Technical File

The Electric Vehicles (Smart Charge Points) Regulations 2021

Contents

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

Charge point make:	EN+
Charge point model:	AC022K-BB-44
Software version at point of sale:	1.4.918
Seller: *Person responsible for compliance with the Regulations*	Humax Electronics Co. LTD
Manufacturer(s): *If different to seller*	Shenzhen EN Plus Technologies Co., Ltd.
Last update to technical file:	29 June 2023

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)

This section describes the charge point general design, manufacture, and operation.

EN+ charge point is designed and manufactured with focus on delivering affordable, fast, and easy-to-install charge point for UK residential and commercial application. The charge point is configured with Monta software out of the box to provide smart charging and other features. The charge point is manufactured in China with extensive development feedback from UK market.

Its feature includes:

1. Three phase charging power (up to 22kW)
2. IP54 Rating
3. Integrated RFID Reader (Mifare ISO/IEC 14443A)
4. 2.4GHz Wi-Fi connection
5. Built-in 6mA RDC-DD
6. Built-in PEN Fault Protection
7. Built-in RCBO
8. Class 1 IEC 62053-21 MID meter for energy measurement (±1% accuracy)
9. Manual and Smart Control through Monta application
10. LCD Screen

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)
		~~Available online via hyperlink (soft copy)~~

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.

Smart functionality

Requirement	Technical solution adopted to meet the requirement
Charge point is able to send and receive information via a communications network	The charge point can connect to the internet through Wi-Fi. It sends and receives information based on OCPP 1.6 protocol.
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	The charge point respond signal sent by Monta server to control the rate and timing of the current flow through the charge point based on OCPP 1.6 protocol.
Charge point is capable of using this functionality to provide demand side response services, including response DSR services	The charge point can be controlled remotely through Monta server to provide demand-side response services when it is available
Charge point has at least one user interface, incorporated in the charge point or otherwise made available to the owner	The charge point has multiple user interface: - Monta mobile application available from the Apple App Store and Google Play Store. This is the main user interface to control the charge point - Wi-Fi Interface / Access Point Web Page. A temporary Wi-Fi interface is available 15 minutes after the charge point is powered up to configure the Wi-Fi connectivity - LED light for status indication - RFID card and reader for charging session authorization - LCD Screen

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 charge point smart functionality depends on the availability of an accessible 2.4GHz Wi-Fi with internet connection and minimum signal strength of -60dBm. Change in electricity supplier does not influence the charge point smart functionality.

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	Each user will have a Charge Key (RFID card) connected to their Monta account. When the Charge Point is offline, the owner will be able to start a charge with the Charge Key (RFID Card)

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	If a charge point is in any way in unsafe condition, as defined by IEC 6185, it will switch to fault mode. The user will not be able to override the specified operation.

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 charge point measures voltage and current during a charging session. The electrical power (kW) and electrical energy (kWh) are then calculated. This information is sent to Monta server. The total imported energy can be seen from Monta app and portal.
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 months • The entirety of the last 12-month period	All charging sessions data are stored in the Monta servers. The owner of the charge point is able to retrieve all relevant information since the charge point was connected to Monta.
The charge point is configured such that it can: • On each occasion it is used, the charge point is capable to 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	Transmitting the information every second would cause significant amount of load to Monta server. Thus, the charge point will not transmit this information via a communications network every second unless it is required by a demand-side response service through Monta.
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 charge point has power and electrical energy measurement accuracy within 10% of the actual figure. There is no systematic inaccuracy.

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	When connecting any Charge Point to Monta in Great Britain, the charge point will be set to only charge outside of peak hours. The owner can then choose to enable charging during peak hours. The owner has the option to disable charging during peak hours at any later time in the Monta mobile application.

• 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	
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 response services	The owner has the option to disable charging during peak hours at any later time in the Monta mobile application.

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	Monta's servers initiate a 'job' when a user starts a charge point directly or a scheduled charge is initiated. However, the time it takes from the 'job' to initiate to the charge point starting the charge will always be random. This will take anywhere between 10-300 seconds, usually in the 10-30 second range.
The charge point is configured such that the maximum duration of this delay can be remotely increased to up to 1800 seconds if required	As the random delay is handled by the Monta server, Monta will be able to implement a forced longer random delay if required.
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	The owner has the option to disable the random delay in the Monta mobile application.