SUNGROW
Clean power for all

# User Manual

## AC Charger

AC22E-01

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# About This Manual

The manual mainly contains product information, as well as guidelines for installation, operation, and maintenance.

**Target Group**

This manual is intended for qualified technicians who are responsible for the installation, operation, and maintenance of the charger, and end users who need to check charger parameters.

A qualified technician is required to meet the following requirements:

- Knowledge of electronics, electricity, and machinery, and be familiar with electrical and mechanical schematic diagrams.
- Training in the installation and commissioning of electrical equipment.
- Be able to quickly respond to hazards or emergencies that occur during installation and commissioning.
- Be familiar with local standards and relevant safety regulations of electrical systems.
- Read this manual thoroughly and understand the safety instructions related to operations.

**EMC**

In some cases, even if the equipment is in accordance with the standard emission limits, it can have an impact in certain application areas (some sensitive equipment is placed in the same location; the equipment is installed close to a radio or TV receiver), and the operator is obliged to take appropriate action to correct this situation.

**How to Use This Manual**

Please read this manual carefully before using the product and keep it properly in a place for easy access.



Contents of this manual may be periodically updated or revised, and the actual product purchased shall prevail. Users can obtain the latest manual from **support.sungrowpower.com** or sales channels.

**Symbols**

This manual contains important safety instructions, which are highlighted with the following symbols, to ensure personal and property safety during usage, or to help optimize the product performance efficiently.

| ⚠ DANGER |
| --- |
| **Indicates high-risk potential hazards that, if not avoided, may lead to death or serious injury.** |

**⚠ WARNING**

**Indicates moderate-risk potential hazards that, if not avoided, may lead to death or serious injury.**

**⚠ CAUTION**

**Indicates low-risk potential hazards that, if not avoided, may lead to minor or moderate injury.**

NOTICE

**Indicates potential risks that, if not avoided, may lead to device malfunctions or financial losses.**

“NOTE” indicates additional information, emphasized contents, or tips that may be helpful, e.g., to help you solve problems or save time.

# Contents

# 1 Introduction

## 1.1 Introduction

The AC22E-01 charger (hereinafter "charger") is used for AC charging of electric vehicles (EVs) and can be either wall-mounted or pole-mounted, with the following advantages:

**Ease of Use**

EV drivers can start and stop charging via RFID charge card or App. When the vehicle is fully charged, the charging will stop. The charger also supports plug&play, which means the charging starts automatically as soon as the charging connector is plugged into the vehicle.

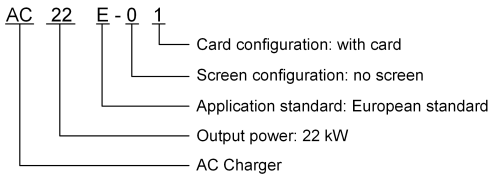
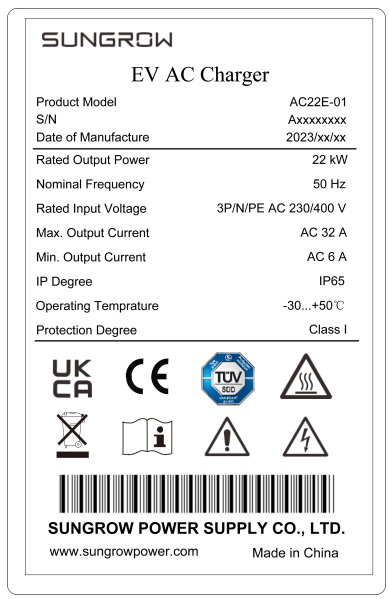
**Smart and Easy Management**

In addition to the LED lights on the charger that indicate charging status, EV drivers can visualize and control the charging session remotely via iEnergyCharge.

**Sustainability**

With an IP65 rating, the charger is water and dust proof, allowing for outdoor use and maintenance.

## 1.2 Model and Nameplate

| Model | Nameplate |
|---|---|
|  |  |

## 1.3 Appearance and Dimensions

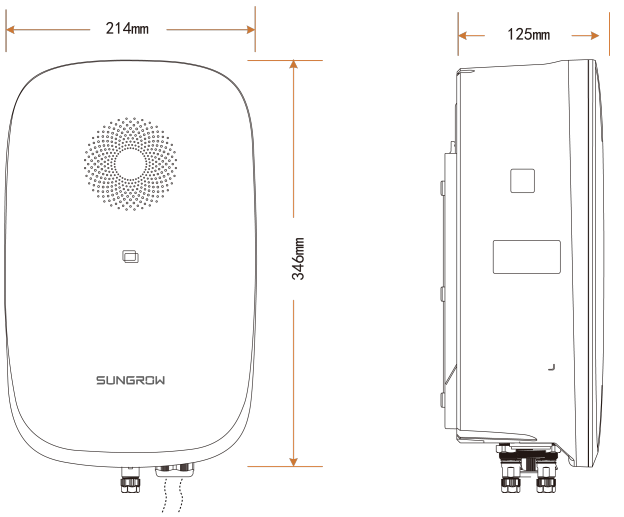



**figure 1-1** Appearance and dimensions

## 1.4 LED Signals

table 1-1 LED Signals

| LED Signal | Description |
|---|---|
| Blue indicator is steady on | Charger standby or charging is complete without drawing the charging plug |
| Blue indicator flashes, on for 0.5s and off for 0.5s | The charger connector is connected to the vehicle |
| Blue indicator breathes | Vehicle charging |
| Blue indicator flashes, ion for 0.2s and off for 0.2s, 5 times | RFID charge card used |
| Red indicator is steady on | Fault occurs (check the fault type through App) |

## 1.5 Electrical Connection Ports

Electrical connection ports are located at the bottom of the charger.

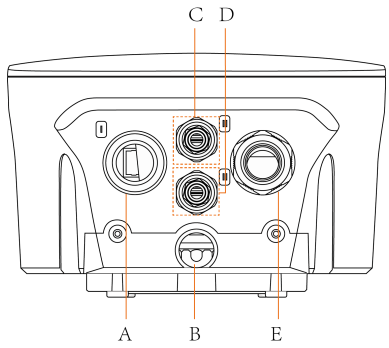



**figure 1-2** Port Diagram

table 1-2 Label Explanation

| Label | Explanation |
|---|---|
| A | Network communication |
| B | AC input from the utility grid |
| C | RS485 Port 1 for connection to the Hybrid Inverter |
| D | RS485 Port 2 for connection to the Smart Energy Meter |
| E | Charging cable output (preinstalled) |

NOTICE

**Cord extension sets are not allowed to be used.**

## 1.6 System Topology

### Stand-alone EV Charger

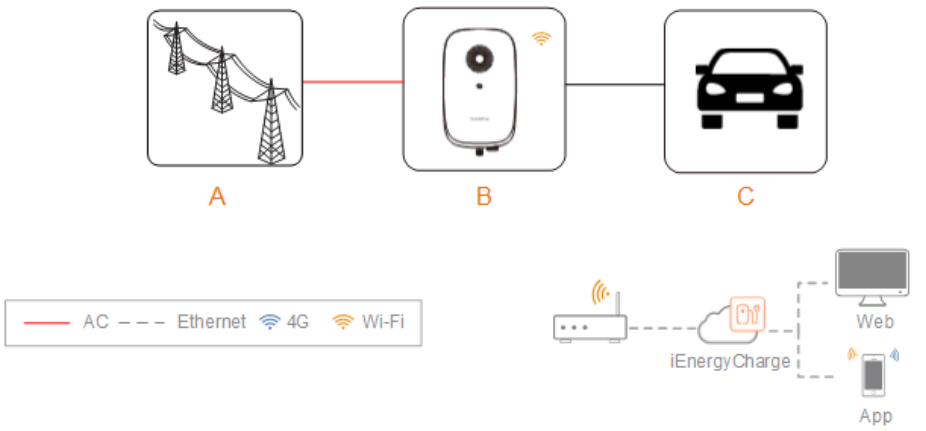



**figure 1-3** System topology diagram of EV charger

| Position | Description | Note |
|---|---|---|
| A | Utility grid | TN-C, TN-S, TN-C-S. |
| B | Charger | AC22E-01 |
| C | Electric vehicle | - |

### Solar-Storage-Charging Solution

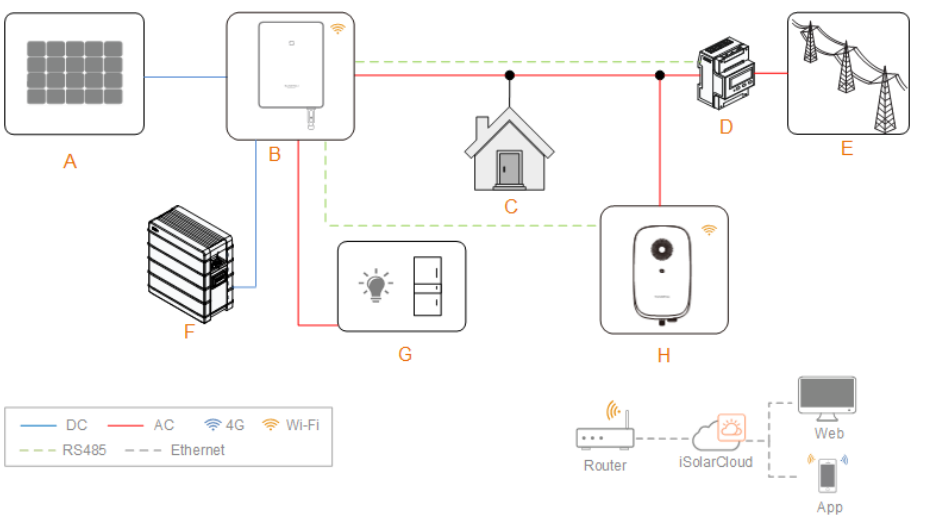



**figure 1-4** System topology diagram of the solar-storage-charging solution

| Description | Note |
|---|---|
| PV strings | Compatible with monocrystalline silicon, polycrystalline silicon, and thin-film modules without grounding. |
| Inverter | - |

| Description | Note |
| --- | --- |
| Energy Meter | Meter cupboard with power distribution system. |
| Utility grid | TN, TN-C-S, TN-S, TN-C. The type of grid grouding system depends on local regulations. |
| Battery | A Li-ion battery. |
| Backup loads | Protected house loads directly connected to the inverter. |
| Normal loads | Non-protected house loads. They will be disconnected in case of grid failure. |
| Charger | AC22E-01 |

For Sungrow's solar-storage-EV charging solution, please refer to user manuals of related inverters.

# 2 Installation

**⚠ WARNING**

**Respect all local standards and requirements during mechanical installation.**

**⚠ CAUTION**

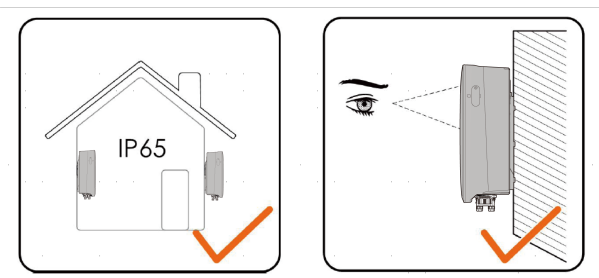
**Any damage or malfunction with the charger caused by negligence or improper use will not be eligible for service and replacement under the warranty.**

## 2.1 Installation Requirements

### Location Requirements

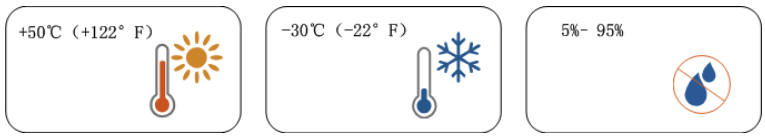
Select an optimal mounting location for safe operation, long service life and expected performance.

- The charger with protection rating IP65 can be installed both indoors and outdoors.
- The charger should be installed at a place where the LED signals can be easily seen, and is convenient for electrical connection, operation, and maintenance.




### Environment Requirements

- There must be no flammable hazards or ignition risks.
- The mounting location must be inaccessible to children.
- The ambient temperature and relative humidity must meet the following requirements.




If the environment temperature exceeds 40°C, the charger will be derated.

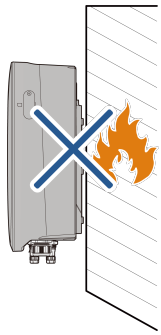
- Avoid exposure to direct sunlight, rainwater and snow.

- The charger should be well-ventilated for good air circulation.
- The mounting location must be away from living area. The charger will emit noises during operation that might be perceived as disturbing.

**Carrier Requirements**

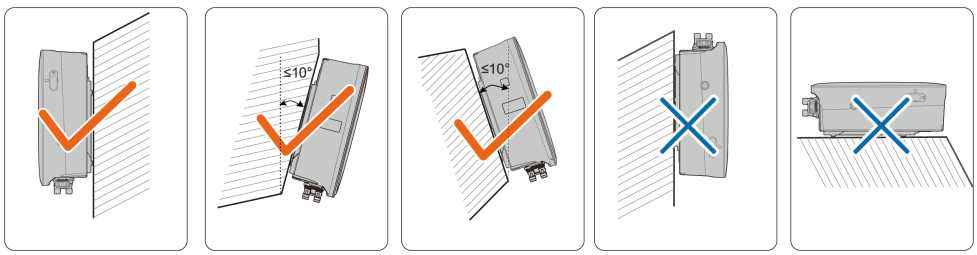
The mounting structure where the charger is installed must comply with local/national standards and guidelines.

Ensure that the installation surface is solid enough to bear 4.5 times the weight of the charger and is suitable for the dimensions of the inverter.



**Angle Requirements**

It is recommended to install the charger vertically, or at a forward or backward inclination of 10° to the vertical. Do not install the charger horizontally or at large forward or backward inclination angles to the vertical, nor keep it upside down.




## 2.2 Unpacking and Inspection

After receiving the product, check whether the appearance and structural parts of the device are damaged, and check whether the packing list is consistent with the actual ordered product. If there are problems, do not install the device and contact your distributor first. If the problem persists, contact SUNGROW in time.

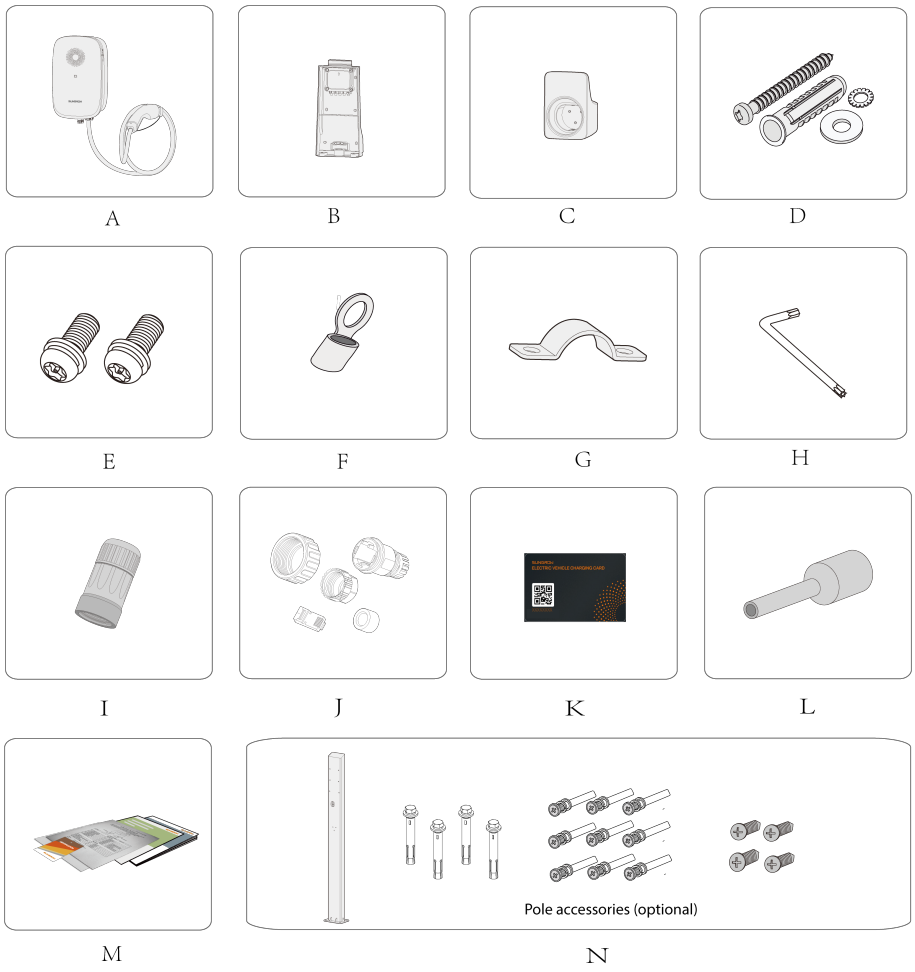



table 2-1 Label Descriptions

| Item | Name | Quantity |
|---|---|---|
| A | AC-Charger | 1 |
| B | Backplate | 1 |
| C | Bracket | 1 |
| D | Expansion screw | 9 |
| E | Hexlobular socket pan head tamper proof screws | 2 |
| F | OT terminals | 5 |
| G | Cable fastener | 1 |
| H | L-shaped wrench ( T20 ) | 1 |
| I | LAN connector set | 1 |
| J | RJ45 protection sleeve | 2 |

| Item | Name | Quantity |
|---|---|---|
| K | RFID card | 2 |
| L | Euro terminals | 2 |
| M | Documents | 1 |
| N | Pole accessories (optional) | 1 ( purchase separately ) |

If your RFID M1 Card is lost, please contact SUNGROW customer service to post-register it.

## 2.3 Installation Tools

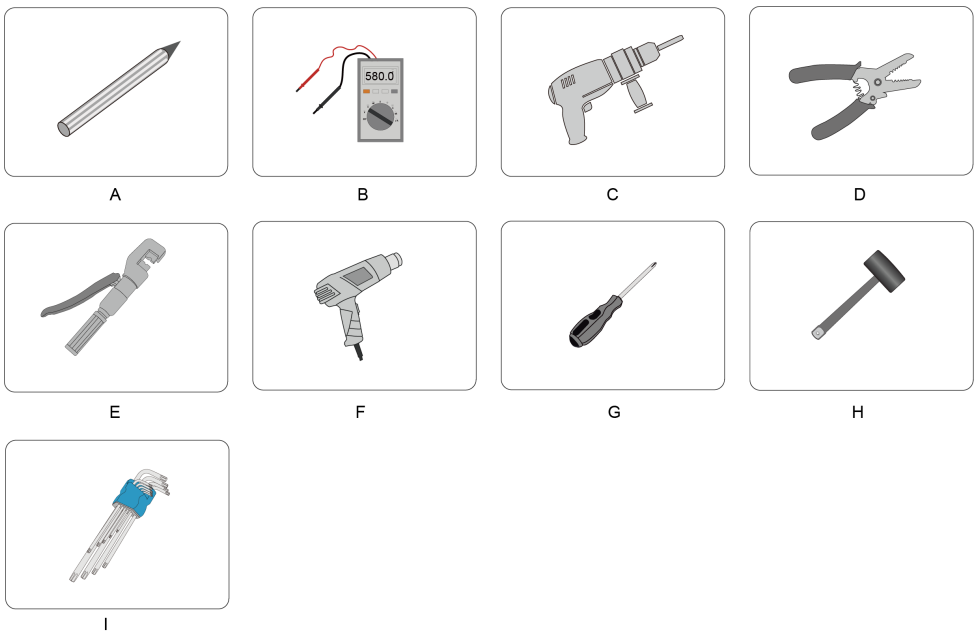



table 2-2 Label Descriptions

| Item | Name | Specification |
|---|---|---|
| A | Marker | - |
| B | Multimeter: | ≥600 Vdc |
| C | Cable drill tool | Ø6, Ø12 |
| D | Wire stripper | |
| E | Hydraulic clamp | 2.5-6mm$^2$ |
| F | Hot air blower | - |
| G | Cross screwdriver | M4 |

| Item | Name | Specification |
|---|---|---|
| H | Rubber hammer | - |
| I | Pan head tamper proof wrench | - |

## 2.4 Electrical Connection

### 2.4.1 Circuit Diagram

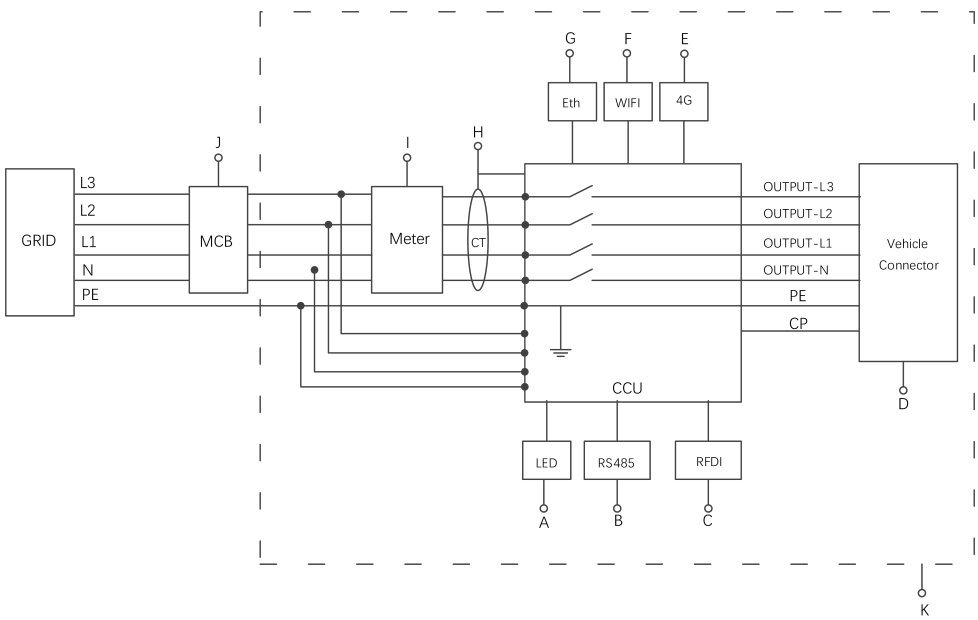



**figure 2-1** Circuit diagram

table 2-3 Label Descriptions

| Label | Description | Remarks |
|---|---|---|
| A | LED lights | The LED lights that indicates the status of the charger |
| B | RS485 | Reserved for external communication |
| C | RFID | Start by swiping card |
| D | Vehicle connector | Connect the target vehicle |
| E | 4G | External communication |
| F | WIFI | External communication |
| G | Eth | Connect the router |
| H | CT | - |
| I | Electricity meter | - |

| Label | Description | Remarks |
|---|---|---|
| J | MCB | Type A residual-current device .<br>AC22E-01：40 A/4P AC400 V with a rated residual current of 30 mA |
| K | The charger | - |

NOTICE

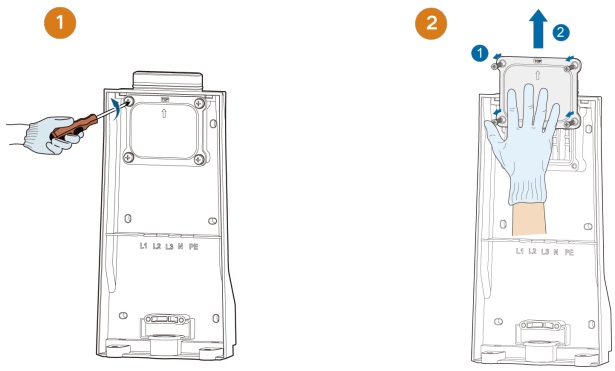
**The charger already integrates a DC residual-current device (RCD) with a rated residual current of 6 mA. However, the charger also requires a type A RCD of 30 mA to operate. Each charger in the system must be individually connected to the utility grid through an RCD and a miniature circuit breaker.**

### 2.4.2 AC Cable Connection

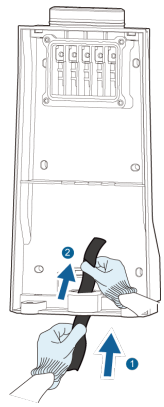
- AC22E-01E：Copper cable cross-section: 5 × 6 $mm^2$

**Step 1** Use the cross screwdriver to loosen the screws of backplate. (M4 screws, torque: 1.2 N·m)

**Step 2** Push up the back cover plate with hand.




**Step 3** Plug the cable into the port of the power supply which is in the middle.



**Step 4** Adjust the cable to a suitable length, and strip off the insulation of the cable to prepare for cable connection terminals.

1 Strip off the insulation from the end of each wire.

2 Insert the copper core of the stripped end of the wire into the copper lug.

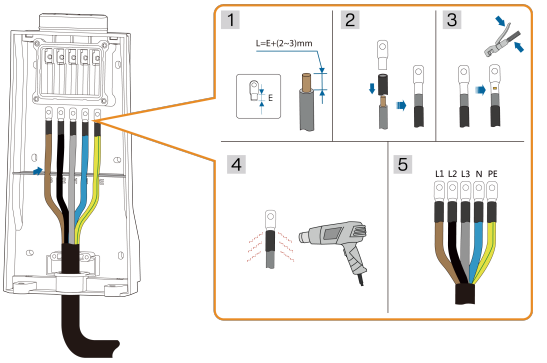
3 Tighten the copper lug using a hydraulic plier.

4 Select a heat-shrink tubing that matches the diameter of the wire.

The length of the tubing should be about 2 cm longer than the length of the copper lug's wire tube.

5 Place the heat-shrink tubing on the copper lug until it completely covers the copper lug's wire hole.

6 Activate heat-shrink tubing using a hot air blower.




| Color | Terminal |
|---|---|
| Brown | L1 |
| Black | L2 |
| Gray | L3 |
| Blue | N |
| Yellow-green | PE |

**DANGER**

**If L1,L2,L3,N,PE are connected incorrectly, it will not only damage the machine, but also create a potential shock hazard .**

**DANGER**

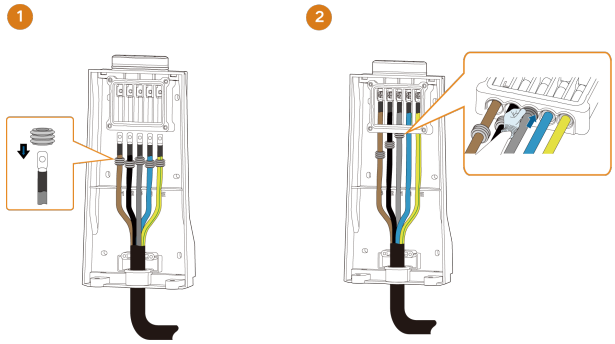
**In the TT, TN-C and TN-S system, make sure that the ground cable is connected reliably. Otherwise, it may cause electric shock.**

**Step 5** Install the sealing ring.

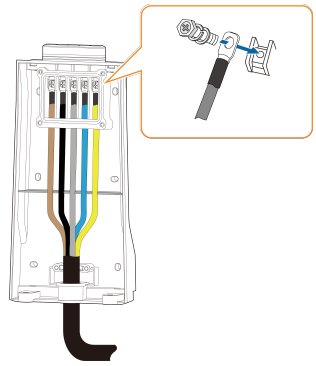
1 Insert the sealing ring into the each wire.

2 Plug the wire into the hole, and insert the sealing ring into the hole.

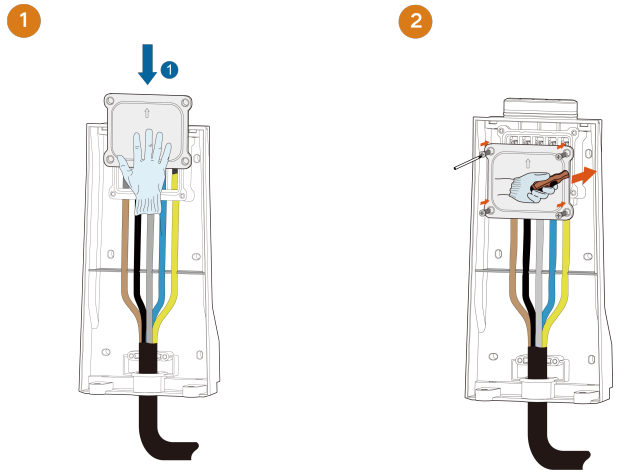
The ring face of the OT terminal faces upward.



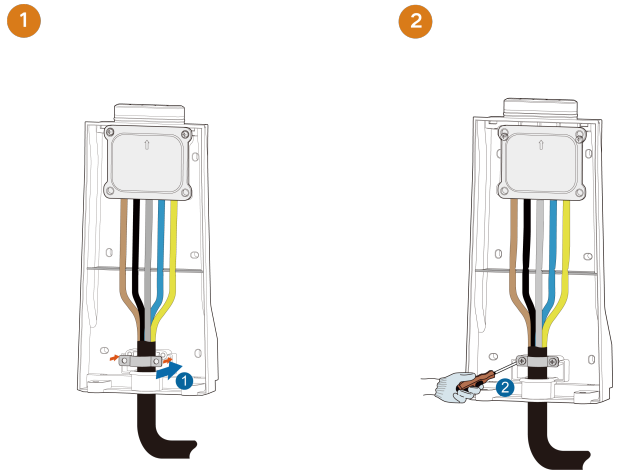

**Step 6** Connect each crimped terminal (OT5.5-4) and tighten them using a M4 screwdriver. (Torque: 1.2 N·m)



**Step 7** Put the back cover plate back in place and tighten the screws to secure it.(M4 screws, torque: 1.2 N·m)



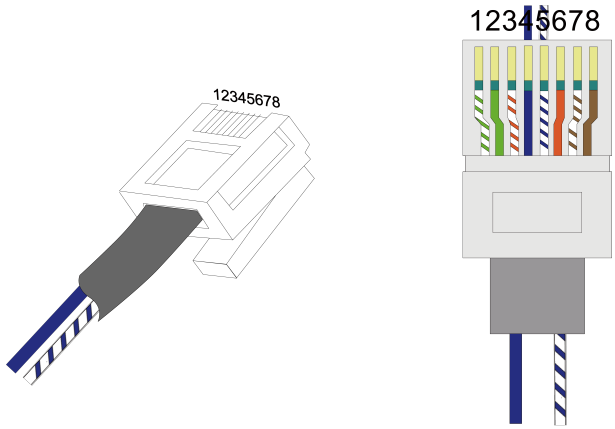
**Step 8** Put the cable fastener in place and tighten the screws to secure it.(M4 screws, torque: 1.2 N·m)



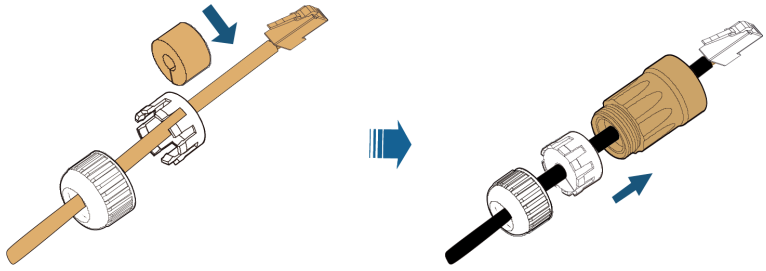
**- - End**

### 2.4.3 Ethernet Communication Connection

**Step 1** (Optional) Strip the insulation layer of the communication cable with an Ethernet wire stripper, and lead the corresponding signal cables out. Insert the stripped communication cable into the RJ45 plug in the correct order, and crimp it with a crimper.

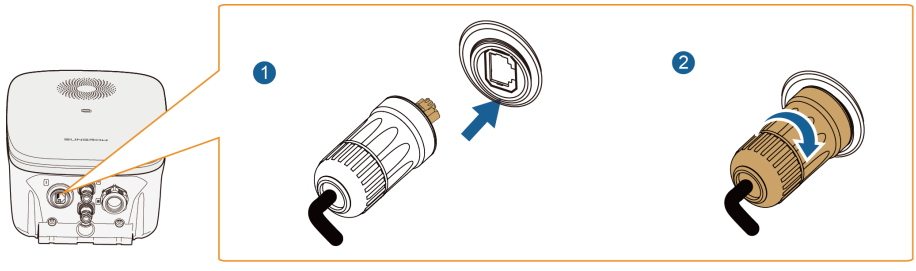



**Step 2** Thread the network cable through the swivel nut and gasket. Afterwards, route the cable into the opening of the sealing. Finally, insert the cable through the housing.



**Step 3** Unscrew the waterproof lid from the Network communication terminal.

**Step 4** Insert the LAN connector into Network communication terminal on the bottom of the Charger. Pull cables outwards to confirm whether they are fastened firmly, then tighten the swivel nut with appropriate torque.

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### 2.4.4 RS485 Communication Connection

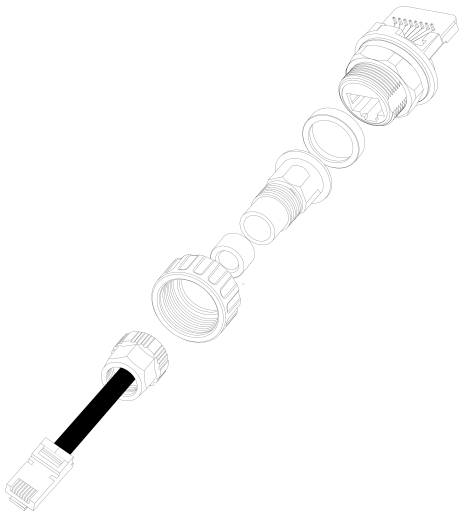
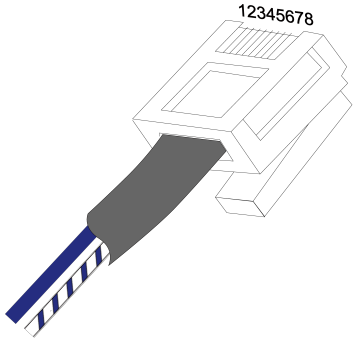


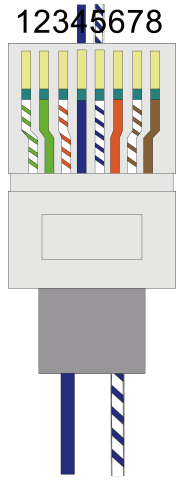
**figure 2-2** RJ45 components

**Step 1** Crimp the Ethernet cable using a crimping tool.

Ensure that the blue wire and the blue-white wire is correctly crimped.

The blue wire (PIN 4) connects to 485B, and the blue-white wire (PIN 5) connects to 485A.




**Step 2** Insert the RJ45 connector to the RJ45 jack.

**Step 3** Install seals for the Ethernet cable in sequence.

Ensure that the cable is secured.

**Step 4** Connect the charger to an inverter or a third-party monitoring system.

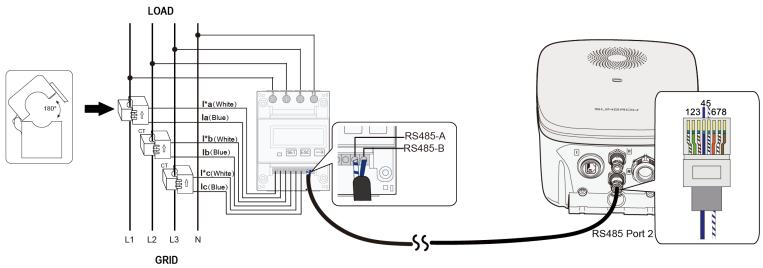



**figure 2-3** Connect to a Smart Energy Meter

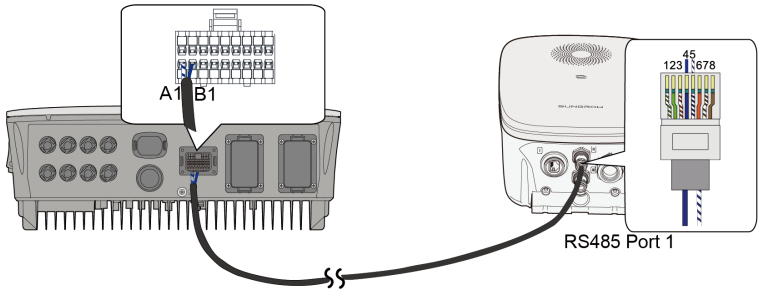



**figure 2-4** Connect to an inverter(SHRT)

**- - End**

## 2.5 Wall-Mounted Installation

Install the charger on the wall using the provided wall-mounting bracket and expansion screw sets.

The load-bearing capacity of the installation carrier must be at least 4.5 times the weight of the charger.

**Step 1** Install the backplate and the charging cable bracket .

1 Hold the cardboard and backplate in the desired position on the wall and mark the positions of the drill holes.

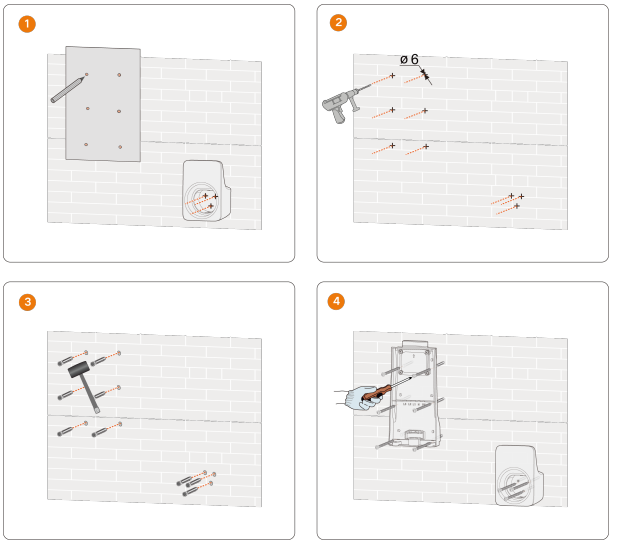
NOTICE

**Before drilling the hole for the backplate, locate and avoid water pipes and electrical wires in the wall.**

2 Drill holes at the marked positions using a hammer drill. (Diameter: 6 mm; depth: 45 mm)

3 Insert the dowel into the holes.

4 Place the backplate on the wall and tighten the screws using a screwdriver to secure the backplate(M4 screws, torque: 1.2 N·m).

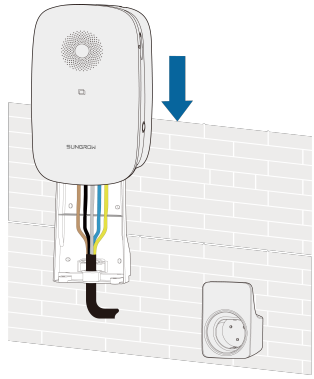



It is recommended that the charging cable bracket be positioned at the lower right side of the charger, about 20 cm away from the charger. The distance shall be adjusted according to the actual situation.

**Step 2** Connect the AC cable.Please refer to "2.4.2 AC Cable Connection".

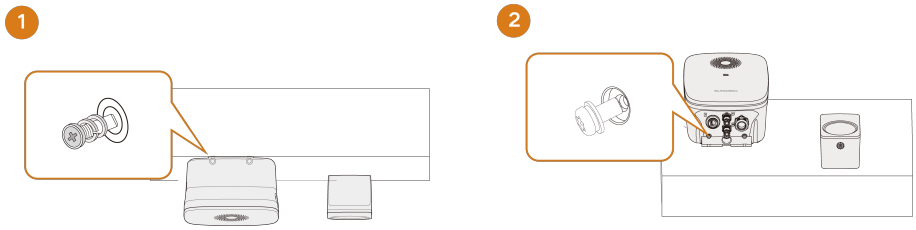
**Step 3** Mount the charger.

1 Hang the charger onto the backplate, and hear "Click", the charger is install in place.



2 Secure the upper charger with M4 screw for plates. (Torque: 1.2 N·m).

3 Secure the lower charger with M4 hexlobular socket pan head tamper proof screws. (Torque: 1.2 N·m).



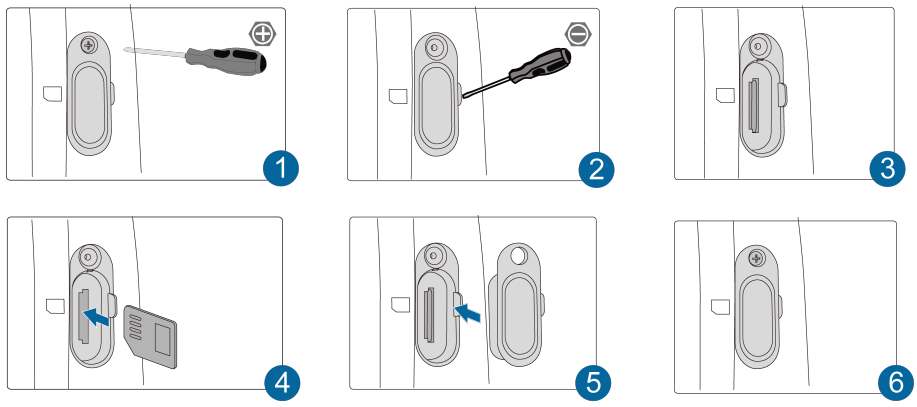

**Step 4** SIM card installation.

1 Remove the screws of the cover plate of card slot by using cross screwdriver in the top right corner of the charger.

2 Pry the cover plate of card slot by using slotted screwdriver.

3 Insert the sim card into the card slot in the direction of the Micro SIM card icon.

4 Re-lock the cover plate of card slot .




**- - End**

## 2.6 Pole-Mounted Installation

It is recommended to install the pole on a solid support surface (such as concrete or tarmac). If conditions do not permit, please install the foundation first, and then install the mounting pole.

### 2.6.1 Foundation Installation

The base should be 100 mm above the ground, and the exterior dimensions of the front, back, left, and right side columns should be greater than 100 mm. Ensure that there are openings for cables.

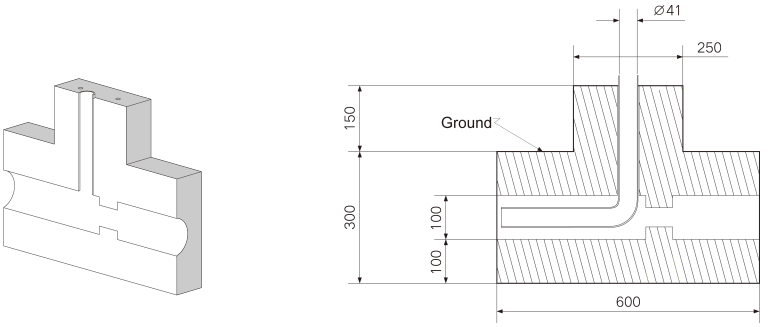



**figure 2-5** Front view (unit: mm)

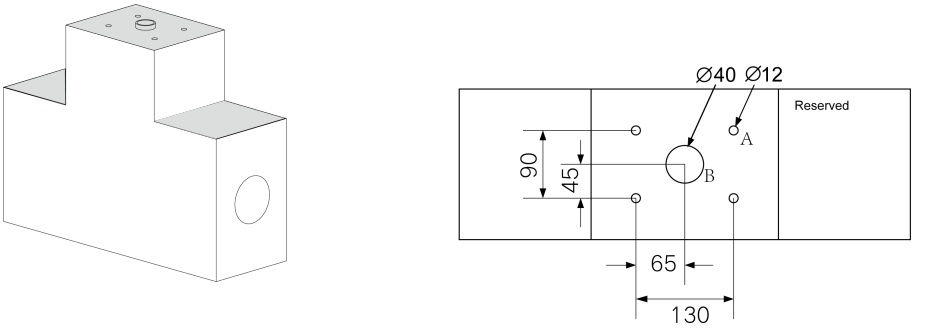



**figure 2-6** Top view (unit: mm)

NOTICE

**A: Expansion screw：4×M8×80 mm ; hole diameter: 12mm; depth: 100mm**

**B: Cable hole diameter : 40mm**

### 2.6.2 Pole Installation

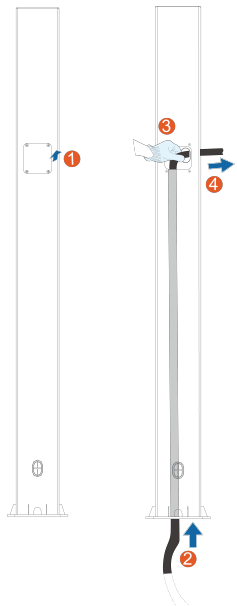
**Step 1** Connect the AC cable.

1 Remove the cover plate on the back of the pole using a cross screwdriver.

2 Lead the AC cable through the bottom into the pole.

3 Grab the AC cable when it reaches the cover plate and take out the end of the cable from the AC cable outlet.

4 Pull the cable out to an appropriate length and close the cover plate.



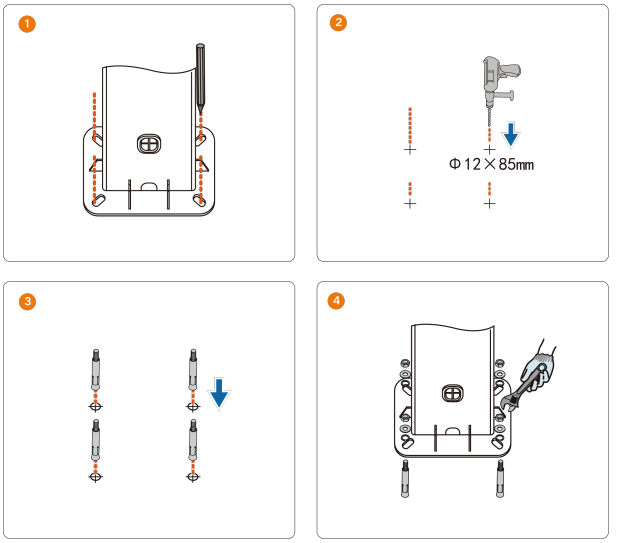
**Step 2** Mount the charger.

1 Place the pole on a solid and flat surface, and mark the positions of the drill holes.

2 Drill holes at the marked positions using a hammer drill. (Diameter: 12 mm; depth: 85 mm)

3 Insert the dowel into the holes.

4 Tighten the expansion screw using a screwdriver.



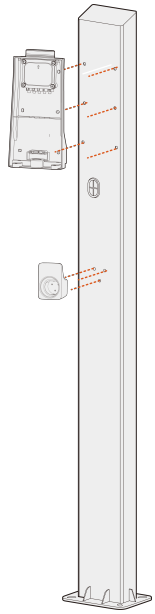

5 Check whether the pole is firmly installed.

**Step 3** Install the backplate and the charging cable bracket.

1 Align the holes in the backplate with the holes drilled in the pole, and secure the backplate to the pole with screws.

2 Align the holes in the bracket with the holes drilled in the pole, and secure the bracket to the pole with screws.

3 Check whether the backplate and the charging cable bracket are firmly installed.



**Step 4** Connect the AC cable.

Please refer to"2.4.2 AC Cable Connection"

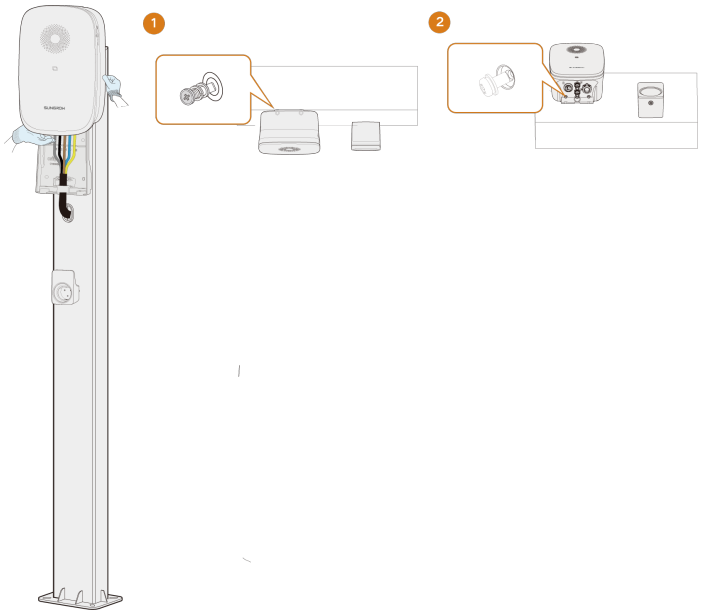
**Step 5** Install the charger.

1 Hang the charger onto the backplate, and hear "Click", the charger is install in place.

2 Secure the upper charger with M4 screw for plates. (Torque: 1.2 N·m).

3 Secure the lower charger with M4 hexlobular socket pan head tamper proof screws. (Torque: 1.2 N·m).

4 Check whether the charger is correctly installed on the pole.




**Step 6** SIM card installation. For details, you can see "2.5 Wall-Mounted Installation" step4

**- - End**

# 3 Inspection before Commissioning

table 3-1 Requirements before commissioning

| Item | Description |
| --- | --- |
| Location | The charger is correctly mounted at a place that is convenient for operation and maintenance. |
| Charger | The charger is firmly and securely installed. |
| Cable | Cables are correctly and firmly connected, and are adequately protected from damage. |
| Current leakage protection | The AC input's current leakage protection switch is reasonable. |
| Clearance | The charger has sufficient cooling space and there is no other stuff or components are left on the top of the charger. |

**Step 1** Ensure that all requirements are met before commissioning.

**Step 2** Turn on the current leakage protection switch of the AC input.

**Step 3** Power on the charger.

The blue LED is solid on which indicates the charger is in standby mode.

**- - End**

# 4 Troubleshooting

table 4-1 Fault Resolution

| Problem | Possible Cause | Solution |
|---|---|---|
| Overvoltage | 1 The grid voltage at the input end of the charger exceeds 276 V.<br>2 The grid voltage is still above 264 V after overvoltage. | Usually, the charger will be reconnected to the grid once the grid returns to normal. If the problem occurs repeatedly:<br>1 Measure the actual grid voltage, and contact local power company for solutions if the grid voltage is above 264 V.<br>2 Contact Sungrow Customer Service if the problem persists. |
| Undervoltage | 1 The grid voltage at the input end of the charger is below 184 V.<br>2 The grid voltage is still below 195 V after undervoltage. | Usually, the charger will be reconnected to the grid once the grid returns to normal. If the problem occurs repeatedly:<br>1 Measure the actual grid voltage, and contact the local power company for solutions if the grid voltage is below 195 V.<br>2 Check if the AC cables are firmly connected.<br>3 Contact Sungrow Customer Service if the problem persists. |

| Problem | | Possible Cause | Solution |
|---|---|---|---|
| Overfrequency | | 1 The mains AC frequency exceeds 63 Hz.<br>2 The grid frequency is still above 61 Hz after overfrequency. | Usually, the charger will be reconnected to the grid once the grid returns to normal. If the problem occurs repeatedly:<br>1 Measure the actual grid frequency, and contact the local power company for solutions if the grid frequency is above 61 Hz.<br>2 Contact Sungrow Customer Service if the problem persists. |
| Underfrequency | | 1 The mains AC frequency is below 47 Hz.<br>2 The grid frequency is still below 49 Hz after underfrequency. | Usually, the charger will be reconnected to the grid once the grid returns to normal. If the problem occurs repeatedly:<br>1 Measure the actual grid frequency, and contact the local power company for solutions if the grid frequency is below 49 Hz.<br>2 Contact Sungrow Customer Service if the problem persists. |
| EV | Leakage current | The DC leakage current is above 6 mA | 1 Stop charging and pull out the charging connector. When the charger returns to normal, try charge again. If the problem occurs repeatedly, contact the EV manufacturer's customer service.<br>2 Stop charging and pull out the charging connector. Contact Sungrow Customer Service if the problem persists. |
| | Overcurrent | Outout current is above 35 A | |
| Charger | Stuck relay | The relay is stuck and cannot be disconnected. | Restart the charger and try again after 1 minute. If the problem occurs repeatedly, contact Sungrow Customer Service. |

| Problem | | Possible Cause | Solution |
|---|---|---|---|
| | Leakage current detection circuit failure | 1 The CT terminal has bad connection or the CT is malfunctioning.<br>2 The RCD circuit is abnormal. | |
| | Relay overtem-perature | The temperature of the main relay is too high. It might be a hardware problem. | |
| | CP failure | Abnormal CP loop circuit on the main board | |
| Wiring | Input ter-minal overtem-perature | 1 The input terminal is loosely connected which causes bad connection.<br>2 The cable's current-carry-ing capacity does not meet the requirements. | 1 Ensure that the AC cable is tightly connected, that the ca-ble used meets requirements, and L and N wires are cor-rectly connected.<br>2 Contact Sungrow Customer Service if the problem persists. |
| | Reverse polarity | L and N wires are connected reversely. | |

If the above faults cannot be removed, please contact Sungrow.

# 5 Commissioning via iSolarCloud

NOTICE

**This section only applies to use cases with the advanced version of the charger.**

For details, refer to the user manual of related inverter.

# 6 iEnergyCharge App

iEnergyCharge App is a tool that allows users to operate and manage their EV chargers. Users can complete account settings and charger configuration, manage charge cards, operate the charger, and reach customer service on the App.

Depending on the version of iEnergyCharge you are using, the user interface might be slightly different.

## 6.1 Download and Installation

**Operating System:**

- Android 6.0 or later
- iOS 11 or later

**Option 1**

Download the App from the below application stores and install it on your device:

- Google Play
- App Store

**Option 2**

Scan the QR code below, and download and install the App by following the onscreen instructions.

## 6.2 Sign-up and Log in

**Step 1** Open the iEnergyCharge App, and tap **Sign up**.

**Step 2** Enter an email address, and tap **Next**.

**Step 3** Find the verification code sent by the system in your email inbox. Then, go back to the App, enter the verification code, and tap **Next**.

**Step 4** Enter a password, and the sign-up process is now completed. You will then go to the App's **Home** screen.

**- - End**

## 6.3 Add a Charger

To add a charger to your account on the iEnergyCharge App for operation and management, you need to set up a reliable network connection between the devices first.

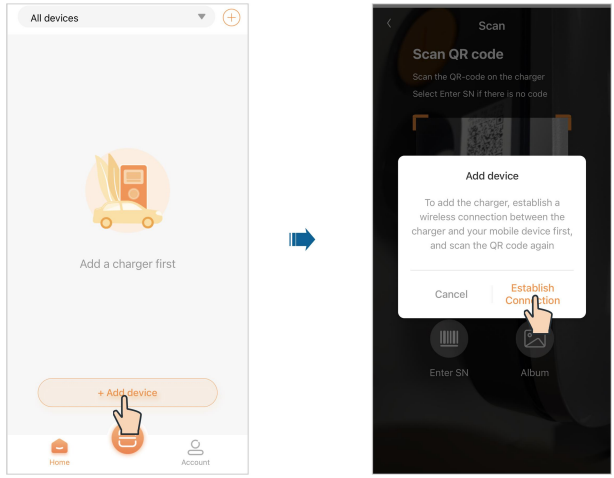
Requirements:

- The charger is powered on;
- Stable WLAN networks are available.

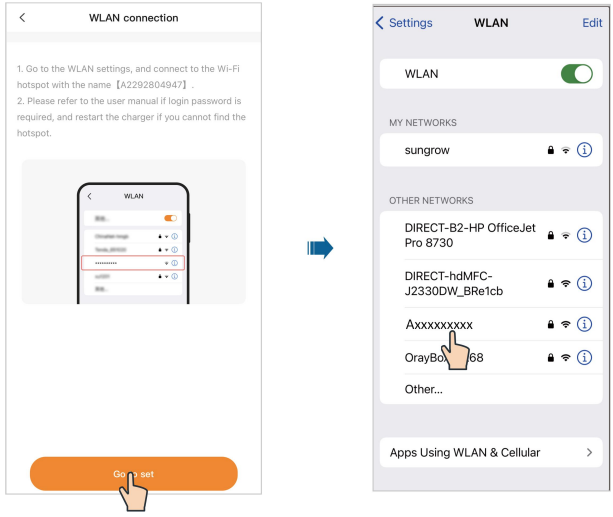
- The charger's WLAN can only be on for 15 minutes. If the network is off, you can restart the charger and connect again.
- To avoid potential interference, it is recommended to enable airplane mode on your mobile device when connecting to the charger's WLAN.

**Step 1** Tap **Add device** on the **Home** screen.

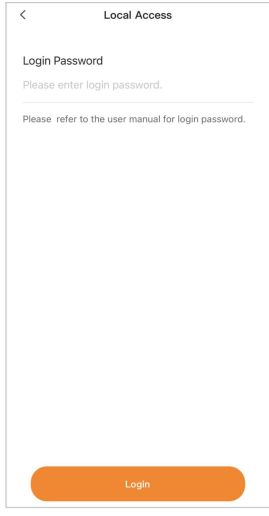
**Step 2** Scan the QR code on the side of the charger, and then, in the "Add device" dialog, tap **Establish Connection**.



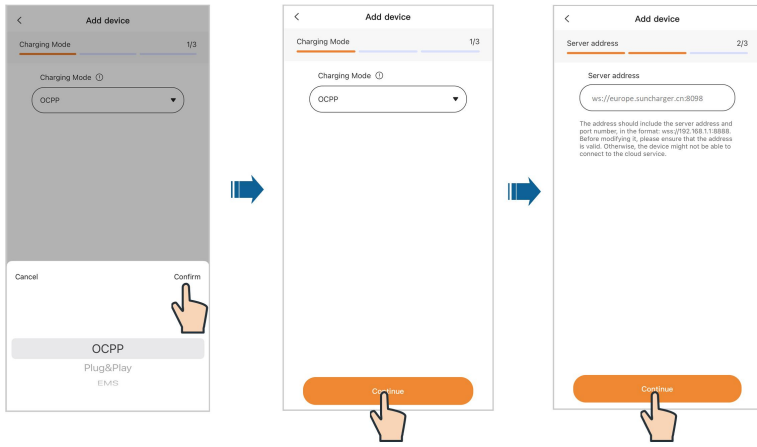
**Step 3** Go to WLAN settings on your mobile device, and connect to the charger's WLAN. The charger's WLAN is named in the format of "**SG-Charger S/N**" and **no password** is required.




**Step 4** Once connected successfully, go back to the App and enter the login password, which should be "**admin**" or "**pw8888**". Then, tap **Log in**.



**Step 5** Select a charging mode based on your needs, and tap **Continue**. Then, set the server address, and tap **Continue**.



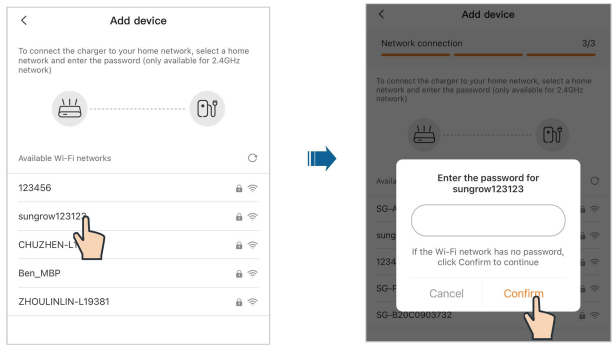

- OCPP: Charge using the stand-alone EV charger.
- Plug&Play: Plug and charge.
- EMS: Available when used with the SUNGROW solar-energy storage-EV charging system.

If the charging mode is set to “EMS”, you need to enter a password generated by the operation and management platform. Please contact the customer service and get the password through the management platform.

Default server address: wss://europe.suncharger.cn:20038.

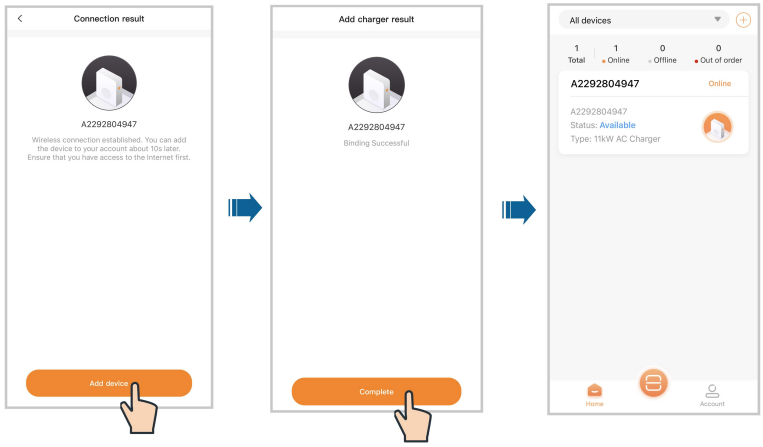
If you want to add a non-SUNGROW charger, enter the server address provided by the operator.

**Step 6** Connect the charger to a stable WLAN network, where you are required to enter the correct password.



**Step 7** After network connection is established successfully, tap **Add device**. The device is now added to your account successfully. Then, tap **Complete**, and you will be directed to the App's Home screen. You can check the status of the charger you have added on this screen.

Disconnect from the charger first, and connect to the router's WLAN network.

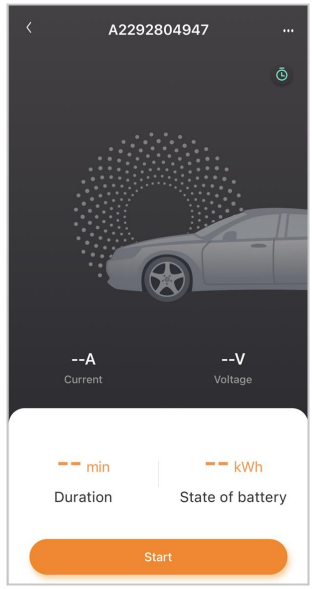



**- - End**

## 6.4 Charging View

After a charger has been added, you can start a charging session or modify charging settings remotely on the charging screen of the App.

On the **Home** screen, choose an available charger that has been added before and tap it. You will then go to the charging screen.



### 6.4.1 Start/Stop Charging

#### Start Charging

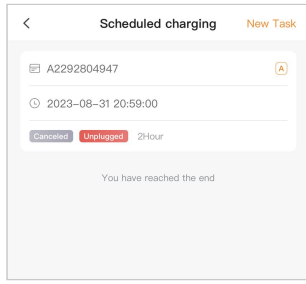
Tap **Start** on the charging screen to start a charging session. During the charging process, you can view the real-time charging current and voltage, charging time, and battery status.

#### Stop Charging

If needed, you can tap **Stop** on the charging screen to stop charging immediately.

### 6.4.2 Scheduled Charging

**Step 1** Tap  in the upper right corner of the charging screen to go to “Scheduled charging”.

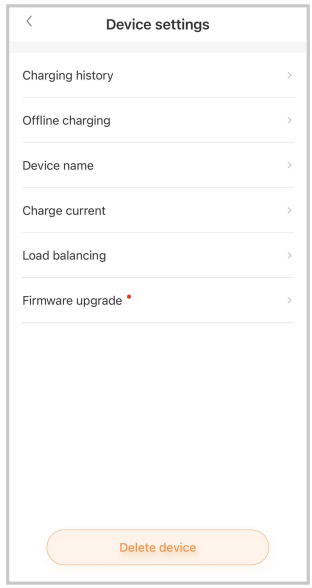



**Step 2** Tap **New task** in the upper right corner of this screen. Here you can create a new scheduled charging task.

**- - End**

### 6.4.3 Device Settings

Tap  in the upper right corner of the charging screen to go to “Device settings”.




#### Delete device

Tap **Delete device** at the bottom of the screen to delete the current charger.

**Charging history**

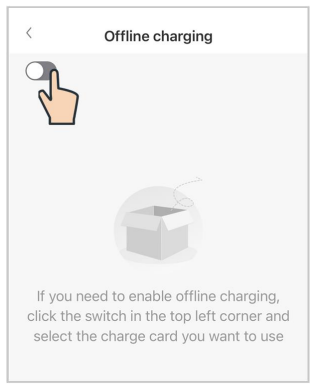
Tap **Charging history** to view the records of charging history.

**Offline charging**

Requirements:

- Your phone and the charger have connection to the Internet.
- The charger is available.
- At least one RFID charge card is available.

Tap **Offline charging**. To enable offline charging, tap the toggle button in the upper left corner, and select the charge card you want to use.




If you have not added an RFID charge card, or you need to add a new card, tap "Add card" at the top right and follow the onscreen instructions to complete the process.

If you switch off offline charging, the respective RFID charge cards must be associated with the charger once again for recognition.

**Device name**

Tap **Device name**. Enter a name, and tap **Save** to set the device name.

**Charge current**

Tap **Charge current**. Set the charging current, and tap **Save** to effect the setting.

The regulated charging current applies only to the current charging session.

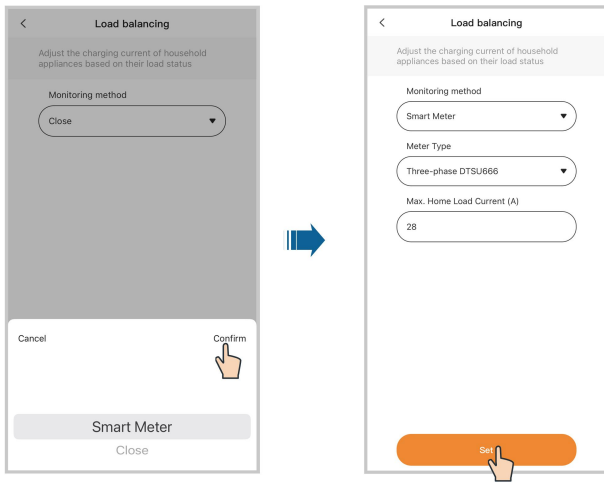
**Load balancing**

Requirements:

- The charger is online.
- The charger is not in use.

- The charger has connected to a power-controlling device.

Tap **Load balancing**. Set the “Monitoring method” to **Smart Meter**, and set the “Meter Type” and “Max. Home Load Current” based on the actual situation. Then, tap **Set** to effect the settings.




Load balancing is available only for SUNGROW energy meters. Contact the customer service for more details.

**Firmware upgrade**

Requirements:

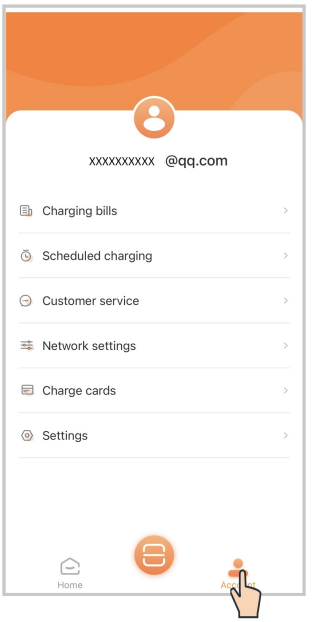
- Your phone and the charger have connection to the Internet.
- The charger is available.
- There is a new version of the firmware.

Tap **Firmware upgrade**. Tap **Update** to start remote firmware upgrade.

To ensure proper functionality of the charger, it is recommended to keep the firmware up to date.

## 6.5 Account

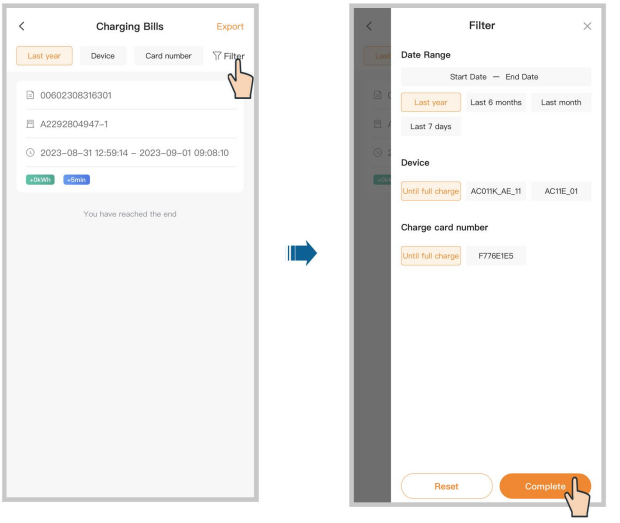
Tap **Account** in the bottom navigation bar. You will then see the screen shown below.



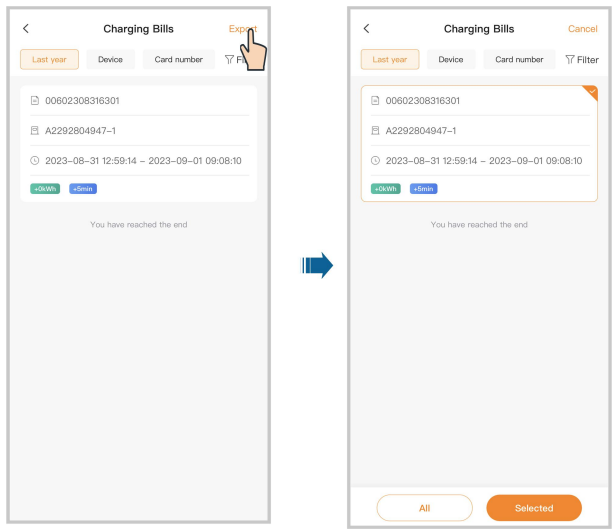

### 6.5.1 Charging Bills

**Step 1** Tap **Charging bills**.

**Step 2** Tap **Filter** at the top of the screen, and you can view charging bills by date, device, and charge card number.



**Step 3** Tap **Export** in the upper right corner of the screen to export the charging bills you need.

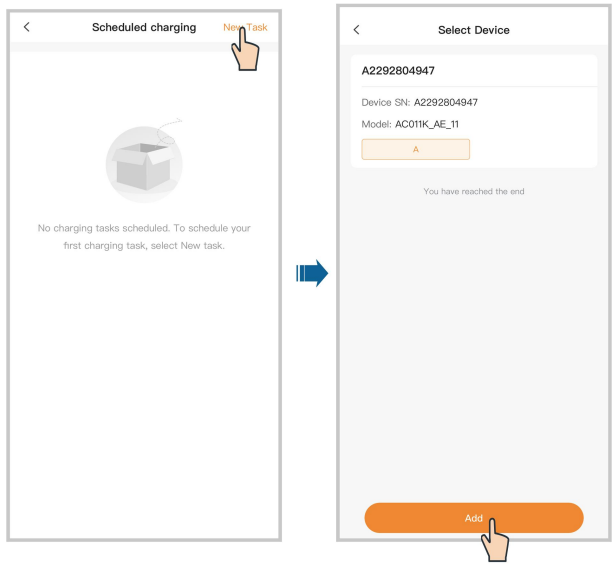



**- - End**

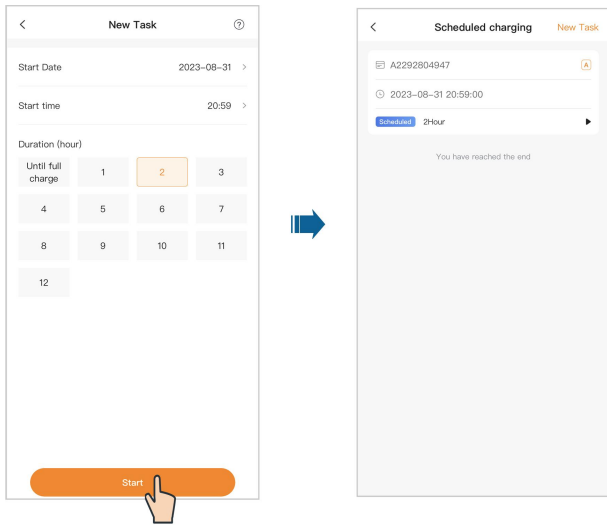
## 6.5.2 Scheduled Charging

**Step 1** Tap **Scheduled charging**.

**Step 2** Tap **New task** in the upper right corner to create a scheduled charging task. Select the device and tap **Add**.



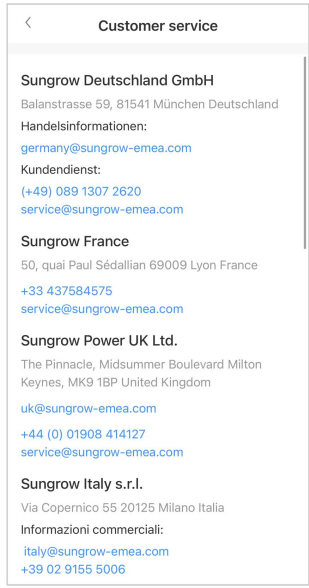
**Step 3** Set the start date, start time, and duration, and tap **Start**. A scheduled charging task is now created.




**- - End**

### 6.5.3 Customer Service

Tap **Customer service**. You can find the contact information for SUNGROW in some regions on this screen.




### 6.5.4 Network Settings

If the WLAN network has changed, please re-configure the network connection for the charger by following the below steps.

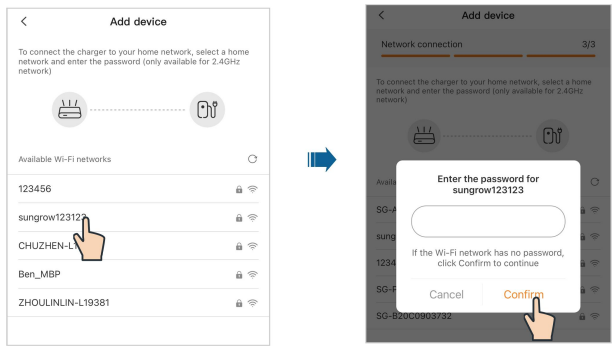
To avoid potential interference, it is recommended to enable airplane mode on your mobile device when connecting to the charger's WLAN.

**Step 1** Tap **Network settings**, scan the QR code on the side of the charger, and connect the device.

**Step 2** Go to WLAN settings on your mobile device, and connect to the charger's WLAN. The charger's WLAN is named in the format of "**SG-Charger S/N**" and **no password** is required.

**Step 3** Once connected successfully, go back to the App and enter the login password, which should be "**admin**" or "**pw8888**". Then, tap **Login**.

**Step 4** Choose another stable wireless network. Enter the password and connect the charger to the network.



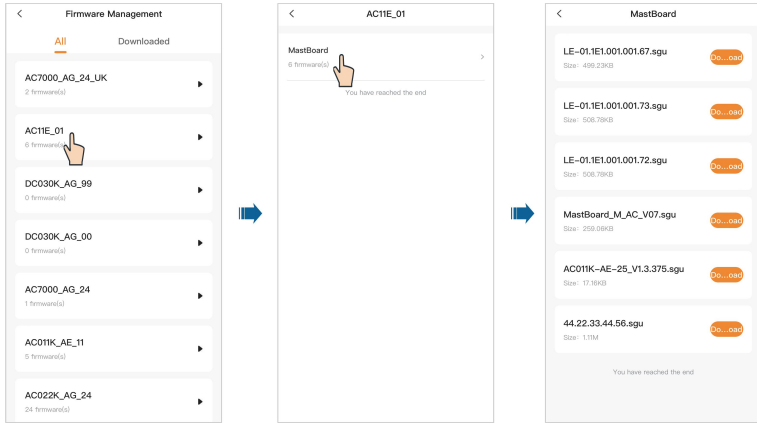

**- - End**

### 6.5.5 Firmware Management

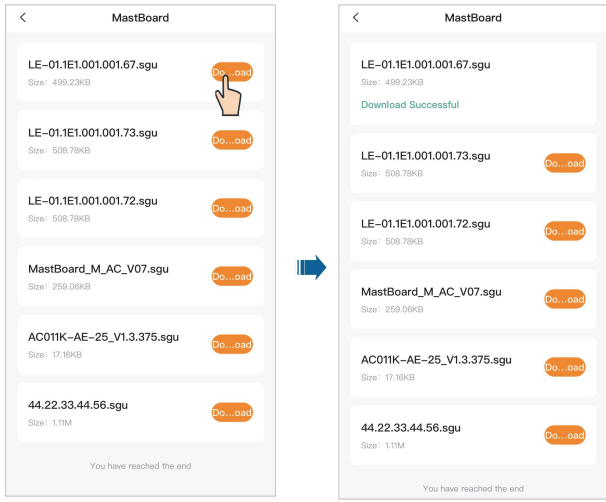
"Firmware Management" is accessible to the Administrator account, please contact your distributor or SUNGROW for the Administrator account and password.

**Step 1** Tap **Firmware Management**.

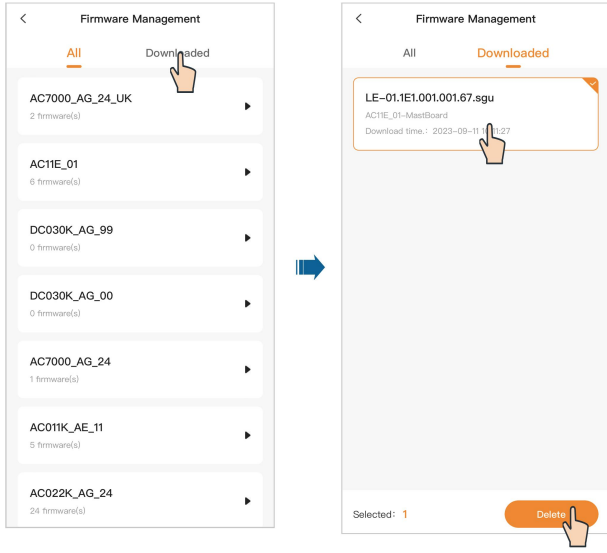
**Step 2** Select the device and the module to be upgraded.



**Step 3** Choose the target firmware package and tap **Download** to download it.




**Step 4** Go back to “Firmware Management”. Tap **Download**, and you can see the firmware package you have downloaded. You can also select the downloaded firmware package and delete it.




**- - End**

## 6.5.6 Device Connection

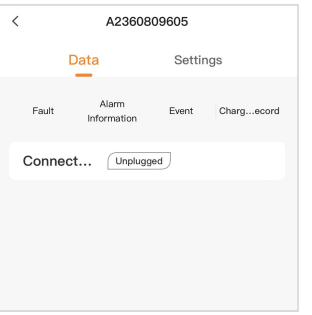
The “Device Connection” function is used to enable the near-end O&M of the charger.

> “Device Connection” is accessible to the Administrator account, please contact your distributor or SUNGROW for the Administrator account and password.

**Step 1** Tap **Device Connection**, scan the QR code on the side of the charger and connect the device.

**Step 2** Go to WLAN settings on your mobile device, and connect to the charger's WLAN. The charger's WLAN is named in the format of "**SG-Charger S/N**" and **no password** is required.

**Step 3** Go back to the App, and you will automatically go to the interface for near-end O&M.



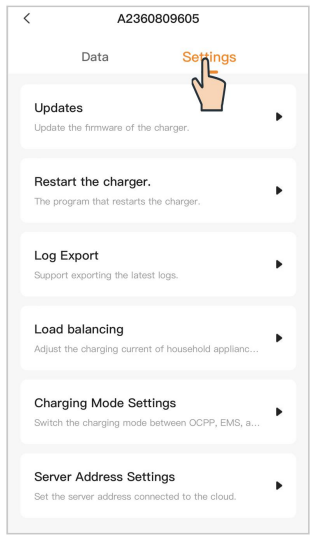

1 Tap **Fault** to view the current charger's fault records.

2 Tap **Alarm information** to view the current charger's alarm records.

3 Tap **Event** to view the current charger's event records.

4 Tap **Charging Records** to view the current charger's charging history.

**Step 4** Choose **Settings**. Here you can complete relevant settings for the charger.




1 Tap **Updates**. Here you can select the firmware package that has been downloaded, and tap **Start to Upload** to start firmware upgrade. For details on firmware package download, see "6.5.5 Firmware Management".

2 Tap **Restart the charger** to restart the current charger.

3 Tap **Log Export**. Here you can select the logs you want and export them, share the log, or upload the exported log to the platform as needed.

4 Tap **Load balancing**. You can adjust the charging current according to the load status of your home appliances.

5 Tap **Charging Mode Settings**. You can change the charging mode for the current charger on this screen as needed.

> If the charging mode is set to “EMS”, you need to enter a password generated by the operation and management platform. Please contact the customer service and get the password through the management platform.

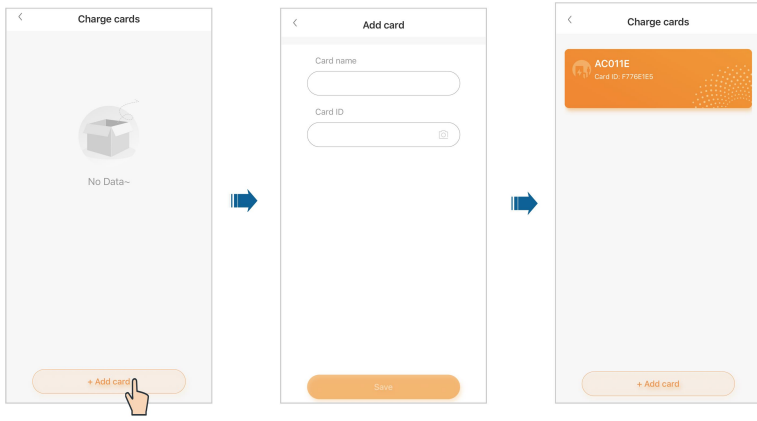
6 Tap **Server Address Settings**. You can change the server address for this charger on this screen as needed.

**- - End**

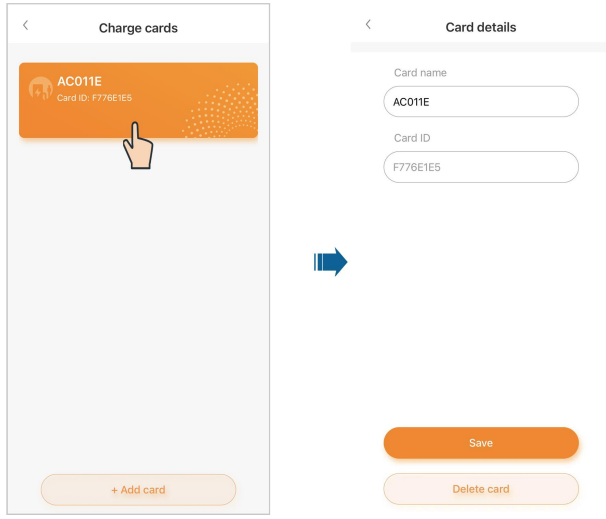
### 6.5.7 Charge Cards

**Step 1** Tap **Charge cards**.

**Step 2** Tap **Add card** at the bottom of the screen. Then, enter the card name and ID, and tap **Save**. The card is now added successfully.



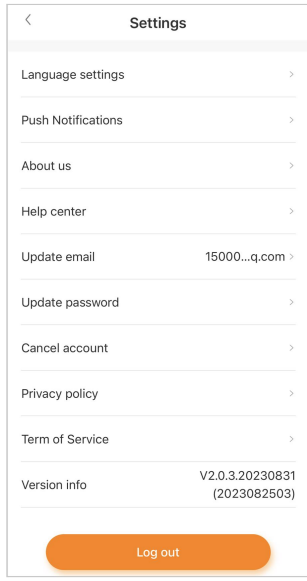

**Step 3** Tap the card that has been added, and go to “Card details”. Here you can edit the card name or delete the card.




**- - End**

### 6.5.8 Settings

Tap **Settings**. Here you can complete settings related to the language of the App, push notifications, email, and password. You can tap **Log out** to log out of the current account.


Settings
Language settings
Push Notifications
About us
Help center
Update email
15000...q.com
Update password
Cancel account
Privacy policy
Term of Service
Version info
V2.0.3.20230831
(2023082503)
Log out

# 7 Appendix

## 7.1 Technical Data

table 7-1 Technical Data

| Specification | AC22E-01 |
|---|---|
| **AC Input and Output** | |
| Max. charge power | 22 kW |
| Nominal Voltage | 400 V |
| Nominal grid frequency | 50 Hz / 60 Hz |
| Max. current | 32 A three-phase |
| Charge connector | Plug Type 2 |
| Input cable cross-section | 5 mm² * 6 mm² |
| Output cable length | 7 m |
| **Protection** | |
| Residual current detection | 6 mA DC |
| Over/Under voltage protection | Yes |
| Over load protection | Yes |
| Over temperature protection | Yes |
| Surge protection category | Yes |
| Overvoltage category | III ( grid ) / II ( car ) |
| **General Data** | |
| Dimensions (H * W * D) | 346 mm * 214 mm * 125 mm |
| Weight | ≤7kg |
| Mounting method | Wall-Mounting / Pole-Mounting (optional) |
| Impact resistance | IK 10 |
| Degree of protection | IP65 |
| Operating ambient temperature range | -30 to 50 °C |
| Allowable relative humidity range | 5 % to 95 % |
| Cooling method | Natural convection |
| Max. operating altitude | 3000 m |
| Grid type | TN / TT |

| Specification | AC22E-01 |
|---|---|
| Status indication | LED indicator |
| Communication | RS485 / Ethernet / WIFI / 4G (Optional) |
| Power consumption for standby | < 5.5 W ( 6.5 W with MID meter ) |
| Start Mode | RFID card / App / Plug & Play |
| Compliance | EN / IEC 61851-1:2019; EN / IEC 61851-21-2:2018 |
| MID meter | Optional |
| Warranty | 3 years ( standard ) |

## 7.2 Quality Assurance

In the event of a defect during the warranty period, SUNGROW will provide free of charge 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 the stipulations of relevant international standards.
- The damage is caused by unexpected natural factors.

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

## 7.3 Contact Information

In case of questions about this product, please contact us.
We need the following information to provide you with 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**.

SUNGROW

Sungrow Power Supply Co., Ltd.

www.sungrowpower.com