

User Manual

DC Charger

IDC30E



All Rights Reserved

All Rights Reserved

No part of this document can be reproduced in any form or by any means without the prior written permission of Sungrow Power Supply Co., Ltd (hereinafter "SUNGROW").

Trademarks

SUNGROW and other Sungrow trademarks used in this manual are owned by SUNGROW.

All other trademarks or registered trademarks mentioned in this manual are owned by their respective owners.

Software Licenses

- It is prohibited to use data contained in firmware or software developed by SUNGROW, in part or in full, for commercial purposes by any means.
- It is prohibited to perform reverse engineering, cracking, or any other operations that compromise the original program design of the software developed by SUNGROW.

Privacy Protection

- Information contained in this manual is the private property of Sungrow Power Supply Co., Ltd. No part of this manual may be transmitted in any form without the prior written permission of Sunlight Power Co., Ltd. Internal reproduction is allowed only for product evaluation or other appropriate purposes.
- We declare that the network account and password data stored in the equipment system are only used for remote control and monitoring of the equipment and will not be transmitted to any third-party data platform without the user's permission.

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.

All contents, pictures, marks, and symbols in this manual are owned by SUNGROW. No part of this document may be reprinted by the non-internal staff of SUNGROW without written authorization.

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.

1 Safe Instructions

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

CAUTION

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

NOTICE

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



“NOTE” indicates additional information, emphasized content, or helpful tips that may help you solve problems or save time.

Please pay attention to the danger warning signs on the machine body at all times. The signs include:

table 1-1 Symbols description

Symbols	Description
	Operation by qualified personnel only.

Symblos	Description
	The temperature here is higher than the acceptable range for the human body. Do not touch it without protection to avoid injury.
	Please read the manual before any operation.
	Hazardous voltage still exists after the device stops. Do not conduct any operation on the device immediately. Wait for at least 10 minutes.

1.2 Packaging, Shipping and Storage

Packaging

NOTICE

The charger is wrapped tightly with wire drawing film and protected by foam blocks. It is packed in cardboard and underpinned by a wooden bottom base.

Shipping

NOTICE

During shipping, the charger shall be packed firmly and intact with cardboard and wooden bottom support, the loading and unloading directions are clearly marked, and the charger shall not be stored and shipped upside down.

During transport, make sure that the equipment is firmly fixed in order to avoid violent shaking and bumps that damage the packaging and its content.

After arrival of goods, check for transport damage and, if any, contact the shipping company or SUNGROW.

Check if the content inside the package matches the delivery list.

DANGER

Non-professional personnel shall not disassemble the components.

Storage

NOTICE

The device shall be stored in a dry, clean, and well-ventilated place, free from harmful gases.

Storage temperature: -40°C~+85°C

Ambient temperature at startup: -35°C~+55°C

Ambient temperature at full power: -25°C~+50°C

Relative humidity: 5%~95% non-condensing

Do not store it near corrosive articles.

1.3 Operations

DANGER

High voltages are present during operation and could cause electrical shock, resulting in death, serious personal injury, or serious property damage. Follow the safety instructions listed in this manual and other relevant documentation.

When the device is working, the temperature around the heat dissipation air outlet is high and there is a risk of burns. Please do not touch it.

When operating the device, local regulations and specifications shall be observed.

No extension cables shall be used when connecting an electric vehicle to an electric vehicle power supply device.

Only connect electric vehicles and their charging equipment. Do not connect any other loads (electric tools, etc.).

After charging, please put the charging connector back into the connector socket to prevent unnecessary exposure to contamination or moisture.

Do not bend, squeeze or roll the charging connector to avoid mechanical damage.

Do not expose the surfaces of the charger to heat, dirt, or water.

It is strictly prohibited to use the charger when the charging connector or the charging cable is defective, appears cracked, frayed, broken, or otherwise damaged. If any anomaly is found, please, refer to the seller or SUNGROW

If there is any abnormality during use, please press the emergency stop button immediately to cut off the power supply.

In case of a thunderstorm, please charge carefully.

Children shall not approach or use the charger during the charging process to avoid injury.

During a thunderstorm, please, charge carefully and be aware of the potential risks.

When charging an electric vehicle with a charger, read carefully the relevant tips and instructions of the vehicle.

1.4 Maintenance and Replacement

DANGER

High voltages are present during operation and could cause electrical shock, resulting in death, serious personal injury, or serious property damage. Before any maintenance work, the device must be powered off and operated in strict accordance with the safety precautions listed in this manual and other relevant documentation.

Maintain the equipment, only once you have familiarized yourself with the contents of this manual and with suitable tools and test equipment.

Before performing maintenance work, power down the device and wait at least 10 minutes before operating the device.

During maintenance, avoid the presence of unrelated persons at the maintenance site, and place temporary to warn signs or barriers to isolate them.

Do not power the device until you have confirmed that any faults affecting the safe performance of the device have been removed.

Observe the ESD protection specifications during maintenance.

Keep the charging connector clean and dry, and wipe it with a clean, dry cloth if it is dirty. Do not touch the charging connector's pins with your hands while it is on.

It is necessary to regularly check whether there is damage to the connector, and check whether the enclosure and surrounding components have visible signs of damage. (Visual inspection)

2 Product Introduction

2.1 Introduction

The 30kW DC charger(hereinafter “Charger”) is used for DC charging of electric vehicles(EVs) and can be either wall-mounted or pole-mounted, with the following advantages:

Technology leadership

Adopting the world's leading power supply technology and design concept, the 30kW DC charger is designed to provide safe, reliable, and controllable DC power for electric vehicles.

Enhanced features

It is featured active power correction, high efficiency, high power density, high reliability, ultra-low standby power consumption, intelligent control, and excellent human-computer interaction experience.

Future-proofed

With ultra-wide constant power output voltage, it can support all electric vehicles in the market and meets their charging needs.

2.2 Production Introduction

2.2.1 Appearance and Dimensions

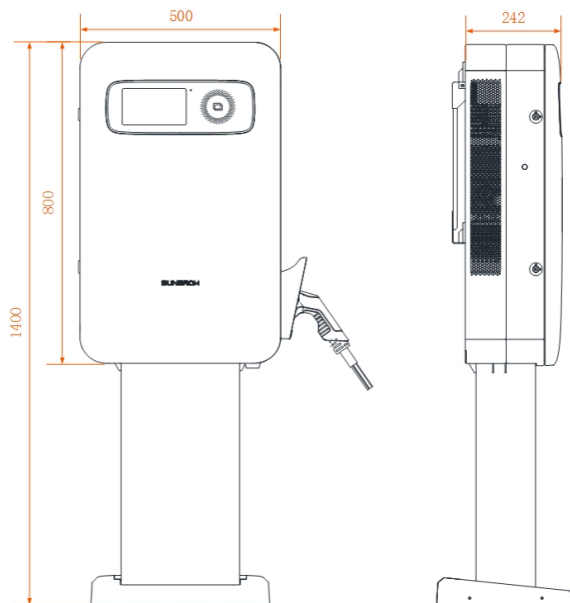


figure 2-1 Product Dimensions (in mm)

2.2.2 Internal Structure

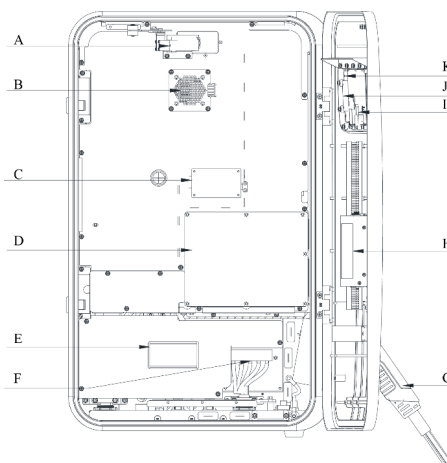


figure 2-2 Diagram of the Internal Structure

table 2-1 Internal Structure Description

No.	Name
A	Door sensor
B	Axial flow fan
C	Insulation Monitor

No.	Name
D	CCU module
E	DC Meter
F	AC input connection terminal
G	Charging connector
H	Display control module
I	Display
J	Card Reader
K	Lamp panel

2.3 Unpacking and Storage

2.3.1 Unpacking and Inspection

Each device is thoroughly tested and carefully inspected before delivery. Nonetheless, damage may still occur during shipping. For this reason, please conduct a thorough inspection of the device.

- Check the packaging case for any visible damage.
- Check to make sure that the scope of delivery matches the packing list
- Check the inner contents for damage after unpacking.

Contact SUNGROW or the transport company in case of any damage or mismatches and provide photos to facilitate services.

Do not dispose of the original packing case. It is recommended to store the device in original packing case when the device is decommissioned.

NOTICE

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 with the above inspection items, do not install the device and contact SUNGROW as soon as possible.

If cutters are used for unpacking, be careful not to damage the charger.

2.3.2 Packing list

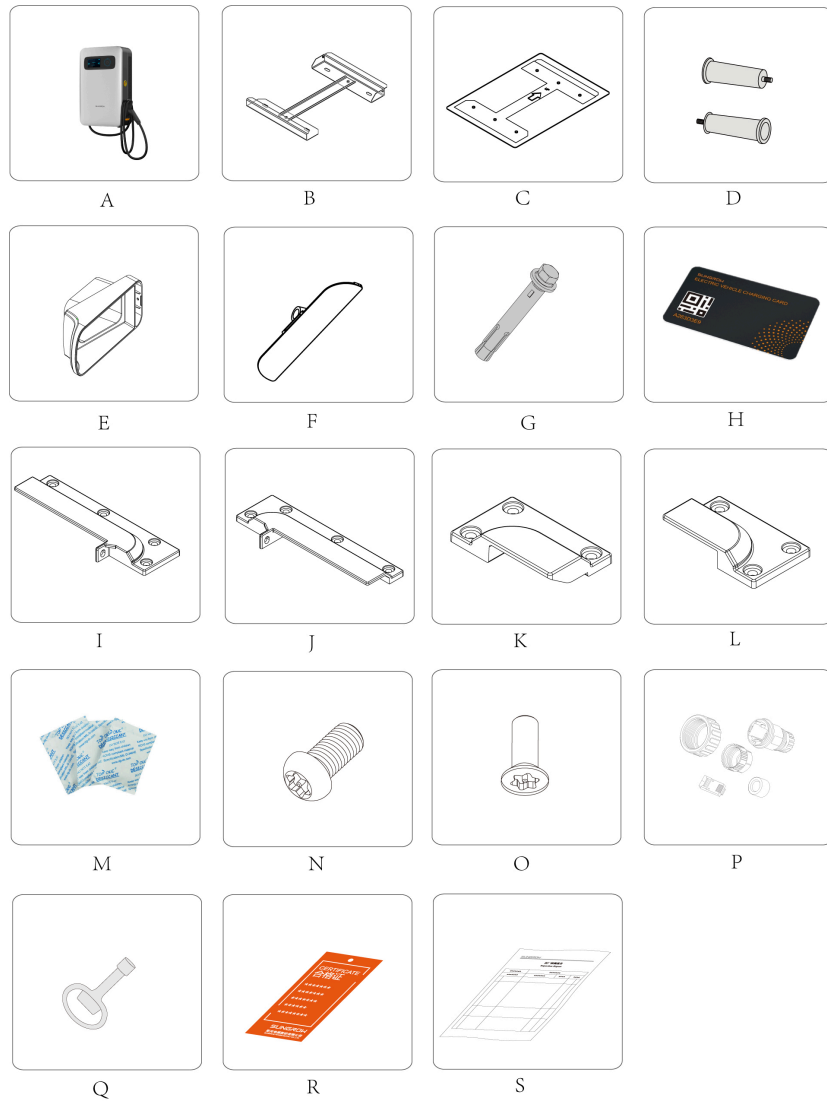


figure 2-3 Packing list

table 2-2 Packing list

No.	Name	Unit	No.
A	Integrated single-connector DC charger_ID-C30E-1000W-V11	PCS	1
B	IDC30E wall-mounted weld assembly	PCS	1
C	Positioning plate	PCS	1
D	Handrail_M12	PCS	2
E	IDC30E socket-outlet trim	PCS	1

No.	Name	Unit	No.
F	IDC30E socket-outlet trim B	PCS	1
G	Expansion bolt	PCS	6
H	M1 card	PCS	2
I	Wall-mounted components-upper left	PCS	1
J	Wall-mounted components-upper right	PCS	1
K	Wall-mounted components-lower left	PCS	1
L	Wall-mounted components-lower right	PCS	1
M	Montmorillonite desiccant	PCS	1
N	Hexalobular socket pan head tamper proof screws M5X12, SUS304	PCS	20
O	Hexalobular socket countersunk head tamper proof screws M4X12, SUS304	PCS	1
P	Modular RJ45 plug	PCS	2
Q	Keys	PCS	2
R	Certificate	PCS	1
S	Test report	PCS	1

2.3.3 Storage

Proper storage is required if the charger is not to be installed immediately.

- Store the charger in the original packing case with the desiccant inside.
- The storage temperature must be always between -40°C and 85°C, and the storage relative humidity must be always between 5% and 95%, non-condensing.
- In case of stacking storage, the number of stacking layers should never exceed the limit marked on the outer side of the packing case.
- The packing case should be upright.
- If the charger needs to be transported again, pack it tightly before loading and transporting it.
- Do not store the charger in places with items that may affect or damage the charger.
- Store the charger in a clean and dry place to prevent dust and water vapor exposure.
- Do not store the charger in places with corrosive substances or susceptible to rodents and insects.
- Carry out periodic inspections. If any insect or rodent bites are found, replace the packaging materials in due time.
- If the charger has been stored for more than a year, inspection and testing by professionals are required before it can be put into operation.

NOTICE

Please store the charger according to the storage requirements. Product damage caused by failure to meet the storage requirements is not covered by the warranty.

2.4 Installation

⚠ WARNING

Respect all local standards and requirements during mechanical installation.

2.4.1 Safe during Mounting

⚠ DANGER

Make sure there is no electrical connection before installation.
In order to avoid electric shock or other injury, make sure that holes will not be drilled through and interrupting any electricity or plumbing installations.

⚠ WARNING

Poor installation environment will affect system performance!
Install the charger in a well-ventilated place.
Ensure that the heat dissipation system or vents are not blocked.
Do not install the charger in an environment with smoke, flammable and explosive objects.

⚠ CAUTION

Improper handling may cause personal injury!
When moving the charger, be aware of its weight and keep the balance to prevent it from tilting or falling.
Wear proper protective equipment before performing operations on the charger.

2.4.2 Installation Tools

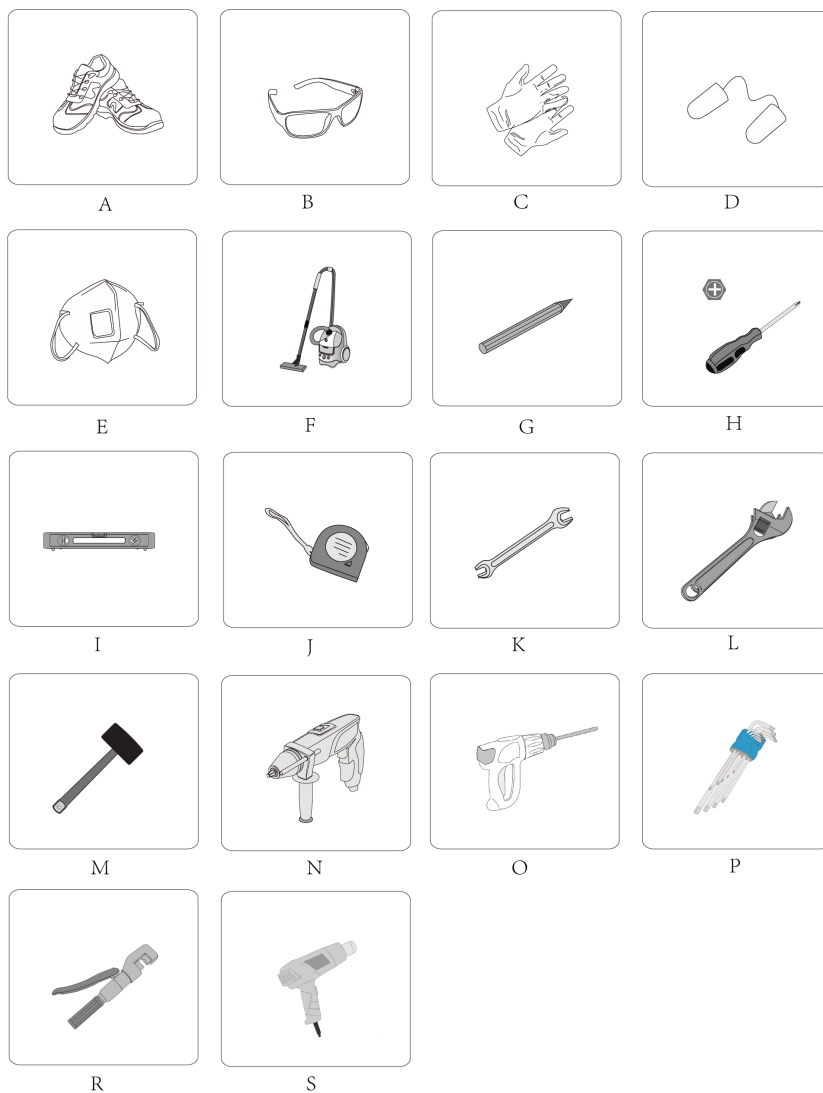


figure 2-4 Tools

table 2-3 Tools

No.	Name
A	Working shoes
B	Goggles
C	Insulating gloves
D	Earplugs
E	Dust proof mask
F	Vacuum cleaner

No.	Name
G	Marker
H	Phillips screwdriver
I	Gradienter
J	Measuring tape
K	No.13 wrench, No.19 wrench
L	French wrench
M	Rubber hammer
N	Electric drill
O	Cable drilling tool: Ø12/Ø18
P	Pan head tamper proof wrench set
R	Hydraulic clamp
S	Hot air blower

2.4.3 Cable Connection Terminal

- step 1** Refer to the figure below, strip the protective layer of the cable to expose the cable copper core with strippers;
- step 2** Put the exposed copper core into the cable crimping hole of OT terminal and press it with a terminal crimping machine;
- step 3** Select a suitable heat shrinkable tubing, insert it to the terminal crimping position, and then tighten the heat shrinkable tubing with a hot air blower;

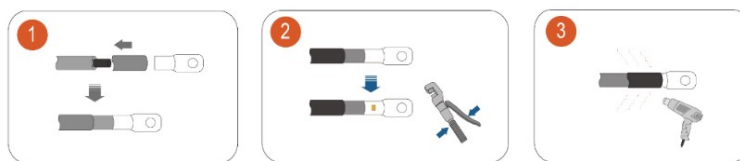


figure 2-5 Terminal crimping

step 4 The cable terminal is shown in the following figure.



figure 2-6 Cable connection terminal



The AC cable diameter: 18mm-25mm recommended.

-- End

2.4.4 Installation Clearance

Reserve ample clearance (see the following figure for details) on all sides of the charger to ensure well heat dissipation and convenient operation and maintenance.

When multiple chargers are to be installed in the chosen location, it is recommended to consider the width of the parking.



Top :200mm Bottom:500mm Front:300mm Left and right sides:1000mm Clearance:2500mm

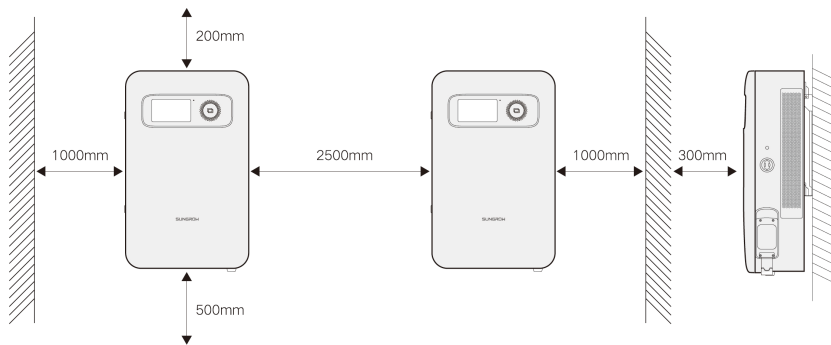


figure 2-7 Min. recommended installation clearance

DANGER

Do not block the air inlet and outlet of the charger, charger damage may occur if otherwise.

2.4.5 Wall-mounted Installation



To close or open the door on site, press the front door panel firmly and then turn the key.

2.4.5.1 Install the Wall Bracket

- step 1** Place the positioning plate horizontally on the wall surface, and use a marker to mark the corresponding hole position;
- step 2** Use an electric drilling tool to drill 12 mm diameter holes in the locations you marked with a hole depth of 70mm;
- step 3** Put the expansion pipe with the specification of M8*60mm into the hole;
- step 4** Use expansion bolts to fix the bracket on the wall and tighten it with a French wrench;

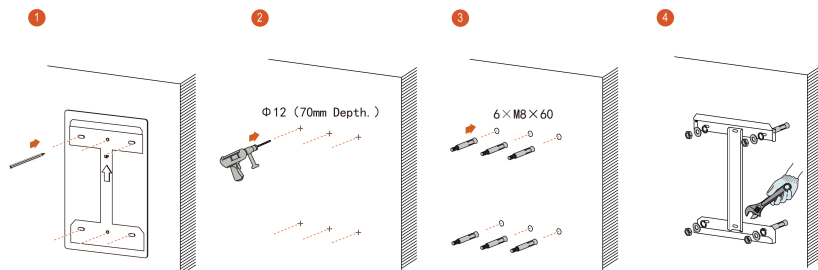


figure 2-8 Steps to drill holes

-- End

2.4.5.2 Install Charger Brackets

step 1 Place the charger back-up on a foam or soft cloth to prevent damage to its casing;

step 2 Attach the upper and lower brackets (4 in total) on the back of the charger with 14*M5*12 hexalobular socket pan head tamper proof screws;

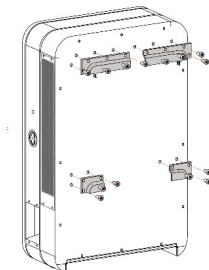


figure 2-9 Charger brackets installation

-- End

2.4.5.3 Install the Handles

step 1 Put the charger flat on the ground and keep it steady;

step 2 Remove the keyhole plug on both sides of the charger to expose the installation holes of the handles;

step 3 Align the handles with the handles' installation hole and tighten them clockwise to secure them to the charger.

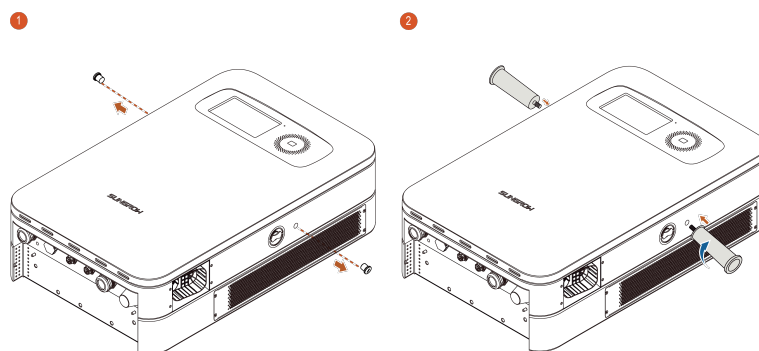


figure 2-10 Handrail installation

-- End

2.4.5.4 Charger Installation

step 1 Hold each handle with both hands and put the charger gently close to the wall bracket;

step 2 Align the bracket on the back of the charger with the position of the wall bracket and hang it on the wall bracket from top to bottom.

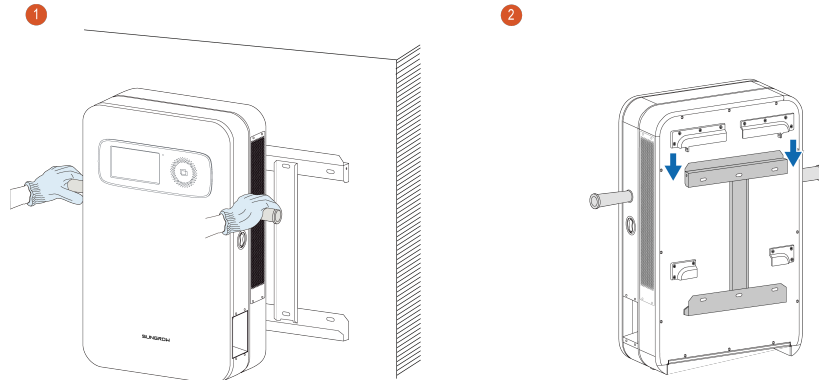


figure 2-11 Charger installation

-- End

2.4.5.5 Remove the Handles

step 1 Turn the handles counterclockwise out of the charger to expose the handles' installation hole on the charger;

step 2 Align the keyhole plugs with the handles' installation holes and plug them back into the charger.

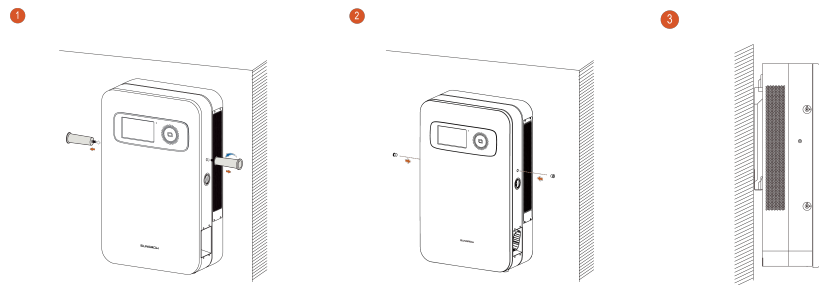


figure 2-12 Installation of the keyhole plug

-- End

2.4.5.6 Secure the Charger

Refer to the figure below, attach the charger to the wall bracket with M5*12 hexalobular socket pan head tamper proof screws.

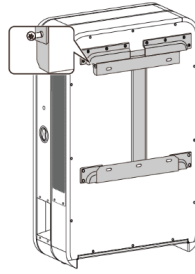


figure 2-13 Secure the charger

2.4.5.7 Install the Charging Connector Socket

- step 1** Place the connector socket horizontally at the mounting position;
- step 2** Use M5*12 hexalobular socket pan head tamper proof screws to attach the connector socket to the charger;
- step 3** Put an orange plug on the bottom of the connector socket and secure it with M4*12 hexalobular socket countersunk head screws;
- step 4** Confirm that the connector socket is mounted firmly and then holster the charging connector into the charger's socket.

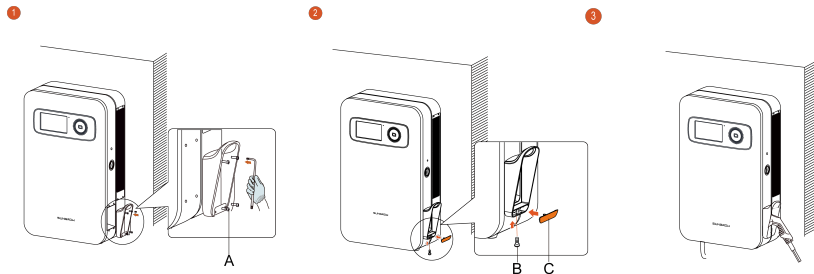


figure 2-14 Installation of the connector socket

table 2-4 Accessories to install the connector socket

No.	Name	Quantity
A	M5*12 hexalobular socket pan head tamper proof screws	4
B	M4*12 hexalobular socket countersunk head screws	1
C	Orange plug	1



The hexagon socket screws mentioned in this manual are all fastened or removed by flower-shaped tamper proof wrench specified in "figure 2-4 Tools"

- - End

2.4.5.8 Connect the Cable Connection Terminal

step 1 Crimp each connection terminal according to 2.4.3 Cable connection terminal;

step 2 Refer to the figure below, use M5 screws to attach the terminal to the specified position with the tightening torque of 3 ± 0.2 N·m.

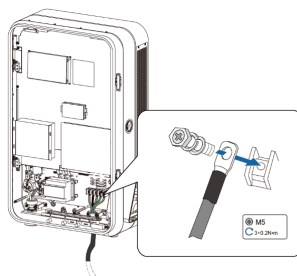


figure 2-15 Connect the cable connection terminal



When transmission distance within 400m: 10mm² copper core cable is recommended. With the AC power distribution box, A protection device should be used, which must meet the requirement of local electrical standard, RCD is generally recommended to be used as the protection device.

Nominal current: 63A/ 4P

Nominal voltage: 400Vac

Release characteristics: C-type

Type of release: electronic

Nominal breaking capacity: 6kA

Numbers of poles: 4P

Nominal residual current: 30mA

Residual tripping current level: type A

-- End

2.4.6 Pole-mounted Installation

2.4.6.1 Pole Components

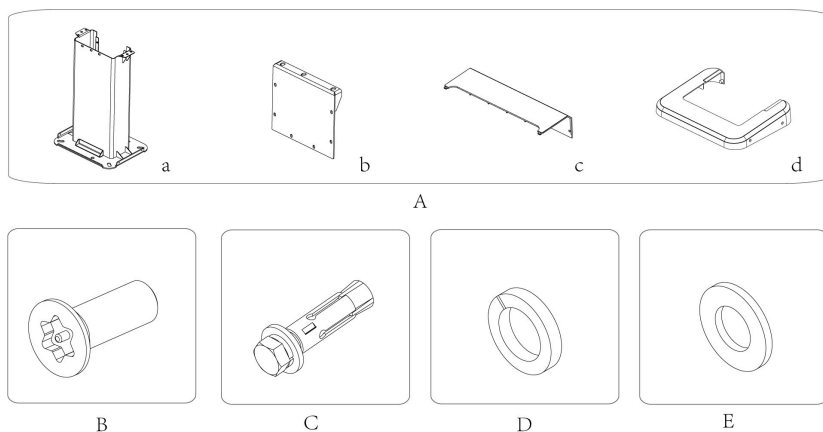


figure 2-16 Pole Components

table 2-5 Description of pole components

No.	Name		Unit	Quantify	
A	IDC30E pole components	a	Pole weld assembly	pcs	1
		b	Pole back cover	pcs	1
		c	Pole top cover	pcs	1
		d	Pole top cover	pcs	1
B	Hexalobular socket cheese head tamper proof screws		pcs	10	
C	Expansion bolt M12*110		pcs	10	
D	Standard spring washer		pcs	10	
E	Flat washer of Class A		pcs	6	

2.4.6.2 Recommended Construction Scheme for Charger Foundation

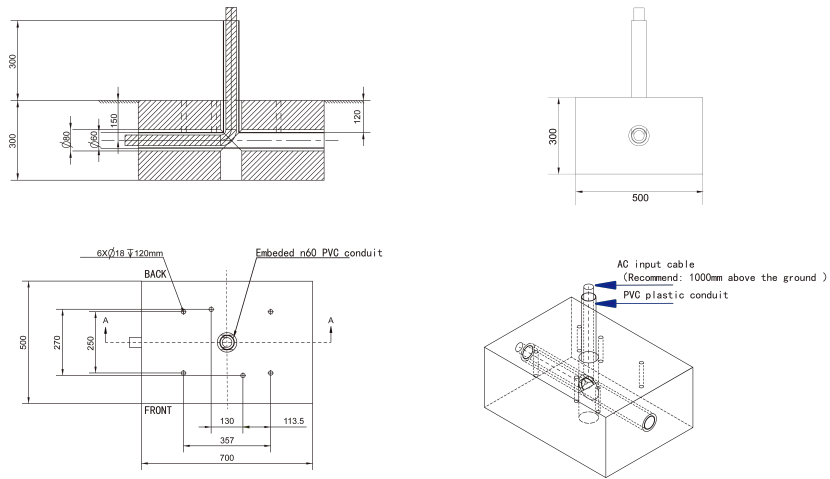


figure 2-17 Charger foundation diagram



The n60 PVC conduit is embedded in the foundation, and the AC input cable passes through the PVC plastic conduit for subsequent connection with the internal circuit of the charger.

It is recommended that the AC input cable be 1000mm above the ground.

2.4.6.3 Remove the Cover Plate

step 1 Remove the set screws of the base cover plate of the charger;

step 2 Pull the base cover plates out;

step 3 Remove the set screws of the cover plate on the back of the charger and remove the back cover.

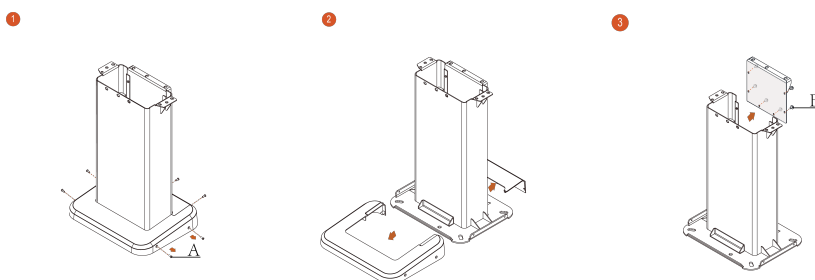


figure 2-18 Remove the back-cover plate

table 2-6 Accessories to remove the back-cover

No,	Name	Quantity
A	M5*14 hexalobular socket countersunk head screws	6
B	M5*12 hexalobular socket pan head tamper proof screws	6

-- End

2.4.6.4 Install the Mounting Pole

step 1 Place the pole on the foundation and mark the drilling hole locations;

step 2 Use cable drilling tool to drill holes in the locations you marked with a hole diameter of 18mm and depth of 120mm;

step 3 Insert the expansion bushing M12*110 into the hole;

step 4 Use No.19 wrench to attach the pole to the foundation.

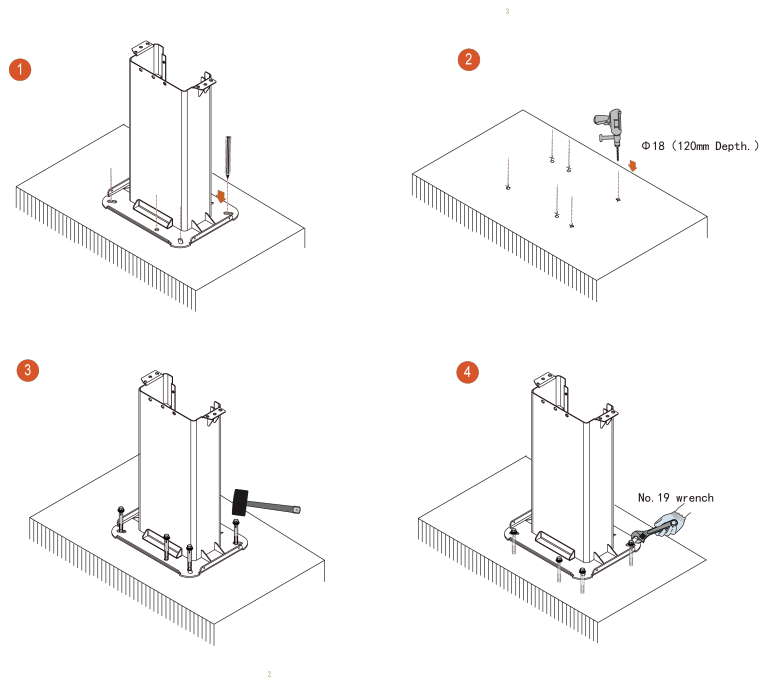


figure 2-19 Pole installation

- - End

2.4.6.5 Install the Handles

For detailed installation information, please refer to "[2.4.5 Wall-mounted Installation](#)".

2.4.6.6 Charger Installation

step 1 Hold the handles with both hands and lift the charger to the upper end of the pole;

step 2 Align the charger with the positioning pin of the pole;

step 3 Use M8*16 hexalobular socket pan head tamper proof screws to lock the charger with the pole and confirm that they are correct before use.

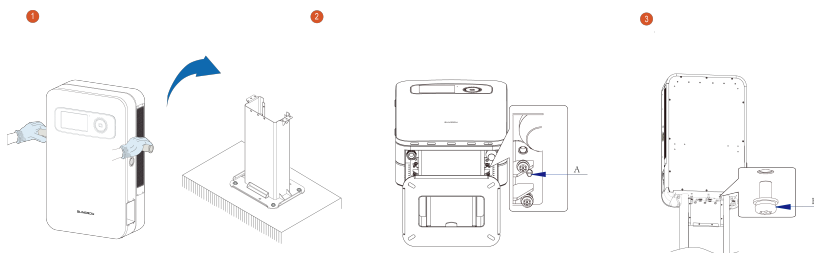


figure 2-20 Charger installation

table 2-7 Accessories to install the charger

No.	Name	Quantity
A	Positioning pin	2
	M8*16 hexalobular socket pan head tamper proof screws	10
B	Spring	10
	Flat washer	10

-- End

2.4.6.7 Detach the Handles

For detailed installation information, please refer to "[2.4.5 Wall-mounted Installation](#)" Remove the handles.

2.4.6.8 Install the Charger Connector Socket

step 1 Place the's horizontally at the mounting position;

step 2 Use M5*12 hexalobular socket pan head tamper proof screws to attach the connector socket to the charger;

step 3 Put an orange plug on the bottom of the connector socket;

step 4 Secure the orange plug with M4*12 hexalobular socket pan head screws.

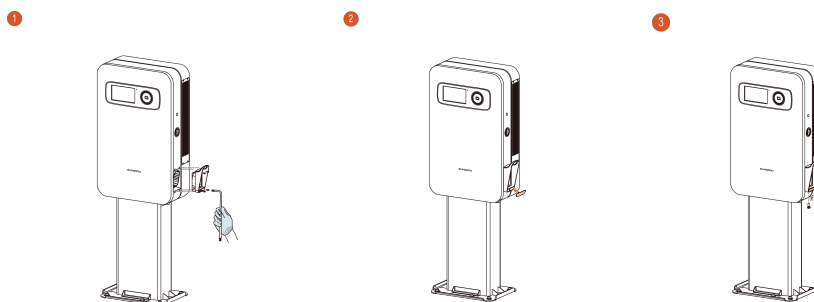


figure 2-21 Install the connector socket

-- End

2.4.6.9 Connect the AC Cable

step 1 Open the charger cabinet door;

step 2 Lead the AC cable through the PVC plastic conduit embedded in the foundation and pole, and then connect to the charger.

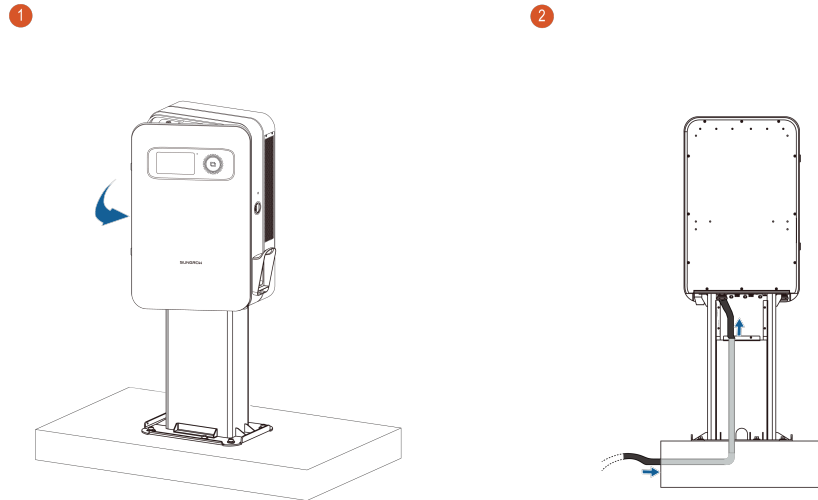


figure 2-22 AC Cable connection

-- End

2.4.6.10 Connect the Cable Connection Terminal

step 1 Crimp each connection terminal according to "2.4.3 Cable Connection Terminal";

step 2 Refer to the figure below, use M5 screws to attach the terminal to the specified position with the tightening torque of $3 \pm 0.2 \text{ N} \cdot \text{m}$.

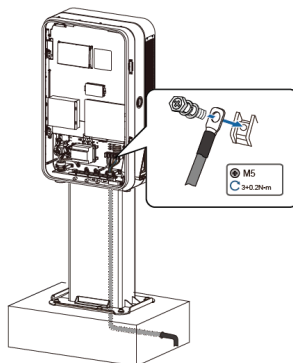


figure 2-23 Connect the cable connection terminal

-- End

2.4.6.11 Install the Cover Plate

step 1 Connect the back-cover plate of the charger and secure it with M5*12 hexalobular socket counter-sunk head screws;

step 2 Close the base-cover plate and attach it to the pole with M5*14 hexalobular socket pan head tamper proof screws.

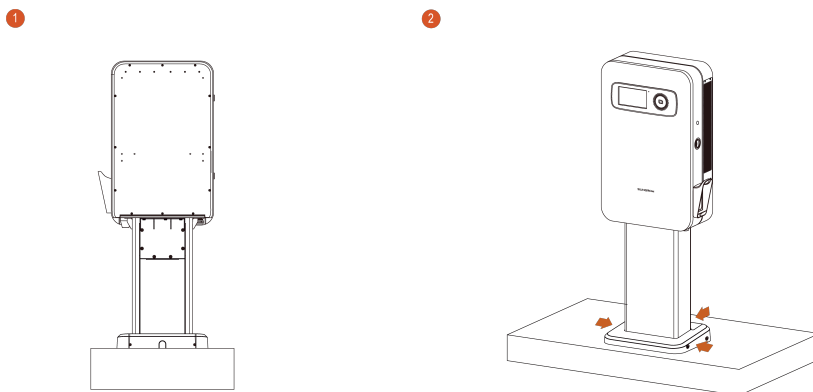


figure 2-24 Back-cover plate installation

-- End

2.4.6.12 Charger Connector Installation

Confirm that the charger connector socket is mounted firmly and then holster the charging connector into the charger.

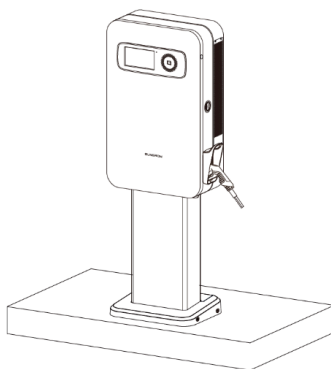


figure 2-25 The charger connector installation

2.4.6.13 LED Indicator Signals

table 2-8 Indicator status

The indicator color	Indicator Effect	Remarks	Meaning
Blue indicator	Blue indicator is constantly on	Normal	Fully charged

The indicator color	Indicator Effect	Remarks	Meaning
	Blue indicator flashes, on for 1s and off for 1s; circulating	Normal	Charging
Red indicator	Red indicator is constantly on	Abnormal	Fault
Green indicator	Green indicator is constantly on	Normal	Standby

3 Interface Function Description

3.1 Page Introduction

3.1.1 The Launch Page

When the charger is powered on for the first time, the program starts automatically.

step 1 Start the program to run a system check;

step 2 After 30 seconds, the touch screen enters the Start page.

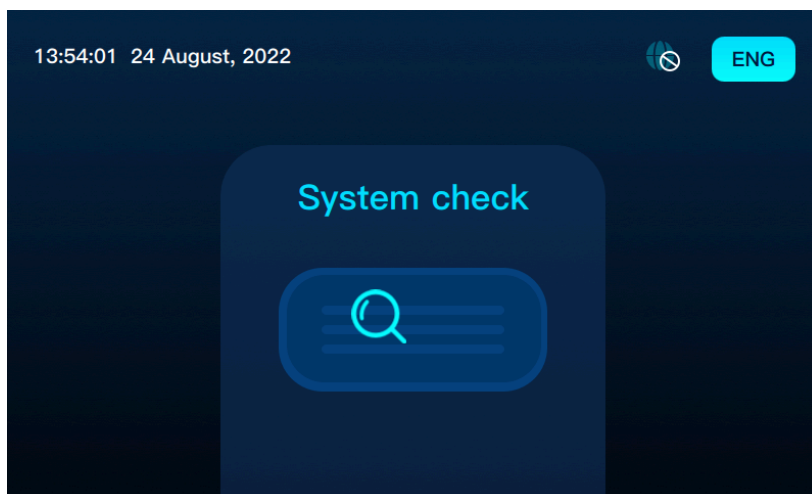


figure 3-1 System check page

-- End

3.1.2 The Start Page

The Start page displays the availability of the charger.

- Upper left corner: time and date.
- Upper right corner: network status and language.

Please plug the connector into your vehicle.

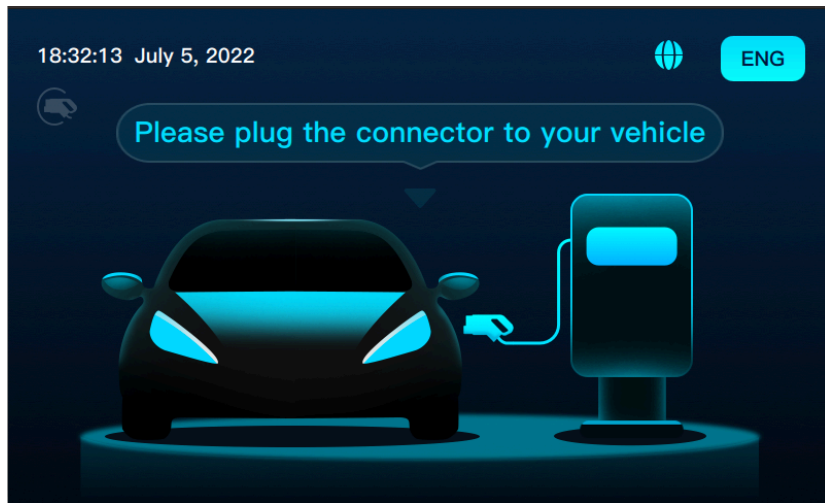


figure 3-2 The start page

If the charger is inactive for 10 minutes, the touch screen automatically enters into screen-saver mode and the backlight will be dimmed. You can touch the screen to exit the screen-saver mode.

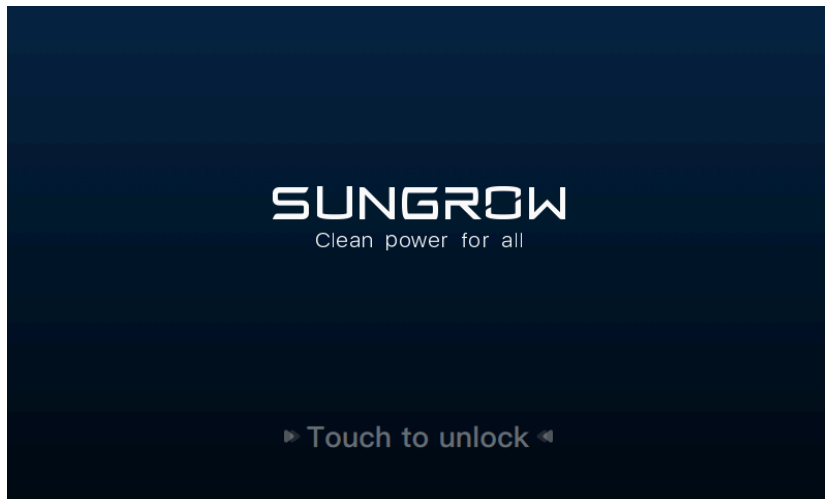


figure 3-3 The Screen-saver Page

3.1.3 Other Pages

In addition to the Start page, five other pages indicate different states of the charger: unavailable, emergency stop, firmware updating, offline, and abnormal

3.1.3.1 Unavailable

When the charger is unavailable, the touch screen enters the Unavailable page. You can see a warning icon and a prompt message, as shown below:

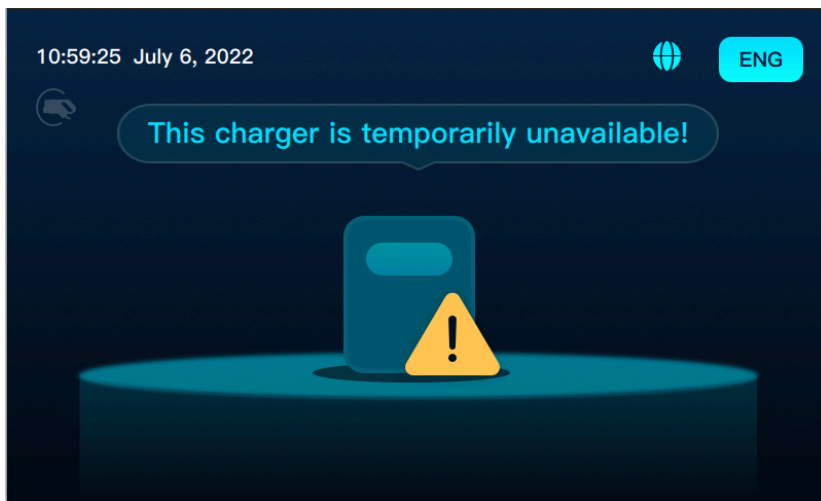


figure 3-4 The Unavailable Page

If you plug the charging connector when the charger is unavailable, you cannot start the charging and are prompted with a message that says the charging point is disabled.

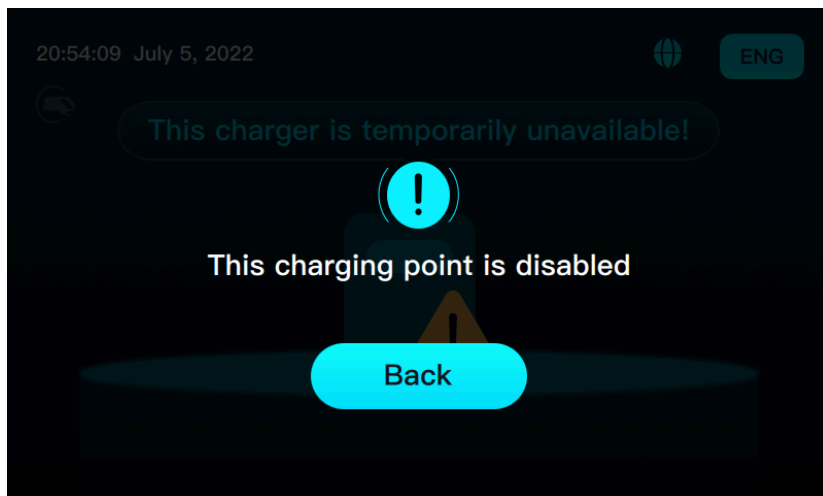


figure 3-5 This Charging Point is Disabled

When the charger is available again and there are no other errors, if the charging connector is plugged into your car, the touch screen enters the Card Swiping page according to your present setting (scan to charge or Plug&Play).

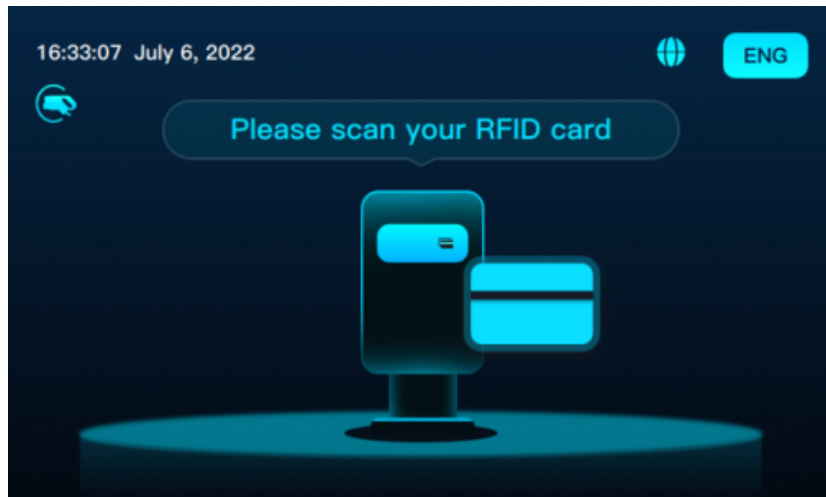


figure 3-6 The Card Swiping Page

3.1.3.2 Emergency Stop

When you press the emergency stop button, the touch screen enters the Emergency Stop page. You can see a stop icon and a prompt message, as shown below:



figure 3-7 The Emergency Stop Page

If you plug the charging connector during an emergency stop, you cannot start the charging and are prompted with a message that says the emergency stop button has been pressed.

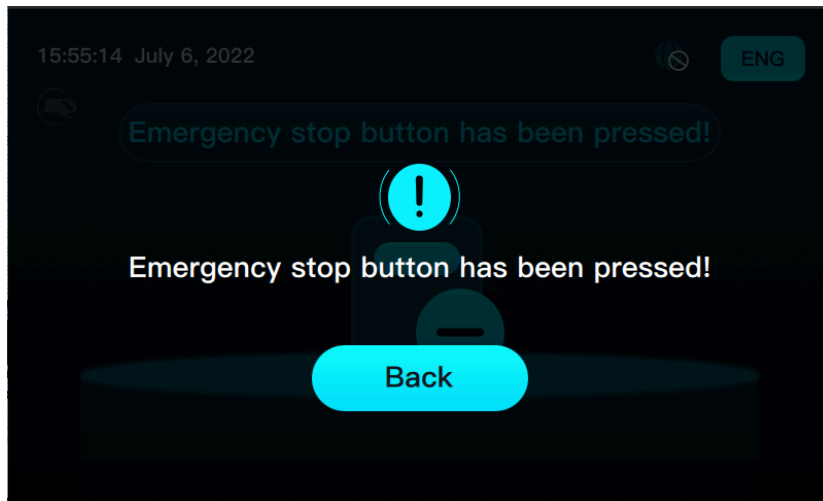


figure 3-8 The Emergency Stop Button Has Been Pressed

When the charger is available again and there are no other errors, if the charging connector is plugged into your car, the touch screen enters the Card Swiping page according to your present setting (scan to charge or Plug & play).

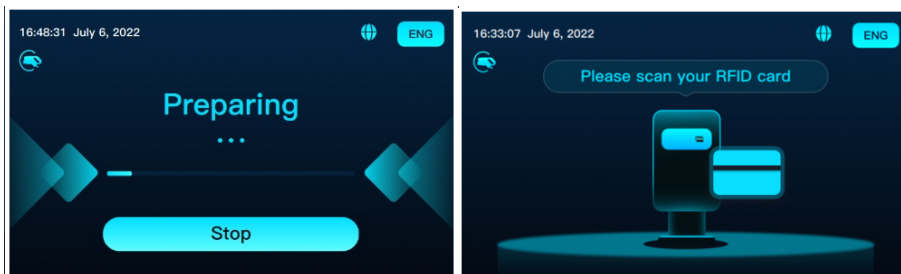


figure 3-9 The Card Swiping Page/The Plug & Play Page

3.1.3.3 Firmware Update

When the firmware is updating, the touch screen enters the Firmware Update page. You can see an upward arrow icon and a prompt message, as shown below:



During updating, do not turn off the power or enter the operating mode. The updating progress is indicated by the progress bar.

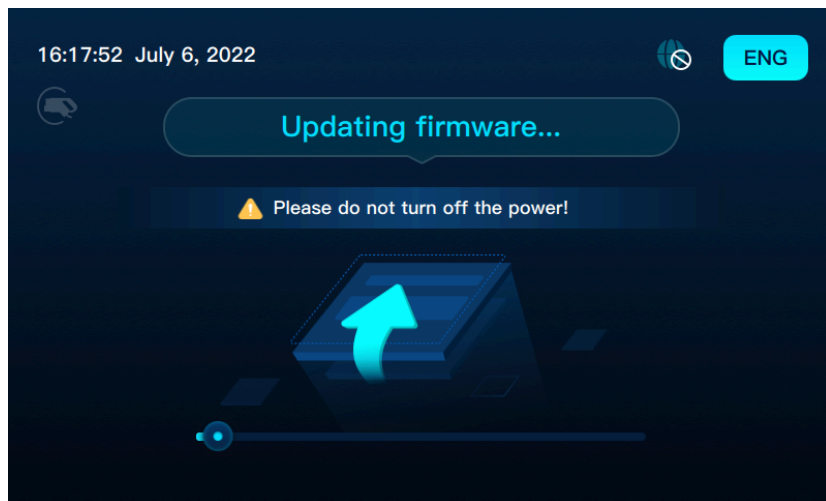


figure 3-10 The Firmware Update Page

- The progress bar shows the present updating progress. The updating cannot be canceled once it starts.
- During updating, if you plug the charging connector into your car, the charger does not respond, and the charging connector icon is not displayed.
- Updating is not allowed during charging and does not interrupt your operation. The firmware only automatically updates when the charger is available.
- After the updating completes, the system reboots in 10 seconds.

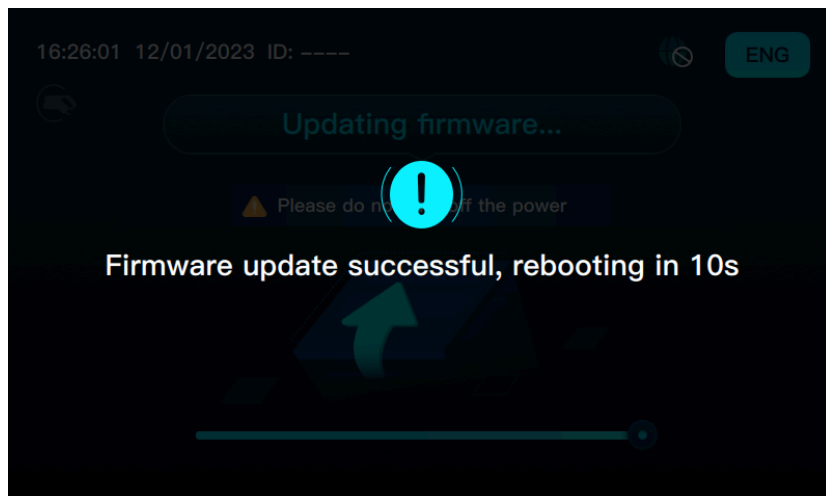


figure 3-11 The Rebooting Page

3.1.3.4 Offline

When the charger is offline, you can see an icon displayed on the upper right side of the page.

The charger is offline because:

- 1 There is a network connection, but the OCPP platform cannot be connected (!);



figure 3-12 Icon Displayed When There is a Network Connection

- 2 There is no network connection, and the OCPP platform cannot be connected (\).



figure 3-13 Icon Displayed When There is No Network Connection

3.1.3.5 Abnormal

When the charger runs abnormally, you are prompted with a message that says a technical issue occurred.

step 1 Click Back.

step 2 The touch screen enters the Unavailable page.

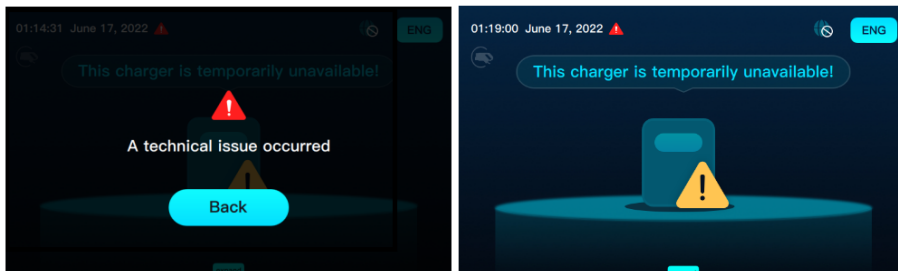


figure 3-14 A technical issue occurred



After an error occurs, the page displays a warning icon, indicating that the charger cannot be used.



step 3 Click  or plug the charging connector directly. You can see a warning message.

step 4 Click Back, and the Unavailable page appears.



If the above situation occurs, do not press the emergency stop button. You cannot charge until the technical issues are fixed.

-- End

3.1.3.6 Operating Mode

step 1 Press the date and time zone in the upper left corner for 4 seconds.

step 2 In the pop-up window, enter the authentication code (initial code: 202207).

step 3 Enter the operating mode.

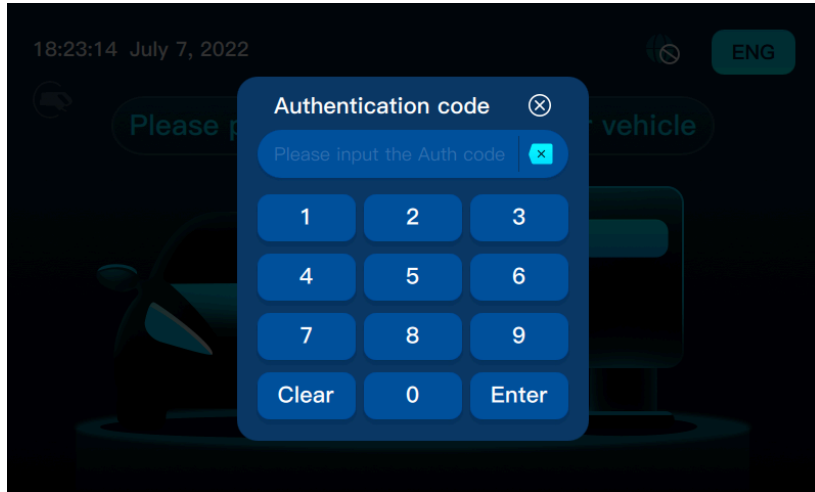


figure 3-15 The Verification Page

-- End

3.1.3.7 Language Settings

step 1 Click  in the upper right corner, and the touch screen enters the Language Settings page.

step 2 Click the national flag icon to automatically switch to the corresponding language.

step 3 Click the Confirm button to exit the Language Settings page.

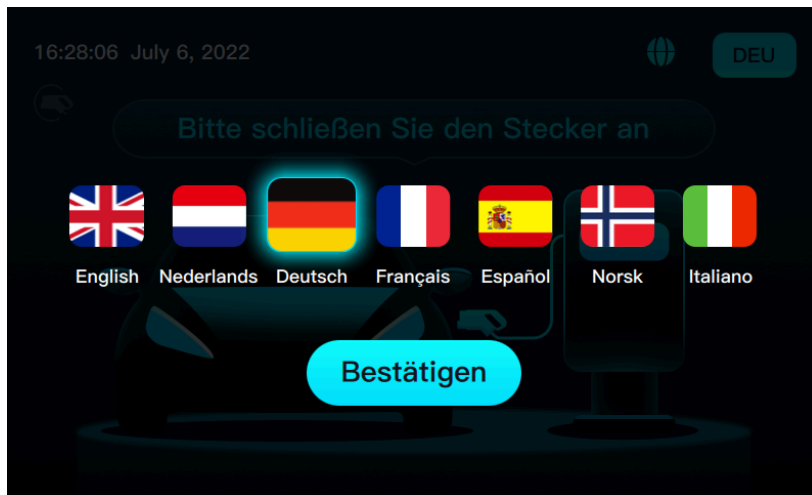


figure 3-16 The Language Settings Page



After switching languages, the language setting icon becomes the abbreviation of the first three letters.

The language of the current page will be switched to the selected language.

The Language Setting page appears whenever you clicked the button in the upper right corner.

-- End

3.2 Charging

3.2.1 Plug the Charging Connector

step 1 Touch any position on the screen.

step 2 Activate the touch screen to enter the Start page.

step 3 You are prompted to plug in the charging connector.

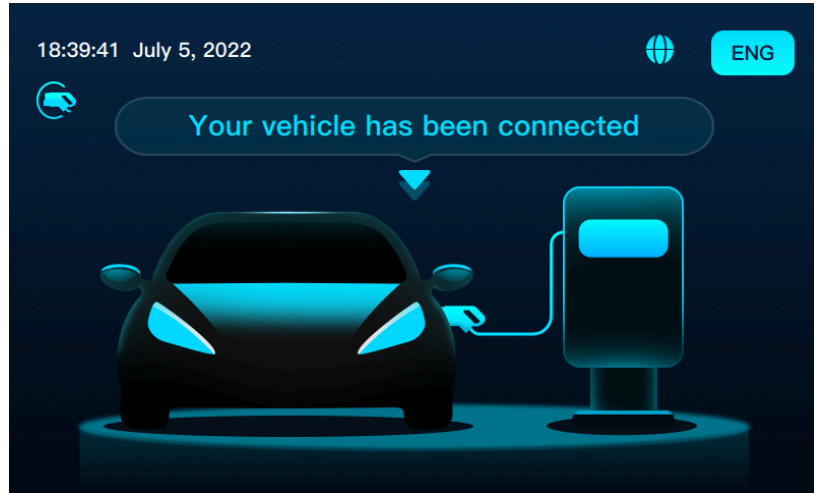


figure 3-17 Your Vehicle Has Been Connected

-- End

3.2.2 Charging method

3.2.2.1 Charging by Swiping Card

Swipe Card

- 1 When the charging connector is plugged into your car, the plugging icon is lit, and the touch screen enters the Card Swiping page.
- 2 After swiping, the touch screen enters the Authentication page, and the progress bar changes from small to large.
- 3 According to the feedback of the OCPP platform, the card-swiping result is displayed.

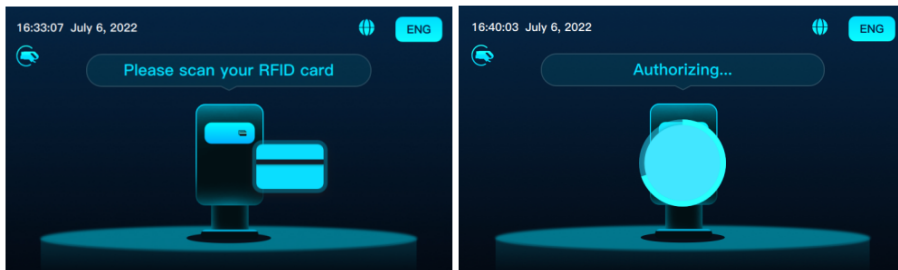


figure 3-18 The Card Swiping Page

Authorization success: You can see a check and a message says that the authentication is successful.

Authorization failure: If the card cannot be used or recognized, the OCPP platform returns a different message:

- The card cannot be recognized.
- The card is banned.
- The card is expired.
- The card is in use.
- Unknown error.
- The card is not in the local list (only in offline mode).

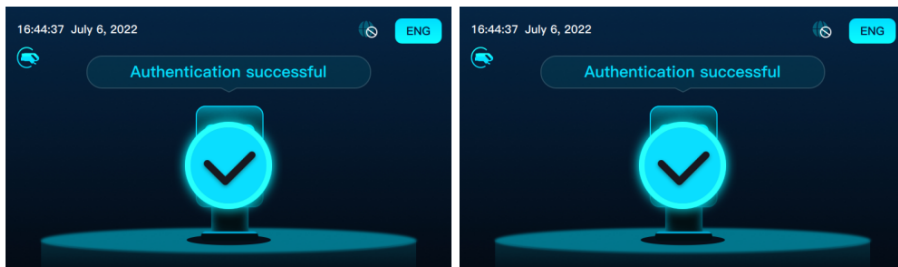


figure 3-19 Authentication Successful/Your Card Has Been Blocked

In Preparation

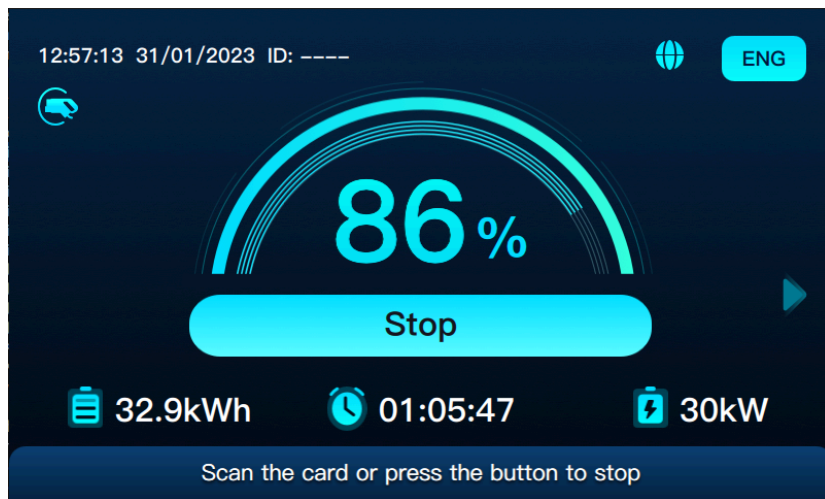


figure 3-20 The preparing page

- When the charger is in preparation, the charge card or stop button is used to terminate the charging process. For more information, see "Stop Charging".
- When you unplug the charging connector when the charger is in preparation, the touch screen returns to the Start page. When the charging is interrupted or you the emergency stop button is pressed, the touch screen enters the Charging Finished page. If the charging is interrupted due to error occurrence, the touch screen enters the corresponding page after you unplugged the charging connector.

NOTICE

If you unplug the charging connector at any stage, the touch screen returns directly to the Start page.

During Charging

During charging, more information is displayed on two screens. Click  and  to switch.

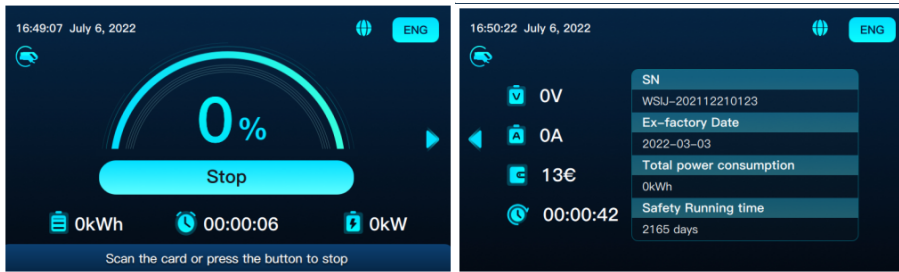


figure 3-21 The First Screen/The Second Screen

The First screen: Core information is displayed including the charging progress (SOC), electricity, time used, power, and a message that says you can stop charging with the charge card or the stop button.

The Second screen: Secondary information is displayed including voltage, current, fee, estimated remaining time, and device information.



If the charger is inactive for 10 minutes, the touch screen automatically enters screen-saver mode and the backlight will be dimmed. You can touch the screen to exit the screen-saver mode.

Stop Charging

There are two ways to stop charging: 1. Swipe the charge card to stop; 2. Press the button to stop.

- Swipe to stop
 - 1 During preparation or charging, swipe the card at any time.
 - 2 If successful, you are prompted to confirm the end of the charging session.
 - 3 Click Confirm to stop charging and the touch screen returns to the Charging Finished page.
 - 4 Click Cancel and the prompt message disappears.



If you swipe a different charge card to stop charging, you will be prompted to use the card that you swiped at the beginning.

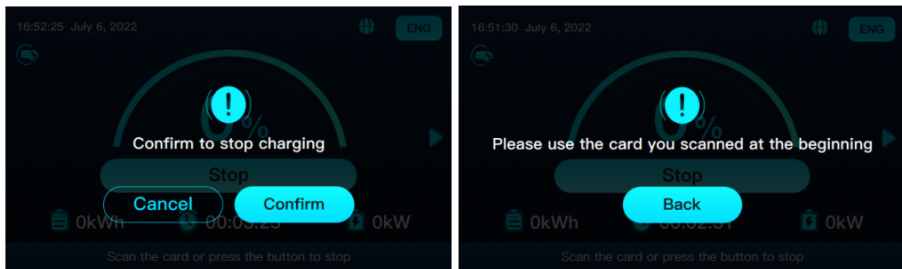


figure 3-22 Confirm to Stop Charging/Use the Card you Swiped at the Beginning

Press to Stop

- 1 During charging, click **Stop** and you are prompted to swipe a card to stop.
- 2 After swiping the card, the charging immediately stops and the Charging Finished page appears.
- 3 Click **Back** and the touch screen returns to the Start page.



If you swipe a different charge card to stop charging, you will be prompted to use the card that you swiped at the beginning.

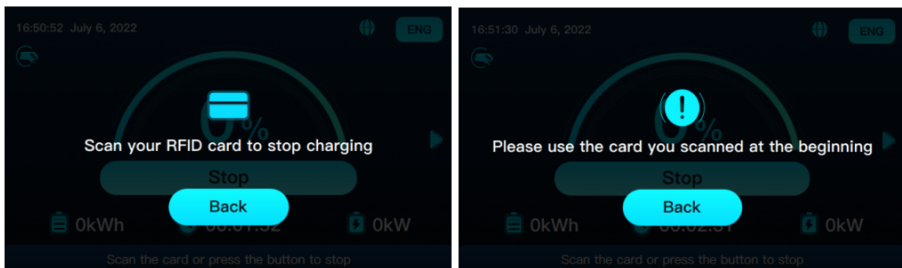


figure 3-23 Scan yourcard to stop charging/ Use the card you scanned at the beginning



On the second screen, because there is no stop button, you can only return to the first screen or swipe the card to stop charging.

Charging Finished

When the EV is fully charged, the user manually stops the charging, or an abnormality occurs during charging, the Stopping page appears.

After the charging session is completed, the Charging Finished page appears. You can see related information including total electricity charged, and time used, and you are prompted to unplug the charging connector.

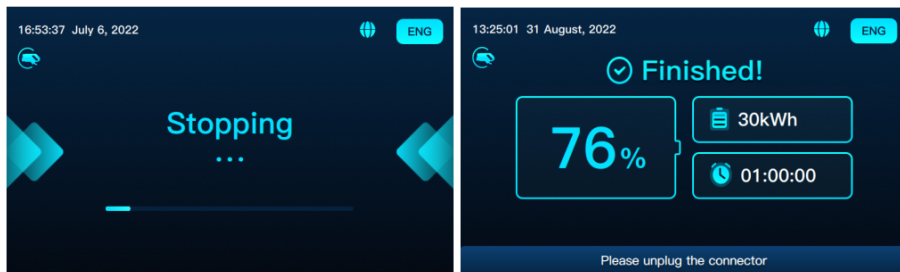


figure 3-24 The Stopping Page/The Charging Finished Pag

During charging, if you directly unplug the charging connector, the touch screen enters the Charging Finished page.

Follow the prompt message and press the home button to start charging.



figure 3-25 The Charging Finished Page

3.2.2.2 Plug&Play

The overall charging process is the same as mentioned above. The difference is :

- Do not need to swipe the charge card.
- When the charging connector is plugged into your car, the touch screen enters the Preparing page
- The charging starts when the preparation is completed.

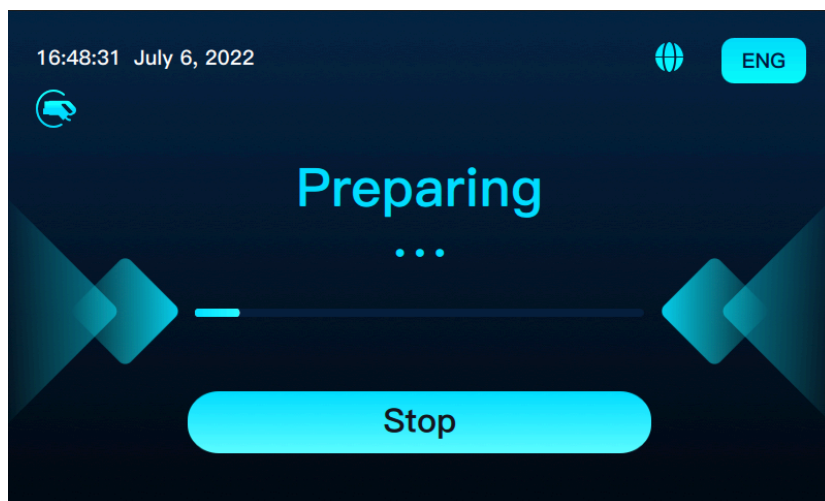


figure 3-26 The Preparing page

Stop charging: Stop the process from the car or the touch screen. Press the  button to stop.

Complete charging: Unplug the charging connector to complete the charging.

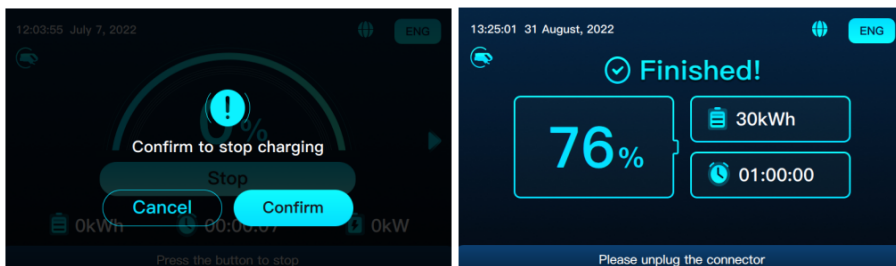


figure 3-27 Confirm to Stop Charging/ The Charging is Completed

4 Operation and Maintenance Mode

4.1 Login and Logout

4.1.1 Login

step 1 Press the time in the upper left corner of any status page of the client.

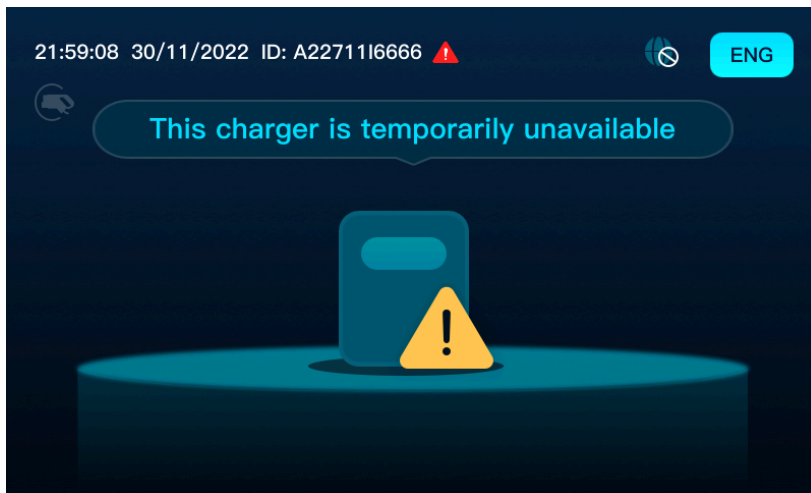


figure 4-1 Client

step 2 In the pop-up dialog box, enter the password 202207 and click [Enter](#).

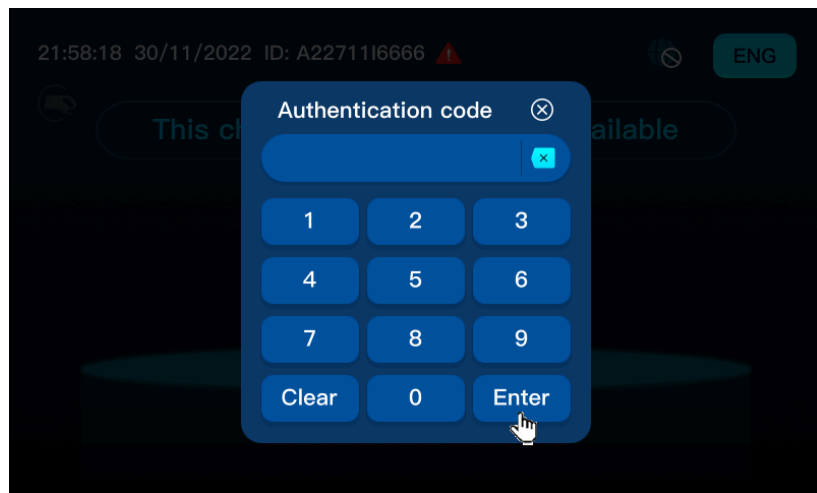


figure 4-2 Password input box



The password 202207 for **Read-only** authority, and if you need other authorities, please refer to "Operation and Maintenance Manual" or contact SUNGROW customer service.

- - End

4.1.2 Logout

Click to return to the initial page.

CCU_Info Version Config_1 Show hide

Monitoring & System Data: CCU1

Monitoring: CCU 1

Cabinet Temp(°C): 0.0

Gun Temp(°C): P:0 | N:0

System Status: Normal

Gun Status: Idle

Output Voltage (V): 0

Request Voltage (V): 0

Output Current (A): 0

Request Current (A): 0

Current SOC %: 0

Remain Time (min): 0

Venti-Fan1 speed (r/min): 0

Venti-Fan2 speed (r/min): 0

Setting & Control:

Connector: CCU 1

DC Current Limit(A): 70 set

Power Limit(kW): 30 set

Serial number: A2271116666

General Control:

Current Error info

History Error info

General Cabinet Fault Temperature:

Recovery Point (°C): 70

Alarm Point (°C): 80

figure 4-3 Operation&Maintance Page

4.2 Functional Description

4.2.1 CCU Info

Select "CCU_Info" from the navigation bar to turn to the CCU_Info page. The CCU_Info page contains two types: user page and administrator page.

The following function description takes the administrator page as an example.

- 1 In Setting&Control-> Connector, drop the menu down;
- 2 Select the CCU number (connector number). CCU number determines the data displayed on the CCU_Info page.

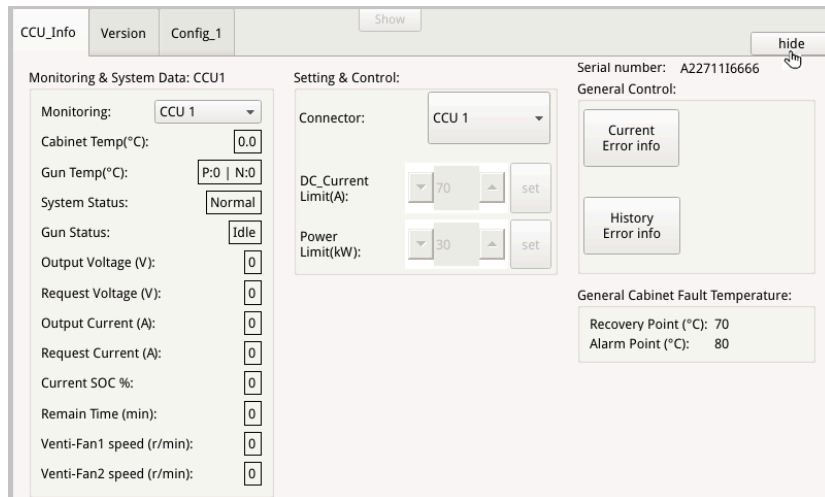


figure 4-4 Administrator page

The CCU_Info page mainly contains:

- System status display column "System Data"
- Exit the charging program "EXIT HMI"
- Restart CCU "Reset CCU"
- Real-time error information "Current Error info"
- History error information "History Error info"
- "Setting"
- Cabinet fault temperature "Cabinet Fault Temperature"

Monitoring&System Data:CCU1

Display monitoring, cabin temperature, connector temperature, system status, connector status, output voltage, requested voltage, output current, requested current, Current SOC, remain time, venti-fan1 speed, venti-fan2 speed.

Monitoring & System Data: CCU1

Monitoring: CCU 1

Cabinet Temp(°C): 0.0

Gun Temp(°C): P:0 | N:0

System Status: Normal

Gun Status: Idle

Output Voltage (V): 0

Request Voltage (V): 0

Output Current (A): 0

Request Current (A): 0

Current SOC %: 0

Remain Time (min): 0

Venti-Fan1 speed (r/min): 0

Venti-Fan2 speed (r/min): 0

figure 4-5 Monitoring&System Data:CCU1

Setting&Control

Setting & Control:

Connector: CCU 1

DC_Current Limit(A): 70 set

Power Limit(kW): 30 set

figure 4-6 Setting&Control

- 1 Click ▼ or ▲ to adjust the maximum current/power of the CCU;
- 2 Click "Set" to set the CCU local charging current/voltage, and each CCU corresponds to the maximum current/power output by a connector;

General Control

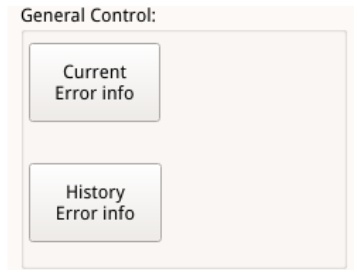


figure 4-7 General Control

Current Error Info

- 1 Click "Current Error info" to display the present real-time error information in the pop-up dialog box;
- 2 Click "Close" to close the dialog box.

History Error Info

- 1 Click "History Error info" to display history error information in the pop-up dialog box;
- 2 Click "Earlier Page", "Newer Page" and "Newest Page" to switch the error pages;
- 3 Click "Close" to close the dialog box.

General Cabinet Fault Temperature

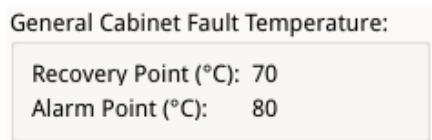


figure 4-8 General Cabinet Fault Temperature

Alarm Temperature: When the cabinet temperature exceeds Alarm temperature, the charger is derating or stopped.

Recovery temperature: When the cabinet temperature is lower than the Recovery temperature, restore the original output capacity.

4.2.2 Version

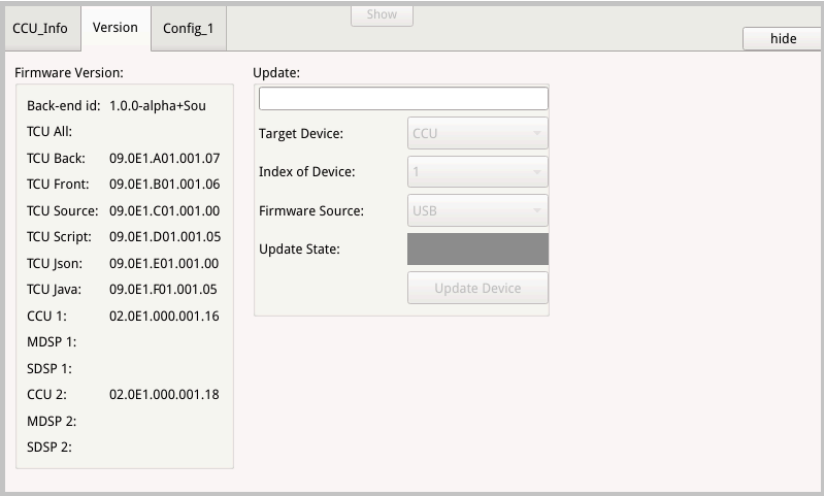


figure 4-9 Administrator page

The Version page mainly contains:

- "Firmware Version"
- "Update"

Firmware Version

Firmware Version:

Back-end id:	1.0.0-alpha+Sou
TCU All:	
TCU Back:	09.0E1.A01.001.07
TCU Front:	09.0E1.B01.001.06
TCU Source:	09.0E1.C01.001.00
TCU Script:	09.0E1.D01.001.05
TCU Json:	09.0E1.E01.001.00
TCU Java:	09.0E1.F01.001.05
CCU 1:	02.0E1.000.001.16
MDSP 1:	
SDSP 1:	
CCU 2:	02.0E1.000.001.18
MDSP 2:	
SDSP 2:	

figure 4-10 Firmware version

Update



This is local update via USB interface, in case of the Internet is unavailable

Update:

Target Device:	CCU
Index of Device:	1
Firmware Source:	USB
Update State:	
Update Device	

figure 4-11 Update

- 1 Insert the U disk and store the description file of the new firmware and the corresponding firmware in the root directory;
- 2 Click the "Target Device" drop-down menu to select target CCU/MDSP/SDSP/TCU ALL to be upgraded;

- 3 Click the "Index of Device" drop-down menu. Select the number of the corresponding module (Note: Select 1 for single connector model; Select 1 for double connector model when upgrading TCU and select the corresponding module number when upgrading other modules.);
- 4 Click the "Firmware Source" drop-down menu and select "USB";
- 5 Click "Update Device" to complete the upgrading;
- 6 After automatic restart, pull out the U disk;
- 7 If you need to upgrade multiple modules, repeat the above steps.

4.2.3 Config_1

Select "**Config_1**" from the navigation bar to turn to the Config_1 page. The Config_1 page contains two types: user page and administrator page.

The following function description takes the administrator page as an example.

The screenshot displays the Config_1 Administrator page with the following sections:

- Navigation Bar:** CCU_Info, Version, Config_1 (selected), Show, hide.
- Network Connection:** Radio buttons for Wifi (selected), SIM, and Eth. A signal strength icon is shown.
- Static information:**
 - Charge point model: UD-C350C-16000
 - Serial number: A2271116666
 - Firmware version: 1.0.0-alpha+Sou
 - Charge point vendor: Sungrow Benelux
- Custom config:**
 - Charging mode: Normal
 - Network mode: wifiMode
 - TimeZone: Netherlands
 - default language: English
- Websocket:**
 - Available websocket: SunCharger
 - Charger ID: A2271116666
 - Other: (empty field)
- Existing SSID and password:**
 - SSID List: ABCD
 - Content: (empty field)
- Sim Card:**
 - signal strength: 0
 - inserted: (checkbox)
 - APN: (empty field)
 - PIN: (empty field)
 - iccid: (empty field)

figure 4-12 Administrator page

The Config_1 page mainly contains:

- "Network Connection"
- "Static information"
- Custom configuration "Custom config"
- Cloud Access Point "Websocket"
- WIFI Name and Password "Existing SSID and password"
- SIM information configuration "Sim Card"

Network Connection



figure 4-13 Network Connection

TCU provides three network connection modes: "WIFI mode", "SIM mode" and "Eth mode".

Static Information

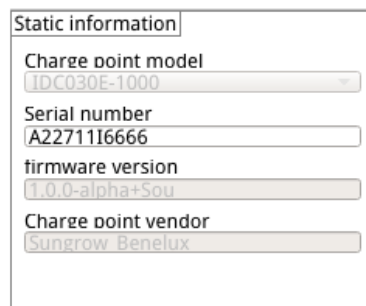


figure 4-14 Static Information

Displays charge point model, serial number, firmware version and charge point vendor.

Custom Config

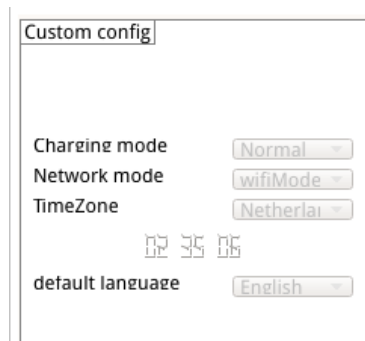


figure 4-15 Custom config

Displays charge mode, network mode, timezone and default language.

Websocket

Websocket

Available websocket

SunCharger

Charger ID

A2271116666

Other:

figure 4-16 Websocket

Displays available websocket, charger ID and other.

Existing SSID and Password

Existing SSID and password

SSID List

ABCD

Content

figure 4-17 Existing SSID and password

Displays SSID list and content.

Sim Card

Sim Card

signal strength 0 inserted

APN

PIN

iccid

figure 4-18 Sim card

Displays APN, PIN and iccid.

5 Faults and Troubleshooting



All faults codes are displayed in operation and maintenance mode. If the problem still persists, please contact with the SUNGROW customer service.

5.1 TCU

table 5-1 TCU faults and troubleshooting

Displaying text	Fault cause	Solutions
0Err_TCU_CCUComm_Error	The communication between the CCU and TCU is lost	1. Check the ethernet cable connection, make sure that the ethernet cable is properly connected between RJ45 of the CCU and the "eth0" of the TCU 2. If the problem persists, turn off the charger's main power switch, wait for 20 seconds, and turn it on again 3. If the problem persists, please contact SUNGROW Customer service
1Err_TCU_CardReader_Comm_Error	The communication between the RFID card reader and TCU is lost	1. Check the connection terminal of the RFID reader. Make sure the red led light is alive on the RFID reader. If it is not, check if the cable connections on the "Reader" terminal block of TCU are still tight 2. If the problem persists, turn off the charger's main power switch, wait for 20 seconds, and turn it on again 3. If the problem persists, please contact SUNGROW Customer service

Displaying text	Fault cause	Solutions
2Err_TCU_DCMeter0_ Comm_Error	The communication between the DC meter and TCU is lost	1. Check the connection terminal of the DC meter. Make sure the display and led is alive on the DC meter. If it is not, check if the cable connections on the DC meter's terminal blocks are still tight 2. If the problem persists, check if the cable connections on "RS485-1" terminal block of TCU are tight 3. If the problem persists, turn off the charger's main power switch, wait for 20 seconds, and turn it on again 4. If the problem persists, please contact SUNGROW Customer service
The network is unreachable 	The internet connection between the charger and the public network is lost	1. Charger is connected to the internet via wifi: a. check if the wifi router is working properly. b. If the wifi is available for the other device, long press the top left area of the screen, enter the password in the keyboard panel (default code 202207). In the pop out maintenance page, click Config_1, and check if the network mode is set to Wifi, and check if the ssid and the password is correct c. If the problem persists, please contact SUNGROW Customer service 2. Charger is connected to the internet via SIM card: a. check if the SIM card is inserted properly. Enter the maintenance page, click Config_1, check the "Inserted" checkbox is checked in "Sim config" area. If it is not, plug out and re-insert the SIM card into the TCU, turn off the main switch, wait for 20 seconds, and turn on. b. Check if the 4g internet is connected properly with the 4g(M) header c. If the problem persists, please contact SUNGROW Customer service

Displaying text	Fault cause	Solutions
The OCPP backend is unreachable 	The internet connection between the charger and the OCPP backend is lost	1. Restart the charger 2. If the problem persists, go to the maintenance page, click Config_1 page, check if the websocket on the websocket area is correct. If it is not, input or select the correct websocket address 2.If the problem persists, on the maintenance page, check the charger id and serial number on the Config_1 page. If the charger id does not match the one which was registered in the OCPP backend, input the correct one. If the serial number does not match the one on the name plate, please contact SUNGROW Customer service 3. If the problem persists, please contact SUNGROW Customer service
Your card has been blocked	The RFID card is registered in the OCPP back-end, but it is currently blocked	1. Contact with the OCPP back-end server provider, check if your RFID card is blocked by the back end 2. If the server provider cannot provide the solutions, please contact SUNGROW Customer service
Your card has expired	The RFID card is registered in the OCPP back-end, but it is currently expired	1. Contact with the OCPP back-end server provider, check if your RFID card is already expired in the back-end server 2. If the server provider cannot provide the solutions, please contact SUNGROW Customer service
Unable to identify your card	The RFID card is not registered in the OCPP back-end server	1. Contact with the OCPP back-end server provider, check if your RFID card is properly registered in the back-end server 2. If the server provider cannot provide the solutions, please contact SUNGROW Customer service

Displaying text	Fault cause	Solutions
This card is being used, please use another card	The RFID card is currently occupied by one another transaction	1. Check if the RFID has already been used for one another charging process. If it is, this RFID card will be unavailable until the corresponding charging session is ended 2. Contact with the OCPP back-end server provider, check if there is an invalid transaction linked to your RFID card. Ask the back-end provider to manually end the invalid transaction 3. If the problem persists, please contact SUNGROW Customer service
Please use the card you scanned at the beginning	The RFID card that is used for ending the charging session, is not the one which started it	1. Check if the RFID that you used is the one which started the charging session. Try the card that you used for starting this charging session 2. If the problem persists, please contact SUNGROW Customer service
This charging point is unavailable	The charger has some technical issues, or the charger is blocked by the OCPP back-end service	1. Contact with the OCPP back-end server provider, check if the charger is set as unavailable in the back end. If so, set the charger back to available status 2. If the problem persists, go to the maintenance page, click CCU_Info, click "Current error info" button, check the error strings and follows the instructions of the other errors in this table, please contact SUNGROW Customer service
Unable to initiate charging, replug and try again	reserved error	-
Sorry, this charger is temporarily out of service	reserved error	-
Emergency stop button has been pressed	The emergency button has been pressed	1. Check if the emergency button has been pressed. If it is, release the button 2. If the problem persists, please contact SUNGROW Customer service

Displaying text	Fault cause	Solutions
Charging request time-out, please retry	The charging process handshake is time-out	1. Plug out the charging connector, re-plug it in the vehicle, and try to start a charging session again 2. If the problem persists, restart the charger, and repeat step 1 again 3. If the problem still persists, please contact SUNGROW Customer service

5.2 CCU

table 5-2 CCU Faults and troubleshooting

Displaying text	Fault cause	Solutions
0Err_Sys_System_Fan_1_Failed_Warning	Fan Failure	Replace the fan.
1Err_Sys_System_Fan_2_Failed_Warning	Fan Failure	Replace the fan.
2Err_Sys_CCU_Motherboard_Voltage_Abnormal_Alarm	The system voltage Abnormal.	Restart, if invalid, replace the control board.
3Err_Sys_AC_Contactor_not_Drop_out_Alarm	The AC contactor is faulty.	Replace the AC contactor.
4Err_Sys_AC_Contactor_not_Pick_up_Alarm	The AC contactor is faulty.	Replace the AC contactor.
5Err_Sys_Door_Open_Alarm	The door is opened.	Close the door.
6Err_Sys_Emergency_Stop_Alarm	Emergency stop is pressed.	Release the emergency stop button.
9Err_Sys_All_Power_Unit_Communication_Failed_Alarm	All power unit communication fault.	Check the communication cable.
10Err_Sys_Charging_Station_Over_Temp_Warning	reserved error	-
11Err_Sys_Charging_Station_Over_Temp_Alarm	The Air-Cooling Fan Failure.	Check the Air-Cooling Fan.
0Err_Connector1_Connector_Over_Temp_Warning	The Charging connector Failure.	Replace the Charging connector.
1Err_Connector1_Connector_Over_Temp_Alarm	Excessive charging current.	charging is not affected, keep attention

Displaying text	Fault cause	Solutions
2Err_Connector1_Insulation_Monitor_-Communication_Failed_Alarm	Communication Failed.	Check the communication cable.
3Err_Connector1_Insulation_Monitor_-Selfcheck_Device_Abnormal_Alarm	The insulation monitor selfcheck abnormal.	Please contact SUNGROW Customer service.
4Err_Connector1_Insulation_Monitor_-Selfcheck_Wiring_Abnormal_Alarm	The insulation monitor selfcheck wiring Abnormal.	Please contact SUNGROW Customer service
5Err_Connector1_Insulation_Monitor_-Selfcheck_DCp_to_GND_Abnormal_-Alarm	The insulation monitor selfcheck DC_P to GND Abnormal.	Please contact SUNGROW Customer service
6Err_Connector1_Insulation_Monitor_-Selfcheck_DCn_to_GND_Abnormal_-Alarm	The insulation monitor selfcheck DC_N to GND Abnormal.	Please contact SUNGROW Customer service
7Err_Connector1_DC_Bus_Insulation_-Abnormal_Level_1_Alarm	The DC bus insulation abnormal.	Please contact SUNGROW Customer service
8Err_Connector1_DC_Bus_Insulation_-Abnormal_Level_2_Alarm	The DC bus insulation Warning.	Please contact SUNGROW Customer service
9Err_Connector1_PLC_Module_Communication_Failed_Alarm	The PLC module communication failed.	Replace the control board.
10Err_Connector1_Group_of_Power_Units_Failed_Alarm	The group of power units Failure.	Check the power units state.
11Err_Connector1_DCp_Output_Contactor_not_Drop_out_Alarm	The DC contactor is faulty.	Replace the DC contactor.
12Err_Connector1_DCp_Output_Contactor_not_Pick_up_Alarm	The DC contactor is faulty.	Replace the DC contactor.
13Err_Connector1_DCn_Output_Contactor_not_Drop_out_Alarm	The DC contactor is faulty.	Replace the DC contactor.
14Err_Connector1_DCn_Output_Contactor_not_Pick_up_Alarm	The DC contactor is faulty.	Replace the DC contactor.
15Err_Connector1_Reserve15	-	-

5.3 LLC

table 5-3 LLC Faults and troubleshooting

Error names	Faults cause	Solutions
EVT_LLC_A_OUTPUT_OV	output beyond the maximum voltage 1000V	1. Check the battery voltage of the vehicle 2. Restart the charger and try again. 3. Please contact SUNGROW customer service.
EVT_LLC_A_OUTPUT_UV	output voltage falls below minimum voltage 200V	1. Check the battery voltage of the vehicle 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
EVT_LLC_A_OUTPUT_OC		
EVT_LLC_A_OUTPUT_-SHORT	-	1. Check the battery voltage of the vehicle 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
EVT_LLC_B_OUTPUT_OV		
EVT_LLC_B_OUTPUT_-OV_FAST	output beyond the maximum voltage 1000V	1. Check the battery voltage of the vehicle 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
EVT_LLC_B_OUTPUT_UV	output voltage falls below minimum voltage 200V	1. Check the battery voltage of the vehicle 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
EVT_LLC_B_OUTPUT_OC		
EVT_LLC_B_OUTPUT_-SHORT	-	1. Check the wiring of DC+ and DC- 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
EVT_LLC_TOTAL_OV	output beyond the maximum voltage 1000V	1. Check the battery voltage of the vehicle 2. Restart charger and try again. 3. Please contact SUNGROW customer service.

Error names	Faults cause	Solutions
EVT_LLC_TOTAL_OC	over current	1. check the wiring of DC+ and DC- 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
EVT_DISCHARGE_CIRCUIT_INVALID	internal fault	Please contact SUNGROW customer service.
EVT_RELAY_ADHESION	internal fault	Please contact SUNGROW customer service.
EVT_RELAY1_TEMP_SENSOR_INVALID	internal fault	Please contact SUNGROW customer service.
EVT_RELAY2_TEMP_SENSOR_INVALID	internal fault	Please contact SUNGROW customer service.
EVT_RELAY3_TEMP_SENSOR_INVALID	internal fault	Please contact SUNGROW customer service.
EVT_AMBIENT_TEMP_SENSOR_INVALID	internal fault	Please contact SUNGROW customer service.
EVT_HS2_TEMP_SENSOR_INVALID	internal fault	Please contact SUNGROW customer service.
EVT_HARD_OCP	inrush current	1. Check the wiring of DC+ and DC- 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
EVT_SCI_TIMEOUT	1.internal communication fault 2.internal circuit fault	1. Restart charger and try again. 2. Please contact SUNGROW customer service.
EVT_CAN_TIMEOUT	1.internal communication fault 2.internal wiring fault 3.internal circuit fault"	1. Restart charger and try again. 2. Please contact SUNGROW customer service.
EVT_RELAY1_OTP	1.internal overflow temperature 2.internal circuit fault"	1. Turn off, waiting for 10 minutes and then restart charger and try again. 2. Please contact SUNGROW customer service.

Error names	Faults cause	Solutions
EVT_RELAY2_OTP	1.internal overflow temperature 2.internal circuit fault"	1. Turn off, waiting for 10 minutes and then restart charger and try again. 2. Please contact SUNGROW customer service.
EVT_RELAY3_OTP	1.internal overflow temperature 2.internal circuit fault"	1. Turn off, waiting for 10 minutes and then restart charger and try again. 2. Please contact SUNGROW customer service.
EVT_AMBIENT_OTP	1.internal overflow temperature 2.internal circuit fault"	1. Turn off, waiting for 10 minutes and then restart charger and try again. 2. Please contact SUNGROW customer service.
EVT_HS2_OTP	1.internal overflow temperature 2.internal circuit fault"	1. Turn off, waiting for 10 minutes and then restart charger and try again. 2. Please contact SUNGROW customer service.
EVT_3V_OV	1.internal system voltage exceed normal range 2.internal circuit fault	1.Check the input voltage whether between normal range 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
EVT_3V_UV	1.internal system voltage falls below normal range 2.internal circuit fault	1.Check the input voltage whether between normal range 2.Restart charger and try again. 3. Please contact SUNGROW customer service.
EVT_12V_OV	1.internal system voltage exceed normal range 2.internal circuit fault	1.Check the input voltage whether between normal range 2.Restart charger and try again. 3. Please contact SUNGROW customer service.
EVT_12V_UV	1.internal system voltage falls below normal range 2.internal circuit fault	1.Check the input voltage whether between normal range 2.Restart charger and try again. 3. Please contact SUNGROW customer service.

Error names	Faults cause	Solutions
EVT_AMBIENT_LOW_TEMP_FAULT	1.internal ambient temperature is too cold 2.internal circuit fault	Please contact SUNGROW customer service.
EVT_HS2_LOW_TEMP_FAULT	1.internal ambient temperature is too cold 2.internal circuit fault	Please contact SUNGROW customer service.
EVT_HARD_OUTPUT_SHORT	over current	1.Check the wiring of DC+ and DC- 2.Restart charger and try again. 3.Please contact SUNGROW customer service.
EVT_HARD_VERSION_ERROR	software version is not compatible	Please contact SUNGROW customer service.

5.4 PFC

table 5-4 PFC Faults and troubleshooting

Errors names	Fault cause	Solutions
BUSVoltageHigh	internal fault	1.Restart charger and try again. 2.Please contact SUNGROW customer service.
PBUSVoltageHigh		
NBUSVoltageHigh		
IAPeakHigh	input over current	1.Restart charger and try again. 2.Please contact SUNGROW customer service.
IBPeakHigh		
ICPeakHigh		
PhaseSeqWrong	input voltage phase fault	1.Check the wiring of input voltage 2. Restart charger and try again. 3.Please contact SUNGROW customer service.
PhaseLoss	input voltage phase lost	1.Check the wiring of input voltage and the value of input voltage 2.Rrestart charger and try again. 3.Please contact SUNGROW customer service.

Errors names	Fault cause	Solutions
AmbientTempHghi	high internal temperature	1.Turn off, waiting for 10 minutes and then restart charger and try again. 2.Please contact SUNGROW customer service.
RadiatorATempHghi		
RadiatorBTempHghi		
RadiatorCTempHghi		
BUSPreChargeVolLow	internal fault	1.Restart charger and try again. 2.Please contact SUNGROW customer service.
PBUSPreChargeVolLow		
NBUSPreChargeVolLow		
BUSVoltageLow		
AmbientTempLow	low internal temperature	1.Restart charger and try again. 2.Please contact SUNGROW customer service.
RadiatorATempLow		
RadiatorBTempLow		
RadiatorCTempLow		
PhaseACurrenRmsHigh	high input current	1.Restart charger and try again. 2.Please contact SUNGROW customer service.
PhaseBCurrenRmsHigh		
PhaseCCurrenRmsHigh		
InputRelayFail	internal AC relay fault	1.Restart charger and try again. 2.Please contact SUNGROW customer service.
PowerSupplyAbnorma	internal system voltage fault	1. Check the input voltage whether between normal range 2.Rrestart charger and try again. 3.Please contact SUNGROW customer service.
SCIfault	1.internal communication fault 2.internal circuit fault	1.Restart charger and try again. 2.Please contact SUNGROW customer service.
HardWearOCPFault	input over current	1.Restart charger and try again. 2.Please contact SUNGROW customer service.
SWUVPFault	internal fault	1.Restart charger and try again. 2.Please contact SUNGROW customer service.
LLCVersionNotMatch	software version is not compatible	Please contact SUNGROW customer service.

Errors names	Fault cause	Solutions
GridAVolHigh	high AC input grid voltage, normal range AC 360~440V	1. Check the AC input voltage 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
GridBVolHigh		
GridCVolHigh		
GridAVolLow	low AC input grid voltage, normal range AC 360~440V	1. Check the AC input voltage 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
GridBVolLow		
GridCVolLow		
FreqHigh	AC input frequency over normal range 45HZ~55HZ	1. Check the AC input voltage 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
FreqLow		
GridCutFastProtect	AC input voltage lost	1. Check the AC input voltage 2. Restart charger and try again. 3. Please contact SUNGROW customer service.
SpIllFault	internal fault	1. Restart charger and try again. 2. Please contact SUNGROW customer service.
InPutVoltageDroop	AC input voltage fault	1. Restart charger and try again. 2. Please contact SUNGROW customer service.
BUSVoltageContinueHigh	internal fault	1. Restart charger and try again. 2. Please contact SUNGROW customer service.
PBUSVoltageContinueHigh		
NBUSVoltageContinueHigh		
BUSVoltageDiscreteHigh		
PBUSVoltageDiscreteHigh		
NBUSVoltageDiscreteHigh		
BusRippleOver		
PBusRippleOver		
NBusRippleOver		
InPutCurrUnbal		

Errors names	Fault cause	Solutions
Fan1Speedabnormal	internal fan fault	1.Restart charger and try again. 2.Please contact SUNGROW customer service.
Fan2Speedabnormal		
Fan3Speedabnormal		
Fan4Speedabnormal		
Fan5Speedabnormal		
InputVoltUnbal	internal faul	1.Restart charger and try again. 2.Please contact SUNGROW customer service.

5.5 Charging Stop Code

table 5-5 Charging stop code

Fault name	Displaying text	Fault cause	Solutions
EV emergency stop	EV_E_Stop	An error has occurred, the charging session is terminated by electric vehicle forcefully	1. Plug out the charging connector, re-plug it into the vehicle, and try to restarting the charging session again. 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact the SUNGROW customer service
PWM failure	PWM_Failure	The PWM is invalid on the CP-PE interface	Please contact with the SUNGROW customer service
EV reports a fault and stops	EV_Reported_Error	An error has occurred in the vehicle side, the charging session terminates	1. Plug out the charging connector, re-plug it into the vehicle, and try to restarting the charging session again. 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact SUNGROW customer service.

Fault name	Displaying text	Fault cause	Solutions
SLAC match failure	SLAC_Match_Failure	The charging session handshake - SLAC process failed	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service"
SDP handshake failure	SDP_Handshake_Failure	The charging session handshake - SDP process failed	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service"
UDP server fault	UDIPv6_Server_Fault	The charging session handshake - UDP server during SDP process is invalid	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service"
TCP server fault	TCPIPv6_Server_Fault	The charging session handshake - TCP server during charging process is invalid	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again. 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service"

Fault name	Displaying text	Fault cause	Solutions
Protocol handshake failure	Protocol_ Handshake_ Failure	The charging session handshake - protocol handshake (DIN/ISO15118) failed	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service.
Service parameter incompatibility	Service_ Incompatibility	The charging session - service parameter exchange failed	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service
Communication parameter incompatibility	Charge_ Parameter_ Incompatibility	The charging session - service parameter exchange failed	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service.
Cable check fault	Cable_Check_ Fault	The charging session - cableCheck process failed	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service.

Fault name	Displaying text	Fault cause	Solutions
Precharge fault	Precharge_Fault	The charging session - precharge process failed	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service.
Current demand fault	Current_Demand_Fault	The charging session - current demand process failed	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service.
CP voltage abnormal	CP_Voltage_Abnormal	The CP-PE terminal voltage is abnormal	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUN-GROW customer service.

Fault name	Displaying text	Fault cause	Solutions
DC output overvoltage protection	DC_Output_Overvoltage_Protection	DC output voltage is over 1020V, the charger over-voltage protection is triggered	1. Check the output voltage on the vehicle or the charger during the charging session, if the voltage is over 1020V, the charging will not be successful. In this case, please contact with the SUNGROW customer service and do not proceed the next steps 2. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 3. If the problem persists, restart the charger, and repeat step 1. 4. If the problem still persists, please contact with the SUNGROW customer service"
DC output undervoltage protection	DC_Output_Undervoltage_Protection	DC output voltage is under 195V, the charger over-voltage protection is triggered	1. Check the output voltage on the vehicle or the charger during the charging session, if the voltage is under 195V, the charging will not be successful. In this case, please contact with the SUNGROW customer service and do not proceed the next steps 2. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 3. If the problem persists, restart the charger, and repeat step 1. 4. If the problem still persists, please contact with the SUNGROW customer service.

Fault name	Displaying text	Fault cause	Solutions
DC output overcurrent protection	DC_Output_Overcurrent_Protection	DC output current is over 82A, the charger over-current protection is triggered	1. Check the output current on the vehicle or the charger during the charging session, if the current is over 82V, the charging will not be successful. In this case, please contact with the SUNGROW customer service and do not proceed the next steps 2. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 3. If the problem persists, restart the charger, and repeat step 1. 4. If the problem still persists, please contact with the SUNGROW customer service.
Frame communication timeout	Frame_Communication_Timeout	The communication between the charger and the vehicle is not stable, or the charger/vehicle failed to send message	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUNGROW customer service.
Communication sequence fault	Communication_Sequence_Fault	The communication frame sent by the vehicle does not follow the sequence defined in the DIN SPEC 70121/ISO 15118 norm	1. Plug out the charging connector, re-plug it in the vehicle, and try to restarting a charging session again 2. If the problem persists, restart the charger, and repeat step 1. 3. If the problem still persists, please contact with the SUNGROW customer service.

6 Maintenance Instructions

Regular maintenance of the charger will ensure its service life and optimal efficiency. Maintenance personnel should formulate the maintenance cycle according to the local actual situation. The recommended maintenance cycle is once every six months. If any malfunction occurs, be sure to handle it in time.

DANGER

Avoid maintaining the equipment on rainy days to prevent water damage to the equipment.

NOTICE

Before maintaining the equipment, please disconnect the AC opening first, and wait for 10 minutes until the residual voltage is released before opening the cover for maintenance.

Charging Connector

- Plug in the charging connector until it locks firmly, and do not shake the head of the charging connector.
- After charging, the charging connector should be unplugged and put back in the connector socket, and the charging cable should be retrieved in time to a place where the vehicle cannot cause any damage.
- Frequently check whether there are any sundries in the head of the charging connector to ensure that the needle is clean and free of stains, and there is no foreign objects.

Charging Pole

- Check whether the charging pole and the surrounding anti-collision poles are deformed.
- Check the charging connector or charging cable for defects, cracks, wear, cracks, and exposure.
- Check whether the appearance and performance of peripheral components such as the connector socket and the antenna are normal.

Cable

- Visually check whether the electrical circuit is burnt or aging and whether the screws for connecting and fixing are loose.
- Check whether the grounding cable is reliably grounded.
- Arrange other inspections according to the actual situation on site.

LCD Screen

- Check the glass of the screen for damage: broken, cracks.
- Check the brightness of the screen and whether the display definition is normal
- Click the screen to operate and check whether the touch function is normal
- Check the waterproof performance around the screen and the plastic panel.

Fan

- Check whether there is foreign object inside the fan and the fan openings. Use water to clean dust, in case of the accumulation dust to affect the heat dissipation.



The water flow should be less than 6L/min, and please check the fan connector before power on.

- Check whether the fan is running normally during operation.
- In device standby status, select factory mode operation to operate the fan at full speed, and check whether the fan speed is normal.

7 Appendix

7.1 System Parameters

table 7-1 System parameters

Type designation	Parameter	IDC30E
Input (AC)	Input voltage	400Vac±10%
	Nominal frequency	50Hz
	Max.input current	51A
	Input cable specification	5*10mm ²
	Power input	3P+N+PE
Output (DC)	DC output power	30kW
	DC output voltage	200-1000Vdc,375-1000Vdc (At nominal power)
	Max.output current	80A
	Cable length	5m
	Charger connector	CCS2
Protection	Insulation monitor	Yes
	Over/Under voltage, protection	Yes
	Over load protection	Yes
	Short circuit protection	Yes
	Over temperature protection	Yes
	Lightning protection	Yes
	Overvoltage level	III
Interface	Touch screen	7-inch color touch screen
	RFID card system	ISO/IEC 14443A/B, ISO/IEC 15693
	Communication interface	2G/3G/4G/Wifi/Ethernet
	Communication protocol	OCPP 1.6
General Data	Dimensions(W*H*D)	800*500*230mm,800*500*262mm(With backplane)
	Weight	≤55kg

Type designation	Parameter	IDC30E
	Mounting method	Wall-mounting/Pole-mounting(Optional)
	Operational noise level	≤50dB
	Degree of protection	IP65,IK10(Shell), IK08(Screen)
	Operating ambient temperature range	-35 to 55°C
	Allowable relative humidity range	5% to 95%
	Max.Efficiency	96.5%
	Max.operating altitude	2000m
	Noise	Operating noise ≤ 50dBA @ 1m horizontally from the front of the charger and operates at nominal condition (25°C, 400Vac, 750Vout, full load)

7.2 Quality Assurance

When product faults occur during the warranty period, SUNGROW will provide free service or replace the product with a new one.

Evidence

During the warranty period, the customer shall provide the product purchase invoice and date. In addition, the trademark on the product shall be undamaged and legible. Otherwise, SUNGROW has the right to refuse to honor the quality guarantee.

Condition

- 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 voltage ratings used by the customers must meet the requirements of the charger. SUNGROW shall not liable for the loss caused by mismatching.
- Be sure to use the charger reasonably and correctly in strict accordance with the parameters described in this manual (such as voltage, etc.). Otherwise, you shall be responsible for the consequences arising therefrom.

- Be sure to waterproof the empty terminals in strict accordance with the requirements specified in this manual. If the protection level of the charger is reduced due to improper handling, SUNGROW will not be responsible.
- The free warranty period for the whole machine and components has expired.
- Equipment damage during transportation.
- Incorrect installation, refitted, or use of the product
- Operation in a harsh environment is not described in this manual.
- Machine failure or damage caused by installation, repair, alteration, or disassembly not conducted by the service agencies or personnel of SUNGROW.
- Machine failure or damage caused by installation, repair, alteration, or disassembly not conducted by qualified service personnel or SUNGROW staff.
- Damage caused by abnormal natural environment or man-made damage.

If the product fault arises due to any of the above causes and the customer requires repair services, such a service may be provided at a cost, following the assessment of SUNGROW.

Software Authorization

The company is not liable for any loss caused by the software products provided with the products.

- It is prohibited to use some or all of the data in the firmware or software developed by SUNGROW for commercial purposes in any way.
- It is forbidden to decompile, decrypt, or other operations that destroy the original program design of the software developed by SUNGROW

SUNGROW

Sungrow Power Supply Co., Ltd.
www.sungrowpower.com