Technical File

The Electric Vehicles (Smart Charge Points) Regulations 2021

Contents

This template is provided to assist sellers of relevant charge points that are subject to the Electric Vehicles (Smart Charge Points) Regulations 2021 ("the Regulations") in meeting the requirements of Regulation 13.

This requires the seller to have a technical file for any relevant charge point that they sell, and to supply a copy of the technical file to any purchaser on request. In the event of bulk purchases, a single technical file can be provided for all identical charge points. Separate technical files are required however if there are any differences in make, model, software version etc between charge points sold.

The seller is not mandated to use this template, but any alternative format must meet the requirements of the Regulations.

This document is the technical file for the following charge point:

Charge point make:	EO Mini Pro 3
Charge point model:	EM301 & EM303
Software version at point of sale:	1.3.0 and greater
Seller: *Person responsible for compliance with the Regulations*	Juuce Ltd t/a EO Charging
Manufacturer(s): *If different to seller*	Juuce Ltd t/a EO Charging
Last update to technical file:	15th December 2022

Description of the smart charge point

This page outlines the general description of the charge point, including a description of its design manufacture, and operation.

(Note: all descriptions must be written in plain English, including written descriptions of any diagrams or drawings used or referred to)

AC charger station, design and manufactured in the UK

- Future proof & scalable electric vehicle charger for homes & commercial environments.
- AC Power Ratings: Single Phase up to 7.2kW // Three Phase up to 22kW.
- Simple electrical installation.
- Integral PEN fault detection, no earth rod or consumer device required.
- Integral 6mA DC leakage detection, no Type B RCD required.
- 3-year product warranty with options to extend.
- Adjustable maximum charging current for lower rated supplies.
- TN & IT* grid connections
- Locking Type 2 universal socket or tethered cable options
- WiFi, CAT5 Ethernet, Bluetooth, Cellular* (Optional)
- OCPP 1.6J: Ready for open OCPP Integration
- OCPP Security Extensions
- OCPP Back-office Agnostic
- Installer and Customer friendly device configuration options
- Integrated Load Management

Operating manual

Copy of operating manual as available at point of sale can be found *(cross as appropriate)***:**		Attached to this document (hard copy)
		Attached to this document as a digital file (soft copy)
	x	Available online via hyperlink (soft copy)
Link if available online:	EO Charging | Smart electric vehicle charging	
Version of file received at point of sale if available online:		

Technical solutions implemented to meet the requirements of the Regulations

This section provides descriptions in plain English of the solutions adopted to meet the requirements of the Regulations, including descriptions and explanations in plain English of any diagrams or drawings used.

Information provided here may be appended if appropriate, but any appendages should be listed here with clear indication of which specific requirement(s) they evidence.

Smart functionality

Requirement	Technical solution adopted to meet the requirement
Charge point is able to send and receive information via a communications network	Compliant via OCPP.
Charge point is able to respond to signals or other information received by it by: • Increasing or decreasing the rate of electricity flowing through the charge point • Changing the time at which electricity flows through the charge point	Compliant via OCPP Smart Charging Profiles.
Charge point is capable of using this functionality to provide demand side response services, including response DSR services	The EO Mini Pro 3 is capable of using a DSR service, provided via any OCPP based service.
Charge point has at least one user interface, incorporated in the charge point or otherwise made available to the owner	EO Charging App or the on device configuration pages which are accessible by a user friendly web interface

Electricity supplier interoperability

Requirement	Technical solution adopted to meet the requirement
Charge point is configured such that is will not cease to have smart functionality if the owner changes their electricity supplier	The EO Mini Pro 3 has no dependencies on any specific electricity supplier. The device can be used with any provider on the market, regardless if the customer switchers providers or not.

Loss of communications network access

Requirement	Technical solution adopted to meet the requirement
Charge point is configured such that, in the event it ceases to be connected to a communications network, it will remain capable of charging an electric vehicle	The EO Mini Pro 3 will continue to charge a vehicle if it is not connected to a communications network.

Safety

Requirement	Technical solution adopted to meet the requirement
Charge point is configured such that it will not allow a relevant person to carry out a specified operation where to do so would or may result in a risk to the health or safety of persons. "Relevant persons" means the owner, or an end-user of the relevant charge point who is not the owner. "Specified operation" means: • Overriding the default mode of charging during the default charging hours • Overriding the provision of demand side response services • Overriding the random delay	The EO Mini Pro 3 is compliant to IEC 61851 and therefore it is not possible to perform an action that would create a safety risk to the customer.

Measuring system

Requirement	Technical solution adopted to meet the requirement
On each occasion it is used, the charge point measures or calculates: • The electricity it has imported or exported (in watt-hours or kilowatt-hours) • The amount of time for which it is importing or exporting electricity	The EO Mini Pro 3 has an internal meter, that measures the electricity every second. The consumed energy data is then transmitted to the CSMS via OCPP every 60 seconds
The charge point is configured such that the owner can view the information in reference to: • Any occasion on which it was used to import or export electricity within the past 12 months • Any month within the past 12	The data will be available via any OCPP server or through the on device configuration pages.

months • The entirety of the last 12-month period	
The charge point is configured such that it can: • On each occasion it is used, measure or calculate every one second the electrical power it has imported or exported (in watts or kilowatts) • Provide this information via a communications network	The EO Mini Pro 3 has an internal meter, that measures the electricity every second. The consumed energy data is then transmitted to the CSMS via OCPP every 60 seconds
The charge point is configured such that: • The figures measured or calculated are accurate to within 10% of the actual figure • Any inaccuracies are not systematic	The internal meter is accurate within 10%

Off-peak charging

Requirement	Technical solution adopted to meet the requirement
The charge point: • Has pre-set default charging hours which are outside of peak hours • Offers the owner the opportunity to accept, remove, or change the default charging hours on first use • Offers the owner the ability to change, remove, or set default charging hours any time after first use unless the charge point is sold with a DSR agreement, configured to comply with the requirements of this agreement, and details of the agreement are included in the statement of compliance	Devices will be shipped with a predefine off peak schedule which prevents the vehicle from charging in two periods: • Period 1 = 0800 to 1100 • Period 2 = 1600 to 2200 Home users can accept, reject or amend the schedule via the EO Charging App or via the on device configuration pages.
The charge point is configured: • To charge a vehicle during the default charging hours (if any), unless the owner overrides the default mode of charging during this time • Such that the owner can override the provision of demand side	Same as above

response services	

Randomised delay

Requirement	Technical solution adopted to meet the requirement
The charge point is configured such that it must operate, at each relevant time, with a delay of random duration up to 600 seconds, determined to the nearest second each time	EO Mini Pro 3 charging stations are shipped with a randomised delay enabled between 0 to 600seconds. The installer / end user can disable, edit or enable randomised delays via the on device configuration pages.
The charge point is configured such that the maximum duration of this delay can be remotely increased to up to 1800 seconds if required	The default is 600seconds but it can be extended up to 1800 seconds
The charge point is configured such that the random delay will not operate where: • The owner or another relevant end-user has manually overridden it • An equivalent random delay has already been applied to the operation of the relevant charge point • The charge point is responding to a response DSR service	Same as above.

Security

[Information in this section is only required from 30 December 2022. Before this date, completing this section is optional.]

Requirement	Technical solution adopted to meet the requirement
General principles The charge point is designed, manufactured, and configured to provide appropriate protection: • Against the risk of harm to, or disruption of the electricity system • Against the risk of harm to, or disruption of, the charge point • For the personal data of the owner and any other end-user of the	The charging station has been designed to be complaint with the latest security standards (ETSI 303 645 and GDPR) and it has been security tested by a 3rd party test house.

relevant charge point	
Passwords The charge point is configured such that where passwords are used on it: • The password is unique to the charge point and not derived from, or based on, publicly available information, or is set by the owner • The password cannot be reset to a default password applying to both the charge point and other charge points	Passwords are unique per device. Securely placed within the packaging. They are not derived from, or based on, publicly available data. Passwords are not reset to a default password. Passwords can be reset via OCPP.
Software The charge point incorporates software which is able to be securely updated using adequate cryptographic measures to protect against cyber attack	Firmware updates are transmitted to the charging station by OCPP. The firmware images are signed and encrypted by EO.
Software The charge point is configured such that: • It checks for security updates available when first set up by the owner and periodically after • It verified the authenticity and integrity of each prospective software update by reference to both the data's origin and its contents and only applies the update if the authenticity and integrity of the software have been validated • By default, it provides notifications to the owner about prospective software updates • The owner can implement software updates without undue difficulty	The devices are remotely updated using the industry standard OCPP protocol. When the device is connected to the EO Cloud, then the EO cloud will determine if it is on the latest firmware version. If a later firmware version is available then the cloud will push the update to the device and the device will upgrade. Notifications shall be provided to the owner via email.
Software The charge point is configured such that: • It verifies via secure boot mechanisms that its software has not been altered other than in accordance with a validated software update • If unauthorised change to software is detected, it notifies the owner and does not connect to a	The EO Mini Pro 3 has a secure boot feature that is enabled by default. If a change is detected (e.g. erroneous FW loaded) then the user will be notified by error codes on the LED of the charging station, entries in the security log (which is available by the on device configuration pages) and notification messages (via OCPP) are passed to the CSMS.

communications network other than for purposes of this notification	
Sensitive security parameters The charge point is configured such that: • Security credentials stored on the charge point are protected using robust security measures • Software does not use hard-coded security credentials	The onboard memory is encrypted for any security credentials and external memory is encrypted via the use of a TPM.
Secure communication The charge point is configured such that communications it sends are encrypted	The OCPP server can define the level of security. By default Communications between the EO Mini Pro 3 and the EO Cloud are encrypted and authenticated. Communication with the on device configuration pages are encrypted.
Data inputs The charge point is configured such that: • Data inputs are verified so that the type and format of the data is consistent with that expected for the function • If such data cannot be verified, it is discarded or ignored by the charge point in a relevant manner	Input validation is done on via the on device Configuration page
Ease of use The charge point is configured to minimise the inputs required from the owner in connection with its set-up and operation	Yes
Ease of use The charge point is configured such that any personal data can be deleted from it by the owner without undue difficulty	The installer is able to reset the device back to default factory settings.
Protection against attack The charge point is designed and manufactured to provide an adequate level of protection against physical damage to the charge point	There are a number of software measures to provide protection against attack such as secure boot, file encryption and signed firmware images. Additionally all products are submitted for external penetration testing. Finally there is a tilt switch inside the unit to detect physical tampering.
Protection against attack The charge point incorporates a	The tilt switch will detect whether the tamper protection boundary has been breached. If a breach is detected

tamper-protection boundary to protect the internal components of the charge point	then this will be added to the security log and an OCPP StatusNotification message will be pushed up to the EO Cloud.
Protection against attack The charge point is designed and manufactured to provide an adequate level of protection to its user interfaces and against use or attempted use of the charge point other than through the user interface	All user interfaces are designed to be secure and prevent unauthorised access. The primary interfaces are all secure using unique and strong passwords.
Protection against attack The charge point is configured such that: • If there is an attempt to breach the tamper-protection boundary, the owner is notified • Its software runs with only the minimum level of access privileges required to deliver functionality • Any logical or network interfaces that are not required for the normal operation of the charge point or otherwise comply with the Regulations are disabled • Software services are not available to the owner unless necessary for the relevant charge point to operate • Any hardware interfaces that are used for the purposes of testing or development, but not otherwise during the operation of the charge point are not exposed	When the tamper protection boundary is breached then the unit will add an entry to the security log and send a StatusNotification message to the EO Cloud which can then be passed onto the user. The onboard software is designed to operate with the lowest level of privilege. All non essential interfaces are disabled.
Security log The charge point incorporates a security log – an electronic record which includes attempts (whether or not successful) to: • Breach the tamper-protection boundary • Tamper with the relevant charge point • Gain unauthorised access to the charge point These entries must record the time and date the event occurred (by reference to Coordinated Universal Time).	A security log is available on the Genius 2 to include tamper protection breaches and other unauthorised access. These events are date stamped and are accessible via the device's web interface.

Test reports

The Regulations do not set a requirement to test charge points, however if tests have been performed which are deemed relevant to evidencing compliance with the Regulations, these should be included in this document.

This page documents the outcome of any tests. Resulting test reports, certifications, or other evidence should be attached to this file.

Name of test	Date of test	Outcome	Certificate attached to file?	Notes (e.g., did test occur via third party?)