

# AC EV Charging Station



# User Manual

Rev. 2.1

## Important:

Read this User Manual before you start using the device!

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# SAFETY INFORMATION

Any other use will be deemed improper and may result in severe injury or damage to property. The manufacturer and dealers will not accept any liability for damage caused by improper use. What's more, the device warranty becomes void in such cases.



## WARNING

Failure to observe these warnings can lead to electric shock or fire, or damage the charging device.

- ◆ If damage occurs while charging, disconnect the charging device immediately from the power mains, if possible by switching off the mains fuse/circuit breaker. Do not touch any electrically live parts.
- ◆ Never operate the device near explosive vapours or gases, switching operations within the device can generate tiny electric.
- ◆ Never touch the contact surfaces of the charging device. Do not insert any objects into the charging equipment connector faces.
- ◆ Do not attempt to modify or repair your charging device in any way yourself. Never open the housing, and do not make any changes to the adapters and/or extension cables.
- ◆ Do not plug the device into power outlets through which water could ingress the device. Do not immerse the charging device in water.
- ◆ Never disconnect the device connectors while the device is electrically live (i. e. while charging a vehicle), As this can lead to fouling of the connector plug contacts and damage the charging electronics. Always stop the charging process first at the controls inside the vehicle.
- ◆ Protect the plug connectors and power sockets against humidity and moisture. Always keep the plugs and the vehicle end coupling dry. Unplugged connectors are not watertight. Always cover them with the protective caps when not in use.
- ◆ Do not let children play with the packaging material or the charging device.

# PRODUCT INFORMATION

## Power and Vehicle connector

NO PLUG	 Type 1(SAEJ1772 North American Standard )
 NEMA 14-50	 Type 2 (IEC62196-2 European Standard)
 CEE16/32(3-phase)	 Type GB (GB/T20234 China Standard)

## Model number definition

EVE      
   

	Classification	Symbol	Meaning of the symbol
①	Basic type	EVE	E series EV charger
②	Rated power	07	1-phase 32A
		11	3-phase 16A
		12	1-phase 48A
		22	3-phase 32A
③	Charging modes	W	Mode 3
④	Charging interface	Blank	Type2(IEC62196-2)
		U	Type1(SAE J1772)
		G	GB(GB/T20234)

## Specifications

### Electrical Specifications

Phase Number	1-phase		3-phase	
Product Model	EVE07W	EVE12W	EVE11W	EVE22W
Rated Voltage	AC110V/240V		AC400V	
Input Frequency	50/60Hz			
Max.output Current	32A	48A	16A	32A
Max.output Power	7.7kW	11.5kW	11kW	22kW
Cable Specification	3x6mm <sup>2</sup>	8AWG	5x2.5mm <sup>2</sup>	5x6mm <sup>2</sup>

## Protection

Over voltage protection	Yes
Under voltage protection	Yes
Over load protection	Yes
Short circuit protection	Yes
Leakage protection	Yes
Over-temp protection	Yes
Lightning protection	Yes

## Function and Accessory

LED indicators	Yes
LCD screen	3.0-inch
RCMU	Type B (AC 30mA+DC 6mA)
Current adjustment	Yes
RFID	Yes
WIFI/Bluetooth	Yes (WIFI 2.4GHz)

## Working environment

Protection degree	IP 65
Operation temperature	-30°C ~55°C
Relative humidity	≤95%RH
Operating elevation limit	≤2000m
Cooling	Natural air cooling
Standby power consumption	<5W

## Mechanical parameters

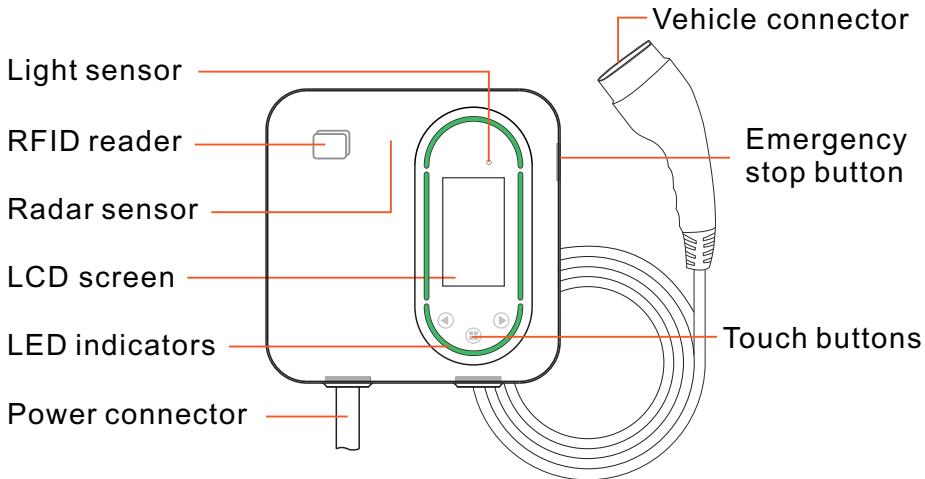
Charging cable	5m (Standard configuration)
Control box	HxWxD=180mm*180mm*70mm
Weight	≤6kg
Colour&Material	White/Black;PC

## Standard&Certificate

Standard	IEC 61851 ; GB/T18487
Certificate	CE,RoHS

# OPERATION

## Overview



## LED indicators

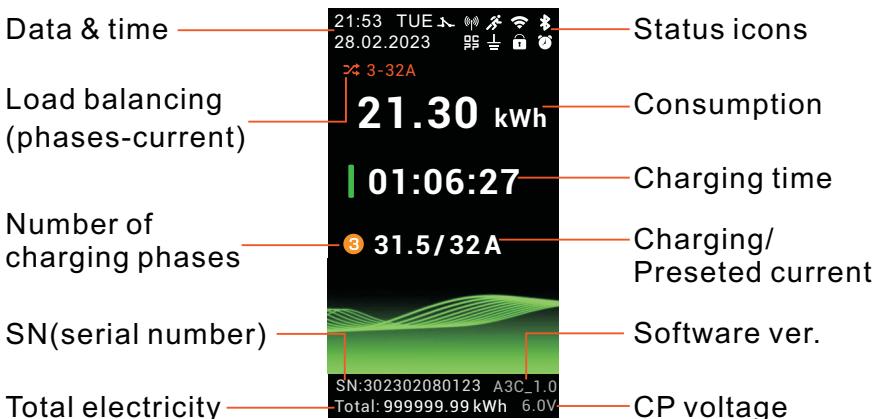
Status	Power On		Charging Standby	Setting Mode	
Indicator Light	Light	Breathing	Breathing	Light	
Status	Reservation Charging	Waiting Car Signal	Charging Finished	Charging Mode	Fault Mode
Indicator Light	Meteor	Breathing	Light	Meteor	Flashing

## Touch buttons



## LCD screen

The LCD screen of the device can view status, safety warnings, charging records, and settings.



Icon	Connotation	Icon	Connotation
Bluetooth icon	Bluetooth enable	Human motion icon	Human motion
Bluetooth icon with signal	Bluetooth connected	Reservation icon	Reservation enable
Wi-Fi icon	Wi-Fi connected	Lock icon	PIN lock enable
Wi-Fi icon with signal	Wi-Fi exchange data	Grounding icon	Grounding connected
EM3-Box icon	EM3-Box connected	Dry contact icon (closed)	Dry contact close
EM3-Box icon with signal	EM3-Box disconnected	Dry contact icon (open)	Dry contact open
OCPP icon	OCPP disconnected	OCPP icon	OCPP connected

# Status display



## Charging Standby

### Touch button

- ◀ No reaction
- ▶ Enter [Charging history] page.
- ▢ Enter [Settings] page, if PIN is enabled, enter the [Unlock] page.



## Reservation charging

Swipe RFID, use APP or enter PIN to skip countdown for charging.

### Touch button

- ◀ No reaction
- ▶ No reaction
- ▢ Enter [Unlock] page, unlock and start charging.



## Waiting Car Signal

During the process of waiting for the vehicle signal, step 1 (green circle) remains on and step 2 flashes.

### Touch button

- ◀ No reaction
- ▶ No reaction
- ▢ No reaction

# Status display



## Charging Mode-1

### Touch button

- ◀ No reaction
- ▶ Enter [Charging Mode-2] page.
- ▢ No reaction



## Charging Mode-2

Display voltage and current of each phase separately, charging power, temperature, and ambient brightness.

### Touch button

- ◀ Enter [Charging Mode-1] page.
- ▶ No reaction
- ▢ No reaction



## Charging Finished

Display consumption and total charging time.

### Touch button

- ◀ No reaction
- ▶ No reaction
- ▢ No reaction



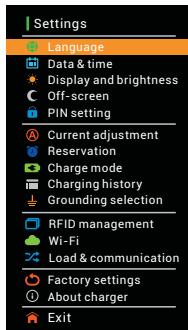
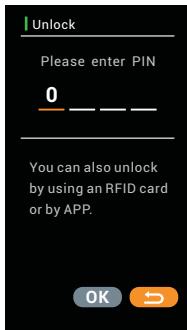
## Fault Mode

Display fault information, fault codes, and handling methods.

### Touch button

- ◀ No reaction
- ▶ No reaction
- Enter [Settings] page, if PIN is enabled, enter the [Unlock] page.

## Setting display



### Button function description

- ◀ Move the cursor up or left, it will be displayed in orange. If the setting is numerical parameter, the button function is reduced.
- ▶ Move the cursor down or right, it will be displayed in orange. If the setting is numerical parameter, the button function is increase.
- Confirm the selection of the orange item. If the setting is on/off, the button function is on or off.



## Data&time

If the device is used for the first time or has not been used for more than 20 days, please set the date and time after turning it on. Incorrect time will affect the scheduled charging function.

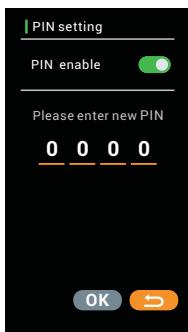
## Display and brightness

This suggestion is to use auto-brightness, which will automatically adjust the appropriate LCD screen brightness according to the ambient brightness.

## Off-screen

Turn off the screen after the set delay time without touching the button. If the proximity sensor is turned on, the LCD screen will light up when the human body is within 5 meters of the device, and the  icon on the status display page will light up. If Off-LED is enabled, the LED will turn off simultaneously with the LCD.

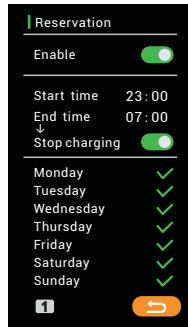
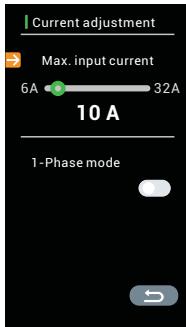
Off-beep is used to disable the beep sound when button is pressed.



## PIN setting

When the PIN is turned on, entering the menu requires entering the PIN, and the  icon on the status display page will light up.

If you forget your PIN, touch the  button, use RFID or APP to unlock, enter the [PIN setting] page of the settings menu, close the PIN or reset the PIN.



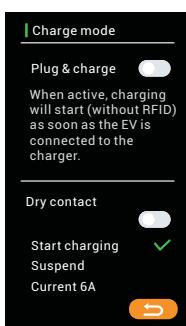
## Current adjustment

Set appropriate charging current according to the capacity of the power grid.

If the 1-Phase mode is enabled, the three-phase device forcibly uses L1 live wire, L2 and L3 do not output during the charging process.

## Reservation

Three reservations can be set, reservation can be achieved between the start and end times. If the stop charging is enabled, charging will pause upon reaching the stop time; otherwise, it will continue until the battery is fully charged, and it needs to meet the week setting. After the reservation is enabled, the  icon on the status display page will light up.



## Charge mode

Plug & charge is enabled, start charging when the charging connector is connected to the vehicle, no other authorization required.

## Dry contact

The dry contact can be configured for three purposes.

**Start charging:** Externally control the start and stop of charging, close the contact to begin charging, open it to stop charging.

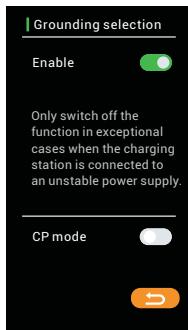
**Suspend:** Externally control the charging station to pause operation, close to pause, open to return to normal.

**Current 6A:** Externally control the charging station to output only 6A for vehicle charging, close to limit to 6A, open to return to normal.

Charging history		
Time	Energy	State
28.03.2023 00:12	23kWh	END: 0000
27.03.2023 23:05	16kWh	ERR 0010
25.03.2023 18:12	66kWh	END: 0000
24.03.2023 19:35	32kWh	END: 0000
23.03.2023 20:58	60kWh	END: 0000
20.03.2023 08:42	5kWh	END: 0000

P1/ 5



RFID management		
No.	ID	Enable
1	D9:79:5E:4A	
2	57:35:8A:39	
3	00:00:00:00	

1 / 2



## Charging history

The device can store up to 30 records, which can be viewed through the left and right buttons (turn orange and touch the  button).

**Note:** After accumulating 30 charging records, the old records will be overwritten one by one.

## Grounding selection

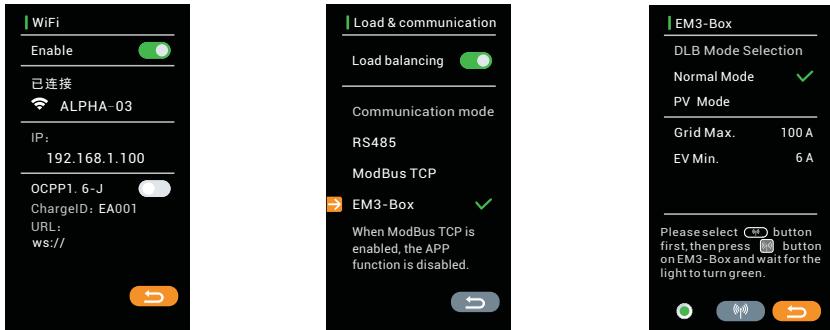
The charger is installed in an ungrounded or poorly grounded power grid, and grounding can be turned off.

**CP mode** is designed to be compatible with certain vehicle models that trigger CP fault, simply enabling it will allow for normal charging.

## RFID management

RFID can be added or disabled, with maximum of six cards added and saved.

**Add RFID:** The cursor stays on the ID option, and after touching the  button, the ID will turn orange. Remove the RFID that needs to be added and approach the device's card swiping area.



## Wi-Fi

The device needs to set wireless name and password through the APP, and can also set static IP address. The ChargeID and URL for OCPP need to be set via the APP.

**Note:** After enabling OCPP, the app will not be able to connect to devices

### OCPP setup steps:

1. Successfully bind the charging station with APP via Bluetooth.
2. Set up WiFi to successfully connect to the network.
3. Configure OCPP parameters.
4. Enable OCPP on the charging station's LCD.

## Load & communication

The device can be communicated through ModBus TCP in WiFi mode. After enabling load balancing, control the current during the charging process through the enabled communication mode.

**Note:** After enabling load balancing, the app will not be able to connect to devices

## EM3-Box

The EM3-Box is an optional component. It is not configured by default and will only appear as an option after purchase. Its function is to externally collect grid or solar current and direction data. For detailed instructions, please refer to the EM3-Box User Manual.

## Start charging

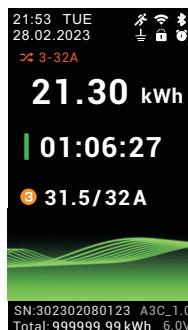
1. Connect the power plug of the charger to a grounded outlet, wait for the device to enter charging standby.
2. Couple the vehicle-end connector of the device to the vehicle's charging socket.
3. Enter the reservation page( If reservation is enabled ). Swipe RFID, use APP or enter PIN to skip countdown for charging.
4. Wait for the vehicle authorization signal, and then enter the charging mode.



Reservation charging



Waiting Car Signal



Charging Mode

## Stop charging

1. Stop the charging process at the controls inside the vehicle, this releases the lock on vehicle's charging coupling.
2. First disconnect the connector coupled to the vehicle, then unplug the connector plug from the power socket or the charging station.

# Installing the App

1. Download and install the app on Google Play or App Store.
2. Allow Bluetooth functionality on your smartphone or tablet, and enable **location** permission on the EV-Charger app.



EV-Charger 



EV-Charger 



EV-charger  
Utilities

## Registration

You must register before using the APP.

**Note: It is not technically possible to use the app without registering.**

**Please note the privacy policy for the processing of your personal data in the app.**

1. Open the EV-charger app, select the language for the app in the top right-hand corner and click on **Register** (Fig. 6)
2. Enter your **email address** and click on **Get code**. You will receive an email with a **6-digit code**. Enter the code in the **Verification code** field.
3. Enter a secure password that you can save in a password manager or memorise.
4. Click on **Register**. Your user account is created and you are automatically logged into the app (Fig. 7).

Fig.6

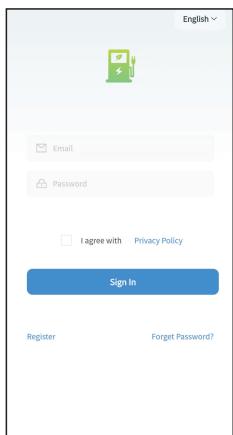
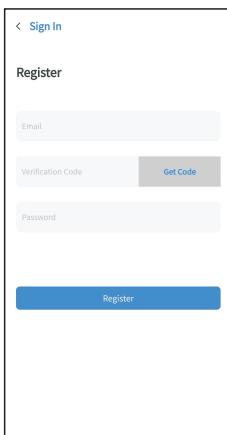


Fig.7



## Connecting the charging station

The charging station is first connected via the Bluetooth connection. Once the connection has been established, the wallbox can be connected via WiFi.

1. Switch on the charging station and hold the smartphone or tablet within range of the charging station.
2. Start the app and tap on the **QR code symbol** or the **plus symbol** in the top right-hand corner (Fig. 8).
3. Now scan the QR code of the charging station, which you will find on the operating instructions and under the housing cover of the charging station.
4. After the QR code has been scanned, enter the **6-digit PUK** and click on **Confirm add** (Fig. 9).
5. The app now searches for the charging station and adds it automatically.

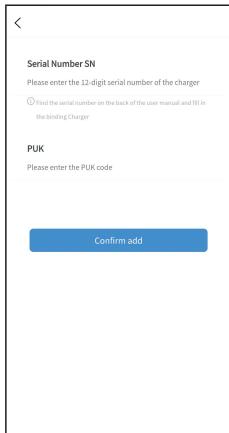
**Note: Accept the authorisations for camera and location that the app requests.**

**Without the permissions, the code cannot be scanned and the charging station cannot be found.**

Fig.8



Fig.9



## WiFi connection

Once the charging station has been connected via Bluetooth, you will find it in the app overview. To connect the charging station to an existing WiFi network, proceed as follows:

1. Select the charging station in the app on the overview page (Fig.10).
2. Tap on the **WiFi symbol**.
3. Enter the **name** and **password** of your WiFi network and click on **OK**. (Fig. 11).
4. The charging station will now attempt to connect to the data you have entered.
5. As soon as the charging station is connected to the WiFi, the **WiFi symbol** lights up on the display of the charging station. Check that the charging station is connected to the network by opening the **WiFi menu** of the charging station.
6. Go back to the overview in the app by tapping on the **arrow at the top left** and refresh the view by **swiping from top to bottom** in the app.
7. The charging station is connected to WiFi when „**Online**“ is displayed in the overview page and the **WiFi symbol** on the status page is blue (Fig. 12).

**Note:** Leave the **DHCP** switch switched on to enable automatic IP address assignment.

Fig.10

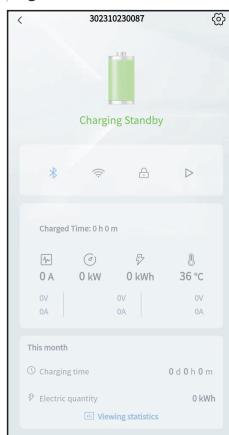


Fig.11

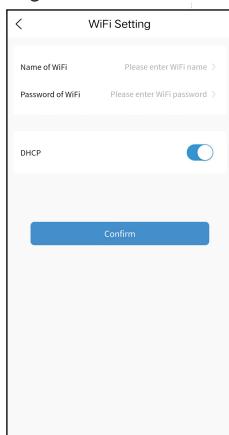
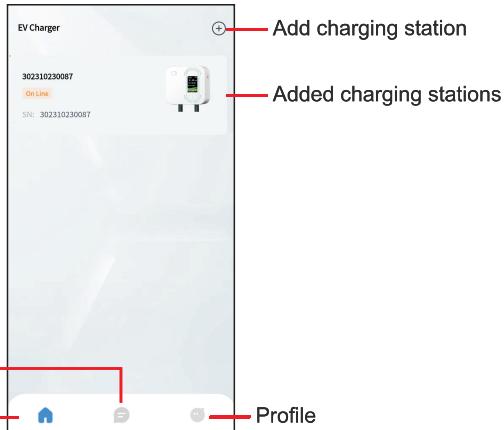


Fig.12



# App Overview

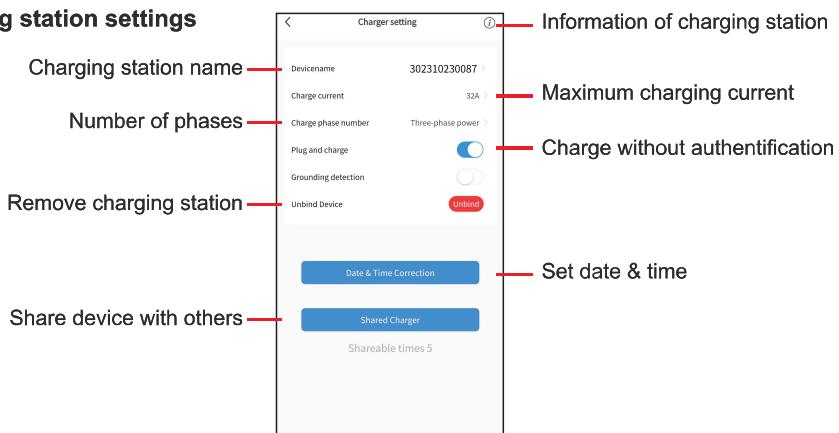
## Overview of charging stations



## Detail page of charging station



## Charging station settings



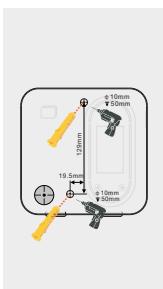
# INSTALLATION



- ① Cardboard
- ② Self-tapping Screws
- ③ Silicone Pad
- ④ Expansion Plugs

## Installation steps

◆ Before installation, please ensure that the power is cut off.



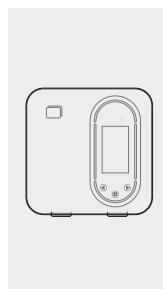
Step1



Step2



Step3



Step4

Step 1: Please drill holes on the wall according to the size of the holes on the **cardboard** and punch in the **expansion plugs**.

Step 2: Install the upper **self-tapping screw**, and reserve about 3 to 4mm threads outside the wall.

Step 3: Remove the decorative panel and wiring cover of the device, and hang the device onto the upper screw. Align the plastic expansion position inside the wiring compartment, cover the lower **self-tapping screw** with a **silicone pad**, and tighten it.

Step 4: Check that the sealing strip of the wiring compartment is intact and close the wiring cover. Lock with screws , install the decorative panel, and tighten the screw.

## FAULT HANDLING

The device is automatically protected in the event of the fault. The fault information and handing methods are as follows.

Fault information	Handling method
Both the LED and LCD screen are not on	<ul style="list-style-type: none"><li>◆ Check whether the power supply and distribution are normal.</li><li>◆ Check breaker is tripped, and open the breaker after troubleshooting.</li></ul>
LED on, and LCD screen not on	<ul style="list-style-type: none"><li>◆ LCD connection cable is loose or LCD is damaged.</li></ul>
Waiting car signal for a long time	<ul style="list-style-type: none"><li>◆ Battery of car is full, the car is in the reservation delay charging mode, or the vehicle connector is not properly connected.</li><li>◆ Disconnect and reconnect the vehicle connector.</li></ul>
Ground Fault Code: 0001	<ul style="list-style-type: none"><li>◆ The device is not grounded, check the input power cable.</li></ul>
RCMU Fault Code: 0002	<ul style="list-style-type: none"><li>◆ The RCMU is damaged and needs to be returned to the factory for repair.</li></ul>
Over voltage Code: 0004	<ul style="list-style-type: none"><li>◆ Check whether the input cable is connected correctly.</li><li>◆ Check whether the input voltage is abnormal.</li></ul>
Under voltage Code: 0008	<ul style="list-style-type: none"><li>◆ Check whether the input cable is reliably connected.</li><li>◆ Check whether the input voltage is abnormal.</li></ul>
Leakage Fault Code: 0010	<ul style="list-style-type: none"><li>◆ Check whether the vehicle connector and its cable are damaged or wet.</li><li>◆ Recover after pulling out the mains connector.</li></ul>

Fault information	Handling method
Over current Code: 0020	<ul style="list-style-type: none"> <li>◆ Check whether the vehicle connector is correctly connected.</li> <li>◆ Check whether the on-board charger is normal.</li> </ul>
CP voltage Code: 0040	<ul style="list-style-type: none"> <li>◆ Check the vehicle connector and charging socket of EV.</li> <li>◆ Disconnect and reconnect the vehicle connector.</li> </ul>
Short circuit Code: 0080	<ul style="list-style-type: none"> <li>◆ Check whether the vehicle connector and its cable are damaged or wet.</li> </ul>
Over temperature Code: 0100	<ul style="list-style-type: none"> <li>◆ Check power plug and socket are in close contact.</li> <li>◆ Check the cable diameter of the socket.</li> </ul>
Emergency stop button pressed Code: 8000	<ul style="list-style-type: none"> <li>◆ The STOP button has been pressed.</li> <li>◆ If no fault occurs, Please press the button again to reset the charger.</li> </ul>

## MAINTENANCE

- ◆ Check whether the join point of the input terminal is in good contact and whether there is any abnormality.
- ◆ If plugs get wet, allow them to dry before using them.
- ◆ Always fit the device with the protective caps when not plugged in.

# **ELECTRIC AND HYBRID VEHICLES**

Model: EVExxW series  
Rev. 2.1