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Please adhere to the actual products in case of any discrepancies in this user manual.

If you encounter any problem on the inverter, please find out the inverter S/N
and contact us, we will try to respond to your question ASAP.

Solis S6 Three Phase Inverter

S6-GR3P(5-10)K03-NV-ND-AU Installation and Operation Manual

(For Australia)

Ver 1.0

Ginlong Technologies Co., Ltd.

Contents

1.1 Product Description

Solis S6 three phase inverters integrate DRM and backflow power control function, that is suitable for smart grid requirement.
This manual covers the three phase inverter model listed below:
S6-GR3P5K03-NV-ND-AU, S6-GR3P6K03-NV-ND-AU, S6-GR3P8K03-NV-ND-AU, S6-GR3P9K03-NV-ND-AU, S6-GR3P9.9K03-NV-ND-AU, S6-GR3P10K03-NV-ND-AU

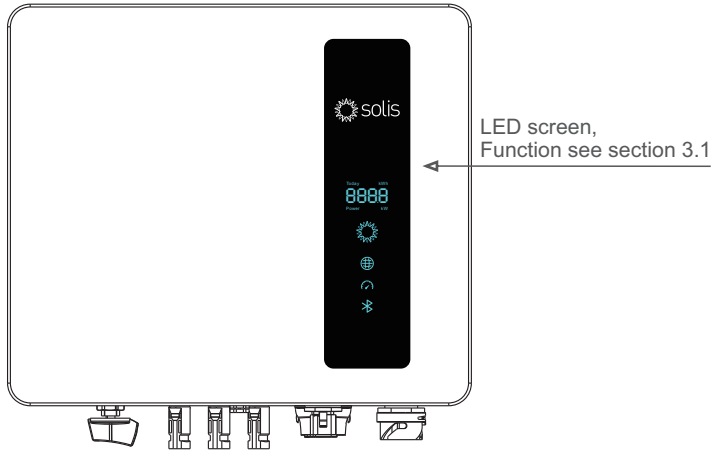


Figure 1.1 Front view

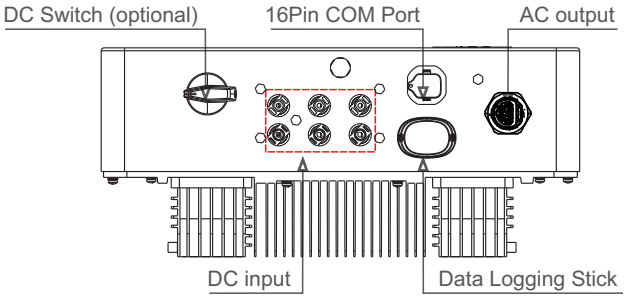
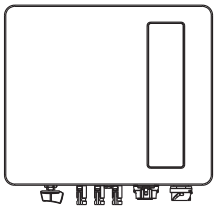


Figure 1.2 Bottom view

1. Introduction

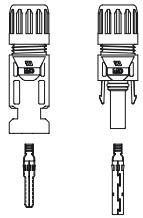
1.2 Packaging

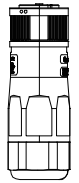
When you receive the inverter, please ensure that all the parts listed below are included:

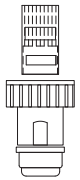

Inverter x1


Back plate x1


Fastening screw x2


DC connector x3


AC connector x1


RJ45 connector x1


WiFi/GPRS Stickx1
(Optional)

User manual x1

If anything is missing, please contact your local Solis distributor.

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:
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:
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. All Solis three phase inverters feature an integrated DC switch.

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.

CAUTION:
The surface temperature of the inverter can exceed 75℃ (167F).
To avoid risk of burns, DO NOT touch the surface when inverter is operating.
The inverter must be installed out of reach of children.

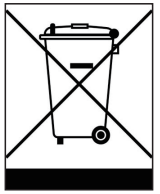
2.3 Notice For Use

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

- Permanent installation is required.
- The electrical installation must meet all the applicable regulations and standards.
- The inverter must be installed according to the instructions stated in this manual.
- The inverter must be installed according to the correct technical specifications.
- 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.

2.4 Notice for Disposal

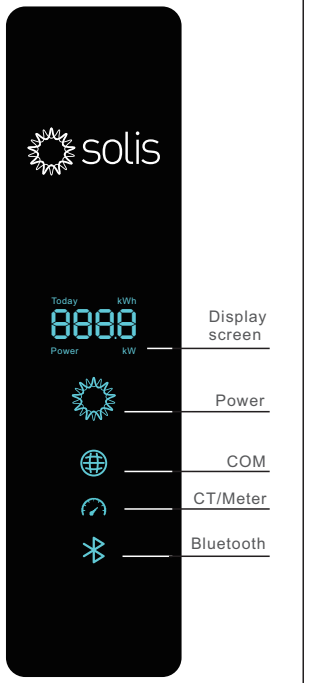
This product shall not be disposed of with household waste. They should be segregated and brought to an appropriate collection point to enable recycling and avoid potential impacts on the environment and human health. Local rules in waste management shall be respected .



3. Overview

3.1 Front Panel Display

There are four indicators on the Solis S6 Series Inverter(Power, COM, CT/Meter and Bluetooth) which indicate the working status of the inverter.



Light	Status	Description
Today kWh 8888 Power kW Display screen	Today/kWh	Today's energy yield.
	Power/kW	Current AC power.
	XXXX	The error code.
Power	Blue Flashing	The inverter is initializing.
	Blue Solid ON	Normally Operating.
	Yellow Solid ON	Warning.
	Red Solid ON	Alarm.
COM	Blue Solid ON	COM Port is using.
	OFF	COM Port is not used.
CT/Meter	Blue Solid ON	CT/Meter Port is using.
	OFF	CT/Meter Port is not used.
Bluetooth	Blue Solid ON	Bluetooth Port is using.
	OFF	Bluetooth Port is not used.

NOTE:
COM/CT/Meter/Bluetooth indicators will automatically turn off after 2 minutes.
The Power indicator will remain on with lower brightness.
Shortpress the Power indicator can wake up all indicators.

NOTE:
Long press the Power button for 5 seconds to reset the bluetooth connection passwords. If the reset is successful, the Power button will be flashing in Blue color and in 0.5s interval for 3s. If the reset is failed, the Power button will be flashing in Yellow color and in 0.5s interval for 3s.

4. Product handing and storage

4.1 Product handling

Please review the instruction below for handling the inverter:

1 The red circles below denote cutouts on the product package.
Push in the cutouts to form handles for moving the inverter (see Figure 4.1).

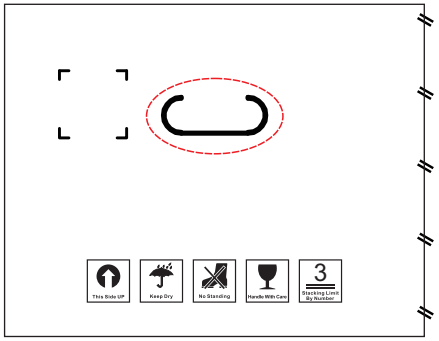


Figure 4.1 move the inverter

2.Open the carton, then handle both sides of inverter through the area denoted dotted line. (see figure 4.2).

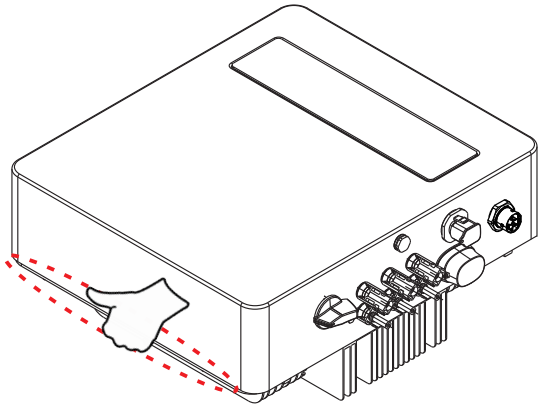


Figure 4.2 Inverter handles

4. Product handing and storage

4.2 Product Storage

If the inverter is not to be installed immediately, storage instructions and environmental conditions are below:

- Use the original box to repackage the inverter, seal with adhesive tape with the desiccant inside the box.
- Store the inverter(s) in a clean and dry place, free of dust and dirt.
- Storage temperature must be between -40℃ and 70℃ and the humidity should be between 0 and 95% non-condensing.
- Stack no more than four (4) inverters high.
- Keep box(es) away from corrosive materials to avoid damage to the inverter enclosure.
- Inspect packaging regularly. If packaging is damaged(wet, pest damage, etc), repackage the inverter immediately.
- Store the inverter(s) on a flat, hard surface - not inclined or upside down.
- After long-term storage, the inverter needs to be fully examined and tested by qualified service or technical personnel before using.
- Restarting after a long period of non-use requires the equipment to be inspected and, in some cases, the removal of oxidation and dust that has settled inside the equipment will be required.

5. Installation

5.1 Select a Location for the Inverter

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

WARNING: Risk of fire

Despite careful construction, electrical devices can cause fires.

- Do not install the inverter in areas containing highly flammable materials or gases.
- Do not install the inverter in potentially explosive atmospheres.

- 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. Ginlong recommends inverter installed to avoid direct sunlight or raining.
- To avoid over heating ambient air temperature must be considered when choosing the inverter installation location. Ginlong recommends using a sun shade minimizing direct sunlight when the ambient air temperature around the unit exceeds 104°F/40°C.

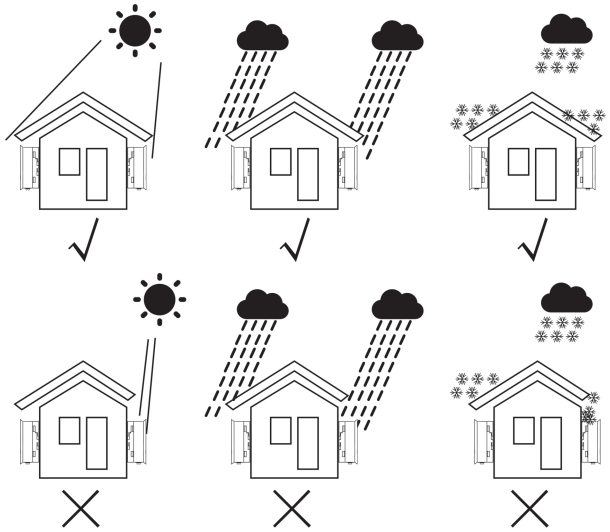
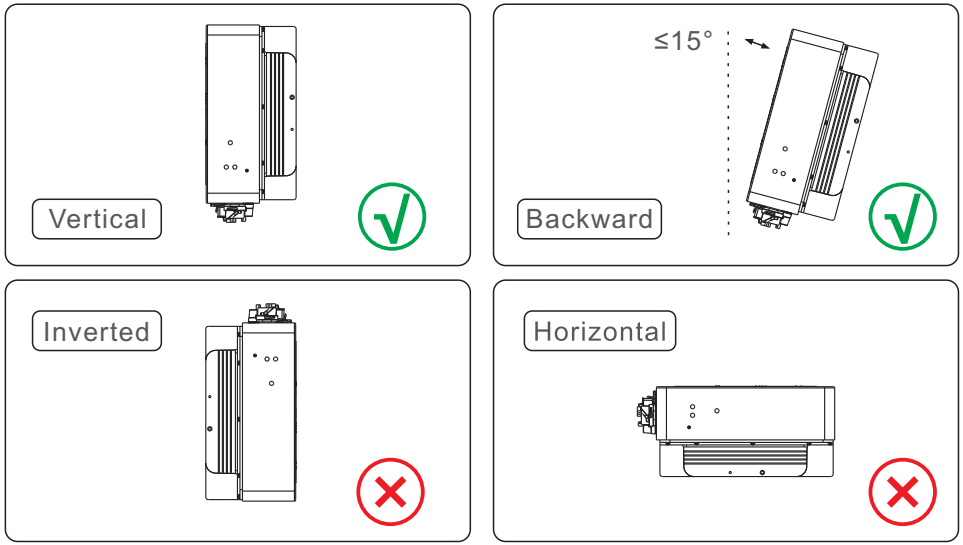


Figure 5.1 Recommended Installation locations

NOTE:

Nothing should be stored on or placed against the inverter.

5. Installation



- The visibility of LED status indicator lights and LCD should be considered.
- Install vertically (+/- 5°) or tilted backward (<=15°).
- Don't mount inverter on the tilted forward wall.
- Don't mount inverter on the horizontal.

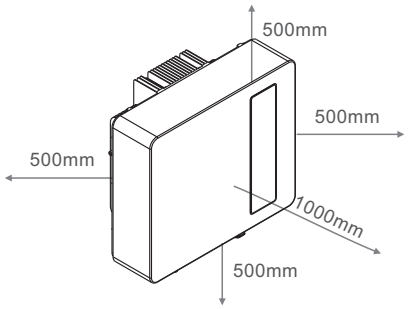


Figure 5.2 Inverter Mounting clearance

- Temperature of inverter heat sinker might 167℉/75℃.
- Inverter is designed for working extreme environment, operation temperature range: -15℉/25℃~149℉/65℃.
- When 1 or more inverters are installed in one location, a minimum 500mm clearance should be kept between each inverter or other object. The bottom of the inverter should be 500mm clearance to the ground.

5.2 Mounting the Inverter

Dimensions of mounting bracket:

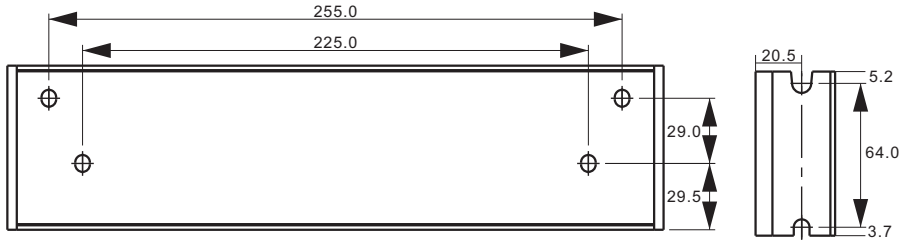


Figure 5.3 Inverter wall mounting

Refer to figure 5.4 and figure 5.5. Inverter shall be mounted vertically.
The steps to mount the inverter are listed below.

1. Refer to Figure 5.4, the holes for expansion bolt based on the hole diameter of bracket (ST6.3*60 cross recessed hexagon head tapping screws, HJ0108 10*50mm fished expandable tubular), using the percussion drilling with the 10mm drill need to stay vertically on the wall.And the drill hole must be vertically on the wall.
   And all drill holes' depth is 60mm.

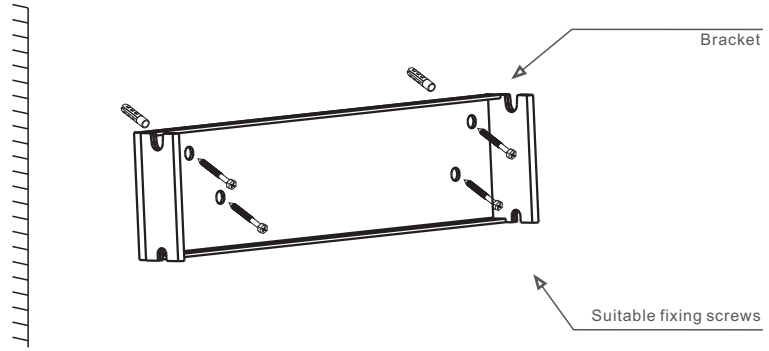


Figure 5.4 Inverter wall mounting

2. Make sure the bracket is horizontal. And the mounting holes (in Figure 5.4) are marked correctly. Drill the holes into wall at your marks.
3. Use the suitable expansion screws to fix the bracket on the wall.

WARNING:
The inverter must be mounted vertically.

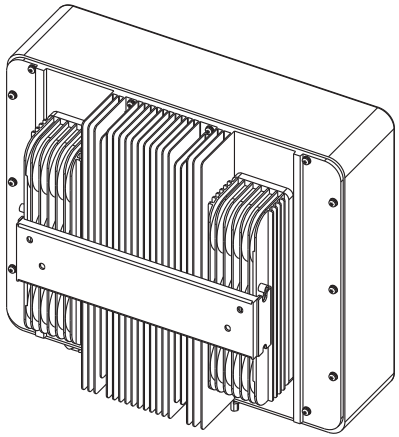


Figure 5.5 Install the inverter

4. Lift the inverter and hang it on the backet, and fixing both sides of inverter with locking screws (accessories).

5. Installation

5.3 Electrical Connections

Inverter designs quick-connect terminal, so top cover needn't open during electrical connection. The sign meaning located the bottom of inverter, as shown below in table 5.1. All electrical connections are suit for the local or national standard.

+	Positive DC input terminal
–	Negative DC input terminal
DC 1	DC input terminal
DC 2	DC input terminal
DC SWITCH	Switch of DC input terminals
COM	RJ45 and terminal block for RS485 communication port
GRID	Connecting terminal of the Grid

Table 5.1 Electrical connection symbols

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.

5.3.1 Grounding

To effectively protect the inverter, two grounding methods must be performed.
Connect the AC grounding cable (Please refer to section 5.3.3).
Connect the external grounding terminal.

To connect the grounding terminal on the heat sink, please follow the steps below:

1) Prepare the grounding cable: recommend to use the ⩾ 6mm^2 outdoor copper-core cable.

2) Prepare OT terminals: M6.

Important:
For multiple inverters in parallel , all inverters should be connected to the same ground point to eliminate the possibility of a voltage potential existing between inverter grounds.

3) Strip the ground cable insulation to a suitable length(see Figure 5.6).

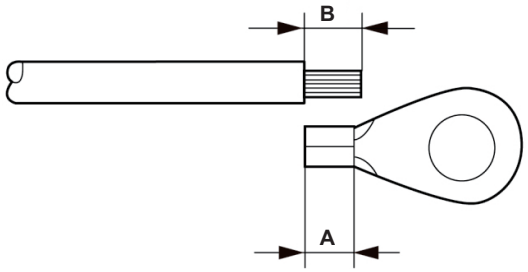


Figure 5.6 suitable length

Important:
B (insulation stripping length) is 2mm~3mm longer than A (OT cable terminal crimping area) 2mm~3mm.

4) Insert the stripped wire into the OT terminal crimping area and use the hydraulic clamp to crimp the terminal to the wire (see Figure 5.7).

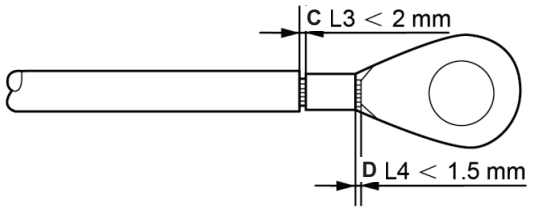


Figure 5.7 strip wire

Important:
After crimping the terminal to the wire, inspect the connection to ensure the terminal is solidly crimped to the wire.

5) Remove the screw from the heat sink ground point.

6) Connect the grounding cable to the grounding point on the heat sink,and tighten the grounding screw, Torque is 3Nm(see figure 5.8).

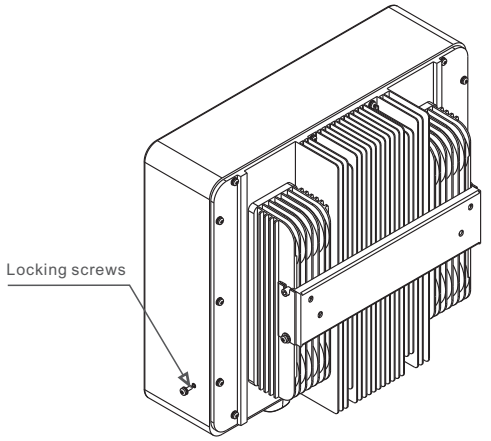


Figure 5.8 Fixed cable

Important:
For improving anti-corrosion performance,
after ground cable installed, apply silicone or paint is preferred to protect.

5.3.2 Connect PV side of inverter

Before connecting inverter, please make sure the PV array open circuit voltage is within the limit of the inverter.

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

Before connecting inverter, please make sure the PV array open circuit voltage is within the limit of the inverter.

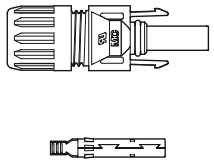


Figure 5.9 DC+ Connector

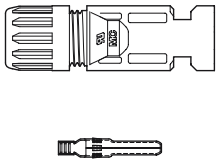


Figure 5.10 DC- Connector

Please use approved DC cable for PV system.

Cable type	Cross section（mm²）	
	Range	Recommended value
Industry generic PV cable (model:PV1-F)	4.0~6.0 (12~10AWG)	4.0（12AWG）

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. (see Figure 5.11)
2. Insert the wire into the connector cap nut and contact pin. (see Figure 5.12)
3. Crimp the contact pin to the wire using a proper wire crimper. (see Figure 5.13)
4. Insert metal connector into top of connector, and tighten nut with torque 2.5-3 Nm (see figure 5.14).

5. Measure PV voltage of DC input with multimeter, verify DC input cable polar (see figure 5.15), and ensure each string of PV voltage in range of inverter operation. Connect DC connector with inverter until hearing a slight clicking sound indicates connection succeed. (see figure 5.16)

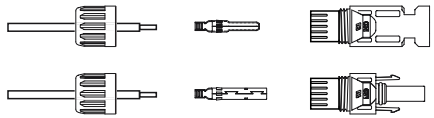


Figure 5.11 Disassemble the Connector Cap nut

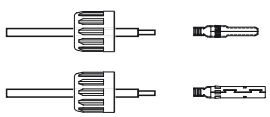


Figure 5.12 Insert the Wire into the Connector Cap nut and contact pin

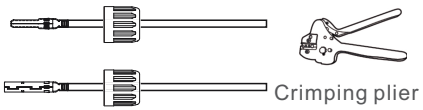


Figure 5.13 Crimp the contact pin to the wire

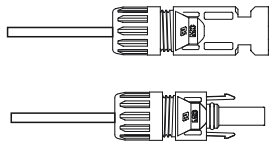


Figure 5.14 Connector with Cap nut Screwed on

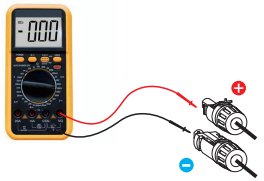


Figure 5.15 Multimeter measurement

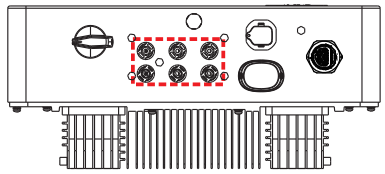


Figure 5.16 Connect the DC Connectors to the Inverter

Caution:

If DC inputs are accidently reversely connected or inverter is faulty or not working properly, it is NOT allowed to turn off the DC switch as it will damage the inverter and even leads to a fire disaster.

The correct actions are:

*Use a clip-on ammeter to measure the DC string current.

*If it is above 0.5A, please wait for the solar irradiance reduces until the current decreases to below 0.5A.

*Only after the current is below 0.5A, you are allowed to turn off the DC switches and disconnect the PV strings.

Please note that any damages due to wrong operations are not covered in the device warranty.

5.3.3 Connect grid side of inverter

For all AC connectors, YJV-0.6/1kV cables with 6mm^2 diameter are required to be used.
Please make sure the resistance of AC cable is lower than 1.5 ohm.

Internal of AC connector signs "L1","L2","L3","N" and "PE" five connection ports (see Figure 5.21). Three phase lines shall be connected to the "L1", "L2" and "L3" terminals respectively, Earth wire shall be connected to "PE" and Neutral wires shall be connected to "N" terminal.

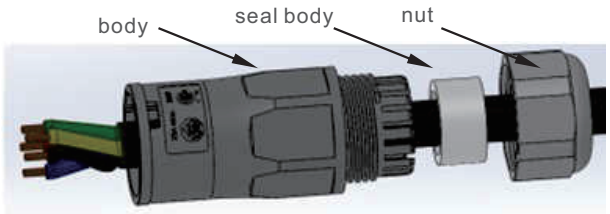


Figure 5.17 AC connector

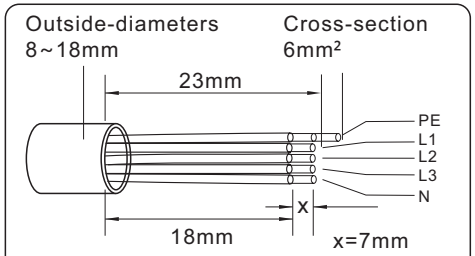


Figure 5.18 Stripped and bared wire

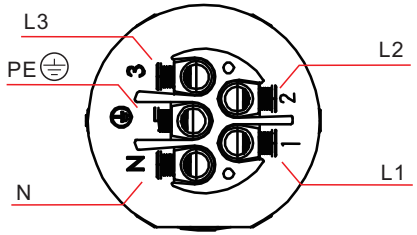


Figure 5.19 Internal structure of AC connector

The steps of AC grid terminal connector for installation are as follows:

A) Fix the wires into the correct position and the torque is 0.8N.m

Please try to pull out the wire slightly to make sure that the wires are well connected.

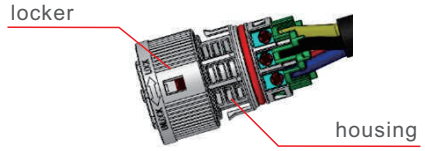


Figure 5.20 Connect Wires to the Terminal

B) Insert the seal and clamp finger into body, then tighten the nut and the torque is 2.5N.m.

Figure 5.21 Tighten up the Cap on the Terminal

C) Connect the AC grid connector to the inverter, until hearing a slight click sound that indicates the connection succeed.

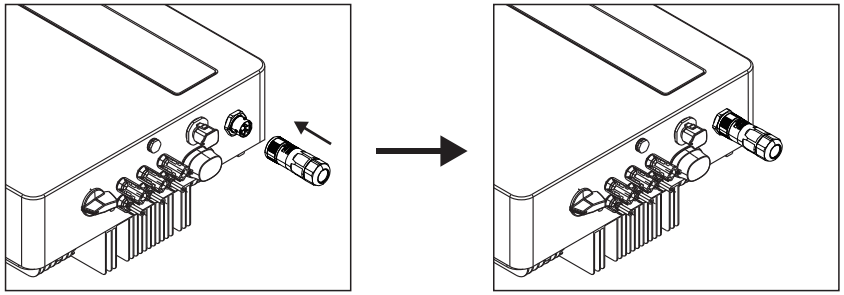


Figure 5.22 Connect AC connector to inverter

5.3.4 Max. over current protection device (OCPD)

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

Inverter	Rated voltage(V)	Rated output current (A)	Current for protection device (A)
S6-GR3P5K03-NV-ND-AU	230/400	7.9	20
S6-GR3P6K03-NV-ND-AU	230/400	9.5	20
S6-GR3P8K03-NV-ND-AU	230/400	12.7	20
S6-GR3P9K03-NV-ND-AU	230/400	14.3	32
S6-GR3P9.9K03-NV-ND-AU	230/400	15.7	32
S6-GR3P10K03-NV-ND-AU	230/400	15.9	32

Table 5.2 Rating of grid OCPD

5.3.5 Inverter monitoring connection

The inverter can be monitored via Wi-Fi or GPRS. All Solis communication devices are optional (Figure 5.23). For connection instructions, please refer to the Solis Monitoring Device installation manuals.

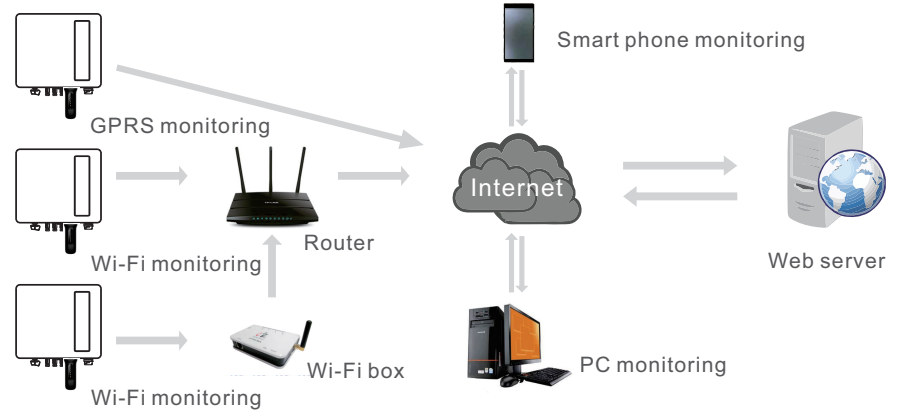


Figure 5.23 Wireless communication function

5.3.6 External Residual Current Device(RCD)

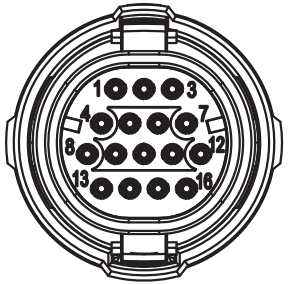
All series of Solis inverters are integrated with an internal residual current device to protect against any potential d.c component and a.c component of residual current.
Therefore, all Solis inverters, due to the design, are not able to feed in DC fault current to the system which fully complies with IEC60364-7-712.
If an external RCD is required to be installed by local regulations, Solis recommends installing a Type-A RCD with a threshold current higher than 100mA.

5.3.7 Earth Fault Alarm

When the earth fault on PV side happens, the yellow alarm indicator will flash and the alarm code “PVISO-PRO” will show up on the APP.
The inverter can’t start to generate until the earth fault is resolved. Please refer to the troubleshooting section of this manual to resolve the earth fault or contact Solis service team for help.

There are 2 communication ports on the inverter.
One is a USB COM port and the other is a 16-Pin COM port.
The USB COM port is used to connect Solis datalogging sticks
(Please refer to manuals of Solis datalogging sticks for details).
The 16-Pin COM port is used for multiple inverter daisy chain connection/DRM connection/ Logic Interface Connection/Meter connection.

The inverter package will include a 16-Pin COM connector to be used on this 16-Pin COM port. The Pin definition is shown below. Facing the connector, Pin 1 is on the left of the first row. The rest polarity is showing in below diagram.



Pin	Definition	Pin	Definition
1	Meter RS485-A	9	DRM1/5
2	Meter RS485-B	10	DRM 2/6
3	COM1 485-A	11	DRM 3/7
4	COM1 485-B	12	DRM 4/8
5	\	13	RefGen
6	COM2 485-A	14	Com/DRM0
7	COM2 485-B	15	V+, 12V
8	\	16	V-, GND

Figure 6.1 16pin COM Connector

The following is the assembly diagram of the 16-Pin COM connector.

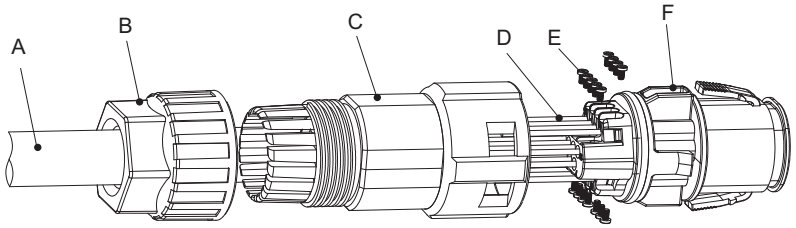


Figure 6.2

A-Main cable (Diameter: 4-6mm)
B-Locking Nut (Torque: 3.5-4N.m)
C- Sleeve
D-COM Wire (Dimension: 0.75-3mm², stripping length: 10-12mm)
E-Locking Screw (Torque: 0.4-0.6N.m)
F-Connector

Connect Steps:
1. Lead the main cable through the locking nut and the sleeve.
2. Strip the COM wires and insert into corresponding pin terminals.
Then fasten the locking screws for the pin terminals.
3. Push the sleeve onto the connector and fasten the locking nut on the end of the sleeve.
4. Connect the connector to the 16-Pin COM port at the bottom of the inverter.

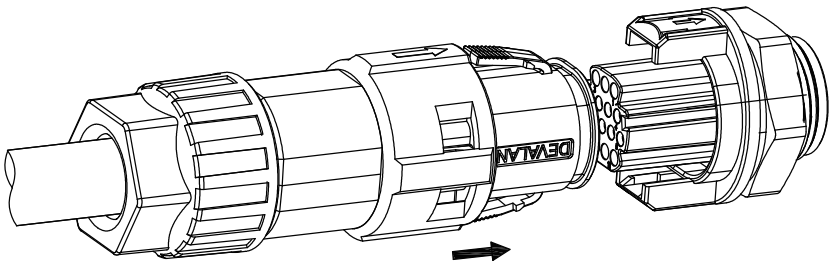


Figure 6.3

Disconnect Steps:
1. Press the button on both sides of the connector and pull the connector to disconnect from the COM port.

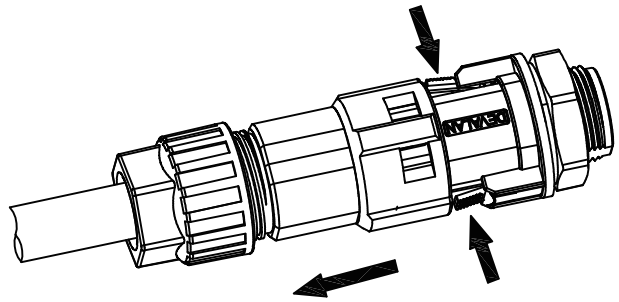


Figure 6.4

6. Comm. & Monitoring

2. Use the unlock tool to insert into the groove on the sleeve and pull the sleeve to disconnect from the connector.

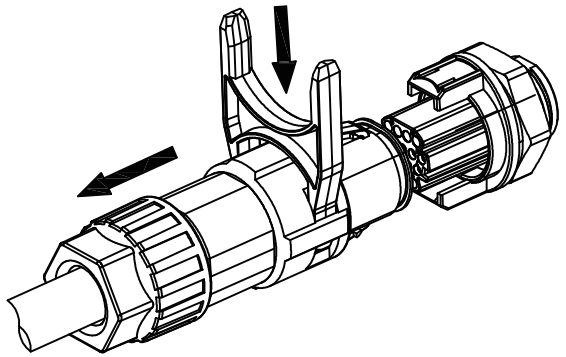


Figure 6.5

6.1 Inverter monitoring connection

Solis can provide optional accessories such as one-to-one datalogging sticks including WiFi stick, GPRS stick and LAN stick for the monitoring of a single inverter or one-to-multiple datalogging boxes including WiFi box and GPRS Box for the monitoring of multiple inverters. Please refer to corresponding manuals for details.

6.1.1 Monitoring for a single inverter

Every inverter can connect a Solis one-to-one datalogging stick for remote monitoring purpose. The datalogging stick should be directly connected to the USB COM port at the bottom of the inverter. It is a simple plug and play design with fast installation time. Details and the rest configuration process please refer to the datalogging stick manual.

6.1.2 Monitoring for multiple inverters

When multiple inverters need to run daisy chain communication together, Pin3/4 and Pin6/7 of the 16-Pin COM Port can be used.

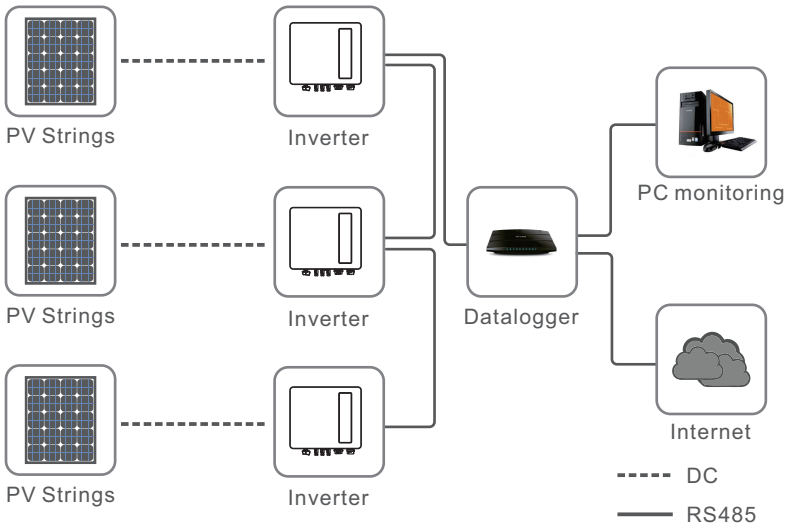
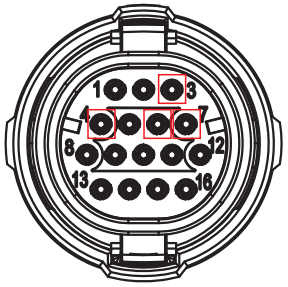


Figure 6.6 Multiple inverter monitoring system(RS485)



Pin	Definition	Description
3	COM1 485-A	RS485 IN A
4	COM1 485-B	RS485 IN B
6	COM2 485-A	RS485 OUT A
7	COM2 485-B	RS485 OUT B

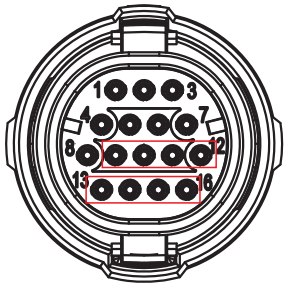
Figure 6.7

The bus RS485 cable can run into a Solis one-to-multiple datalogging box or any compatible 3rd party monitoring devices, PPC or plant SCADA.

6. Comm. & Monitoring

6.2 DRM Connection/ Logic Interface Connection

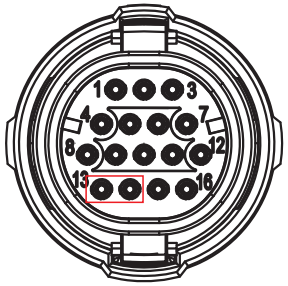
The AS/NZS 4777.2:2020 requires inverters to support demand response modes (DRM). Solis Australian version inverters fully comply with the DRM requirements in AS/NZS 4777 .2:2015. The pin definition is showing below. For details on the working logic, please refer to the standard document of AS/NZS 4777.2:2020. The DRM controlling device is not in the scope of supply of Solis.



Pin	Definition	Pin	Definition
9	DRM1/5	13	RefGen
10	DRM 2/6	14	Com/DRM0
11	DRM 3/7	15	V+, 12V
12	DRM 4/8	16	V-, GND

Figure 6.8

Some European countries may require a simply logic interface relay or contactor switch to operate the RUN/STOP of inverters. For Solis European version inverters, the Pin 13 and Pin 14 can be used to perform the control logic (Not available in South Africa).
The logic interface relay or contactor switch is not in the scope of supply of Solis.
When the relay is closed (Short between Pin13 and Pin14), the inverter can operate normally.
When the relay is opened (Open between Pin13 and Pin14), the inverter will reduce its output power to zero within 5s.



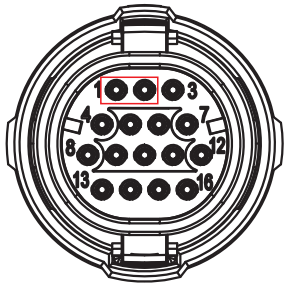
Pin	Definition
13	RefGen
14	Com/DRM0

Figure 6.9

6. Comm. & Monitoring

6.3 Meter Connection

The inverter can work with a three phase smart meter to achieve Export Power Management function and/or 24hour consumption monitoring function.
The Pin 1 and Pin 2 of the 16-Pin COM port are used for Meter RS485 communication.



Pin	Definition
1	Meter RS485-A
2	Meter RS485-B

Figure 6.10

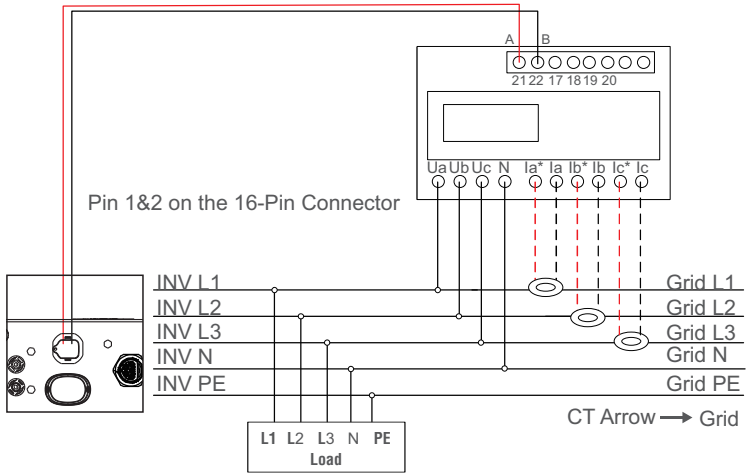


Figure 6.11 External CT Type Meter - “Meter in Grid”

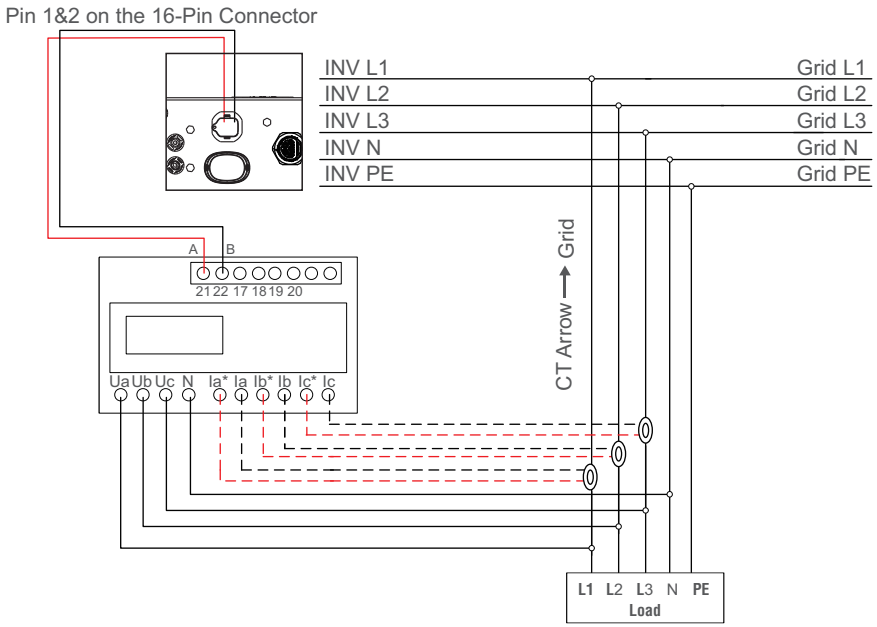


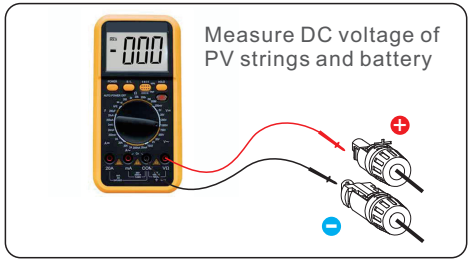
Figure 6.12 External CT Type Meter - “Meter in Load”

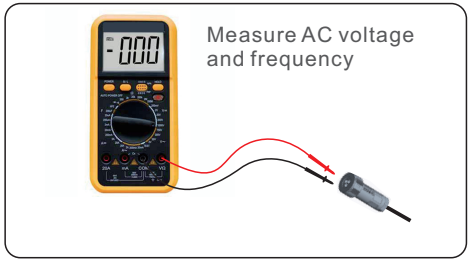
7.1 Start the Inverter

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.
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 Power light will flashing blue indicating the inverter is initializing.
4. After 30-300 seconds(depending on local requirement), the inverter will start to generate power. The power light will become solid blue.

7.2 Preparation

- Ensure all the devices are accessible for operation, maintenance and service.
- Check and confirm that the inverter is firmly installed.
- Space for ventilation is sufficient for one inverter or multiple inverters.
- Nothing is left on the top of the inverter.
- Inverter and accessories are correctly connected.
- Cables are routed in safe place or protected against mechanical damage.
- Warning signs and labels are suitably affixed and durable.
- An Android or IOS mobile phone with Bluetooth function is available.
- Measure DC voltage of PV strings and ensure the polarity is correct.
- Measure AC voltage and frequency and ensure they are within local standard.



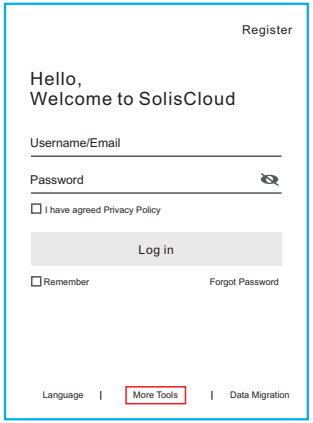


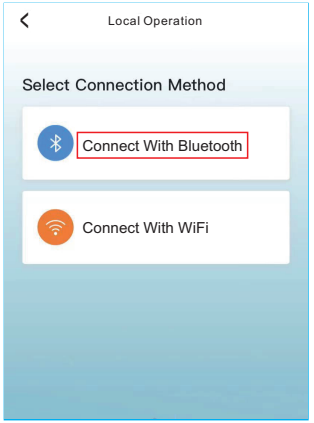
7.3 APP Download

Users need to download the APP before installing it for the first time.
There are three ways to download and install the latest APP:
1. You can visit **www.soliscloud.com** to download the latest version APP.
2. You can search "**Soliscloud**" in Google Play or App Store.
3. You can scan this QR code below to download "**Soliscloud**".

7.4 Local Connection via APP

Step 1: **Rotate the inverter DC switch from OFF to ON.**
Step 2: **APP Bluetooth connection with inverter.**
Turn on Bluetooth switch on your mobile phone and then open the Soliscloud APP.
Click "More Tools"->"Local Operation"->"Connect with Bluetooth"

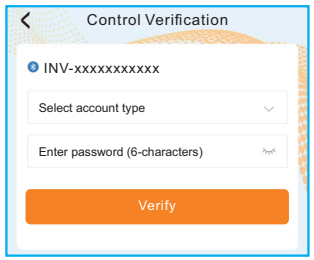


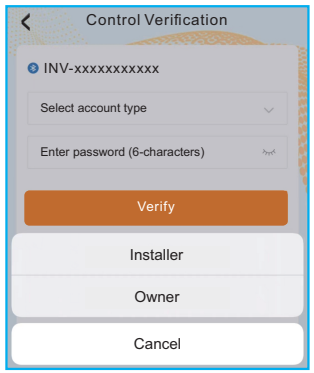


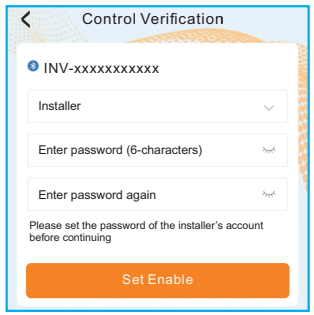
Select the Bluetooth signal from the inverter. (Bluetooth Name: INV-Inverter SN)

Step 3: **Login account.**

If you are the installer, please select the account type as Installer. If you are the plant owner, please select the account type as owner. Then set your own initial password for control verification. (The first log-in must be finished by installer in order to do the initial set up)

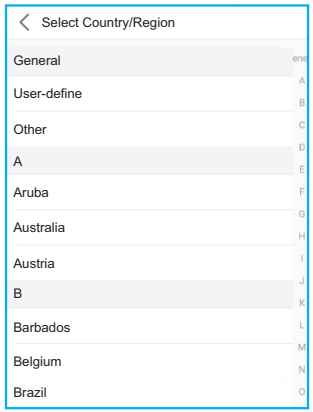






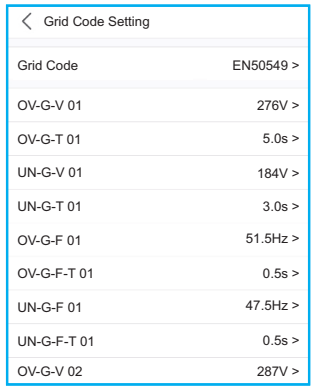
Step 4: **Grid Code Setting.**

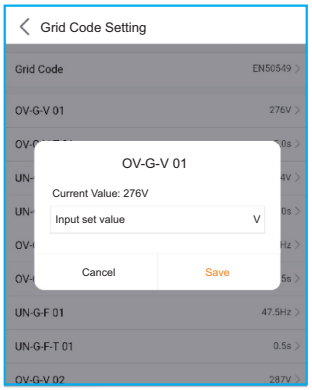
Select **"Settings->Grid Parameter Setting->Grid Code Setting->Grid Code"**, choose the applicant standard according to the installation and save.



The specific parameters can be set at Grid Code Setting page.

Mention that the grid parameters modification should be permissible by utility grid company or the power distribution supplier.





Step 5: **Turn on the AC switch between the inverter and Grid, wait till the inverter start generating.**

7.5 Stop the Inverter

To stop the inverter, it is mandatory that the steps below are followed in the exact order outlined.

1. Select "Power OFF" in the APP.
2. Turn off the AC Switch between Solis inverter and Grid.
3. Wait approximately 30 seconds and then switch the DC switch off.
4. Confirm all LED's switch OFF (~one (1) minute).

CAUTION

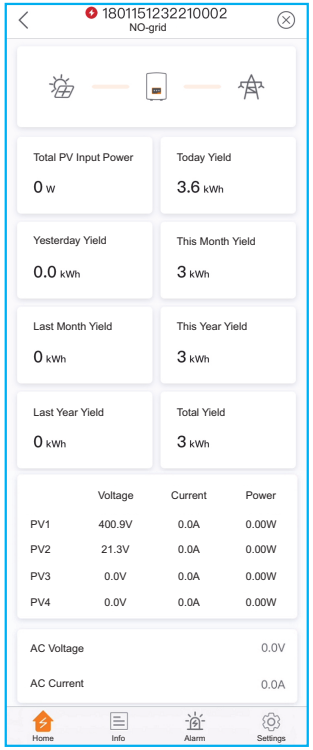
Although the inverter DC disconnect switch is in the OFF position and all the LED's are OFF, operators must wait five (5) minutes after the DC power source has been disconnected before opening the inverter cabinet. DC side capacitors can take up to five (5) minutes to dissipate all stored energy.

The APP interface contains 4 sections:

1. Home
2. Info
3. Alarm
4. Settings

8.1 Home Page

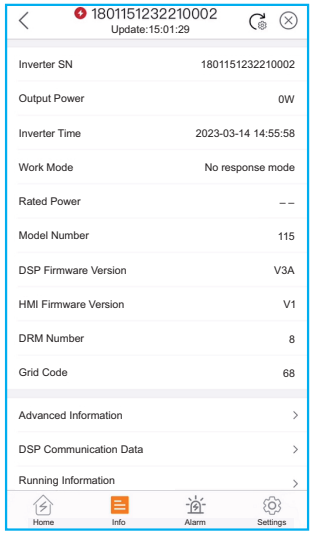
The home page contains the power and energy data of the inverter.
The PV data and AC data are also available under this section.



8. Operation

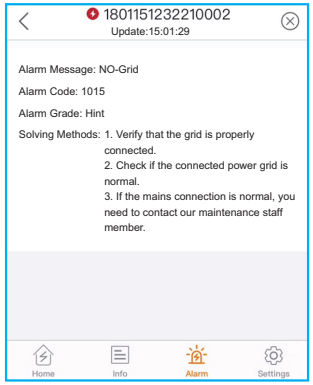
8.2 Info Page

Info page displays the general information of the inverter such as inverter serial number, firmware version, grid code, etc.



8.3 Alarm Page

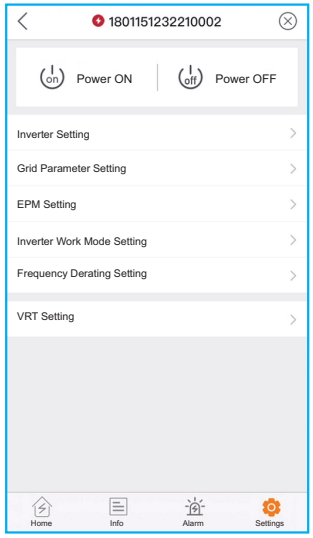
Alarm page contains the alarm code of the inverter and its corresponding troubleshooting methods.



8.4 Setting Page

Setting page contains all the setting options of the inverter.

Functions	Setting Path
Switch on/off the inverter	Settings -> “Power ON” & ”Power OFF”
Change inverter time setting	Settings -> Inverter Setting-> Inverter Parameter Setting -> Inverter Time Setting
Change inverter output power percentage or power factor	Settings -> Inverter Setting-> Inverter Power Setting
Set grid code and protection parameters	Settings -> Grid Parameter Setting -> Grid Code Setting
Set Export Power control	Settings -> EPM Setting
Set grid code related working modes	Settings -> Inverter Work Mode Setting -> Work Mode

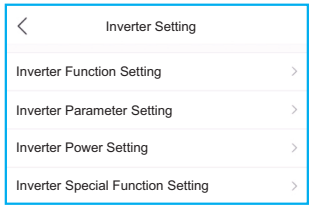


NOTE:
The inverter is by default setting with grid code which complies with local requirements. If there is need to modify the protection limits, please consult and approve by your local grid operator.

8.4.1 Start up and Stop the inverter

1. Select “Settings -> Power ON” to start up the inverter.
2. Select “Settings -> Power OFF” to stop the inverter.

8.4.2 Inverter Setting



8.4.2.1 Inverter Function Setting

1. AFCI Setting

Setting	Description
AFCI Protect	Set the inverter AFCI function ON/OFF.
Arc-Fault Manual Reset	When Arc-Fault error happens more than 5 times, inverter will stop generating. Users have to check the inverter connection is OK and make a manual reset operation using this switch.

2. 24-Hour Load Monitoring

Turn on this switch to enable 24-Hour Load Monitoring function. Please refer to 6.4.4.1 Built-in EPM Setting for details.

3. MPPT Multi-peak Scanning Setting

Setting	Description
MPPT Multi-peak Scanning Switch	Set the function ON/OFF.
MPPT Multi-peak Scan Interval	The inverter will carry out Multi-peak MPPT scanning 1 time every scan interval.

4. Logical Interface Setup

Setting	Description
Logic Interface(DRM) Switch	Set the function ON/OFF.
P_Limit DI 1 ~ P_Limit DI 4	Set the AC output power under different DI.

8.4.2.2 Inverter Parameter Setting

Setting	Description
Time	Set the inverter time and date according to local time zone.
Slave Address	Set the inverter address when multiple inverters are installed.
Generation Calibration	Calibrate the inverter daily, monthly, annual and total yield.

8.4.2.3 Inverter Power Setting

Setting	Description
Output Power Setting	Set the inverter maximum AC output power.
PF Curve	Set the inverter power factor.
Power Limit	Set the power control slope, power rise control slope, power down control slope, EN 50549 power change gradient after fault trip restart, EN 50549 gradient limit for power-on change.

8.4.3 Grid Parameter Setting

See Chapter 5.3 for details.

8.4.4 EPM Setting

Built-in EPM is for PV plant with only 1 inverter, while External EPM for multiple inverters.

8.4.4.1 Built-in EPM Setting

Select “Settings -> EPM Setting -> Built-in EPM Setting” to make the settings.
The Built-in EPM includes 2 functions related to the smart meter or smart sensor.

NOTE:

Function 1: Export Power Management Function

1. Inverters can work with a smart meter OR a smart sensor to dynamically limit the export power of the system.
2. Zero injection can be achieved.
3. Smart meter can be installed either on the grid side OR the load side. Smart sensor can only be installed on the grid side.

Function 2: 24-Hour Load Monitoring Function

1. Only applicable if Solis monitoring system is used.
2. Inverters can work with a smart meter OR smart sensor to monitor the load consumption data for the whole day and the data will be displayed on the Solis monitoring system.
3. Smart meter or smart sensor can only be installed on the grid side.

NOTE:

Please refer to below instructions for different user scenarios.

Scenario 1. Only Function 1 is required

Using a Smart Meter:

Step 1: Refer to Section 4.3.7 to connect the smart meter on the grid side or load side.
Step 2: Select the corresponding meter model in the **Meter Selection**.
Step 3: Choose **Meter in Grid Mode** or **Meter in Load Mode** in the **Built-in EPM mode selection** accordingly.
Step 4: Configure the **System Export Power Limit Value** to set the allowed backflow power.
Step 5: Configure the **Built-in EPM Failsafe Switch** to enable the failsafe function (If necessary).

Using a Smart Sensor:

Step 1: Refer to Section 4.3.8 to connect the smart sensor on the grid side.
Step 2: Select the **CT Sensor Mode** in the **Built-in EPM mode selection**.
Step 3: Configure the **CT Ratio** and **CT Direction** at the “**Settings -> EPM Setting -> CT Setting**”. (If necessary).
Step 4: Configure the **System Export Power Limit Value** to set the allowed backflow power.
Step 5: Configure the **Built-in EPM Failsafe Switch** to enable the failsafe function (If necessary).

NOTE:

Please refer to below instructions for different user scenarios.

Scenario 2. Only Function 2 is required

Using a Smart Meter:

Step 1: Refer to Section 4.3.7 to connect the smart meter on the grid side or load side.
Step 2: Select the corresponding meter model in the **Meter Selection**.
Step 3: Choose **Meter 24-Hour Monitoring Mode** in the **Built-in EPM mode selection** accordingly.
Step 4: Enable the **24-Hour Load Monitoring** function at “**Settings -> Inverter Setting -> Inverter Function Setting**”.

Using a Smart Sensor:

Step 1: Refer to Section 4.3.8 to connect the smart sensor on the grid side.
Step 2: Select the **CT load Monitoring Mode** in the **Built-in EPM mode selection**.
Step 3: Configure the **CT Ratio** and **CT Direction** at the “**Settings -> EPM Setting -> CT Setting**”. (If necessary).
Step 4: Enable the **24-Hour Load Monitoring** function at “**Settings -> Inverter Setting -> Inverter Function Setting**”.

NOTE:

Please refer to below instructions for different user scenarios.

Scenario 3. Both Function 1 and 2 are required

Using a Smart Meter:

Step 1: Refer to Section 4.3.7 to connect the smart meter on the grid side or load side.

Step 2: Select the corresponding meter model in the **Meter Selection**.

Step 3: Choose **Meter in Grid Mode** or **Meter in Load Mode** in the **Built-in EPM mode selection** accordingly.

Step 4: Configure the **System Export Power Limit Value** to set the allowed backflow power.

Step 5: Configure the **Built-in EPM Failsafe Switch** to enable the failsafe function (If necessary).

Step 6: Enable the **24-Hour Load Monitoring** function at "**Settings -> Inverter Setting -> Inverter Function Setting**".

Using a Smart Sensor:

Step 1: Refer to Section 4.3.8 to connect the smart sensor on the grid side.

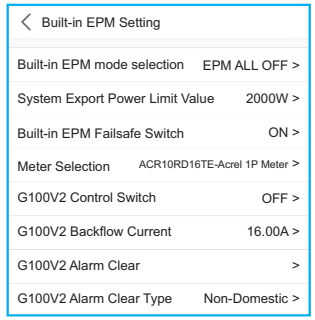
Step 2: Select the **CT Sensor Mode** in the **Built-in EPM mode selection**.

Step 3: Configure the **CT Ratio** and **CT Direction** at the "**Settings -> EPM Setting -> CT Setting**". (If necessary).

Step 4: Configure the **System Export Power Limit Value** to set the allowed backflow power.

Step 5: Configure the **Built-in EPM Failsafe Switch** to enable the failsafe function (If necessary).

Step 6: Enable the **24-Hour Load Monitoring** function at "**Settings -> Inverter Setting -> Inverter Function Setting**".



Setting	Description
Built-in EPM mode	6 built-in EPM mode is optional. Choose the appropriate mode needed.
System Export Power Limit Value	Set the permissible PV plant export power to the gird.
Built-in EPM Failsafe Switch	When G100 standard is used, this switch is enabled by default.
Meter Selection	Select the meter model according to the actual installation.
G100V2 Control Switch	When new G100 standard is used, enable this switch. Select the meter or CT mode according to the actual installation.
G100V2 Backflow Current	Set the backflow current of the PV plant to the grid. Only meaningful when G100V2 switch is on.
G100V2 Alarm Clear	Use this function to clear a fault status according to new G100 standard. Only meaningful when G100V2 switch is on.
G100V2 Alarm Clear Type	Select the Domestic or Non-domestic according to the actual installation. Only meaningful when G100V2 switch is on.

There are 6 modes for Built-in EPM.

1. EPM ALL OFF. Built-in EPM function is disabled.

2. CT Sensor Mode. Solis Smart Sensor is connected in the grid connection point (The **System Export Power Limit Value** setting is applicable, default value is 0W).

3. Meter in Grid Mode. Solis Smart Meter is connected in the grid connection point (The **System Export Power Limit Value** setting is applicable, default value is 0W).

4. Meter in Load Mode. Solis Smart Meter is connected in the load branch circuit (The **System Export Power Limit Value** setting is applicable, default value is 0W).

5. Meter 24-Hour Monitoring Mode. Solis Smart Meter is connected in the grid connection point(used for 24h load monitoring only, the **System Export Power Limit Value** setting is not applicable).

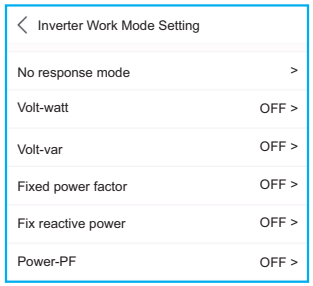
6. CT load Monitoring Mode. Solis Smart Sensor is connected in the grid connection point (used for 24h load monitoring only, the **System Export Power Limit Value** setting is not applicable).

8.4.4.2 External EPM Setting

Select "**Settings -> EPM Setting -> External EPM Setting**".
External EPM Failsafe Swtich should be turned ON when external EPM device is used.

8.4.5 Inverter Work Mode Setting

Select "Settings -> Inverter Work Mode Setting".



1. No response mode
Use this switch to close all response mode.
2. Volt-watt Mode
The volt-watt mode varies the active power output level of the inverter in response to the voltage at its grid-interactive port.
3. Volt-var Mode
The volt-var mode varies the reactive power absorbed or supplied by the inverter in response to the voltage at its grid-interactive port.
4. Fixed power factor Mode
The fixed power factor mode is for control of power factor over the range of inverter output.
5. Fixed reactive power Mode
The fixed reactive power mode is for control of reactive power over the range of inverter output.
6. Power-PF Mode
The Power-PF mode varies the active power output level of the inverter in response to its power factor.

Solis Three 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 6.2) 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.

10. Troubleshooting

The inverter is designed in accordance with the most important international grid-tied standards and safety and electromagnetic compatibility requirements. Before delivering to the customer, the inverter has been subjected to several tests to ensure its optimal operation and reliability.

In case of failure, the LCD screen will display an alarm message. In this case, the inverter may stop feeding into the grid. The failure descriptions and their corresponding alarm messages are listed in Table 10.1:

Alarm Message	Failure description	Solution
No power	Inverter no power on LCD	1.Check PV input connections 2.Check DC input voltage (single phase >120V, three phase >350V) 3.Check if PV+/− is reversed
LCD show initializing all the time	Can not start-up	1.Check if the connector on main board or power board are fixed. 2.Check if the DSP connector to power board are fixed.
OV-G-V01/02/03/04	Over grid voltage	1.Resistant of AC cable is too high. Change bigger size grid cable 2.Adjust the protection limit if it's allowed by electrical company.
UN-G-V01/02	Under grid voltage	1.Use user define function to adjust the protection limit if it's allowed by electrical company.
OV-G-F01/02	Over grid frequency	
UN-G-F01/02	Under grid frequency	
G-IMP	High grid impedance	
NO-GRID	No grid voltage	1.Check connections and grid switch. 2.Check the grid voltage inside inverter terminal.
OV-DC01/02/03/04	Over DC voltage	1.Reduce the module number in series
OV-BUS	Over DC bus voltage	1.Check inverter inductor connection 2.Check driver connection
UN-BUS01/02	Under DC bus voltage	
GRID-INTF01/02	Grid interference	1.Restart inverter 2.Change power board
OV-G-I	Over grid current	
IGBT-OV-I	Over IGBT current	
DC-INTF OV-DCA-I	DC input overcurrent	1.Restart inverter 2.Identify and remove the string to the fault MPPT 2.Change power board
IGFOL-F	Grid current tracking fail	1.Restart inverter or contact installer.
IG-AD	Grid current sampling fail	
INI-FAULT	Initialization system fault	1.Restart inverter or contact installer.
DSP-B-FAULT	Comm. failure between main and slave DSP	
12Power-FAULT	12V power supply fault	

Alarm Message	Failure description	Solution
OV-TEM	Over Temperature	1.Check inverter surrounding ventilation. 2.Check if there's sunshine direct on inverter in hot weather.
PV ISO-PRO 01/02	PV isolation protection	1.Remove all DC input, reconnect and restart inverter one by one. 2.Identify which string cause the fault and check the isolation of the string.
ILeak-PRO 01/02/03/04	Leakage current protection	1.Check AC and DC connection 2.Check inverter inside cable connection.
RelayChk-FAIL	Relay check fail	1.Restart inverter or contact installer.
DCinj-FAULT	High DC injection current	
AFCI self-detection (model with AFCI module)	AFCI module self-detect fault	1.Restart inverter or connect technician.
Arcing protection (model with AFCI module)	Detect arc in DC circuit	1. Check inverter connection whether arc exists and restart inverter.
Screen OFF with DC applied	Inverter internally damaged	1. Do not turn off the DC switches as it will damage the inverter. 2. Please wait for the solar irradiance reduces and confirm the string current is less than 0.5A with a clip-on ammeter and then turn off the DC switches. 3. Please note that any damages due to wrong operations are not covered in the device warranty.

Table 10.1 Fault message and description

NOTE:

If the inverter displays any alarm message as listed in Table 10.1; please turn off the inverter and wait for 5 minutes before restarting it . If the failure persists, please contact your local distributor or the service center.

1. Serial number of Solis Three Phase Inverter.
2. The distributor/dealer of Solis Three Phase Inverter (if available).
3. Installation date.
4. The description of problem.
5. The PV array configuration (e.g. number of panels, capacity of panels, number of strings , etc.).
6. Your contact details.

11. Specifications

Model	S6-GR3P5K03-NV-ND-AU
Max. DC input voltage (Volts)	1100
Rated DC voltage (Volts)	600
Start-up voltage (Volts)	160
MPPT voltage range (Volts)	160...1000
Max. input current (Amps)	3*20
Max short circuit input current (Amps)	3*25
MPPT number/Max input strings number	3/3
Rated output power (Watts)	5000
Max. output power (Watts)	5000
Max. apparent output power (VA)	5000
Rated grid voltage (Volts)	3/N/PE~230/400
Rated output current (Amps)	7.9
Max. output current (Amps)	7.9
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50
Operating frequency range (Hertz)	45...55
Max.efficiency	98.0%
EU efficiency	97.4%
MPPT efficiency	>99.5%
Dimensions	355W*410H*179D (mm)
Weight	14.7kg
Topology	Transformerless
Self consumption (Night)	<1 W
Operating ambient temperature range	-25 ~ +60 ℃
Relative humidity	0-100%
Ingress protection	IP66
Noise emission (typical)	<40 dBA
Cooling concept	Natural convection
Environmental Category	Indoor and outdoor
Max.operation altitude	3000m
Grid connection standard	AS/NZS 4777.2:2020, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530
Safety/EMC standard	IEC 62109-1/-2, IEC 61000-6-1/-2/-3/-4
DC connection	MC4 connector
AC connection	Quick connection plug
Display	LED digital display & LED indicator
Communication	RS485, DO, DI, Optional: Wi-Fi, GPRS
Warranty	5 Years (Extendable to 20 Years)

11. Specifications

Model	S6-GR3P6K03-NV-ND-AU
Max. DC input voltage (Volts)	1100
Rated DC voltage (Volts)	600
Start-up voltage (Volts)	160
MPPT voltage range (Volts)	160...1000
Max. input current (Amps)	3*20
Max short circuit input current (Amps)	3*25
MPPT number/Max input strings number	3/3
Rated output power (Watts)	6000
Max. output power (Watts)	6000
Max. apparent output power (VA)	6000
Rated grid voltage (Volts)	3/N/PE~230/400
Rated output current (Amps)	9.5
Max. output current (Amps)	9.5
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50
Operating frequency range (Hertz)	45...55
Max.efficiency	98.0%
EU efficiency	97.4%
MPPT efficiency	>99.5%
Dimensions	355W*410H*179D (mm)
Weight	14.7kg
Topology	Transformerless
Self consumption (Night)	<1 W
Operating ambient temperature range	-25 ~ +60 ℃
Relative humidity	0-100%
Ingress protection	IP66
Noise emission (typical)	<40 dBA
Cooling concept	Natural convection
Environmental Category	Indoor and outdoor
Max.operation altitude	3000m
Grid connection standard	AS/NZS 4777.2:2020, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530
Safety/EMC standard	IEC 62109-1/-2, IEC 61000-6-1/-2/-3/-4
DC connection	MC4 connector
AC connection	Quick connection plug
Display	LED digital display & LED indicator
Communication	RS485, DO, DI, Optional: Wi-Fi, GPRS
Warranty	5 Years (Extendable to 20 Years)

11. Specifications

Model	S6-GR3P8K03-NV-ND-AU
Max. DC input voltage (Volts)	1100
Rated DC voltage (Volts)	600
Start-up voltage (Volts)	160
MPPT voltage range (Volts)	160...1000
Max. input current (Amps)	3*20
Max short circuit input current (Amps)	3*25
MPPT number/Max input strings number	3/3
Rated output power (Watts)	8000
Max. output power (Watts)	8000
Max. apparent output power (VA)	8000
Rated grid voltage (Volts)	3/N/PE~230/400
Rated output current (Amps)	12.7
Max. output current (Amps)	12.7
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50
Operating frequency range (Hertz)	45...55
Max.efficiency	98.0%
EU efficiency	97.4%
MPPT efficiency	>99.5%
Dimensions	355W*410H*179D (mm)
Weight	15.4kg
Topology	Transformerless
Self consumption (Night)	<1 W
Operating ambient temperature range	-25 ~ +60 ℃
Relative humidity	0-100%
Ingress protection	IP66
Noise emission (typical)	<40 dBA
Cooling concept	Natural convection
Environmental Category	Indoor and outdoor
Max.operation altitude	3000m
Grid connection standard	AS/NZS 4777.2:2020, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530
Safety/EMC standard	IEC 62109-1/-2, IEC 61000-6-1/-2/-3/-4
DC connection	MC4 connector
AC connection	Quick connection plug
Display	LED digital display & LED indicator
Communication	RS485, DO, DI, Optional: Wi-Fi, GPRS
Warranty	5 Years (Extendable to 20 Years)

11. Specifications

Model	S6-GR3P9K03-NV-ND-AU
Max. DC input voltage (Volts)	1100
Rated DC voltage (Volts)	600
Start-up voltage (Volts)	160
MPPT voltage range (Volts)	160...1000
Max. input current (Amps)	3*20
Max short circuit input current (Amps)	3*25
MPPT number/Max input strings number	3/3
Rated output power (Watts)	9000
Max. output power (Watts)	9000
Max. apparent output power (VA)	9000
Rated grid voltage (Volts)	3/N/PE~230/400
Rated output current (Amps)	14.3
Max. output current (Amps)	14.3
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50
Operating frequency range (Hertz)	45...55
Max.efficiency	98.2%
EU efficiency	97.6%
MPPT efficiency	>99.5%
Dimensions	355W*410H*179D (mm)
Weight	15.4kg
Topology	Transformerless
Self consumption (Night)	<1 W
Operating ambient temperature range	-25 ~ +60 ℃
Relative humidity	0-100%
Ingress protection	IP66
Noise emission (typical)	<40 dBA
Cooling concept	Natural convection
Environmental Category	Indoor and outdoor
Max.operation altitude	3000m
Grid connection standard	AS/NZS 4777.2:2020, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530
Safety/EMC standard	IEC 62109-1/-2, IEC 61000-6-1/-2/-3/-4
DC connection	MC4 connector
AC connection	Quick connection plug
Display	LED digital display & LED indicator
Communication	RS485, DO, DI, Optional: Wi-Fi, GPRS
Warranty	5 Years (Extendable to 20 Years)

11. Specifications

Model	S6-GR3P9.9K03-NV-ND-AU
Max. DC input voltage (Volts)	1100
Rated DC voltage (Volts)	600
Start-up voltage (Volts)	160
MPPT voltage range (Volts)	160...1000
Max. input current (Amps)	3*20
Max short circuit input current (Amps)	3*25
MPPT number/Max input strings number	3/3
Rated output power (Watts)	9900
Max. output power (Watts)	9900
Max. apparent output power (VA)	9900
Rated grid voltage (Volts)	3/N/PE~230/400
Rated output current (Amps)	15.7
Max. output current (Amps)	15.7
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50
Operating frequency range (Hertz)	45...55
Max.efficiency	98.2%
EU efficiency	97.6%
MPPT efficiency	>99.5%
Dimensions	355W*410H*179D (mm)
Weight	15.4kg
Topology	Transformerless
Self consumption (Night)	<1 W
Operating ambient temperature range	-25 ~ +60 ℃
Relative humidity	0-100%
Ingress protection	IP66
Noise emission (typical)	<40 dBA
Cooling concept	Natural convection
Environmental Category	Indoor and outdoor
Max.operation altitude	3000m
Grid connection standard	AS/NZS 4777.2:2020, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530
Safety/EMC standard	IEC 62109-1/-2, IEC 61000-6-1/-2/-3/-4
DC connection	MC4 connector
AC connection	Quick connection plug
Display	LED digital display & LED indicator
Communication	RS485, DO, DI, Optional: Wi-Fi, GPRS
Warranty	5 Years (Extendable to 20 Years)

11. Specifications

Model	S6-GR3P10K03-NV-ND-AU
Max. DC input voltage (Volts)	1100
Rated DC voltage (Volts)	600
Start-up voltage (Volts)	160
MPPT voltage range (Volts)	160...1000
Max. input current (Amps)	3*20
Max short circuit input current (Amps)	3*25
MPPT number/Max input strings number	3/3
Rated output power (Watts)	10000
Max. output power (Watts)	10000
Max. apparent output power (VA)	10000
Rated grid voltage (Volts)	3/N/PE~230/400
Rated output current (Amps)	15.9
Max. output current (Amps)	15.9
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50
Operating frequency range (Hertz)	45...55
Max.efficiency	98.2%
EU efficiency	97.6%
MPPT efficiency	>99.5%
Dimensions	355W*410H*179D (mm)
Weight	15.4kg
Topology	Transformerless
Self consumption (Night)	<1 W
Operating ambient temperature range	-25 ~ +60 ℃
Relative humidity	0-100%
Ingress protection	IP66
Noise emission (typical)	<40 dBA
Cooling concept	Natural convection
Environmental Category	Indoor and outdoor
Max.operation altitude	3000m
Grid connection standard	AS/NZS 4777.2:2020, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530
Safety/EMC standard	IEC 62109-1/-2, IEC 61000-6-1/-2/-3/-4
DC connection	MC4 connector
AC connection	Quick connection plug
Display	LED digital display & LED indicator
Communication	RS485, DO, DI, Optional: Wi-Fi, GPRS
Warranty	5 Years (Extendable to 20 Years)

12. Appendix

12.1 Built-In DC Isolator Specification

Model	GHX6-55P	NDG3V-50
Rated insulation voltage	1500V	
Rated impulse withstand voltage	8000V	
Suitability for isolation	Suitable for isolation	
Rated operational current	45A at 1100V	40A at 1100V
Utilization category	DC-PV2	
Rated short-time withstand current(Icw)	1500A	700A
Rated short-circuit making capacity(Icm)	2000A	1400A
Rated breaking capacity	4*Ie 180A	4*Ie 160A