by specific length, as described in the figure below.



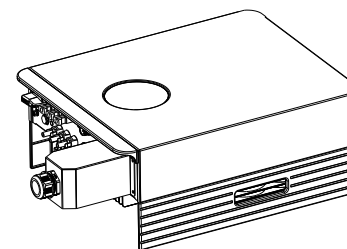
Step 2. Make the cable and crimp the OT terminal.



Step 3. Follow the instruction and secure the cable to corresponding terminals.



Step 4. Secure the junction box, and secure it with screw.

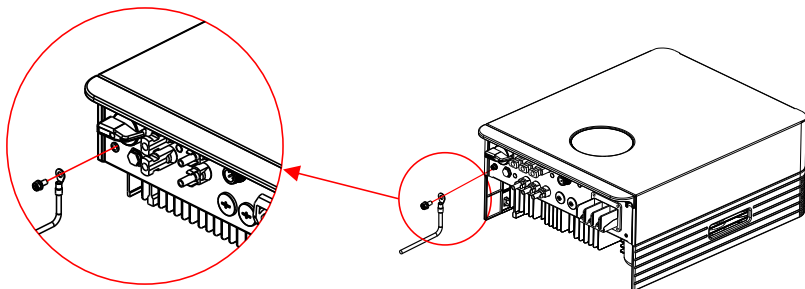


▲Figure 4.13 Connect the AC Connector to the Inverter

4.3.3 External ground connection

An external ground connection is provided at the right side of inverter.

Prepare OT terminal, tighten the screw. The machine comes with it. Use appropriate tools to screw out the screw and crimp the lug to the terminal.



▲ Figure 4.14 Connect the external grounding conductor

4.3.4 Max, over current protection device (OCPD)

To protect the inverter's PV and AC grid connection conductors, Company recommends installing breakers that will protect against overcurrent. The following table defines OCPD ratings for the inverters.

Inverter	Rated output voltage(V)	Rated output current (A)	Current for protection device (A)
G7K/G7K1/G7K2	220/230	31.8	75
G7.5K1/G7.5K2	220/230	34.1	75
G8K/G8K1/G8K2	220/230	36.4	75
G9K/G9K1/G9K2	220/230	40.9	75
G10K/G10K1/G10K2/G10K6	220/230	45.5	75
G11K/G11K1	220/230	50	75
G12K/G12K1	220/230	54.5	75

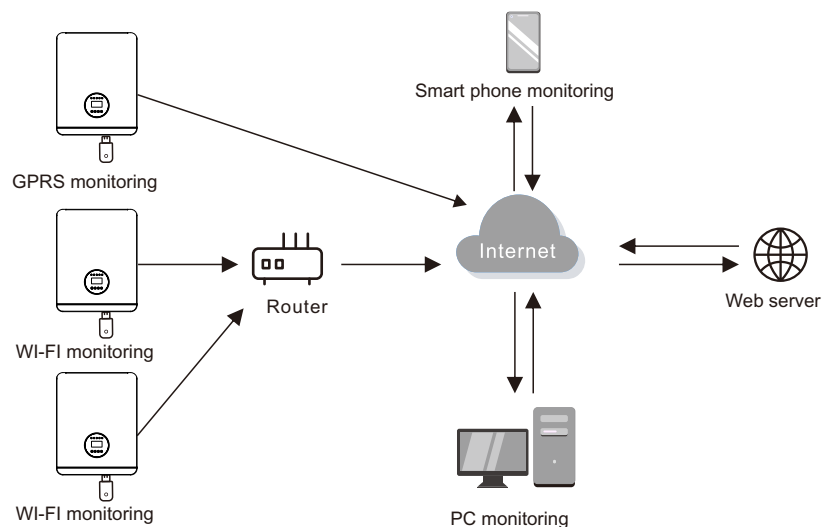
▲ Table 4.3 OCPD level of power grid

Inverter	Rated input voltage(V)	Max. input current (A)	Current for protection device (A)
G7K	360	15	22.5
G7K1	360	20	30
G7K2	360	18	27
G7.5K1	360	20	30
G7.5K2	360	18	27
G8K	360	15	22.5
G8K1	360	20	30
G8K2	360	18	27
G9K	360	15	20
G9K1	360	20	30
G9K2	360	18	27
G10K	360	15	22.5
G10K1	360	20	30
G10K2	360	18	27
G10K6	360	20	30
G11K	360	15	20
G11K1	360	20	25
G11K2	360	18	27
G12K	360	15	20
G12K1	360	20	25
G12K2	360	18	27

▲ Table 4.4 PV OCPD ratings

4.3.5 Inverter monitoring connection

The inverter can be monitored via Wi-Fi or GPRS. All communication devices are optional .
For connection instructions, please refer to the Monitoring Device installation manuals.

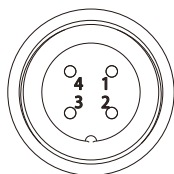


▲ Figure 4.15 Communication function

The inverter is equipped with standard RS485 and WLAN/GPRS communication ports, and the RS485 communication port is mainly used for the software upgrade, WLAN/GPRS communication port is for inverter wireless monitoring.

Pin	Description	Pin	Description
1	VCC	3	485A
2	GND	4	485B

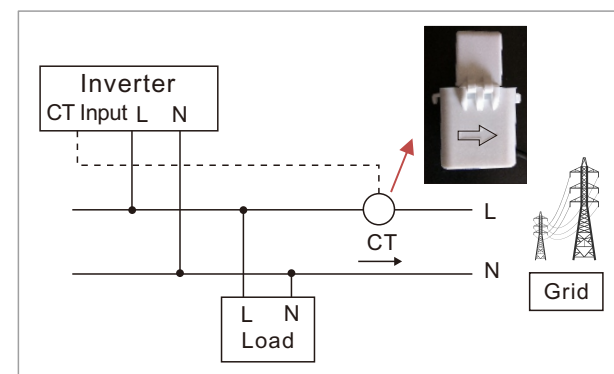
▲ Table 4.5



▲ Figure 4.16 Inverter WLAN/GPRS port

4.3.6 CT connections(optional)

This inverter has integrated export limitation functionality. To use this function, a CT must be installed, if use the CT, please reference below picture. The CT should be fitted around the live conductor on the grid side of the main incoming consumer unit. Use the directional flow indication arrow on the CT to ensure it is fitted in the correct orientation. The arrow should be pointing towards the grid , not the load.

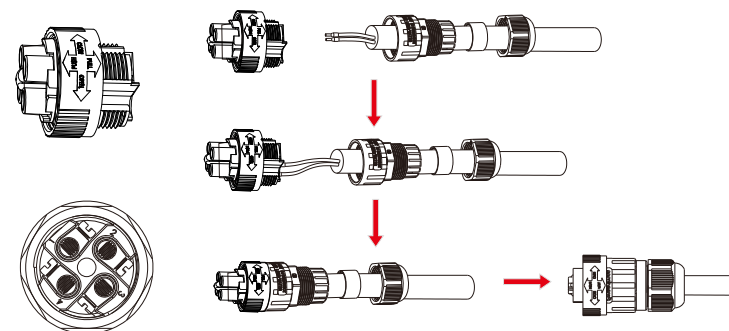


▲ Figure 4.17 Direction of CT

Pin	Description	Pin	Description
1	CT positive electrode	3	485A
2	CT negative pole	4	485B

▲ Table 4.6

Please follow below figure to assemble CT connector.



▲ Figure 4.18 CT connector

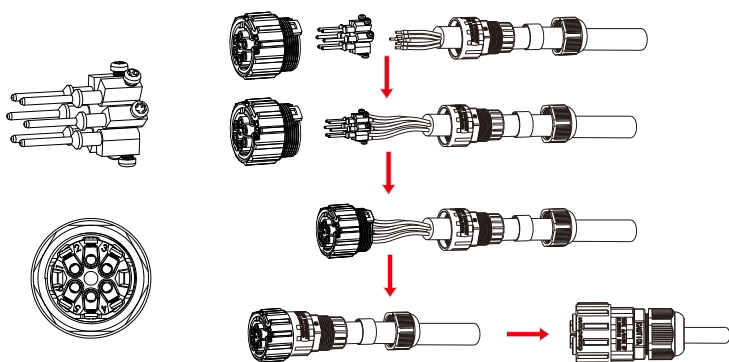
4.3.7 DRED port connections(optional)

DRED means demand response enable device. The AS/NZS 4777.2:2015 required inverter need to support demand response mode(DRM). This function is for inverter that comply with AS/NZS 4777.2:2015 standard. G series inverter is fully comply with all DRM. A 6P terminal is used for DRM connection.

Pin	Description	Pin	Description
1	DRM 1/5	4	DRM 4/8
2	DRM 2/6	5	RefGen
3	DRM 3/7	6	Com/DRM0

▲ Table 4.7

Please follow below figure to assemble DRM connector.



▲ Figure 4.19 DRM connector

05 Start&Stop

5.1 Start the Inverter

To start up the Inverter, it is important that the following steps are strictly followed:

1. Switch the grid supply main Switch (AC) ON first.
2. Switch the DC switch ON. If the voltage of PV arrays are higher than start up voltage, the inverter will turn on. The LED status indicator will light.
3. When both the DC and the AC sides supply to the inverter, it will be ready to generate power. Initially, the inverter will check both its internal parameters and the parameters of the AC grid, to ensure that they are within the acceptable limits. At the same time, the green LED will flash and the LCD displays the information of INITIALIZING.
4. After 60-300 seconds (depending on local requirement), the inverter will start to generate power. The green LED will be on continually and the LCD displays GENERATING.



WARNING:

Do not touch the surface when the inverter is operating. It may be hot and cause burns.

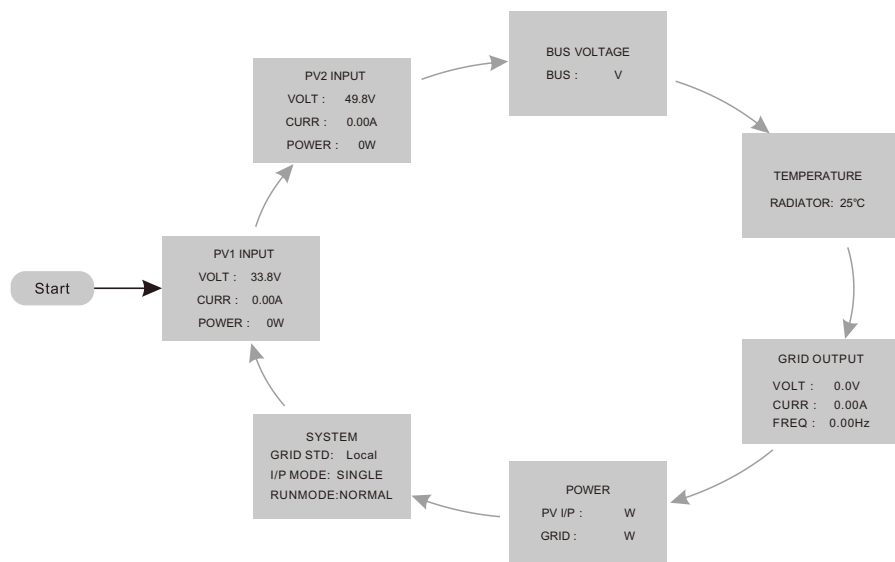
5.2 Stop the Inverter

To stop the Inverter, the following steps must be strictly followed:

1. Switch the Supply Main Switch (AC) OFF.
2. Wait 30 seconds. Switch the DC Switch OFF. All the LEDs of the inverter will be off in one minute.

06 Operation

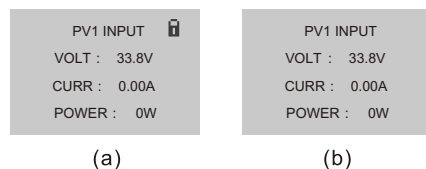
During normal operation, the display alternately shows various status information (see Figure 6.1). Screens can also be scrolled manually by pressing the UP and DOWN keys.



▲ Figure 6.1 Operation Overview

Lock screen

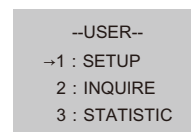
Pressing the ENTER key locks (Figure 6.2(a)) or unlocks (Figure 6.2 (b)) the screen.



▲ Figure 6.2 Locks and Unlocks the Screen of LCD

Main Menu

Press the ESC key to access to the Main Menu , there are three submenus in the Main Menu (see Figure 6.3) :



▲ Figure 6.3 Main Menu

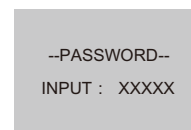
6.1 SETUP-Technicians Only



NOTE:

To access to this area is for fully qualified and accredited technicians only. Enter menu "SETUP" need password.

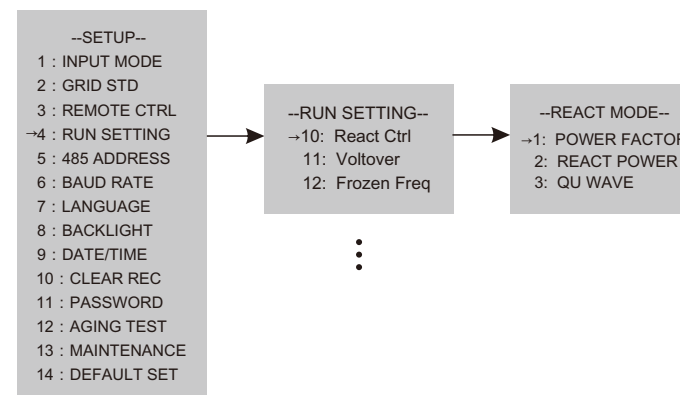
Select "SETUP" from the Main Menu. The screen will require the password as below.



▲ Figure 6.4 Enter password

The default password is "00000". Please press "ENTER" to move the cursor backwards or confirm the setting, press "up" / "DOWN" to select the number, press "ESC" to move the cursor forward or return to the Main Menu.

After enter the correct password the Main Menu will display a screen and be able to access to the following information, You can also continue to access the next menu level. Password can be changed through item 11.



**NOTE:**

"POWER FACTOR" mode is selected by default, and "QU WAVE" or other modes can be selected through this page.

6.1.1 Set DATE/TIME

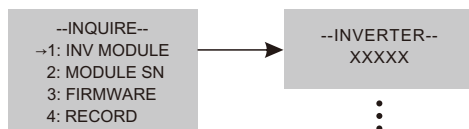
Please set the time and date after starting the inverter for the first time.

```
--DATE/TIME--  
DATE : 2020-06-06  
TIME : 10 : 01 : 12  
WEEK : 6
```

▲ Figure 6.5 Set Date/Time

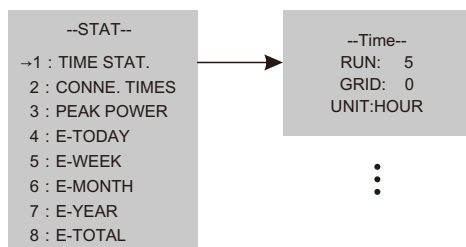
6.2 INQUIRE

The following submenus are displayed when the Inquiry menu is selected, You can also continue to access the next menu level.



6.3 Statistics

Select Statistics from the Main Menu to access the following options, You can also continue to access the next menu level.



07

Maintenance

Blue Single Phase Inverter does not require any regular maintenance. However, cleaning the dust on heat-sink will help the inverter to dissipate the heat and increase its life time. The dust can be removed with a soft brush.

**CAUTION:**

Do not touch the inverter's surface when it is operating. Some parts of the inverter may be hot and cause burns. Turn off the inverter (refer to Section 5.2) and wait for a cool-down period before any maintenance or cleaning operation.

The LCD and the LED status indicator lights can be cleaned with a damp cloth if they are too dirty to be read.

**NOTE:**

Never use any solvents, abrasives or corrosive materials to clean the inverter.

08

Trouble shooting

It is very easy for the inverter's maintenance. When you meet any problems, please refer to the following trouble shooting first, please contact your local distributor if the problem can't be solved by yourself.

The following sheet lists some basic questions may encounter in the operation.

Alarm Message	Failure description	Solution
F00-F03	AC voltage & frequency are too high or too low.	1. Please check mains voltage whether it is complied with local safety standard 2. Please check the AC output line is properly connected. Make sure its output voltage to see if it is normal. 3. Disconnect PV input and restart the inverter and check whether.
F04-F05	Bus voltage is too high or too low.	1. Please check the setting of input mode 2. Disconnect PV input and restart the inverter and check whether fault still exists.
F06	Bus voltage is Unbalance	1. Please check the setting of input mode. 2. Disconnect PV input and restart the inverter and check whether fault still exists.
F07	Insulation impedance Fault	1. Disconnect PV input and restart the inverter and check whether fault still exists. 2. Please measure impedance of PV+/PV- to ground whether is over than 500KΩ.
F08	Input Current High	1. Please check the setting of input mode. 2. Disconnect PV input and restart the inverter and check whether fault still exists.
F09	Hardware Current High	1. Disconnect PV input and restart the inverter after few minutes and check whether fault still exists.
F10	Inverter Current High	1. Disconnect PV input and restart the inverter after few minutes and check whether fault still exists.
F11	Inverter DC Current high	1. Disconnect PV input and restart the inverter after few minutes and check whether fault still exists.
F12	Amb Temperatur Over	1. Disconnect PV input and cool down the inverter then restart the inverter to see if it is back to normal operation. 2. Please check environmental temperature whether out of working temperature.

Alarm Message	Failure description	Solution
F13	Heatsink Temperature High	1. Disconnect PV input and cool down the inverter then restart the inverter to see if it is back to normal operation. 2. Please check environmental temperature whether out of working temperature.
F14	AC Relay Fault	1. Disconnect PV input and restart the inverter and check whether fault still exists.
F15	PV Input Voltage Low	1. Please check the configuration of PV input, one of PV input is idle when inverter is set on parallel mode. 2. Disconnect the PV input and restart the inverter and check whether fault still exists.
F16	Remote Off	1. The inverter is on remote OFF status, the Inverter can be turned, off/on remotely by monitoring software.
F18	SPI communication Fault	1. Disconnect PV input and restart the inverter and check whether fault still exists.
F20	Leakage Current High	1. Disconnect PV input and restart the inverter and check whether fault still exists.
F21	Leakage Current Self-Checking Failure	1. Disconnect PV input and restart the inverter and check whether fault still exists. 2. Contact with your local distributor if the fault still exists.
F22	Consistency Voltage Fault	1. Disconnect PV input and restart the inverter and check whether fault still exists. 2. Contact with your local distributor if the fault still exists.
F23	Consistency Frequency Fault	1. Disconnect PV input and restart the inverter and check whether fault still exists. 2. Contact with your local distributor if the fault still exists.

Alarm Message	Failure description	Solution
F24	DSP Operation Fault	1.Disconnect PV input and restart the inverter and check whether fault still exists. 2.Contact with your local distributor if the fault still exists.
F26	IGBT Fault	1.Disconnect PV input and restart the inverter and check whether fault still exists. 2.Contact with your local distributor if the fault still exists.
F31	AFCI Module Fault	1.Disconnect PV input and restart the inverter and check whether fault still exists. 2.Contact with your local distributor if the fault still exists.
F32	DSP communication Lost	1.Disconnect PV input and restart the inverter and check whether fault still exists. 2.Contact with your local distributor if the fault still exists.
F33	AFCI Fault	1.Disconnect PV input and restart the inverter and check whether fault still exists. 2.Contact with your local distributor if the fault still exists.
W00	Fan A Lock	1.Disconnect PV input and restart the inverter and check whether fault still exists. 2.Contact with your local distributor if the fault still exists.
W01	Fan B Lock	1.Disconnect PV input and restart the inverter and check whether fault still exists. 2.Contact with your local distributor if the fault still exists.

▲ Table 8.1 Trouble shooting

NOTE:

If the inverter displays any alarm message as listed in Table 8.1; please turn off the inverter (refer to Section 5.2 to stop your inverter) and wait for 5 minutes before restarting it (refer to Section 5.1 to start your inverter). If the failure persists, please contact your local distributor or the service center. Please keep ready with you the following information before contacting us.

1. Serial number of G Single Phase Inverter;
2. The distributor/dealer of G Single Phase Inverter (if available);
3. Installation date.
4. The description of problem (i.e. the alarm message displayed on the LCD and the status of the LED status indicator lights. Other readings obtained from the Information submenu will also be helpful.) ;
5. The PV array configuration (e.g. number of panels, capacity of panels, number of strings ,etc.);
6. Your contact details.

09 Specifications

Model Specifications	G7K	G7K1	G7K2
Max. DC power	10500W	10500W	10500W
Max. DC voltage	600Vd.c.		
Normal DC voltage	360Vd.c.		
Start Voltage	80Vd.c.		
MPPT voltage range	60-550Vd.c.		
Number of MPPT trackers	3	2	3
Strings per MPPT tracker	1	1	1
Max. input current per MPPT tracker	15Ad.c. *3	20Ad.c.*2	18Ad.c. *3
PV short circuit current	22.5Ad.c.*3	30Ad.c.*2	27Ad.c.*3
Normal AC output Power	7000W	7000W	7000W
Max. AC output Power	7000W	7000W	7000W
Max. Apparent Power	7000VA	7000VA	7000VA
Normal AC voltage	220/230Va.c.		
Normal AC grid frequency	50/60Hz		
Max. output current	31.8Aa.c.		
Inrush current	< 31.8Aa.c.		
Max. output fault current	102Ad.c.		
Max. inverter backfeed current to the array	0Ad.c.		
Max. output overcurrent protection	75Ad.c.		
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
THDI	<3%		
Topology	Transformer less		
Max. efficiency	98.1%		
Euro-eta	97.5%		
Dimensions (W / L / D)	380*483*161mm		
Weight(KG)	14.5	14	14.5
Operating temperature range	-25℃~+60℃		
Relative humidity	0-100%		
Operating Altitude	≤4000m		
Noise (typical)	≤ 35dB		
Cooling concept	Natural		
Protection rating	IP66		
Protection class	I		
Overvoltage category (PV/AC)	II/III		
Pollution degree	2		
User Interface	LED & LCD		
Communication	RS485/WIFI/GPRS		

09 Specifications

Model Specifications	G7.5K1	G7.5K2
Max. DC power	11250	
Max. DC voltage	600Vd.c.	
Normal DC voltage	360Vd.c.	
Start Voltage	80Vd.c.	
MPPT voltage range	60-550Vd.c.	
Number of MPPT trackers	2	3
Strings per MPPT tracker	1	1
Max. input current per MPPT tracker	20Ad.c.*2	18Ad.c.*3
PV short circuit current	30Ad.c.*2	27Ad.c.*3
Normal AC output Power	7500W	
Max. AC output Power	7500W	
Max. Apparent Power	7500VA	
Normal AC voltage	220/230Va.c.	
Normal AC grid frequency	50/60Hz	
Max. output current	34.1Aa.c.	
Inrush current	< 34.1Aa.c.	
Max. output fault current	102Ad.c.	
Max. inverter backfeed current to the array	0Ad.c.	
Max. output overcurrent protection	75Ad.c.	
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)	
THDI	<3%	
Topology	Transformer less	
Max. efficiency	98.1%	
Euro-eta	97.5%	
Dimensions (W / L / D)	380*483*161mm	
Weight(KG)	14	14.5
Operating temperature range	-25°C~+60°C	
Relative humidity	0-100%	
Operating Altitude	≤4000m	
Noise (typical)	≤ 35dB	
Cooling concept	Natural	
Protection rating	IP66	
Protection class	I	
Overvoltage category (PV/AC)	II/III	
Pollution degree	2	
User Interface	LED & LCD	
Communication	RS485/WIFI/GPRS	

09 Specifications

Model Specifications	G8K	G8K1	G8K2
Max. DC power	12000W		
Max. DC voltage	600Vd.c.		
Normal DC voltage	360Vd.c.		
Start Voltage	80Vd.c.		
MPPT voltage range	60-550Vd.c.		
Number of MPPT trackers	3	2	3
Strings per MPPT tracker	1	1	1
Max. input current per MPPT tracker	15Ad.c.*3	20Ad.c.*2	18Ad.c.*3
PV short circuit current	22.5Ad.c.*3	30Ad.c.*2	27Ad.c.*3
Normal AC output Power	8000W		
Max. AC output Power	8000W		
Max. Apparent Power	8000VA		
Normal AC voltage	220/230Va.c.		
Normal AC grid frequency	50/60Hz		
Max. output current	36.4Aa.c.		
Inrush current	< 36.4Aa.c.		
Max. output fault current	102Ad.c.		
Max. inverter backfeed current to the array	0Ad.c.		
Max. output overcurrent protection	75Ad.c.		
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
THDI	<3%		
Topology	Transformer less		
Max. efficiency	98.1%		
Euro-eta	97.5%		
Dimensions (W / L / D)	380*483*161mm		
Weight(KG)	14.5	14	14.5
Operating temperature range	-25°C~+60°C		
Relative humidity	0-100%		
Operating Altitude	≤4000m		
Noise (typical)	≤ 35dB		
Cooling concept	Natural		
Protection rating	IP66		
Protection class	I		
Overvoltage category (PV/AC)	II/III		
Pollution degree	2		
User Interface	LED & LCD		
Communication	RS485/WIFI/GPRS		

09 Specifications

Model Specifications	G9K	G9K1	G9K2
Max. DC power		13500W	
Max. DC voltage		600Vd.c.	
Normal DC voltage		360Vd.c.	
Start Voltage		80Vd.c.	
MPPT voltage range		60-550Vd.c.	
Number of MPPT trackers	3	2	3
Strings per MPPT tracker	1	1	1
Max. input current per MPPT tracker	15Ad.c. *3	20Ad.c.*2	18Ad.c. *3
PV short circuit current	22.5Ad.c.*3	30Ad.c.*2	27Ad.c.*3
Normal AC output Power		9000W	
Max. AC output Power		9000W	
Max. Apparent Power		9000VA	
Normal AC voltage		220/230Va.c.	
Normal AC grid frequency		50/60Hz	
Max. output current		40.9Aa.c.	
Inrush current		< 40.9Aa.c.	
Max. output fault current		102Ad.c.	
Max. inverter backfeed current to the array		0Ad.c.	
Max. output overcurrent protection		75Ad.c.	
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
THDI		<3%	
Topology		Transformer less	
Max. efficiency		98.1%	
Euro-eta		97.5%	
Dimensions (W / L / D)		380*483*161mm	
Weight(KG)	15	14.5	15
Operating temperature range		-25 °C~+60 °C	
Relative humidity		0-100%	
Operating Altitude		≤4000m	
Noise (typical)		≤ 35dB	
Cooling concept		Natural	
Protection rating		IP66	
Protection class		I	
Overvoltage category (PV/AC)		II/III	
Pollution degree		2	
User Interface		LED & LCD	
Communication		RS485/WIFI/GPRS	

09 Specifications

Model Specifications	G10K	G10K1	G10K2	G10K6
Max. DC power		15000W		
Max. DC voltage		600Vd.c.		
Normal DC voltage		360Vd.c.		
Start Voltage		80Vd.c.		
MPPT voltage range		60-550Vd.c.		
Number of MPPT trackers	3	2	3	3
Strings per MPPT tracker	1	1	1	1
Max. input current per MPPT tracker	15Ad.c. *3	20Ad.c.*2	18Ad.c.*3	20/20/16Ad.c.
PV short circuit current	22.5Ad.c.*3	30Ad.c.*2	27Ad.c.*3	30/30/24Ad.c.
Normal AC output Power		10000W		
Max. AC output Power		10000W		
Max. Apparent Power		10000VA		
Normal AC voltage		220/230Va.c.		
Normal AC grid frequency		50/60Hz		
Max. output current		45.5Aa.c.		
Inrush current		< 45.5Aa.c.		
Max. output fault current		102Ad.c.		
Max. inverter backfeed current to the array		0Ad.c.		
Max. output overcurrent protection		75Ad.c.		
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)			
THDI		<3%		
Topology		Transformer less		
Max. efficiency		98.1%		
Euro-eta		97.5%		
Dimensions (W / L / D)	380*483*161mm		380*483*193mm	
Weight(KG)	15	14.5	18	18
Operating temperature range		-25 °C~+60 °C		
Relative humidity		0-100%		
Operating Altitude		≤4000m		
Noise (typical)		≤ 35dB		
Cooling concept		Natural		
Protection rating		IP66		
Protection class		I		
Overvoltage category (PV/AC)		II/III		
Pollution degree		2		
User Interface		LED & LCD		
Communication		RS485/WIFI/GPRS		

09 Specifications

Model Specifications	G11K	G11K1	G11K2
Max. DC power	16500W		
Max. DC voltage	600Vd.c.		
Normal DC voltage	360Vd.c.		
Start Voltage	80Vd.c.		
MPPT voltage range	60-550Vd.c.		
Number of MPPT trackers	3	2	3
Strings per MPPT tracker	1	1	1
Max. input current per MPPT tracker	15Ad.c. *3	20Ad.c.*2	18Ad.c. *3
PV short circuit current	22.5Ad.c.*3	30Ad.c.*2	27Ad.c.*3
Normal AC output Power	11000W		
Max. AC output Power	11000W		
Max. Apparent Power	11000VA		
Normal AC voltage	220/230Va.c.		
Normal AC grid frequency	50/60Hz		
Max. output current	50Aa.c.		
Inrush current	< 50Aa.c.		
Max. output fault current	102Ad.c.		
Max. inverter backfeed current to the array	0Ad.c.		
Max. output overcurrent protection	75Ad.c.		
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
THDI	<3%		
Topology	Transformer less		
Max. efficiency	98.1%		
Euro-eta	97.5%		
Dimensions (W / L / D)	380*483*193mm		
Weight(KG)	18	17.5	18
Operating temperature range	-25°C~+60°C		
Relative humidity	0-100%		
Operating Altitude	≤4000m		
Noise (typical)	≤ 35dB		
Cooling concept	Natural		
Protection rating	IP66		
Protection class	I		
Overvoltage category (PV/AC)	II/III		
Pollution degree	2		
User Interface	LED & LCD		
Communication	RS485/WIFI/GPRS		

09 Specifications

Model Specifications	G12K	G12K1	G12K2
Max. DC power	18000W		
Max. DC voltage	600Vd.c.		
Normal DC voltage	360Vd.c.		
Start Voltage	80Vd.c.		
MPPT voltage range	60-550Vd.c.		
Number of MPPT trackers	3	2	3
Strings per MPPT tracker	1	1	1
Max. input current per MPPT tracker	15Ad.c. *3	20Ad.c.*2	18Ad.c. *3
PV short circuit current	22.5Ad.c.*3	30Ad.c.*2	27Ad.c.*3
Normal AC output Power	12000W		
Max. AC output Power	12000W		
Max. Apparent Power	12000VA		
Normal AC voltage	220/230Va.c.		
Normal AC grid frequency	50/60Hz		
Max. output current	54.5Aa.c.		
Inrush current	< 54.5Aa.c.		
Max. output fault current	102Ad.c.		
Max. inverter backfeed current to the array	0Ad.c.		
Max. output overcurrent protection	75Ad.c.		
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
THDI	<3%		
Topology	Transformer less		
Max. efficiency	98.1%		
Euro-eta	97.5%		
Dimensions (W / L / D)	380*483*193mm		
Weight(KG)	18	17.5	18
Operating temperature range	-25°C~+60°C		
Relative humidity	0-100%		
Operating Altitude	≤4000m		
Noise(typical)	≤ 35dB		
Cooling concept	Natural		
Protection rating	IP66		
Protection class	I		
Overvoltage category (PV/AC)	II/III		
Pollution degree	2		
User Interface	LED & LCD		
Communication	RS485/WIFI/GPRS		

Table 9.1 Grid Specification

Grid Specification	Output Voltage Range (Vac)	Output Frequency Range (Hz)	Boot wait time(S)	Error recovery time (S)
China	187~252	48~50.5	60	30
Germany	184~253	47.5~52	60	30
Australia	180~265	47~52	60	30
Italy	184~276	49.7~50.3	60	30
Spain	196~253	48~50.5	180	30
U.K.	184~262	47.5~52	180	30
Hungary	196~253	49~51	300	30
Belgium	184~264	47.5~51.5	60	30
AUS-W	180~265	45~52	60	30
Greece	184~253	47~51.5	180	30
France	184~264	47.5~50.4	60	30
Metro	200~240	49~51	60	30
Thailand	198~242	48~51	60	30
Local	150~290	45~55	60	30
60Hz	150~290	55~66	60	30
South Africa	196~253	47~52	60	30
Brazil	176~246.4	57.4~62.6	180	30
I50549	195.5~264.5	47.5~51.5	60	30
VDE0126	184~253	47.5~51.5	60	30
Ireland	195.5~253	48~52	180	30
Poland	195.5~253	47.5~52	60	30
Chile(BT)	176~242	47.5~51.5	60	30
Chile(HD)	198~242	49~51	300	30
Chile(LD)	198~242	49~51	300	30
61727	196~253	47.5~51.5	60	30
Denmark	195.5~253	47.5~51.5	60	30

10 Quality Assurance

When product faults occur during the warranty period, Company or his partner will provide free service or replace the product with a new one.

Evidence

During the warranty period, the customer shall provide the product purchase invoice and date. In addition, the trademark on the product shall be undamaged and legible. Otherwise, Company has the right to refuse to honor the quality guarantee.

Conditions

- After replacement, unqualified products shall be processed by Company.
- The customer shall give Company or his partner a reasonable period to repair the faulty device.

Exclusion of Liability

In the following circumstances, Company has the right to refuse to honor the quality guarantee:

- The free warranty period for the whole machine/components has expired.
- The device is damaged during transport.
- The device is incorrectly installed, refitted, or used.
- The device operates in harsh environment, as described in this manual.
- The fault or damage is caused by installation, repairs, modification, or disassembly performed by a service provider or personnel not from Company or his authorized partner.
- The fault or damage is caused by the use of non-standard or non-Company.

Components or software.

- The installation and use range are beyond stipulations of relevant international standards.
- The damage is caused by unexpected natural factors.

For faulty products in any of above cases, if the customer requests maintenance, paid maintenance service may be provided based on the judgment of Company.

