

Electric Vehicle Charging Guide

During 2021, we started to futureproof our developments to allow for easier installation of Electric Vehicle (EV) charge points in the future as the use of EV's increases. This means that the majority of Lodges started in 2021 and all Lodges started in 2022 will have the ducting and cabling already run for easier future installation of the charge points.

Equipment

We have chosen to work with EO as our supply chain partner for the provision of the chargepoints and the mounting accessories. EO are one of the largest EV charging suppliers in the UK and their products and services fit in well with us as a business.

The EV Charger that will be installed is the EO Genius 2, this will be installed alongside a EO Genius Hub. Features include.

- Built-in PME for safe charging
- OCPP compliant
- Has dynamic load balancing
- Wifi/Ethernet and Bluetooth connectivity
- Built in RFID reader
- Built in MID meter
- IP54, IP66 and IK08 protected



Consideration should be given to the protection of the EV chargepoint. The company recommended option is the Project EV EV-POST2 protection barrier, available from KEW Electrical. The requirement for protection will depend on the location of the chargepoint.

EO will provide training on the EO "Cloud" software to the Lodge Manager and Area Manager, plus anyone else who would like training, which will detail how to use the system, how to register new users and other features available.

Duct and Cable (Future Provision) Lodges

The design will be carried out by the National Framework EV Charging partner, SPS Energy. This design should then be used by the groundworkers to ensure that the correct size, quantity and design of ducting is installed. The groundworkers are to supply and install the ducting.

The cable is supplied and pulled through by SPS Energy. Where no EV chargepoints are being installed, these will be terminated in a waterproof junction box, ready for future connection.

Internally, the cables will be clearly marked and left in the plant room for future connection.

Process:

- Technical to send site layout plans to SPS Energy at an early stage, prior to site commencement
- SPS Energy to return a design of the duct layout within 10 working days
- Technical to add the design to the site layout plans and to pass to the surveyor for groundworker procurement
- Groundworker to dig the trenches and install the ducting
- SPS Energy to pull cables and provide termination points or chargepoints
- Electrical contractor to connect into landlord supply
- EO to train the Lodge Manager on the EO Cloud system

To arrange for installation of further EV charge points, this can then be done via SPS Energy. The cables for other spaces have been run from the plantroom (but not connected to the board) and terminate at individual chambers in the car park. Consideration should be given to the protection of the EV chargepoint. The company recommended option is the Project EV EV-POST2 protection barrier, available from KEW Electrical.

EV Charge Point Lodges

Where EO EV Chargepoints are installed as part of the development, the EO Hub and EO “Cloud” software will already be available. Full training on the system will be provided to the Lodge Manager and anyone else who would like training, which will detail how to use the system, how to register new users and other features available.

To arrange for installation of further EV charge points, this can then be done via SPS Energy. The cables for other spaces have been run from the plantroom (but not connected to the board) and terminate at individual chambers in the car park. Consideration should be given to the protection of the EV chargepoint. The company recommended option is the Project EV EV-POST2 protection barrier, available from KEW Electrical (details further on in the guide)

EO “Cloud” System

The EO “Cloud” system is a web-based portal that provides functionality to track usage, control accesses, control the kW charge, set up new RFID cards and much more. As detailed above, full training will be provided on this system. For any additional training for new starters etc, please contact our EO representative:

Wesley Kent – wesley.kent@eocharging.com

Mobile Number: 07880 691084

Churchill Estates Management Accounting

The Electric used for the EV chargepoints will be charged to the user at source. This money will then be credited to the Lodge at the end of each month and can be applied to the electricity bill, meaning that the EV electricity usage will be essentially kept separate from the communal electricity usage. This process will be managed by Churchill Estates Management finance team.

EV owners

Owners that wish to use the EV chargepoints will need to register to use the EO software. This can be done via either the Lodge Manager or via Churchill Estates Management. They will be registered as a user and can then use the chargepoint via the web-based app system. This app will need to be downloaded by the user. Bank details will be required to register within the app, and the charge is taken at point of use, similar to a pay as you go petrol pump.

Churchill Estates Management

The fee for the kWh electricity will be determined by CEM. This fee will be reviewed in line with the energy prices.

EO GENIUS



DESIGNED AND MANUFACTURED
IN THE UNITED KINGDOM.

Future proof & scalable electric vehicle charger for homes & commercial environments. The Genius is in the detail.

INSTALLATION

- + Simple electrical installation.
- + Integral PEN fault detection, no earth rod or consumer device required.
- + Integral 6mA DC leakage detection, no Type B RCD required.
- + Adjustable maximum charging current for lower rated supplies.
- + TN & IT* grid connections.

FEATURES

- + Locking Type 2 universal socket.
- + Power Ratings: Single Phase up to 7.2kW/Three Phase up to 22kW.
- + WiFi, CAT5 Ethernet, Bluetooth.
- + Cellular* (Optional).
- + MID/Eichrecht* Meter (Optional).
- + RFID (Optional).

INTELLIGENCE

- + OCPP 1.6J: ready for open OCPP Integration.
- + Direct communications with EO Cloud back-office.
- + Static or Automatic load management, including advanced scheduling options.
- + EO App smartphone integration via EO Cloud.
- + Add EO Hub for advanced on-site load management.
- + Net Zero solar functionality.*

*Feature not available with V1 product. V2 to be available in 2022.

MODEL ORDER CODE	EG201	EG203
DESCRIPTION	EO Genius-2 32A 1-Phase Charger - Locking Socket	EO Genius-2 32A 3-Phase Charger - Locking Socket

ELECTRICAL DATA		
RATED POWER	Up to 7.2kW	Up to 22kW
CHARGING CURRENT	6A to 32A (variable)	6A to 32A (variable)
RATED CURRENT	Up to 32A max	Up to 32A max
NOMINAL SUPPLY	230VAC 50Hz	400VAC 50Hz
SUPPLY CONNECTIONS	TN: L1, N, PE 0.2 - 16mm ² IT: L1, N	TN: L1, L2, L3, N, PE 0.2- 16mm ² IT: L1, L2, L3, PE
OVER CURRENT CONNECTION	40A Supply	40A Supply
EARTH LEAKAGE PROTECTION	A dedicated 30m Type A RCD must be used on the supply circuit Integral 6mA DC leakage detection - no Type B RCD required	
STANDBY POWER CONSUMPTION	<3W	
STATUS INDICATION	3 colour LED indicator (green, blue, red)	
CHARGING MODE	Mode 3 (IEC 61851-1 / SAE J1772 compliant communication protocol)	
SOCKET	IEC 62196 Type 2, IP54 hinged lid, locking pin	
SUPPLY CABLE ENTRY	Ø10mm - Ø22mm PVC Stepped Grommet	

MECHANICAL DATA	
DIMENSIONS (H X W X D)	305mm x 215mm x 118mm
UNIT WEIGHT	<4kg
MOUNTING LOCATION	Wall or Post mounted, Indoor or Outdoor (permanent mounting)
AMBIENT TEMPERATURE	-30°C to +55°C
INTERNAL ELECTRONICS TEMPERATURE	-25°C to +70°C
OPERATING HUMIDITY	5 to 95%
ENCLOSURE	PC UV stabilized (UL94 V-0 Fire Rated)
PROTECTION	IP66 / IP54
IMPACT RATING	IK08
STANDARD FINISH	Black (RAL9005), White* (RGB 255, 255, 255), or Grey* (RGB 120, 120, 120)

COMMUNICATIONS

2 x RS485, up to 3 CTs for load management.
U,FI external antennae ports for WiFi, BTE & Cellular.*
2* x 10/100Mbit RJ45 Ethernet.

COMPLIANCE (PENDING)

OZEV EVHS & WCS Approved (Pending).
DEKRA Certified & BSI Kitemark (Pending).
CE + UKCA Marked, EMC Directive 2014/30/EU, IEC 61851-1, IEC 61851-22, IEC 62196-2. EN 301-489 RFID - ISO/IEC 14443 (MIFARE).

OPTIONS

MID Meter; Eichrecht Meter (22kW only)
GPRS (Cellular)*
RFID Card Reader
Tethered T1/T2 Cable
Load management when installed with current transformers.
EO Hub for local smart functionality.

*Feature not available with V1 product. V2 to be available in 2022.

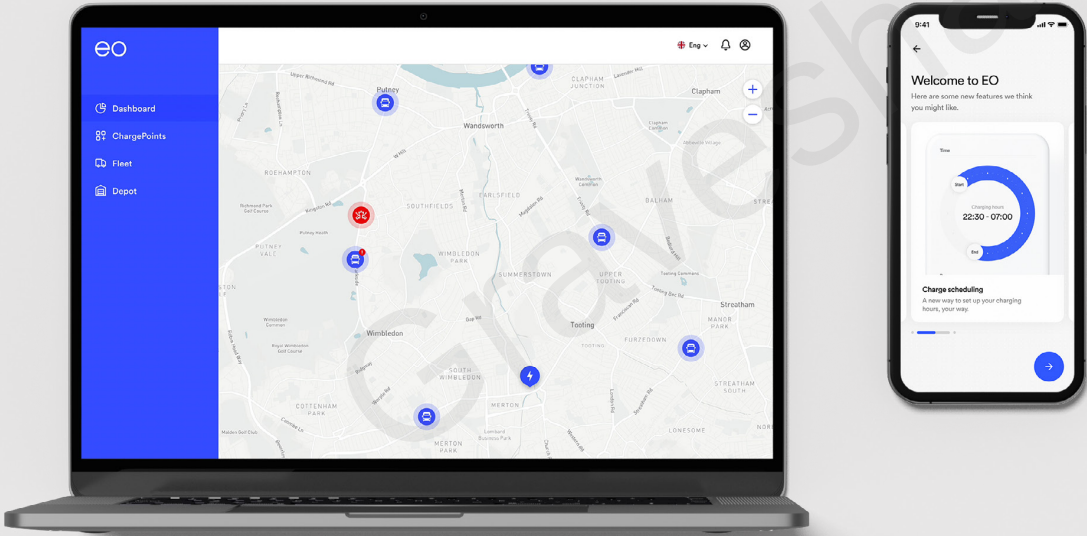
Designed to permit installations compliant with IET Wiring Regulations BS 7671:2018 and the Electricity Safety, Quality, and Continuity Regulations 2002 and BS 8300:2009+A1:2010. In no event will EO Charging accept any liability for any loss, costs or damage consequential on the use and/or misuse of our hardware or software products except and only to the extent that this is caused by our negligence.

EO CLOUD & EO APP

EO Cloud and EO App give fleet managers and business owners full control of their charging infrastructure and electric vehicle fleet.

KEY FEATURES

- + Site load management: control the power rate of your chargers, utilising as much of the sites energy supply as possible every second.
- + Monitor live charging activity: check the status of your charging stations at each depot with ease.
- + Reporting: generate a comprehensive report of all charging sessions at the click of a button.
- + Link home & work charging: connect employee's chargers at home to chargers at the workplace for quick reimbursement & record benefit-in-kind tax.
- + Remote diagnostics: run remote diagnostics and fault resolution from your EO Cloud account.
- + Smartphone controlled: EO App allows drivers to start or stop their charge and carefully monitor the amount they've spent.



Protection Barrier EV-POST2



The Project EV protection barrier is easily visible, easy to setup, and protective against multiple forms of physical damage.

Effective with all floor-standing models.
(Pictured chargers for illustrative purposes only.)

