Cable Smart - Systems overview

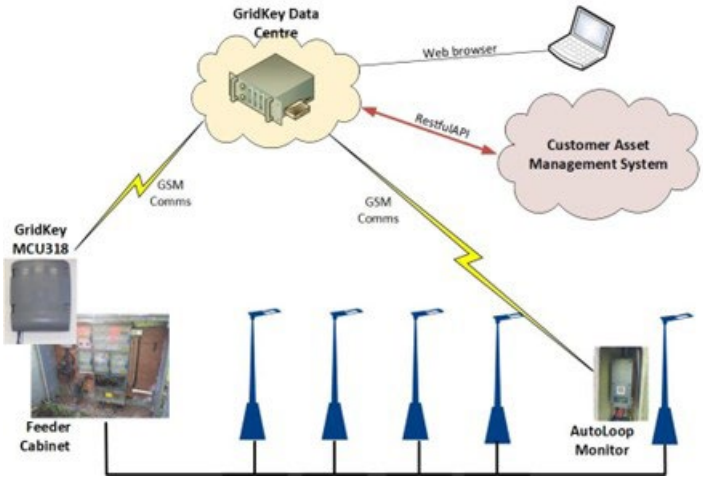
Unlocking the smartgrid

Why choose the Cable Smart Systems?

In order to meet the mandatory electrical safety requirements of BS7671, it is necessary to carry out either periodic manual safety testing or for there to be a continuous monitoring solution. Cable Smart not only provides that monitoring solution for electrical safety testing but also provides a valuable tool in allowing planned maintenance and upgrades of the electrical network by providing advanced warning of deteriorating circuits and also of other issues such as energy waste, incorrect protection devices and changing electrical loads.

The system consists of two elements, a GridKey MCU LV monitoring device which is installed in the feeder pillar and measures voltage and current on up to 18 outgoing circuits and the Autoloop devices which are typically mounted at the end of each of these circuits. The MCU and Autoloop both have an embedded GSM modem which communicates securely with a cloud based data centre where data is collected and analysed to provide an automated electrical safety report and also other analytics on the electrical network.

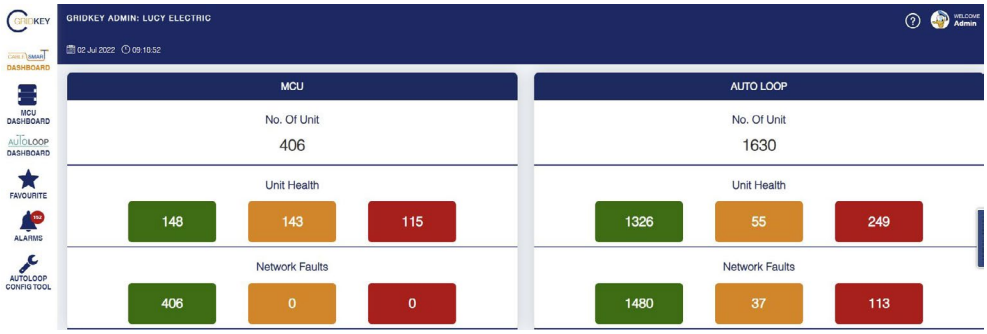
For its voltage connections the GridKey MCU connects to either three phase or single phase voltage (depending on the design of the network) and current connections are made using either Rogowski style sensors or miniature CTs which can be clipped onto existing cabling without the need to re-wire the cabinet. The system continuously monitors the voltage and current and produces a measurement report every 10 minutes which includes mean, minimum and maximum voltage and current readings as well as active and reactive power, power factor and harmonic content. These reports are automatically securely transmitted to the GridKey cloud- based Data Centre for further analysis.



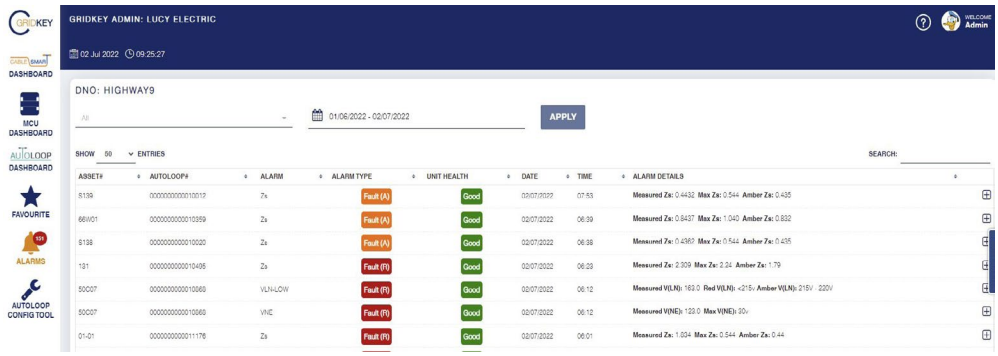
The Autoloop is connected at the end of the circuits – either in a lighting column or in a cabinet. The unit tests single phase circuits and has a simple live, neutral and earth connection – this will power the unit which automatically carries out electrical tests and transmits the results to the same data centre.

The Data Centre stores all the information received from both the MCU and Autoloop devices and then carries out a series of analytics to determine both the safety and health of the electrical network. This data is available either real-time from a web-site log-in or through periodic reports which can be viewed or emailed automatically.

On logging in to the system a summary dashboard is displayed.



It is then possible to interrogate the units and alarms further – so for example the alarm page will give more details about the current alarm summary.



The test history for specific alarms can then be examined to determine how severe they are – whether there is a continuous problem or just a sporadic reading – an example here is shown for a loop impedance (Zs) fault.

For more information about GridKey please contact us:

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