Micro Inverter

GW0.799K-MIS-G10

GW0.8K-MIS-G10

GW1K-MIS-G10

User Manual

Copyright Statement

NOTICE
The information in this user manual is subject to change due to product updates or other reasons. This guide cannot replace the notices and warnings of the device unless otherwise specified. All descriptions in the manual are for guidance only.

1. About This Manual

1.1. Overview

This manual describes the product information, installation, electrical connection, commissioning, troubleshooting, and maintenance. Read through this manual before installing and operating the product. All the installers and users have to be familiar with the product features, functions, and safety precautions. This manual is subject to update without notice. For more product details and latest documents, visit https://en.goodwe.com/.

1.2. Applicable Model

This manual applies to the listed inverters below:

Model	Nominal Output Power	Nominal Output Voltage
GW0.799K-MIS-G10	799W	L/N/PE, 220/230/240
GW0.8K-MIS-G10	800W	L/N/PE, 220/230/240
GW1K-MIS-G10	1000W	L/N/PE, 220/230/240

1.3. Symbol Definition

DANGER
Indicates a high-level hazard that, if not avoided, will result in death or serious injury.
WARNING
Indicates a medium-level hazard that, if not avoided, could result in death or serious injury.
CAUTION
Indicates a low-level hazard that, if not avoided, could result in minor or moderate injury.
NOTICE
Highlights key information and supplements the texts. Or some skills and methods to solve product-related problems to save time.

2. Safety Precaution

Strictly follow the safety instructions in the user manual during the operation.

WARNING

The products are designed and tested strictly complies with related safety rules. Read and follow all the safety instructions and cautions before any operations. Improper operation might cause personal injury or property damage as the inverters are electrical equipment.

2.1. General Safety

NOTICE

- The information in this user manual is subject to change due to product updates or other reasons. This guide cannot replace the notices and warnings of the device unless otherwise specified. All descriptions in the manual are for guidance only.
- Before installations, read through the user manual to learn about the product and the precautions.
- Use insulating tools and wear personal protective equipment when operating the equipment to ensure personal safety. Wear anti-static gloves, cloths, and wrist strips when touching electron devices to protect the inverter from damage.
- Unauthorized dismantling or modification may damage the equipment, and the damage is not covered under the warranty.
- Strictly follow the installation, operation, and configuration instructions in this manual. The manufacturer shall not be liable for equipment damage or personal injury if you do not follow the instructions.

2.2. System Safety

DANGER

- Disconnect the upstream switches to power off the equipment before any electrical connections. Do not work with power on. Otherwise, an electric shock may occur.
- All operations such as transportation, storage, installation, use and maintenance shall comply with applicable laws, regulations, standards and specifications.
- Perform electrical connections in compliance with local laws, regulations, standards and specifications, including operations, cables, and component specifications.
- Use the connectors included in the package to connect cables. The manufacturer shall not be liable for equipment damage if other connectors are used.
- Ensure all cables are connected tightly, securely, and correctly. Inappropriate wiring may cause poor connection and damage the equipment.
- To protect the equipment and components from damage during transportation, ensure that the transportation personnel are professionally trained. All operations during the transportation have to be recorded. The equipment shall be kept in balance to avoid falling down.
- Keep the equipment stable to avoid dumping, which can result in equipment damage and personal injuries.

WARNING

- Do not apply mechanical load to terminals, otherwise the terminals may be damaged.
- If the cable bears too much tension, the connection may be poor. Reserve a certain length of the cable before connecting it to corresponding ports.
- Tie the cables of the same type together, and place cables of different types at least 30mm apart. Do not place the cables entangled or crossed.
- Place the cables at least 30mm away from the heating components or heat sources, otherwise the insulation layer of the cables may be aging or broken due to high temperature.

2.2.1.PV String Safety

WARNING

- Ensure the PV module frames and the bracket system are securely grounded.
- Ensure the DC cables are connected tightly, securely and correctly. Inappropriate wiring may cause poor contacts or high impedances, and damage the inverter.
- Measure the DC cable using a multimeter to avoid reverse polarity connection. Also, the voltage should be under the max DC input voltage. The manufacturer shall not be liable for the damage caused by reverse connection and overvoltage.
- The PV strings cannot be grounded. Ensure the minimum insulation resistance of PV string to the ground meets the minimum insulation resistance requirements before connecting the PV string to the inverter (R=maximum input voltage (V)/ 30mA).
- Do not connect one PV string to more than one inverter at the same time. Otherwise, it may cause damage to the inverter.
- PV modules used with inverters must comply with IEC 61730 Class A standard.

2.2.2.Inverter Safety

WARNING

The voltage and frequency at the connecting point should meet the on-grid requirements.

2.3. Safety Symbols and Certification Marks

DANGER

- All labels and warning marks should be visible after the installation. Do not cover, scrawl, or damage any label on the equipment.
- The following descriptions are for reference only.

No.	Symbol	Descriptions
1		Potential risks exist. Wear proper personnel protective equipment before any operations.
2		HIGH VOLTAGE HAZARD. Disconnect all incoming power and turn off the product before working on it.
3		High-temperature hazard. Do not touch the product under operation to avoid being burnt.
4		Delayed discharge. Wait 5 minutes after power off until the components are completely discharged.
5		Read through the user manual before any operations.
6		Do not dispose of the equipment as household waste. Discard the product in compliance with local laws and regulations, or send it back to the manufacturer.
7		CE mark.

2.4. EU Declaration of Conformity

2.4.1. Equipment with Wireless Communication Modules

GoodWe Technologies Co., Ltd. hereby declares that the equipment with wireless communication modules sold in the European market meets the requirements of the following directives:

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

2.4.2. Equipment without Wireless Communication Modules

GoodWe Technologies Co., Ltd. hereby declares that the equipment without wireless

communication modules sold in the European market meets the requirements of the following directives:

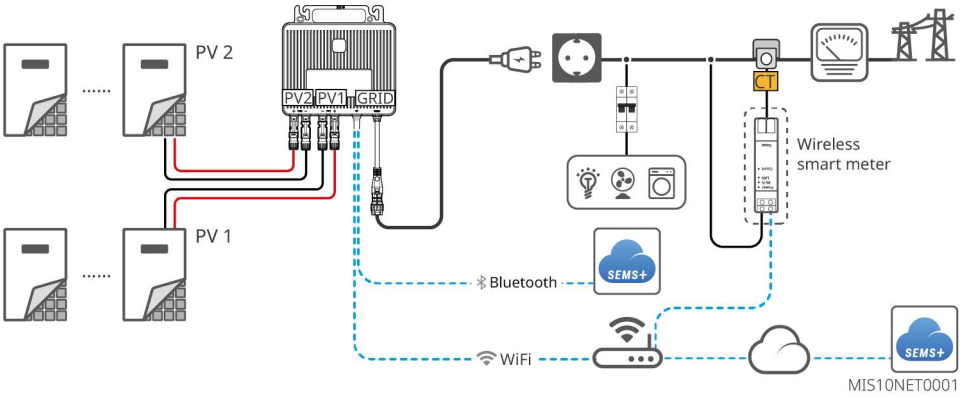
- Electromagnetic compatibility Directive 2014/30/EU (EMC)
- Electrical Apparatus Low Voltage Directive 2014/35/EU (LVD)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

3. System Introduction

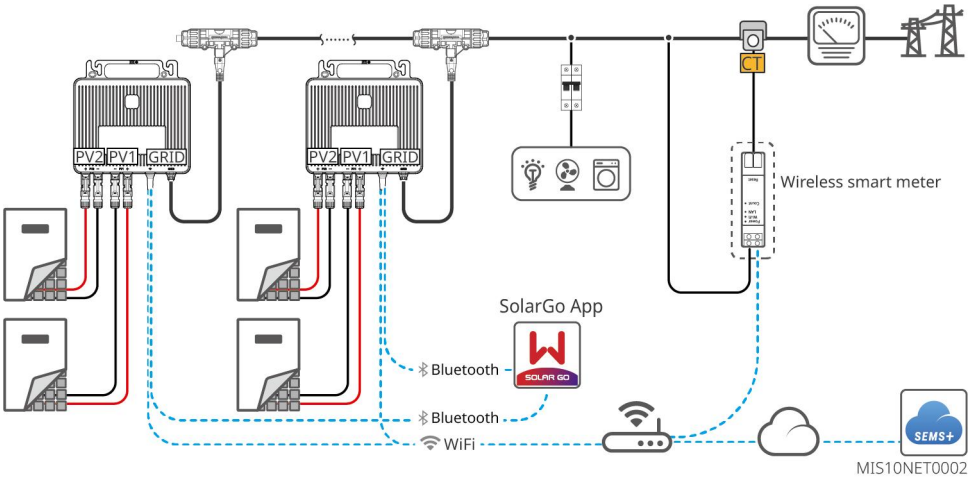
3.1. Product Overview

The MIS inverter is a micro single-phase grid-tied PV inverter. The inverter converts the DC power generated by the PV module into AC power and feeds it into the utility grid.

The application scenario of the inverter is plug and play PV system, as follows:



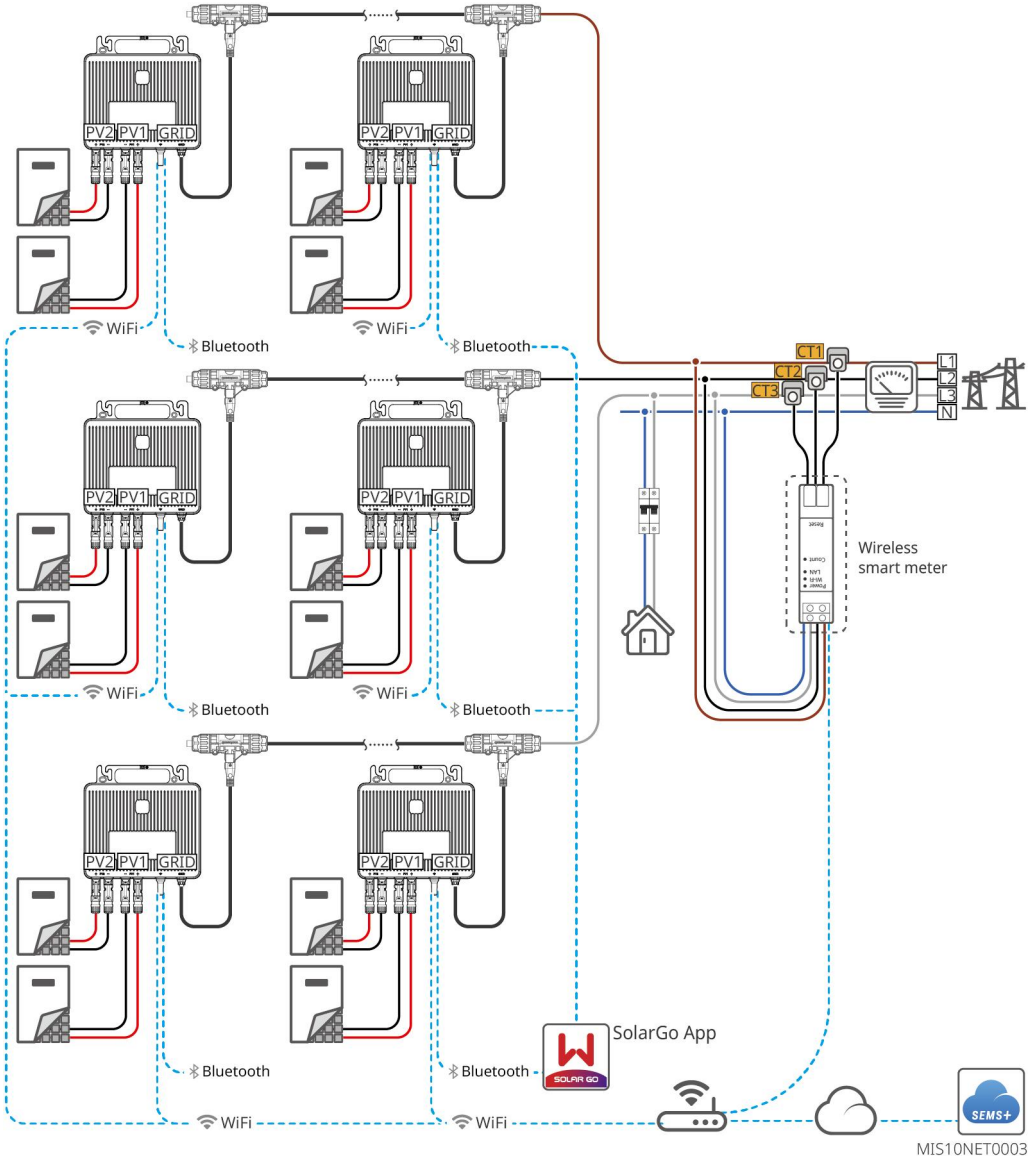
The application scenario of the inverter is hardwired system, as follows:



- Obtain the local grid license before connecting to the grid.
- Supports connecting one or more PV modules. Ensure the DC input from the PV system meets the following requirements: Open-circuit voltage does not exceed 60V, short-circuit current does not exceed 20A, and the power of each module is between 180Wp and 480Wp.
- The inverter supports connecting to SEMS+ App or SolarGo App(installar only) via bluetooth to configure router information. And then connecting to SEMS+ App via WiFi to realize remote monitoring and control of inverters and power stations.
- Install the smart meter or not based on actual needs. If installation is required, prepare a wireless smart meter by yourself and connect it via WiFi to enable functions such as power limitation. For installation methods and precautions regarding the wireless meter, please refer to the corresponding meter manual. Currently supported meter models: Fineco

EM115-Mod-WL (single-phase), Shelly Pro 3EM (three-phase),Eastron SEM3-WL-2 (three-phase, only for China) etc.

- When connecting a wireless smart meter in a hardwired scenario—only where local regulations permit—if multiple inverters need to be connected to a three-phase grid, ensure that CTs are installed on L1, L2, and L3, as shown in the diagram below.



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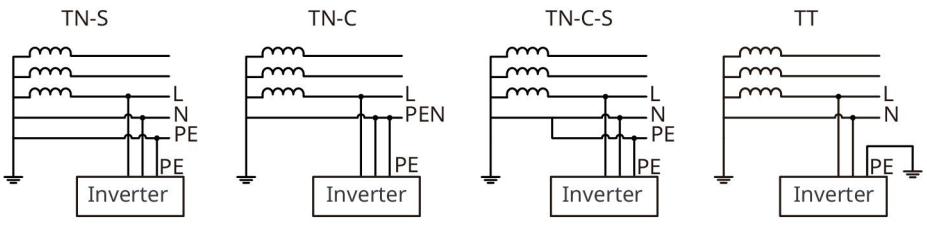
3.2. Supported Grid Types



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3.3. Features

Power derating

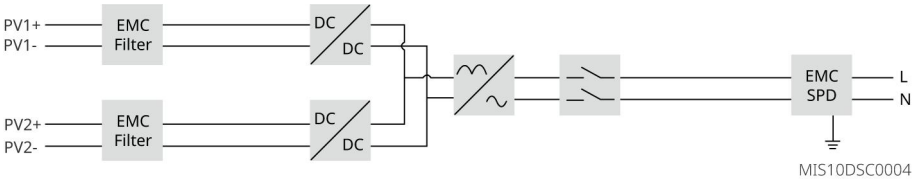
To satisfying the local laws or regulations and ensuring a safe operation, the inverter will automatically reduce the output power when the operating environment is not ideal. The following are the factors that may occur power derating. Please try to avoid then during operations.

- Unfavorable environmental conditions, e.g., direct sunlight, high temperature, etc.
- Inverter's output power percentage has been set.
- Over-frequency derating.
- Higher input current value.

Communication

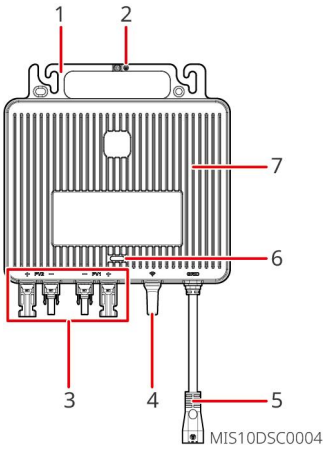
- Setting the inverter via bluetooth in a short distance; or connecting the inverter to the server via WiFi to monitor the inverter and power station working status.
- Bluetooth: meets Bluetooth 5.0 standard.
- WiFi: supports 2.4G frequency band. Set the router to 2.4G or 2.4G/5G mode.
- The router wireless signal name supports a maximum input of 32 bytes.
- To ensure communication quality, it is recommended to select a router with high wireless gain or more antennas. Use a wireless repeater or outdoor router if needed.

3.4. Circuit Diagram



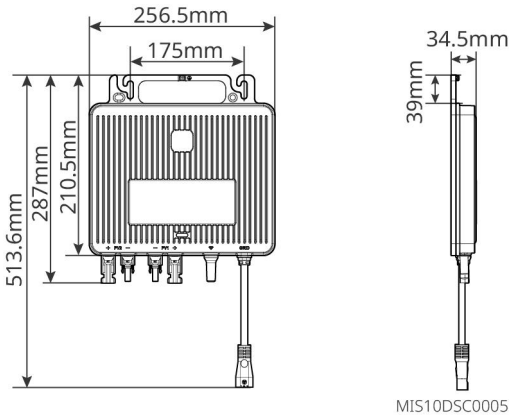
3.5. Appearance

3.5.1. Parts



No.	Parts	Descriptions
1	Handle	Moves or hangs the inverter.
2	Grounding point	Connects the grounding cable to the grounding points for protection. If the AC plug is grounded, no additional grounding cable is required.
3	PV connector	Connects the inverter to the PV module. Connector model: MC4.
4	Antenna	Wireless communication; supports WiFi/bluetooth.
5	AC connector	Connects the AC cable to provide AC output power to household loads.
6	LED indicator	Indicates working state of the inverter.
7	Heat sink	Used for heat dissipation of inverters.

3.5.2.Dimensions



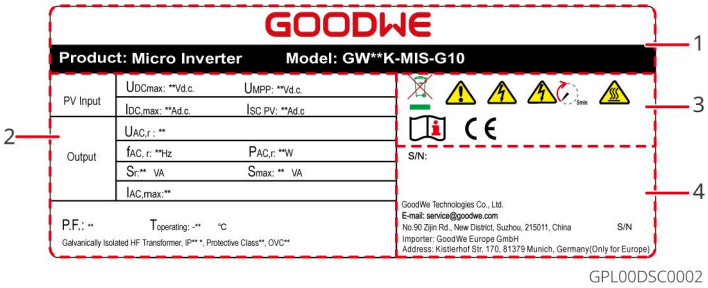
3.5.3.Indicators

Indicator status	Descriptions
	Slow blinking green = Equipment on and in the standby mode.
	Fast blinking green = equipment starting and in the self-check mode.
	Steady green = The two PV inputs are available, and the inverter is feeding power to the grid properly.
	Blinking green and red = Not all PV inputs are available, but the inverter is still feeding power to the grid. The two blinks represent the status of PV1 and PV2 respectively. A red blink indicates abnormal PV input, and a green blink indicates

	normal PV input. Example: As shown on the left, PV1 is abnormal, and PV2 is working normally.
	Double blinking red = Utility grid fault.
	Steady red = Equipment fault.
	Fast blinking green and red = Updating software.

3.5.4.Nameplate

The nameplate is for reference only.



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No.	Descriptions
1	GW trademark, producy type, and producth model.
2	Technical parameters.
3	Safety symbols and certification marks.
4	Contact information and serial number.

4. Check and Storage

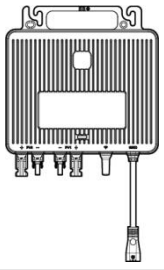
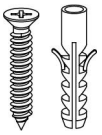
4.1. Check Before Receiving

Check the following items before accept the product.

- Check the outer packing box for damage, such as holes, cracks, deformation, and other signs of equipment damage. Do not unpack the package and contact the supplier as soon as possible if any damage is found.
- Check the product model. If the product model is not what you requested, do not unpack the product and contact the supplier.
- Check the deliverables for correct model, complete contents, and intact appearance. Contact the supplier as soon as possible if any damage is found.

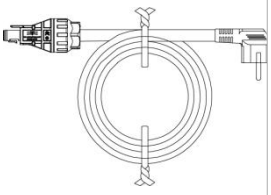
4.2. Package Content

NOTICE
• Connect the PV cables using the connectors in correct model. The manufacturer shall not be liable for the damage if other connectors are used. • The actual number of accessories may differ. • The optional accessories can be purchased from the manufacturer based on your actual needs. The accessories will be delivered separately. The actual number of accessories may differ.

Parts	Descriptions	Parts	Descriptions
	Inverter x 1		Expansion screws x 2
	Flange nuts x 1		Assembly bolts x 2
	PV fastening tool x 4		Unlock tool for PV and AC connectors x 1

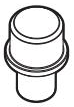
	Documents x 1		

The delivered AC connector and cable for plug and play system are as following:

Parts	Descriptions	Parts	Descriptions
	AC cable AC cable length: 5m, 10m, or 15m. Only for the plug and play scenario.	-	-

For hardwired inverter installations, AC connectors and cables must be purchased separately.

The quantities listed below are for reference only, actual accessory requirements may vary.

Parts	Descriptions	Parts	Descriptions
	T-shape AC connector with cable x 1 Number of the connector and number of the inverter are the same.		The quantity of connectors matches the number of inverters.
	Unlock tool for PV connectors x N		PIN terminal x N
	Unlock tool for T-shape AC connectors x N	-	-

4.3. Storage

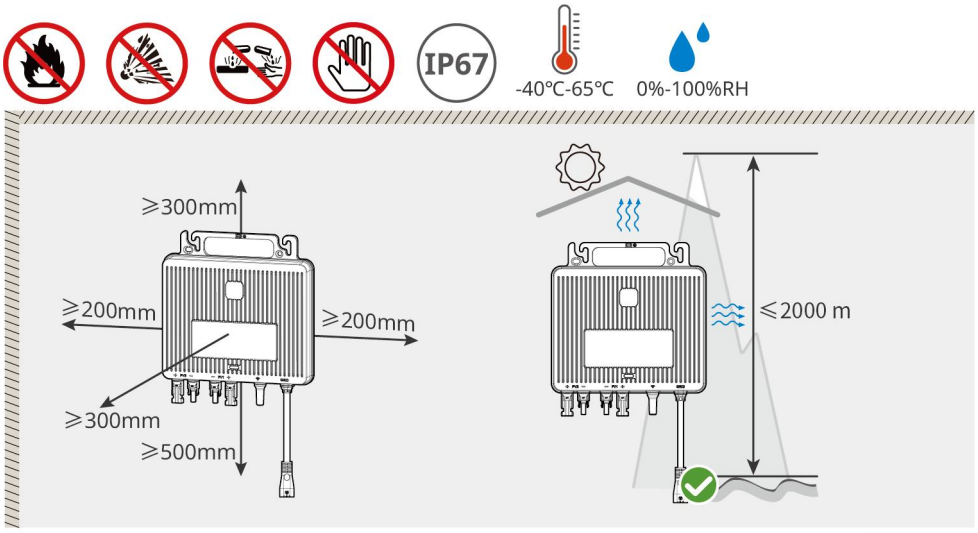
If the equipment is not to be installed or used immediately, please ensure that the storage environment meets the following requirements:

1. Do not unpack the outer package.
2. Store the equipment in a clean place. Make sure the temperature and humidity are appropriate and there is no condensation.
3. The height and direction of the stacking products should follow the instructions on the packing box.
4. The product must be stacked with caution to prevent them from falling.

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

5. Installation

5.1. Installation Requirements



Installation Environment Requirements

- Do not install the equipment in a place near flammable, explosive, or corrosive materials.
- The temperature and humidity at the installation site should be kept within the appropriate range.
- Do not install the equipment in a place that is easy to touch, especially within children's reach.
- When the equipment is working, its temperature may be high. Do not touch the surface to avoid burn.
- Install the equipment in a sheltered place to avoid direct sunlight, rain, and snow.
- The place to install the equipment shall be well-ventilated for heat radiation and large enough for operations.
- Install the equipment at a height that is convenient for operation and maintenance, electrical connections, and check indicators and labels.
- The altitude to install the equipment shall be lower than the maximum working altitude of the system.

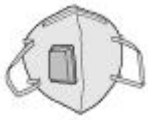
Mounting Support Requirements

- The mounting support shall be nonflammable and fireproof.
- Ensure the mounting support is solid enough to bear the inverter weight.

Installation Tool Requirements

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

Tool	Descriptions	Tool	Descriptions

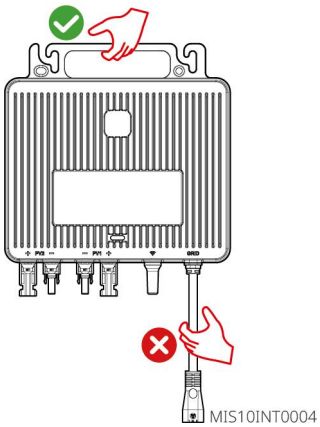
	Goggles		Safety shoes
	Safety gloves		Dust mask
	Socket wrench set M8		Impact drill
	Marker		Level
	Torque wrench M6		Rubber hammer
	Cable tie		Vacuum cleaner
	Multimeter	-	-

5.2. Installing the Inverter

CAUTION

Move the equipment to the site before installation. Follow the instructions below to avoid personal injury or equipment damage.

1. Do not bump or hit the antenna. Otherwise, the antenna may be damaged.
2. Instead of lifting the cables directly, it is recommended to hold the handle of the inverter to prevent potential damage to the cables.



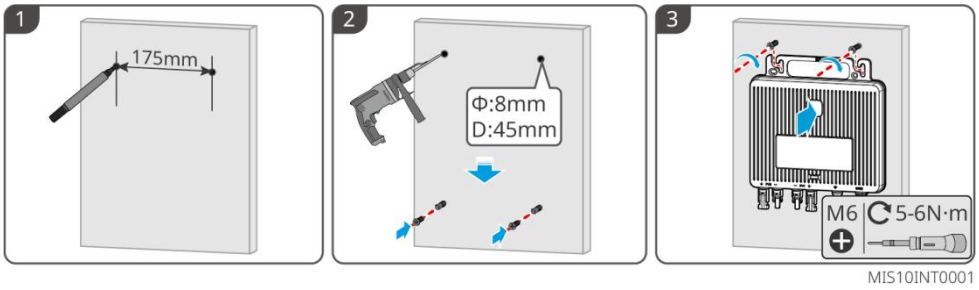
NOTICE
● For plug and play installation, plan the installation position reasonably and make sure the cable lengths between the inverter, PV and socket are sufficient. ● For hardwired installation, consider the AC cable length and plan the installation position reasonably.

Wall installation

Step 1 Confirm the installation location based on the layout plan, and mark the drilling positions with a marker pen.

Step 2 Drill holes at the marked positions, then install the expansion screws. Hole diameter: 8mm. Hole depth: 45mm.

Step 3 Hang the inverter onto the expansion screws and tighten the screws with a torque wrench.

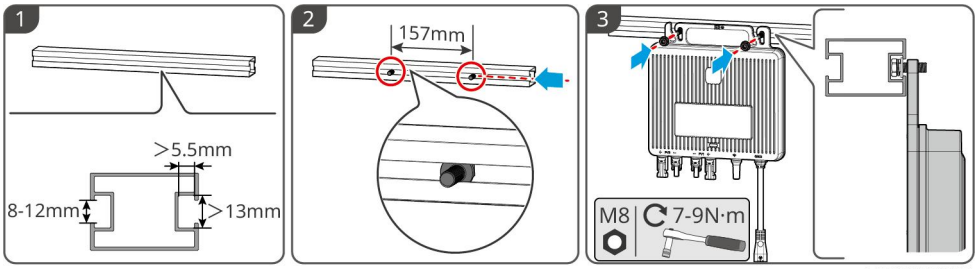


PV Rail Mounting

Step 1 Prepare the PV rails that meet the required specifications, and confirm the installation location according to the layout plan.

Step 2 Insert the assembly bolts into the PV rail from the side.

Step 3 Hang the inverter onto the assembly bolts and tighten the flange nuts using a socket wrench.



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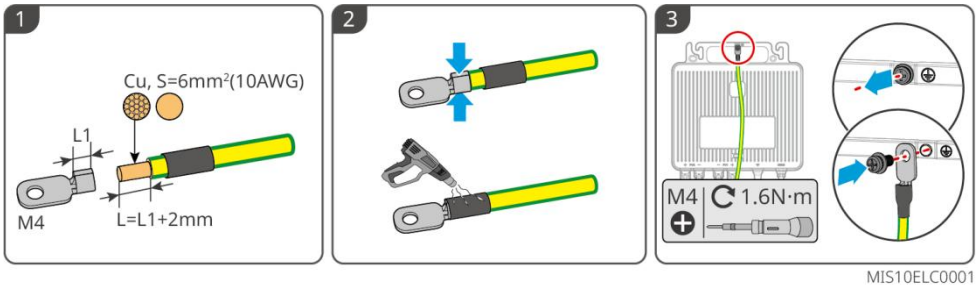
6. Electrical Connection

6.1. Connecting the PE Cable (Hardwired Scenario)

When multiple inverters are installed in a hardwired scenario, the PE cable should be connected to ensure system safety.

WARNING

1. Ensure that the equipment is reliably grounded before operations.
2. To improve the corrosion resistance of the terminal, you are recommended to apply silica gel or paint on the ground terminal after installing the PE cable.
3. The PE cable, grounding OT terminal and screw should be prepared by the customer. Recommended specifications:
   - PE cable: outdoor copper cable, conductor cross-sectional area: 6mm^2.
   - OT terminal: M4
   - Screw: M4



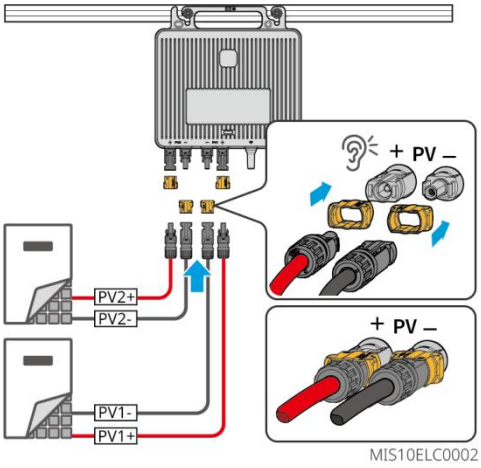
6.2. Connecting PV cables

DANGER

- Ensure the PV connectors are connected with correct polarity.
- To prevent PV cables from disconnecting, install the PV fastening tool. The fastening tool is only suitable for MC4 PV connectors.

Step 1 Take out the PV fastening tool included in the package and install it onto the PV connector of the inverter.

Step 2 Plug the PV connector of the PV module into the PV connector of the inverter.



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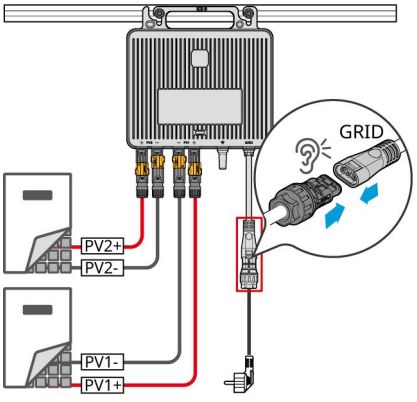
6.3. Connecting the AC Cable

- **Scenario 1: plug and play**

DANGER
Ensure the AC plug matches the specifications of the socket.

Step 1 Insert the AC cable included in the package into the AC connector of the inverter.

Step 2 Plug the other end of the cable into the household socket. The inverter will power on and start working.



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- **Scenario 2: hardwired**

NOTICE
• The AC cable assembly includes 21 T-type connectors as standard. Before use, split the AC cable according to the number of inverters, ensuring the retained T-type connectors match the inverter count. • The included AC cable has pre-cut segments at 2.5m intervals. If this length is insufficient, prepare additional compliant AC cables.

For extended cabling needs, refer to local regulations and the table below to source approved AC cable extensions.

T-shape connector AC cable specification (AC cable specification)	Maximum number per branch
10AWG	8
12AWG	6
14AWG	4

Step 1: Take out the AC cable and verify the required number of T-shape connectors. Step 2: Use the included connector unlock tool to detach the terminal T-type connector from the AC cable.

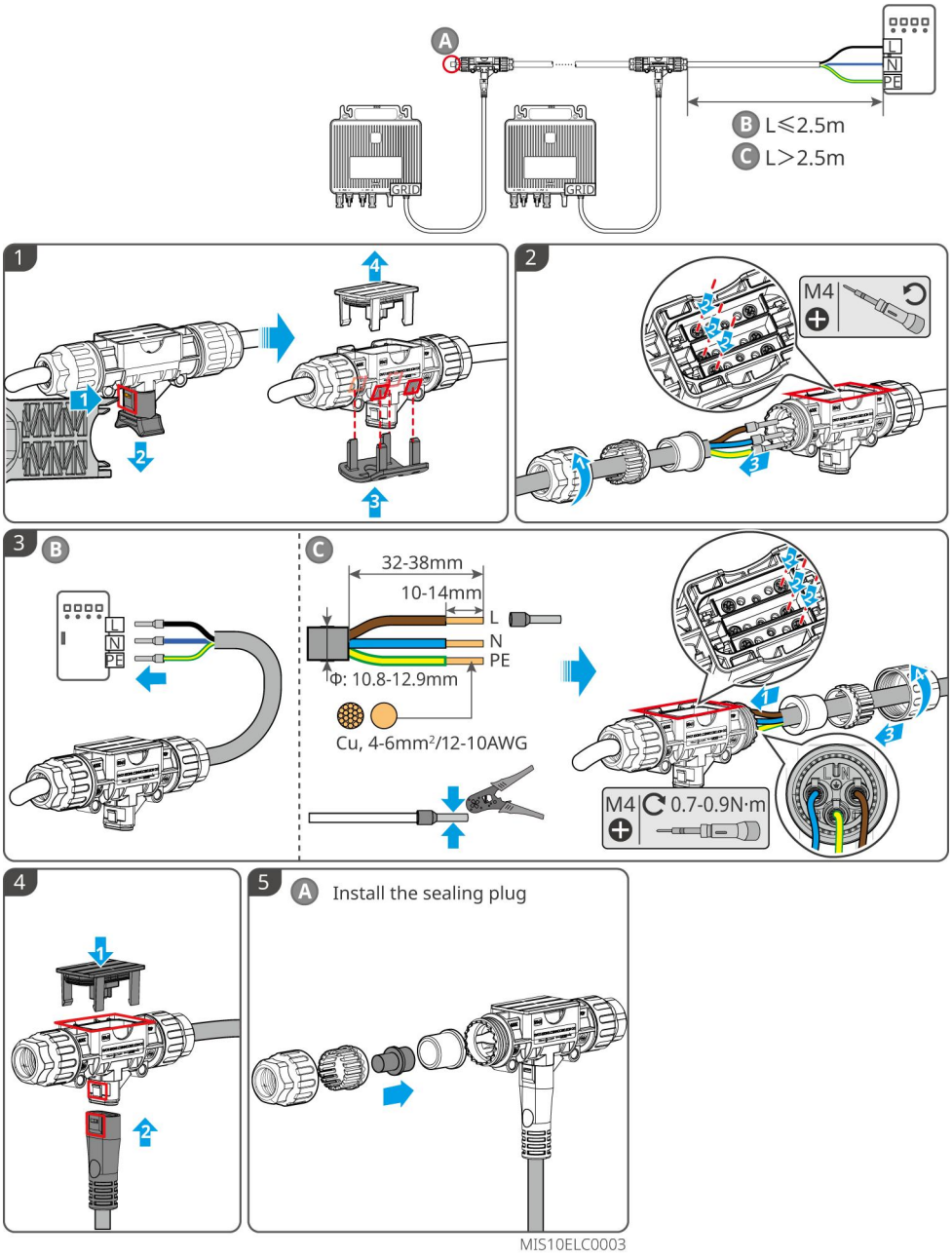
Loosen the internal screw of the detached T-type connector.

Step 2: Remove the crimped AC cable from the connector.

Step 3: The included AC cable has a fixed segment length of 2.5m. If the length is sufficient, directly connect the terminal AC cable to the distribution box. If extended length is required, replace the terminal cable with a user-provided compliant extension, then connect it to the T-type connector before linking to the distribution box.

Step 4: Attach the inverter-side AC connectors to the corresponding T-shape connectors on the AC cable sequentially.

Step 5: Install the waterproof plug at the end of the starting T-shape connector.



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7. System Trial Operation

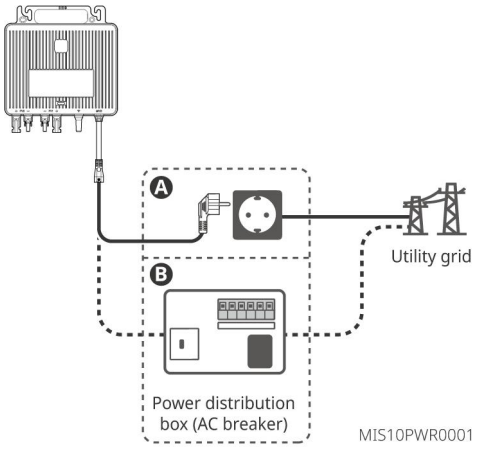
7.1. Check Before Power ON

No.	Check Item
1	The inverter is firmly installed in a clean place where is well-ventilated and easy to operate.
2	The PE, DC input and AC output cables are connected correctly and securely.
3	Cable ties are intact, routed properly and evenly.
4	Unused cable holes are sealed.
5	The voltage and frequency at the connecting point should meet the on-grid requirements.

7.2. Power ON

A. Plug and play scenario: complete all electrical connections and plug the AC power cord directly into a standard household outlet.

B. Hardwired scenario: complete all electrical connections, energize the system by connecting the AC circuit breaker in the distribution panel.



8. System Commissioning

The hardwired system should be configured by installers via SolarGo App, including safety code, operating paramters, etc.

SolarGo App is a mobile application that communicates with the inverter through bluetooth or WiFi modules. Commonly used functions are as follows:

- Check the operating data, software version, alarms, etc.
- Set grid parameters, communication parameters, safety countries, power limitation, etc.
- Equipment maintenance.

Visit the official websitehttps://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SolarGo_User%20Manual-EN.pdf or scan the QR code to read the SolarGo APP User Manual for more details.

SolarGo App

SolarGo App User Manual

9. Plant Configuration and Monitoring

9.1. Introduction to SEMS+ App

NOTICE
The version of the App corresponding to the screenshots in this manual is V1.7. The screenshots are for reference only.

SEMS+ App is a monitoring platform to manage power stations and devices. Commonly used functions:

1. Manage user information.
2. Add, monitor the power station or devices.
3. Equipment maintenance.

The App structure is as following:

Primary menu	Submenu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu
Login & Register	-	-	-	-

Overview	Monitoring Information	-	-	-
	Create Station	-	-	-
Station	Station List	-	-	-
	Station Details	Monitoring	-	-
		Device	Add Device	-
			Device List	Search Device
				Replace Device
				Edit Device
				Delete Device
			Device Details	Device Monitoring Info
				Device Remote Control
		Alarms	-	-
		Station Configuration	Edit Station	-
			Delete Station	-
			Replacement History	-
			User Information	-
			Home Configuration	-
	Create Station	-	-	-
Services	Services	Warranty	-	-
		Report Center	-	-
		GoodWe News	-	-
		Announcements	-	-
		Community	-	-
	Tools	Create Station	-	-
		Network Link	-	-

	Help	-	-	-
My	User Profile	-	-	-
	User Information	-	-	-
	Setting	-	-	-
	Account Security	Email	-	-
		Password	-	-
		Close Account	-	-
	Auth Management	Remote Control Auth	-	-
		Monitoring Auth	-	-
	Apps	-	-	-
	About	-	-	-
	Logout	Logout	-	-
		Login anther Account	-	-

9.2. Downloading and Installing the App

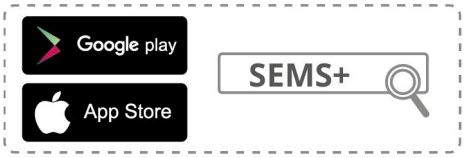
Make sure that the mobile phone meets the following requirements:

- Operating system: Android 6.0 or later, iOS 13.0 or later.
- Internet connection via browser.
- WLAN/Bluetooth capabilities.

Download Methods:

Method I

Search SEMS+ on Google Play (Android) or App Store (iOS) to download and install the App.



SEMS0001

Method II

Scan the QR code below to download and install the App.

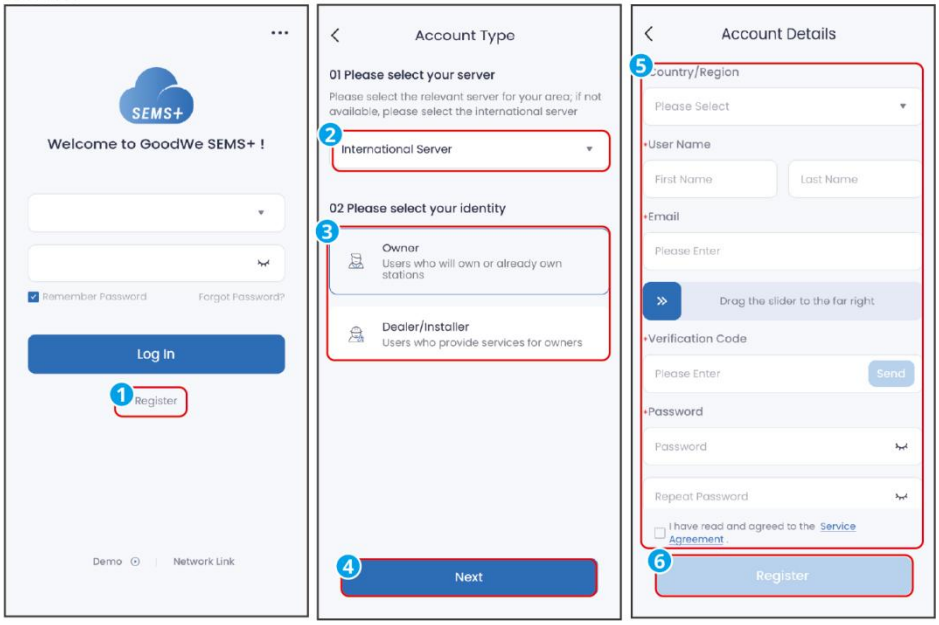
SEMS0002

9.3. Managing the Account

9.3.1. Registering an Account

Step 1 Tap **Register** and enter the account information based on actual situation.

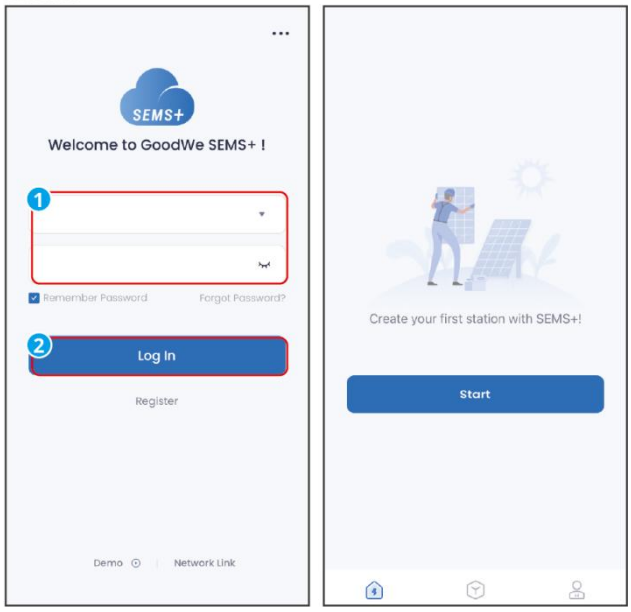
SEMS0005



9.3.2. Logging in to the App

Step 1 Enter the username and password, tap **Log In**.

SEMS0006



9.4. Quick Configuration

NOTICE
Before Configuring the Power Plant: ● Ensure that all equipment (e.g., inverters, meters, PV modules) within the plant is correctly installed. ● Refer to the third-party meter's manual to complete its setup and network configuration.

For new accounts registering for the first time, please follow the on-screen instructions to complete the quick configuration of the station. After the quick configuration is completed, you can view the station and related monitoring information for its devices.

Step 1 Log in to the SEMS+ App using the newly registered account and password.

Step 2 Tap  > **Start** to enter the station creation interface.

Step 3 Set the station-related information according to your actual situation. Tap **Save & Continue** to proceed to the Add Device interface.

Step 4 Scan the SN code on the device label to automatically populate the device information, or manually enter the information. After completing the addition, tap **Done** to go to the **Search Device** interface.

Step 5 Tap **Search Device**, and the app will automatically search for nearby devices. Once the desired microinverter is found, tap the device name (WNN-***, where *** represents the 16-digit device serial number). Enter the login page.

Step 6 Log in as User (default password: 1234). For security, the interface will prompt to change the default password. Follow the instructions to set a new password, then log in again using the newly created password. Then enter the **Device Configuration** page.

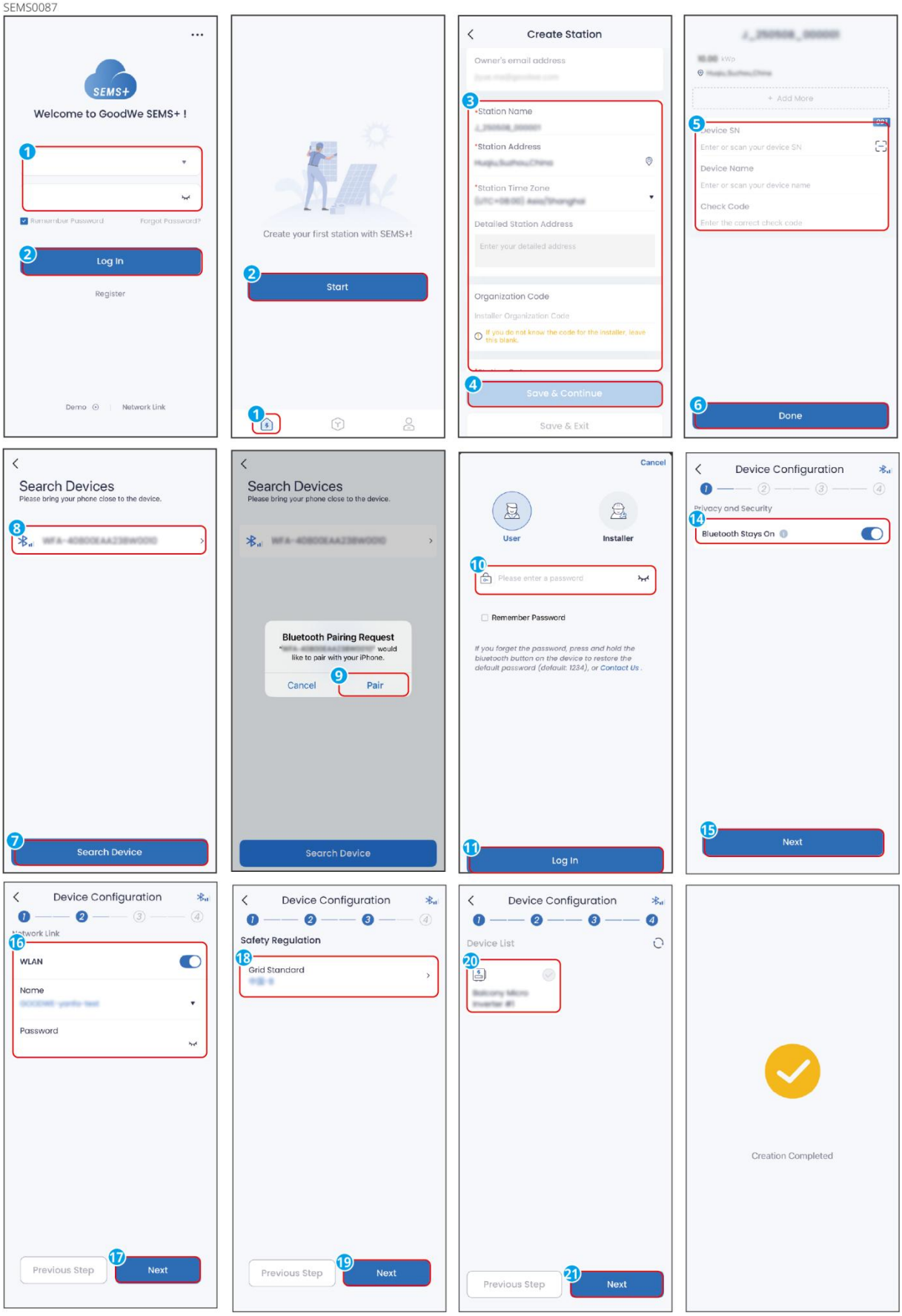
Step 7 Enable “Bluetooth Stays On” based on actual needs. Enable the function, the bluetooth of the device will be contentious on to keep connected to SEMS+. Otherwise, the bluetooth will be off in 5 minutes.

Step 8 Select the router the device should connect to based on actual needs. Once the device connects to the router, the station or device information can be viewed through the App. Ensure the router signal is stable for a reliable connection to the device. After completing the setup, tap **Next**.

Step 9 Select the safety region or country based on actual requirements. After completing the settings, tap **Next**.

Step 10 Confirm the device list and tap **Next** to finish creating the station and adding devices.

SEMS0087



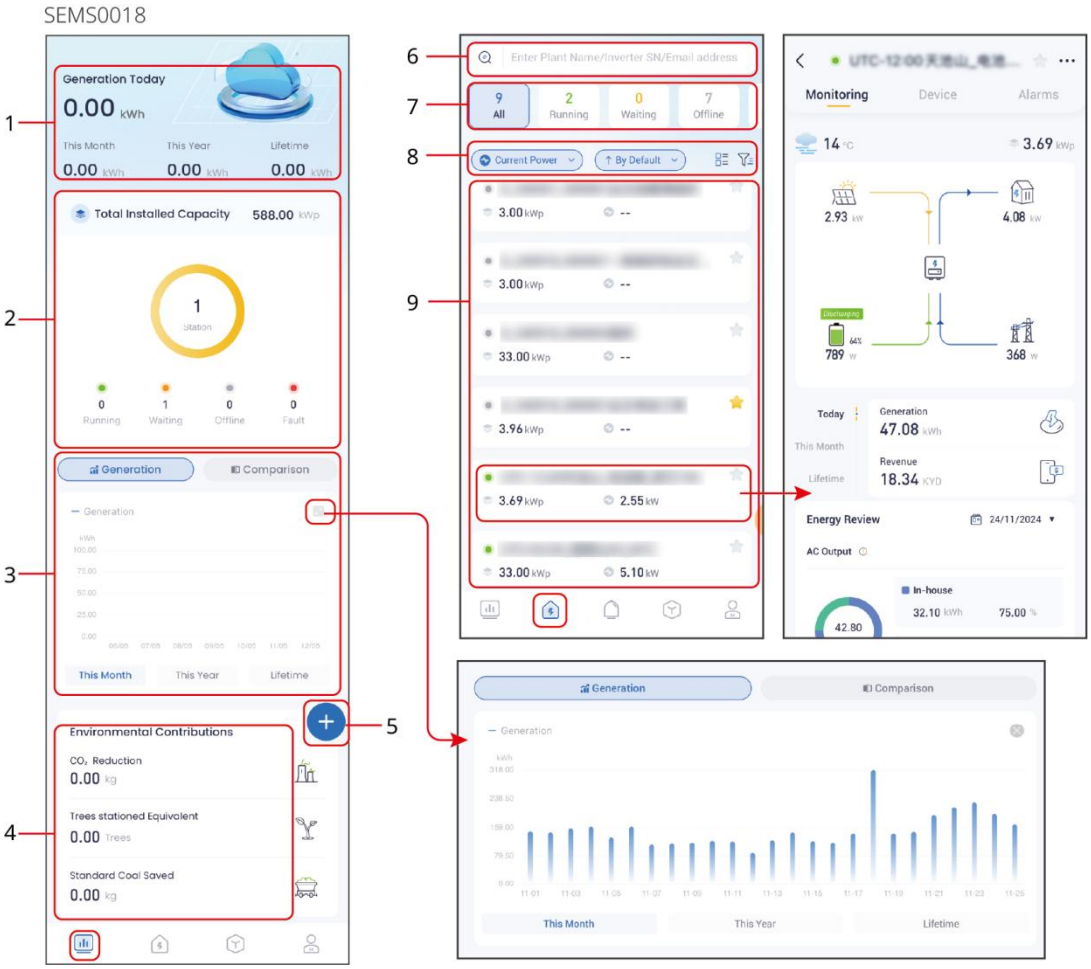
No.	Parameter	Descriptions

Create Station		
1	Station Name	Set the power station name.
2	Station Address	Set the station address based on actual situation.
3	Station Category	Select the station type. Recommended category: Residential Grid-tied.
4	Currency	Select the currency type.
5	Station Capacity	Set the station capacity based on the total power of the PV modules.
6	Modules	Set the number of the PV module in the station.
7	Rate of Revenue	Set the rate revenue of the station.
8	Station Profile Photo	Take station photos and set the photo as the profile photo.

9.5. Station Monitoring

9.5.1. Checking Overview Information of All Stations

After logging in, you can view an overview of all stations linked to your account from the homepage. Or sort the list of all power stations through different sorting and filtering conditions on the power station page to view the detailed information of the power stations.

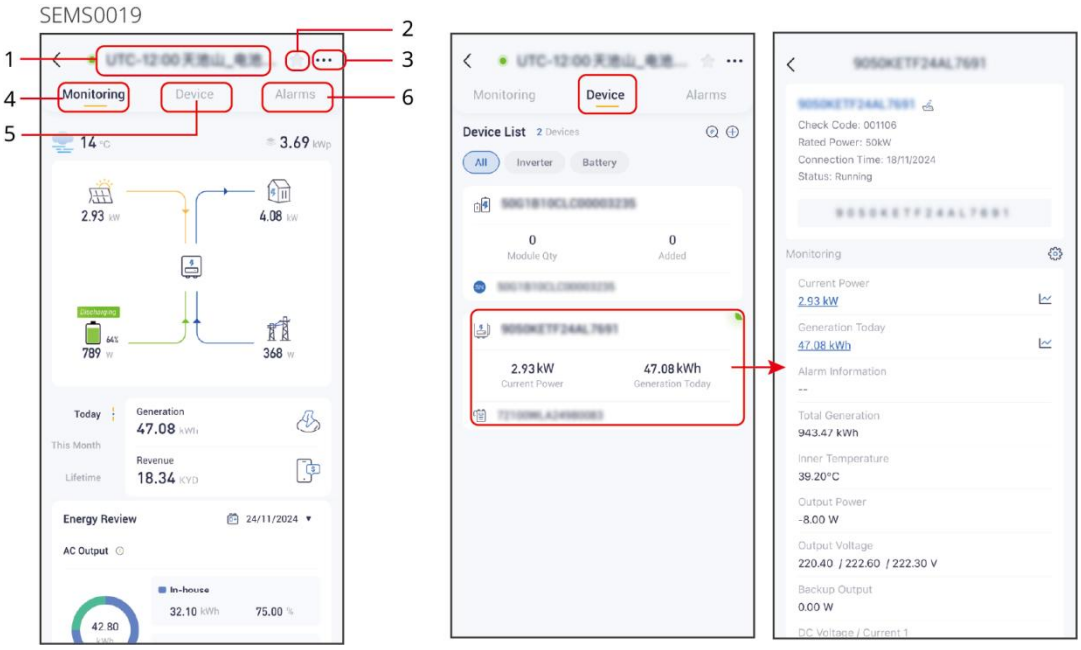


No.	Descriptions
1	Displays the overall generation information of all stations, including: Generation Today, Generation This Month, Generation This Year, and Generation Lifetime. Generation This Year will not be displayed if the station amount exceeds 10.
2	Displays the total installed capacity and the working status of the stations. Working status: Running, Waiting, Offline, and Fault. The stations status is Running only when all the devices of the station are working properly.
3	Displays statistical chart of Generation Today, This Year, and Lifetime. Or displays comparison chart comparing current and past generation. Tap to expand the chart.
4	Displays environmental contributions like **CO_2 Reduction**, **Trees Stationed Equivalent**, **Standard Coal Saved**.
5	Creating a new station.
6	Searching Stations. Enter the device SN, power station name or email address to quickly search for the corresponding power station.

7	Power station operation status. Display the current operation status of power stations and the number of power stations operating in each status. Tap the operation status to filter power stations in the corresponding operation status.
8	● Set KPI indicators displayed in the power station list: Current Power, Rev. Today, Rev. Total, Gen. Today, Gen. Total. ● Set the sorting method of the power station list: By Default, By Capacity. ● Set the display mode of the power station list: Station Card, Station List. ● Set the filtering conditions for the power station list: Scope, Category, Capacity.
9	Power station list. Tap the power station name to view the detailed information of the power station. The displayed content varies depending on the station type. The actual interface takes precedence

9.5.2.Checking Detailed Information of Single Station

Select the device to find the specific information of the device.



No.	Descriptions
1	The current name of the power station.
2	Favoriting a station.
3	Configuring Station Information. Supported functions: Configure basic information of the power station, modify user information, add power station photos, set PV module layout, etc.

4	Displays current power station operation information in chart form, such as energy flow diagrams, power generation, load power consumption, AC output, and other information.
5	Device List Displays devices in the current power station, such as inverters, batteries, data collectors, charging piles, etc. • • Tap the device card to view detailed device information.
6	Alarm information.

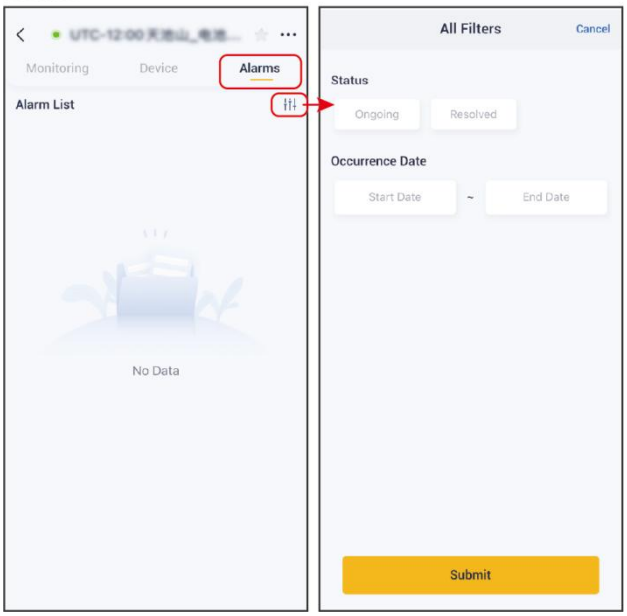
9.5.3.Checking Alarm Information

Method 1: Alarms of a specific station.

Step 1 Select a station from the station list.

Step 2 Tap **Alarms** and select an alarm to view detailed information. Tap  to filter the alarms as needed.

SEMS0021

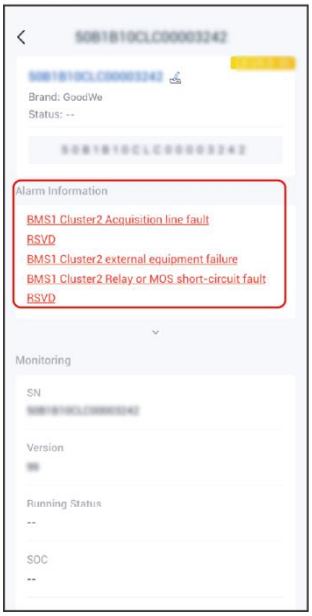


Method 2: Alarms of a specific device.

Step 1 Select a station from the station list.

Step 2 Tap Device and select a device to enter the device page. If alarms exist, the latest 10 active alarms will be displayed.

SEMS0022

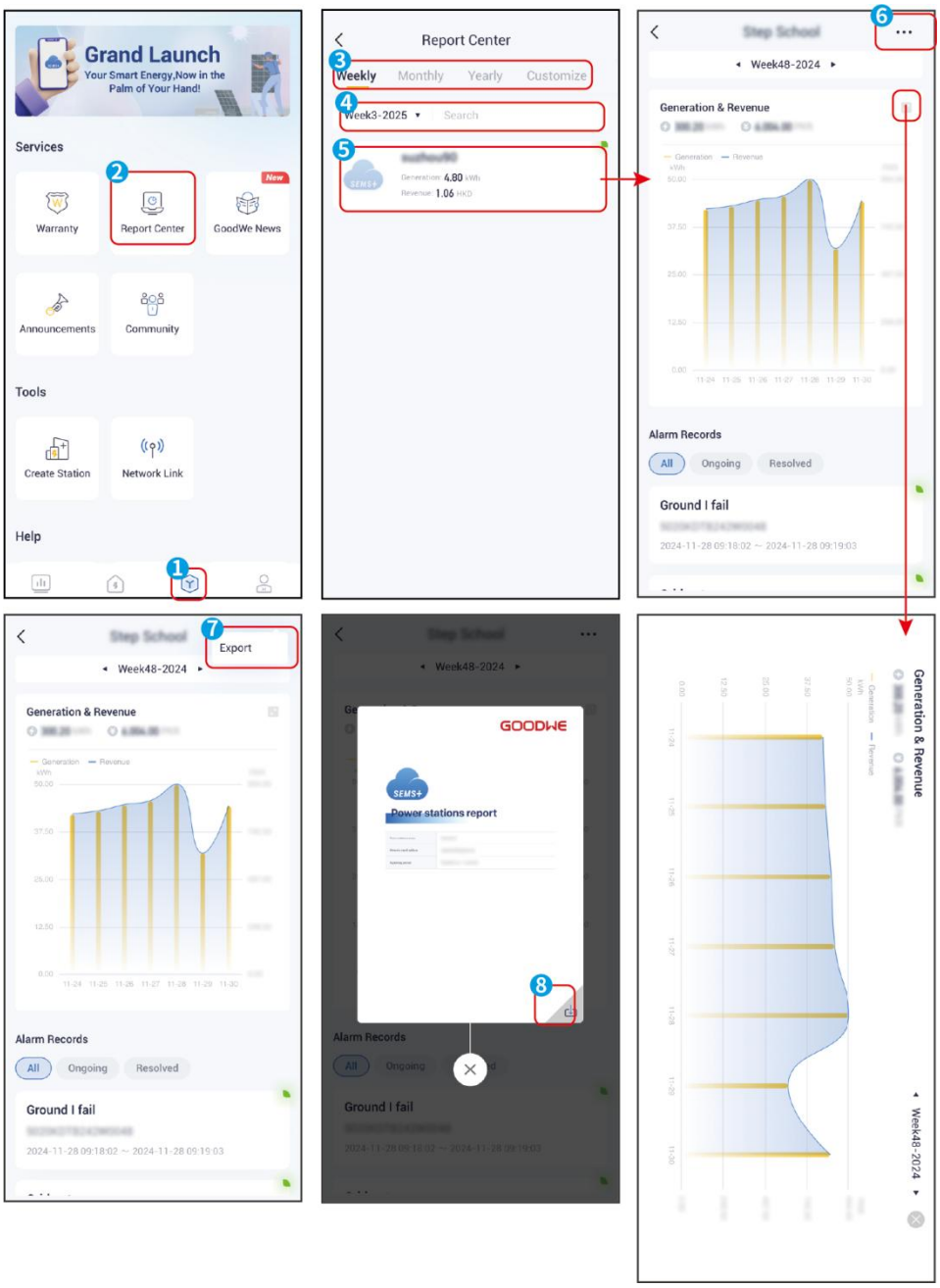


9.5.4.Checking Station Reports

Viewing Reports

Step 1 Tap **Service > Report Center**.

Step 2 Select a time period, search for the desired station, and tap the station name to view the report center. Tap ••• > **Export** to download the report if needed.

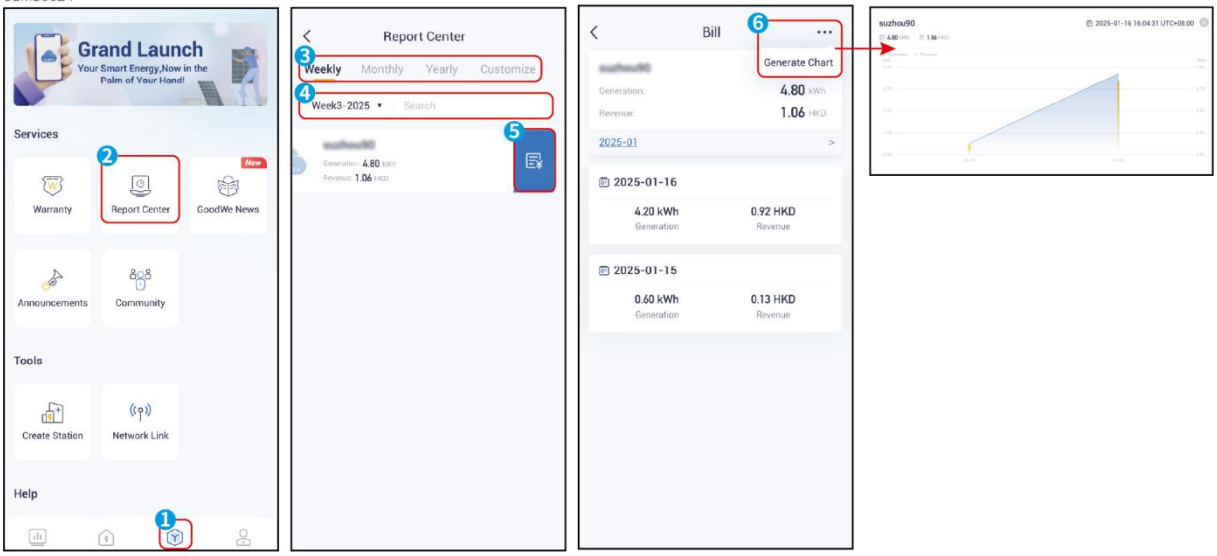


Viewing Bills

Step 1 Tap **Service > Report Center**.

Step 2 Search for the desired station. Find the station, swipe left and tap  to view billing details of the month.

SEMS0024



9.6. Setting the Network Information

The SEMS+ App allows connecting devices via Bluetooth and configuring network parameters to realize remote monitoring or management via WiFi.

NOTICE
Before connecting, ensure: Your phone's Bluetooth is turn on. The device is powered on and communicating properly.

Step 1 Open the app and select **Network Link** on the homepage or in the **Service** interface.

Step 2 Tap **Bluetooth** and select the device by the serial number.

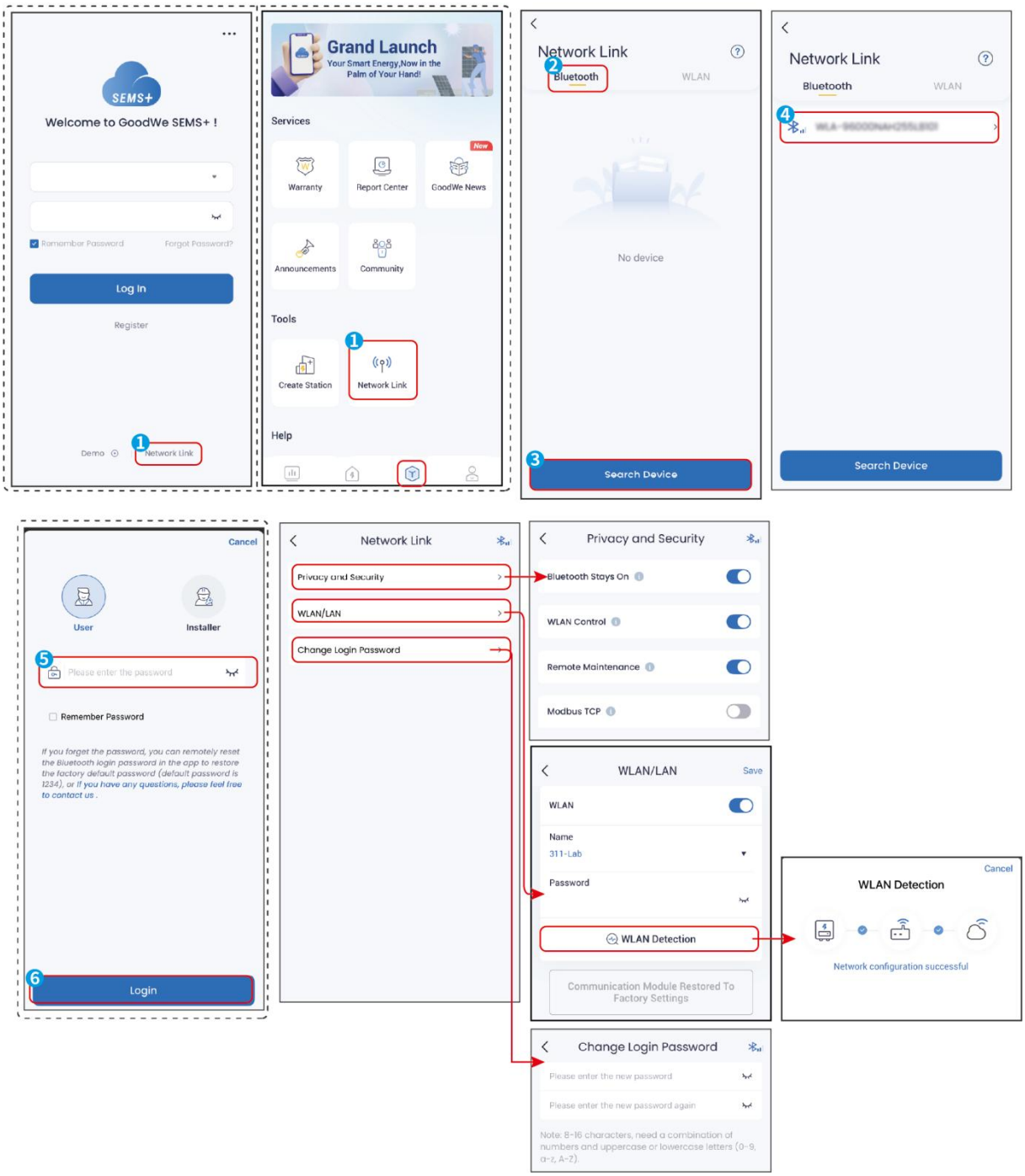
Step 3 Log into the App as **User** and enter the password. Default password: 1234. If no login prompt appears, you will directly enter the communication settings interface.

Step 4 (Optional) Enable **WLAN Control, Remote Maintenance** or **Modbus TCP** if required.

Step 5 Set the WLAN parameters based on actual situation. Tap Save to complete settings. Tap **WLAN Detection** to check the communication status.

Step 6 (optional) Tap **Login Password Change** to input a new password, and **Save**.

SEMS0085



No.	Parameter	Descriptions
Privacy&Security		
1	Bluetooth Stays ON	Enable the function, the bluetooth of the device will be contentious on to keep connected to SEMS+. Otherwise, the bluetooth will be off in 5 minutes.
2	WLAN Control	Enable the function, the device and the App can be connected through the WLAN when they are on the same LAN. Otherwise, they cannot be connected even if they are on the same LAN.

3	Remote Maintenance	Enable the function, the after-sales service center will remotely upgrade the version of the communication module.
4	Modbus TCP	Enable the function, the third party monitoring platform can access inverter through Modbus-TCP communication protocol.
WLAN/LAN		
5	WLAN	Enable or disable WLAN.
6	Name	Select the name of the router network to be used and enter its password.
7	Password	

9.7. Managing Device Remotely

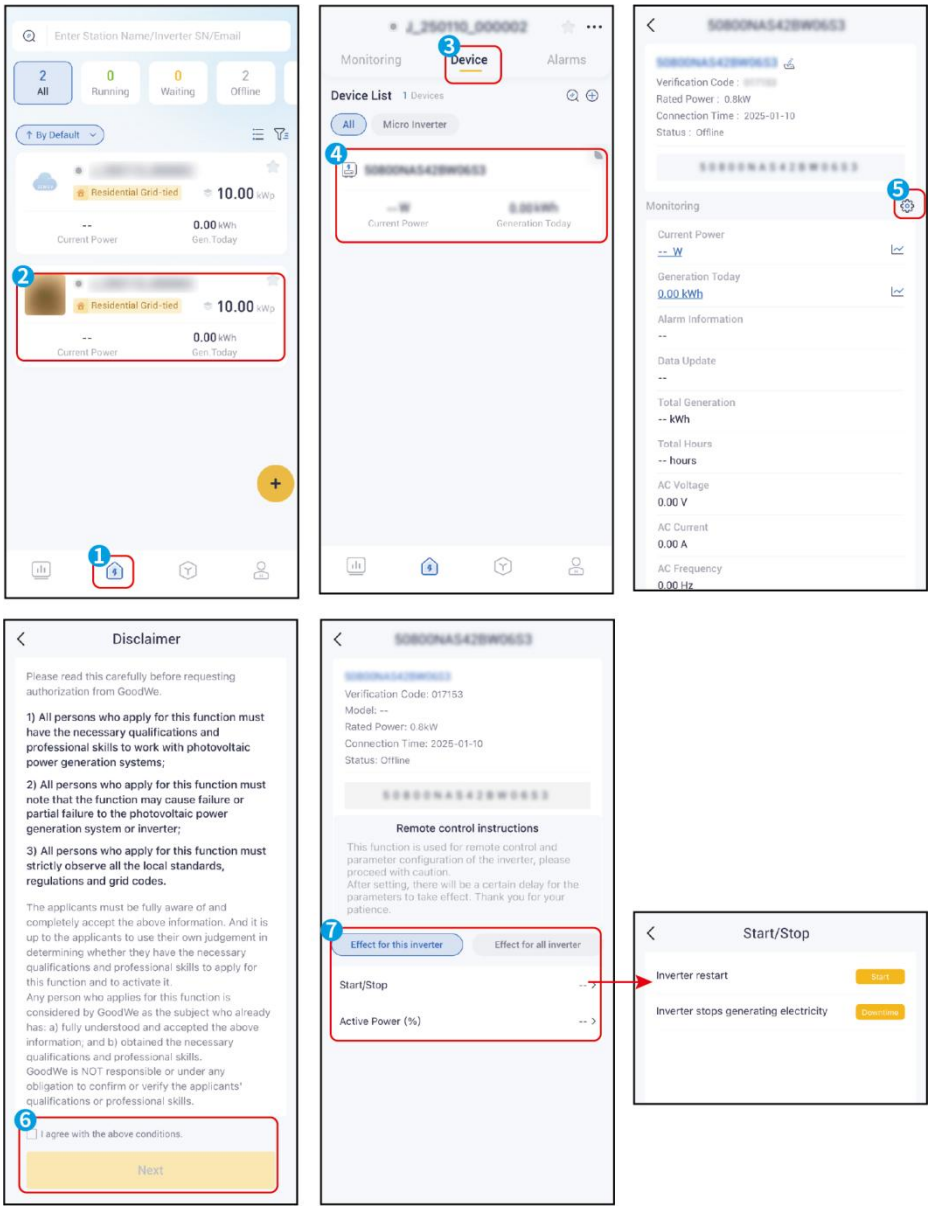
NOTICE

- Set the device parameters via SEMS+ App after creating a plant and adding devices to it.
- Before setting any parameters, read through user manual to learn the product functions and features. Incorrectly configured parameters, such as grid settings or start/stop commands, may result in devices failing to connect to the grid, potentially affecting power generation.

Step 1 If there are more than one station, select a station from the station list.

Step 2 Tap Device to enter the device page and choose the device to be configured.

Step 3 Tap  , read the prompts and set parameters as needed.



No.	Parameter	Descriptions
1	Effective for this inverter / Effective for all inverters	● Effective for this inverter: Effective for this inverter: Applies settings to a single inverter. ● Effective for all inverters: Effective for all inverters: Applies settings to all inverters in the network.
2	Start/Stop	● Inverter Restart: Restart the inverter. ● Inverter stops generating electricity: The inverter stops generating electricity.
3	Active Power	Set the inverter active power output value. For example: When the setting value is 90%, it means the active power output value of the inverter = the inverter rated power * 90%.
4	On-grid Settings	● Power Limit Enable: Enable power limit when power limiting is

		required by local grid standards and requirements. ● Power Limit Value: Set the maximum power that is allowed feed into the utility grid based on local grid standards and requirements. ● Advanced Settings: ■ Power Limit Mode: When the mode is Split-phase Power, the max power of the phase will be limited. When the smart meter is a three phase meter, set the mode to Total Power to limit the totoal power of three phases. ■ Power Regulation Time Interval: When the power limit function is enabled, all inverters will adjust the output power at intervals based on the load conditions. The smaller the set value, the faster the power limit response speed. Default value: 900ms. Set the value reasonably according to the actual situation on site, otherwise it may cause power oscillation. ■ Communication Timeout Duration: Protection measures can be taken when the communication between the inverter and the smart meter is abnormal. ■ Communication Timeout Handling: when the communication between the inverter and the smart meter is abnormal, the equipment should stop working or continue working at the percentage of the rated power.

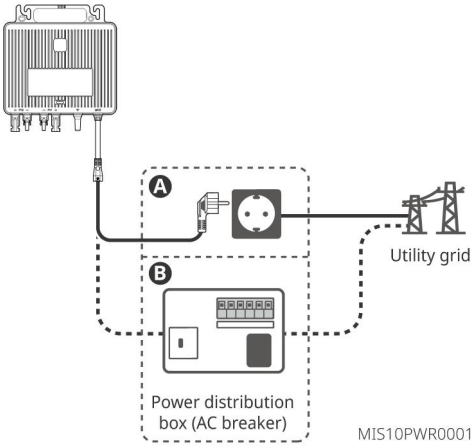
10. System Maintenance

10.1. Power Off

NOTICE
To reset the bluetooth password, power off the inverter and wait for 20-30s, then power it back on.

A. Plug and play scenario: unplug the AC plug from the household outlet.

B. Hardwired scenario: turn off the AC circuit breaker in the distribution panel.



MIS10PWR0001

10.2. Removing the Inverter

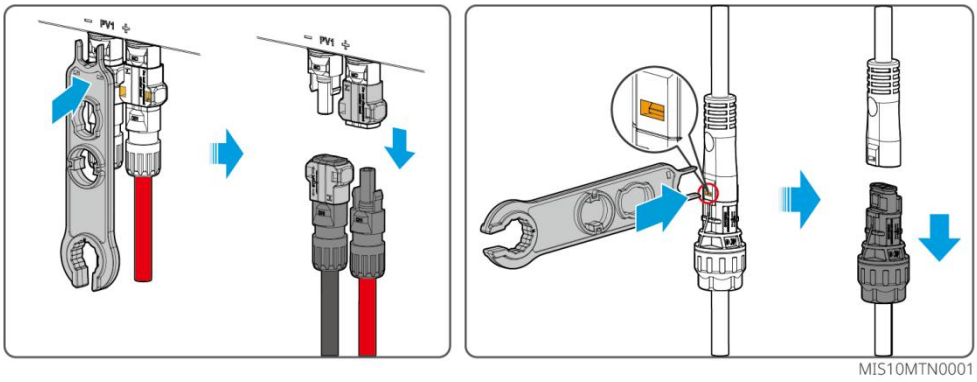
WARNING

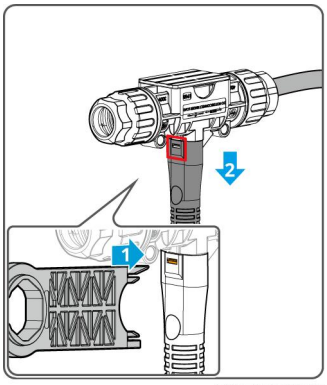
- Make sure that the inverter is powered off.
- Wear proper PPE before any operations.

Step 1 Disconnect all the cables, including PV cable and AC cables.

Step 2 Remove the inverter.

Step 3 Store the inverter properly. If the inverter needs to be used later, ensure that the storage conditions meet the requirements.


MIS10MTN0001



MIS10ELC0005

10.3. Disposing of the Inverter

If the inverter cannot work anymore, dispose of it according to the local disposal requirements for electrical equipment waste. The inverter cannot be disposed of together with household waste.

10.4. Routine Maintenance

DANGER

- Before maintaining the equipment, take necessary protective measures to prevent electric shock.
- During maintenance, ensure that both upstream and downstream switches of the equipment are disconnected.
- Strictly follow proper operating procedures during maintenance.

WARNING

- Contact after-sales service for help if the copper conductor is exposed. Do not touch or disassemble privately because high voltage danger exists.
- In case of other emergencies, contact the after-sales service as soon as possible. Operate following the instructions or wait for the after-sales service personnel.

Maintaining Item	Maintaining Method	Maintaining Period	Maintaining Purpose
System Clean	Check whether the installation space meets requirements and whether there is any debris around the device.	Once half a year	Prevent heat dissipation failures.
System installation	1. Check whether the equipment are installed securely and whether the screws are installed tightly. 2. Check whether the equipment is damaged or deformed.	Once 6-12 months	Ensure that the equipment is installed securely.
Electrical connection	Check whether the cables are securely connected. Check whether the cables are broken or whether	Once 6-12 months	Confirm the reliability of electrical connections.

	there is any exposed copper core.		

10.5. Troubleshooting

Perform troubleshooting according to the following methods. Contact the after-sales service if these methods do not work.

Collect the information below before contacting the after-sales service, so that the problems can be solved quickly.

1. Product information like serial number, software version, installation date, fault time, fault frequency, etc.
2. Installation environment, including weather conditions, whether the PV modules are sheltered or shadowed, etc. It is recommended to provide some photos and videos to assist in analyzing the problem.
3. Utility grid situation.

No.	Fault	Cause	Solutions
1	Grid Overvoltage	The grid voltage exceeds the permissible range, or the duration of high voltage exceeds the requirement of HVRT.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. If the problem occurs frequently, check whether the grid voltage is within the permissible range. 3. Check whether the AC breaker and the output cables are connected securely and correctly if the problem persists.
2	Grid Undervoltage	The grid voltage is lower than the permissible range, or the duration of low voltage exceeds the requirement of LVRT.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal.

			2. If the problem occurs frequently, check whether the grid voltage is within the permissible range. 3. Check whether the AC breaker and the output cables are connected securely and correctly if the problem persists.
3	Grid Overfrequency	Utility grid exception. The actual grid frequency exceeds the requirement of the local grid standard.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. If the problem occurs frequently, check whether the grid frequency is within the permissible range.
4	Grid Underfrequency	Utility grid exception. The actual grid frequency is lower than the requirement of the local grid standard.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. If the problem occurs frequently, check whether the grid frequency is within the permissible range.
5	Grid Rapid Overvoltage	The grid voltage is abnormal or ultra high.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid

			is normal. 2. If the problem occurs frequently, check whether the grid voltage is within the permissible range. 3. Check whether the AC breaker and the output cables are connected securely and correctly if the problem persists.
6	Grid 10min Overvoltage	The moving average of grid voltage in 10min exceeds the range of safety requirements.	If the problem occurs frequently, check whether the grid frequency is within the permissible range. If not, contact the local power company.
7	孤岛保护 Anti-islanding	The utility grid is disconnected. The utility grid is disconnected according to the safety regulations, but the grid voltage is maintained due to the loads.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. If the problem occurs frequently, check whether the grid frequency is within the permissible range.
8	LVRT Undervoltage	Utility grid exception. The duration of the utility grid exception exceeds the set time of HVRT.	1. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 2. If the problem occurs frequently, check whether the grid voltage and frequency are within the

			permissible range. If not, contact the local power company.
9	HVRT Overvoltage	Utility grid exception. The duration of the utility grid exception exceeds the set time of HVRT.	3. If the problem occurs occasionally, the utility grid may be abnormal temporarily. The inverter will recover automatically after detecting that the utility grid is normal. 4. If the problem occurs frequently, check whether the grid voltage and frequency are within the permissible range. If not, contact the local power company.
10	Level1 DCI abnormal	The DC component of the output current exceeds the safety range or default range.	1. If the problem is caused by an external fault like a utility grid exception or frequency exception, the inverter will recover automatically after solving the problem. 2. If the problem occurs frequently and the PV station cannot work properly, contact the dealer or the after-sales service.
11	Level2 DCI abnormal		
12	Low Insulation Res.	1. The PV string is short-circuited to PE. 2. The PV system is in a moist environment and the cable is not well insulated to the ground.	1. Check whether the resistance of the PV string to PE exceeds 50kΩ. If no, check the short circuit point. 2. Check whether the PE cable is connected correctly.
13	Flash R/W abnormal	The internal Flash storage is abnormal.	Disconnect the AC output switch and DC input switch, then connect them 5 minutes later. Contact the dealer or the after-sales service if the problem persists.
14		1. The installation location of the	1. Check whether the ventilation

	Cavity Overtemperature	inverter is not ventilated. 2. The ambient temperature exceeds 60℃. 3. Internal fan working abnormally	of the inverter installation location is good and whether the ambient temperature exceeds the maximum allowable ambient temperature range. 2. If the ventilation is poor or the ambient temperature is too high, improve the ventilation and heat dissipation conditions. 3. Contact the dealer or after-sales service if both the ventilation and the ambient temperature are normal.
15	PV Input Overvoltage	The PV array configuration is not correct. Too many PV panels are connected in series in the PV string.	Check the serial connection of the PV array. Make sure that the open circuit voltage of the PV string is not higher than the maximum operating voltage of the inverter.
16	PV Continuous Hardware Overcurrent	1. The PV configuration is not proper. 2. The hardware is damaged.	Disconnect the AC output switch and DC input switch, then connect them 5 minutes later. Contact the dealer or the after-sales service if the problem persists.
17	PV Continuous Software Overcurrent	3. The PV configuration is not proper. 4. The hardware is damaged.	Disconnect the AC output switch and DC input switch, then connect them 5 minutes later. Contact the dealer or the after-sales service if the problem persists.
18	PV String Reversed	The PV strings are connected reversely.	Check whether the PV strings are connected reversely.
19	MOS once Overvoltage	1. The MOS is abnormal. 2. The PV voltage is too high. 3. The MOS voltage sampling is abnormal.	Disconnect the AC output switch and PV cables, then connect them 5 minutes later. Contact the dealer or the after-sales service if the problem persists.

20		A sudden change in the grid or load causes an overcurrent.	Contact the dealer or the after-sales service if the problem persists.

11. Technical Parameters

Technical parameters	GW0.799K-MIS-G10	GW0.8K-MIS-G10	GW1K-MIS-G10
Input			
Max. Input Power (W)	960	960	1350
Max. Input Voltage (V)	60	60	60
Nominal Input Voltage (V)	42	42	42
Min. Start-up Voltage (V)	15	15	15
MPPT Operating Voltage Range (V)	13-60	13-60	13-60
Max. Input Current (A)	18/18	18/18	18/18
Max. Input Short Circuit Current (A)	20/20	20/20	20/20
Number of MPP Trackers	2	2	2
Number of Strings per MPPT	1	1	1
Output			
Nominal Output Power (W)	799	800	1000
Max. Continuous Output Power (W)	799	800	1000
Nominal Apparent Power (VA)	799	800	1000
Max. AC Apparent	799	800	1000

Power (VA)			
Nominal Output Voltage (V)	L/N/PE, 220/230/240	L/N/PE, 220/230/240	L/N/PE, 220/230/240
Output Voltage Range (V)	176 - 264	176 - 264	176 - 264
Nominal Output Frequency (Hz)	50/60	50/60	50/60
AC Grid Frequency Range (Hz)	50/60 ±5	50/60 ±5	50/60 ±5
Max. Continuous Output Current (A)	3.50 @220 V 3.47 @230 V 3.33 @240 V	3.50 @220 V 3.48 @230 V 3.33 @240 V	4.54 @220 V 4.35 @230 V 4.17 @240 V
Power Factor (@nominal power)	~1 default -0.8 leading ... +0.8 lagging adjustable	~1 default -0.8 leading ... +0.8 lagging adjustable	~1 default -0.8 leading ... +0.8 lagging adjustable
Max. Total Harmonic Distortion	< 3%	< 3%	< 3%
Efficiency			
Max. Efficiency	96.4%	96.4%	96.4%
European Weighted Efficiency	94.0%	94.0%	94.0%
Nominal MPPT efficiency	99.8%	99.8%	99.8%
General Data			
Operating Temperature Range (℃)	-40℃ ~ 65℃ (Derating temperature 45℃)	-40℃ ~ 65℃ (Derating temperature 45℃)	-40℃ ~ 65℃ (Derating temperature 45℃)
Relative	0~100%	0~100%	0~100%

Humidity			
Max. Operating Altitude (m)	0~2000	0~2000	0~2000
Cooling Method	Natural convection	Natural convection	Natural convection
Weight (kg)	3.3kg	3.3kg	3.3kg
Dimensions (W×H×D mm)	256 × 210 × 34	256 × 210 × 34	256 × 210 × 34
Ingress Protection Rating	IP67 C4M	IP67 C4M	IP67 C4M
Overvoltage Category	DC II / AC III	DC II / AC III	DC II / AC III
Features			
Communication	Built-in Wi-Fi and Bluetooth	Built-in Wi-Fi and Bluetooth	Built-in Wi-Fi and Bluetooth
Monitoring	SEMS+ APP	SEMS+ APP	SEMS+ APP
Protection	PV Insulation Resistance Detection, PV Reverse Polarity Protection, Anti islanding Protection, AC Overcurrent Protection, AC Short Circuit Protection, AC Overvoltage Protection, Type III AC Surge Arrester		
Warranty	12 Years Standard, 25 Years Optional	12 Years Standard, 25 Years Optional	12 Years Standard, 25 Years Optional
Topology	Galvanically Isolated HF Transformer	Galvanically Isolated HF Transformer	Galvanically Isolated HF Transformer
Compliance	IEC62109, VDE 0126-95, VDE 4105:2018, EN 50549-1:2019+EN 50549-10, ETSI/EN 303645, EN 18031, IEC61000, EN300328, EN301489, EN IEC 62311, IEC62920		

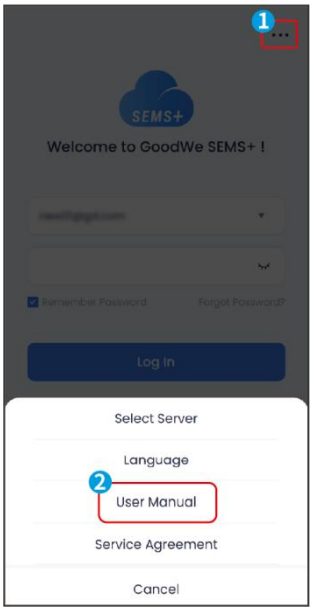
12. Appendix

12.1. FAQ

12.1.1. How to find SEMS+ App User Manual

Step 1: Tap ••• > **User Manual** on the app login page.

SEMS0049



12.2. Acronyms and Abbreviations

Acronyms	EN Description
U_{batt}	Battery Voltage Range
$U_{batt,r}$	Nominal Battery Voltage
$I_{batt,max\ (C/D)}$	Max. Continuous Charging Current Max. Continuous Discharging Current
$E_{C,R}$	Rated Energy
U_{DCmax}	Max.Input Voltage
U_{MPP}	MPPT Operating Voltage Range
$I_{DC,max}$	Max. Input Current per MPPT
$I_{SC\ PV}$	Max. Short Circuit Current per MPPT
$P_{AC,r}$	Nominal Output Power
$S_{r\ (to\ grid)}$	Nominal Apparent Power Output to Utility Grid
$S_{max\ (to\ grid)}$	Max. Apparent Power Output to Utility Grid
$S_{r\ (from\ grid)}$	Nominal Apparent Power from Utility Grid

$S_{max\ (from\ grid)}$	Max. Apparent Power from Utility Grid
$U_{AC,r}$	Nominal Output Voltage
$f_{AC,r}$	Nominal AC Grid Frequency
$I_{AC,max(to\ grid)}$	Max. AC Current Output to Utility Grid
$I_{AC,max(from\ grid)}$	Max. AC Current From Utility Grid
P.F.	Power Factor
S_r	Back-up Nominal apparent power
S_{max}	Max. Output Apparent Power (VA) Max. Output Apparent Power without Grid
$I_{AC,max}$	Max. Output Current
$U_{AC,r}$	Nominal Output Voltage
$f_{AC,r}$	Nominal Output Frequency
$T_{operating}$	Operating Temperature Range
$I_{DC,max}$	Max. Input Current
U_{DC}	Input Voltage
$U_{DC,r}$	DC Power Supply
U_{AC}	Power Supply/AC Power Supply
$U_{AC,r}$	Power Supply/Input Voltage Range
$T_{operating}$	Operating Temperature Range
P_{max}	Max Output Power
P_{RF}	TX Power
P_D	Power Consumption
$P_{AC,r}$	Power Consumption
$F_{(Hz)}$	Frequency
$I_{SC\ PV}$	Max. Input Short Circuit Current
U_{dcmin}-U_{dcmax}	Range of input Operating Voltage
$U_{AC,rang(L-N)}$	Power Supply Input Voltage
$U_{sys,max}$	Max System Voltage
$H_{altitude,max}$	Max. Operating Altitude
PF	Power Factor
THDi	Total Harmonic Distortion of Current
THDv	Total Harmonic Distortion of Voltage
C&I	Commercial & Industrial
SEMS	Smart Energy Management System
MPPT	Maximum Power Point Tracking
PID	Potential-Induced Degradation

Voc	Open-Circuit Voltage
Anti PID	Anti-PID
PID Recovery	PID Recovery
PLC	Power-line Communication
Modbus TCP/IP	Modbus Transmission Control / Internet Protocol
Modbus RTU	Modbus Remote Terminal Unit
SCR	Short-Circuit Ratio
UPS	Uninterruptible Power Supply
ECO mode	Economical Mode
TOU	Time of Use
ESS	Energy Storage System
PCS	Power Conversion System
SPD	Surge Protection Device
DRED	Demand Response Enabling Device
RCR	Ripple Control Receiver
AFCI	AFCI
GFCI	Ground Fault Circuit Interrupter
RCMU	Residual Current Monitoring Unit
FRT	Fault Ride Through
HVRT	High Voltage Ride Through
LVRT	Low Voltage Ride Through
EMS	Energy Management System
BMS	Battery Management System
BMU	Battery Measure Unit
BCU	Battery Control Unit
SOC	State of Charge
SOH	State of Health
SOE	State Of Energy
SOP	State Of Power
SOF	State Of Function
SOS	State Of Safety
DOD	Depth of discharge

12.3. Term Explanation

Overvoltage category definition

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

Category II: Applies to equipment not permanently connected to the installation. Examples are appliances, portables tools and other plug-connected equipment.

Category III: Applies to a fixed equipment downstream, including the main distribution board. Examples are switchgear and other equipment in an industrial installation.

Category IV: Applies to equipment permanently connected at the origin of an installation (upstream of the main distribution board). Examples are electricity meters, primary over-current protection equipment and other equipment connected directly to outdoor open lines.

Moisture location category definition

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

Environment category definition

Outdoor: Ambient Temperature: -25~+60℃, applied to Pollution Degree 3 environment.

Indoor Unconditioned: Ambient Temperature: -25~+40℃, applied to Pollution Degree 3 environment.

Indoor conditioned: Ambient Temperature: 0~+40℃, applied to Pollution Degree 2 environment.

Pollution degree definition

Contamination Class I: No contamination or only dry, non-conductive contamination;

Pollution Degree II: Normally only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation must be expected.

Pollution Degree III: Conductive pollution occurs, or dry. non-conductive pollution occurs, which becomes conductive due to condensation, which is expected.

Pollution Degree IV: Persistent conductive pollution occurs, for example, the pollution caused by conductive dust, rain or snow.

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