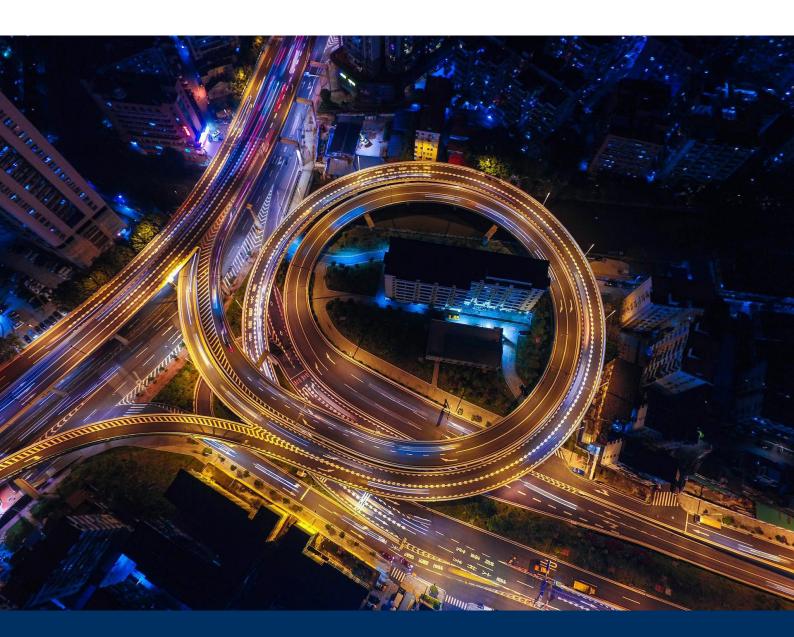




Cable Smart - Systems overview



Unlocking the smartgrid

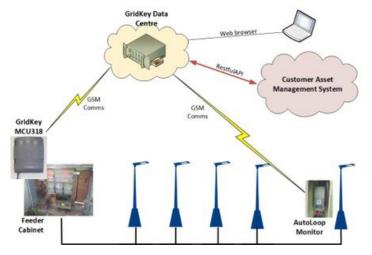
Why choose the Cable Smart Systems?

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.

DKEY ADMIN: LUCY ELECTRI (?) 🏟 WELCON Admir GRIDKEY 🗂 02 Jui 2022 🕐 09:18:52 MCU AUTO LOOF MCU No. Of Unit No. Of Unit 406 1630 FAVOURITE ALARMS Unit Health Unit Health 148 115 1326 249 AUTOLOOP CONFIG TOOL Network Faults Network Faults 113

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.

EY	GRIDKEY ADMIN	LUCY ELECTRIC							(? 🌍 WELCOM
	ាល រមនេះ (0 09 25 27 DN0: HIGHWAY9									
RD										
	AI -			01/06/2022 - 02/07/2022		APPLY				
ARD IOP ARD	SHOW 50 - 1	ENTRIES							SEARCH:	
	ASSET	AUTOLOOP#	ALARM	ALARM TYPE	UNIT HEALTH	• DATE	• TIME	ALARM DETAILS		
	\$139	0000000000010012	74	Fault (A)	Good	02/07/2022	07:53	Measured Zs: 0.4432 Max Zs: 0.544 Amber Zs: 0.435		Œ
	66W01	000000000010359	Zs	Fault (A)	Good	02/07/2022	08:39	Measured Zs: 0.8437 Max Zs: 1.040 Amber Zs: 0.832		Œ
	S138	000000000010020	Ze	Fault (A)	Good	02/07/2022	06:38	Mensured 7s: 0.4362 Max 7s: 0.544 Amber 7s: 0.435		E
	131	000000000010495	Zo	Fault (FI)	Good	02/07/2022	06:23	Measured Zs: 2.309 Max Zs: 2.24 Amber Zs: 1.79		E
	50C07	000000000010868	VLN-LOW	Fault (F)	Good	02/07/2022	08:12	Measured V(LN): 183.0 Red V(LN): <215v Amber V(LN): 215v . 220v		Œ
L	50C07	000000000010565	VNE	Fault (F)	Good	02/07/2022	06:12	Measured V(NE): 123.0 Max V(NE): 30/		Œ
	01-01	000000000011176	Zs	Fault (R)	Good	02/07/2022	06.01	Measured Zs: 1.834 Max Zs: 0.544 Amber Zs: 0.44		Œ

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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