



Greater London on-street EV

Case Study:

Taking charge of safe and reliable on-street EV infrastructure

Project Summary

Project name: Taking charge of safe and reliable on-street EV infrastructure

Location: Greater London UK

Completed: 2019

Products used: Lucy Zodion single phase secondary isolators

Collaborator: ubitricity

Background:

With a key driver for the electrification of vehicles being the environmental benefits they promote, electric vehicles (EV) are becoming pivotal parts of urban regeneration. Reducing emissions and improving the carbon footprint of both individuals and communities, EVs and their supporting infrastructure are now vital assets for cities and towns throughout the world.

There are a number of initiatives throughout the UK that are helping to drive the uptake of EV. One of these initiatives is the 'Go Ultra Low City Scheme' (GULCS) procurement framework, which has been set-up by London Councils, TfL and the GLA, to ensure the Capital's transport network meets its aim to be the Ultra-Low Emission Vehicles (ULEV) capital of Europe.

The Scheme has four main streams of work which focus on making residential charging available, increasing the provision of rapid chargers and increasing the provision of charging infrastructure in car club bays. This increased uptake means solutions are required that not only make EV charge points more accessible, but ensure the supporting infrastructure is capable of providing a consistent, safe and reliable power supply.

ubitricity is a market leading supplier of on-street EV charging solutions, integrating them within existing street furniture to make on-street charging available and simple to use. The EV charging specialist recently carried out work as part of the (GULCS) by transforming existing street lighting columns into on-street charge points, throughout London and surrounding boroughs.

As the UK's market leader in the provision of connection equipment for external lighting infrastructure, including the sole supply of street lighting cut-outs and isolators in to the UKPN electrical network, ubitricity selected Lucy Zodion as its solution partner for the project.

Challenge:

The main challenge of the project was to support the transition of the use of the streetlight. From being solely used to illuminate the street, it is now required to become a multipurpose piece of street furniture, providing both illumination and EV charging facilities simultaneously, while ensuring power and protection to both equipment and people, in-line with electrical regulations.



Image for reference only

Key Objectives:

Lucy Zodion worked with ubitricity's UK Operations Director to provide a certified and approved solution that works alongside existing street lighting infrastructure. The key objectives include:

- **Reliable** - The solution had to meet all relevant industry standards, as well as those outlining the safety of users. It also had to demonstrate a proven track record.
- **Safe** – As the lamppost is being transformed from street furniture to a point of public access, the solution needed to consider not only the electrical safety within the street lighting column, but the safety of the end-user while accessing ubitricity's charging equipment.
- **Readily available** - As the project was on a short-lead time, Lucy Zodion was required to provide a solution that was immediately available.
- **Multi-purpose** - The solution was required to provide appropriate protection of both the EV charging equipment and to protect the user from electric shock in line with industry standards. The solution had to provide a separate feed to the luminaire to ensure continual operation in the event of electrical issues.

Solution:

Lucy Zodion's solution was to manufacture and supply several thousand secondary isolators to provide 32A supply protection and lockable isolation for the street lighting column. They provide 25A residual protection for the 5.8kW EV charging equipment, plus 6A protection for the luminaires. The product installed is:

- **Product Specification:** Lucy Zodion Trojan Midi with 32A switch disconnecter

Results:

Lucy Zodion's isolation solution met all objectives successfully, resulting in a certified and approved installation. As a result of the project, various London Boroughs are closer to meeting their Ultra-Low Emissions targets with a capable infrastructure to support EV drivers. The objectives were met in the following ways:

- **Safe** - Lucy Zodion included in the design a 25A residual current protection for the 5.8kW ubitricity EV chargers. Additionally 6A protection for the luminaires was included so that in the event of a fault on the charging equipment, the luminaire will continue to operate as normal.
 - **Reliable** – Lucy Zodion isolators are manufactured considering current British and Industry standards. Components are also tested by third party, KEMA, for further compliance and accreditation. The 32A isolator is KEMA tested to IEC/EN 60947-3 and the fuse carrier is KEMA tested to IEC/EN 60269-1.
- Additionally the isolators' 25A residual current protection and 6A protection, were integrated in line with the IET Code of Practice for Electrical Vehicle Charging Equipment Installation (BS7671:2008+A3: 2015).
- **Readily available** - Due to the number of units required, these were shipped weekly to support a wide-scale roll out over a relatively short period, which suitably matched the installation schedule.

- **Multi-purpose** - The isolators provide 25A residual current and overload protection for ubitricity's 5.8kW EV chargers, which are mounted into existing streetlights. In addition, 6A protection is included for the luminaires to provide dedicated supply and protection in order to minimise outages. The isolators were used in conjunction with the Network Operators (UKPN) approved Lucy Zodion Street Lighting Cut-Out.

Stefan Diller, Team Lead Hardware & Development, ubitricity:

"Working with Lucy Zodion enabled ubitricity to source quality and reliable isolators to meet the timescales required to deliver the London GULCS project with our partner Siemens."



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