SUNGROW
Clean power for all

User Manual

AC Charger

AC007E-01 / AC007E-01 L1

AC007E-01-UEN-Ver13-202307

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Disposal

After the service life of the charger ends, please dispose of it in accordance with the applicable electrical waste disposal act at the installation location. It can also be returned to Sungrow Power Supply Co., Ltd., but the relevant expenses shall be borne by your party.

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 Safe Introductions

This manual contains important instructions for SUNGROW charger that shall be followed during installation, operation, and maintenance. Please review all warnings and notices before installing and using the charger.

⚠ WARNING

Do not install or use the charger near flammable, explosive, harsh or combustible materials, chemicals, or vapors.

⚠ WARNING

Turn off the power supply at the circuit breaker before installing or cleaning the charger.

NOTICE

Use the charger only within the operation steps and parameters specified in this manual.

NOTICE

Never spray water or any other liquid directly onto the charger body or the charging connector. Store the charger in the connector socket to prevent unnecessary damage.

NOTICE

Do not attempt to disassemble, repair, tamper with or modify the charger. Contact SUNGROW for any repair or modification.

NOTICE

Do not use the charger if it is defective, appears cracked, frayed, broken or otherwise damaged, or fails to operate. Please contact SUNGROW in time.

NOTICE

Be careful when transporting the charger. Do not subject it to strong force or impact or pull, twist, tangle, drag, or step on the charger to prevent damage to it or any components.

NOTICE

Do not touch the end terminal of the charger with any part of your body or metal objects.

NOTICE

Use of charger may affect or impair the operation of any medical or implantable electronic devices, such as implantable cardiac pacemakers or implantable cardioverter defibrillator. Please check with your electronic device manufacturer concerning the effects of the charger on such electronic devices before using the charger.

2 Introduction

2.1 Introduction

The **AC007E-01 / AC007E-01 L1** charger (hereinafter "charger") is used for AC charging of electric vehicles (EV/PHEV) 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 card or App. When the vehicle is fully charged, the charging will stop. The charger also supports plug&play charging, 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 .

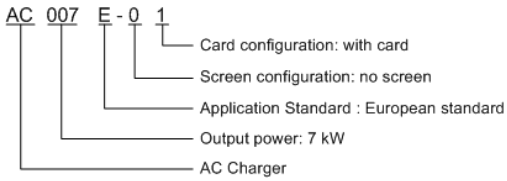
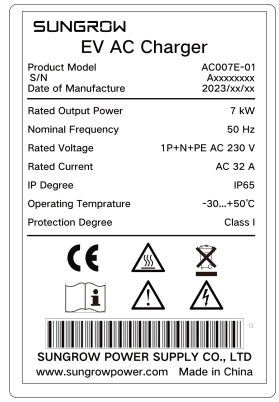
Sustainability

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

2.2 Model and Nameplate

The charger comes in two versions for different use cases:

- AC007E-01 (hereinafter referred as "the advanced version")
- AC007E-01 L1 (hereinafter referred as "the standard version")

Model	Nameplate
	

2.3 Appearance and Dimensions

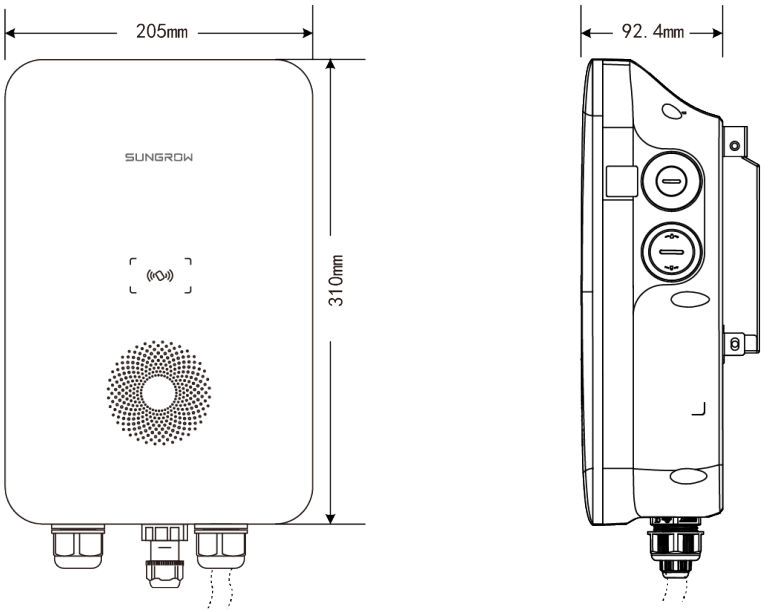


figure 2-1 Appearance and dimensions

2.4 LED Signals

table 2-1 LED Signals

Indicator	Indicator
Standby	Blue indicator flashes slowly, on for 1 s and off for 4s ; circulating
Charging	Blue indicator breathes, on for 1s and off for 1s; circulating
Charging stops	Blue indicator is steady on
Ready to charge	Blue indicator flashes quickly, on for 0.5s and off for 0.5s; circulating
Charging reservation	Blue indicator is on for 3s and red indicator is on for 3s
Power-on self-test	Blue indicator is on for 1s and red indicator is on for 1s
Charger software upgrading	Blue indicator flashes quickly
Swiping Card	Blue light is on for 5 times with an interval of 0.2s

2.5 Electrical Connection Ports

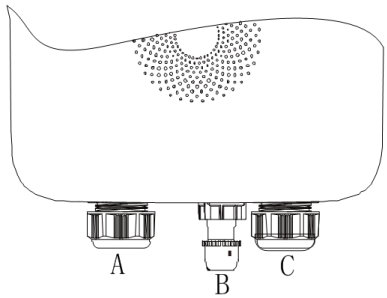


figure 2-2 Port Diagram

table 2-2 Label Explanation

Label	Explanation
A	AC input (AC connection)
B	RS485 external communication
C	Charging cable output (Charging cable connection)

2.6 System Topology

Stand-alone EV Charger

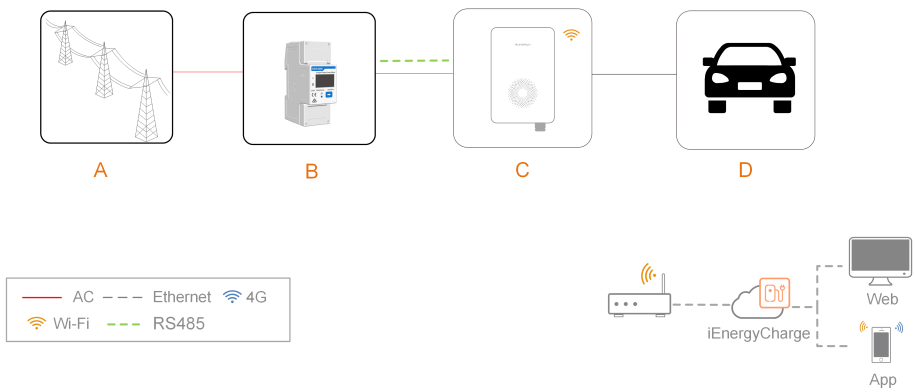


figure 2-3 System topology diagram of EV charger

Position	Description	Note
A	Utility grid	TT, TN-C, TN-S, TN-C-S.
B	Smart Energy Meter	Optional (DDSU666).
C	Charger	**AC007E-01 L1**
D	Electric vehicle	-

Solar-Storage-Charging Solution

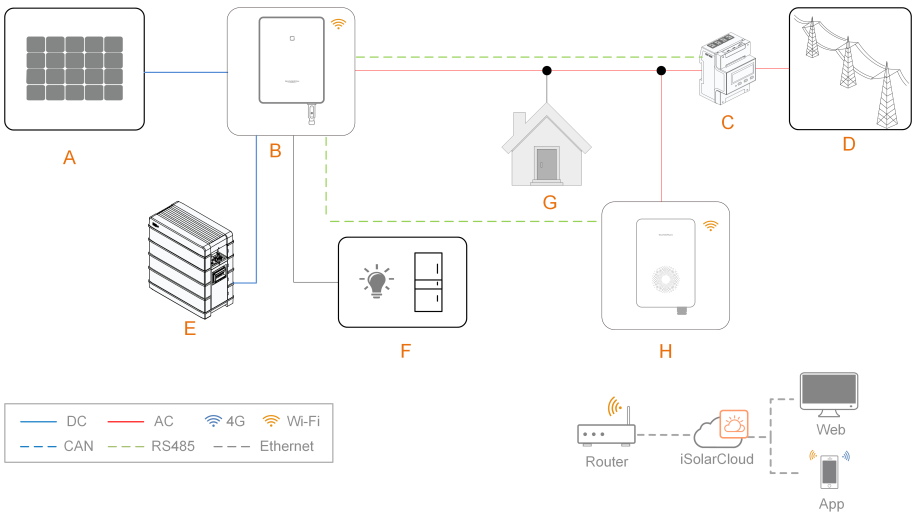


figure 2-4 System topology diagram of the solar-storage-charging solution

Position	Description	Note
A	PV strings	Compatible with monocrystalline silicon, polycrystalline silicon, and thin-film modules without grounding.
B	Inverter	-
C	Smart Energy Meter	A smart energy meter that monitors power usage and helps to avoid power outages caused by peak electricity during home charging.
D	Utility grid	TT, TN, TN-C-S, TN-S, TN-C. The type of grid grouding system depends on local regulations.
E	Battery	A Li-ion battery.
F	Backup loads	Protected house loads directly connected to the inverter.
G	Normal loads	Non-protected house loads. They will be disconnected in case of grid failure.
H	Charger	**AC007E-01**

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

3 Installation

WARNING

Respect all local standards and requirements during mechanical installation.

CAUTION

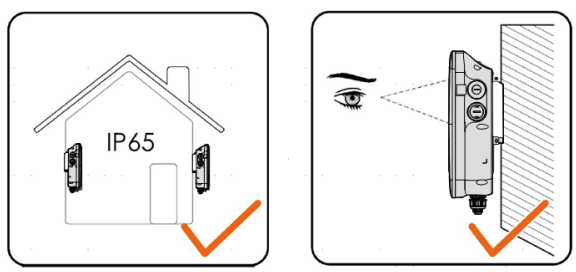
Any damage or malfunction with the charger caused by negligence or improper use will not be eligible for service and replacement under the warranty.

3.1 Installation Requirements

Location Requirements

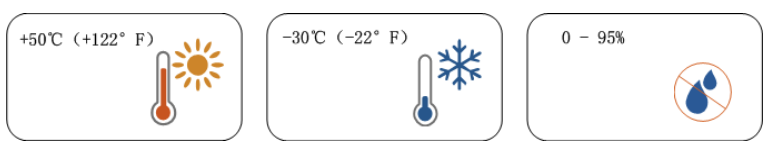
Select an optimal mounting location for safe operation, long service life and expected performance.

- 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.

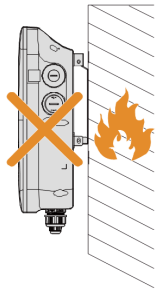


- Avoid exposure to direct sunlight, rainwater and snow.
- The charger should be well-ventilated for good air circulation.
- The mounting location must be away from living area. The charger will emit noises during operation that might be perceived as disturbing.

Carrier Requirements

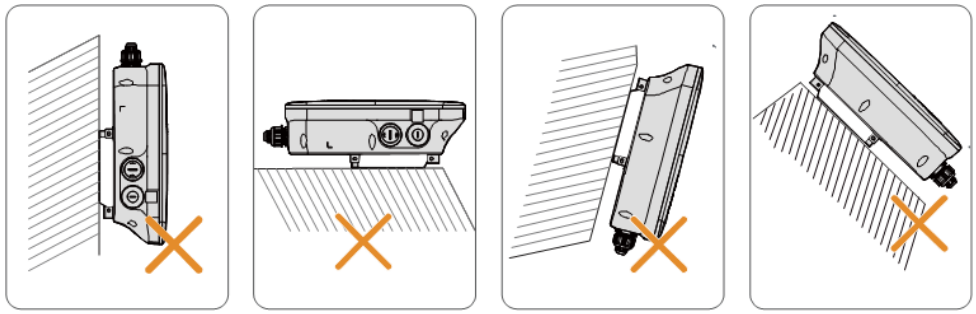
The mounting structure where the charger is installed must comply with local/national standards and guidelines.

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

- Install the charger vertically.
- Do not install the charger horizontally, tilted or upside down.
- Do not install the charger on a tilted surface.



3.2 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.

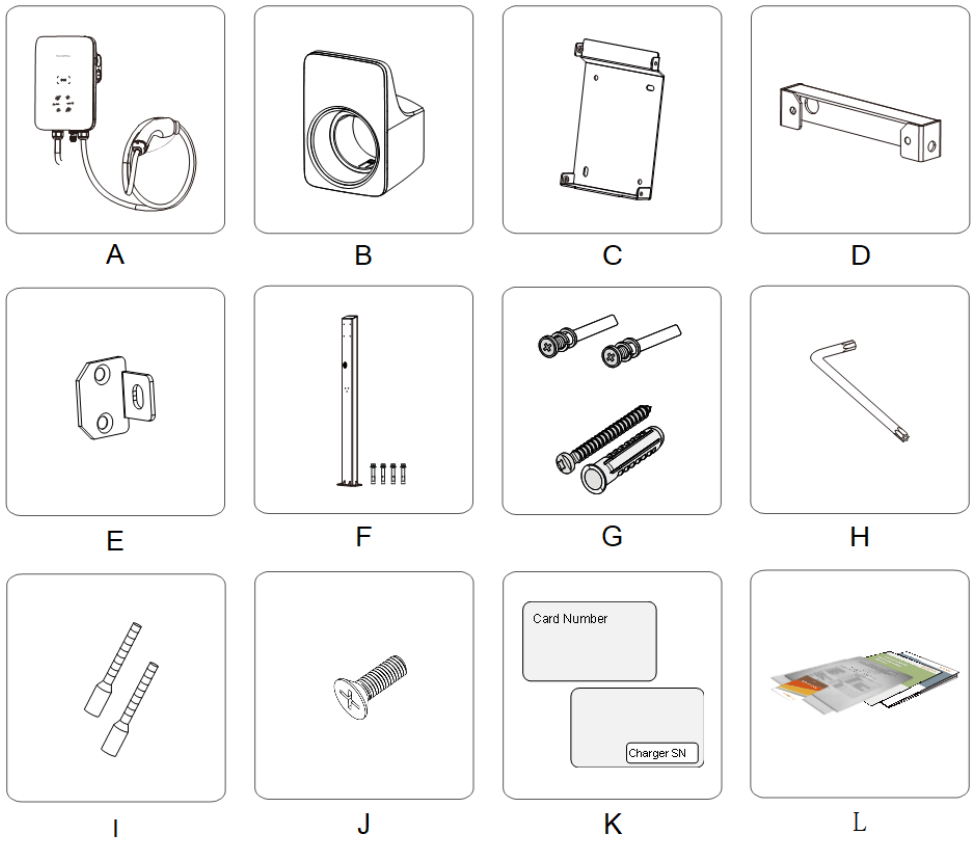


table 3-1 Label Descriptions

Item	Name	Quantity
A	AC-Charger	1
B	Charging cable bracket	1
C	Backplate	1
D	Upper mounting plate	1
E	Lower mounting plate	2
F	Mounting pole (optional)	1 (not included in scope of delivery)
G	Combination screw and expansion screw	4, 7 (wall-mounted); 11, 0 (pole-mounted)
H	L-shaped spanner	1
I	Wire end ferrule	1~2
J	Countersunk screw	6
K	RFID card	2
L	Quick Installation Guide, Warranty Card, and Certificate of Conformity	1, 1, 1

The scope of delivery does not include the optional mounting pole (F), this item must be ordered separately.

3.3 Installation Tools

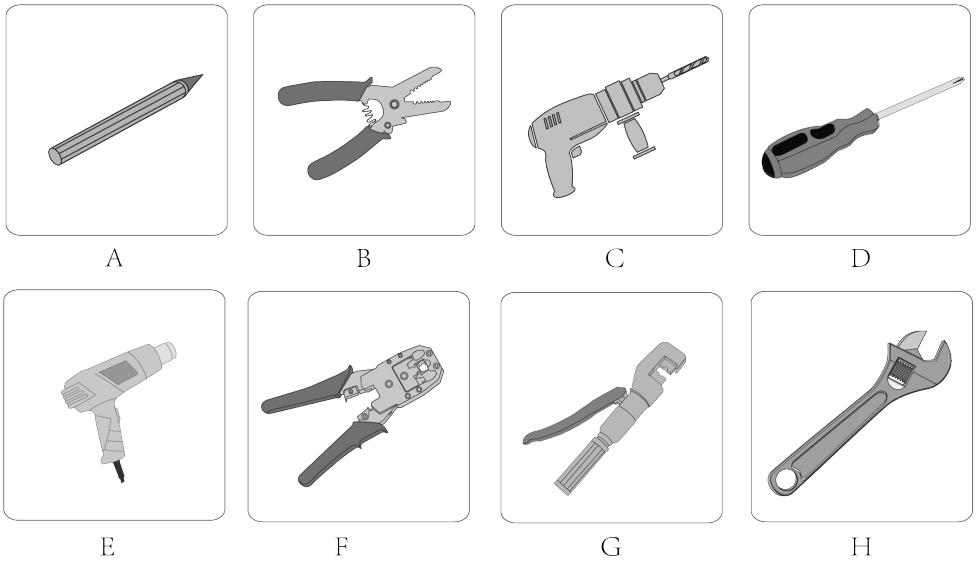


table 3-2 Label Descriptions

Item	Name	Specification
A	Marker	-
B	Wire stripper	-
C	Hammer drill	Ø6, Ø12
D	Screwdriver	M3, M4
E	Heat gun	-
F	RJ45 crimping tool	-
G	Hydraulic plier	2.5-6 mm^2
H	Adjustable spanner	-

3.4 Electrical Connection

3.4.1 Circuit Diagram

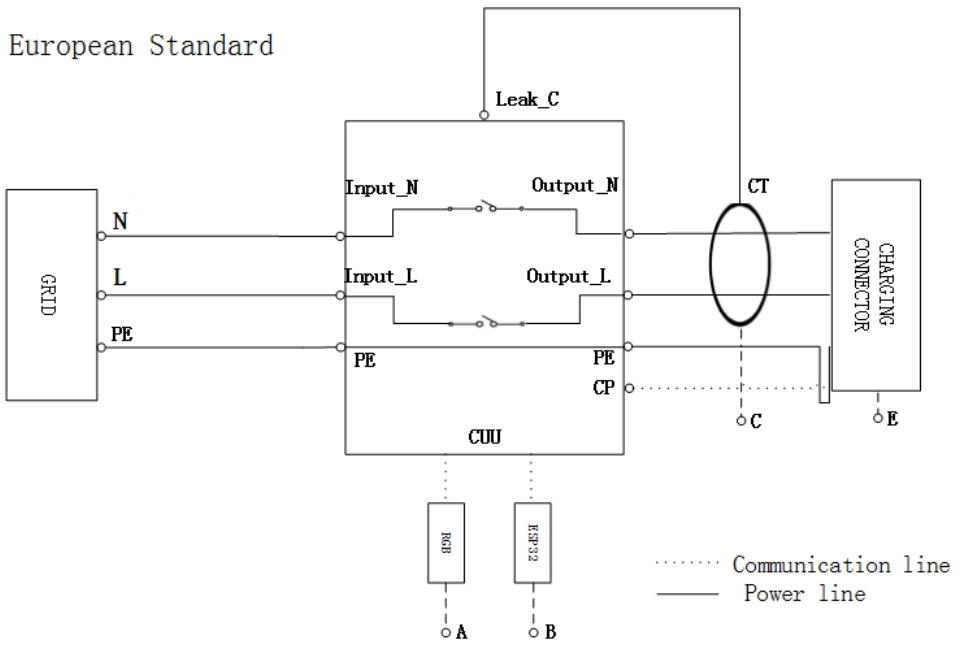


figure 3-1 Circuit diagram(European)

table 3-3 Label Descriptions

Label	Description
A	The LED lights that indicates the status of the charger
B	ESP32 module for Wi-Fi communication
C	CT for leakage current detection
E	Charging connector Type 2

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.

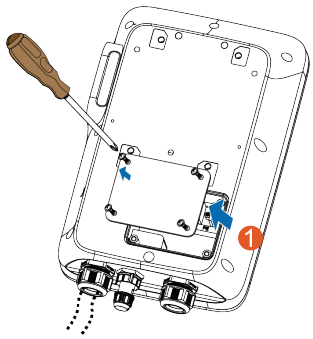
3.4.2 AC Cable Connection

AC Cable Requirement

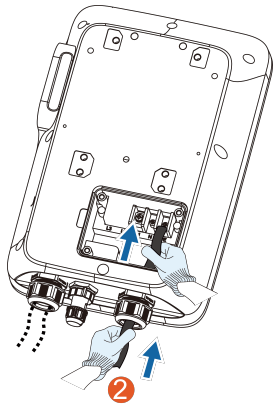
Cable cross-section: 3× 6 mm^2

Step 1 Place the charger face-down on a clean and flat surface.

Step 2 Loosen the screws that secure the back cover plate. (M3 screws, torque: 0.5 ± 0.1 N·m)



Step 3 Plug the cable into the port of the power supply which is at the leftmost.



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.

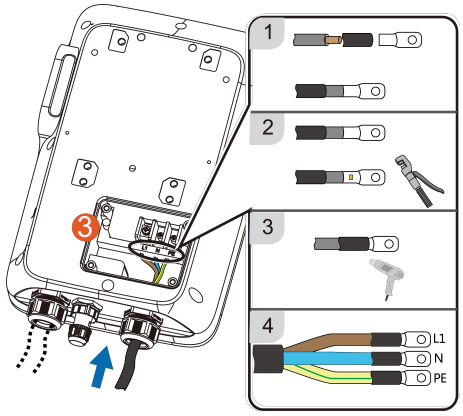
3 Tighten the copper lug using a hydraulic plier.

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

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

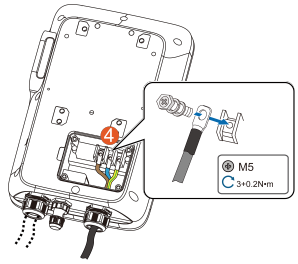
5 Place the heat-shrink tubing on the copper lug until it completely covers the copper lug's wire hole.

6 Activate heat-shrink tubing using a heat gun.

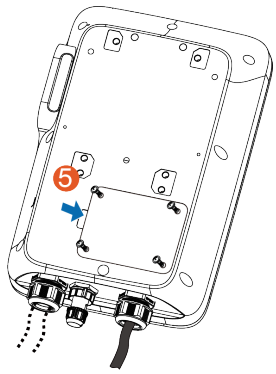


Color	Terminal
Brown	L1
Blue	N
Yellow-green	PE

Step 5 Connect each crimped terminal (OT2.5-5) and tighten them using a screwdriver. (Torque: 3 ± 0.2 N·m)



Step 6 Put the back cover plate back in place and tighten the screws to secure it.



- - End

3.4.3 RS485 Communication Connection

In the stand-alone usage application scenario, you may connect an RS485 cable to the meter to enable ALM function.

For the Residential Hybrid + AC Charging Solution, the RS485 communication connection is needed to connect the AC Charger to SUNGROW's 1-phase inverter (SHRS).

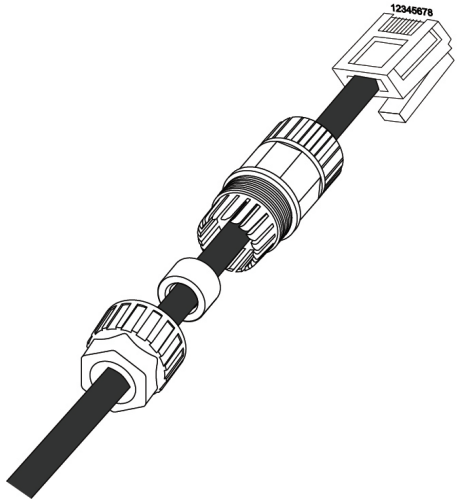
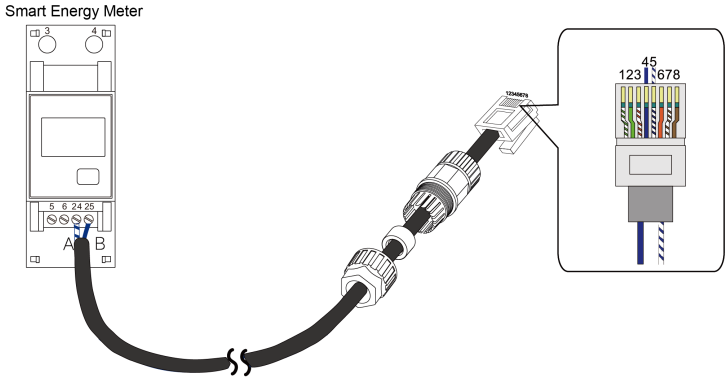


figure 3-2 RJ45 components

Step 1 Crimp both ends of the Ethernet cable using a crimping tool.

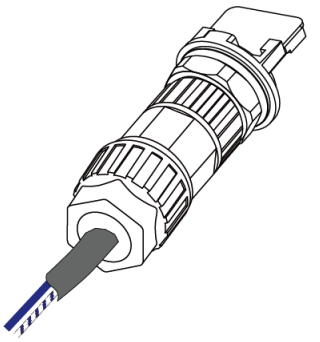
Ensure that the blue wire and the blue-white wire is correctly crimped.

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.



Step 4 Ensure that the cable is secured.

- - End

3.5 Wall-Mounted Installation

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

- Installation height of the charger from ground: 1.1m recommended
- 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.

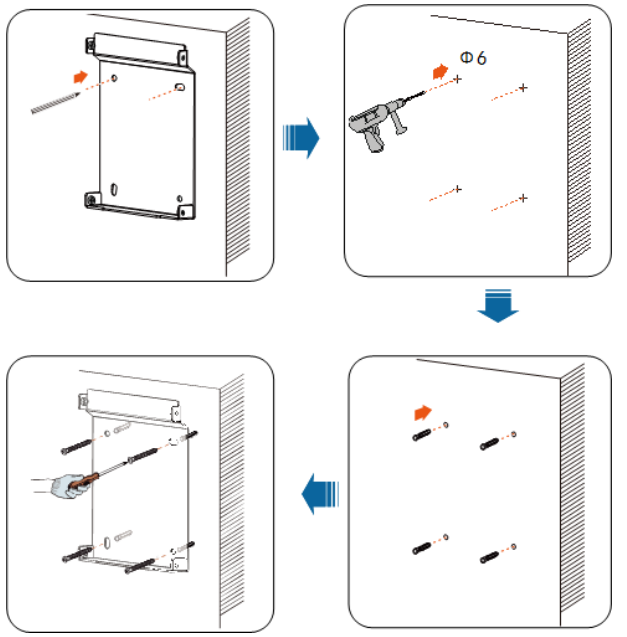
1 Hold the backplate in the desired position on the wall and mark the positions of the drill holes.

> 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.



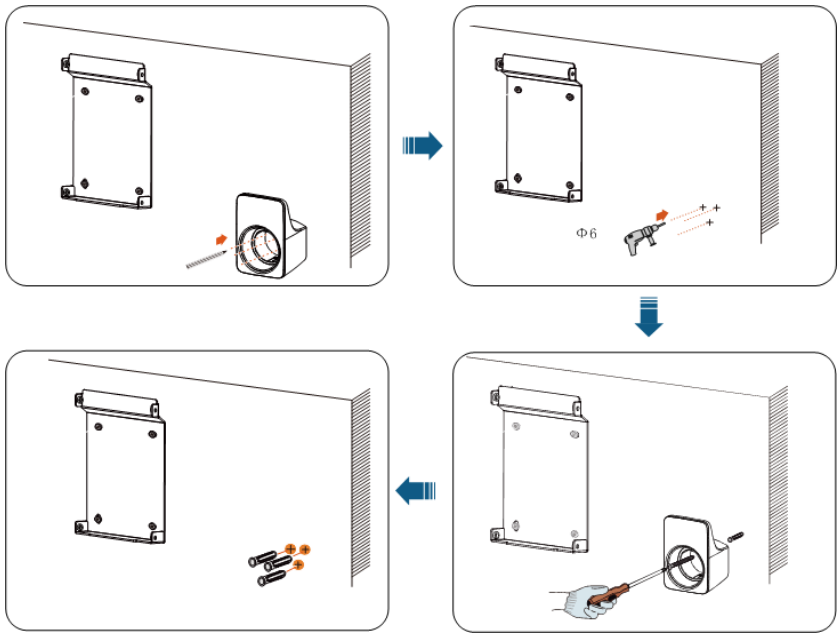
Step 2 Install the charging cable bracket.

1 Hold the charging cable bracket in the desired position on the wall and mark the positions of the drill holes.

2 Drill holes at the marked positions using a hammer drill.

3 Insert the dowel into the hole.

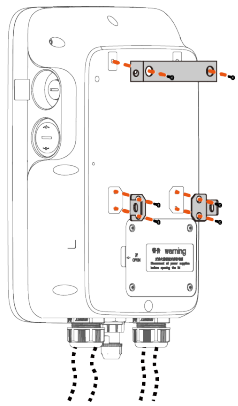
4 Place the charging cable bracket on the wall, and tighten the screws to secure the charging cable bracket using a screwdriver.



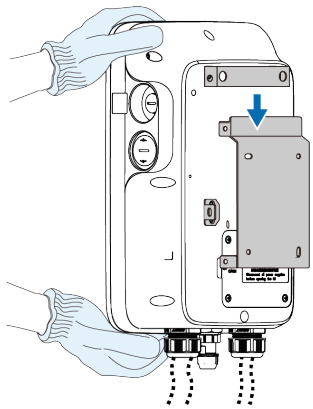
It is recommended that the charging cable bracket be positioned at the lower right side of the charger, about 20 cm away from the charger. The distance shall be adjusted according to the actual situation.

Step 3 Mount the charger.

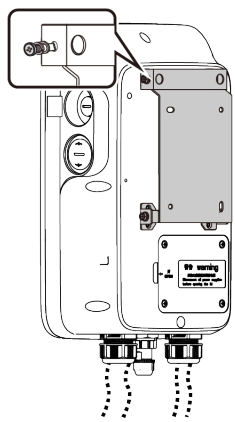
1 Secure the upper mounting plate and the lower mounting plate on the back of the charger using a screwdriver. (Torque: 1.2 ± 0.1 N·m)



2 Hang the charger onto the backplate.



3 Secure the upper and lower mounting plates to the backplate with screws. (Torque: 1.2 ± 0.1 N·m).



- - End

Installation height of the connector socket from ground: 1.1m recommended, from charger:0.5m recommended

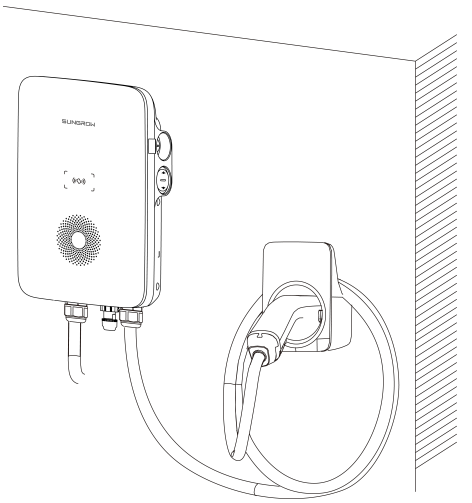


figure 3-3 Wall-mounted charger

3.6 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.

3.6.1 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.

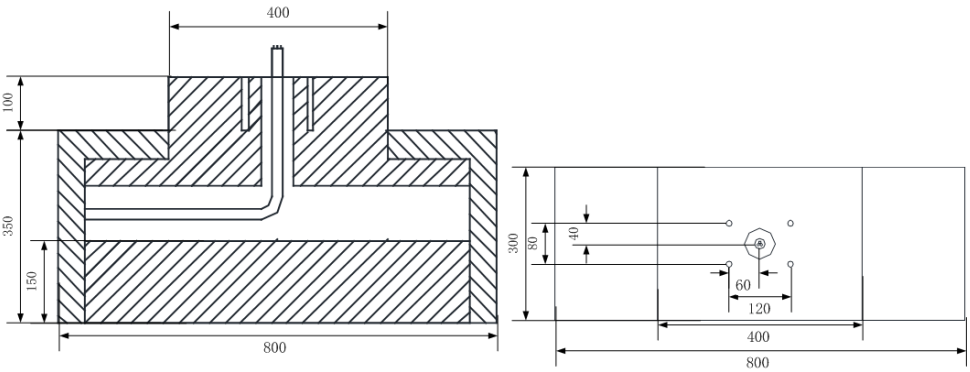


figure 3-4 Front view and top view (unit: mm)

3.6.2 Pole Installation

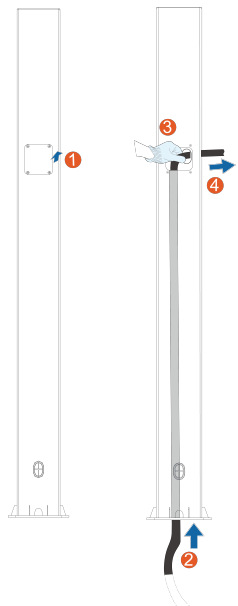
Step 1 Connect the AC cable.

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.



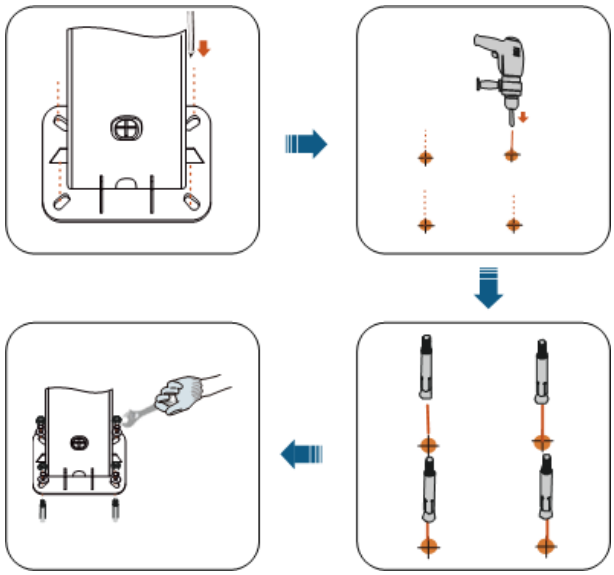
Step 2 Mount the charger.

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: 70 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 Install the upper mounting plate and lower mounting plate.

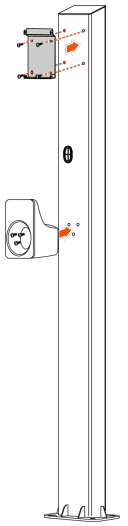
1 Place the charger face-down on a clean and flat surface, and secure the upper and lower mounting plates to the pole using a screwdriver.

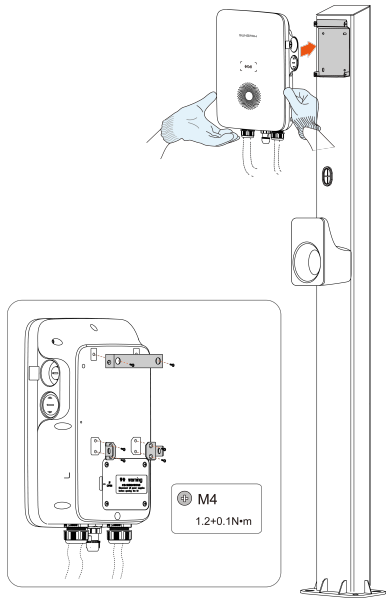
2 Ensure that the upper mounting plate and the lower mounting plate are firmly installed.

3 Hang the charger onto the backplate.

4 Secure the upper and lower mounting plates to the backplate.

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





- - End

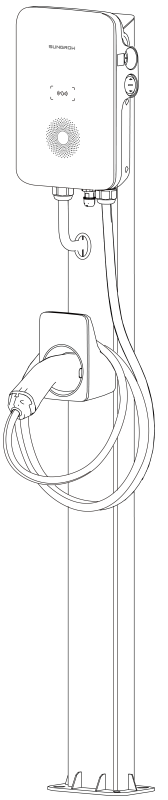


figure 3-5 Pole-mounted charger

4 Inspection before Commissioning

table 4-1 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 blinks slowly which indicates the charger is in standby mode.

- - End

5 Troubleshooting

table 5-1 Fault Resolution

Problem	Possible Cause	Solution
Overvoltage	1 The grid voltage at the input end of the charger exceeds **276V**. 2 The grid voltage is still above **265V** after overvoltage.	Usually, the charger will be reconnected to the grid once the voltage falls inside the range of 251V~209V for 2 minutes. If the problem occurs repeatedly: 1 Measure the actual grid voltage, and contact local power company for solutions if the grid voltage is above **265V**. 2 Contact Sungrow Customer Service if the problem persists.
Undervoltage	1 The grid voltage at the input end of the charger is below **184V**. 2 The grid voltage is still below **196V** after undervoltage.	Usually, the charger will be reconnected to the grid once the voltage falls inside the range of 251V~209V for 2 minutes. If the problem occurs repeatedly: 1 Measure the actual grid voltage, and contact the local power company for solutions if the grid voltage is below **196V**. 2 Check if the AC cables are firmly connected. 3 Contact Sungrow Customer Service if the problem persists.

Problem		Possible Cause	Solution
Overfrequency		1 The mains AC frequency exceeds 63 Hz. 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: 1 Measure the actual grid frequency, and contact the local power company for solutions if the grid frequency is above 61 Hz. 2 Contact Sungrow Customer Service if the problem persists.
Underfrequency		1 The mains AC frequency is below 47 Hz. 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: 1 Measure the actual grid frequency, and contact the local power company for solutions if the grid frequency is below 49 Hz. 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. 2 Stop charging and pull out the charging connector. Contact Sungrow Customer Service if the problem persists.
	Overcurrent	Output current is above over-current point. Mark：Adjust the over-current value following the actual current, below 20 A, over-current value is actual current + 2 A; Above 20 A, over-current value is 1.1 times the actual current; If there is no define current, which is 1.1 time the max. current.	

Problem		Possible Cause	Solution
Charger	Relay adhension	The relay is stuck and cannot be disconnected.	Restart the charger and try again. If the problem occurs repeatedly, contact Sungrow Customer Service.
	Leakage current detection circuit failure	1 The CT terminal has bad connection or the CT is malfunctioning. 2 The RCD circuit is abnormal.	
	Relay overtemperature	The temperature of the main relay is too high. It might be a hardware problem.	
	CP failure	Abnormal CP circuit on the main board	
Wiring	Input terminal overtemperature	1 The input terminal is loosely connected which causes bad connection. 2 The cable's current-carrying capacity does not meet the requirements.	1 Ensure that the AC cable is tightly connected, that the cable used meets requirements, and L and N wires are correctly connected. 2 Contact Sungrow Customer Service if the problem persists.
	Reverse polarity	L and N wires are connected reversely.	
Meter communication abnormal		No communication between the meter and the charger for 1 minute.	Check whether the RS485 cable between the meter and the charger is properly connected, or turn off the load balancing function.
CT fault		The bus current measured by the CT is smaller than the actual output current of the charger. Something abnormal with the CT.	Replace the CT, or turn off the load balancing function.

table 5-2 LED Signals that indicates abnormal conditions

Charger Status	LED Signals
Leakage current	Red light is on for 0.5s, off for 0.5s, and flashes 4 times, and then off for 3s. Cyclic
CP failure	Red light is on for 0.5s, off for 0.5s, and flashes 5 times, and then off for 3s. Cyclic
Overcurrent	Red light is on for 0.5s, off for 0.5s, and flashes 6 times, and then off for 3s. Cyclic
Relay adhesion	Red light is on for 0.5s, off for 0.5s, and flashes 7 times, and then off for 3s. Cyclic
Leakage current circuit abnormal	Red light is on for 0.5s, off for 0.5s, and flashes 8 times, and then off for 3s. Cyclic
Input terminal over-temperature	Red light is on for 0.5s, off for 0.5s, and flashes 9 times, and then off for 3s. Cyclic
Relay over-heat	Red light is on for 0.5s, off for 0.5s, and flashes 10 times, and then off for 3s. Cyclic
Undervoltage	Red light is on for 0.5s, off for 0.5s, and flashes 11 times, and then off for 3s. Cyclic
Overvoltage	Red light is on for 0.5s, off for 0.5s, and flashes 12 times, and then off for 3s. Cyclic
Over-frequency	Red light is on for 0.5s, off for 0.5s, and flashes 13 times, and then off for 3s. Cyclic
Under-frequency	Red light is on for 0.5s, off for 0.5s, and flashes 14 times, and then off for 3s. Cyclic
Security chip failure	Red light is on for 0.5s, off for 0.5s, and flashes 16 times, and then off for 3s. Cyclic
CT abnormal	Red light is on for 0.5s, off for 0.5s, and flashes 17 times, and then off for 3s. Cyclic
ALM Meter communication abnormal	Red light is on for 0.5s, off for 0.5s, and flashes 18 times, and then off for 3s. Cyclic
Alarms (ground alarm, disassembly alarm, reverse phase alarm and etc.)	Red light is on

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

6 Commissioning via Web UI

The charger has a built-in access point for commissioning and connection to other devices.

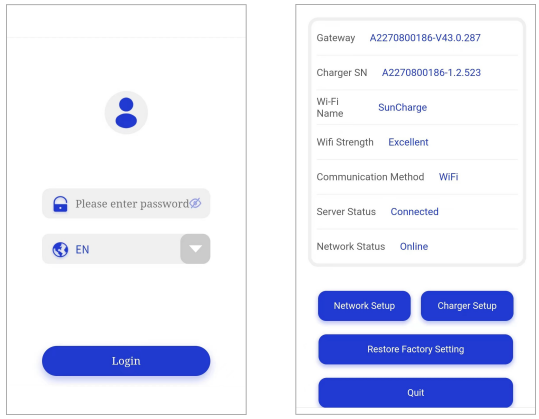


figure 6-1 Web UI

6.1 Establish a Connection

Once the charger is powered on, you need to establish a wireless connection between the charger and your mobile device or laptop.

- The charger is powered on.
- A Wi-Fi network is available.

The charger's Wi-Fi network will only broadcast for 15 minutes. When the network is turned off, restart the charger and connect to the network again.

To avoid potential interference, it is recommended to enable airplane mode when connecting to the charger's Wi-Fi network.

Charger's Wi-Fi network (SSID), IP address, and passwords

- Charger's SSID in WLAN: See the charger's serial number.
- WLAN password: **admin123** or no password required (depending on the firmware version of the charger).
- IP address of the web UI: **192.168.4.1**
- Web UI password: **SGC666** or see the 4-digit PIN on the RFID card (depending on the firmware version of the charger).

Step 1 Connect to the charger's Wi-Fi network.

1 On your mobile device or laptop, turn on the WLAN option.

2 In the WLAN settings, select the SSID of the charger.

Step 2 Log in to the web UI.

1 Open your browser and enter the IP address to navigate to the **Login** page.

2 Enter the password and click **Login**.

Step 3 Set up the network.

For proper functionality of the charger, it is necessary to configure the network and connect the charger to the SUNGROW's network server. This ensures server connectivity for software upgrades and remote services.

1 On the **Home** page, select **Network Settings**.

2 Click **Wi-Fi Name** to select your router Wi-Fi network from the list, and enter the password of the router network below.

If the SSID of your router Wi-Fi network is not displayed in the list, manually add the network and enter the name and password.

3 Click **Confirm** to apply the changes.

The web UI will navigate to the **Login** page.

Step 4 Log in to the web UI again.

The server status changes to "**Connected**" to confirm the connection.

- - End

6.2 Configure Network

If the router's Wi-Fi network has changed, update the network settings accordingly.

Your phone has connected to the charger’s Wi-Fi network.

To avoid potential interference, it is recommended to enable airplane mode when connecting to the charger's Wi-Fi network.

Step 1 Log in to the web UI.

Step 2 On the **Home** page, select **Network Settings**.

Step 3 Modify network settings as needed.

Option	Description
Wi-Fi Name	Select a Wi-Fi network from the list.
Server Address	Enter the server address provided by the operator. The serial number will be captured automatically.

Step 4 Click **Confirm** to apply the changes.

- - End

6.3 Manage the Charger

6.3.1 Change the Charging Mode

Your phone has connected to the charger's Wi-Fi network.

Step 1 Log in to the web UI.

Step 2 On the **Home** page, select **Charger Settings**.

Step 3 On the **Charger Settings** page, select **Switch Charging Modes**.

Step 4 In the pop-up dialog box, change the charging mode as needed.

No.	Mode	Description	Note
1	**Network**	Start a charging session via RFID cards or iEnergyCharge.	The default mode for AC007E-01 L1.
2	**Plug&Play**	Start a charging session once the charging connector is plugged into the vehicle.	-
3	**EMS**	Start a charging session via RFID cards or iSolarCloud.	The default mode for AC007E-01.

By default, AC007E-01 L1 does not support EMS charging. Contact customer service for assistance if you require EMS charging.

The EMS charging mode requires a 4-digit PIN. Depending on the version of the charger, the device-specific PIN is obtained in different ways.

- The standard version: contact the installer or SUNGROW for assistance.
- The advanced version: see the sticker on the RFID card.

- - End

6.3.2 Set Up Load Balancing

Only SUNGROW's energy meter is supported for load balancing on AC007E-01 and AC007E-01 L1. Contact customer service for details.

- The charger is online.
- The charger is not in use.
- The charger has connected to a power-controlling device. See"3.4.3 RS485 Communication Connection" .

Step 1 Log in to the web UI

Step 2 On the **Home** page, select **Charger Settings**.

Step 3 On the **Charger Settings** page, select **Load Balancing**.

Step 4 Select the device you have for power-controlling, and click **Next**.

Step 5 Based on the devices you select, you can modify the following:

Option	Description
CT Ratio	The default value is set to 3:100.
Maximum Available Current	Range: 10-100 A

Step 6 Click **Confirm** to apply the changes.

- - End

6.3.3 Set Up Max Charging Current

Step 1 Log in to the web UI

Step 2 On the **Home** page, select **Charger Settings**.

Step 3 On the **Charger Settings** page, select **Max Charging Current**.

Step 4 Please set the current value based on actual needs.

The range of max charging current is 6~32 A.

- - End

6.3.4 Update the Firmware

You can update the firmware of the charger on-site via the web UI.

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

It is recommended to update the firmware via iEnergyCharge. See "7.3.2 Update the Firmware Remotely".

It is recommended to use Safari or Chrome browsers only because other browsers might cause an unexpected error when upgrading.

Contact customer service for available firmware packages if needed.

Step 1 Log in to the Web UI.

Step 2 On the **Home** page, select **Charger Settings**.

Step 3 On the **Charger Settings** page, select **Upgrade Firmware**.

Step 4 Click **Browse** and select the firmware package.

Currently, only .enfs format is supported.

Step 5 Click **Upgrade** to update the charger.

The process might take 3 to 5 minutes.

- - End

7 Commissioning via App

connects charge point operators and EV drivers and aims to provide a seamless and integrated charging experience.

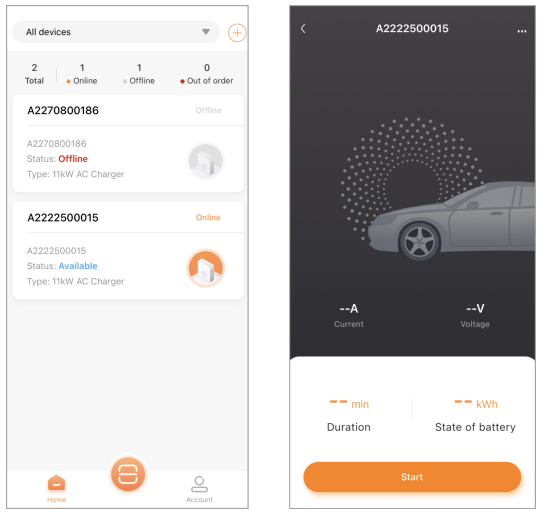


figure 7-1

Depending on the version of you're using, the user interface might be slightly different.

7.1 Access iEnergyCharge

iEnergyCharge connects charge point operators and EV drivers and aims to provide a seamless and integrated charging experience.

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

7.1.1 Download and Install

Operating system:

- Android 6.0 and above
- iOS 11 and above

Method 1

Search for “iEnergyCharge” in the following application stores, and follow the on-screen instructions to install.

- App Store
- Google Play Store

Method 2

Scan the QR code to download and install iEnergyCharge.

7.1.2 Sign up and Log in

Sign up to use iEnergyCharge.

Sign up

Step 1 Open iEnergyCharge and click **Sign up** on the **Login** page.

Step 2 Enter your email, and follow the on-screen instructions to sign up for an account.

Log in

Step 3 Open iEnergyCharge, and enter your email and password.

Step 4 Click **Log in**.

You can change the language preference on the **Login** page.

When logged in, you can update your email and password on the "**Account→Settings**" page.

Step 5 Optional: Check **Remember me** to save the latest login credentials.

- - End

7.2 Operation

7.2.1 Add the Charger to Your Account

Scan the QR code or manually enter Charger SN to add the charger to your iEnergyCharge account.

- Your phone has connected to the charger's Wi-Fi network.
- The charger is online.

Step 1 Open iEnergyCharge and click to navigate to the **Scan** page.

Step 2 Scan the QR code on the charger and select **Add charger**.

Step 3 On the **Device status** page, select **Add device**.

Step 4 Confirm the connection on the **Add charger result** page and click **Complete**.

Step 5 If iEnergyCharge fails to connect to the router's Wi-Fi network, follow the on-screen instructions to complete the process.

Step 6 Optional: To delete the charger, select " ••• →**Delete device**".

- - End

7.2.2 Scan the QR Code to Charge

- The charger has been added to your account.
- The vehicle is plugged in.

Step 1 Open iEnergyCharge, click or select the charger on the **Home** page to check details.

You can see the rated current and rated voltage of this charger.

Step 2 Click **Start** to start charging.

You can see the real-time current and voltage of this charger.

Step 3 When the charging finishes, you can **Confirm** the time and energy used.

During charging, you can track charging progress or remotely stop charging on iEnergyCharge.

Step 4 Optional: Select " ••• →**Device name**" to rename this charger for easier recognition.

- - End

7.2.3 Add RFID Cards

You can directly start charging via RFID cards.

At least one RFID card is available.

Step 1 Open iEnergyCharge and navigate to the **Account** page.

Step 2 Select "**Charge cards→Add card**".

Step 3 Add a card.

Use one of the following methods:

- Manually enter card name and card number.
- Click to capture the card number via scanning.

Step 4 Click **Save** to apply the changes.

- - End

7.2.4 Regulate Current During Charging

Controlled charging is not enabled for the charger.

Charging at a regulated current only applies to the current charging session.

Step 1 Open iEnergyCharge and select the charger.

Step 2 Click " →**Charge current**" to navigate to the **Charge current** page.

Step 3 Set the current range.

Step 4 Click **Set** to apply the changes.

- - End

7.2.5 Enable Offline Charging

When offline charging is enabled, you can start charging via RFID cards even if the charger is offline.

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

Step 1 Open iEnergyCharge and select the charger to be used for offline charging.

Step 2 Click " →**Offline charging**" to navigate to the **Offline charging** page.

Step 3 Click on the top left and click **Confirm** in the pop-up dialog box.

Step 4 Select one or multiple RFID cards.

If you have not added an RFID card, or you need to add a new RFID card, click **Add card** on the top right and follow the on-screen instructions to complete the process.

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

- - End

7.3 Configuration

7.3.1 Configure Network

If the router's Wi-Fi network has changed, update the network settings accordingly.

To avoid potential interference, it is recommended to enable airplane mode when connecting to the charger's Wi-Fi network.

Step 1 Open iEnergyCharge and navigate to the "**Account→Network settings**" page.

Step 2 Scan the QR code on the charger and select **Add charger**.

iEnergyCharge automatically connects to the charger's Wi-Fi network.

Step 3 If iEnergyCharge fails to connect to the charger, follow the on-screen instructions to complete the process.

Step 4 On the **Add device** page, select your router's Wi-Fi network, and enter the password.

Step 5 Click **Confirm** to apply the changes.

Step 6 **Optional:** If iEnergyCharge fails to apply the settings, follow the on-screen instructions to complete the process.

- - End

7.3.2 Update the Firmware

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

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

Step 1 Open iEnergyCharge and select the charger to be upgraded.

Step 2 Select "  →**Update firmware**" to navigate to the **Update firmware** page.

Step 3 Click **Update** to download the firmware.

The charger restarts when the upgrading process is completed.

- - End

8 Appendix

8.1 Technical Data

table 8-1 Technical Data

Specification	AC007E-01 / AC007E-01 L1
AC Input and Output	
Max. charge power	7.4 kW
Nominal voltage	230 V
Nominal grid frequency	50/60 Hz
Max. current	32 A single-phase
Charge connector	Plug Type 2
cable cross-section	3*6 mm²
Cable Length	7 m
Protection	
Residual current device	6 mA DC
Over/Under voltage protection	Yes
Over load protection	Yes
Over temperature protection	Yes
Surge protection	II
Overvoltage category	III (grid)/II (car)
General Data	
Dimensions (W*H*D)	310*205*92 mm
Weight	4.2 kg
Mounting method	Wall-Mounting/Pole-Mounting (optional)
Impact resistance	IK08
Degree of protection	IP65
Operating ambient temperature range	-30 to 50 °C
Allowable relative humidity range (non-condensing)	5 % to 95 %
Cooling method	Natural convection

Specification	AC007E-01 / AC007E-01 L1
Max. operating altitude	2000 m
Grid type	TN/TT
Display	LED indicator
Monitoring	AC007E-01: iSolarCloud AC007E-01 L1: iEnergyCharge
Communication	RS485/WIFI
Charging protocol	OCPP 1.6
Power consumption for standby	< 5 W
Start Mode	RFID card/APP
Compliance	EN/IEC 61851-1:2019; EN/IEC 61851-21-2:2018
Warranty	AC007E-01: 5 years AC007E-01 L1: 3 years

8.2 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.

8.3 Declaration of Conformity

Within the scope of the EU directives:
Radio Equipment Directive (RED) 2014/53/EU

8.4 Firmware Update

The charger actively maintains security updates within 3 years after its first launch.
The operation and maintenance personnel will check for firmware updates at least every six months and record them in the corresponding firmware version checklist.
In addition, any updates to the charging station will be pushed to you through the Monta application.

8.5 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