

# Cable Smart - GridKey MCU 318



Unlocking the smartgrid

# Why choose the Cable Smart MCU?

The Cable Smart system provides a continuous regime of monitoring to determine the safety of private and public electrical networks. The system consists of two elements, a GridKey MCU LV monitoring device which is installed in a feeder pillar and measures voltage and current 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.

The GridKey MCU318 is a physically compact measurement unit which measures single or three phase voltage as well as the current on up to 18 outgoing circuits. These circuits can be single or three phase and each sensor can be configured to a specific phase and circuit number.

The system consists of three elements – the MCU, voltage connections and the current sensors. Although it is possible to fit the MCU is a small plastic unit which can be mounted in the feeder pillar using either wood screws on to the back board if there is room or using magnetic mounts to hold it firmly to a metal surface. The lid of the unit opens to allow the current sensor connectors to be fitted to the unit, three phase voltage cables are pre-fitted to the lid. There is no requirement for an earth connection.

Voltage cables contain in-line fuses to provide the necessary protection and need to be connected to the main incomer to the cabinet – typically this is immediately after the main isolator switch so that when the cabinet is isolated, the MCU is also isolated. If required the voltage cables can be cut to length to aid installation.

Two types of current sensors are available – miniature CTs or rope Rogowski coils – the CTs measure a maximum of 120A load current and fit up to 16mm double insulated or 25mm single insulated cables and so are used almost exclusively for typical lighting and technology projects. The rope Rogowski sensors have an internal diameter of 200mm and are flexible in construction and are able to measure up to 1000A load current. The sensors are supplied as a “sensor assembly” – this consist of three sensors wired into a single connector which then plugs directly into the MCU. It is not possible to change the length of the cables joining the sensors to the connector.

On-site configuration is carried out using an App running on a tablet – both iOS and Android versions are available. The Apps are free but require an unlock passcode available from GridKey. The configuration tool has two main components – the first to allow install location and other parameters to be input and the second to check that the unit has been installed correctly. It normally takes less than 10 minutes to configure and test the install.



# Specifications

## MCU Characteristics

Parameters reported	Max, min, mean voltage and currents Active and reactive power Phase angle and power factor THD on voltage and current
Operating voltage range	90v-270v, 47-52Hz
Voltage accuracy	± 1%
Current accuracy	± 2%
Measurement reports	Every 1 minutes to every 24 hours - can be changed locally or remotely

## MCU Physical

Maximum dimensions	241mm (W) x 300mm (H) x 79mm (D)
IP rating	IP54
Weight	1.35kg
Voltage cable length	Pre-fitted 2m length, separate 3 phase and voltage cables, double insulated, 6kV isolation. In-line fast blow fuse protection

## MCU On-site Install and Configuration

MCU Configuration Tool - Connect3	Android and iOS app available from Play Store and App Store
-----------------------------------	---

## CT Sensors

Max current measurement	120A
Accuracy	± 1%
Max conductor size	16mm double insulated, 25mm single insulated
Overall dimensions	53mm (H) x 43mm (W) x 39mm (D)
Cable length	Available in 2m and 4m lengths

## Safety & Compliance:

Overvoltage category	CAT IV 600V
Safety compliance	LV directive 2014/35/EU, CE and UKCA marking
EMC compliance	BSEN 61326-2-2:2013

**For more information about GridKey please contact us:**

Website: [www.gridkey.co.uk](http://www.gridkey.co.uk)

Email: [info@gridkey.co.uk](mailto:info@gridkey.co.uk)

Phone: +44 (0)1268 850000