

Commissioning Guide

1-Phase PV Grid-Connected Inverter

SG5.0RS-ADA / SG8.0RS / SG9.0RS / SG10RS



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About This Manual

Target Group

This manual is intended for distributors/installers, owners, and O&M personnel of SG5.0–10RS inverters.

Symbols in the Manual



NOTE indicates supplementary information, emphasis on specific points, or tips that might help to solve your problems or save your time.

Main Content

This manual gives instructions mainly on how to create a plant and set relevant parameters regarding SH8.0–10RS inverters on the iSolarCloud App.



User interfaces presented in this manual come from V2.1.6.20230731 iSolarCloud App. Icons and data in the figures are for reference only, which may be different on the App you actually use.

This manual gives instructions on how to use the iSolarCloud App on an iOS device. These instructions also apply to Android devices, with only small differences in user interfaces. Please refer to the user interfaces actually shown on your device.

System Requirements

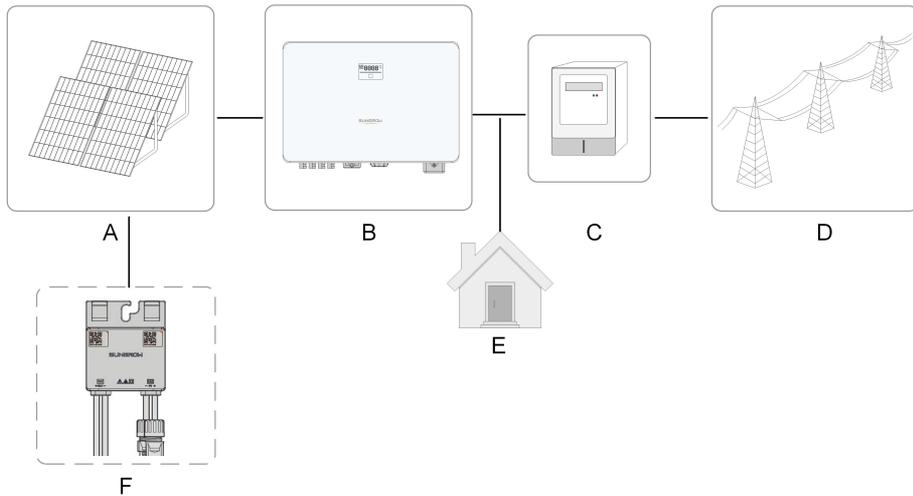
- Mobile OS: Android 5.0 or later, iOS 11.0 or later;
- The phone can connect to WLAN or 2G/3G/4G/5G network;
- The phone has enough storage space to install the App;
- The phone has sufficient battery power.

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1 System Introduction

SG5.0–10RS inverters are transformerless single-phase grid-connected string inverters manufactured by SUNGROW. It is an important part of the PV power generation system. The inverter is designed to convert the DC output from PV modules into grid-compatible AC power and feed it into the grid. The diagram below shows the typical application scenario of the inverter. This manual mainly gives step-by-step instructions on inverter configuration.



No.	Item	Description
A	PV strings	Compatible with monocrystalline silicon, polycrystalline silicon, and thin-film modules without grounding.
B	Inverter	SG5.0RS-ADA, SG8.0RS, SG9.0RS, SG10RS.
C	Metering device	Meter cupboard with power distribution system. SG5.0RS-ADA matching single-phase wireless meter WiMeter-S.
D	Utility grid	TT, TN-C, TN-S, TN-C-S.
E	Loads	House loads that consume electricity.
F	Optimizer	/

2 Commissioning

2.1 Inspection Before Commissioning

Check the following items before starting the inverter:

- All equipment has been reliably installed.
- DC switch(es) and AC circuit breaker are in the "OFF" position.
- The ground cable is properly and reliably connected.
- The AC cable is properly and reliably connected.
- The DC cable is properly and reliably connected.
- The communication cable is properly and reliably connected.
- The vacant terminals are sealed.
- No foreign items, such as tools, are left on the top of the machine or in the junction box (if there is).
- The AC circuit breaker is selected in accordance with the requirements of this manual and local standards.
- All warning signs & labels are intact and legible.

2.2 Commissioning Procedure

Step 1 Close the AC switch (if any) between the inverter and the grid.



Before closing the AC circuit breaker between the inverter and the grid, measure the AC voltage with a multimeter set to "AC voltage", making sure it is within the allowable range. Otherwise, the inverter may be damaged.

Step 2 Rotate the DC switch of the inverter to "ON" position.

Step 3 Close the DC switch (if any) between the inverter and the PV string.

Step 4 If, with sufficient light, the grid conditions meet the grid connection requirements, the inverter will work normally.

Step 5 Check the LED indicator. If it is in normal state, proceed with configuration on the iSolarCloud App.

-- End

3 Configuration on iSolarCloud

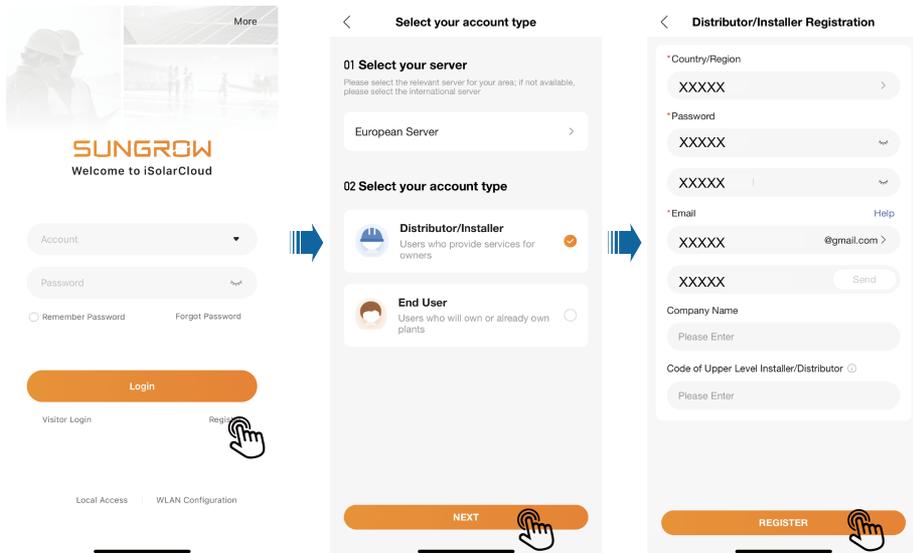
3.1 Install iSolarCloud App

The iSolarCloud App is a software for users to configure running parameters for the inverter. You may download the App in the following two ways:

- Search for iSolarCloud in App Store, Google Play or other application stores, and download the App by following the onscreen instructions.
- Scan the QR code below with a phone and download the App.



3.2 Create an Account



Step 1 Tap Register.

Step 2 Select a **Server**, and choose to create a **Distributor/Installer** or **Owner** account according to the actual needs. Then, tap "Next".

Users in mainland China may choose **Chinese Server** and can only create a Distributor/Installer account.



European and African users may choose **European Server**, Australian users may choose **Australian Server**, and users in other countries/regions may choose **International Server**. These users can create an Owner or a Distributor/Installer account.

Step 3 Complete the required information. Information required for registration include: **Country/Region**, **Password**, **Phone Number/Email**, **Verification Code**, **Company Name**, and **Code of Upper Level Installer/Distributor**. The Distributor/Installer may also set a **Username**, which is optional.

Please register with a phone number if you select the **Chinese Server**.



Please register with an email if you select the **International Server**, **European Server**, or **Australian Server**.

You can contact your upper-level distributor/installer for the "Code of Upper Level Installer/Distributor". Entering this code indicates that your organization is subordinate to an upper-level distributor/installer.

Step 4 Tap **REGISTER** to complete registration.

-- End

3.3 Create a Plant

Requirements

- The matching communication device for the inverter has been properly installed.
- There are available wireless home networks, and your mobile phone has connected to a wireless home network.
- You have already logged in to the iSolarCloud App. You can create an iSolarCloud account by yourself, or contact your distributor/installer or SUNGROW for the account and password.

Devices are managed as part of a plant on the iSolarCloud App. You can add different types of devices to the plant, e.g., inverters, batteries, and communication modules. The following three steps are required to create a plant: "[3.3.1 Complete Plant Information](#)", "[3.3.2 Add Communication Device & Set up Network Connection](#)", and "[3.3.4 Set Tariffs](#)".

3.3.1 Complete Plant Information

Background Information

User interfaces for creating a plant may differ slightly by the plant type, inverter type, or communication device. Please refer to the interfaces actually shown on the App. Some of the required information need to be acquired in advance, for example:

- To authorize the Distributor/Installer to manage the plant, the Owner needs to ask them for their distributor/installer code.
- To assist the Owner in creating a plant, the Distributor/Installer needs to ask for the owner's phone number.

Step 1 Open the iSolarCloud App. Enter the account name and password on the login screen → log into the account → tap **Create Plant** → fill in the general information of the plant → save the settings.

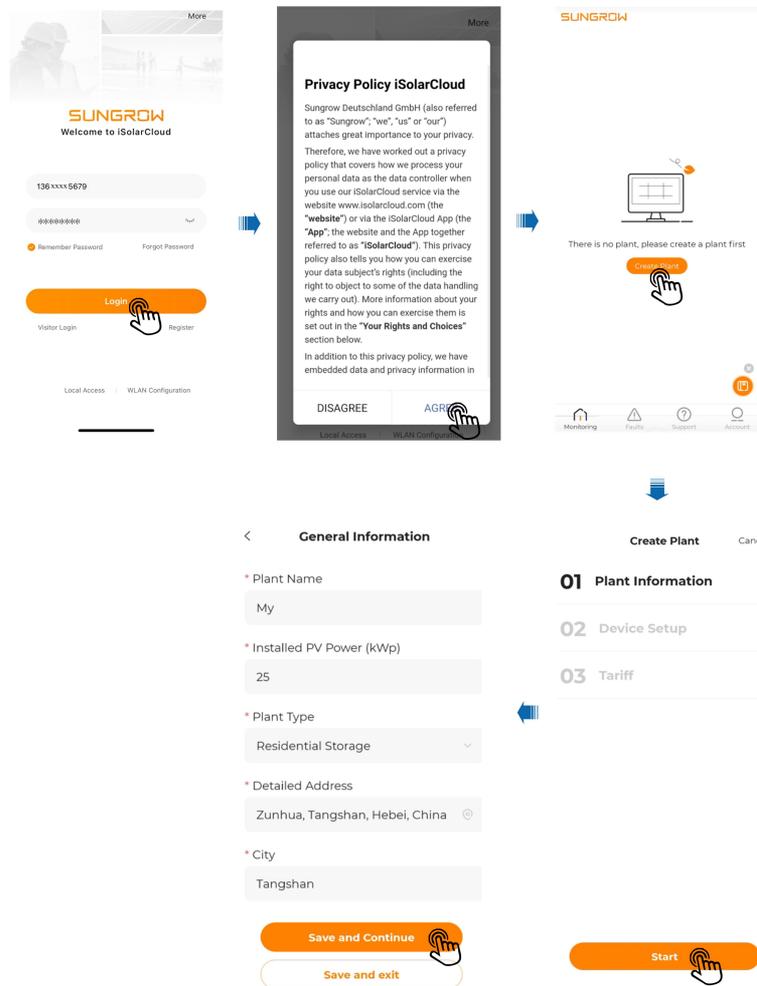


table 3-1 Parameters Required for Creating a Plant

Parameter	Description
Plant Name*	Enter the plant name.
Installed PV Power (kWp)*	Enter the installed power.
Plant Type*	Select the plant type.
Detailed Address*	<p>The location of the plant, which can be set in the following two ways:</p> <ul style="list-style-type: none"> Manual setting: Enter the location of the plant in the input box. Auto acquisition: Tap  to get the current location automatically.

Parameter	Description
City*	The city where the plant is located.
Postal Code	The postal code of the place where the plant is located.
Country/Region*	The country (region) where the plant is located.
Time Zone*	The time zone of the place where the plant is located.
Module Model	The model of the PV module actually used in the plant.
Owner's Email Address*	Enter the owner's email address.
Grid-connection Type*	Set the grid-connection type for the plant.
Grid-connected Date	Shows the current date by default. You may tap  to set the grid-connected date.
Plant Image	Upload an image of the plant.



- Note: * indicates required fields.
- Upon opening "Create Plant", detailed information about the plant location will be acquired automatically.

-- End

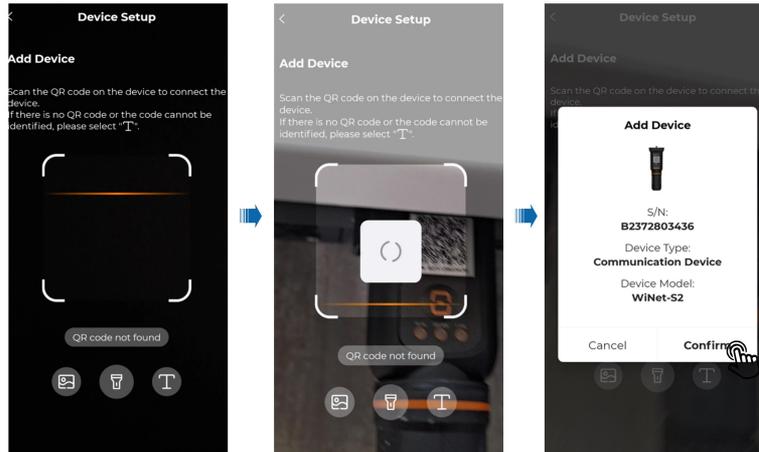
3.3.2 Add Communication Device & Set up Network Connection

Background Information

Communication devices are used for network connection between the inverter and the server. To allow exchange with the server, users need to add a communication device to the plant and complete network configuration accordingly. The communication device should connect to the wireless home network, or any other network that is available. After the network connection is established, the communication device will collect the inverter's operating data and upload them to the server. Users can view all kinds of plant data on the iSolarCloud App.

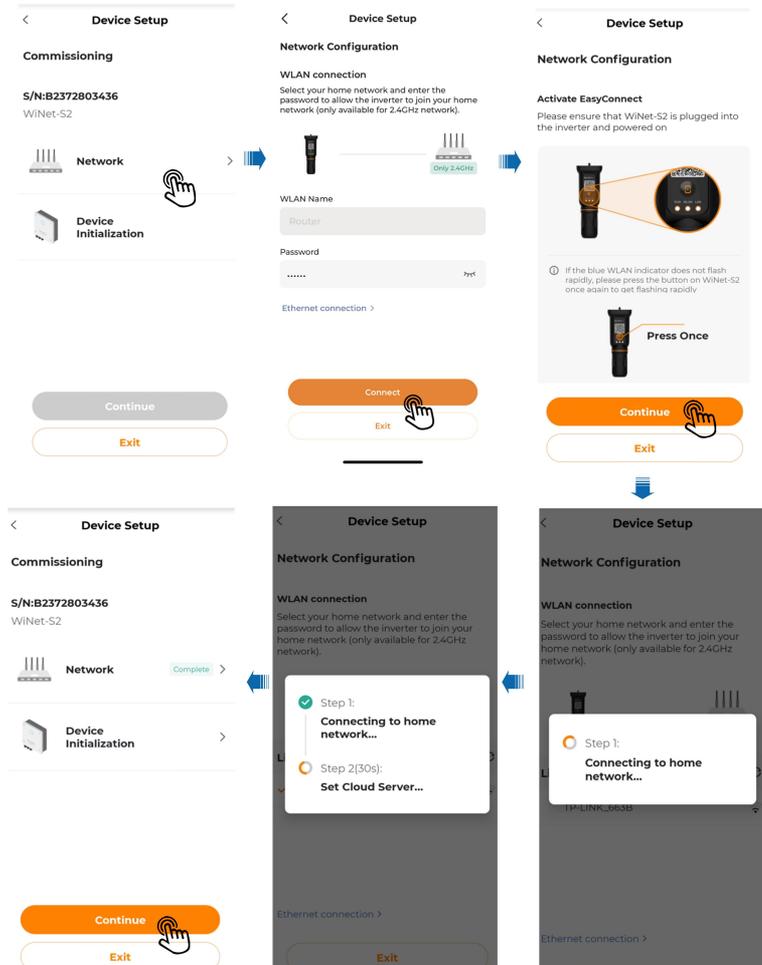
Requirements

- Make sure the mobile phone has connected to a home network.

Step 1 Scan the QR code on the device to add it to the plant.

Step 2 Connect the communication device to the home network, so that data can be transferred to the iSolarCloud server over the home network.

Tap **Network** → select the target home network and enter the password → press the button on the communication device once by following the onscreen instructions → wait for the network connection to be established → complete network configuration.



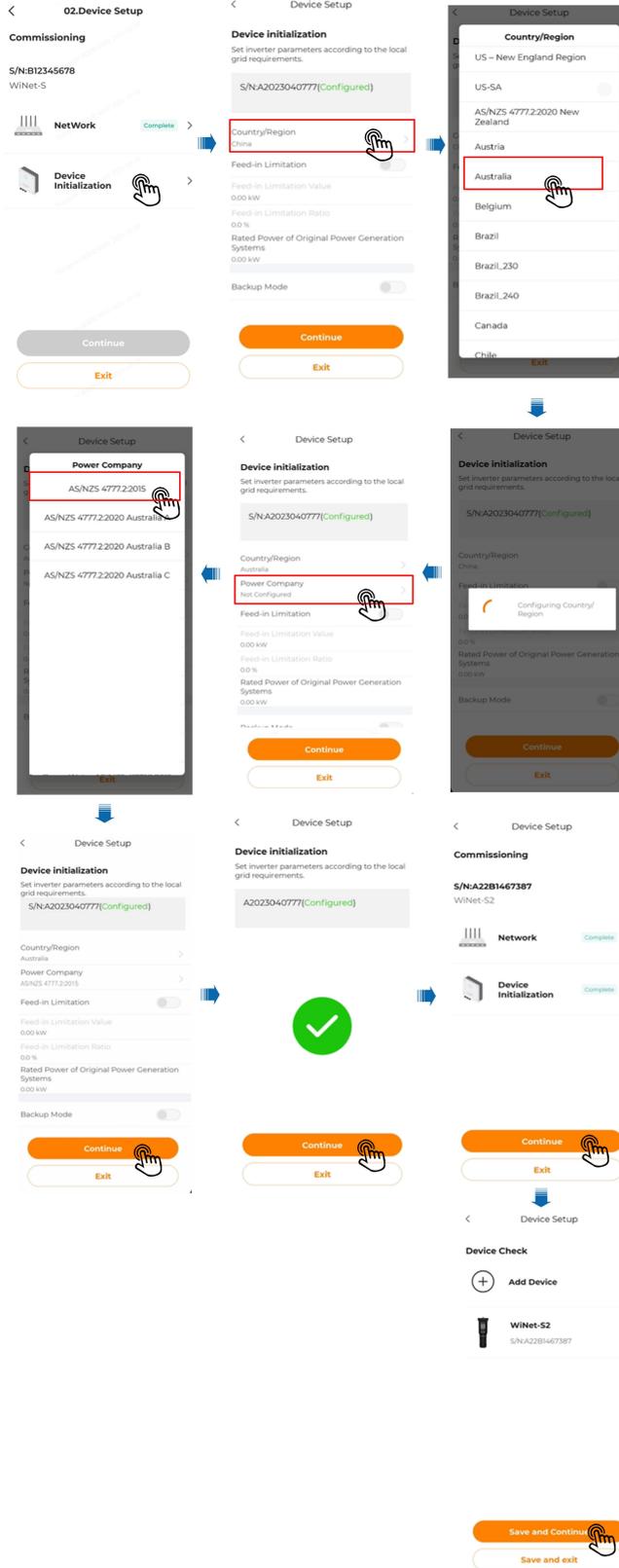
-- End

3.3.3 Device Initialization

Background Information

To get the inverter connected to the local grid, the local standards for grid connection must be met. Please set the inverter parameters according to the applicable local grid standards. Setting of Feed-in Limitation, in accordance with the grid standards, is required for device initialization. For details, see "3.4.1 Feed-in Limitation".

Step 1 Tap Device Initialization in “Commissioning” → select a Country/Region based on the location of the inverter → choose a power company as needed → tap Continue, and device initialization will be completed.



-- End

3.3.4 Set Tariffs

Tariff is required for revenue calculation. Please contact your local power company for energy tariff if needed.

Step 1 Set your preferred currency in **Unit** → set **Feed-in Tariff** and **Consumption Tariff** → save the settings.

< **Edit Tariff** Skip

① Tariff is used for revenue calculation. If you don't know your tariff, please contact your electric power company.

Unit

EUR

Feed-in Tariff

Tariff Type

Fixed Tariff

Tariff(EUR/kWh)

Please Enter

Consumption Tariff

Tariff Type

Save and Continue

Save and exit

Step 2 Tap Complete. Now the steps for creating a plant are completed.



-- End

3.4 Set Common Parameters

This section introduces the parameters that are required to be set for the system, after a plant has been created.

Requirements

- You have created a plant already.
- All data have been updated to the plant.

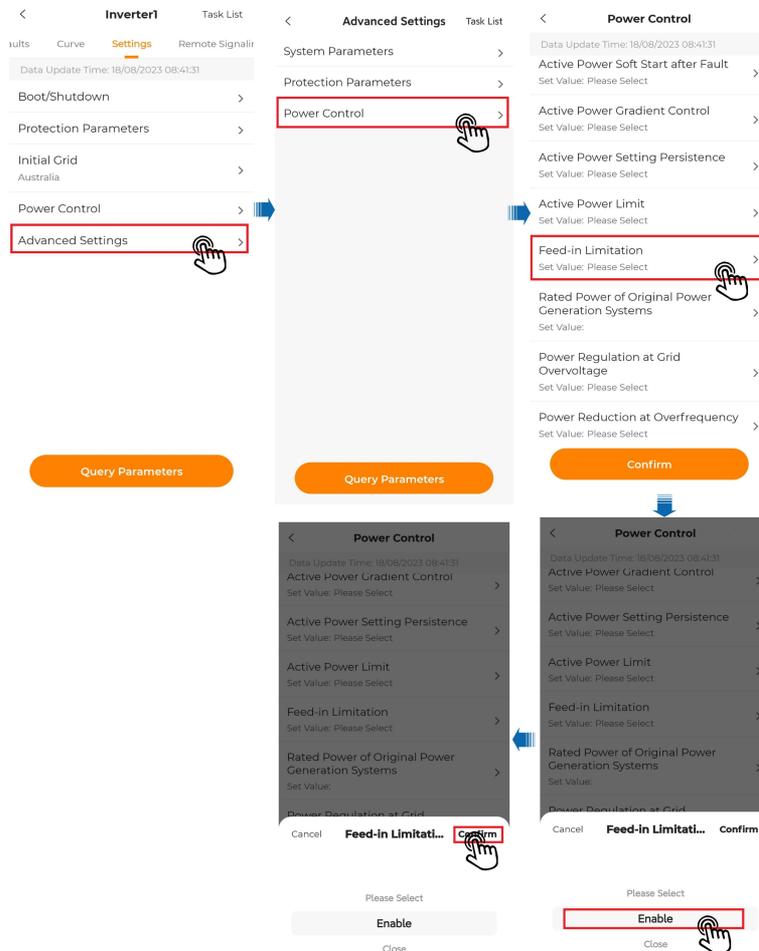
3.4.1 Feed-in Limitation

Background Information

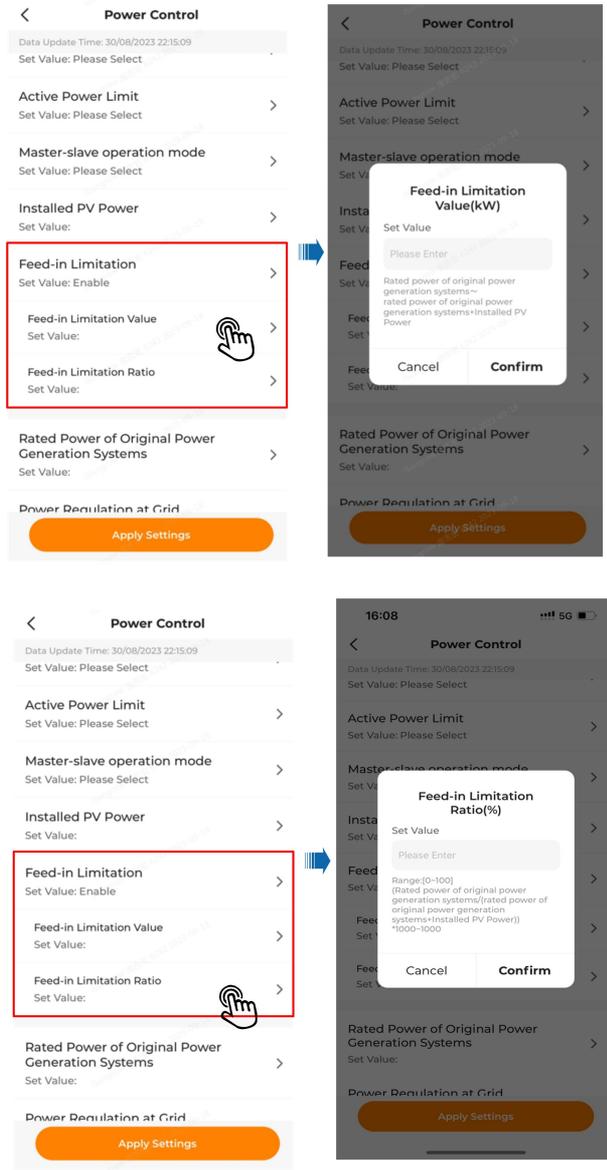
The Feed-in Limitation function is used to limit the power fed into the grid from the PV installation. You may set this function based on actual needs. If the Feed-in Limitation is enabled, you need to set the **Feed-in Limitation Value** and **Feed-in Limitation Ratio** as well. Ranges of values for these parameters are listed in the table below. For example, for a 10kW system that has an export limit of 6kW, the ratio is 60%.

Parameter	Range
Feed-in Limitation Value(kW)	Rated power of original power generation systems ~ rated power of original power generation systems + Installed PV Power
Feed-in Limitation Ratio(%)	(Rated power of original power generation systems/(rated power of original power generation systems + Installed PV Power)) *1000 ~ 1000

Step 1 Select the target plant on the **Monitoring** screen. Choose Device → Inverter → Settings → Advanced Settings → Power Control → Feed-in Limitation, and select **Enable**. Then, tap Confirm to turn on the Feed-in Limitation function.



Step 2 After the Feed-in Limitation is enabled, set the **Feed-in Limitation Value** and **Feed-in Limitation Ratio** in **Feed-in Limitation**.



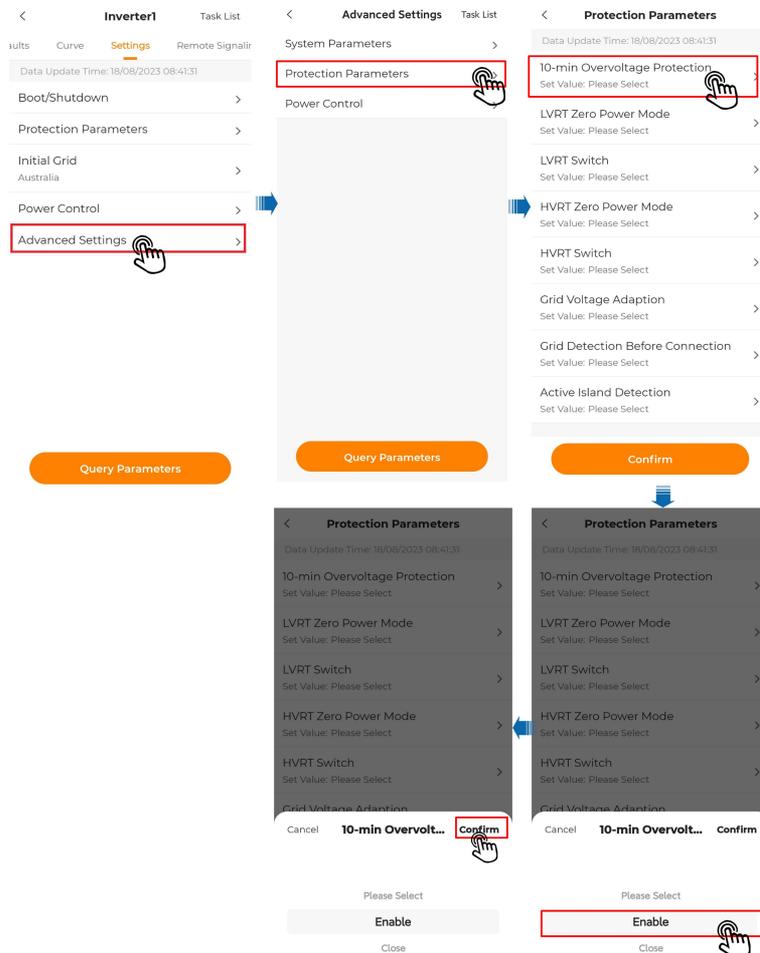
-- End

3.4.2 10-min Overvoltage Protection

Background Information

If the average grid voltage stays higher than the preset overvoltage protection value for 10 minutes, the inverter will shut down automatically due to a fault. To protect the inverter from damages caused by grid voltage staying overly high, it is necessary to enable this function.

Step 1 Select the target plant on the **Monitoring** screen, and choose Device → Inverter → Settings → Advanced Settings → Protection Parameters → 10-min Overvoltage Protection. Then, select **Enable**, and tap Confirm to save the settings.



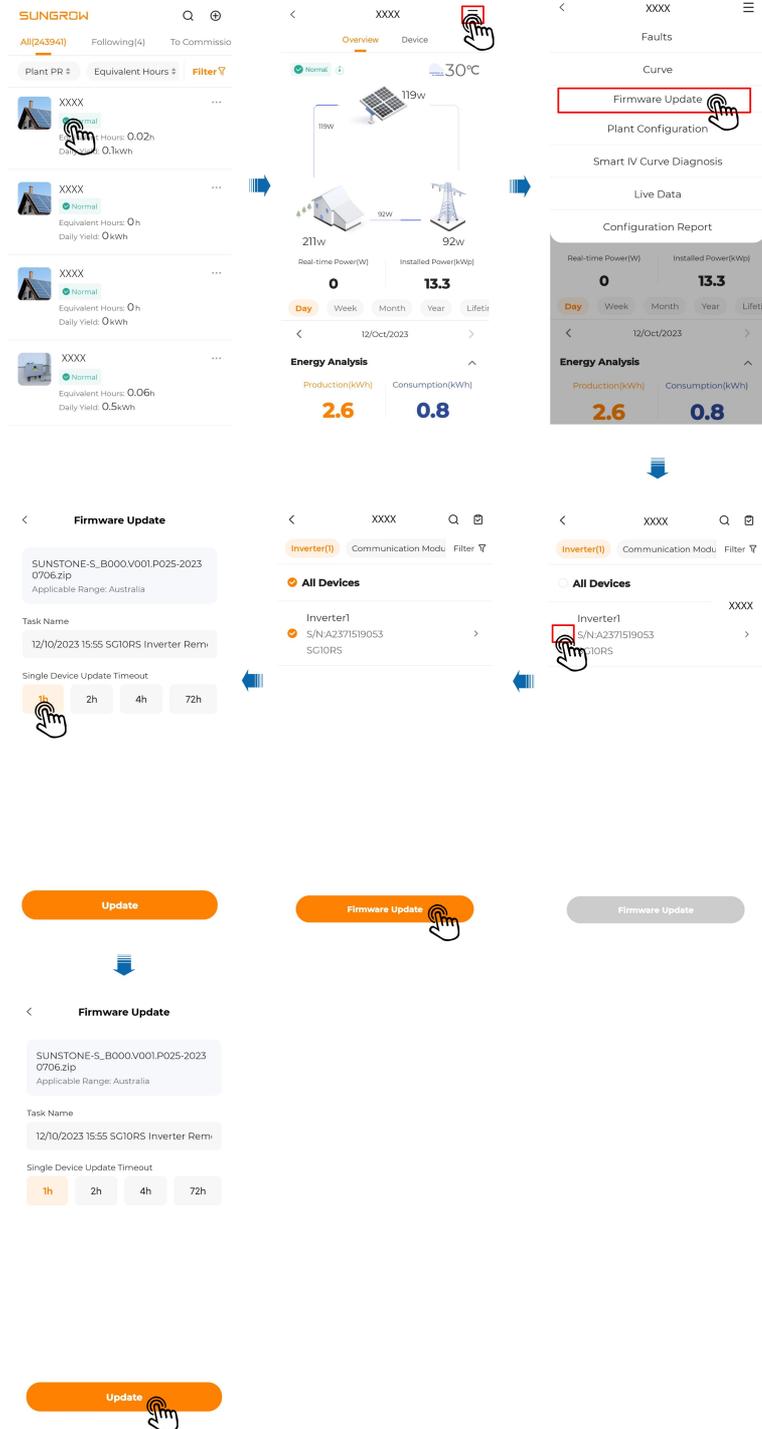
-- End

3.5 Firmware Update

Background Information

Inverter firmware update is typically used to improve the performance, stability, and reliability of the inverter, or fix the known problems and vulnerabilities. Please perform firmware update on a regular basis to keep the inverter up-to-date.

Step 1 Select the target plant. Choose  in the upper right corner of the screen → Firmware Update → select the device → Firmware Update → set Single Device Update Timeout (e.g., 1h) → Update.



Single Device Update Timeout: If the time of firmware update exceeds 1h, there will be an update timeout message. In such a case, please repeat the steps for firmware update.

-- End

3.6 PV Plant Information

Power Flow: Information such as generated output and feed-in power of the PV system are shown here. Arrows between the icons indicate that there is energy flowing between the devices. The direction in which the arrow points indicates the direction of the energy flow.



Users granted access to live data can see the live data status:



Live data enabled



Live data not enabled



The device does not support live data

The Owner can view operation information of the plant such as **Today Yield** and **Today Revenue**.

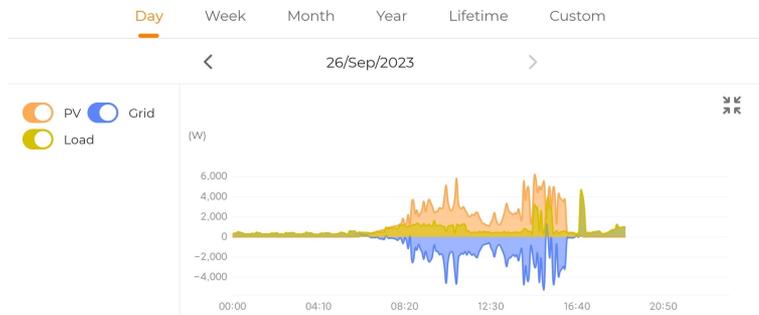
The Distributor/Installer can view operation information of the plant such as **Energy Analysis**, **Production** and **Consumption** of power, and **Earning**.

Take **Energy Analysis** as an example:

You can toggle between **Curve** and **Summary** to check the curves and the production and consumption data.



Tap  in the upper right corner of the curve graph to view it in landscape mode.



3.7 Frequently Asked Question

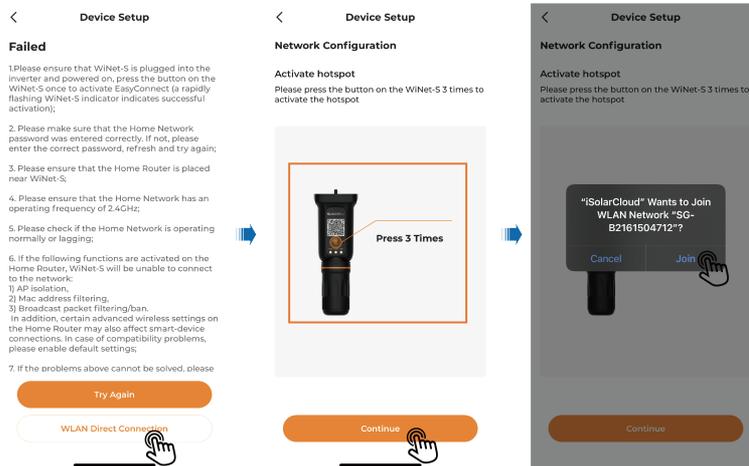
3.7.1 Communication Device Network Configuration Failed

Background

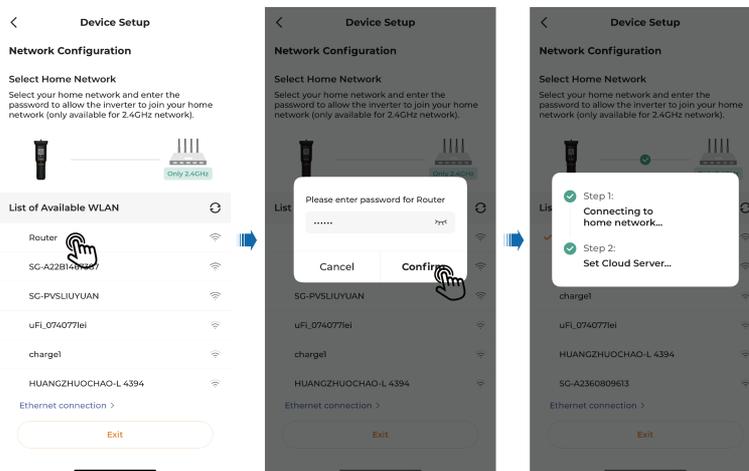
In the process of creating a plant, network configuration for the communication device has failed due to network or other reasons. This failure persists after retry, and the subsequent tasks cannot be carried on.

Step 1 In case of a network connection failure, you can adopt **WLAN Direct Connection**.

Tap **WLAN Direct Connection** on the screen that shows a connection failure message → press the button on the communication device three times by following the onscreen instructions → connect the mobile phone to the communication module's WLAN.



Select the target home network in “Network Configuration” → enter the password → wait for the network connection to be established → complete network configuration.



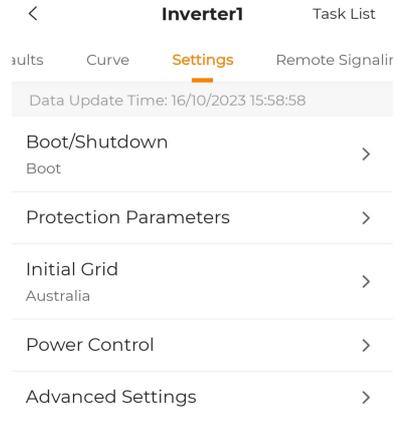
-- End

3.7.2 Unable to View Set Parameter Values

Background

Exit and go to another screen after finishing the parameter setting. Then, go back to the parameter setting screen again, and the value set for the parameter before is gone.

Step 1 In case the set value for the parameter cannot be seen, you can select the corresponding plant on the **Monitoring** screen, and then choose “Settings” → “Query Parameters”. Wait for the task to be executed, and the value that has been set for the parameter will be shown on the screen.



-- End

4 More Information

For more information about the inverter and the iSolarCloud App, you may refer to the documents below:

1. [《SG5.0-10RS User Manual》](#)
2. [《iSolarCloud App User Manual \(Overseas\)》](#)

5 Quality Assurance

When product faults occur during the warranty period, SUNGROW 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, SUNGROW has the right to refuse to honor the quality guarantee.

Conditions

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

Exclusion of Liability

In the following circumstances, SUNGROW 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 conditions beyond those 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 SUNGROW.
- The fault or damage is caused by the use of non-standard or non-SUNGROW 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 SUNGROW.

6 Contact Information

In case of questions about this product, please contact us.

We need the following information to provide you the best assistance:

- Model of the device
- Serial number of the device
- Fault code/name
- Brief description of the problem

For detailed contact information, please visit: <https://en.sungrowpower.com/contactUS>

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