

Technical File

The Electric Vehicles (Smart Charge Points) Regulations 2021

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

Charge point make:	myenergi
Charge point model:	ZAPPI-2H07UW ZAPPI-2H07UB ZAPPI-2H07TW ZAPPI-2H07TB ZAPPI-2H22UW ZAPPI-2H22TW ZAPPI-2H22UB ZAPPI-2H22TB
Software version at point of sale:	V4.122
Seller: <i>Person responsible for compliance with the Regulations</i>	myenergi Ltd, Pioneer Business Park, Faraday Way, Stallingborough, Grimsby, DN41 8FF, UK
Manufacturer(s): <i>If different to seller</i>	N/A
Last update to technical file:	29/06/2022

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.

zappi is a MODE 3 electric vehicle charger, designed for use in residential applications. It is manufactured in 8 model variations, for the UK market:

Model No.	Rating	Connector	Colour
ZAPPI-2H07UW	7kW	Untethered	White
ZAPPI-2H07UB	7kW	Untethered	Black
ZAPPI-2H07TW	7kW	Tethered	White
ZAPPI-2H07TB	7kW	Tethered	Black
ZAPPI-2H22UW	22kW (3 Phase)	Untethered	White
ZAPPI-2H22TW	22kW (3 Phase)	Tethered	White
ZAPPI-2H22UB	22kW (3 Phase)	Untethered	Black
ZAPPI-2H22TB	22kW (3 Phase)	Tethered	Black

zappi has a built-in user interface with an LCD display, which can be used in conjunction with the myenergi app and myenergi account to control the charge point.

zappi is part of myenergi's range of eco-smart products, which aim to maximise the use of self-generated electricity, from solar or wind power (although there is no requirement to have your own generation to use zappi). It can be used standalone, or in conjunction with other myenergi devices.

zappi is designed at myenergi's facility in Grimsby and manufactured in the United Kingdom. zappi is designed and tested in accordance with the Product Standard IEC EN 61851-1:2019.

zappi complies with the following standards:

LVD 2014/35/EU, EMC 2014/30/EU, EN 62196, EN 62955:2018, CE & UKCA certified.

A full technical specification can be found at: <https://myenergi.com/wp-content/uploads/2022/06/zappidatasheetweb-compressed-2-2.pdf>

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:	Current Version of manual: https://myenergi.com/zappi-support Earlier versions: https://myenergi.com/installers-centre/download-centre/	
Version of file received at point of sale if available online:	Rev 2.1.5	

Technical solutions implemented to meet the requirements of the Regulations

Smart functionality

Requirement	Technical solution adopted to meet the requirement
<p>Charge point is able to send and receive information via a communications network</p>	<p>zappi is connected to the internet through your home broadband connection. Depending on your installation this can be achieved by:</p> <ol style="list-style-type: none"> 1. Using zappi's onboard WiFi or Ethernet to connect to your home broadband router. 2. The myenergi hub, which communicates between zappi, other myenergi devices and your home broadband router. (This is the case if you have a physical myenergi hub). 3. By using another myenergi device in your home, which acts as a virtual hub for all myenergi devices in your property. <p>The information flow between zappi and myenergi is bidirectional, allowing zappi to send information to myenergi servers and myenergi servers to send commands to zappi.</p>
<p>Charge point is able to respond to signals or other information received by it by:</p> <ul style="list-style-type: none"> • Increasing or decreasing the rate of electricity flowing through the charge point • Changing the time at which electricity flows through the charge point 	<p>Your zappi can communicate with myenergi servers over an internet connection. Your charge point is capable of receiving commands from myenergi's systems to increase or decrease the electricity flowing through the charge point. Commands can also be used for adjusting the scheduled charging periods (Boosts). These commands also include the ability to remotely start or stop charging.</p> <p>zappi can be controlled by the myenergi app, which sends commands to myenergi servers over an internet connection.</p> <p>Where your zappi is enrolled in a Demand Side Response service (DSR) zappi is able to interpret commands from the myenergi server, to adjust its charging behaviour.</p>
<p>Charge point is capable of using this functionality to provide demand side response services, including response DSR services</p>	<p>Your charge point can receive commands from myenergi servers, which allow it to take part in demand side response services (DSR).</p> <p>Demand side response services involve signals being sent to your charger to increase or decrease the flow of</p>

	<p>electricity, through the charger, in response to changes on the electricity grid.</p> <p>These services include load reduction (reducing the amount of electricity flowing through the charge point) and frequency response services. (Increasing or decreasing electricity flowing through the charge point, in response to the frequency of the electricity grid).</p> <p>DSR is an optional feature, by default you will not be opted into DSR Services. You can opt into, or out of DSR Services in the myenergi app. The feature is currently in Beta and may not be available to all users, however this does not affect your charger's ability to take part in DSR services in the future.</p> <p>You can also provide your electricity tariff information in the myenergi myaccount and zappi will schedule a charging session based on this information and the time your vehicle needs to be ready by. Pricing can be set for each 30 minute time period.</p>
<p>Charge point has at least one user interface, incorporated in the charge point or otherwise made available to the owner</p>	<p>myenergi offers three (3) user interfaces for use with the zappi charger:</p> <ul style="list-style-type: none"> • zappi has a built-in user interface (LCD Screen) with physical buttons, which allows the adjustment of charging settings directly on the device. • The myenergi app, which is available for iOS and Android devices. • The myenergi myaccount, which is a web portal that can be accessed from a web browser on your phone, tablet, or computer. https://myaccount.myenergi.com <p>The myenergi app can be used for monitoring and controlling charging sessions. The myenergi app allows the following functionality, with regards to the smart charging regulations:</p> <ul style="list-style-type: none"> • Ability to remotely start and stop charging sessions. • Ability to override randomised delay. • Ability to change or remove the default off-peak charging schedule. • Ability to reinstate the off-peak charging schedule if it has been removed. <p>The myenergi myaccount can be used to download up to 13 months of charging history for your zappi. Charging history can be viewed on a line-by-line basis and exported in CSV or Excel file types.</p>

Electricity supplier interoperability

Requirement	Technical solution adopted to meet the requirement
<p>Charge point is configured such that it will not cease to have smart functionality if the owner changes their electricity supplier</p>	<p>zappi works with all UK energy providers - your charge point will work regardless of your energy provider. If you move suppliers your charge point will be unaffected, and your smart charging settings will remain the same.</p> <p>If you use the optional zappi features, such as matching your charging schedule to your electricity tariff, you can update your energy tariff in the myaccount portal. https://myaccount.myenergi.com</p>

Loss of communications network access

Requirement	Technical solution adopted to meet the requirement
<p>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</p>	<p>zappi is designed to work without an internet connection. However, we recommend keeping your zappi connected to the internet, so you can benefit from additional features and firmware updates.</p> <p>zappi has a built-in user interface (screen and buttons), which can be used to start and stop charging, as well as adjusting charging settings, without the need for an internet connection. Features such as load management, use devices that are physically installed in your home and do not require the internet to operate. These features are usually hardwired or communicate over a local radio network within your home.</p> <p>If there is a problem with the internet connection, zappi will continue to operate and can be used to charge an EV using the local controls if needed.</p> <p>zappi stores charging history on the device for a period of up to 7 days, on re-establishing a connection to the myenergi servers, zappi will attempt to upload charging history, that happened during the communications failure, ensuring charging data is not lost.</p>

Safety

Requirement	Technical solution adopted to meet the requirement
<p>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.</p> <p>“Relevant persons” means the owner, or an end-user of the relevant charge point who is not the owner.</p> <p>“Specified operation” means:</p> <ul style="list-style-type: none"> • Overriding the default mode of charging during the default charging hours • Overriding the provision of demand side response services • Overriding the random delay 	<p>zappi is designed and tested in accordance with the Product Standard IEC EN 61851-1:2019.</p> <p>Once installed and commissioned it will operate safely in any of the modes provided. Changing the mode, changing the default charging hours, overriding the provision of demand response services, or overriding the random delay can all be done safely by the end user, from the built-in display or by the app.</p> <p>Should zappi identify a situation that poses a safety risk, zappi will enter a fault mode. The fault mode is indicated by a red myenergi logo on the front of the device and a fault message will be displayed on the screen.</p> <p>The user will be required to carry out a reset procedure, after they have investigated and rectified the fault. This reset procedure requires the user to physically press and hold a button on the device, before the zappi can be used for charging an electric vehicle again. In fault mode, the ability to override the ‘specified operations’ is not possible, and charging will be stopped.</p> <p>zappi will also ensure that installation limits, that have been set at your property, (such as a grid limit) are not exceeded by carrying out a specified operation. In the event that they are, zappi will prioritise the installation limits over the ‘specified operations’</p>

Measuring system

Requirement	Technical solution adopted to meet the requirement
<p>On each occasion it is used, the charge point measures or calculates:</p> <ul style="list-style-type: none"> • 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 	<p>zappi includes a metering circuit with an accuracy is equivalent to EN 50470-1/3 Class B (1%). Energy (kWh) delivered to the EV is displayed on the zappi and communicated to the myenergi server, so that it can be viewed by the end user in the charge history in their online account: https://myaccount.myenergi.com</p> <p>The charging history also provides details of when the vehicle was plugged in and out and the duration that electricity was flowing through the charge point.</p> <p>You can also view your charging history on the zappi user interface.</p>

<p>The charge point is configured such that the owner can view the information in reference to:</p> <ul style="list-style-type: none"> • 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 	<p>myenergi account (https://myaccount.myenergi.com) will display charge history to the end user, detailing the following for each charging session:</p> <ol style="list-style-type: none"> 1. Plugged in / Unplugged: Time and Date 2. Number of kWh delivered 3. Active time charging (Amount of time that electricity was flowing through the charge point) <p>These logs will show historical data, for a period of 13 months beginning from 30th June 2022. Customers can view and export charging data on a line-by-line basis. The charging history will also be filterable to a weekly, monthly or a user defined time period, including the last 12 month period</p>
<p>The charge point is configured such that it can:</p> <ul style="list-style-type: none"> • 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 	<p>zappi measures the energy delivered to the electric vehicle every second, This is achieved by a metering circuit which meets the accuracy requirements of the Measuring Instrument Regulations. (EN 50470-1/3 Class B).</p> <p>Energy (kWh) delivered to the EV is displayed on the zappi screen and communicated to the myenergi server using the end user’s home broadband connection.</p>
<p>The charge point is configured such that:</p> <ul style="list-style-type: none"> • The figures measured or calculated are accurate to within 10% of the actual figure • Any inaccuracies are not systematic 	<p>zappi includes a meter circuit which measures energy delivered to the vehicle with an accuracy of 1%</p> <p>zappi includes a metering circuit which meets the accuracy requirements of the Measuring Instrument Regulations. (EN 50470-1/3 Class B)</p>

Off-peak charging

Requirement	Technical solution adopted to meet the requirement
<p>The charge point:</p> <ul style="list-style-type: none"> • 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 <p>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.</p>	<p>During first setup, zappi will enter an installation wizard, using zappi's built-in display and buttons. The wizard will ask your installer a series of questions to understand if zappi is being installed in a scenario, where smart charging regulations apply.</p> <p>Based on the answers, zappi will automatically be configured to charge between 12:00am (Midnight) and 08:00am.</p> <p>Your zappi will also be configured in ECO+ mode by default, in this mode your charger will only charge in the following two scenarios:</p> <ol style="list-style-type: none"> 1. During the schedule that you set on zappi or in the app. If you did not change the default schedule, this will be between 12am (Midnight) and 8am. 2. When surplus self-generation (wind or solar) is available. <p>Users can (at any time):</p> <ol style="list-style-type: none"> 1. Do nothing, and accept the default off-peak charging period 2. Change the off-peak charging period in the myenergi app, or on the zappi itself by going to the 'charge settings' menu 3. Remove the off-peak charging schedule, by going to the 'charge settings' menu on zappi or 'timed boost' section in the myenergi app. 4. Change the default mode of zappi, in the charge settings menu on zappi. If the default mode is changed to 'Fast', zappi will default to this charging mode each time a vehicle is plugged in, and will ignore any schedules set. 5. Reinstate the default off-peak charging hours in the myenergi app. By default, a timed boost will suggest the hours of 12am (midnight) and 8am, Monday to Friday, as the schedule. This schedule can be changed by the user to meet their requirements.

<p>The charge point is configured:</p> <ul style="list-style-type: none"> • 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 	<p>zappi will be configured in ECO+ mode by default. In this mode zappi will only charge during your set schedule, or when surplus self-generated solar or wind is available. The user can override the default charging period by switching to ‘Fast mode,’ using the buttons on zappi, or by setting a manual boost in the myenergi app.</p> <p>Users can change the default mode of zappi in the charge settings menu on zappi.</p> <p>Customers can override and opt in /out of DSR services in the myenergi app.</p>
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Randomised delay

Requirement	Technical solution adopted to meet the requirement
<p>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.</p>	<p>zappi has a randomised delay function, which is built into the device. This delay will activate if the electricity flowing through the charge point, from the electricity grid, is increased or decreased. zappi will calculate a delay to the nearest second, using a random number generator when:</p> <ol style="list-style-type: none"> 1. Your zappi reaches the start of your scheduled charging time, where electricity is due to start flowing through the charge point. 2. Your zappi reaches the end of your scheduled charging time. 3. When plugging in using fast mode. <p>The delay calculated can be up to 600 seconds (10 minutes) The delay is purely random and will differ each time. The delay in seconds is displayed on the zappi screen.</p> <p>Randomised delay will not be active in scenarios where zappi is decreasing the electricity flowing through the charge point, in order to maintain installation limits set at your property. (Such as a grid limit)</p>
<p>The charge point is configured such that the maximum duration of this</p>	<p>Your zappi is capable of firmware updates using its internet connection. Should the UK Government decide to increase the delay in the future, your device will be</p>

<p>delay can be remotely increased to up to 1800 seconds if required.</p>	<p>issued a firmware update to increase the maximum length of the randomised delay.</p>
<p>The charge point is configured such that the random delay will not operate where:</p> <ul style="list-style-type: none"> • 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 	<p>Randomised Delay can be overridden by pressing the ‘+’ button on the zappi. This will cancel the delay and the vehicle will start or stop charging from the electricity grid immediately. The delay at the start of a charging session can also be overridden by switching to fast mode from ECO or ECO+, <u>after</u> the electric vehicle has been plugged in.</p> <p>The randomised delay can also be overridden in the myenergi app. An in-app notification will appear when a randomised delay is active. The user can override this delay, and start charging immediately, by pressing the ‘charge now’ button on the notification.</p> <p>A user can override randomised delay, at the end of their charging session in the myenergi app, by pressing the ‘end now’ button</p> <p>When responding to DSR services, randomised delay does not apply.</p>