

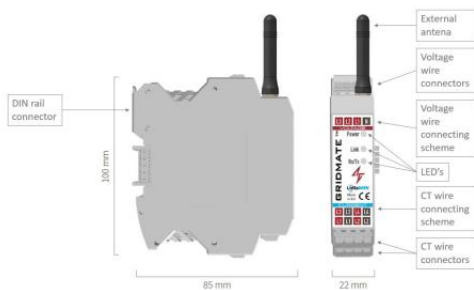
INSTALLATION MANUAL – TECHNICAL INFORMATION

281402 LORA281402-EM-600A-EU868

iQunet wireless Energy Monitor 600A max. / 3 phase 400V max.

1. Components

1.1. GridMate LoRaWAN device



Device enclosure is made from V-0 class plastic (according to UL94), with a sticker indicating the wiring scheme. In the front there are 3 LED's to indicate the status of the device. It has IP40 protection class. 35mm DIN rail mount is attached to the back of the sensor device for installation purposes.

1.2. Rogowski Coils



Each GridMate sensor device is bundled with 3 Rogowski coils. The Rogowski coils wires are marked with indicators: L1, L2, L3.

1.3. Voltage cable



The wires are marked with indicators: L1, L2, L3 and L4 (neutral) and have a snap-in connector for connecting the cables to the Gridmate.

1.4. Voltage connector, screw-on



The voltage cable is plugged into the voltage connector and is physically connected (e.g. screwed) to each of the power lines.

2. Installation manual

This manual explains how to set up a GridMate sensor device. Please read this manual before setting up and using the GridMate sensor device. The manufacturer doesn't take any responsibility for any damage that has been done to the sensor device while not following the installation and operation requirements in this manual.

2.1. Work Safety requirements

Installing and servicing the GridMate device is an increased hazard task, that can be done only by a specially trained electrician. Personnel doing GridMate set up, maintenance and check-ups must be qualified and certified to do electrical work. Connecting the GridMate device shall only be done with the power lines switched off.

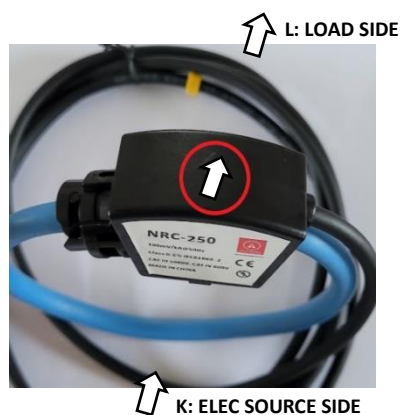
2.2. Preparation before installation

Find out the type and voltage of the electricity grid. The GridMate sensor device can only be used in 0.4kV **(400 V) electricity grids with a neutral**. Before installing the GridMate device, make sure that the particular device configuration fits the electrical wiring and parameters. Check if the Rogowski coils can be clamped around the chosen cables or busbars and choose the appropriate voltage connection option. Make sure that the maximum current doesn't exceed the current transducer range per phase.

2.3. GridMate setup

2.3.1. Installation of the Rogowski coils

Installation starts with mounting Rogowski coils on the electrical conductors. Rogowski coils are marked with phase numbers that are important for making a correct voltage connection and phase load traceability. Also, it's important to note the **direction of the arrow on**; it needs to be **pointed from the electricity source towards the load** (see Image below).



In the process of setting up the device you must follow the state of the cable connector and make sure that it's not exposed to any harmful factors (water, mud, oil, etc.). In installations where Rogowski coils are used the surplus cable length should be rolled up in a loop with a diameter no smaller than 15cm and fastened in a way that the connector and coil aren't exposed to unnecessary strain. When the Rogowski coils have been set up, they can be connected to the GridMate sensor device.

2.3.2. GridMate setup and wire connecting

GridMate can be mounted on 35mm DIN rail (using the mount) or in any appropriate place, while making sure that it isn't hanging by its cables and there is no unnecessary strain on the connectors. It is recommended to mount the device as far as possible from hot objects and in places where the temperature doesn't exceed 50°C. Also, any unnecessary exposure to direct sunlight should be avoided.

2.3.3. Connecting voltage cables

When installing a GridMate sensor device, the neutral must always be the first connected voltage wire.

When removing the device, the neutral must be disconnected last.

When connecting the voltage wires, special attention must be paid to the neutral connection place. Make sure that the contact surface is clean and decrease the probability that the neutral connection could be lost while installing and using the GridMate sensor device.

The voltage phase wire connecting shall fit the Line numbers of the installation. Make sure that the phase markings fit the markings on the Current Transformers.

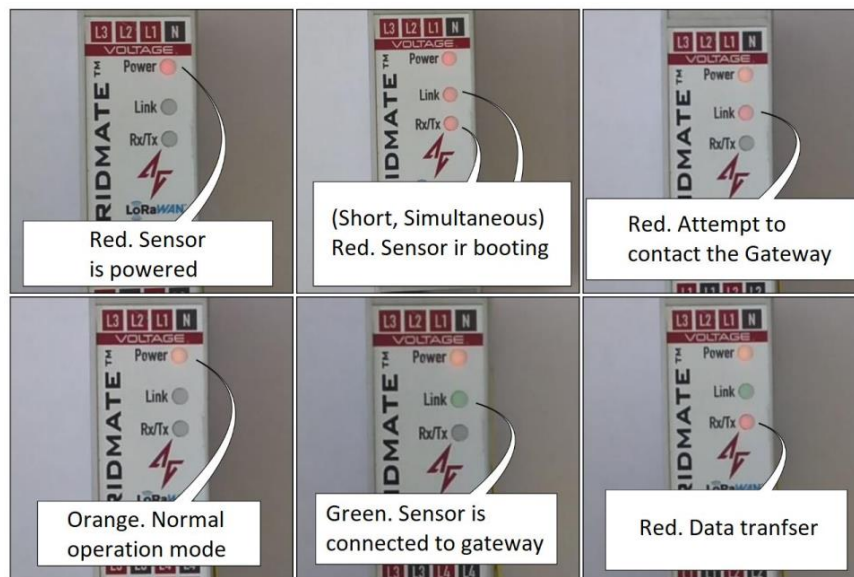
The Voltage cables are connected to the phases by screwing them to voltage terminals of the installation. Under no condition, there shall be power on the lines during installation.

After installing the voltage connection make sure that there is no unnecessary strain on the connectors because of the weight of cables or other factors as it could lead to a loss of contact.

2.3.4. Operation of the sensor device

After connecting the voltage to the GridMate sensor device, the device will start to search an available iQunet server to join. 3 LEDs on the sensor device indicate operating modes and possible problems (see Image)

As soon as the device is installed it immediately starts reading electricity data. First data pack is sent as soon as the device is properly connected to the grid. Subsequent data packs will be sent every 5 minutes.



3. Maintenance

The GridMate sensor device should be used with care. The following suggestions will help you use the warranty service effectively:

- Keep equipment dry. Rain, moisture and various liquids may contain minerals that can corrode electronic circuits. In case the device is wet, please dry it completely.
- Do not use or store in dusty or dirty areas. This can damage detachable parts and electronic components.
- Do not store in excessive heat. High temperatures can shorten the life of electronic devices, destroy batteries and deform or melt some plastic parts.
- Do not store in a cold place. Otherwise, when the temperature rises to normal temperature, moisture will form inside, which will destroy the board.
- Do not throw, knock or shake the device. Rough handling of equipment can destroy internal circuit boards and delicate structures.
- Do not wash with strong chemicals, detergents or strong detergents.
- Do not apply with paint. Smudges can block debris in detachable parts and affect normal operation.