EOCHARGING.COM

EO GENIUS 2

↘ INSTALLATION & COMMISSIONING GUIDE

→ TABLE OF CONTENTS

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

→ 1.0 INTRODUCTION

This document covers the details of the EO Genius 2 product.

+ Product summary.
+ Physical installation.
+ Product data.
+ Device configuration.
+ Advanced features.
+ A detailed description of each of the menu pages.

The documentation in this guide is based around Firmware version 1.3.5.

1.1 PRODUCT SUMMARY

Topic	Genius 2
Audience	Commercial
EO Cloud interface	Web Portal
Switch gear	Contactors
Metering	MID meter
RFID	Yes
Power	Single Phase – 7.2kW Three Phase – 22kW

ⓘ 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.

1.2 EO CHARGING ECOSYSTEM

The below diagram outlines our product ecosystem for the EO Genius 2, our Cloud software connect and run to create a seamless charging experience for the user.
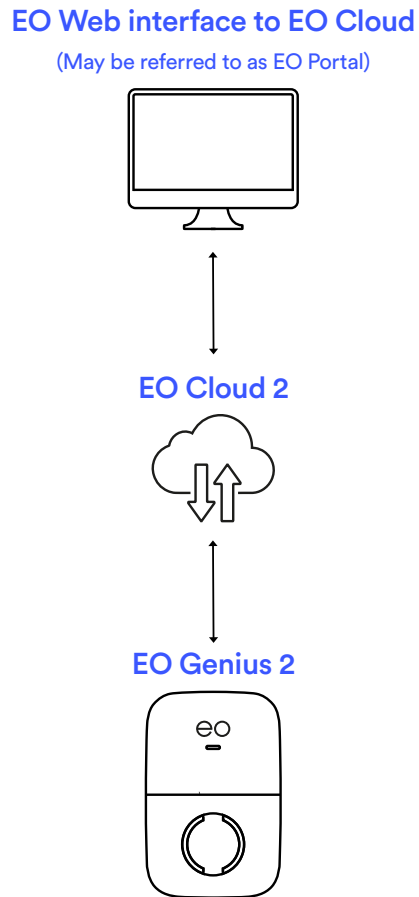
EO Web interface to EO Cloud
(May be referred to as EO Portal)

EO Cloud 2

EO Genius 2

Figure 1: EO Genius 2 product ecosystem.

→ 2.0 QUICK REFERENCE GUIDE

2.1 EO GENIUS 2 INSTALLATION

1. If you have never installed an EO Genius 2 then please complete the Installer Training on the EO Academy – go to the training academy link on the support page of the EO website.

2. Open up the EO Genius 2 and mount the base on to the wall.

3. Use the cable template on the installer guide to prepare the input cables (Power and CT clamp connections).

4. Take a photo of the installer label on the side of the front unit. This is required for commissioning (step 9 below).

5. Connect the power cables to the EO Genius 2 (Remember to use the supplied cable restraint and stepped grommet to ensure ingress protection).

6. Connect the CT Clamps or the ethernet cable to the front of the EO Genius 2, close the EO Genius 2 (put the rubber washers on the hex bolts) and attach the fascia (insert top first).

7. Power up the EO Genius 2.

8. When the LED has changed from white to blue (which can take 2 min) then join the wifi hotspot e.g. eo-01234567890 (refer to the photo taken in point 4 for login credentials).

9. Go to https://10.10.10.1 on a web browser and click through security warnings. Login with username "Installer" and the password from the photo in step 4. Then set the following as a minimum:

    1. **Smart Charging** - If you want to perform safety tests then you may want to disable the default profiles and random delay. Remember to re-enable them before handing over to the customer as per UK Smart Charging Regs.

    2. **Network** – Check the APN details for GSM enabled units (if required).

    3. **Installer** – Timezone, max current, contact details, tamper (bump=2, tilt=10) and CT clamps (if load management is required).

    4. **Load** – load management & Solar settings (if required).

11. Log out and the unit is ready to hand over to the customer. Also hand over the customer card as they will need this for final setup.

12. Residential customers can use the EO Charging mobile phone app to connect the charging station to the EO Cloud.

13. Commercial customers should contact EO to get the tenant in EO Cloud set up so that the charging stations can be assigned to the tenant in EO Cloud.

2.2 LEDS

LED Colour	State
White	Bootup
Flashing blue	Ready
Flashing green	Car plugged in but not charging
Green	Charging
Yellow	Paused
Cyan	Random delay
Flashing blue/green	Firmware is updating
Flashing red/green	Tamper has been activated
Red	Error state
White flash	RFID card read
Purple	RFID has been scanned and a transaction has been approved by the OCPP server but no vehicle has been plugged in yet i.e. it's ready to go.

2.3 SIMPLE OPERATION

In order to use the Charging station:

+ Ensure that the charging station is powered up.

+ Plug the cable into the vehicle.

+ Plug the other end of the charging cable into the vehicle. The vehicle will start to charge immediately or as per the schedule on the cloud or app.

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→ 3.0 PREPARATION FOR INSTALLATION

3.1 EQUIPMENT

Ensure that the appropriate tools are used to mount the charging stations along with the appropriate power cables, MCB and RCDs.

3.2 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 the charging stations will fail to connect to the EO Cloud. When connecting to the EO Cloud please ensure that ports 80 and 443 are open.

3.3 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 charging station may fail. To check that the Wi-Fi signal is strong enough please complete the following steps:

1. Ensure that a 2.4GHz wifi network is available.
2. Utilise a suitable Wi-Fi analyser mobile device app to verify signal stability, strength, and interference levels.
3. Using a mobile device connect to the premises' Wi-Fi router (if the customer grants permission).
4. Measure the data rate and signal noise. The data rate should be greater than 5mbs and using an appropriate mobile app, measure the signal noise [RSSI] value which should be less than-67dBm.

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 assuming that a suitably strong GSM signal strength is available.

→ 4.0 INSTALLATION INSTRUCTIONS FOR EO GENIUS 2

4.1 CHARGER INSTALLATION INSTRUCTIONS
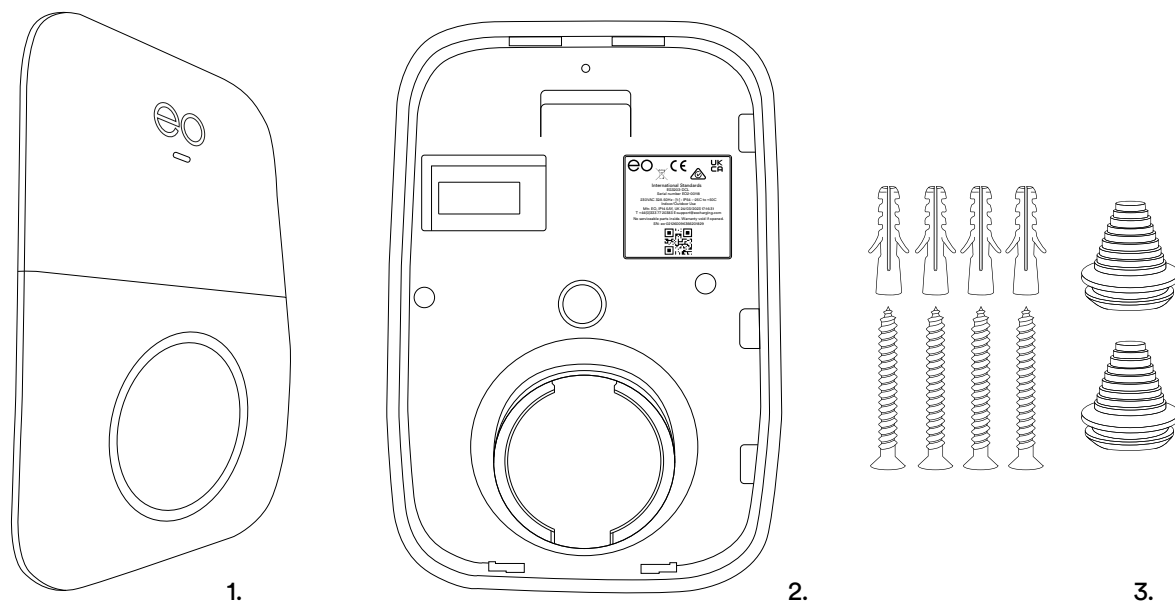
1. What is in the box.

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. Separate the base and the front.
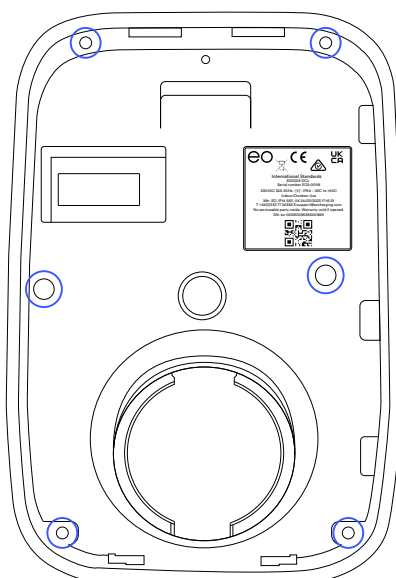

Figure 3: EO Genius 2 backplate.

3. Take a photo of the installer label on the side of the front. These details will be required for later on in the installation process.
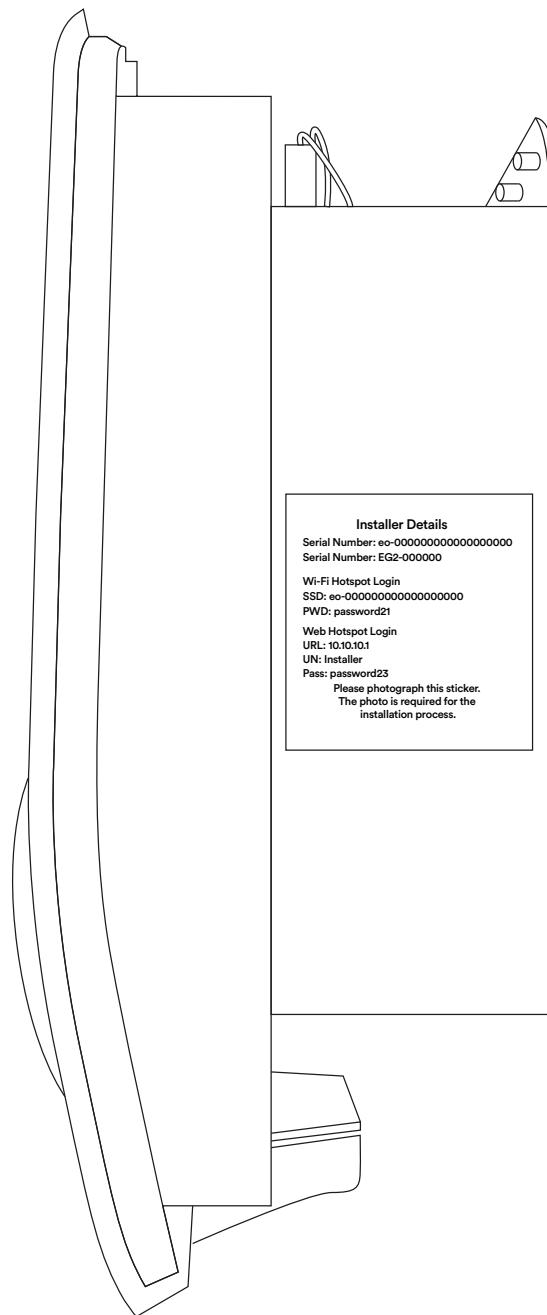
Installer Details
Serial Number: eo-000000000000000000
Serial Number: EG2-000000

Wi-Fi Hotspot Login
SSD: eo-000000000000000000
PWD: password21

Web Hotspot Login
URL: 10.10.10.1
UN: Installer
Pass: password23

Please photograph this sticker.
The photo is required for the
installation process.

Figure 4: EO Genius 2 rear housing.

4. 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]

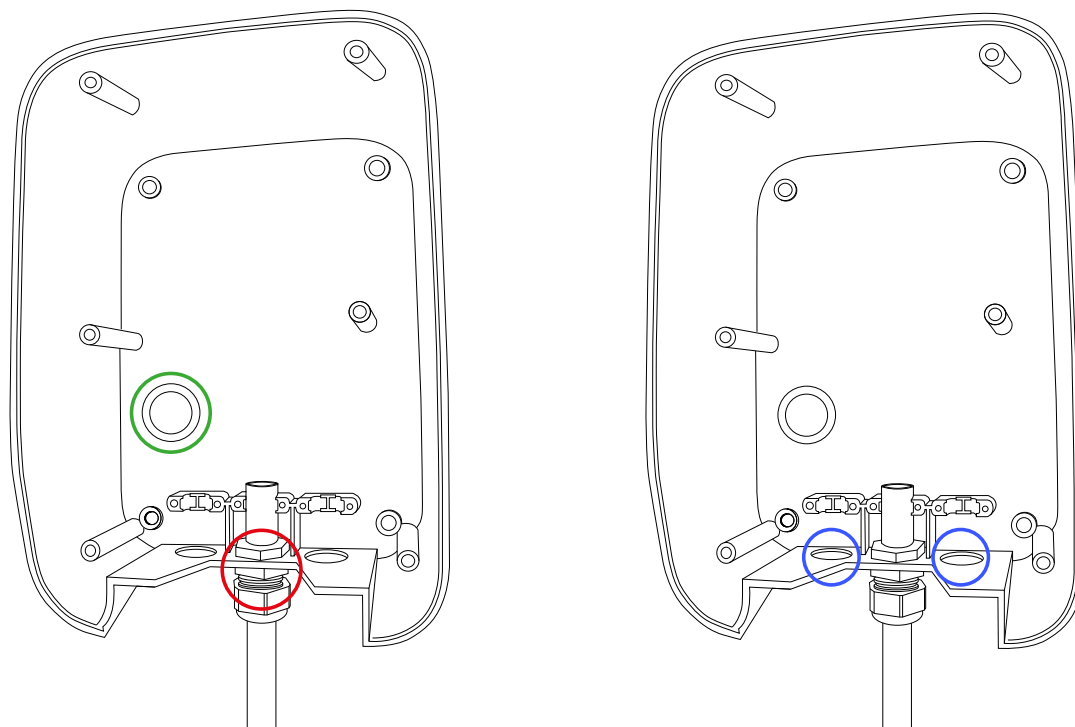   b.   Power – bottom entry [red]

    c.   Ethernet [blue]

Figure 5: 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.

5. 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.

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

6. 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.
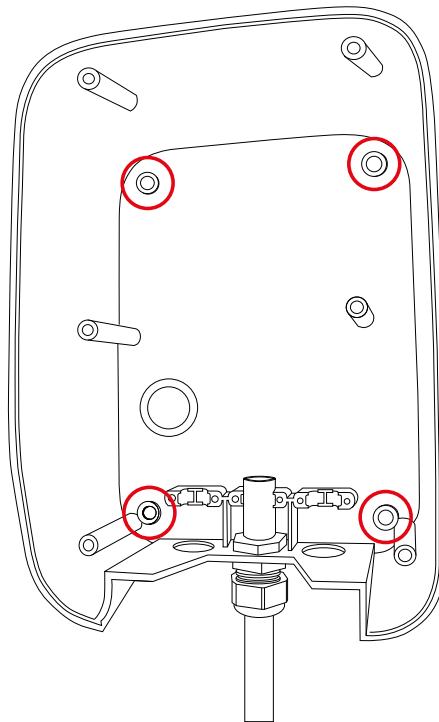
Figure 6: EO Genius 2 rear housing displaying 4 rear entry holes.

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.
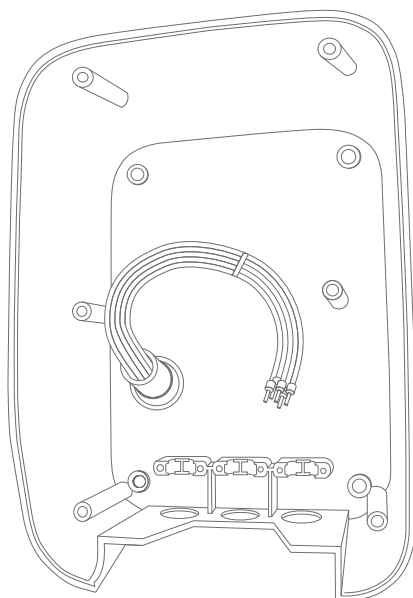

Figure 7: EO Genius 2 with rear cable routing.

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.
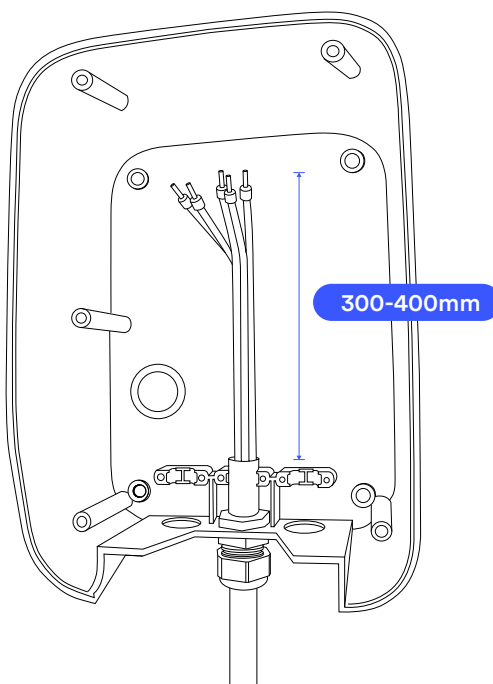

Figure 8: EO Genius 2 with bottom cable routing.

9. Secure both the power and Ethernet LAN cables to the rear housing making sure to fit grommets and compression glands accordingly.
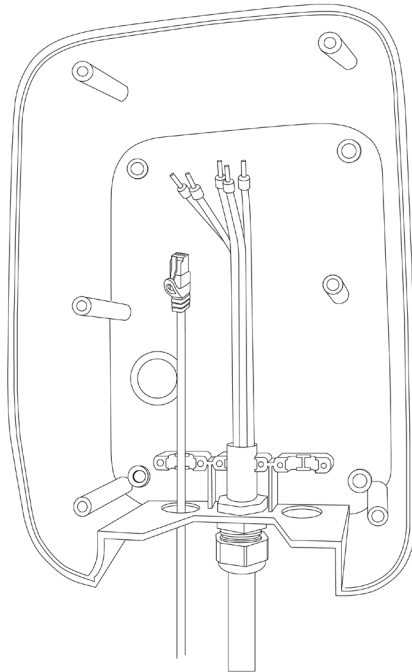

Figure 9: Ethernet and power cables secured to rear housing.

10. 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.
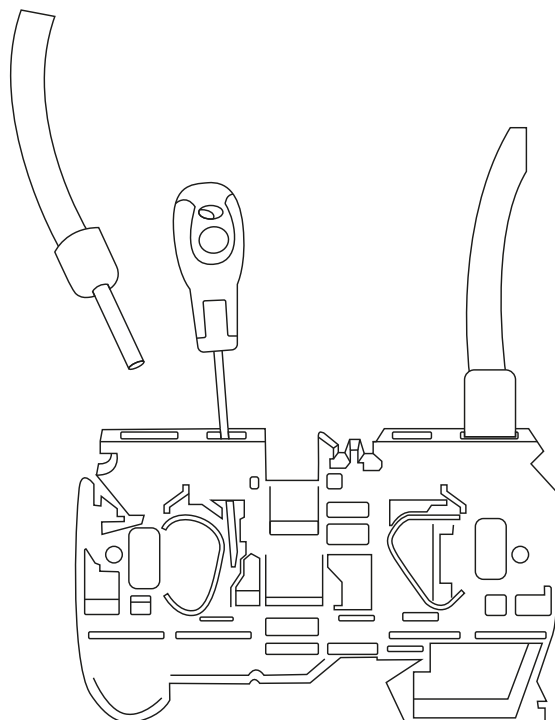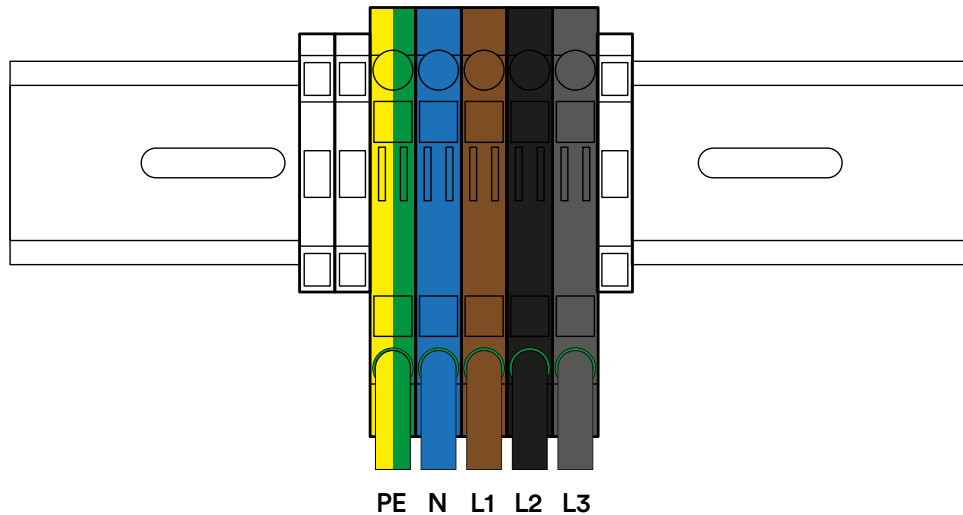

Figure 10: DIN Rail.

Figure 11: DIN Rail colour coding.

PE = Protective Earth
N   = Neutral
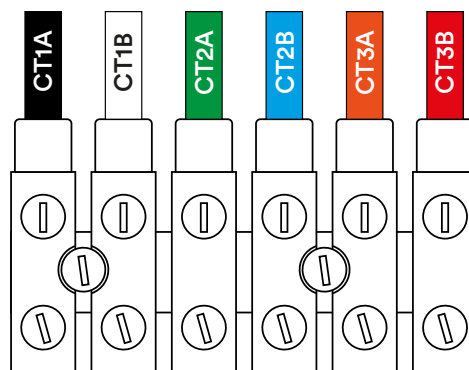L1   = Line/Phase 1
L2   = Line/Phase 2
L3   = Line/Phase 3

Figure 12: CT Clamp Wiring.

CT Clamps EO provide are Red = CT1A and White = CT1B

Here is a diagram on CT clamp orientation for a single phase genius. The orientation can be checked in the info page of the Genius 2 when it has powered up - see section 5.1
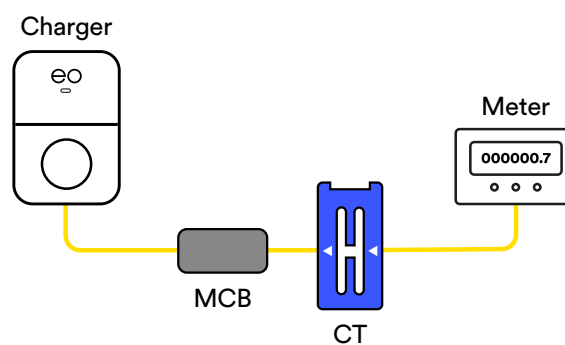
Figure 13: CT clamp orientation.

11. 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 14: EO Genius 2.

The image below shows a typical example of a Genius 2 system connected to a LAN. Chargers can be connected via Ethernet to an existing or standalone LAN.
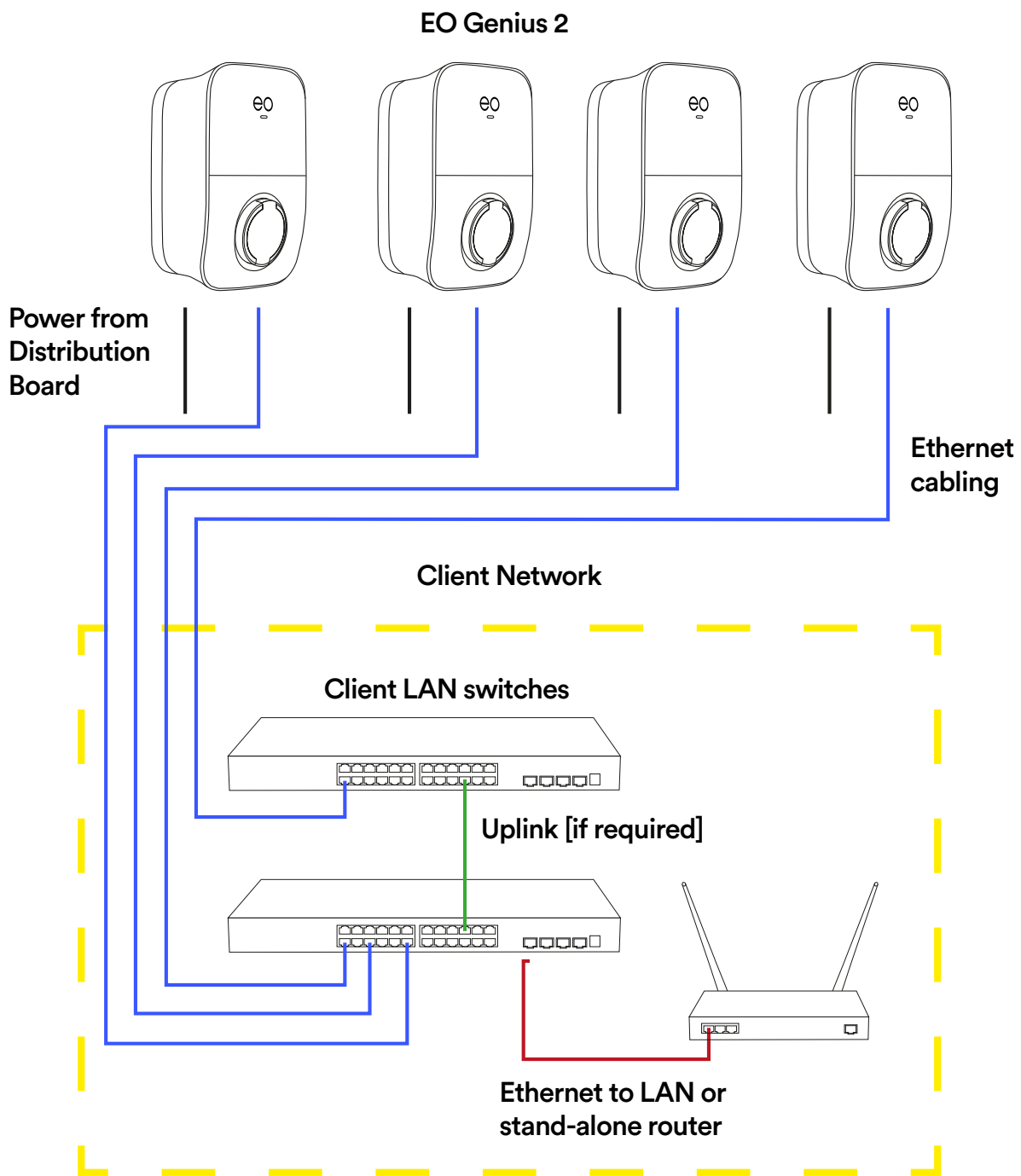
EO Genius 2

Power from Distribution Board

Ethernet cabling

Client Network

Client LAN switches

Uplink [if required]

Ethernet to LAN or stand-alone router

Figure 15: LAN connection diagram example.

4.2 TN/IT 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.

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

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

Congratulations, you have successfully completed the hardware installation for the EO Genius 2.

4.3 RFID

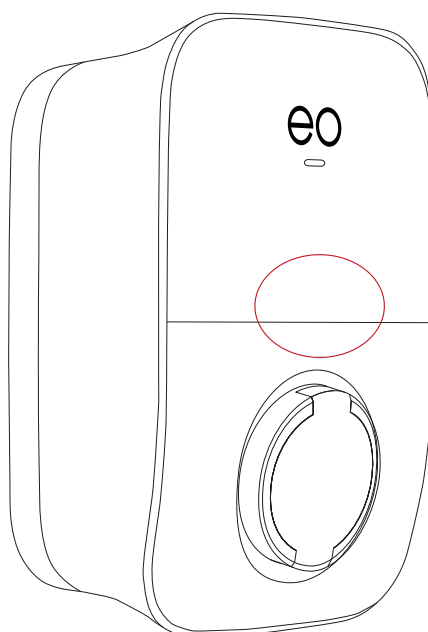The EO Genius 2 has an RFID card reader in the front of the unit

Figure 16: EO Genius 2 RFID location.

4.4 MAINTENANCE

The EO Genius 2 should be maintained periodically. Maintenance should include physical cleaning of the unit and the pins of the socket/plug. Additionally the RCD/MCB should be tested as per the manufacturer's instructions.

→ 5.0 DETAILED DESCRIPTION OF WEB INTERFACE

The following section provides a detailed view of the web interface of the EO Genius 2.

5.1 INFO PAGE

Figure 17: System information page.

This is a very useful page as it displays some important information to determine if the charging station is working as expected. This includes:

+ CSMS Connection State – is the charging station able to make a connection to the OCPP server.

+ Status – OCPP status of the charging station.

+ Current and current offered – how much current is being offered to the vehicle and how much current is being drawn by the vehicle.

+ Faults.

+ CT Clamps.

+ If CT Clamps are enabled then this will show a +VE or -VE value in mA.

  + +ve value = current import e.g. current is flowing from the grid into the house.

  + -ve value = current export e.g. current is flowing from the house into the grid.

5.2 TRANSACTIONS

The transactions screen is broken down into two halves.

Figure 18: Transactions page.

1. Transaction history.

    a. Here it is possible to see historic charging sessions and how much energy was drawn and for how long during the session.

2. RFID White List.

    a. The RFID white list is only available on the Genius 2.

    b. It is possible to build an RFID white list for the Genius 2 charging stations. To enable a white list:

        I.   Click enable

        II. Click "add" RFID tag

        III. Scan an RID tag on the front of the genius 2 unit

        IV. RFID tag should now be added

    c. It is possible to then export the white list.

    d. To use the unit in offline mode with RFID authentication then enable the RFID white list, add a tag and then select local authorisation and authorisation required in the CSMS page.
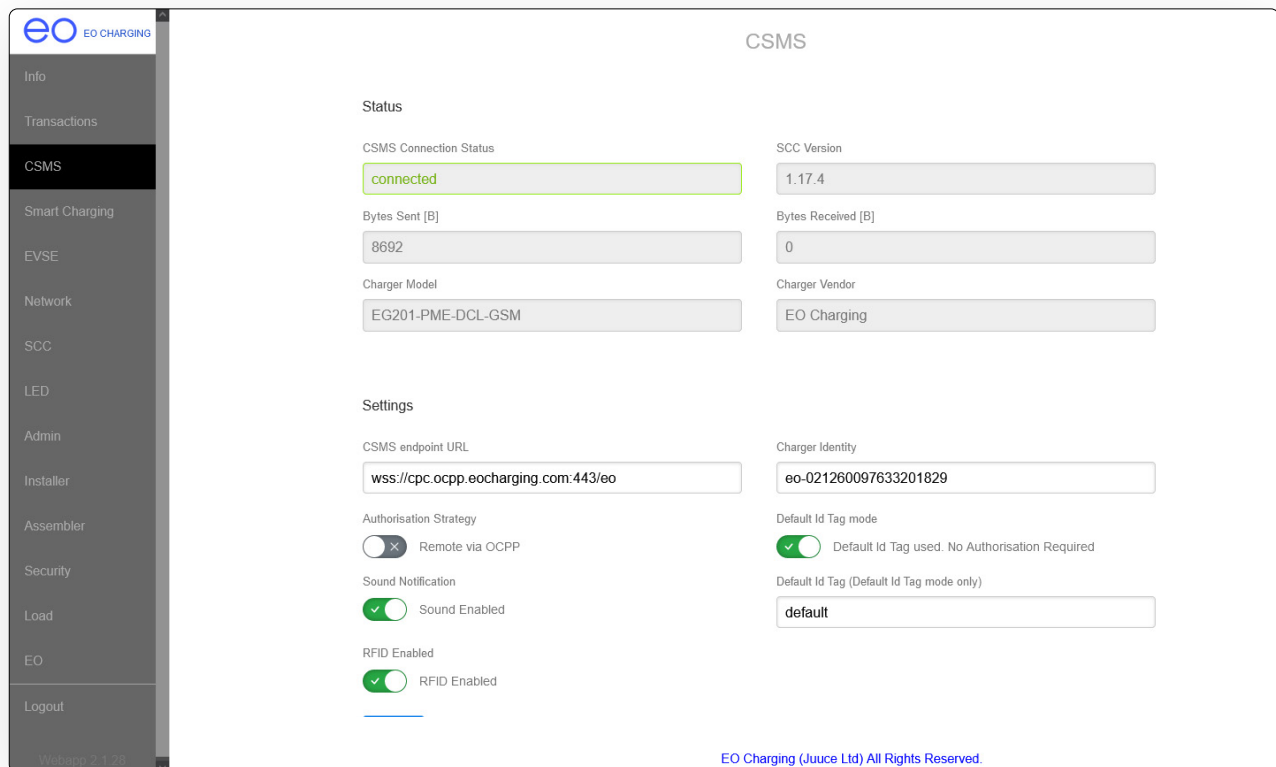
5.3 CSMS

Figure 19: CSMS page.

By default the charging station is configured to connect to the EO Cloud. The EO Genius 2 will have RFID. If the installer wishes to configure this unit to connect to a 3rd party OCPP server then the following fields should be modified

+ Authorisation Strategy – Local or Remote by OCPP server

+ Sound – on or off

+ RFID – on or off

+ Default ID Tag mode– requires authorisation by the cloud before starting

+ Default ID Tag – value sent up in Start Transaction message

+ CSMS URL – the path of the OCPP Server. The URL for the EO Cloud is

    + **wss://cpc.ocpp.eocharging.com:443/eo**

+ Charger Identity – the OCPP ID required by the server

5.3.1 RFID MODES

There are three modes available on the EO Genius 2 relating to RFID:

+ No RFID operation

+ Cloud Mode – authorisation is done by the cloud

+ Island Mode – the Genius 2 is not connected to the EO Cloud and authorisation is done locally

5.3.1.1 NO RFID OPERATION

+ This is the default configuration of the Genius 2

+ Authorisation Strategy = Remote

+ Default ID Tag mode – Enabled (Default ID Tag used. No authorisation required)

The basic operation is:

+ Genius 2 connects to EO Cloud

+ Driver plugs vehicle into Genius 2

+ Charging session starts

5.3.1.2 CLOUD MODE

+ The default configuration must be changed from the default to

+ Authorisation Strategy = Remote

+ Default ID Tag mode – Disabled (Authorisation Required)

The basic operation is:

+ Genius 2 connects to EO Cloud

+ Driver plugs vehicle into Genius 2

+ Vehicle is put on pause

+ Charger sends RFID tag to the EO Cloud

+ EO Cloud checks and sends approval command to the EO Cloud

+ Charging session starts

5.3.1.3 ISLAND MODE

+ The default configuration must be changed from the default to

+ Authorisation Strategy = Local

+ Default ID Tag mode – Disabled (Authorisation Required)

The basic operation is:

+ Genius 2 does not connect to EO Cloud

+ Installer adds the RFID card to the charging station whitelist in the Transaction menu

+ Driver plugs vehicle into Genius 2

+ Vehicle is put on pause

+ EO Genius 2 checks the internal whitelist

+ EO Genius 2 approves the RFID tag

+ Charging session starts

5.4 SMART CHARGING PROFILES

Figure 20: Smart charging page.

By default the charging station is programmed with a default charging schedule and a random delay in accordance to the UK Smart Charging Regulations. It is important the units are handed over to the customer with both of these features enabled.

The profiles defined are OCPP Smart Charging Profiles and so can be over ridden by the OCPP Server.

5.5 EVSE

Figure 21: EVSE page.

The page contains detailed information about the firmware and configuration of the charging station. The only installer and customer actionable item is to change the ocpp. Available status of the charger:

+ Available

+ Unavailable

5.6 NETWORK
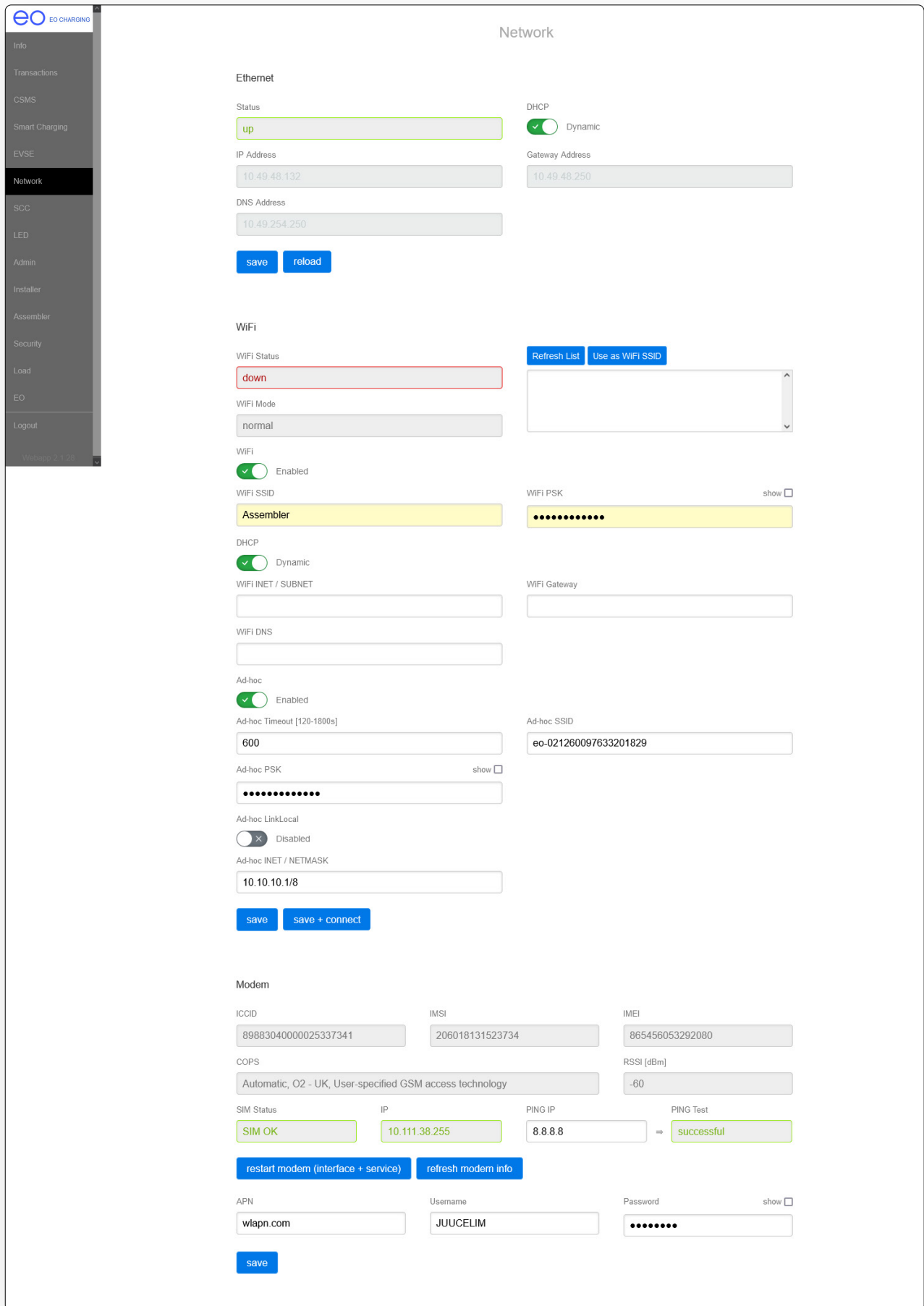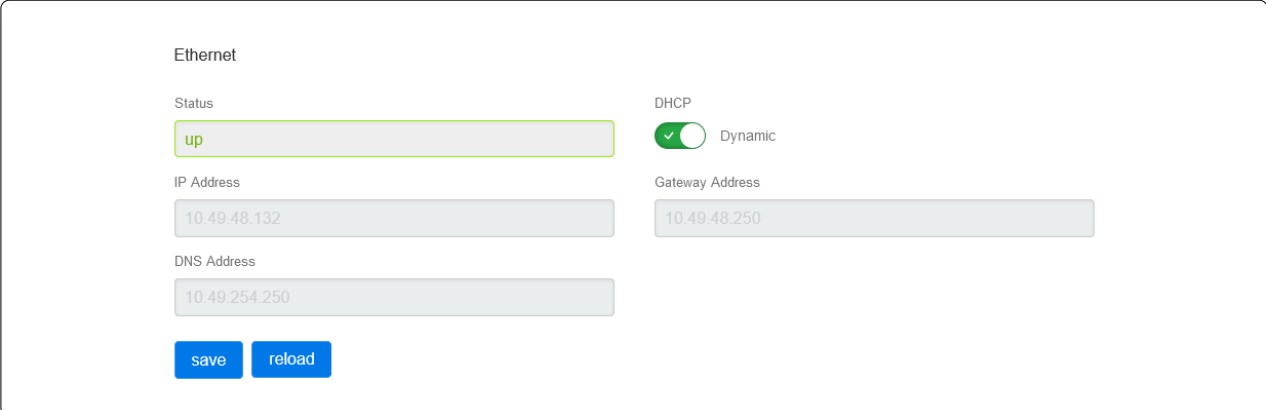
Figure 22: Network page.

+ Ethernet

+ Wi-Fi

+ GSM

5.6.1 ETHERNET

Figure 23: Ethernet settings.

By default the ethernet port is enabled and set up for dynamic DHCP. If a static IP address is required then the DHCP switch should be set to Static and then IP address details should be entered.

5.6.2 WI-FI + ADHOC

The Wi-Fi device on the charging station operates in two modes:

+ Adhoc – configuration settings for the Wi-Fi hotspot. DO NOT modify these settings as it can cause the unit to power up without a Wi-Fi hotspot. If this happens then the only recovery route is to connect the charging station to a router using an ethernet cable.

+ Wi-Fi – the settings used to join the charging station to a local Wi-Fi network.

Figure 24: Wi-Fi settings.

In order to view the list of available Wi-Fi networks, then click on the "Refresh List" button. This will show the list of available networks and their associated signal strengths. Select the chosen network and then click on the "use as Wi-Fi SSID" button. This will then populate the "Wi-Fi SSID" text field allowing the installer to enter the Wi-Fi password into the Wi-Fi PSK field. Again static Wi-Fi details can be used if so desired.

5.6.3 GSM

Figure 25: Modem settings.

There are three settings that the installer can enter:

+ APN URL

+ Username

+ Password

The GSM functionality works in two modes:

+ Primary – when the charging station powers up it then checks for an active Wi-Fi or ethernet connection. If neither are present then the charging station will connect to the OCPP server using the GSM as the primary connection route.

+ Back up – if an ethernet or active Wi-Fi connection is present then the GSM will act as a back up. After 20min of no connection from the Wi-Fi / ethernet then the device will swap over to GSM.

5.7 SCC

This page shows any errors that are present in the system. This can be useful in diagnosing an issue with the charging station in the case of a fault. The EO Support team may request these data logs in the event of a charger malfunction.
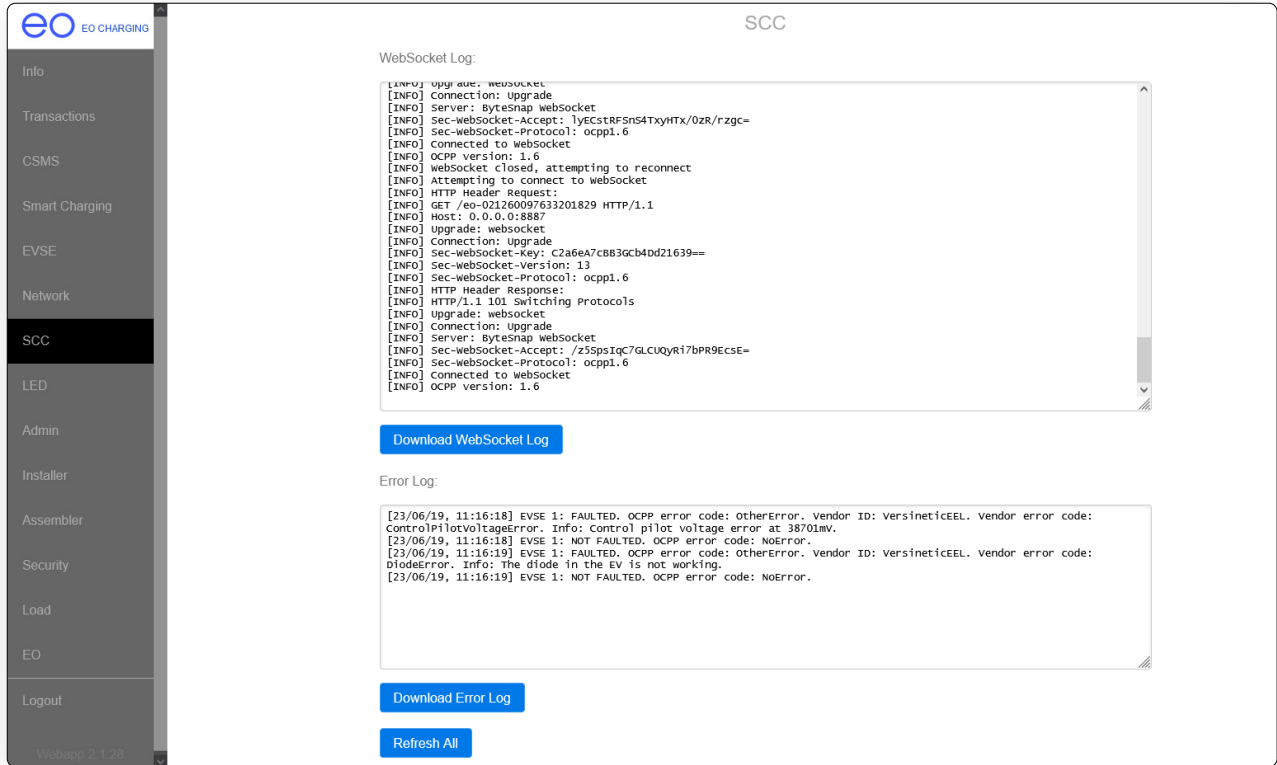
Figure 26: SCC page.

5.8 ADMIN

This page details a number of important support functions.
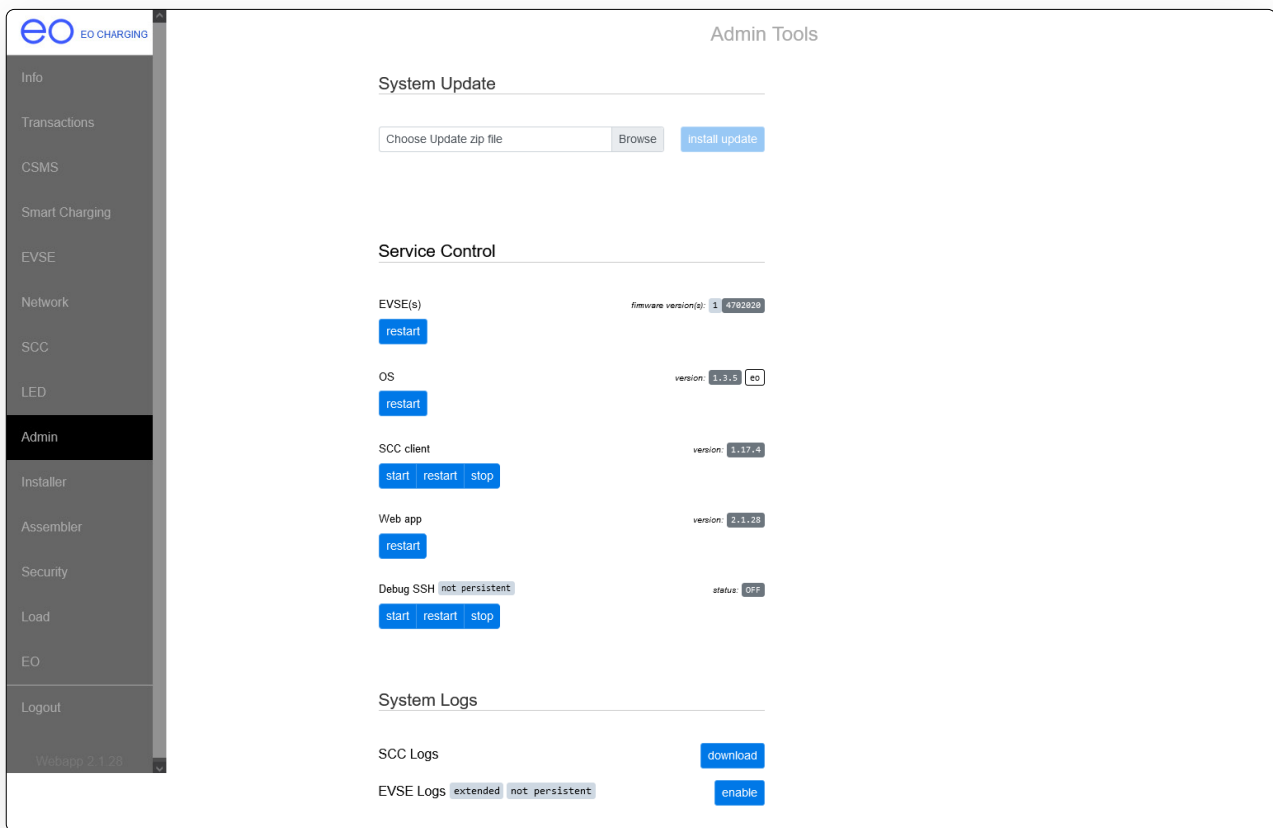
Figure 27: Admin tools page.

These items may be requested by support in the event of a fault:

+ System Update – support may provide the new firmware image which can then be uploaded to the charging station.

+ OS Firmware Version – e.g. 1.3.5 in the above image.

+ OS Restart – reboot the charger which takes roughly 2 min to complete.

+ SCC Logs – download the diagnostic logs. These can be analysed offline or sent to EO Support for analysis in the event of a fault.

5.9 INSTALLER

This page details a number of important support functions.

Figure 28: Installer settings page.

There are important options and fields that must be completed by the installer:

+ Timezone – set the local timezone which is important for OCPP schedules (which are sent down in UTC).

+ Charger Current Limit – the maximum current limit of the charger.

+ Installer Info – enter details of the installer so that these can be made available to the OCPP Server and hence the support team.

+ Tilt - This is a multi stage process

  + Ensure that the charging station is in the final mounted position i.e. it is calibrated in situ.

  + Enter the details – Bump=2 and Tilt=10

  + Click "Save tilt + calibrate"

  + Note – when the "Save tilt + calibrate" button is pressed then this will remove any other unsaved information on the page. So double check that other installation is saved before pressing this button.

+ CT Clamps - If any CT clamps are being used then the following must be enabled

  + External CT Clamps Enabled - Yes / No

  + Ct Clamp 1

    + Enabled Yes / No

    + Rating e.g. 100A

    + Location – Source (e.g. output of inverter) / Site (e.g. output of site meter)

  + Ct Clamp 2

    + Enabled Yes / No

    + Rating e.g. 100A

    + Location – Source (e.g. output of inverter) / Site (e.g. output of site meter)

  + Ct Clamp 3

    + Enabled Yes / No

    + Rating e.g. 100A

    + Location – Source (e.g. output of inverter) / Site (e.g. output of site meter)

5.10 LOAD

The load page works in conjunction with the CT Clamp settings on the installer page to set up load management functionality of the charger. The system is highly flexible and therefore there are a number of load management options available:

Figure 29: Load balancing page.

Setting	Recommended Value	Notes
Enabled	Yes	Turns on or off Load Balancing.
Load balancing mode	Dynamic	The permanent load management mode. To turn off load management then select Static.
Site Limit	X Amps e.g. 60Amps or 80Amps or 100Amps	The limit of the site.
Load balancing margin	10% of the Site limit in Amps	A safety margin for the load management algorithm. For example if the site limit is 100A then the Load Balancing Margin should be set to 10Amps.

Load Balancing Minimum Change	1A	The amount by which the site/import CT Clamp reading must change by before the charging station will react to the change. For example if the Load Balancing Minimum Change is set to 1A then the load management won't react if the CT reading changes by 0.1Amp. However, it will react if the CT reading changes by 1.1Amp.
Load Balancing Minimum Delay	10sec	The time between changes to the advertised rate of available power to the vehicle.
Load Balancing Minimum Top Up	6A	The minimum rate of charge to be used in TopUp or TopUpEco mode.
TopUpEco Minimum Threshold	6A	The amount of export required before the charging station will start charging in solar mode.

5.10.1 ENABLE DIFFERENT MODES BY USING PROFILES

If the customer wants to select different schedules at different times using the EO Charging app, then the following configuration options should be set by the installer.

Figure 30: Load balancing profile settings.

Setting	Recommended Value	Notes
Enabled	Yes	Turns on or off the ability to control the different modes by the EO Charging App.
Load Balancing Profile Mode	Import	The default solar mode which is used by the charging station when a solar schedule is selected by the EO Charging App.

5.11 SOLAR

It is possible to set up the Genius 2 to allow the charging stations to work in a number of solar modes:

Setting	Net Zero	Solar Matching
Description	The excess solar of the house is imported directly into the vehicle.	The vehicle is set to charge at the same rate as the output of the solar inverted.
Location of the CT Clamp	Output of the site meter.	Output of the Solar Inverter.
Example	+ Solar is generating 10 Amps of solar. + The house is consuming 2 Amps. + The vehicle will be set to charge at 8 Amps. + No power is imported from the Grid.	+ Solar is generating 10Amps. + The house is consuming 6 Amps. + The vehicle is set to charge at 10 Amps. + 6 Amps is imported from the grid.
Notes	The vehicle will only start to charge in this mode when the site is exporting more than the vehicle's minimum charging rate which is 6 Amps.	All house consumption will be imported from the grid in this mode.

It is possible to set up the charging stations to work in the following modes:

1. Permanent Solar Mode.
   a. The device is permanently in solar mode (Net Zero or Solar Matching).
      I. Import – the charging rate matches the output of the solar inverter or the total export of the site.
      II. TopUp – the charging rate of the vehicle is set to a minimum value of 6A which is then increased if the solar export is greater than 6A.
      III. TopUpEco – the same as TopUp but the starting threshold is not 6Amps but can be configurable.

2. Solar + Load Management.
   a. The customer can set up the device using the EO Charging Smartphone app so that the charging station can charge on full power or on solar e.g.
      I. Full Power – 00:00 to 04:00
      II. Solar – 10:00 to 15:00

5.11.1 RECOMMENDED CONFIGURATIONS

CT1	CT2	Load Management Mode	Load Balancing Profile Enabled	Load Balancing Profile Mode	Operation
Not connected (NC)	NC	Static	False	n/a	n/a
Site (output of site meter)	NC	Dynamic	False	n/a	Load management at the site import limit.
Source (output of solar inverter)	NC	Import	False	n/a	Permanent Solar Matching Mode.
Site	NC	TopUp / TopUp Eco	False	n/a	Permanently set up to charge in top up mode i.e. dependent on export of power from site.
Site	NC	Dynamic	True	Import	Net Zero Mode.
Site	NC	Dynamic	True	TopUp/ TopUpEco	Advanced solar modes.
Site	Source	Dynamic	True	Import/ TopUp/ TopUpEco	Net zero mode but the current output of the solar inverter is shown on the Info page. This is a useful piece of information/ diagnostic too.

→ 6.0 OTHER

6.1 FIRMWARE UPDATE

It is possible to upgrade the firmware of the charging station through two mechanisms:

1. Through the OCPP server.
2. Through the Admin Page of the web interface.

When the EO Genius 2 connects to the EO Cloud then the EO Cloud will automatically upgrade the unit to the latest firmware version 10 seconds after the device has connected to the EO Cloud.

6.2 PEN FAULT DETECTION

The PME variants of the EO Genius 2 have inbuilt PEN fault detection. There are no configuration options required for this feature and it continually operates whilst the unit is powered on.

If the charging station is fitted with the PEN Fault Detection system (model designator -PME), then the charging station will detect errors in the incoming grid connection. If a PEN fault is detected then the vehicle will be fully isolated from the charging station and the LED shall illuminate solid RED. It shall not be possible to charge a vehicle in this condition. In order to restart charging:

+ The vehicle must be unplugged from the charging station.
+ The charging station must be power cycled or remotely reset.
+ If the LED remains RED then the grid connection is still not within the defined safety limits and an installer must be contacted to inspect the incoming supply. If the normal pulsing Blue LED is shown then the system is safe to use.

> (i) Note: For PME variants, please make sure these are ordered at the point of purchase as cannot be retrofitted.

6.3 UK SMART CHARGING REGULATIONS

The EO Genius 2 is compliant with the UK Smart Charging regulations. The charging stations comes programmed with a random delay (of 600sec/10min), a default charging schedule (no charging between 0800->1100 and 1600->2200) and an anti-tamper tilt switch in addition to the other requirements such as auto firmware update.

6.4 OFFLINE BEHAVIOUR

6.4.1 SCHEDULES

By default, the EO Genius 2 will follow the last communicated schedule sent to the charging station by the OCPP server. If no schedule has been sent to the charging station by the OCPP server then the charging station will continue to operate according to any schedule set in the "Smart Charging" menu of the web interface.

6.4.2 LOAD MANAGEMENT

If Local Load management has been configured then this will continue to operate independently of the connection to the OCPP server.

6.4.3 RFID

Depending on the configuration of the RFID functionality (see section 7.3.1), the charging station will continue to allow charging sessions to start / stop using an RFID card. Note that an RFID must have been previously authenticated.

6.5 DELETING CUSTOMER DATA

The only customer data that is stored by the EO Genius 2 is the customer Wi-Fi details. These can be deleted by the customer logging into the web interface of the device and then removing them from the Network page.

6.6 FINDING THE DEVICE ON A LOCAL NETWORK

If the customer or the installer is logged into the same IP network as the charging station then it is possible for the web interface to loaded by two mechanisms.

+ Entering the IP address of the charger into the search bar of the web browser.
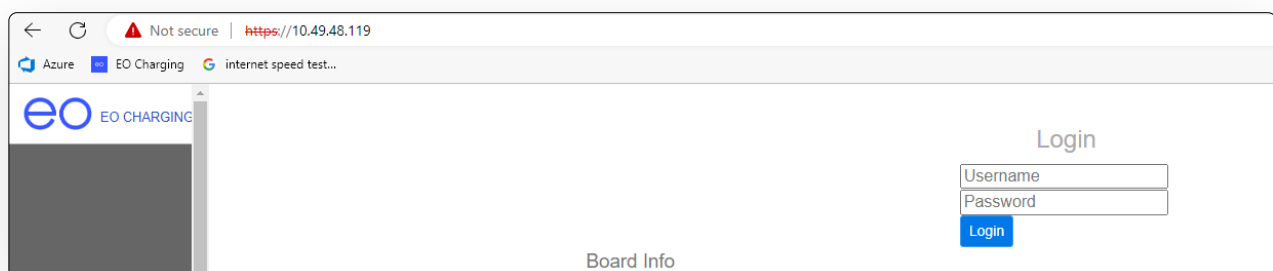
Figure 31: Installer login using IP address.

+ To find the IP address then an IP Scanning tool can be used.

+ Enter the serial number of the charging station followed by .local
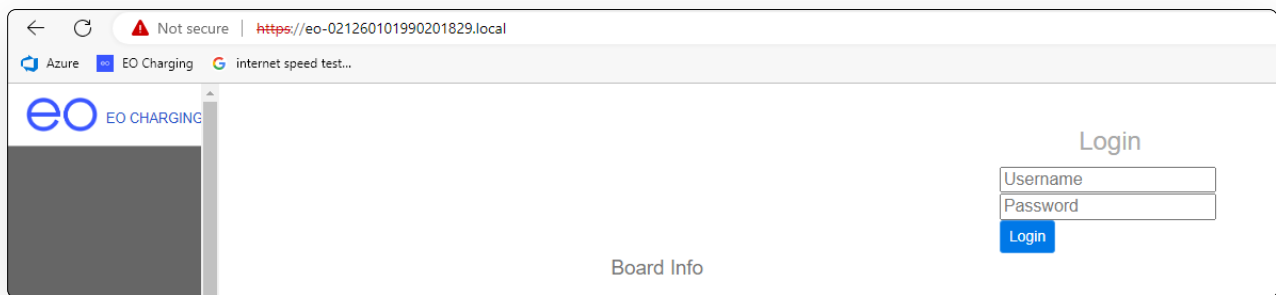
Figure 32: Installer login using charger serial number.

6.7 TEMPERATURE DERATING

The charging stations have a temperature de-rating algorithm so that the charging rate of the vehicle will be reduced if the temperatures inside the unit exceed thresholds. The charging station will start reduce the charging rate by 25% if the temperatures exceed 60°C for the EO Genius 2.

→ 7.0 HINTS AND TIPS

Make use of the info page. This will indicate to the installer and the customer what the charging station is currently doing and is a good tool for fault diagnostics.

The installer should review the readings of the CT Clamps on the Info page to check the correct orientation of the CT Clamps.

The error logs on the SCC page give details of any errors shown.

In the case of an error occurring, download the diagnostic logs from the admin page as the support team will request them.

→ 8.0 CHARGING STATION SPECIFICATIONS

Topic	Note
Characteristics of power supply input	Permanently connected to 230V
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. For tethered units, the holster height should be between 0.5 & 1.5m 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	2000m
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 - internal RDC-DD as per IEC62955, 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
Storage	Dry storage location in ambient temperatures between 0°C and 30°C
Access restrictions	Both restricted and unrestricted
Torque setting for main chassis screws	6Nm
Measures for protection against electric shock	Where the EO Genius 2 includes internal 6mA DC leakage protection (DCL option), then a 30mA Type A RCD must be fitted at the supply. Otherwise, a Type B RCD or equivalent should be used. EO recommends a 40A supply for a 32A charging station. Overcurrent protection (e.g. MCB) should be installed upstream of the charging station. The internal RDC-DD is compliant to IEC 62955
Short circuit protection of the charging cable	40A Type B or Type C MCB with a maximum I2t of + Socket version should be ≤ 75000 A2s + Tethered version should be ≤80000 A2s
Overvoltage category	Category 3
Rated Insulation Voltage	230V (1ph), 440 (3ph)
Rated impulse withstand voltage Uimp	4000V

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Topic	Note
Rated peak withstand current (Ipk)	≤ 80kA2s
Rated short time withstand current (Icw)	N/A
Rated conditional short-circuit current of an ASSEMBLY (Icc)	5000A2s
Maximum charging rate	32Amps per phase

Important: The installer must select the RCD and earthing configuration by following the current local regulations and best practices . The installer must follow national usage guidelines to ensure the unit is installed in accordance to any local restrictions. For the UK refer to the current IET code of practice and a Type A RCD & Type B MCB are recommended.

→ 9.0 EO SUPPORT CENTRE

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

Contact us to learn more about our products. Our charging experts offer 24/7 technical support and are ready to help with any questions or issues.

Live Chat: https://www.eocharging.com/contact-us

Phone: +44 (0) 333 77 20383

Email: support@eocharging.com

The EO Academy Installer training can be found at:
https://www.eocharging.com/eo-academy

ⓘ   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

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