

NEO IEC2 AC Charging Stations User Manual



Welcome

Thank you for choosing NEO AC charger.

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither MANUFACTURER nor any of its affiliates or subsidiaries shall be responsible or liable for the misuse of the information contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

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All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the MANUFACTURER should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use MANUFACTURER software or approved software with our hardware products may result in injury, harm, or improper operating results.

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Safety Information

Before using or maintaining this product, it is important to read the following safety instructions. Failure to follow and implement all the specified instructions and procedures, will invalidate the warranty and as such MANUFACTURER will not be liable for any claims.

DANGER

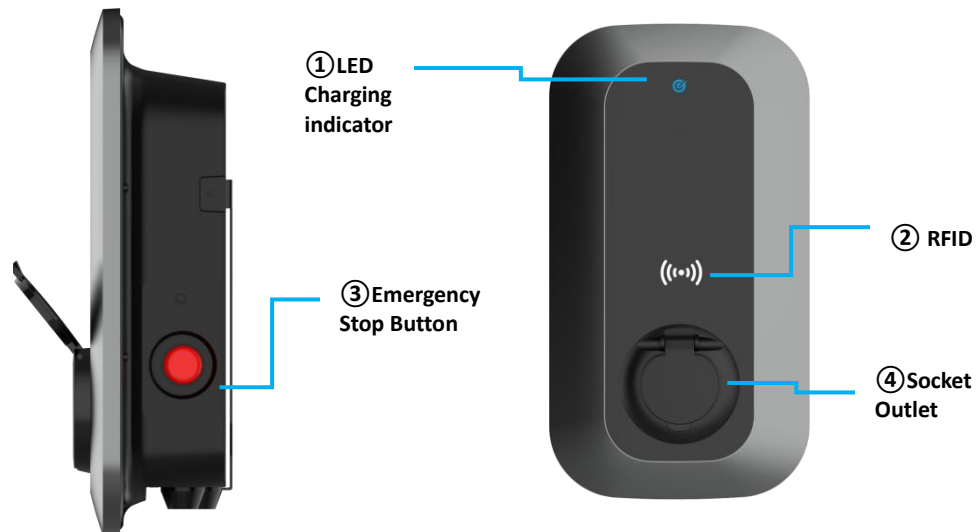
- Do not open the charger.
- Do not use the charger if it is damaged.
- Do not use an extension lead on the charging cable.
- Do not touch or insert foreign objects into the plugs.
- Do not install the charger near flammable, explosive, or combustible materials.

WARNING

- All work on the equipment must only be carried out by qualified personnel who have read and fully understood all safety information and installation requirements contained in this manual.
- The charger must be out of reach from children.
- EV charger must be connected to a protective earth conductor.
- The electrical installation must comply with all local applicable safety requirements, standards and guidelines.
- No modifications must be made to the EV charger.
- Components should not be changed or replaced by the end-user or unqualified personnel.

1. Product Overview

NEO AC charger creates smart, stable and reliable charging experience for electric vehicles owners.



1.1 Main features of products (NO Screen Case B)

- ① LED Charging indicator:

Indicator Signal	Status
Green	Available
White	Core Board initializing
Blue	Charging
Pink	Charging Complete
Yellow	OTA in Progress
Green Flashing	Connected
Yellow Flashing	Reserved
Red Flashing	Unavailable

- ② RFID: indicates the place to swipe the RFID to activate / de-active the charging session.
- ③ Emergency stop button: Press down this button in case of emergency.
- ④ Socket Outlet



1.2 Main features of products (LCD Screen Case B)

➤ ① LED Charging indicator:

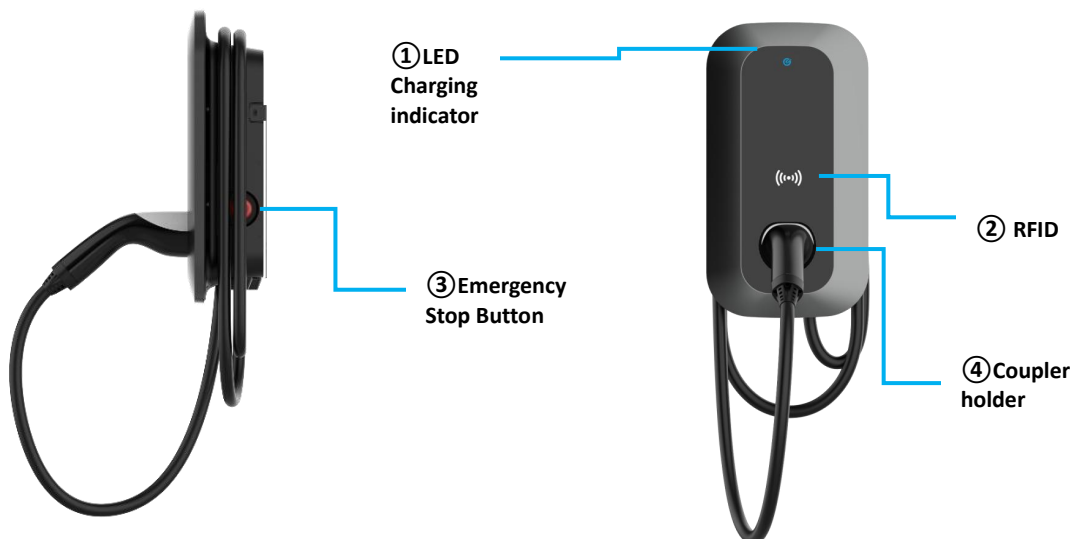
Indicator Signal	Status
Green	Available
White	Core Board initializing
Blue	Charging
Pink	Charging Complete
Yellow	OTA in Progress
Green Flashing	Connected
Yellow Flashing	Reserved
Red Flashing	Unavailable

- ② Display screen: displays the status and parameters of charging station.
- ③ Emergency stop button: Press down this button in case of emergency.
- ④ RFID: indicates the place to swipe the RFID to activate / de-active the charging session.
- ⑤ Socket Outlet



1.3 Main features of products (TFT Screen Case B)

- ① TFT Display screen: displays the status and parameters of charging station.
- ② RFID—indicates the place to swipe the RFID to activate / de-active the charging session.
- ③ Emergency stop button: Press down this button in case of emergency.
- ④ Socket Outlet



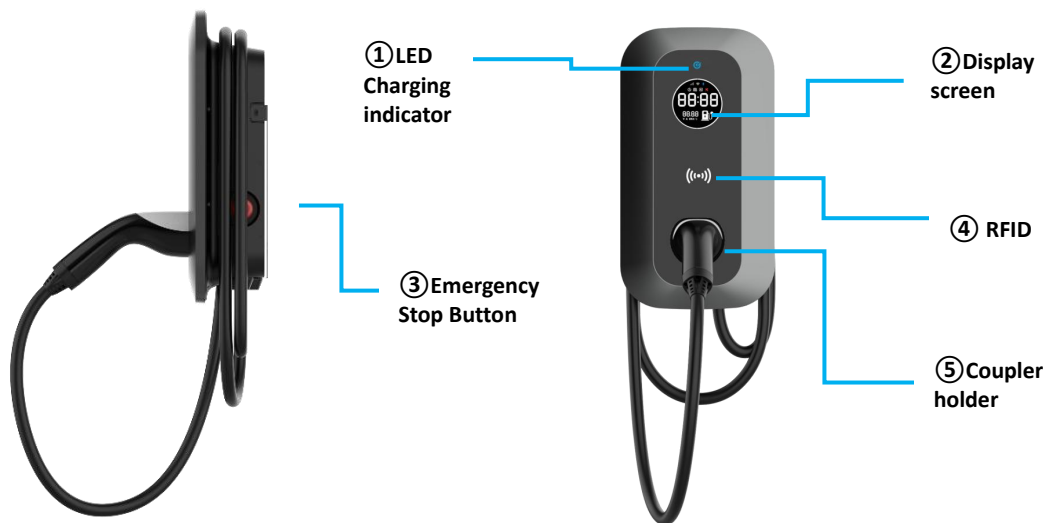
1.4 Main features of products (NO Screen Case C)

- ① LED Charging indicator:

Indicator Signal	Status
Green	Available
White	Core Board initializing
Blue	Charging
Pink	Charging Complete
Yellow	OTA in Progress

Green Flashing	Connected
Yellow Flashing	Reserved
Red Flashing	Unavailable

- ② RFID: indicates the place to swipe the RFID to activate / de-active the charging session.
- ③ Emergency stop button: Press down this button in case of emergency.
- ④ Coupler holder: place the charging coupler head to the coupler holder when the charge station is not in use.

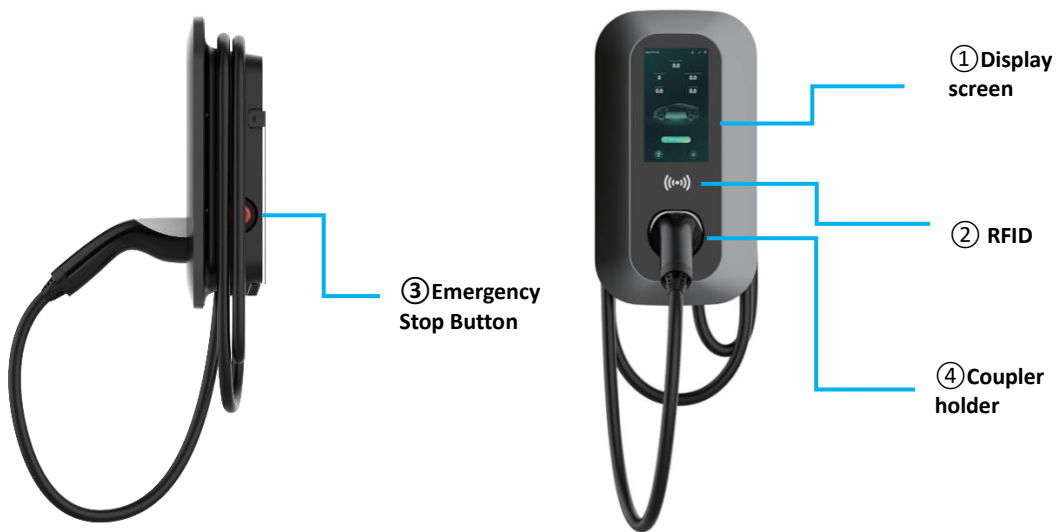


1.5 Main features of products (LCD Screen Case C)

- ① LED Charging indicator:

Indicator Signal	Status
Green	Available
White	Core Board initializing
Blue	Charging
Pink	Charging Complete
Yellow	OTA in Progress
Green Flashing	Connected
Yellow Flashing	Reserved
Red Flashing	Unavailable

- ② Display screen: displays the status and parameters of charging station.
- ③ Emergency stop button: Press down this button in case of emergency.
- ④ RFID: indicates the place to swipe the RFID to activate / de-active the charging session.
- ⑤ Coupler holder: place the charging coupler head to the coupler holder when the charge station is not in use.

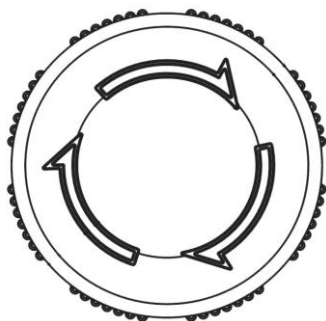


1.6 Main features of products (TFT Screen Case C)

- ①TFT Display screen: displays the status and parameters of charging station.
- ②RFID—indicates the place to swipe the RFID to activate / de-active the charging session.
- ③Emergency stop button: Press down this button in case of emergency.
- ④Coupler holder: place the charging coupler head to the coupler holder when the charge station is not in use.

1.7 Emergency button

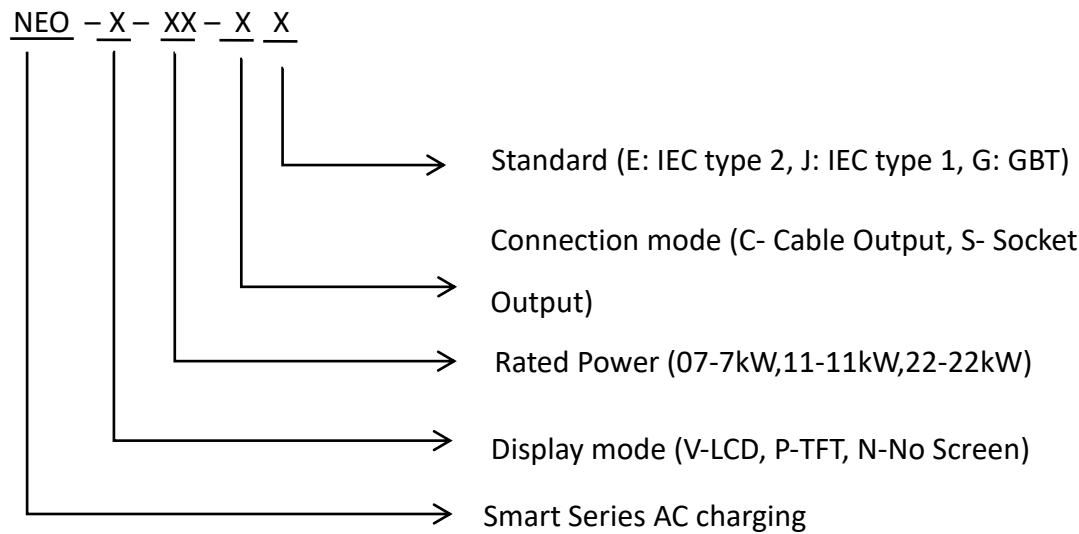
As shown in the figure, when the device is damaged or in an emergency, please press the emergency stop button on the right side of the device, and the charging station will immediately cut off the output; Please stop charging and contact the device maintenance personnel in time.



Warning:

Before release the emergency stop button, please make sure the emergency state is lifted, consult with your installer or qualified electrician before release the emergency stop button.

1.8 Model description:



2. List of Accessories

			
User Manual *1	Certificate *1	Mounting plate *1	Wire clamp plate *1
			
Anchor bolt *4	Flat head screws M6*30mm *4	Round head self-tapping screws M3*8.0mm *2	Pan head screws M4*10mm*3

3. Main Technical Parameters

Product model	NEO-X-07-XX	NEO-X-11-XX	NEO-X-22-XX
Product name	IEC2 charger		
Case Material	PC+ Fireproof and Flame Retardant		
Product size	W210.8*D103.9*H403mm		
Mounting	Wall-mount or on Pedestal (optional)		
Wire-in	Bottom feed		
Net weight	Case B: 2.7kg Case C: 4.5kg	Case B: 3.1kg Case C: 4.4kg	Case B: 3.1kg Case C: 5.4kg
Input voltage	AC 1PH 220V±20%	AC 3PH 380V±20%	AC 3PH 380V±20%
Input frequency	50/60Hz		
Rated power	7kW	11kW	22kW
Output voltage	AC 220V±20%	AC 380V±20%	AC 380V±20%
Output current	32A (max)	16A (max)	32A (max)
Standby power consumption	< 5W		
Working temperature	-25°C ~ +50°C		

Storage temperature	-25°C ~ +70°C
Working altitude	<2000m
Ingress Protection	IP65
Cooling mode	natural cooling
Safety standard	EN/IEC 61851; EN61000; EN301908; EN301489; EN62311; EN300328;
MTBF	17,520 hours
Special protection	UV protection design
Emergency shutdown, over voltage protection, undervoltage protection, over-current protection, leakage protection, grounding protection, temperature protection, waterproof protection, power-off protection and data protection.	

Insulation resistance: the insulation resistance between input loop and ground, output loop and input to output of charging station is $\geq 10\text{M}\Omega$.

4. Installation Instructions



WARNING

All work on the equipment must only be carried out by Licensed Electrician in Australia and the installation process should meet the requirement of AS/NZS 3000.

4.1 Installation environment requirements

4.1.1 This model NEO AC smart charging stations are suitable for outdoor application with its IP65 structure.

4.1.2 Please ensure that the ambient temperature is in the range of -25°C to +50°C.



WARNING

Do not mount the EV charger in areas containing highly flammable materials or gases.

Do not mount the EV charger in potentially explosive atmospheres.

The use of adapter or extension cord is strictly prohibited.

The BCP series EV Charger must be grounded through a permanent wiring system or an equipment grounding conductor.

4.2 Before Installation

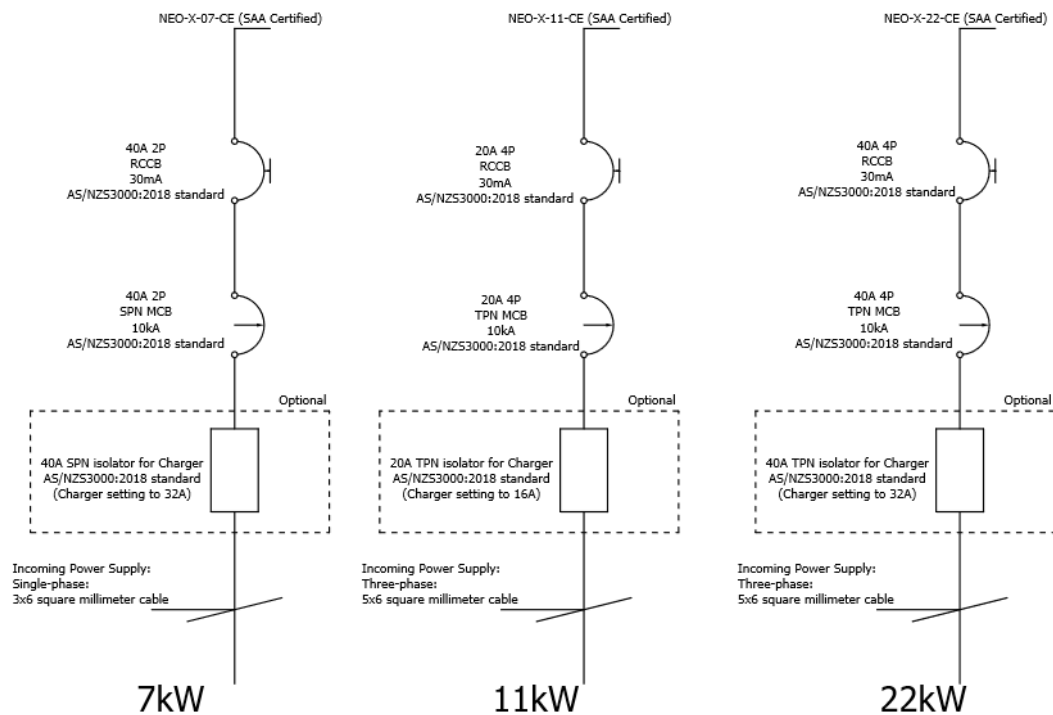
4.2.1 NEO Series intelligent AC charging stations can be installed on the wall or pedestal according to the requirements.

4.2.2 The installer should provide external MCB and RCCB Type A, the MCB and RCCB shall be properly installed at upstream of the charger in the sub-distribution panel with the following requirements and shall also meet the local regulations:

1. The connecting point of the EV supply equipment shall be protected by an RCD having a rated residual operating current not exceeding 30 mA;
2. RCD(s) protecting connecting points shall be at least type B;
3. RCDs shall comply with AS/NZS3000:2018;
4. RCDs shall disconnect all live conductors.

Power Supply	Charger Rating	MCB Main Circuit Breaker	RCCB Residual Current Circuit Breaker
230VAC 1-phase	7kW	40A 2P Curve C 10KA	40A 2p 30mA Type A
415VAC 3-phase	11kW	20A 4P Curve C 10KA	20A 4P 30mA Type A
415VAC 3-phase	22kW	40A 4P Curve C 10KA	40A 4P 30mA Type A

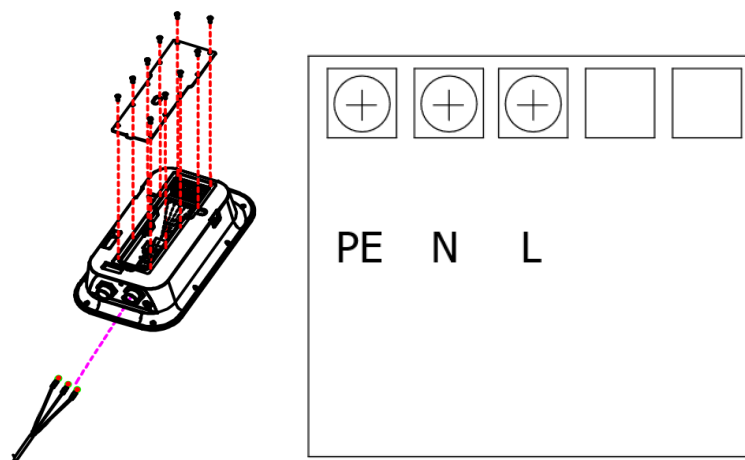
4.2.3 AS/NZS3000:2018 does not create a requirement for separate isolation switches to be located at EV charging locations. The appropriateness of installing an isolation switch proximate to the EVSE will vary depending on the installation.



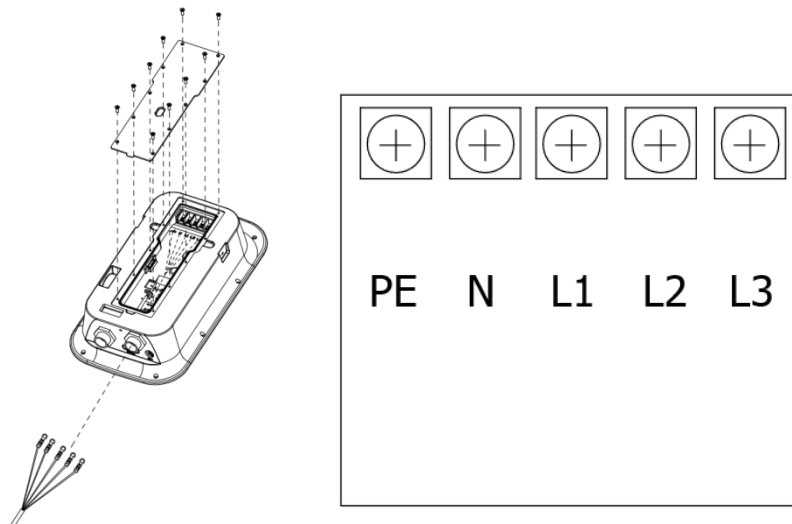
4.3 Wall mounting

4.3.1 Remove 10 x M3 x 8.0mm screws on the back cover, connect AC power supply cord to the corresponding terminals labeled L, N, PE (NEO-X-07-XX) or L1, L2, L3, N and PE (NEO-X-11-XX or NEO-X-22-XX). The size of input cable should meet the requirements of AS/NZS 3008. It is recommended to use at least 6 square millimeters copper cable with RV8-4 terminal.

Tighten cable gland and assemble the back cover, tighten 10 x M3 x 8.0mm screws.

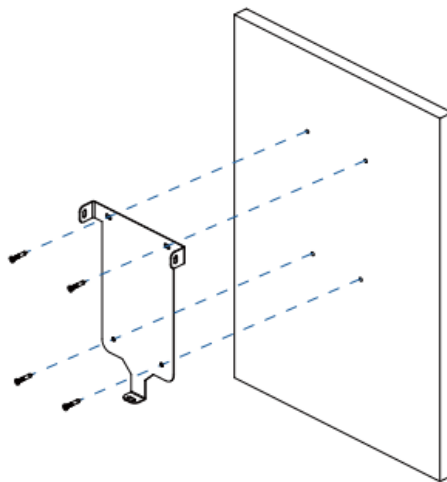


Connect with AC power cord (NEO-X-07-XX)

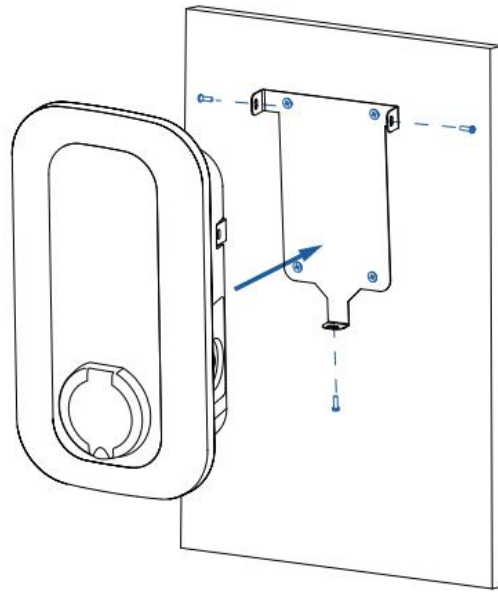


Connect with AC power cord (NEO-X-11-XX or NEO-X-22-XX)

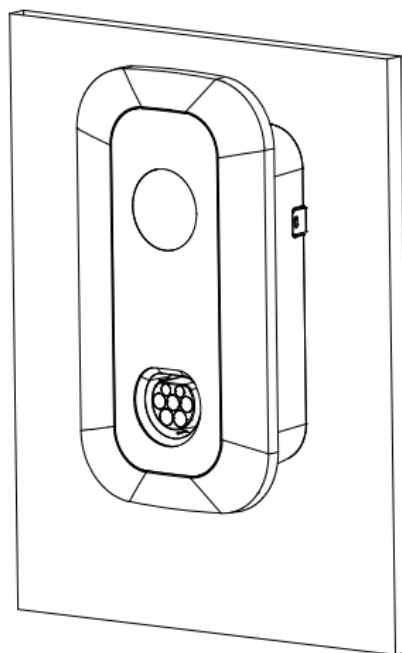
4.3.2 Use the mounting plate as template to position the holes on the wall, drill three $\phi 8$ mm holes at depth of 45 mm. Fix the mounting plate on the wall with 4 x M6 x 30mm screws.

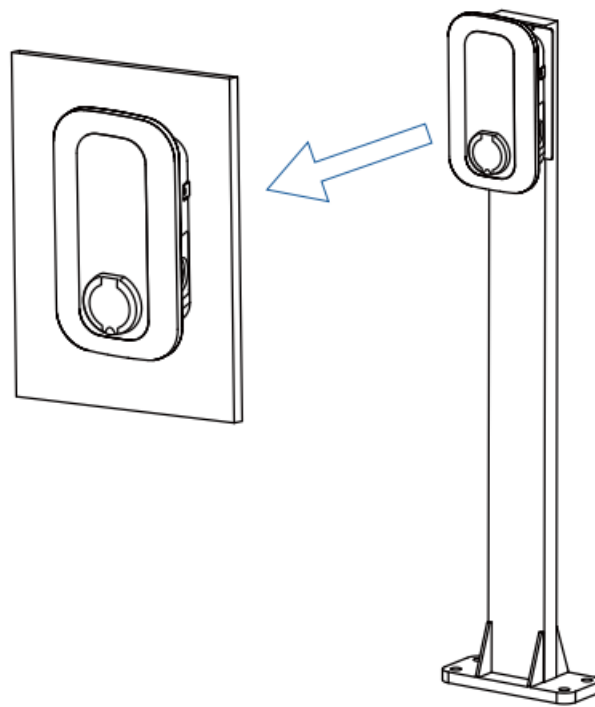


4.3.3 Fix the charger on mounting plate with 3 x M4 x 10 mm screws.



4.3.4 The final effect picture after fixing the charging pile.





5. (OCPP Mate) Operation Manual

Please use your SMART phone to scan the following QR code to download the latest APP.

Download link: <https://appstore.sheway.com/download/releases/1440>



5.1. The APP home page is displayed

- A. Click on the blank space of Figure 1 or click  "Go to the charging station equipment search page as shown in Figure 2;
- B. If the device is not found, please click the button below Figure 2 again"
";
- C. Click the searched charging station ID to connect. The connection shown in Figure 3 shows the basic information of the charging station.

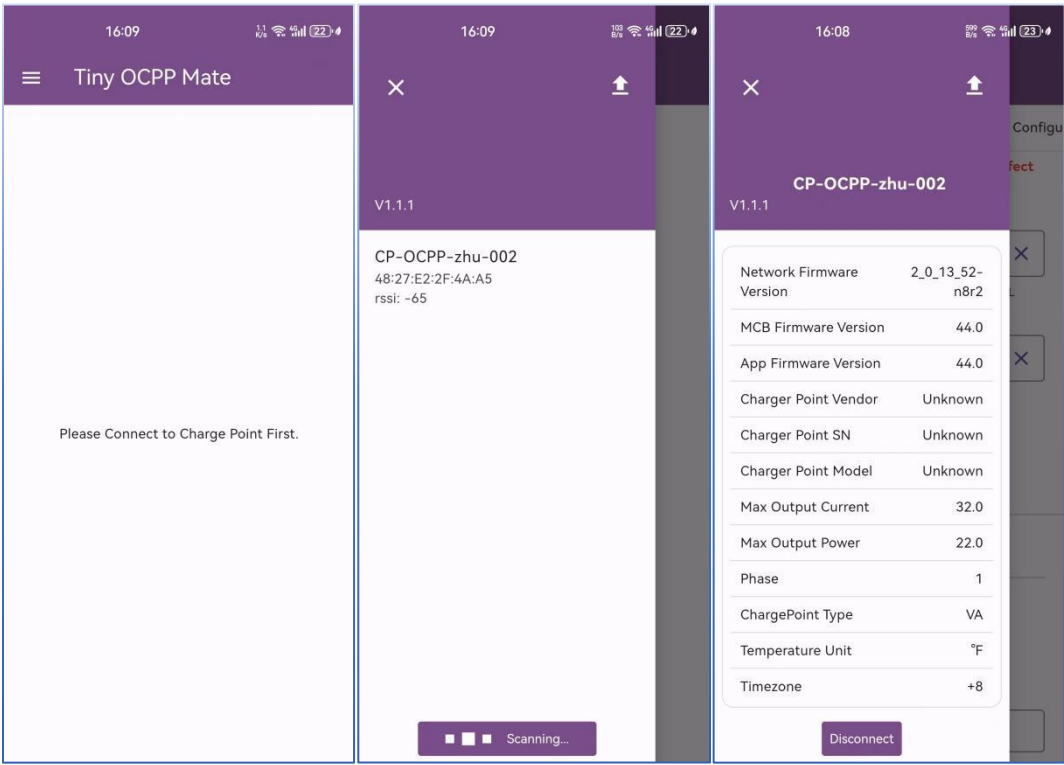


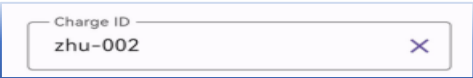
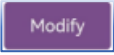
Figure 1

Figure 2

Figure 3

5.2 Modify the URL link and Charge ID and configuration network:

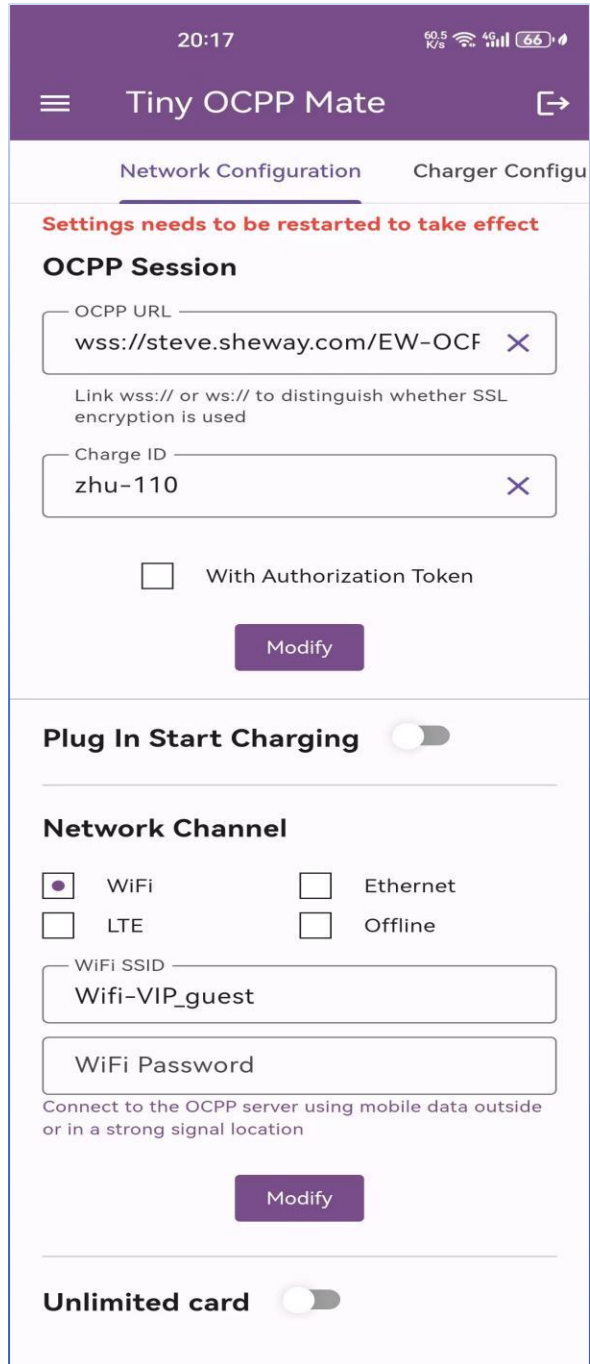
5.2.1 URL of charging station and Charge ID modification.

- A. The URL link modification""Click × to delete the content of the filling box, and enter the URL link address of the corresponding charging station (standard: ws / wss beginning);
- B. Charge ID modify""Click × to delete the content of the fill-in box, Input the one corresponding to the charging station Charge ID;
- C. The above URL link and charging station Charge ID parameter modification are completed, Please click on "" to submit.

5.2.2 Network switching

- A. Switch to the WiFi network,Enter the WiFi name and the WiFi password:"";
- B. Switch to the Ethernet network:"";

- C. Switch to the 4G network: "☐ LTE";
- D. Switch to the offline network "☐ Offline";
- E. After any of the above network switching is completed, **Please click on "  " to submit.**



The screenshot displays the 'Tiny OCPP Mate' mobile application interface. At the top, the status bar shows the time 20:17, battery level at 60.5%, and 4G network connectivity. The app header includes a menu icon, the title 'Tiny OCPP Mate', and a share icon. Below the header, there are two tabs: 'Network Configuration' (selected) and 'Charger Configuration'. A red warning message states 'Settings needs to be restarted to take effect'. The 'OCPP Session' section contains an 'OCPP URL' field with the value 'wss://steve.sheway.com/EW-OCF' and a 'Charge ID' field with the value 'zhu-110'. A checkbox for 'With Authorization Token' is currently unchecked. A 'Modify' button is located below these fields. The 'Plug In Start Charging' section features a toggle switch that is currently turned on. The 'Network Channel' section has four radio button options: 'WiFi' (selected), 'Ethernet', 'LTE', and 'Offline'. Below these are fields for 'WiFi SSID' (containing 'Wifi-VIP_guest') and 'WiFi Password'. A note indicates to 'Connect to the OCPP server using mobile data outside or in a strong signal location'. Another 'Modify' button is present. At the bottom, the 'Unlimited card' section has a toggle switch that is currently turned off.

Figure 4

5.3.LAN upgrade :

- A. Click the icon "  " in Figure 2 to enter the LAN upgrade page in Figure 2;
- B. Click the found LAN device to connect Figure 5, Figure 6;
- C. After connecting, enter the mobile phone file management inside to find the saved upgrade file Figure 7;
- D. Click on the upload to wait for the upgrade to complete Figure 8.

(Tips: The charging station and the mobile phone must be connected to the same network, and the upgrade file should be saved to the mobile phone)

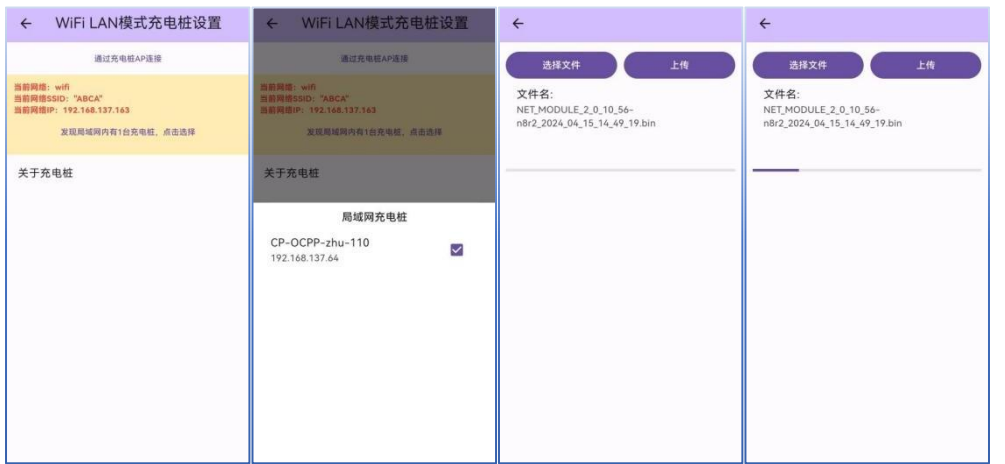


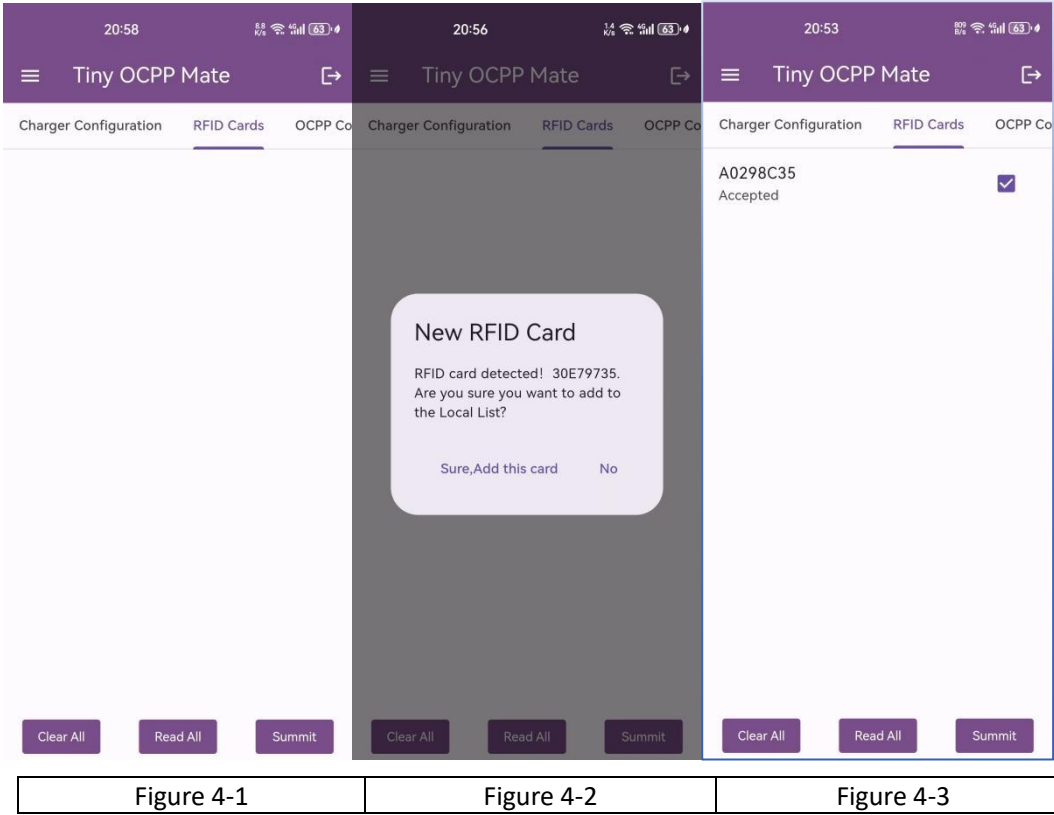
Figure 5	Figure 6	Figure 7	Figure 8
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5.4 OCPP expansion configuration

As shown in Figure 4, OCPP Session area is used to set the URL and Http Authorization Token of OCPP server, and Network Channel area is used to set the networking mode of charging station. Currently, it supports four working modes: Offline, WiFi, Ethernet and 4G. The following table shows a comparison of various network methods:

operate mode	illustration
Offline	This mode is suitable for non-connected scenarios. Open LocalAuthorizeOffline option as shown in Figure 6 before charging by swiping card
WiFi	Suitable for indoor, configured WiFi LAN network scenarios
Ethernet	Indoor and outdoor can be, need to use the network cable supporting RJ-45 interface, if the use of high-speed network cable, please choose the wire with shielding media.
4G	Suitable for outdoor, please keep the scene mobile data network signal good

1. If the charging station (the network needs to switch " ☐ Offline " mode),Please use the Android phone with NFC function and switch to the page as shown in Figure 4-1. Follow the following steps to add the card number:



- A. Attach the card to the NFC area of the phone;
- B. The App recognizes the card number and asks whether it is added to the App. Figure 4-2;
- C. After the card is added to the App, Figure 4-3, click the card option to choose "Accepted" or "Blocked" mode. In order to remove the card from the App, the user need to long press the screen.
- D. After the operation, click the right side of the card to upload to the charging station, click "Summit" button to submit the list to the charging station.(Note: During submission, the charging station will remove all the card information added before).
2. After the card configuration is completed, you can use the card to charge with the credit card.

5.5 Output current setup

As shown in Figure 9, the user can use OCPP Mate to set maximum output current to meet the mandatory Service and Installation Rules of each state and territory.[君蔡1]

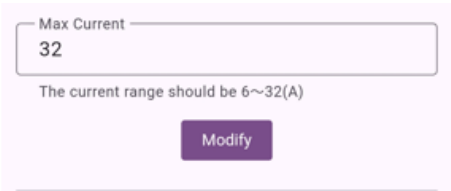


Figure 9

6. Charger User Guide

6.1 The LCD Displays ICONS Function.



6.1.1 4G signal icon: When optional 4G modem is equipped and activated, it indicates the strength of 4G signal.

6.1.2 WIFI icon: The icon lights up after successful connection with the WIFI router.

6.1.3 Bluetooth icon: The Bluetooth icon lights up after successful connection with Bluetooth remote control or smart phone.

6.1.4 Charging duration indicator: the icon lights up when charging in progress, and the main time window displays the charging duration (hours: minutes).

6.1.5 Reservation indicator: lights up when the charger is set to reservation charge mode via APP.

6.1.6 Smart charging indicator: When the APP has set smart charging, the icon lights up. The system will automatically adjust the charging power according to the time set by the user.

6.1.7 Error icon: when the equipment is fault, the icon lights up and the error code is displayed in the time window.

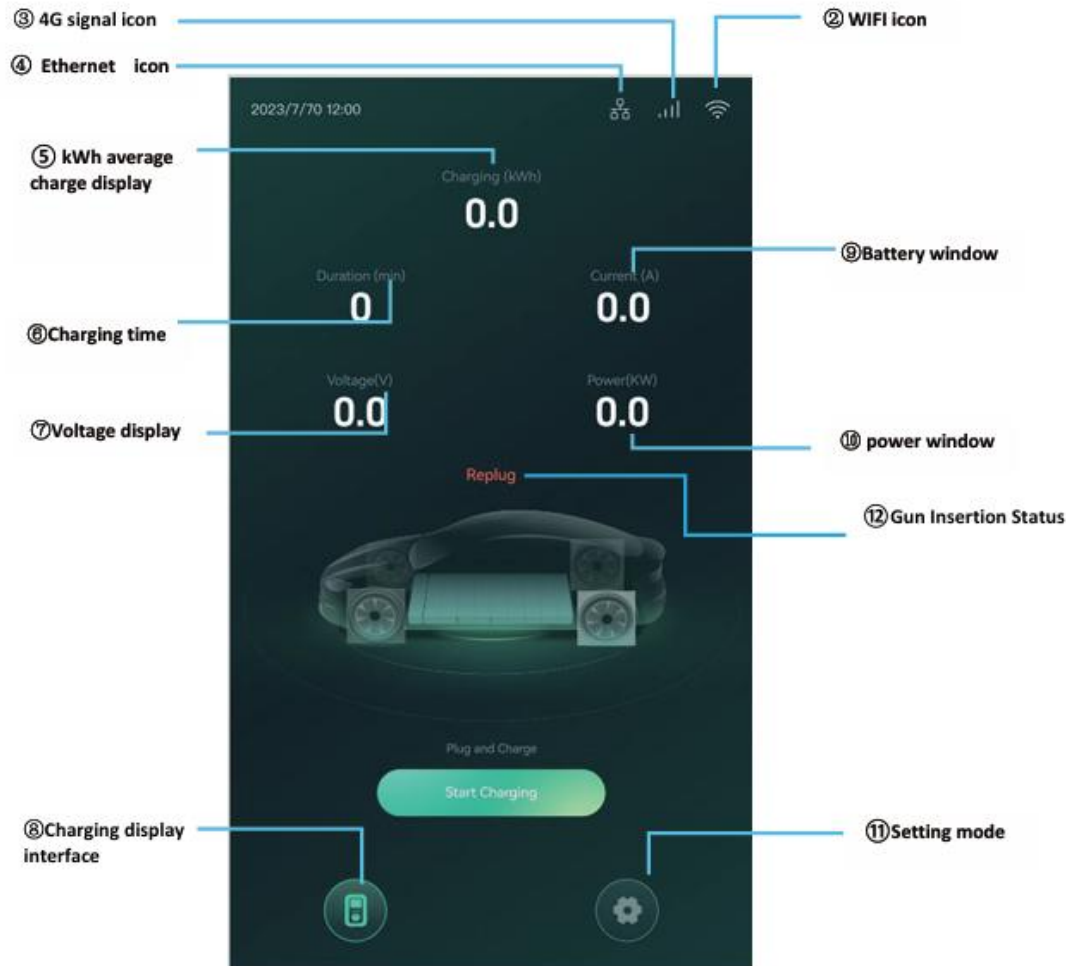
6.1.8 Time window: display charging time parameters or error code.

6.1.9 Parameter window: displays the charging voltage, current, power, and the temperature in the charging station.

6.1.10 Connector status indication: the icon flashes when it is not connected to the EV, and the icon is always on when it is connected to EV.

6.1.11 Charging status indication: 3 icons are always on when charging is not in progress, and the flashing light indicates charging in progress.

6.2 The TFT Displays ICONS Function



6.2.2 WIFI icon: The icon lights up after successful connection with the WIFI router.

6.2.3 4G signal icon: When optional 4G modem is equipped and activated, it indicates the strength of 4G signal.

6.2.4 Ethernet icon: The Ethernet icon lights up, indicating that the Ethernet is connected.

6.2.5 kWh average charge display: This shows the average power per hour of charging.

6.2.6 Charging time: This window shows the total accumulated time for a single charging run.

6.2.7 Voltage display: This window shows real-time charging voltage fluctuations.

6.2.8 Charging display interface: Click the charging display interface to display the current charging information.

6.2.9 Battery window: During the charging process, the current charging quantity value is displayed.

6.2.10 Power window: Window showing real-time power for the current state of charge.

6.2.11 Setting mode: software function parameter setting.

6.2.12 Coupler Insertion Status: This shows the status of the charging coupler when it is plugged in and unplugged.

6.3 Charging station operation sequence

6.3.1 Ensure the Emergency Stop Button is released.

6.3.2 Power-on the charger, wait until the self-test is completed. The LED indicator turns green when charger is standby.

6.3.3 Unplug the coupler from the coupler holder and connect to EV socket (IEC Type 2).

6.3.4 Charging session automatically starts (under default plug-and-charge setting), the LED indicator turns blue.

When optional RFID module is activated, you may swipe RFID card to activate the charging session.

6.3.5 When the charging is completed, wait until the LED indicate turns pink, unplug the coupler from EV and plug it back to the coupler holder on the charger.

You may end the charging session from your EV (interface varies from different EV models);

Or use smart phone APP or Bluetooth remote controller to stop the charging session (when optional WIFI/Bluetooth module is supplied);

Or swipe RFID card to stop charging session (when RFID module is supplied).

6.3.6 In case of abnormal situation during charging, press the emergency stop switch immediately, and call for service technician from your charger provider.

Attention:

Don't unplug the EV Charger before the charging is completed, there's risk of electric shock.

7. Error code

For NEO-V-XX-XX and NEO-P-XX-XX, error code will display on screen when fault occurs. Error codes are listed in the following table:

error code	Fault description
E01	Grounding fault
E02	Leakage current protection
E03	Input overvoltage
E04	Input undervoltage
E05	Overcurrent protection
E06	Charging coupler abnormal.
E07	Emergency Stop Button is pressed down
E08	Coupler locking mechanism abnormal
E09	Line-Neutral polarity reverse connection
E12	Temperature sensor 3 failed.
E20	Relay open circuit
E21	Relay adhesion

For NEO-N-XX-XX, error code are displayed by the charging indicator signal. The indicator signal representation are listed in the following table:

Indicator Signal	Fault description
Red	Emergency Stop Button is pressed down
Blue Flashing	S2 disconnect from EV side while charging
Red and Yellow Alternating Flashing	Leakage Fault
Red and White Alternating Flashing	Output Relay Fault in Standby
Red and White Alternating Flashing	Relay Fault During Startup
Red and Blue Alternating Flashing	Grounding fault
Red and Pink Alternating Flashing	Overcurrent protection
Red and Green Alternating Flashing	Line-Neutral polarity reverse connection

8. Warranty

Your NEO series IEC2 charger has the benefit of our guarantee, which covers the cost of repairs for 24 months from the date of installation. This gives you the reassurance that if, within that time, your charger is proven to be defective because of workmanship or material defect we will, at our discretion, either repair or replace the charger at no cost to you.

Warranty Limitations:

The Warranty is valid only for products purchased either directly from Manufacturer or from an authorized reseller of Manufacturer.

- 1) Any defect or damage which is a result of repair, alteration, or modification performed without the written permission of Manufacturer.
- 2) The use of parts not manufactured, sold or approved by Manufacturer in any replacement or repairment.
- 3) Cases where the Product is operated on an electrical supply which is not in accordance with the ratings specified in writing by Manufacturer.
- 4) Product is damaged as a result of incorrect installation or being used for a purpose for which it is not designed, sold or otherwise not in accordance with any written specified instructions for use or Product installed by third party manufacturer not approved by CUSTOMER or Manufacturer.
- 5) If changes occur in the condition or operational quality of the Product due to incorrect storage, transportation, mounting, climate or any other influence outside the control of Manufacturer.
- 6) Product is further damaged as a result of operating the product when it was known to be defective.
- 7) Product parts requiring replacement due to normal wear and tear including the replacement of the following parts: cables, couplers, and user interface.
- 8) When the damage is caused directly or indirectly by utility supply problems, insect or animal attacks, lack of user care, vandalism, incorrect power supply, electrical storm damage, flooding or any other weather phenomena.
- 9) Unauthorized operation or modification to the Product or any disregard of the instructions contained in the User manual.
- 10) Any loss, damage, or destruction to the Product due to an event of force majeure that is an act of nature; and/or.
- 11) Any loss, damage or destruction to the Product arising from, or caused or contributed to by, the Customer's or End-User's negligence or the negligence of the Customer's agents or servants.
- 12) The firmware changes due to the modifications asked by the customer or changes in standards.

9. Recycling and disposal

- 1) This device is used to charge electric vehicles and is subject to the EU directive 2012/19 / EU on waste electrical and electronic equipment (WEEE).
- 2) Disposal must be according to national and regional Regulations for electrical and electronic equipment respectively.
- 3) Old devices and batteries must not be disposed of with household waste or bulky waste. Before the device being disposed of should it be rendered inoperable.
- 4) Dispose of the packaging material in the region's usual collection container for cardboard, paper, and plastics.

