

EO GENIUS 2

↘ INSTALLATION & COMMISSIONING GUIDE



→ TABLE OF CONTENTS

Important: Read carefully before use. Keep for future reference.

- 1.0 Introduction
 - 1.1 High level sequence
 - 1.2 Pre-installation information
- 2.0 Installation instructions for the EO Genius 2**
 - 2.1 Charger installation instructions
 - 2.2 Important charger information
- 3.0 Wiring connections
 - 3.1 Physical connections
- 4.0 Software configuration of the EO Genius 2**
 - 4.1 Initial steps
 - 4.2 Log in to the Genius 2 user interface.
 - 4.3 Configure the device parameters.
 - 4.3.1 Info page
 - 4.3.2 CSMS page
 - 4.3.3 Network page
 - 4.3.4 Installer page
 - 4.3.5 Load page
 - 4.3.6 Smart charging page
- 5.0 EO Genius 2 power up
 - 5.1 Charger status light on power-up
 - 5.2 Normal operation
- 6.0 Final notes
 - 6.1 Further technical support
- 7.0 Software configuration of the EO Genius 2 for CPO Customers**
 - 7.1 Initial Steps
 - 7.2 Log in to the Genius 2 user interface
 - 7.3 Configure the device parameters
 - 7.3.1 Info page
 - 7.3.2 CSMS page
 - 7.3.3 Network page
 - 7.3.4 Installer page
 - 7.3.5 Load page
 - 7.3.6 Smart charging page
- 8.0 EO Genius 2 Power up
 - 8.1 Charger status light on power-up
 - 8.2 Normal operation
- 9.0 Additional information
 - 9.1 Firmware updates
 - 9.1.1 Receiving the firmware images
 - 9.1.2 Apply the images
 - 9.2 Security
 - 9.3 Trouble shooting
 - 9.4 Final notes
- 10.0 Further technical support**

→ 1.0 INTRODUCTION

This document is intended for both Small and medium-sized enterprises (SME) and Charge point operators (CPO) installation purposes and details how to install and configure the EO Genius 2. It covers the physical installation and the software configuration required to enable the charger to communicate to the appropriate OCPP back office.

It includes:

- + How to mount and wire up the EO Genius 2.
- + How to access the charger's user interface.
- + How to configure your Genius 2 for your respective software:
 - + SME
 - + CPO
- + Charger's LED status light.



It is important to note that the information in this document is subject to change without notice as the EO Genius 2 product evolves, please download the latest version from www.eocharging.com/support.

HOW DO I KNOW WHICH SOFTWARE CONFIGURATION SET UP TO FOLLOW?



SMEs include fleet operators and the majority of commercial installs. SMEs represent 99% of all businesses in the EU and is the default way to configure your EO Genius 2 for the majority of EO's customers found by following section 4.0.



CPOs build EV charging stations, install hardware from a variety of electric vehicle supply equipment (EVSE) vendors, and ensure optimal ongoing EV charging operations. They usually have their own back-office portal which will require different configuration settings which can be found by following section 7.0.

1.1 HIGH LEVEL SEQUENCE

The high-level installation sequence is:

- + Physically install the product.
- + Power up the unit.
- + When the LED turns from white to blue, then the Wi-Fi hotspot is available.
- + Join the Wi-Fi hotspot (which is available for 10min) at <https://10.10.10.1>.
- + Configure the unit and log out.
- + When the hotspot turns off then the charger will connect to the configured Cloud based Charging Station Management System.

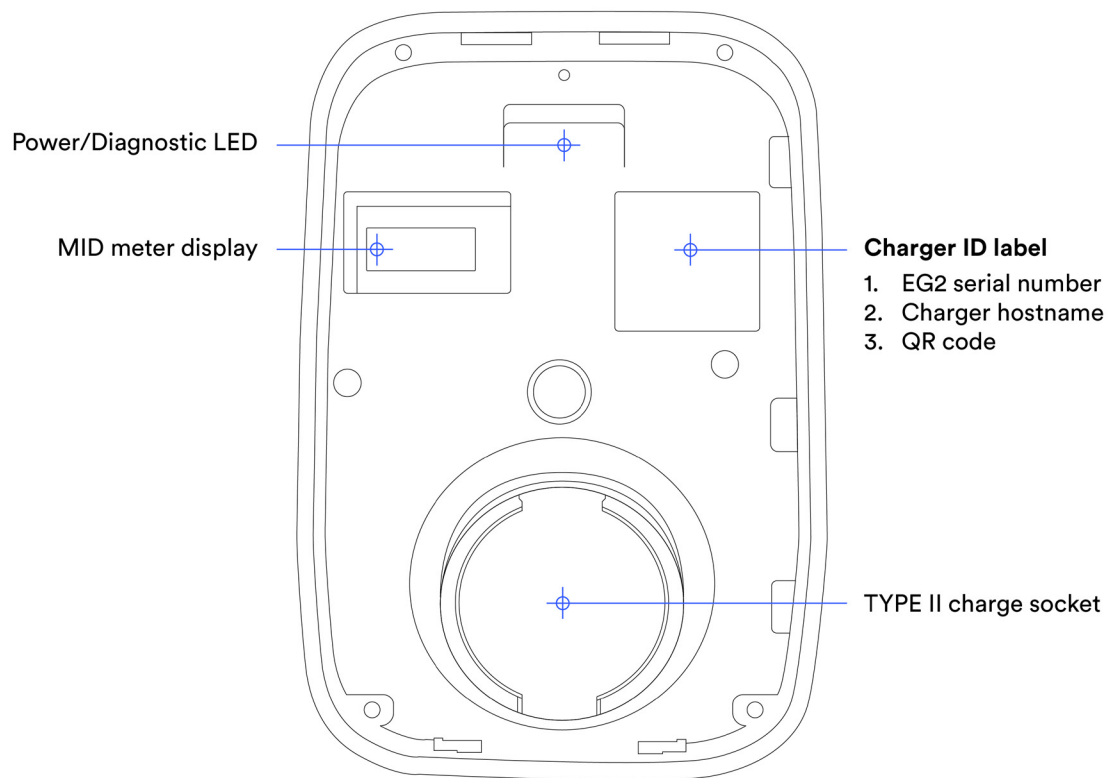


Figure 1: EO Genius 2 labelled backplate.

1.2 PRE-INSTALLATION INFORMATION

Network (LAN) connectivity:

When using a hard-wired connection to a LAN, make sure a working connection to the client's network is available prior to installation or your chargers will fail the online tests.

Wi-Fi connectivity:

If the Genius 2 is to use Wi-Fi for its internet connection to a back-office platform, before fitting the device in place, it is recommended that the strength and integrity of the Wi-Fi signal is checked. If a weak Wi-Fi signal is present, then there is a chance that the installation of the EO Genius 2 may fail. To check that the Wi-Fi signal is strong enough please complete the following steps:

1. Utilise a suitable Wi-Fi analyser mobile device app to verify signal stability, strength, and interference levels.
2. Using a mobile device, connect to the premises' Wi-Fi router.
3. Measure the data rate and signal noise. The data rate should be greater than 5mbps and using an appropriate mobile app, measure the signal noise [RSSI] value which should be circa -60dBm.

If the Wi-Fi is not suitable, a couple of options exist:

1. Install a 2.4GHz Wi-Fi booster.
2. Use the hard-wired ethernet option.
3. Request a charger with the 4G GSM internal modem.

↘ HARDWARE INSTALLATION

→ 2.0 INSTALLATION INSTRUCTIONS FOR EO GENIUS 2

2.1 CHARGER INSTALLATION INSTRUCTIONS

1. What is in the box.

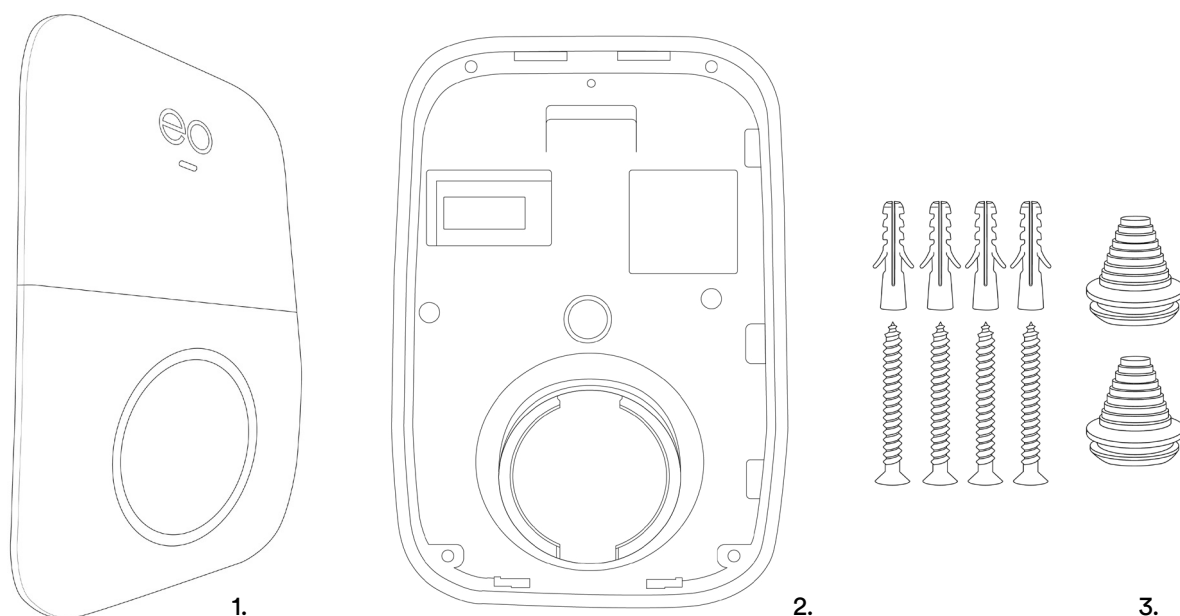


Figure 2: Box contents.

1. EO Genius 2 fascia
 2. Genius 2 housing
 3. stepped grommets and charger mounting screws
2. Remove the EO Genius 2 from the packaging. The fascia should be put to one side and left in its wrapping. Using a long reach 4mm hex key, loosen the centre two housing securing screws followed by the four outer screws.

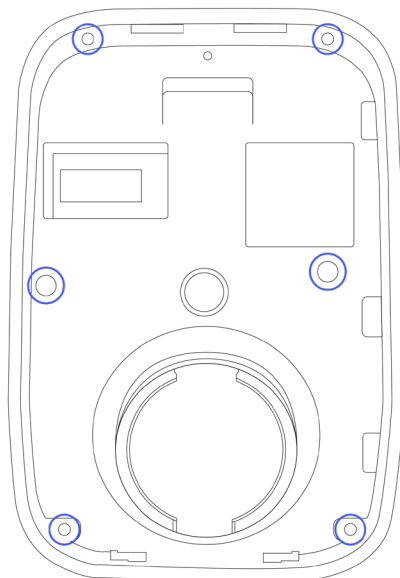


Figure 3: EO Genius 2 backplate.

3. On the bottom of the base, pop out the caps from the cable entry holes. Fit the appropriate glands or stepped grommets for the incoming cables. There are four cable entry holes available:
- a. Power – rear entry [green]
 - b. Power – bottom entry [red]
 - c. CT clamps [yellow]
 - d. Ethernet [blue]

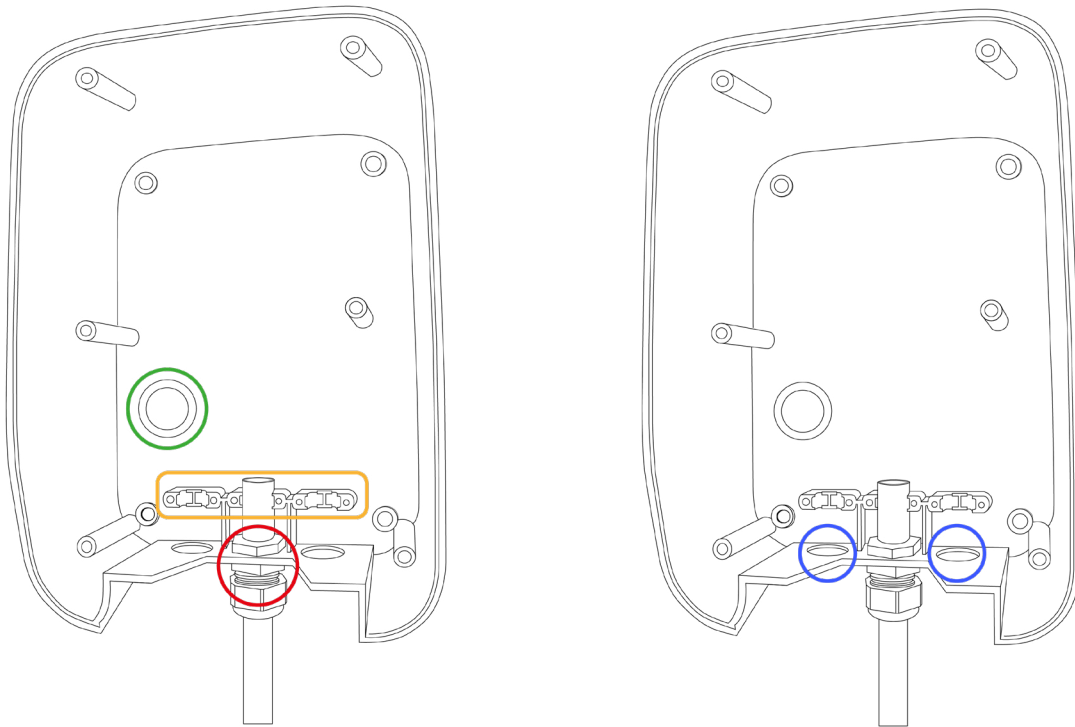


Figure 4: EO Genius 2 rear housing.

The number of glands required will be dependent on the specific installation requirements of each site. When fitting the charger to an EO Post, we recommend you use the rear entry aperture as it accommodates wiring through to the post wiring access port.

4. Offer the base of the EO Genius 2 or the enclosed template up to the installation location. Please make sure the surface is flat and level.

Level the EO Genius 2 base and mark the position of the four holes. Take the EO Genius 2 base away and drill the four holes.



Do not drill through the EO Genius 2 base or base screw holes.

5. Attach the EO Genius 2 base to the wall using four screws. Ensure that the base is the correct way up and that it is flush against the wall. For uneven surfaces we recommend using the optional backplate.

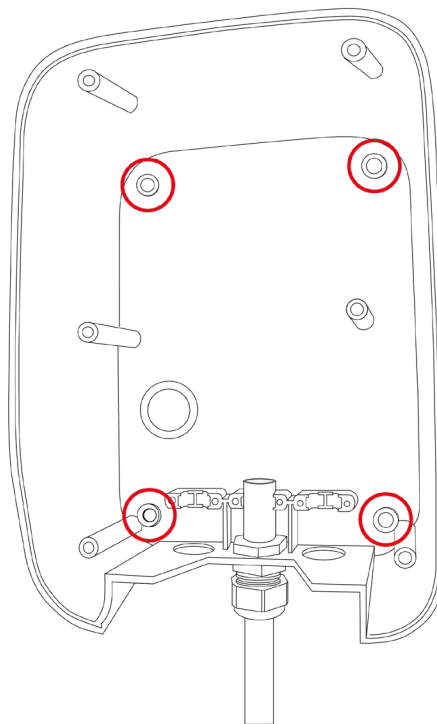


Figure 5: EO Genius 2 rear housing displaying 4 rear entry holes.

6. For installation to an EO Post, make sure all necessary cables have been routed up through the post, and secure the backplate to the post using the fixings supplied within its packaging. Offer up the EO Genius 2 rear case to the backplate and secure the 5mm hex bolts provided in the backplate fixing kit.

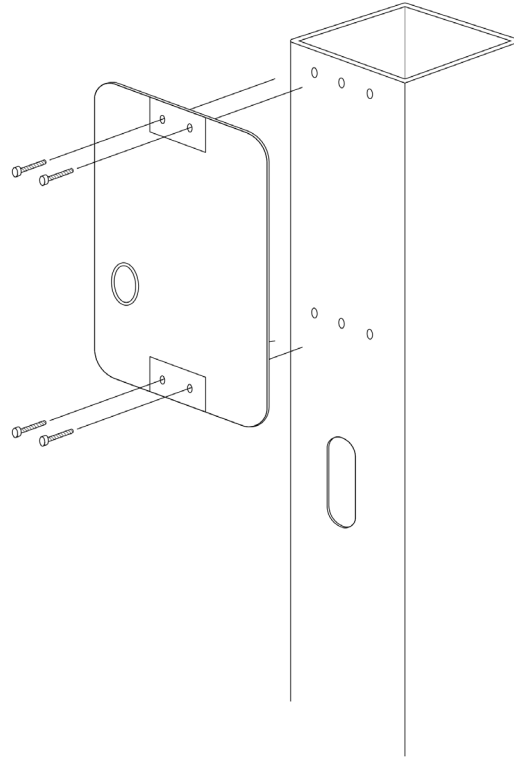


Figure 6: EO Genius 2 backplate post mounting.

7. Strip and prepare the power cable and feed it into the desired entry point, depending on your installation type. The figure below shows the cable routed through the rear.

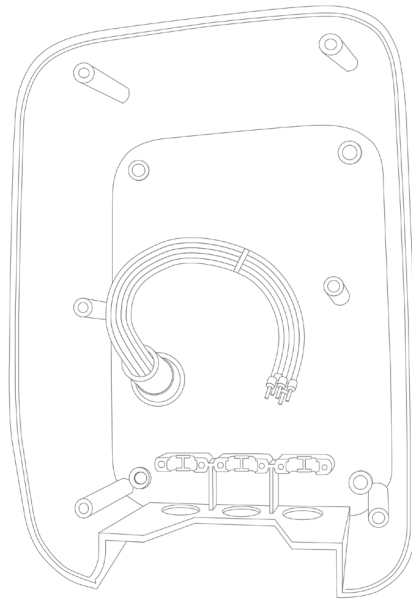


Figure 7: EO Genius 2 with rear cable routing.

8. For wall mounting, either of the cable entry positions can be used. We strongly recommend the use of ferrules where multi-strand wires are being used. This will therefore increase the contact area between the connector and wire, reducing any risk of heat generation during operation. Strip back 30 to 40cm of outer sheath allowing for efficient internal routing.

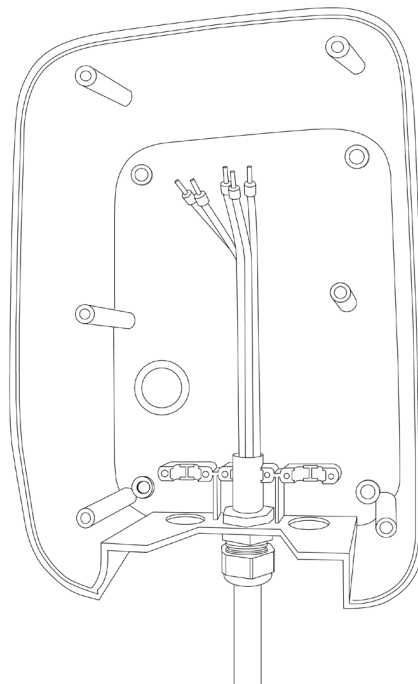


Figure 8: EO Genius 2 with bottom cable routing.

9. Feed the other end of the cable into the base EO Genius 2 ready for connection to the charger cartridge.

10. Secure both the power and Ethernet LAN cables to the rear housing.

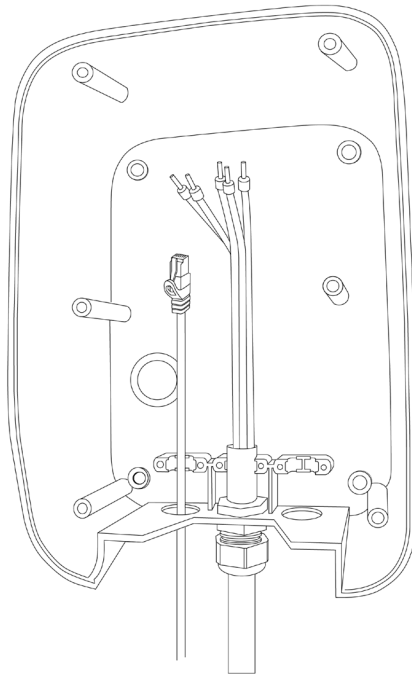


Figure 9: Ethernet and power cables secured to rear housing.

11. Connect the power cables to the DIN rail power connector of the EO Genius 2. Insert a small flat-blade screwdriver into the DIN rail terminal to allow the power cable to be inserted. Remove the screwdriver to secure the power cable in place. We strongly recommend the use of ferrules where cable type permits.

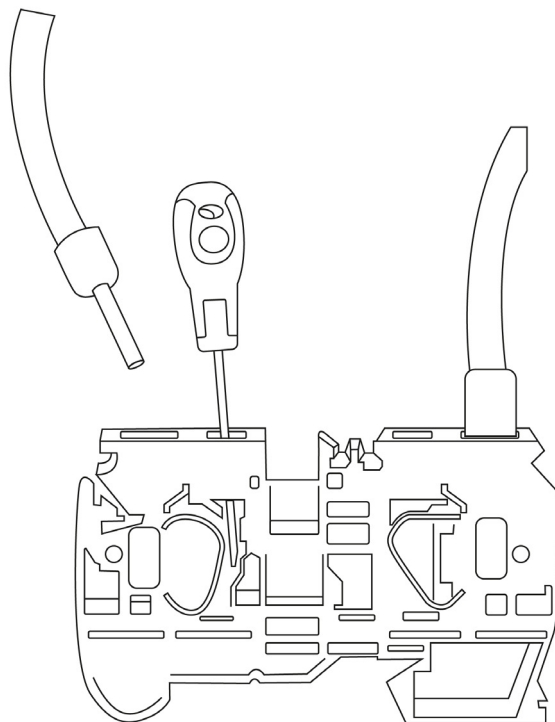
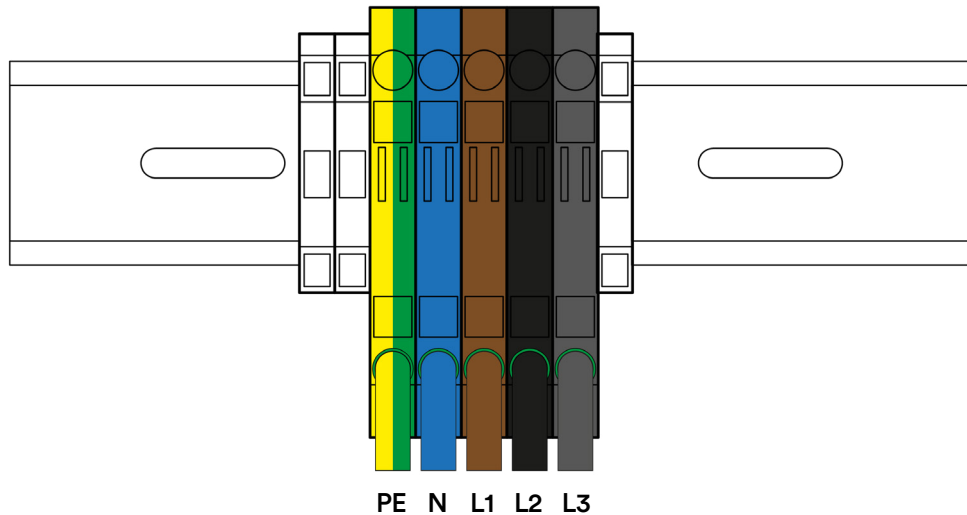


Figure 10: DIN Rail.



PE = Protective Earth

N = Neutral

L1 = Line/Phase 1

L2 = Line/Phase 2

L3 = Line/Phase 3

Figure 11: DIN Rail colour coding.

12. With all cables connected position them so that you can close the EO Genius 2 front plate to the EO Genius 2 rear housing, making sure that no cables are trapped.

Secure the Genius 2 cartridge to the EO Genius 2 rear chassis. We recommend starting with the two centre bolts followed by the four corner ones.

Note: Do not over tighten these bolts.

Note: Attaching the Fascia to the EO Genius 2 should be carried out after **all testing is complete**.



Figure 12: EO Genius 2.

2.2 IMPORTANT CHARGER INFORMATION

Topic	Note
Characteristics of power supply input	Permanently connected to 230V or 110V AC supply
Characteristics of power supply output	Supplies 230V AC to the vehicle
Normal environmental conditions	Can be installed indoors or outdoors
Access requirements	Can be installed with no access restrictions
Mounting method	Stationary equipment intended for surface or post mounting
Protection against electric shock	Class I equipment
Charging mode	Mode 3 charging equipment
Ventilation during the supply of energy	Does not support ventilation during charging
Ingress protection	IP54
Mechanical strength	IK08
Operating temperature	-25°C to +50°C
Height of installation	The charging equipment should be mounted with the bottom face of the enclosure at least 0.9m above ground level
Usage of adaptors/cord extension sets	Adaptors and conversion adaptors sets are not permitted to be used with the equipment. Cord extension sets are not permitted to be used
Maximum altitude	9000m
Pollution degree	Pollution Degree 2
Type of earthing system	TN, IT, TT
Skill level	Operation by ordinary – Installation by skilled authorised electrician

Topic	Note
EMC classification	EN 61851-21-2:2021 Residential & Non-Residential EN 55032:2015 + A1:2020 Class B ENSI EN 301 489-1 V2.2.3:2019 EN 300 328 V2.2.2:2019 EMC Directive 2014/30/EU & UK Electromagnetic compatibility Regulations 2016
Nature of Short-circuit protective device	Upstream RCD Type A required Internal: 6mA DC Leakage, PEN, LoE, LoN
Dimensions and weight	Genius 2 3PH UK (EG203-PME-DCL) 3.628kg Genius-2 1PH UK (EG201-PME-DCL): 3.338kg Genius-2 3PH INT (EG203-DCL): 3.55kg Genius-2 1PH INT (EG201-DCL): 3.25kg Genius-2 3PH UK Tethered (EG203-PME-DCL-T2T): 6.644kg Genius-2 1PH UK Tethered (EG201-PME-DCL-T2T or T1T): 5.348kg Genius-2 3PH INT Tethered (EG203-DCL-T2T): 6.56kg Genius-2 1PH INT Tethered (EG201-DCL-T2T or T1T): 5.25kg Dimensions : 330mm x 220mm x 130mm
Access restrictions	Both restricted and unrestricted



The installer must select the RCD and earthing configuration by following the current local regulation & best practices. Also refer to the current IET code of practice.

Where the EO Genius 2 includes DC leakage protection a Type A RCD can be fitted at the supply, otherwise, a Type B RCD or equivalent should be used. EO recommends a 40A supply for on 32A charging station. Overcurrent protection (e.g. MCB) should be installed upstream of the charging station.

→ 3.0 WIRING CONNECTIONS

It is possible to configure the EO Genius 2 to connect to either TN or IT grid types which are shown in the following section.

3.1 PHYSICAL CONNECTIONS

Wiring system	Power connections on EO Genius 2				
	PE	N	L1	L2	L3
TN (400V)	PE	N	L1	L2	L3
IT (230V)	PE	L1	L2	L3	

PE = Protective Earth

N = Neutral

L1 = Line/Phase 1

L2 = Line/Phase 2

L3 = Line/Phase 3

3.2

The phase rotation and grid selection (IT/TN) should be set as per the instructions.

The EO Genius 2 is now physically installed and the commissioning of the charger can now begin.

Congratulations, you have successfully completed the hardware installation for the EO Genius 2. There are now two different ways our charger can be configured:



SMEs include fleet operators and the majority of commercial installs. SMEs represent 99% of all businesses in the EU and is the default way to configure your EO Genius 2 for the majority of EO's customers found by following section 4.0.



CPOs build EV charging stations, install hardware from a variety of electric vehicle supply equipment (EVSE) vendors, and ensure optimal ongoing EV charging operations. They usually have their own back-office portal which will require different configuration settings which can be found by following section 7.0.

↘ COMMERCIAL SOFTWARE CONFIGURATION

→ 4.0 SOFTWARE CONFIGURATION OF THE EO GENIUS 2

The following steps should be taken by the installer to prepare the EO Genius 2 so that it can be connected to a 3rd party back-office or the EO Cloud using the OCPP protocol.



SMEs include fleet operators and the majority of commercial installs. SMEs represent 99% of all businesses in the EU and is the default way to configure your EO Genius 2 for the majority of EO's customers found by following section 4.0.

The main sequence of steps will be as follows:

1. The charger should be connected to power and switched on.
2. Log in to the Genius 2 user interface.
3. Configure the device parameters.

After all the above is carried out, the unit will be ready to connect to a back-office of choice.

4.1 INITIAL STEPS

1. Ensure that the EO Genius 2 is powered up.
2. Locate the device User Interface (UI) username and password which can be found in the charger packaging and put them in a safe place as these are specific to each charge point.

During 'Power Up' the LED will be white whilst the unit is booting up. When the device is ready, the LED will turn green. At this point the user interface can be accessed.

4.2 LOG IN TO THE GENIUS 2 USER INTERFACE.

For the commissioning of the EO Genius 2, the charger has an internal UI.

You will need to access each charger interface, in turn, to carry out configurations.

The charger interface is available via a Wi-Fi hotspot. The Wi-Fi hotspot is available for 10 minutes after powering up the charger.

1. When powering up the EO Genius 2, a Wi-Fi hotspot is emitted for 10 minutes by default, allowing a connection to be made with a laptop.
2. The hotspot name is represented as the charger hostname, for example, eo-1234567891234. The password for joining this hotspot can be found on the label stuck to the inside of the packaging (see following page).

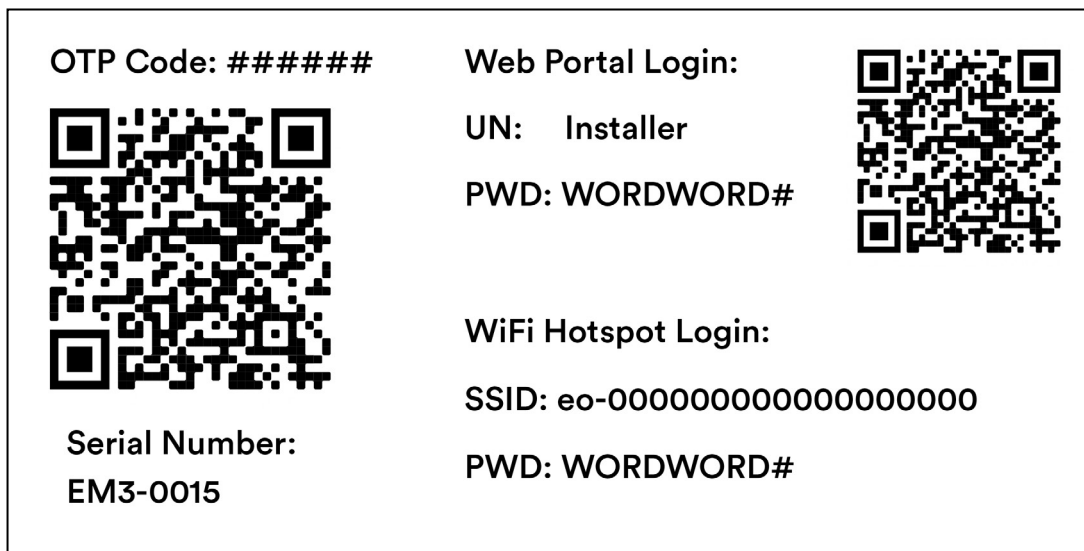


Figure 13: Example hotspot password label found in the Genius 2 packaging.

3. Once connected to the charger Wi-Fi hotspot open your web browser and enter the following IP address 10.10.10.1 in the search bar.

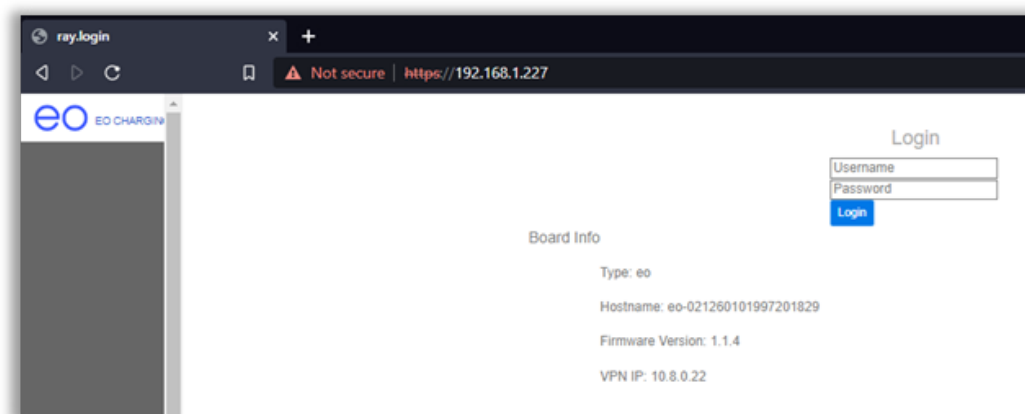


Figure 14: EO Charging UI login page.

You should reach the UI login page where you will need to enter the username which is **“Installer”** and the unique password which can be found on a label stuck to the inside of the charger packaging, see figure 14 for an example of credentials label for reference.

Note: Each charge point will have its unique passcode. We recommend you retain all labels and hand these to your client for safe keeping as may be required at a later date.

The image below shows a typical example of a Genius 2 system connected to a LAN.

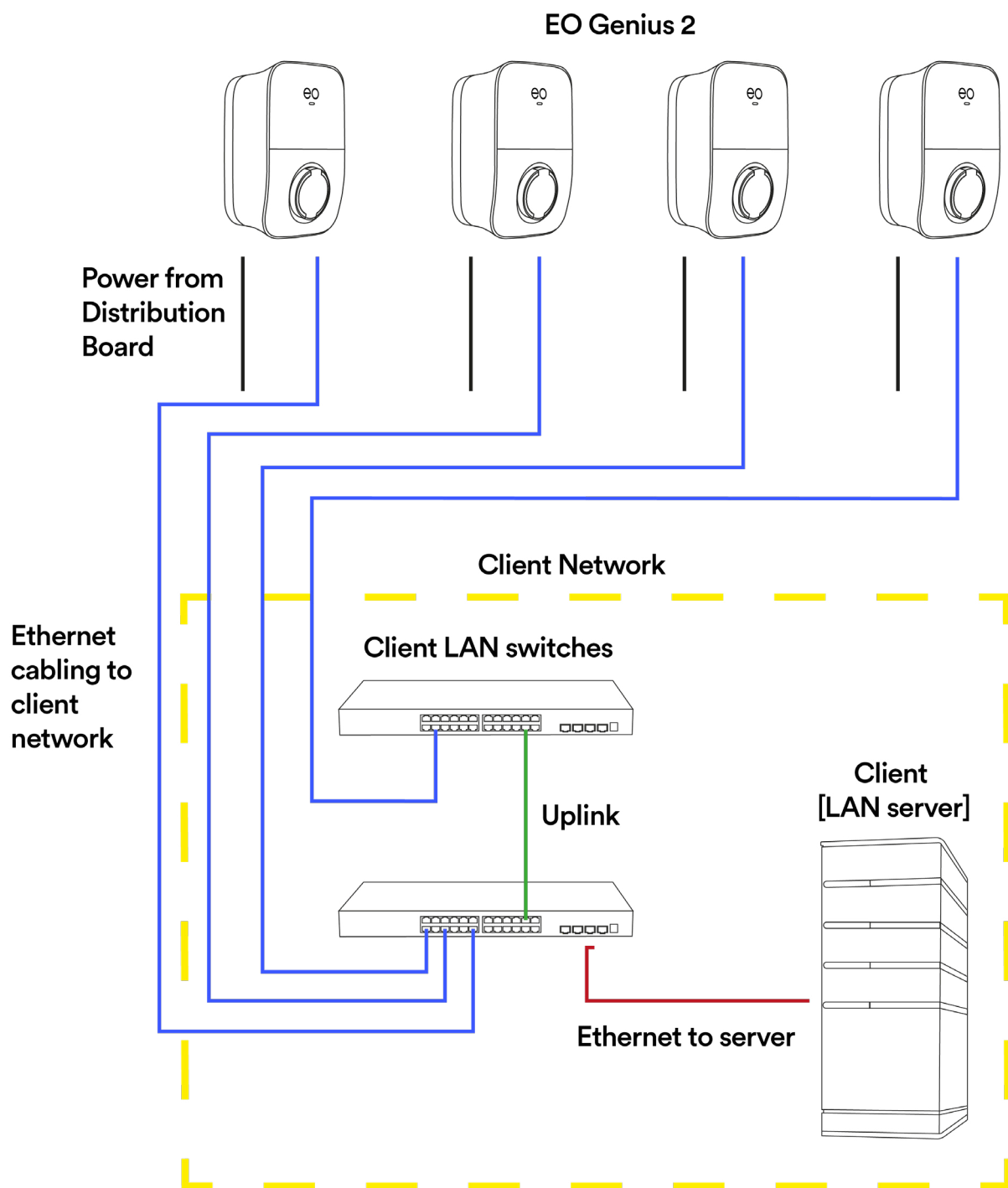


Figure 15: LAN connection diagram.

4.3 CONFIGURE THE DEVICE PARAMETERS.

Once the installer is logged in then there are several pages that can be configured by the installer:

4.3.1 INFO PAGE

Once logged in you are presented with the general Info screen showing such details as:

1. Charger connection status.
2. IP address.
3. Charger Hostname/Serial number.

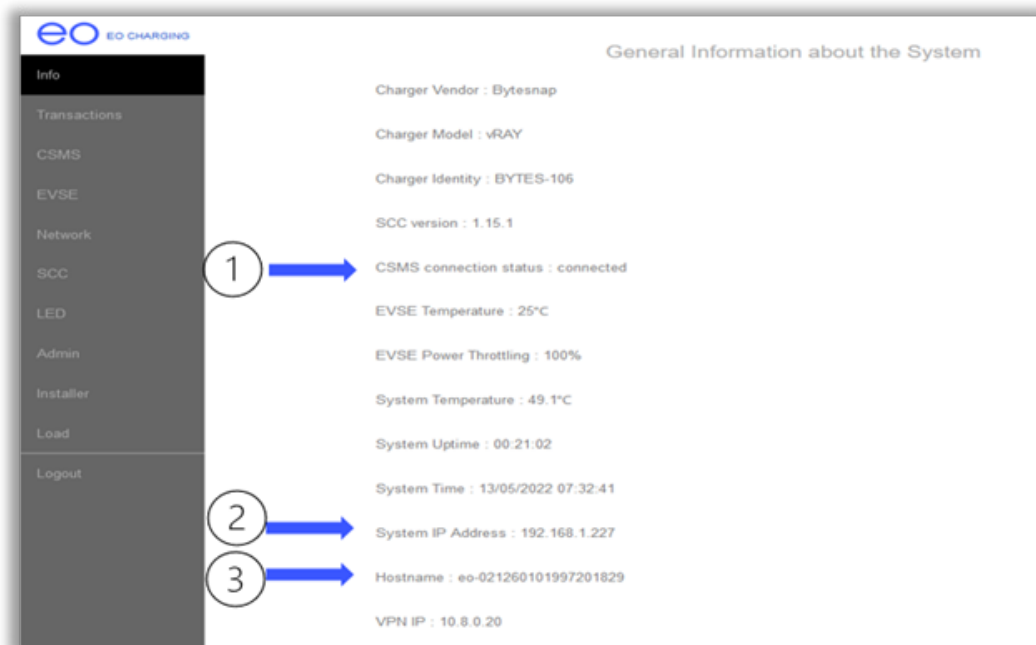


Figure 16: Device information page.

4.3.2 CSMS PAGE

1. The charger's online status will display here once commissioned or connected to a LAN.
2. The connection URL of the OCPP server.
3. Make sure the toggle "Authorisation via CSMS server" is off for remote authorisation via a back office.
4. RFID can be enabled or disabled.

The screenshot shows the 'CSMS' configuration page in the 'eo CHARGING' software. A left sidebar contains navigation links: Info, Transactions, CSMS (highlighted), EVSE, Network, SCC, LED, Admin, Installer, Load, and Logout. The main content area is titled 'CSMS' and is divided into 'Status' and 'Settings' sections. The 'Status' section displays 'CSMS Connection Status' as 'connected' (highlighted with a green box and a blue arrow labeled '1'), 'Bytes Sent (B)' as '92316', 'Charger Model' as 'vRAY', 'SCC Version' as '1.15.1', 'Bytes Received (B)' as '0', and 'Charger Vendor' as 'Bytesnap'. The 'Settings' section includes 'CSMS Server Address' (ws://cpc.qa2.ocpp.eocharging, with a blue arrow labeled '2'), 'Offline Authorisation' (with a toggle for 'Authorisation via CSMS server' set to 'off', indicated by a blue arrow labeled '3'), 'Sound Notification' (with a toggle for 'Sound Disabled' set to 'off'), 'RFID Enabled' (with a toggle for 'RFID Disabled' set to 'off', indicated by a blue arrow labeled '4'), 'Charger Identity' (BYTES-106), 'Default Id Tag mode' (Default Id Tag used, No Authorisation Required, with a green checkmark), and 'Default Id Tag (Default Id Tag mode only)' (default). A 'Save' button is at the bottom.

Figure 17: EO charging SME software CSMS page.

4.3.3 NETWORK PAGE

1. Network status settings are available here for LAN connectivity. In most applications, DHCP assignment will be required however Static IP address can also be set by way of the toggle.
2. If connecting the charger using Wi-Fi, the router SSID and password can be entered here. If you click on the “Refresh List” button, then a list of available Wi-Fi SSIDs is available.
3. Make sure to set the toggle for DHCP or STATIC IP assignment.
4. Do not modify any of the ad hoc Wi-Fi configuration settings.

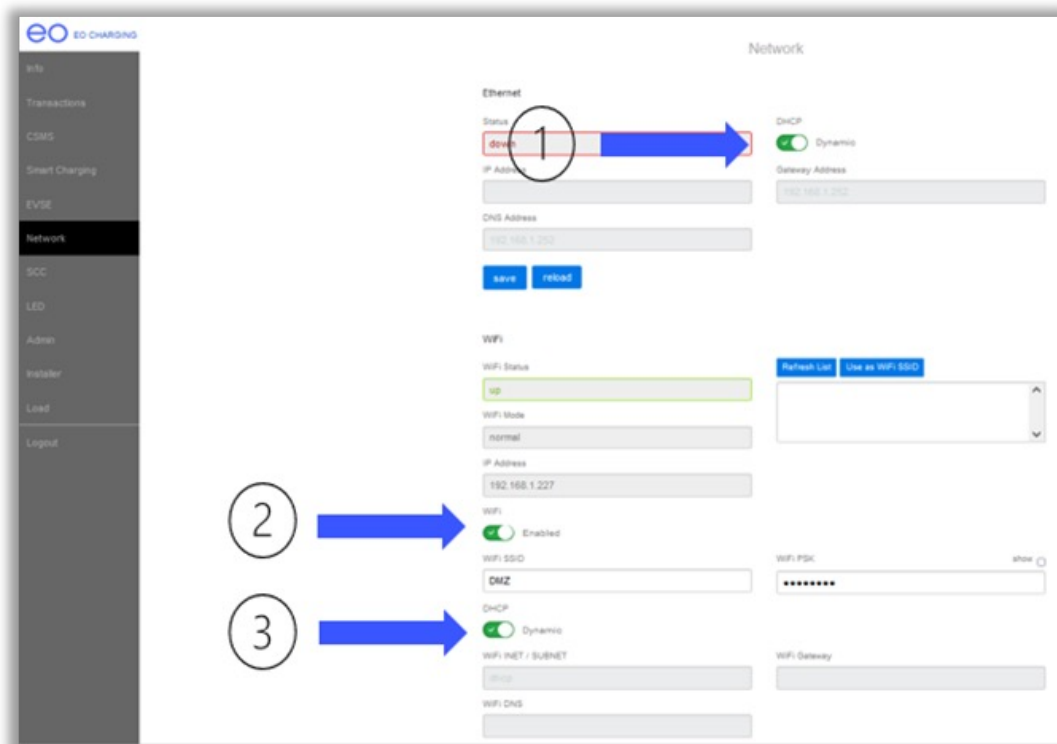


Figure 18: EO charging software network page.

4.3.4 INSTALLER PAGE

1. Check your time zone and adjust it as required.
2. Set the charger maximum out value in Amps. This value should not exceed 32Amps.
3. Enter your name, company, and email address.
4. From the drop-down box, select the phase connection to the charger.

The screenshot shows the 'EO CHARGING' web interface. On the left is a sidebar menu with options: Info, Transactions, CBMS, Smart Charging, EVSE, Network, SCC, LED, Admin, **Installer** (highlighted), Load, and Logout. The main content area is titled 'Installer Settings' and contains the following sections:

- Charger Settings**: Includes a 'Timezone' dropdown menu showing '(UTC+00:00) Dublin, Edinburgh, Lisbon, London' and a 'Save Timezone' button.
- Charger Current Limit**: A numeric input field set to '32' with a unit of '[A]' and a 'calibrate' button.
- Tilt Alarm Angle**: A numeric input field set to '10' with a unit of '[°]'.
- Installer Info**: Three text input fields for 'Installer Name [text]', 'Installer Company [text]', and 'Installer Email [email]'.
- Phase Connection**: A dropdown menu currently showing 'R (L1)'.
- External Metering**: A dropdown menu currently showing 'Not Fitted'.
- At the bottom are two buttons: 'Save All Configuration' and 'Reset to Default'.

Four numbered circles (1, 2, 3, 4) with blue arrows point to the corresponding steps in the instructions: 1 points to the Timezone dropdown, 2 points to the Charger Current Limit input, 3 points to the Installer Name input, and 4 points to the Phase Connection dropdown.

Figure 19: EO charging software installer page.

4.3.5 LOAD PAGE

1. Toggle on/off as required.
2. Set the desired safety margin in Amps.
3. Select static or Dynamic balance.
4. Make sure to enter the site value. This will be the site or distribution board load capacity.

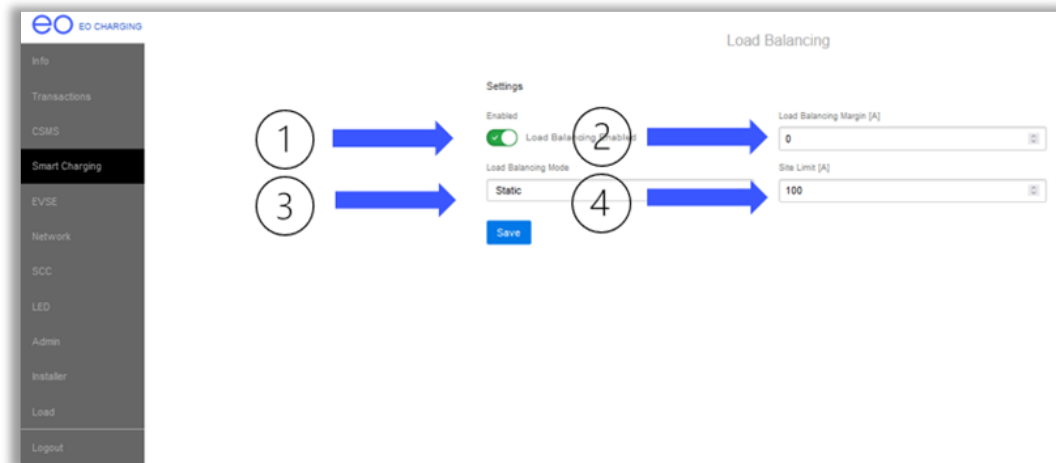


Figure 20: EO charging load balancing page.

4.3.6 SMART CHARGING PAGE

A charging profile is enabled by default.

This may need to be adjusted to suit clients charging requirements. This setting can only be changed via the charger UI so any future changes to this setting would need to be amended here.

The randomised delay is set to 600s or 10 minutes. This setting forces the charger to offer power to a vehicle anywhere between 0 and a 10 minute interval. The value can be amended if required.

The screenshot shows the 'Smart Charging' configuration page in the EO CHARGING software. On the left is a vertical sidebar with navigation links: Info, Transactions, CSMS, Smart Charging (highlighted), EVSE, Network, SCC, Admin, Installer, Load, and Logout. The main content area is titled 'Smart Charging' and contains the following sections:

- Smart Charging Profiles:** Includes input fields for 'Number of Active Profiles' (set to 0) and 'Number of Charging Profiles' (set to 1), followed by a 'Clear' button.
- Default Charging Profile:** Features a 'Default Profile' section with a green toggle switch labeled 'Enabled'. Below this, a note states 'When Enabled, No charging happens during these periods:'. Two 'No Charging Period' boxes are shown: Period 1 from 08:00 to 09:00, and Period 2 from 16:00 to 22:00.
- Randomised Delay:** Includes a 'Max Delay [0-1800s]' input field set to 0, and a 'Save' button.

Three blue arrows with circular callouts point to specific elements: Arrow 1 points to the 'Smart Charging' menu item in the sidebar; Arrow 2 points to the 'Enabled' toggle switch; Arrow 3 points to the 'Max Delay' input field.

Figure 21: EO charging software smart charging page.

→ 5.0 EO GENIUS 2 POWER UP

The EO Genius 2 has a status LED on its front face providing the user with its current status. Below describe the interpreted LED flash codes.

5.1 CHARGER STATUS LIGHT ON POWER-UP

The following LED sequence should be observed:

LED colour	State	Notes
Not illuminated	Power off	No power is available EVSE
LED solid white	Initialising	Initialising
LED pulses blue	Ready	The unit has started up successfully and is ready to charge

5.2 NORMAL OPERATION

LED colour	State	Notes
LED pulses blue	Ready	Ready to charge
LED pulses green	Cable is inserted	EO Genius 2 is communicating with the vehicle and trying to start a charging session
LED solid green	Charging	A charging session has started successfully
LED pulses blue	Cable is removed	Ready to charge
LED solid yellow	Paused	The EO Genius 2 has been put on pause by the third-party OCPP server
LED pulses red	Fault condition	A fault has occurred and the communication logs and, if necessary, the diagnostic logs should be consulted

→ 6.0 FINAL NOTES

All charging stations installed should be completely tested and signed off as functioning using dedicated EV test equipment.

An electrical and charger test certificate should be left with the client once all work is complete where appropriate.

6.1 FURTHER TECHNICAL SUPPORT

All EO Charging technical documentation is published in the EO Resource Centre, this is found at: <https://www.eocharging.com/support>.

The EO Support team can be reached at:

Email: support@eocharging.com

Phone: +44 (0) 333 77 20383

We now offer 24-hour phone support, 7 days a week for EO customers - select the 'Technical Support' option.



This document contains information that is subject to change without notice.

The latest version of this publication can be downloaded at:

<https://www.eocharging.com/support/commercial-solutions/eo-genius-2>



Disclaimer: *No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including, but not limited to, copying, recording, retrieving data, or computer networks without the written permission of EO Charging.*

↘ CHARGE POINT OPERATOR SOFTWARE CONFIGURATION

→ 7.0 SOFTWARE CONFIGURATION OF THE EO GENIUS 2 FOR CPO CUSTOMERS

The following steps should be taken by the installer to prepare the EO Genius 2 so that it can be connected to a 3rd party back-office or the EO Cloud using the OCPP protocol.



CPOs build EV charging stations, install hardware from a variety of electric vehicle supply equipment (EVSE) vendors, and ensure optimal ongoing EV charging operations. They usually have their own back-office portal which will require different configuration settings which can be found by following section 7.0.

The main sequence of steps will be as follows:

1. The charger should be connected to power and switched on.
2. Log in to the Genius 2 user interface.
3. Configure the device parameters.

After all the above is carried out, the unit will be ready to connect to a back-office of choice.

7.1 INITIAL STEPS

1. Ensure that the EO Genius 2 is powered up.
2. Locate the device User Interface (UI) username and password which can be found in the charger packaging and put them in a safe place as these are specific to each charge point.

During 'Power Up' the LED will be white whilst the unit is booting up. When the device is ready, the LED will turn green. At this point the user interface can be accessed.

7.2 LOG IN TO THE GENIUS 2 USER INTERFACE.

For the commissioning of the EO Genius 2, the charger has an internal UI.

You will need to access each charger interface, in turn, to carry out configurations.

The charger interface is available via a Wi-Fi hotspot. The Wi-Fi hotspot is available for 10 minutes after powering up the charger.

1. When powering up the EO Genius 2, a Wi-Fi hotspot is emitted for 10 minutes by default, allowing a connection to be made with a laptop.
2. The hotspot name is represented as the charger hostname, for example, eo-1234567891234. The password for joining this hotspot can be found on the label stuck to the inside of the packaging (see following page).

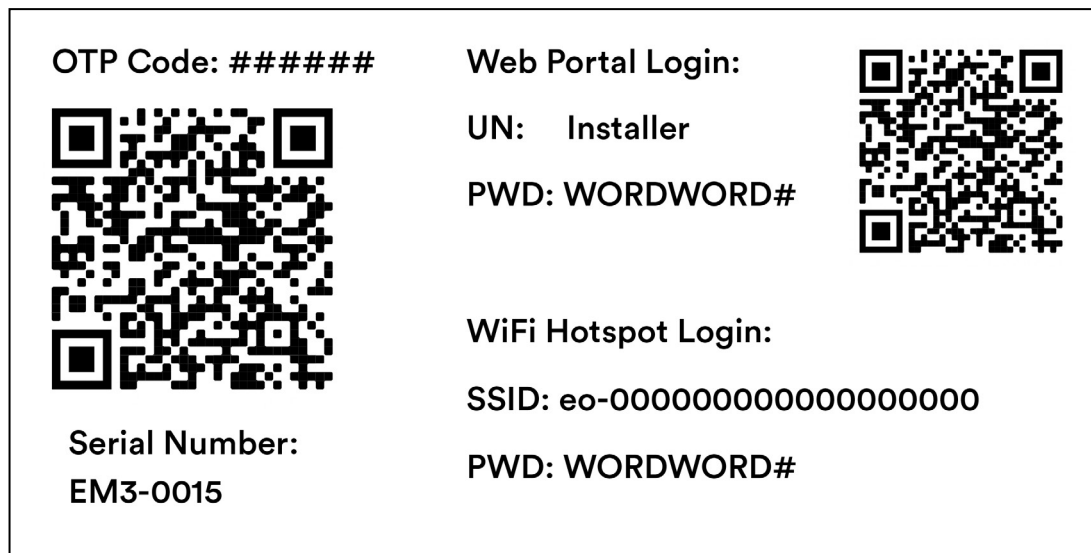


Figure 22: Example hotspot password label found in the Genius 2 packaging.

3. Once connected to the charger Wi-Fi hotspot open your web browser and enter the following IP address 10.10.10.1 in the search bar.

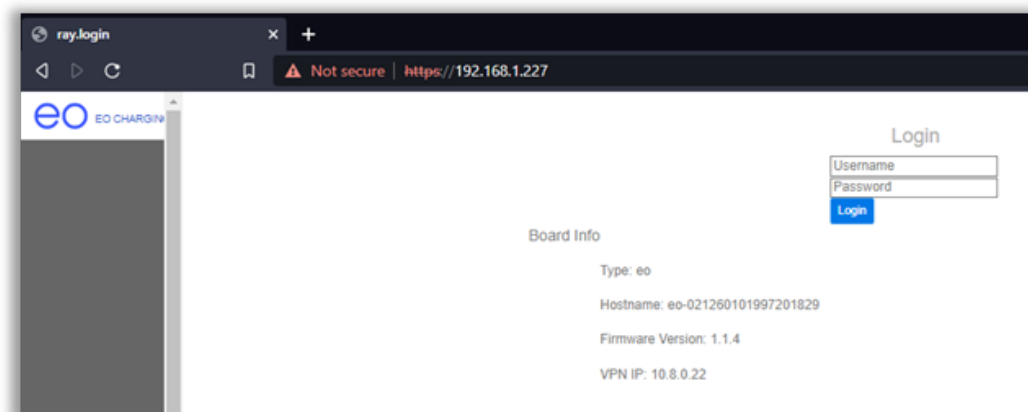


Figure 23: EO Charging UI login page.

You should reach the UI login page where you will need to enter the username which is **“Installer”** and the unique password which can be found on a label stuck to the inside of the charger packaging, see figure 14 for an example of credentials label for reference.

Note: Each charge point will have its unique passcode. We recommend you retain all labels and hand these to your client for safe keeping as may be required at a later date.

The image below shows a typical example of a Genius 2 system connected to a LAN.

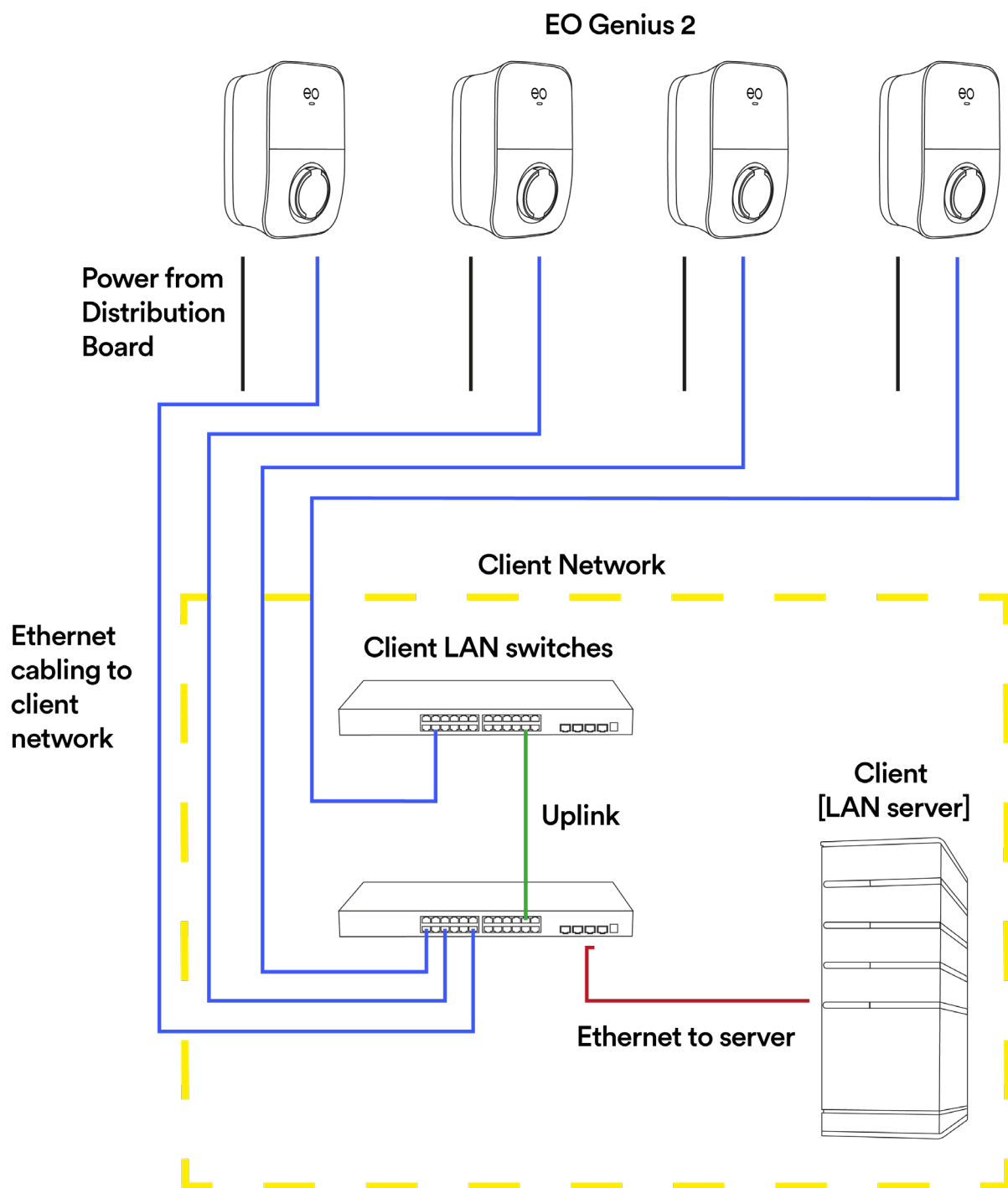


Figure 24: LAN connection diagram.

7.3 CONFIGURE THE DEVICE PARAMETERS

Once the installer is logged in then there are several pages that can be configured by the installer:

7.3.1 INFO PAGE

Once logged in you are presented with the general Info screen showing such details as:

1. Charger connection status.
2. IP address.
3. Charger Hostname/Serial number.

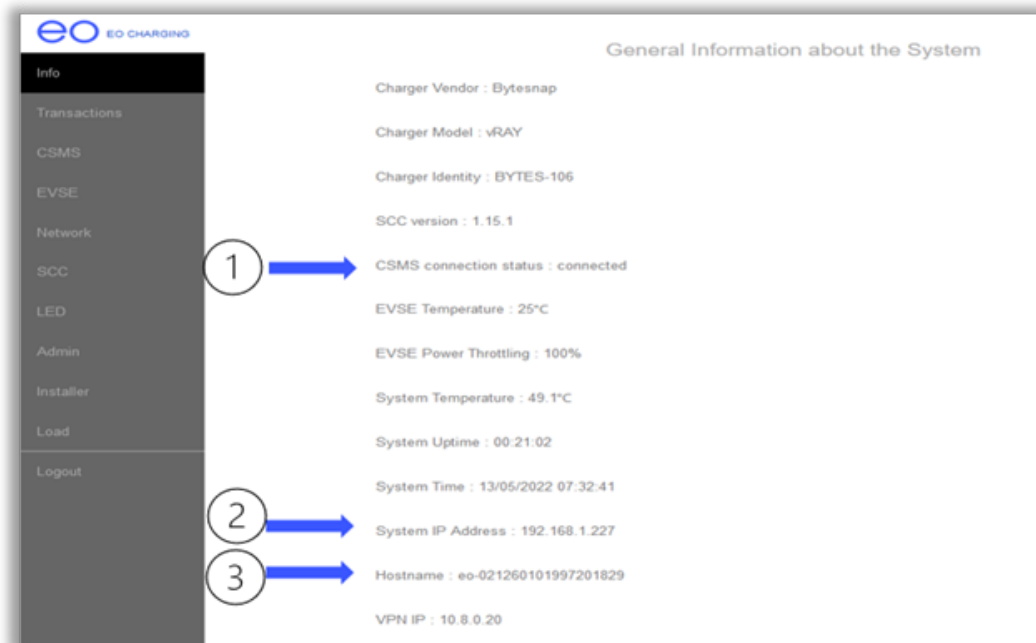


Figure 25: Device information page.

7.3.2 CSMS PAGE

- + Select the CSMS page

EO CHARGING

Info
Transactions
CSMS
Smart Charging
EVSE
Network
SCC
LED
Admin
Installer
Load
Logout

CSMS

Status

CSMS Connection Status
connected

Bytes Sent [B]
992933

Bytes Received [B]
419992

Charger Model
EO Genius 2

Charger Vendor
EO Charging Ltd

Settings

CSMS Server Address
ws://cpc.ocpp.eocharging.com:80/eo

Charger Identity
EOGENIUS2_123456

Offline Authorisation
☒ Authorisation via CSMS server

Sound Notification
☒ Sound Disabled

RFID Enabled
☒ RFID Enabled

Save

Figure 26: EO charging software CSMS page.

- + Please enter the below details
 - + CSMS server address – this is the CPO OCPP URL
 - + Charger identity – this is the OCPP ID
- + Click save
- + Reset the device by either
 - + Power cycling the device
 - + Clicking on SCC restart on the admin page

Admin

SCC client

start restart stop

version: 1.16.3

Figure 27: Admin page SCC Client restart.

Verify connection

When the charging station has restarted then it should automatically connect to the CPO server.

7.3.3 NETWORK PAGE

1. Network status settings are available here for LAN connectivity. In most applications, DHCP assignment will be required however Static IP address can also be set by way of the toggle.
2. If connecting the charger using Wi-Fi, the router SSID and password can be entered here. If you click on the “Refresh List” button, then a list of available Wi-Fi SSIDs is available.
3. Make sure to set the toggle for DHCP or STATIC IP assignment.
4. Do not modify any of the ad hoc Wi-Fi configuration settings.

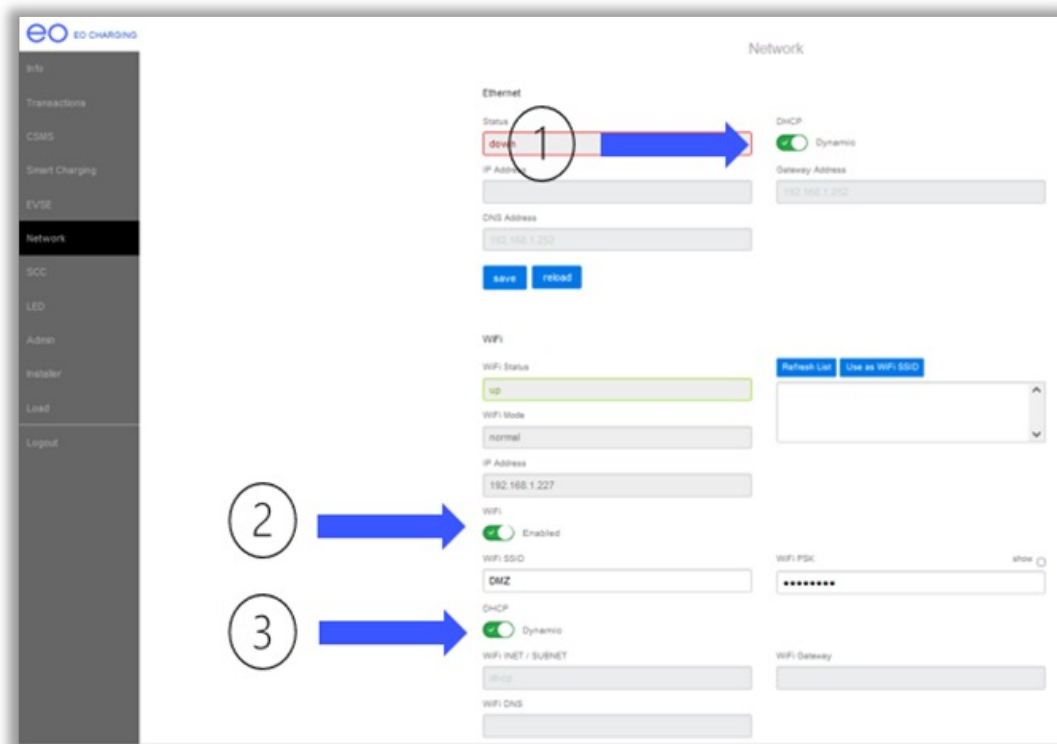


Figure 28: EO charging software network page.

7.3.4 INSTALLER PAGE

1. Check your time zone and adjust it as required.
2. Set the charger maximum out value in Amps. This value should not exceed 32Amps.
3. Enter your name, company, and email address.
4. From the drop-down box, select the phase connection to the charger.

The screenshot shows the 'Installer Settings' page of the EO Charging software. On the left is a sidebar menu with options: Info, Transactions, CBMS, Smart Charging, EVSE, Network, SCC, LED, Admin, **Installer**, Load, and Logout. The main content area is titled 'Installer Settings' and contains the following sections:

- Charger Settings**: Includes a 'Timezone' dropdown menu (currently set to '(UTC+00:00) Dublin, Edinburgh, Lisbon, London') with a 'Save Timezone' button.
- Charger Current Limit**: A numeric input field set to '32' with a unit of '[A]'.
- Tilt Alarm Angle**: A numeric input field set to '10' with a unit of '[°]' and a 'calibrate' button.
- Installer Info**: Three text input fields for 'Installer Name [text]', 'Installer Company [text]', and 'Installer Email [email]'.
- Phase Connection**: A dropdown menu currently set to 'R (L1)'.
- External Metering**: A dropdown menu currently set to 'Not Fitted'.

At the bottom of the form are two buttons: 'Save All Configuration' and 'Reset to Default'.

Four numbered circles (1, 2, 3, 4) with blue arrows point to the corresponding steps in the form: 1 points to the Timezone dropdown, 2 points to the Charger Current Limit input, 3 points to the Installer Name input, and 4 points to the Phase Connection dropdown.

Figure 29: EO charging software installer page.

7.3.5 LOAD PAGE

1. Toggle on/off as required.
2. Set the desired safety margin in Amps.
3. Select static or dynamic balance.
4. Make sure to enter the site value. This will be the site or distribution board load capacity.

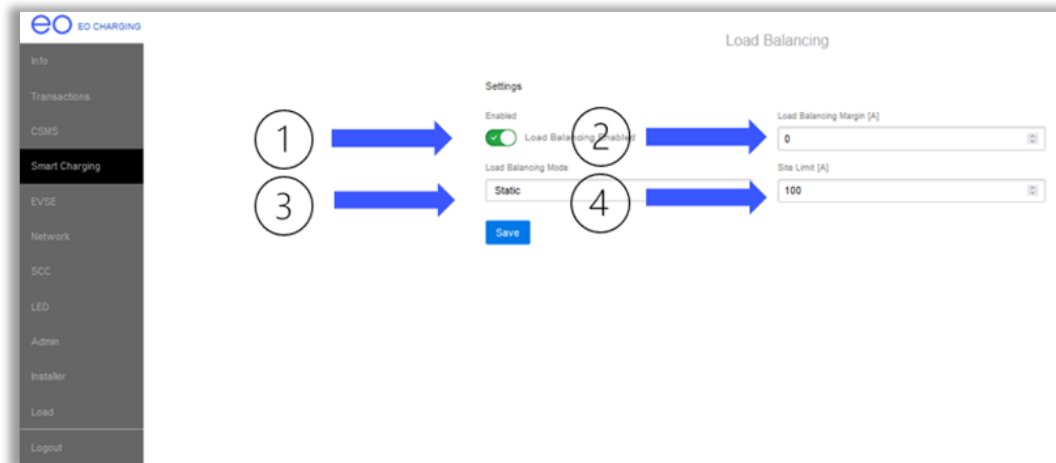


Figure 30: EO charging software smart charging page.

7.3.6 SMART CHARGING PAGE

A charging profile is enabled by default.

This may need to be adjusted to suit clients charging requirements. This setting can only be changed via the charger UI so any future changes to this setting would need to be amended here.

The randomised delay is set to 600s or 10 minutes. This setting forces the charger to offer power to a vehicle anywhere between 0 and a 10 minute interval. The value can be amended if required.

The screenshot shows the 'Smart Charging' configuration page in the EO CHARGING software. On the left is a vertical sidebar with navigation links: Info, Transactions, CSMS, Smart Charging (highlighted), EVSE, Network, SCC, Admin, Installer, Load, and Logout. The main content area is titled 'Smart Charging' and contains the following sections:

- Smart Charging Profiles:** Includes input fields for 'Number of Active Profiles' (set to 0) and 'Number of Charging Profiles' (set to 1), followed by a 'Clear' button.
- Default Charging Profile:** Features a 'Default Profile' section with a green toggle switch labeled 'Enabled'. Below this, a note states 'When Enabled, No charging happens during these periods:'. Two time periods are listed: 'No Charging Period 1' from 08:00 to 09:00, and 'No Charging Period 2' from 16:00 to 22:00.
- Randomised Delay:** Includes a 'Max Delay [0-1800s]' input field set to 0, and a 'Save' button.

Three numbered callouts with blue arrows point to specific elements: Callout 1 points to the 'Smart Charging' menu item in the sidebar; Callout 2 points to the 'Enabled' toggle switch; Callout 3 points to the 'Max Delay' input field.

Figure 31: EO charging software smart charging page.

→ 8.0 EO GENIUS 2 POWER UP

The EO Genius 2 has a status LED on its front face providing the user with its current status. Below describe the interpreted LED flash codes.

8.1 CHARGER STATUS LIGHT ON POWER-UP

The following LED sequence should be observed:

LED colour	State	Notes
Not illuminated	Power off	No power is available EVSE
LED solid white	Initialising	Initialising
LED pulses blue	Ready	The unit has started up successfully and is ready to charge

8.2 NORMAL OPERATION

LED colour	State	Notes
LED pulses blue	Ready	Ready to charge
LED pulses green	Cable is inserted	EO Genius 2 is communicating with the vehicle and trying to start a charging session
LED solid green	Charging	A charging session has started successfully
LED pulses blue	Cable is removed	Ready to charge
LED solid yellow	Paused	The EO Genius 2 has been put on pause by the third-party OCPP server
LED pulses red	Fault condition	A fault has occurred and the communication logs and (if necessary) the diagnostic logs should be consulted

→ 9.0 ADDITIONAL INFORMATION

9.1 FIRMWARE UPDATES

Periodically new firmware images will be released by EO to the CPO customers. EO mandates that these new firmware images must be uploaded to the Genius 2 charging stations as soon as possible as they may contain security improvements.

9.1.1 RECEIVING THE FIRMWARE IMAGES

1. Contact cposupport@eocharging.com and ask to be put onto the firmware image release mailing list.
2. Periodically cposupport@eocharging.com will send out new firmware images with release notes.

9.1.2 APPLY THE IMAGES

The firmware images can either be applied via the CSMS using the standard OCPP firmware update commands or they can be applied to the device directly:

1. Log onto the charging station
2. Go to the Admin page
3. Upload the zip file

System Update

Choose Update zip file	Browse	install update
------------------------	--------	----------------

Figure 32: EO Charging Software Systems updates.

9.2 SECURITY

By default, over 100 common root certificates have been preloaded onto the Genius 2. However, if a custom root certificate needs to be added to the charging station then the following sequence should be followed:

1. Connect to the CSMS using the ws connection.
2. Use the OCPP Install Certificate command to download the new certificate.
3. Change to the wss connection and the EO Genius 2 should now be able to connect to the CPOs CSMS.

9.3 TROUBLE SHOOTING

In the case of problems, EO Support may request the diagnostic logs from the charging station. These logs can be accessed from the Admin page.

1. Load the Admin page.
2. Click on the “download” button in the SCC logs.
3. A compressed file will be downloaded.
4. Email the downloaded log file to EO Support.

System Logs

SCC Logs

download

Figure 33: EO Charging Software Systems logs.

9.4 FINAL NOTES



All charging stations installed should be completely tested and signed off as functioning using dedicated EV test equipment.

An electrical and charger test certificate should be left with the client once all work is complete where appropriate.

→ 10.0 FURTHER TECHNICAL SUPPORT

All EO Charging technical documentation is published in the EO Resource Centre, this is found at: <https://www.eocharging.com/support>.

The EO Support team can be reached at:

Email: support@eocharging.com

Phone: +44 (0) 333 77 20383

We now offer 24-hour phone support, 7 days a week for EO customers - select the 'Technical Support' option.



This document contains information that is subject to change without notice.

The latest version of this publication can be downloaded at:

<https://www.eocharging.com/support/commercial-solutions/eo-genius-2>



Disclaimer: *No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including, but not limited to, copying, recording, retrieving data, or computer networks without the written permission of EO Charging.*

