OCULAR

IQ MINI INSTALLATION GUIDE

IOCAH30-7TE-CRW4 / IOCAH30-7SE-CRW4
IOCAH30-22TE-CRW4 / IOCAH30-22SE-CRW4

Version 1.0

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CONTENTS

IMPORTANT!

Read this entire document before installing or using the charger.
Failure to do so or to follow any of the instructions and warnings in this document can result in fire, electrical shock, serious injury, or death.

The charger must be installed by a qualified electrician.

The entire installation must comply with the latest AS/NZS 3000:2018 standards.

SPECIFICATIONS

Model Number	IOCAH30-7TE-CRW4-M	IOCAH30-22TE-CRW4-M	IOCAH30-7SE-CRW4-M	IOCAH30-22SE-CRW4-M
Power				
Power Output	7.2kW (1-Phase)	22kW (3-Phase)	7.2kW (1-Phase)	22kW (3-Phase)
EV Charging Connector	5m Type-2 Cable		Type-2 Socket	
Input and Output Voltage	230V ± 20%	400V ± 20%	230V ± 20%	400V ± 20%
Input and Output Current	32A max per phase			
Recommended Circuit Breaker	40A type A RCBO			
Frequency (Hz)	50/60Hz			
User Interaction				
Display	LED indication lights			
RFID Reader	ISO14443 Type A cards compatible			
Charger Control Method	Mobile App, physical button, RFID, start on plug			
Safety				
Internal RCD	30mA AC & 6mA DC Leakage			
Electrical Protection	Over current, Short circuit, Over voltage, Under voltage, Ground fault, Lightning surge, Over temperature			
Communication				
OCPP	1.6J and 2.0.1 (Firmware upgrade required)			
Internet Connection	Ethernet, Wi-Fi, 4G			
Additional Communication Type	Modbus (TCP/IP)			
Energy Meter	Integrated Meter			
Load Control	Compatible with Ocular Load Controller or OCPP smart profiles			
General Data				
Ambient Air Temperature for Operation	-30°C to +50°C in operation			
Ambient Air Temperature for Storage	-40°C to +70°C in storage			
Working Humidity	5% - 95% relative humidity, non-condensing			
IP Performance	IP55, IK10			
Mounting	Wall Mount			
Dimension (H x W x D, mm)	398 * 285 * 226 mm			
Net Weight	4.5 kg	4.7 kg	1.5 kg	1.7 kg
Certification	CE, IEC /EN 61851-1, IEC 61008-1-A1, IEC 62955-1-A1, IEC/EN 61851-21-2, IEC 62196-2, RCM			
Warranty	2 Years (Extended warranties available)			

PRODUCT OVERVIEW

No	Item
1	Type-2 charging cable and plug
2	LED status indicator
3	RFID
4	Physical button
5	Plug storage recess

SAFETY INSTRUCTION

This document contains important instructions and warnings that must be followed when installing and maintaining the Ocular IQ Home Solar.

WARNINGS

Installation and maintenance of the charger should only be conducted by a qualified and licensed electrician.

Make sure that materials used, and installation procedures follow local building codes and safety standards, including AS/NZS 3000:2018.

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

Always deenergise and isolate the unit before installation, opening the unit, or performing maintenance from the circuit breaker or isolator.

Do not attempt to open, disassemble, repair, tamper with, or modify the charger unless you are a licensed electrician. The unit is not user serviceable.

Do not use the charger if it appears defective, cracked, frayed, broken, damaged, or fails to operate.

Do not use this charger if the EV charging cable is frayed, has broken insulation, or shows any other indication of damage.

Do not use this charger if the enclosure or EV charging connector is cracked, open, or shows any indication of damage.

Do not touch the charger sockets with sharp metallic objects, such as wire, tools, or needles, and do not put fingers into the sockets.

Incorrect installation and usage of the charger could potentially damage the vehicle's battery and/or the charger itself, voiding the warranty for both.

Do not operate the charger in temperatures outside its range of -30°C to +50°C.

Ensure that the EV charging cable is positioned properly in the charging sockets. Do not use cleaning solvents on any charger components.

NOTES BEFORE INSTALLATION

The charger should be protected by an external Residual Current Device (RCD) to be installed in the upstream circuit which complies with the following:

- Type-A Rated residual operating current not exceeding 30 mA
- Required as per Appendix P, AS/NZS 3000:2018 Australian and New Zealand Standards for EV charging stations.

Recommended (Note installation requirements are site specific and may vary):

- 40A 30mA Type A RCBO
- Isolation Switch close to the charger
- $10mm^2$ 2C (or 4C) + E Cabling

TOOLS REQUIRED

- Philips #1 screwdriver
  Philips #2 screwdriver
- 2.5 mm flat blade terminal screwdriver
- Step drill bit
- Electric drill
- EV charger tester (e.g. Metrel 3152)
- Laptop or mobile device
- Ferrule crimping tool

Notes:

Installer is responsible for providing appropriate glands, fittings and conduit to secure the incoming power supply, and Data cables. For the power cable entry, a 25mm gland or Plain to Screw Adaptor for using conduit can be used. For Data cable entry, a 16mm glad can be used or a 20mm Plain to Screw Adaptor for conduit. Installer will need to use a step drill bit to open the hole to 20mm.

For a rear entry installation, the installer will need to use the step drill bit to open up a hole in the back of the charger.

It is the Installers responsibility to maintain the IP rating of the charger during and after installation.

BOX CONTENTS

EV Charger

Entry Hole Caps

Ferrule crimps x 4

Ferrule crimps x 3

M5x40 screws x 3

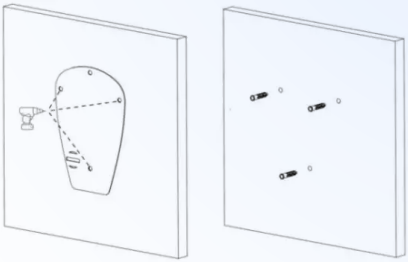
Expansion screws x 3

Opening tool

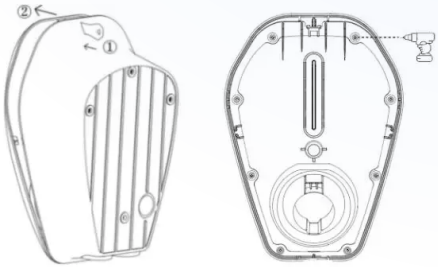
Template

WALL MOUNTING AND WIRING

1. Use the enclosed template to mark and drill the mounting holes. Only three screws are required during wall mounting. Using the top screw hole is not required.



2. Using opening tool (included in the box) remove the black front cover, then unscrew the gray panel.

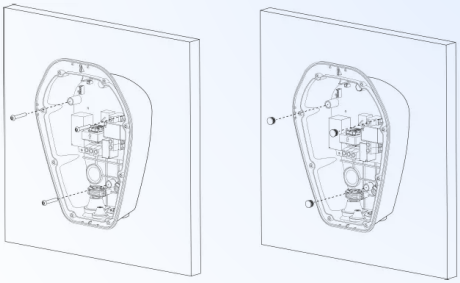


3. Unclip the communication cable and put the front panel aside to protect the cover during installation.

The charger can be installed with the power and data cables coming in from the bottom using the existing entry holes, or with the cables coming in through the wall and rear of the charger. For rear entry, use a step drill bit to make a hole in the space provided. Ensure appropriate steps are taken to seal the opening to maintain IP rating. Seal the bottom entry holes with the provided entry hole caps.

4. Remove rubber plugs, fix the device on the wall with screws, and then replace rubber plugs.

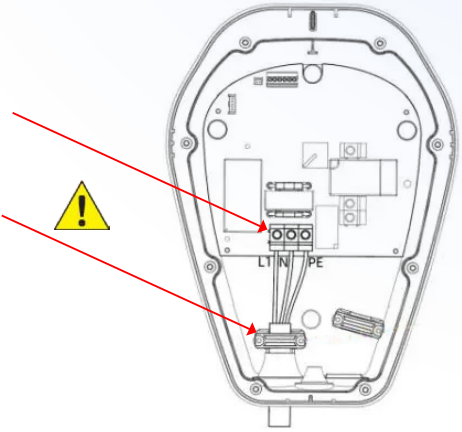
   It is critical that the rubber plugs get replaced otherwise the IP rating of the charger will be impacted.



5. Connect the cables into the terminal block.

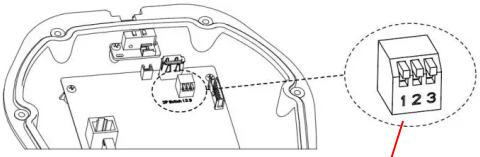
   Tighten the terminal with a torque of 1.2 Nm. Do not over-tighten.

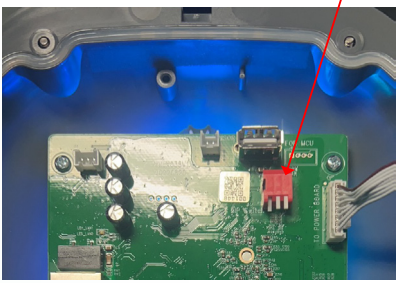
   For cable clamp, tighten the screws with a torque of 0.5-0.7 Nm. The bottom cable clamp is removable if required.



6. The Dip Switch located on the PCB behind the front panel can be used to set a hard current limit on the charger. A switch in the up position is OFF, while a down position is ON.

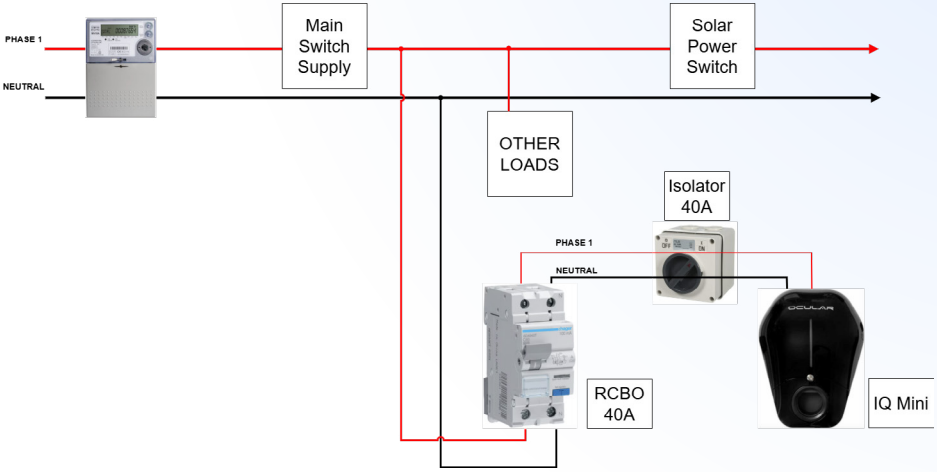
   Inform the customer that the charger has been set with a hard limit and make a note in this user manual.



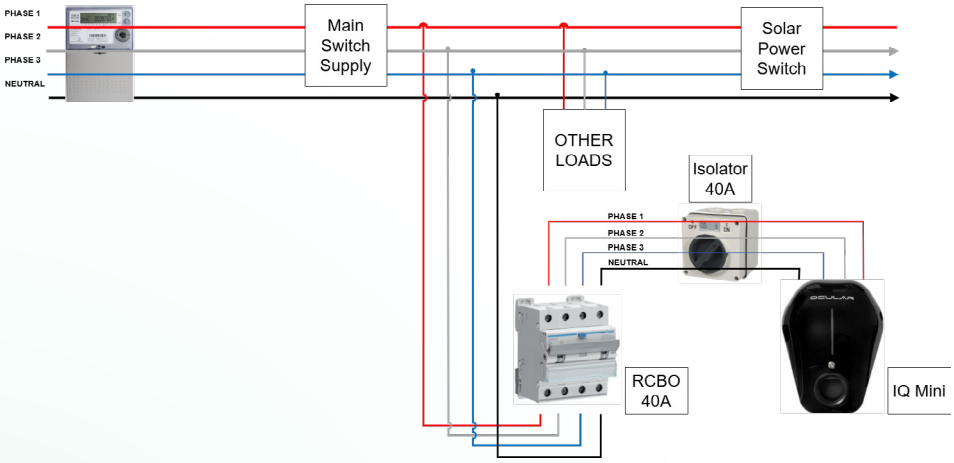


Dip 1	Dip 2	Dip 3	Current Limit
OFF	OFF	OFF	32 A
OFF	OFF	ON	25 A
OFF	ON	OFF	20 A
OFF	ON	ON	16 A
ON	OFF	OFF	10 A

SINGLE PHASE INSTALLATION



THREE PHASE INSTALLATION



INTERNET CONNECTION AND CHARGER INSTALLATION

The charger must be successfully connected to the internet during the installation process to ensure proper operation. There are three options for internet connectivity:

- Ethernet (recommended for maximum internet stability)
- WiFi
- 4G (4G capable units only)

Connect the ethernet cable to the WAN port behind the front panel.

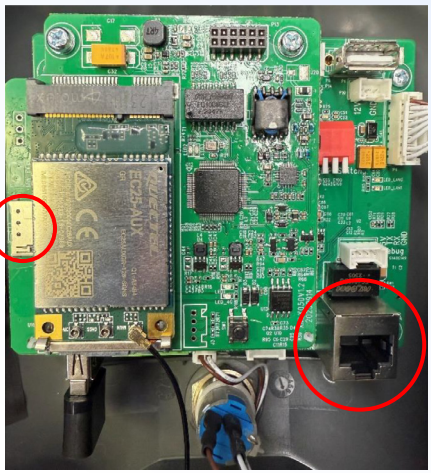
4G capable units will have a SIM card slot that can take a Nano Sized Sim card. To use 4G, Insert the SIM card into the SIM card slot. Confirm that the SIM card is fully seated. Configuration of the SIM card details will be completed at a later stage.

After the charger has been mounted, connected to incoming power and ethernet or 4G has been connected, the unit can be closed. WiFi connection can be done after the charger has been energised.

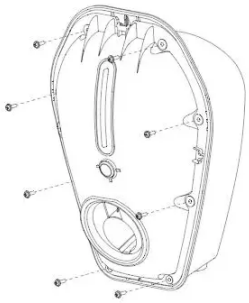
Reconnect the communication cable to the PCB on the front panel, tighten the screws to secure the front panel.

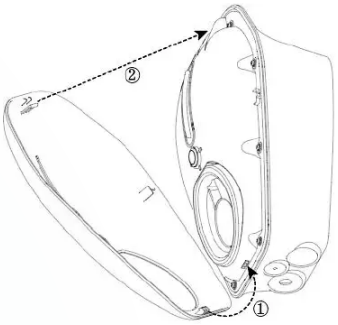
If the entries at the bottom of the charger were not used for any reason, replace rubber seals with plastic Entry Hole Caps.

Tighten the screws with a torque of 0.2-0.5 Nm.
Do not over-tighten.



SIM Card and WAN Port





SET UP / PROCESS

1. Pre-energising

- Ensure connections are secure and power on the system.
- Verify all cabling is wired properly.
- Energise the charger.
- LED lights should sequentially illuminate blue.
- If the LED flashes red please refer to the Troubleshooting page.

2. Post-energising

- Use an EV charger tester (e.g Metrel, Fluke) to run testing following AS/NZS 3000 Section 8.3.3.1.
- If the charger does not begin to charge under testing with the EV Tester, it may not be configured to ‘start charging on plug’, please refer to Appendix D how to set it as ‘start charging on plug’.
- Test functionality and perform safety inspection.

WEB-INTERFACE ACCESS AND WIFI CONNECTION

1. **Find the chargers' local hotspot using laptop or smart device.**

   Search for the charger's hotspot like you would for any Wi-Fi network. This hotspot will have the following SSID: AP_IOC- ******
   (if needed you can find the full SSID on the sticker side of the charger)

   The password for this Hotspot is: IOC12345

2. **Navigate to the web-interface of the Ocular Charger.**

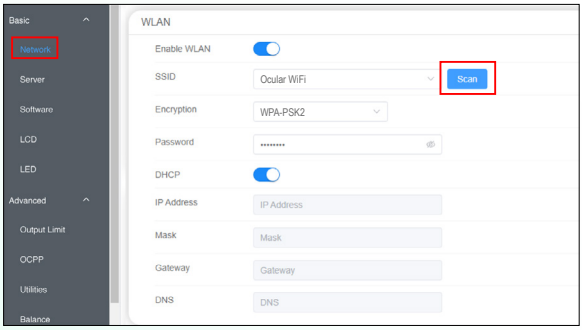
   Open a web browser (Chrome, Safari, Edge) and search: 192.168.10.1:8900
   The web interface will ask for Username and Password:

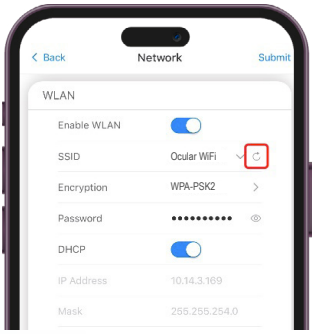
   The login information will be: Username : install
   Password : installer123

   You will be asked to change it to a new password.
   We recommend 'Evcharging123'
   Write the new login password here: _____.
   Please hand this book to the user after the installation so that they can keep track of the new password.

3. **(Optional): Set up WIFI configuration (not needed if ethernet is used)**

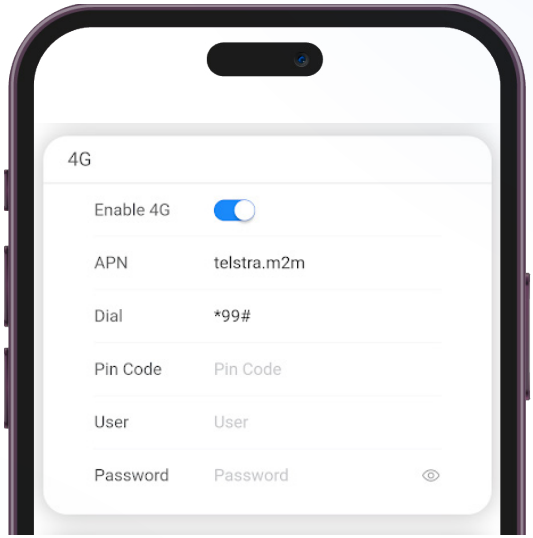
   - Navigate to the Network tab (see picture below).
   - Click the "Scan" button to start scanning for available WiFi network.
   - Use the dropdown list to select the required network, enter the password.
   - Click Submit then Reboot (top right-hand corner) to apply changes.
   - You will then need to log back in to the web-interface to continue configuration.





4. Set up 4G Connection (4G enabled version only)

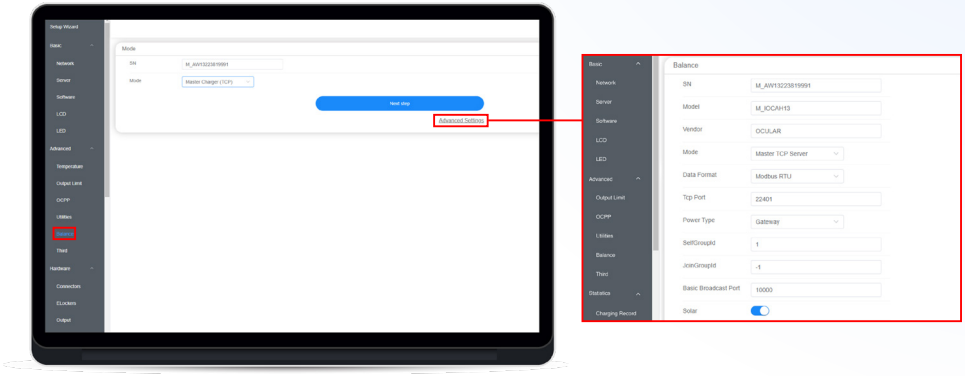
- Confirm that a SIM card was inserted during the installation step.
- Navigate to the network page and then navigate to the 4G section.
- Toggle the Enable 4G switch
- Energy the SIM card details including APN, Dial, pin code, user, and password.
- Click Submit then Reboot (top right-hand corner, or on the home page) to apply changes.
- Contact your sim card provider for these details or if there are connectivity issues.

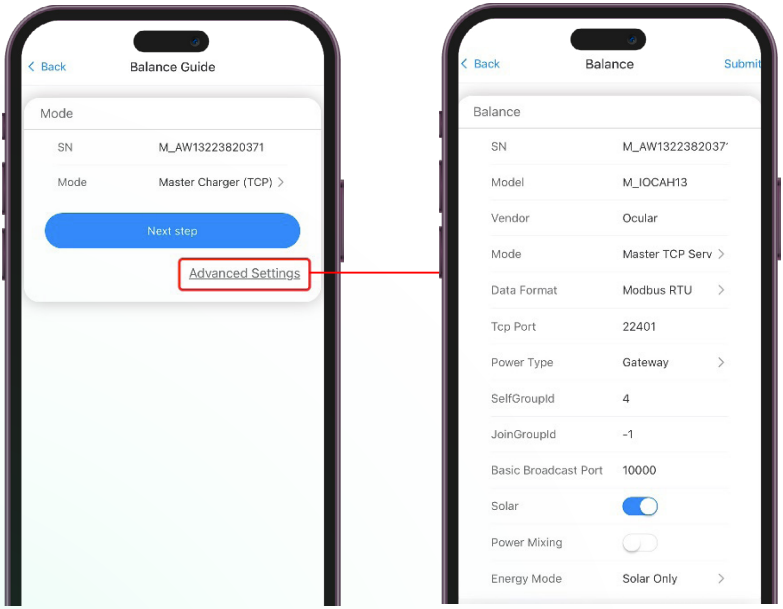


CHARGER CONFIGURATION - ACCESSING THE ADVANCED SETTINGS PAGE

Do not change settings other than outlined below as this may affect operations.

1. Log in to the web-interface of the charger. (Refer to page 13).
2. Click on the Balance tab, and then click on “Advanced Settings”.
3. A new page will open that shows the advanced settings.





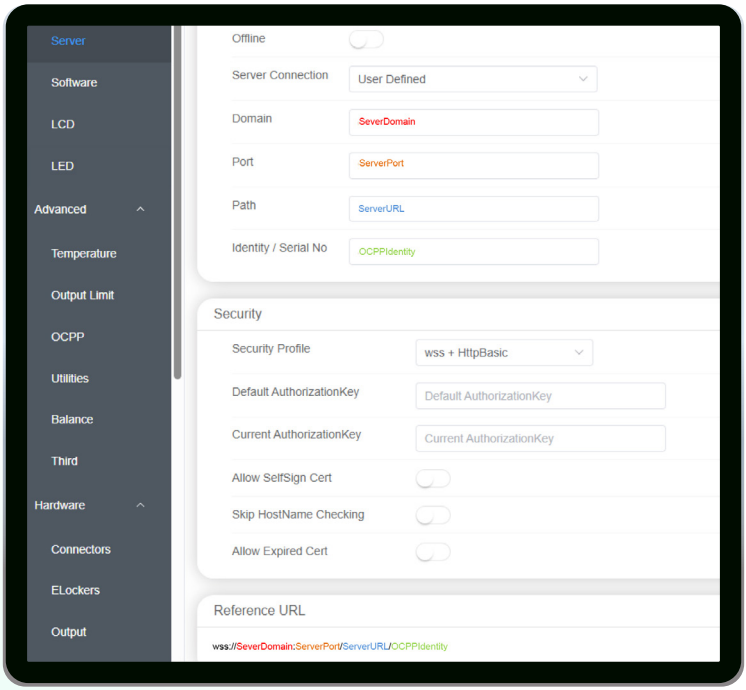
SETTING UP OCPP CONNECTION

The IQ Mini can be configured onto an OCPP Charger Management Platform to provide advanced functionality.

1. Log in to the web-interface of the charger. (Refer to page 13).
2. Navigate to the Server tab from the left-hand side panel
3. Enter the OCCP parameters as follow:
   a. OCPP Server Domain
   b. OCPP Server Port
   c. OCPP Server Path
   d. OCPP Identity

   A standard OCPP link should be as follow:
   wss://SeverDomain:ServerPort/ServerURL/OCPPIdentity

4. Configure security settings to match the requirements of the OCPP server.
5. Click Submit and Reboot on the top right-hand side to enact the changes.
6. Verify that the server connection is complete by consulting the OCPP app/server.



APPENDIX A - TROUBLESHOOTING

Situations	Actions
Status indicator is not blue after the charger is powered on	• Make sure the AC power input is connected correctly. • Turn OFF the charger and then back ON using the isolator switch. • If the problem persists, contact your installer for Technical Support.
Status indicator does not flash blue when the charger is connected to the EV	• Unplug the charging plug and reconnect it fully to the receptacle on the EV. • Inspect the cable and plug for damage. • Inspect the EV and its receptacle for damage. • If the situation persists, contact your installer for Technical Support.
Status indicator flashes red while charging	• There is a temporary error. • Wait until the temporary error is resolved and the charger returns to normal condition. It usually takes less than 10 seconds. • If the status indicator doesn't return to blue, turn OFF the charger and then back ON. • If the situation persists, contact Ocular Charging for Technical Support.
Status indicator is solid red	• There is a critical error. • Unplug the charging plug from the EV immediately. • Turn OFF the charger and then back ON. • If the situation persists, contact your installer for Technical Support.

APPENDIX B – CHARGER ERROR CODES

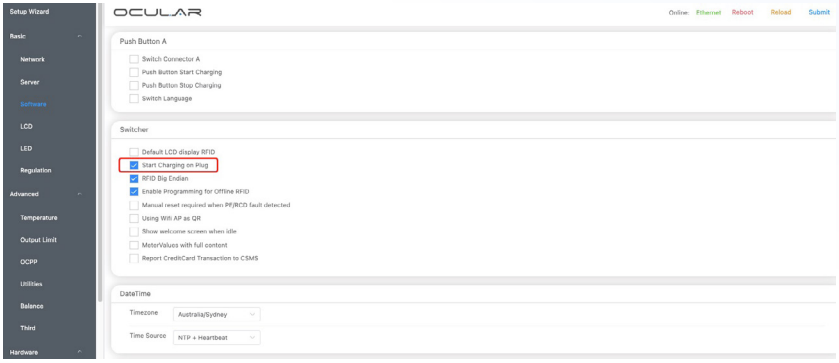
This page shows the error codes' meaning, if any of the charger presents any error listed below, please contact your installer for technical support.

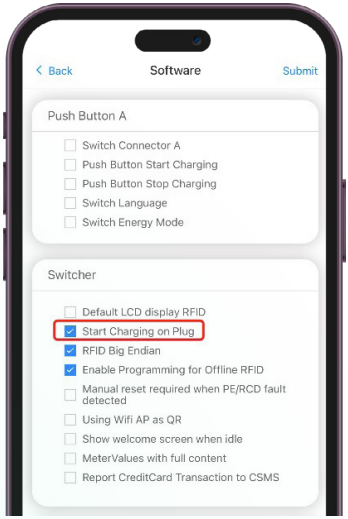
LED Diagram	LED Status	Definition
	Red light is solid	CP / CC fault
	Alternately flashing red and green	Overcurrent / Overvoltage / Undervoltage
	Alternately flashing red and blue	Socket lock / Output relay fault
	Group A and B, red and red flashing alternately	Ground fault
	Group A and B, red and green flashing alternately	RCD fault
	Group A and B, red and blue flashing alternately	PME fault (Phase Imbalance or under / over voltage)
	Flashing red	Other fault

APPENDIX C – CHANGE THE CHARGER TO ‘START CHARGING ON PLUG’

If the charger does not automatically start charging while testing, then it may not be set to charge on plug. Follow the steps below to change it. The user will be able to change this setting in the Ocular App later.

- Follow the instructions on page 13 to log into the charger web-interface.
- Navigate to the “Software” Tab under “Basic”
- Under the subsection “Switcher”, tick the box next to “Start Charging on Plug”
- Click submit “Submit” on the top right-hand corner of screen, and then click “restart” on the Home page.





OCULAR

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