EGM
Electrical Grid Monitoring

Eyes On™ The Grid

Meta-Alert™ Solutions For Distribution Networks

EGM's advanced grid monitoring solution is based on a suite of **3rd Generation sensors** that combine fault detection and current measurement capabilities found in earlier line sensors with **precision voltage** measurement, advanced physical environment measurements, and a secure communications network to provide the industry's first holistically designed grid monitoring solution that accurately locates problems across the Distribution network.

Who is EGM?

EGM is a technology company committed to making the world's biggest machine better. By adding telemetry to the existing T&D grid in a non-disruptive way, we give the utility accurate and timely information to optimize the operation of the entire Grid. We collect, securely transmit, and analyze the data in real-time giving the utility insights into the true performance of the Grid.

According to NREL

A study conducted by the National Renewable Energy Laboratory (NREL) concluded that an EGM system can provide "significantly improved [distribution system state estimation] DSSE accuracy with only a small number of lines with the sensors, and significantly improve fault detection speed and accuracy, and reduce downtime and energy lost due to faults, while improving customer load availability compared to the traditional approaches."

MSU-X
for low-amperage lines

MSU-1
self-powered for OH lines

Importance of Precision Voltage

The next generation of Distribution applications – those applications needed to support distributed energy management, faster outage restoration, and awareness of the grid edge -- have one thing in common: the need for precise electrical parameter measurements in near real-time. And the most critical measurement? Precision Voltage. Precise voltage measurement combined with drastically improved current measurement allows the calculation of Power Factor, Phase Angle, Harmonics, Frequency and a host of other critical parameters with accuracy not available before.

Benefits of Precision Measurement & Data

Electrical

- Precise Voltage
- Precise Current
- Power Factor
- Phase Angle
- Frequency
- Power & Energy
- Harmonics
- Corona discharge
- EMF
- Current "Leakage"

Physical

- Cable Movement
- Vibration
- Cable Angle
- Cable Temp.

Environmental

- Ambient Temp.
- Humidity

Analytics Engine

Transmission Operations

- ❑ Dynamic Line Ratings (DLR)
- ❑ Ice Accretion
- ❑ Line Galloping
- ❑ Casual Contact
- ❑ Cable Health

Distribution Operations

- ❑ Fault Location (OH+UG Feeder, UG Loop)
- ❑ Broken Wire Detect
- ❑ Dist. Power Flow, FLISR Enhancements

Power Quality

- ❑ Momentary Location (OH+UG Feeder, UG Loop)
- ❑ Voltage Issues
- ❑ Pre-Failure Detection

DERs & Micro-Grid

- ❑ Phase Synchronization
- ❑ Distribution DLR
- ❑ Current Direction
- ❑ Total Harmonic Distortion

info@egm.energy | www.egm.energy | 833-664-2835

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Meta-Alert™
Solutions Leading Grid Modernization

What Makes EGM Different?

Real-time, accurate data is so crucial to so many operational applications that, today, utilities are forced to rely on “estimates” or derived values. We feel it does not make sense to provide sensors for distribution and ignore transmission, or provide sensors for overhead and disregard underground, or provide only current-related data when accurate voltage related data is so vital. At EGM, we want to help our utility customers improve Grid Operations from the point of Generation to the consumer’s house… and everywhere in between.

Contact Us

Electrical Grid Monitoring, Inc. (EGM)
9301 Oaksdale Ave.
Suite 170
Chatsworth, CA 91311
U.S.A.

www.egm.energy

We’d be happy to discuss the state of the utility industry and the changing energy landscape. Additionally, we’ll share how our technology provides increased safety, reliability, and benefits while reducing costs.

For more information: info@egm.energy.

Real-Time, All the Time

Monitoring, and ultimately managing, a diverse energy mix at the edge of the grid will require more than intermittent measurements and involves more than just fault detection. Supporting renewables and EVs, and understanding the electrical effects of that equipment, requires real-time, all-the-time monitoring of more than just current but many precise, time-synchronized electrical parameters such as voltage, phase angle, power factor and frequency.

Improving ADMS with Advanced Analytics

Operational applications such as ADMS/DMS/OMS will benefit from accurate, timely data captured from many points on the network. Specifically, Fault Location, Isolation and Service Restoration (FLISR), Distribution Power flow (DPF), State Estimation, VVO and Outage Management (OMS) will benefit from real-time precision electrical data provided by Meta-Alert sensors and the alerts and notifications available from Meta-Alert advanced analytics.

	MSU-1 Self-Powered for Overhead Lines	**MSU-X** for Low-Amperage Lines
PRIMARY POWER SOURCE	Self-powered, Induction (12A)	Secondary (120V) or Solar Powered
LINE RATING	4kV to 240kV	4kV to 33kV
MEASUREMENT ACCURACY		
Voltage	+/- 0.5%	+/- 0.5%
Current (0 to 5000A)	+/- 0.1%	+/- 0.1%
OTHER PARAMETERS AVAILABLE		
Harmonics (I, V)	1st - 63rd	1st - 63rd
Power Factor	✓	✓
Phase Angle	✓	✓
Power & Energy	✓	✓
Frequency	✓	✓
Current Direction	✓	✓
Cable Temp	✓	✓
PRIMARY APPLICATIONS AVAILABLE		
Fault Detection with Location	✓	✓
Broken Wire Alerts	✓	✓
Failing Equipment Detection	✓	✓
Voltage Sag/Surge	✓	✓
Phase Identification	✓	✓
LIFESPAN	15 years	15 years