

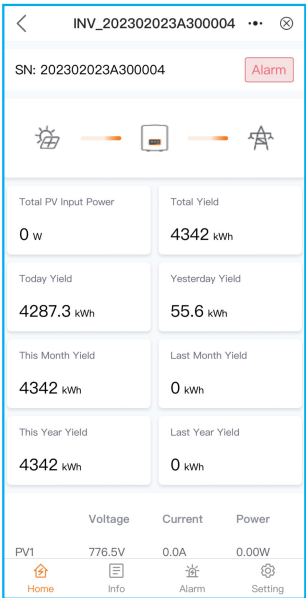
6. Normal operation

The APP interface contains 4 sections:

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

6.3 Home Page

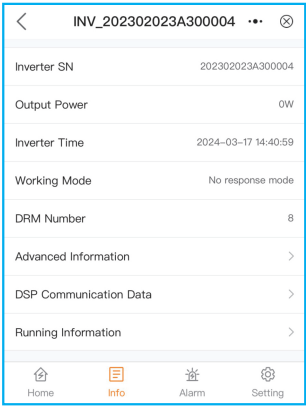
The home page contains the power and energy data of the inverter.
The PV data and AC data are also available under this section.



6. Normal operation

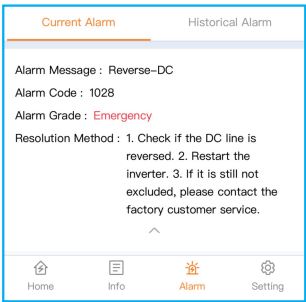
6.4 Info Page

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



6.5 Alarm Page

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

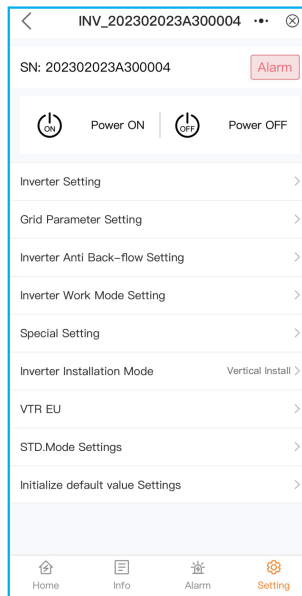


6. Normal operation

6.6 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.

7. Maintenance

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 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.

7.1 Anti-PID Function

Solis Three phase Inverters integrates optional Anti-PID module and it can recover the PID effect during night thus protect the PV system from degradation.

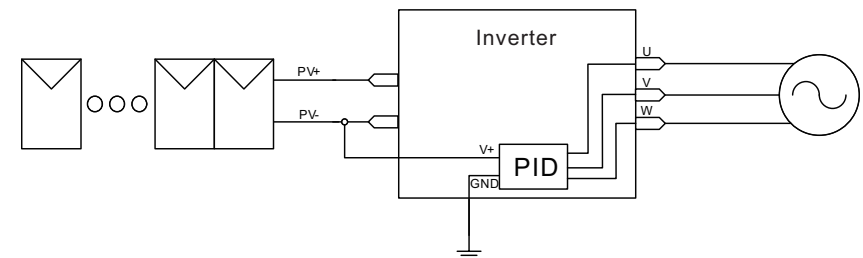


Figure 7.1

The Anti-PID module repairs the PID effect of the PV model at night. When operating, the inverter LCD screen displays "PID-repairing" information, and the red light is on. The Anti-PID function is always ON when AC is applied.

If maintenance is required and turn off the AC switch can disable the Anti-PID function.



WARNING :

The PID function is automatic. When the DC bus voltage is lower than 260Vdc, the PID module will start creating 650 Vdc between PV- and ground. No need any control or settings

7. Maintenance

**NOTE:**

If you need to maintain the inverter at night, please turn off the AC switch first, then turn off the DC switch, and wait 20 minutes before you do other operations.

7.2 Fan Maintenance

If the fan does not work properly, the inverter will not be cooled effectively, and it may affect the effective operation of the inverter.

Therefore, it is necessary to clean or replace a broken fan as follows:

1. Turn off the "Grid ON/OFF" switch on the inverter LCD.
2. Disconnect the AC power.
3. Turn the DC switch to "OFF" position.
4. Wait for 15 minutes at least.
5. Remove the 2 screws on the fan plate.
6. pull out the fan module slowly and unplug the power plug of the fan after pulling out around 400mm.
7. Clean and replace the broken fan.
8. Connect the electrical wire and reinstall the fan. Restart the inverter.

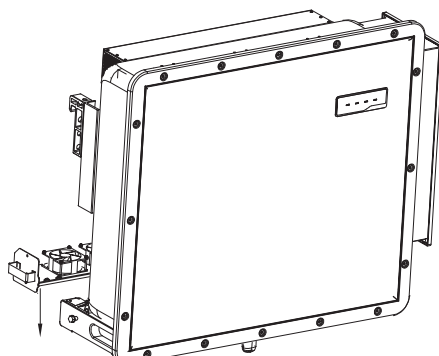


Figure 7.2

8. 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 8.1:

Alarm Message	Failure description	Solution
No power	Inverter no power on LCD	1.Check PV input connections 2.Check if the DC input voltage higher than 620V 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	
OV-TEM	Over Temperature	1.Check inverter surrounding ventilation. 2.Check if there's sunshine direct on inverter in hot weather.

8. Troubleshooting

Alarm Message	Failure description	Solution
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	
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	
Reve-DC	One of the DC string is reversely connected	1. Please check the inverters' PV string polarity, if there are strings reversely connected wait for the night when the solar irradiance is low and the PV string current down below 0.5A. Turn off the two DC switches and fix the polarity issue.
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 8.1 Fault message and description

8. Troubleshooting



NOTE

Before grid connection, if the string has negative current, it means the voltage between the two strings of one MPPT is unbalanced. One of two string may have more PV panels than another one.



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 15 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 Solis Three Phase Inverter;
2. The distributor/dealer of Solis Three 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 (refer to Section 5.2) 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.

9. Specifications

Model	S6-GC3P150K07-HV-ND-US
Max. DC input voltage (Volts)	1000
Rated DC voltage (Volts)	720
Start-up voltage (Volts)	180
MPPT voltage range (Volts)	160...1000
Max. input current (Amps)	7*54
Max. short circuit current (Amps)	7*75
MPPT number/Max input strings number	7/21
Rated output power (Watts)	150000
Max. output power (Watts)	150000
Max. apparent output power (VA)	150000
Rated grid voltage (Volts)	3Φ/PE, 480
Max. output current (Amps)	180.4
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50/60
Max. efficiency	98.8%
CEC efficiency	98.2%
Dimensions (W*H*D)	1035.5* 869* 396 mm
Weight	105kg
Topology	Transformerless
Self consumption (night)	< 2W
Operating ambient temperature range	-30°C...+60°C
Relative humidity	0~100%
Ingress protection	TYPE 4X
Cooling concept	Intelligent redundant cooling
Max.operation altitude	4000m
Compliance	UL 1741, IEEE 1547, UL 1699B, UL 1998, FCC, UL 1741SA
DC connection	MC4 connector
AC connection	OT Terminal (max 400 mm²)
Display	LED+Bluetooth
Communication connections	RS485, Optional: Wifi, GPRS, PLC
Warranty	5 years (extend to 20 years)

9. Specifications

Model	S6-GC3P166K07-HV-ND-US
Max. DC input voltage (Volts)	1000
Rated DC voltage (Volts)	720
Start-up voltage (Volts)	180
MPPT voltage range (Volts)	160...1000
Max. input current (Amps)	7*54
Max. short circuit current (Amps)	7*75
MPPT number/Max input strings number	7/21
Rated output power (Watts)	166000
Max. output power (Watts)	166000
Max. apparent output power (VA)	166000
Rated grid voltage (Volts)	3Φ/PE, 480
Max. output current (Amps)	199.7
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50/60
Max. efficiency	98.8%
CEC efficiency	98.2%
Dimensions (W*H*D)	1035.5* 869* 396 mm
Weight	105kg
Topology	Transformerless
Self consumption (night)	< 2W
Operating ambient temperature range	-30°C...+60°C
Relative humidity	0~100%
Ingress protection	TYPE 4X
Cooling concept	Intelligent redundant cooling
Max.operation altitude	4000m
Compliance	UL 1741, IEEE 1547, UL 1699B, UL 1998, FCC, UL 1741SA
DC connection	MC4 connector
AC connection	OT Terminal (max 400 mm²)
Display	LED+Bluetooth
Communication connections	RS485, Optional: Wifi, GPRS, PLC
Warranty	5 years (extend to 20 years)

9. Specifications

Model	S6-GC3P174K07-HV-ND-US
Max. DC input voltage (Volts)	1000
Rated DC voltage (Volts)	720
Start-up voltage (Volts)	180
MPPT voltage range (Volts)	160...1000
Max. input current (Amps)	7*54
Max. short circuit current (Amps)	7*75
MPPT number/Max input strings number	7/21
Rated output power (Watts)	174000
Max. output power (Watts)	174000
Max. apparent output power (VA)	174000
Rated grid voltage (Volts)	3Φ/PE, 480
Max. output current (Amps)	209.3
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50/60
Max. efficiency	98.8%
CEC efficiency	98.2%
Dimensions (W*H*D)	1035.5* 869* 396 mm
Weight	105kg
Topology	Transformerless
Self consumption (night)	< 2W
Operating ambient temperature range	-30°C...+60°C
Relative humidity	0~100%
Ingress protection	TYPE 4X
Cooling concept	Intelligent redundant cooling
Max.operation altitude	4000m
Compliance	UL 1741, IEEE 1547, UL 1699B, UL 1998, FCC, UL 1741SA
DC connection	MC4 connector
AC connection	OT Terminal (max 400 mm²)
Display	LED+Bluetooth
Communication connections	RS485, Optional: Wifi, GPRS, PLC
Warranty	5 years (extend to 20 years)

9. Specifications

Model	S6-GC3P200K07-HV-ND-US
Max. DC input voltage (Volts)	1000
Rated DC voltage (Volts)	720
Start-up voltage (Volts)	180
MPPT voltage range (Volts)	160...1000
Max. input current (Amps)	7*54
Max. short circuit current (Amps)	7*75
MPPT number/Max input strings number	7/21
Rated output power (Watts)	200000
Max. output power (Watts)	200000
Max. apparent output power (VA)	200000
Rated grid voltage (Volts)	3Φ/PE, 480
Max. output current (Amps)	240.6
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50/60
Max. efficiency	98.8%
CEC efficiency	98.2%
Dimensions (W*H*D)	1035.5* 869* 396 mm
Weight	105kg
Topology	Transformerless
Self consumption (night)	< 2W
Operating ambient temperature range	-30°C...+60°C
Relative humidity	0~100%
Ingress protection	TYPE 4X
Cooling concept	Intelligent redundant cooling
Max.operation altitude	4000m
Compliance	UL 1741, IEEE 1547, UL 1699B, UL 1998, FCC, UL 1741SA
DC connection	MC4 connector
AC connection	OT Terminal (max 400 mm²)
Display	LED+Bluetooth
Communication connections	RS485, Optional: Wifi, GPRS, PLC
Warranty	5 years (extend to 20 years)

9. Specifications

Model	S6-GC3P80K07-LV-ND
Max. DC input voltage (Volts)	800
Rated DC voltage (Volts)	450
Start-up voltage (Volts)	180
MPPT voltage range (Volts)	160...800
Max. input current (Amps)	7*54
Max. short circuit current (Amps)	7*75
MPPT number/Max input strings number	7/21
Rated output power (Watts)	80000
Max. output power (Watts)	88000
Max. apparent output power (VA)	88000
Rated grid voltage (Volts)	3/N/PE, 220/230V
Rated grid output current (Amps)	209.9
Max. output current (Amps)	230.9
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50/60
Max. efficiency	98.8%
CEC efficiency	98.3%
Dimensions (W*H*D)	1035.5* 869* 396 mm
Weight	105kg
Topology	Transformerless
Self consumption (night)	< 2W
Operating ambient temperature range	-30°C...+60°C
Relative humidity	0~100%
Ingress protection	IP66
Cooling concept	Intelligent redundant cooling
Max.operation altitude	4000m
Compliance	UL 1741, IEEE 1547, UL 1699B, UL 1998, FCC, UL 1741SA
DC connection	MC4 connector
AC connection	OT Terminal (max 400 mm²)
Display	LED+Bluetooth
Communication connections	RS485, Optional: Wifi, GPRS, PLC
Warranty	5 years (extend to 20 years)

9. Specifications

Model	S6-GC3P100K07-LV-ND
Max. DC input voltage (Volts)	800
Rated DC voltage (Volts)	450
Start-up voltage (Volts)	180
MPPT voltage range (Volts)	160...800
Max. input current (Amps)	7*54
Max. short circuit current (Amps)	7*75
MPPT number/Max input strings number	7/21
Rated output power (Watts)	100000
Max. output power (Watts)	100000
Max. apparent output power (VA)	100000
Rated grid voltage (Volts)	3/N/PE, 220/230V
Rated grid output current (Amps)	251.0
Max. output current (Amps)	251.0
Power Factor (at rated output power)	0.8leading~0.8lagging
THDi (at rated output power)	<3%
Rated grid frequency (Hertz)	50/60
Max. efficiency	98.8%
CEC efficiency	98.3%
Dimensions (W*H*D)	1035.5* 869* 396 mm
Weight	105kg
Topology	Transformerless
Self consumption (night)	< 2W
Operating ambient temperature range	-30°C...+60°C
Relative humidity	0~100%
Ingress protection	IP66
Cooling concept	Intelligent redundant cooling
Max.operation altitude	4000m
Compliance	UL 1741, IEEE 1547, UL 1699B, UL 1998, FCC, UL 1741SA
DC connection	MC4 connector
AC connection	OT Terminal (max 400 mm²)
Display	LED+Bluetooth
Communication connections	RS485, Optional: Wifi, GPRS, PLC
Warranty	5 years (extend to 20 years)

10. Appendix

10.1 FCC Instructions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



FCC WARNING:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.