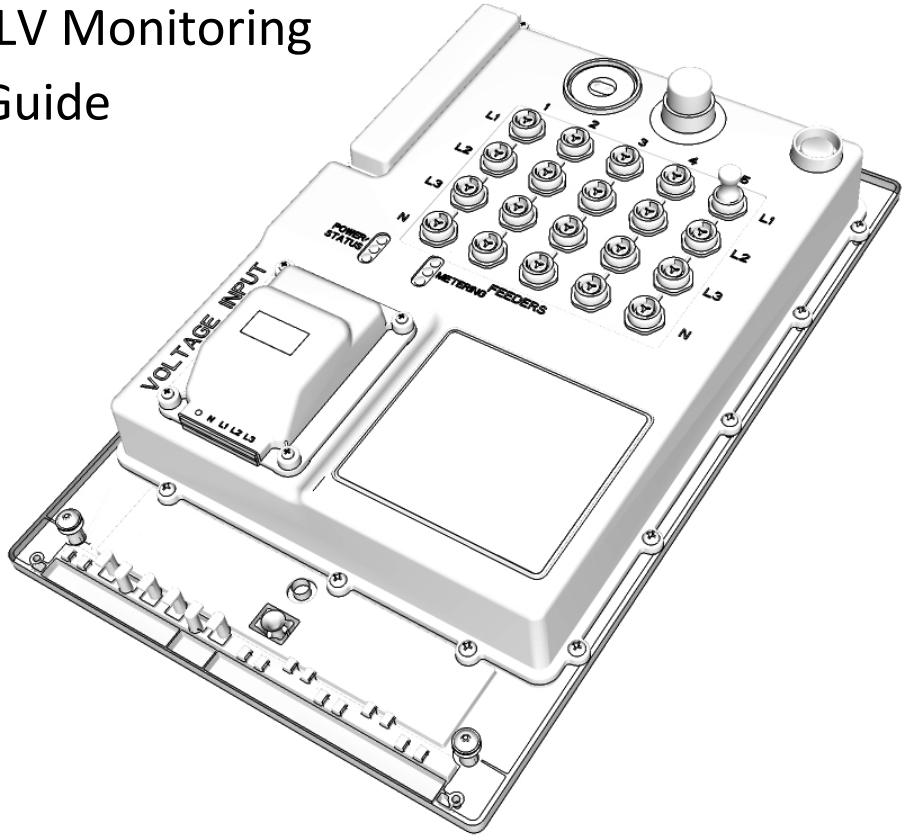
GridKey LV Monitoring System Guide



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The following symbols are used in this guide:

Symbol	Description
⚠	Warning – important information; follow precautions to avoid injury, data loss or system malfunction. See System User Manual for further details
⚡	Warning – important information; follow precautions to avoid electric shock.
🗑	Do not dispose of this product as unsorted municipal waste

The GridKey LV Monitoring System comprises an MCU520 Metrology & Communications Unit (MCU), GridHound sensors (GH600-D-XX), optional GridKey Flexible Rogowski sensors, voltage connection leads and busbar clamps.

<u>Safety Information</u> - Refer to the appropriate GridKey LV Monitoring System User Manual for details on installation commissioning and maintenance of the system.

- The system must only be installed, operated, maintained and removed by qualified electrical personnel with appropriate training on the GridKey LV Monitoring System.
- Follow safe electrical work practices as specified in local and national work instructions and codes. Use appropriate personal protective equipment and gloves as required.
- Always use this product in the manner specified or the protection provided by the product may be impaired. The equipment contains no user serviceable parts.
- Disconnect the system from the supply before performing any maintenance action.
- Always connect the neutral supply before any phase. Always disconnect the neutral supply last
- The working voltage line to neutral is 230VAC. Do not apply the GridKey LV Monitoring System to circuits having nominal AC line to neutral voltage greater than 230V. The system may be safely used in installations where the phase to phase voltage is 400VAC.
- During system operation the MCU will communicate periodically over the GSM/GPRS interface. Maintain a minimum distance of 20cm between the antenna and your body
- NOTE: This product is to be used for providing information only and is not intended for use in safety-critical applications.

Installation and Removal Instructions

- Inspect the equipment for damage. **Do not install a component if visibly damaged.**
- When installing on HAZARDOUS LIVE conductors which cannot be de-energised during application or removal of the current sensor the operator must use additional individual personal protective equipment (PPE) to avoid electric shock.
- The system is designed to be used with CAT IV 600V double insulated leads with fuses, as stated in the GridKey LV Monitoring System User Manual. They should be installed with fuse at source (near the busbar connections) to limit the possibility of uncontrolled discharge and arc flash hazard should the leads be accidentally shorted.
- Ensure cables do not present a trip hazard; secure excess cabling if required.

Features Key – See Figure 1

A	Top mounting holes	E	Power & Status LEDs	I	Bottom mounting hole
B	Optical Port	F	Metering LEDs	J	External Antenna/Auxiliary cable tie point
C	Antenna Cover	G	Voltage lead Cover	K	Current sensor cable tie points
D	Current Sensor Connectors	H	Voltage lead restraint		

Installation Guide

- **Pole Mount/External mount** installations must use watertight protection on voltage lead fuse holders and connection points (e.g. self fusing LV rubber tape), failure to do so may result in unit failure / risk of shock.
- The following instructions are for a **standard** installation on a wall or similar surface. If this is not the case or if requiring a GSM/GPRS antenna extension then consult the full GridKey LV Monitoring System User Manual for appropriate instructions.

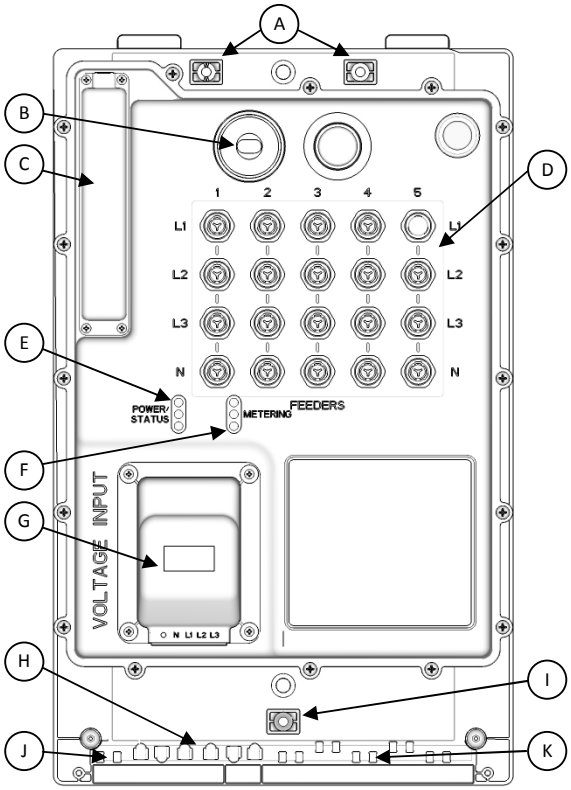

Figure 1 – Unit features

Figure 2 – Voltage lead restraint

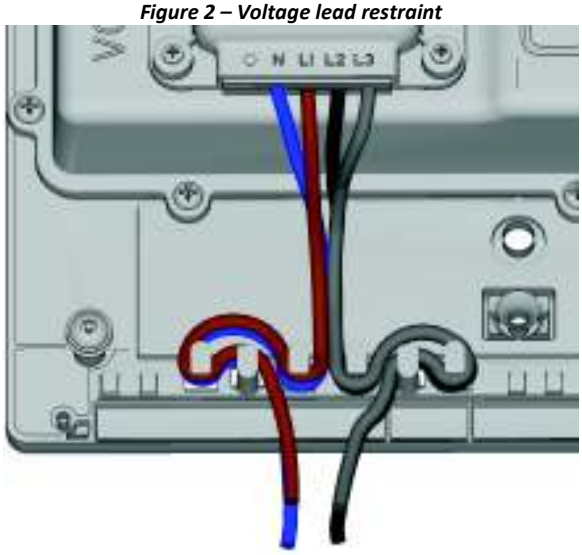

Figure 3 – Current sensor cable tidy

1. Identify a suitable location to mount the MCU to a vertical surface. For optimum GSM/GPRS performance, position MCU >0.5m from the ground and surrounding equipment. **Surface should be flat with respect to the fixing points.** Fix the MCU using the mounting holes top and bottom.
2. Survey lead length required for voltage leads and sensors. Aim to use shortest leads possible, bear in mind restraint length (see Figure 2).
3. Connect the GridKey sensors (Refer to safety leaflet for chosen sensor).
4. Route the cables from the sensor to the MCU, avoiding non-insulated conductors and contact with any sharp edges that may abrade the insulation. Fix the cables securely to the installation and the MCU (see Figure 3).
5. Fit fused voltage leads to the supplied connector. See the GridKey LV Monitoring System User Manual for details in preparing and inserting the leads.
6. **Ensure** that the protective plastic on the soft seal surface is removed from MCU housing and voltage lead cover. Connect voltage connector and fit voltage lead cover to the MCU.
7. Locate sensor cables and voltage leads into their appropriate strain relief slots and fit the cable clamp bar.
8. Using suitable busbar connections; connect the voltage leads with N first followed by L1, L2 and L3. The MCU is now powered.
9. Check that the MCU has powered up appropriately by monitoring the POWER/ STATUS and METERING LEDs, (See the System User Manual for correct operation).
10. Using the fitter's installation record sheet provided by your organization; note the configuration of the MCU and sensors. The details on this sheet must be communicated to GridKey in order for the MCU configuration to be updated over-the-air.
11. Fit anti-tamper cover.

Normal LED operating sequence			
	Steady on	Pulse/Flashing	Off
Power/Status (E)	**Comment**	**Metering (F)**	**Comment**
	No Errors present		Energy (xWhr) pulse
	Unit Powered, established communications		Metrology running and phase rotation correct
	Should flash in synch with Metering Yellow LED		Should flash regularly

Removal Guide

Visually inspect the MCU, current sensors, voltage connections and leads before removal. Take appropriate safe handling measures before proceeding. If in doubt contact your supplier for further advice.

1. Disconnect voltage leads from the busbars, removing the neutral last.
2. Remove the anti-tamper cover.
3. Remove the cable ties from the sensor connectors.
4. Remove the voltage lead cover and disconnect voltage connector from MCU.
5. Disconnect the current sensors (refer to safety leaflet for chosen sensor and the appropriate system manual).
6. Unscrew the MCU from its mounting location.

Safeguarding the Environment

Disposal of Packaging Materials - The packaging material is recyclable and is marked with the recycle symbol. Packing materials should therefore be disposed of responsibly.
Disposal of Equipment - This equipment is marked according to the European directives 2002/96/EC and 2003/108/EC on Waste Electrical and Electronic Equipment (WEEE). Ensuring this product is disposed of correctly will help prevent potential negative consequences for the environment and human health.
The symbol on the product, or on the documents accompanying the product, indicates that this equipment may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

Safety Standards
BS EN 61010-1:2001
BS EN 61010-2-032:2002

Specifications

Working Voltage	230 V_{RMS}
Overvoltage	CATIV 300V (Phase to Neutral)
Line Frequency	50 Hz
Max individual current	720 A
IP rating EN 60529	IP65
Impact	IK06
Altitude	2000 m
Environmental	-20 to +55^{0}C
Relative Humidity	<80%

Product information subject to change without prior notice.