



# EV Charging Stations

Smart Mobility in Motion: Improving Energy Management  
for Electric Vehicle Charging Infrastructure

# RM's Solution for EV Charging Station

Electric Vehicle (EV) charging represents a novel form of electric load, distinguished by its distinct usage patterns and variable power and energy demands. Importantly, integrating EV charging into new or existing electrical systems can significantly affect overall power distribution.

Effectively managing the power of EV charging stations is crucial to mitigate impacts on electrical infrastructure. This includes optimizing energy allocation among all connected loads to minimize strain on the system while ensuring efficient distribution.



Testing the thermal resilience and other parameters of components and assessing their functionality across diverse climatic conditions, from the scorching heat of the Sahara to the freezing cold of Siberia, is essential for ensuring battery electric vehicles' global readiness. However, obtaining accurate results depends on the precise and reliable replication of these temperature conditions on test benches. Ensuring dependable and accurate temperature sensing is imperative for various components within electric vehicles.

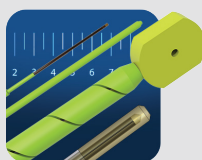
Rugged Monitoring offers cutting-edge solutions, providing secure and high-performance solutions. Our continually growing portfolio caters to applications in e-motors and charging infrastructure, offering flexibility in designing new layouts and materials for power electronics. Trusted globally by numerous customers, our established solutions contribute to elevating the performance, efficiency, and sustainability of electric vehicles.

## How it Works:

The electric motor converts electrical power into dynamic motion, emphasizing the pivotal role of protection and safety for prolonged operational durability. Whether designed to be replaceable or integrated to endure the entire operational lifespan, the temperature sensor must demonstrate reliability, resistance to drift even following repeated temperature spikes, and seamless integration into the production process.

At Rugged Monitoring, we offer sensor assemblies founded on durable sensor elements, ensuring extended lifetimes. Paired with innovative and customizable mounting options, our array of possibilities empowers our customers to achieve optimal designs for their specific needs.

## Our innovative and most advanced online/offline electrical asset monitoring solution for OEMs



Sensors



Monitors



Software

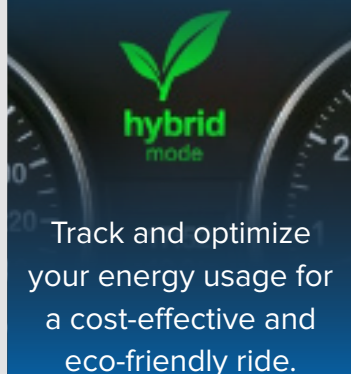
## What can be monitored

### Battery Health Monitoring



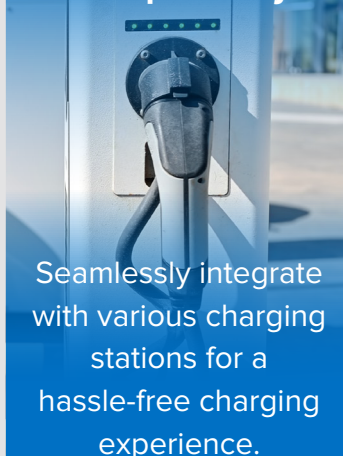
Precise insights into your battery's condition, ensuring longevity and reliability.

### Energy Consumption Analytics



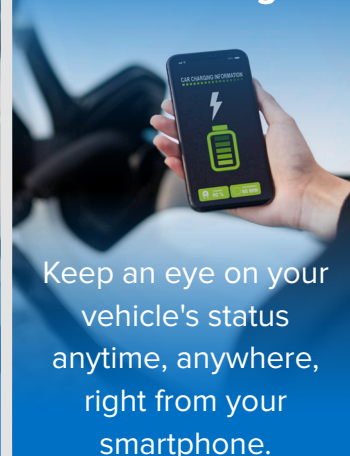
Track and optimize your energy usage for a cost-effective and eco-friendly ride.

### Charging Station Compatibility



Seamlessly integrate with various charging stations for a hassle-free charging experience.

### Remote Monitoring



Keep an eye on your vehicle's status anytime, anywhere, right from your smartphone.

## R501 Rack Mount Comprehensive and Customizable Asset Monitoring Solution

R501, the customizable, rack mount, comprehensive electrical asset condition monitor is designed to monitor multiple electrical assets and its parameters enables a simple and user-friendly interface. R501 provides condition monitoring of electrical assets by focusing on preventing asset failures and reduce downtime. With our comprehensive monitoring solution, the health of assets can be determined, and maintenance activities can be scheduled. The R501, our versatile rack-mounted monitor, with its customizable features allow you to monitor multiple assets simultaneously, providing a user-friendly interface and an extensive range of parameters to track. The R501 focuses on preventing asset failures and minimizing downtime, empowering you to take proactive maintenance actions.



### Features of R501

- Expandable with daisy chain & Field Upgradable to add different monitoring modules.
- Highly secure, web server-based visualization and configuration software
- Simple visualization & easy to configure.
- Equipped with most accurate & advance health assessment analytics.
- Range of communication options and protocol support; ethernet redundancy (PRP)

### Benefits of R501

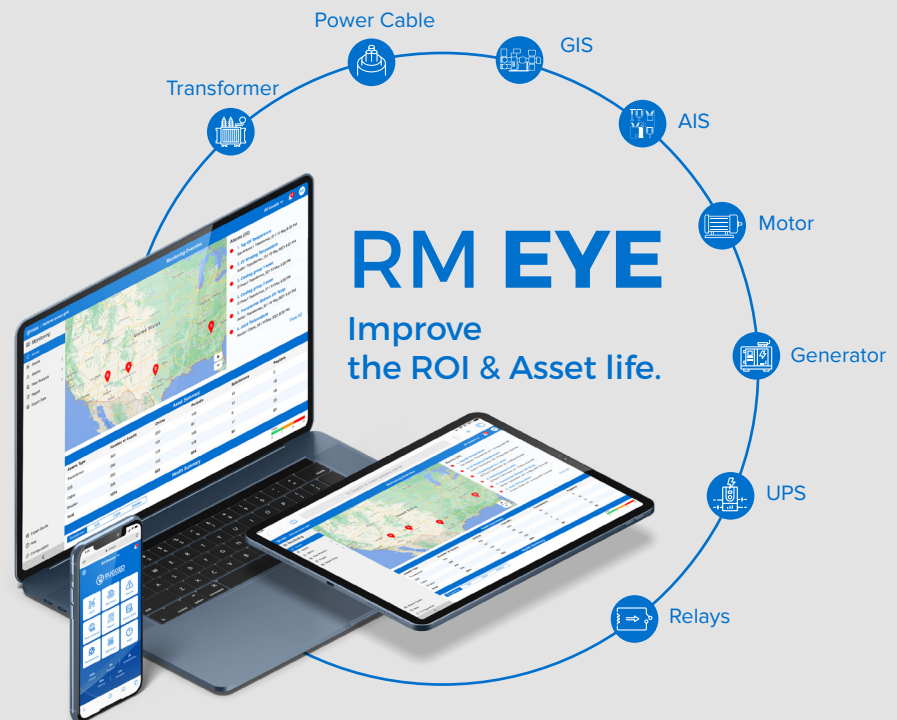
- Improved asset reliability
- Accurate predictive analysis
- Access asset data from anywhere
- One monitoring solution for multiple assets
- Increased asset lifetime
- Highest return on investment
- Field upgradable with no device downtime



# RMEYE: Multi Site, Multi Asset Condition Monitoring Solutions

We at Rugged Monitoring have developed an AI based comprehensive electrical asset condition monitoring system “RMEYE” with multiple analytical capabilities in asset condition monitoring that stands way apart in technological advancement.

RMEYE is a versatile condition monitoring solution that can offer comprehensive analysis on various electrical assets spread across multiple industries. It considers every aspect in condition monitoring of different assets like transformer, cable, GIS, AIS, motor, generator, UPS, VFD, MV panel, battery, relays, etc and users to give the best recommendation for longer and better health of the assets.



## Features

- **Advanced asset health monitoring** with analysis and recommendations to increase asset effectiveness in addition to maximizing equipment uptime
- **Modern remote monitoring solutions** provide valuable insights to Multiple Assets at Multiple Sites from time to time
- **Establish a real time and consistent monitoring** by getting the right information into right hands
- **Simple and user-friendly interface** providing easy and fast access to all the features
- **Everything about the asset at one place**  
The raw data, analysis and recommendations
- **Advanced asset algorithms** for electrical assets to evaluate asset health
- **Advanced reporting technology with automated alerts**
- **An efficient, reliable partial discharge monitoring for all the assets**
- **A detailed comprehensive DGA analysis**
- **Built on well-established remote and cloud-based monitoring technology**
- **Quick configuration** so that you are not required to configure separately.
- **Protocols: IEC 61850, MODBUS, MQTT**
- **Robust integration with 3rd party systems and devices** with industry standard protocols
- **Bulk configuration imports for fast deployment**
- **Encompasses a secure access to data and configuration**
- **QR code scanner on mobile devices**
- **Accessible on web browser and mobile app**
- **Historical data storage and on demand access** via export feature
- **Extended multilingual support** to handle product inquiries or troubleshoot problems proactively
- **Systematic fleet management analysis**
- **Offline test data integration and analysis**



## Benefits



### Company

- ✓ Single monitoring solutions for multiple assets
- ✓ Avoid unscheduled outages and increase asset utilization
- ✓ Extend asset life, with proper maintenance
- ✓ Reduce insurance premium with most advanced monitoring
- ✓ 24 x 7 remote monitoring, accessible from anywhere



### Manager

- ✓ Decision support system for short term and long term planning
- ✓ Company, region, substation analysis on your fingertips
- ✓ Effective management and tracking of monitoring KPIs
- ✓ Identify problem areas with interactive dashboards
- ✓ Advanced and automatic management/regulatory reports



### Asset Experts

- ✓ Deep analysis of diagnosed faults with advanced analytical tools
- ✓ Complete asset data at one location
- ✓ Customise and generate automatic reports for subscribed assets
- ✓ Ready access to historical data for root cause analysis



### Operators

- ✓ Quick identification of problematic assets in the network
- ✓ Get real time alarm/ alert notifications
- ✓ Realtime updates about the assets on mobile, desktop and emails
- ✓ Quick access to assets with QR code scan on handheld devices

## Ready to Revolutionize Your Ride?

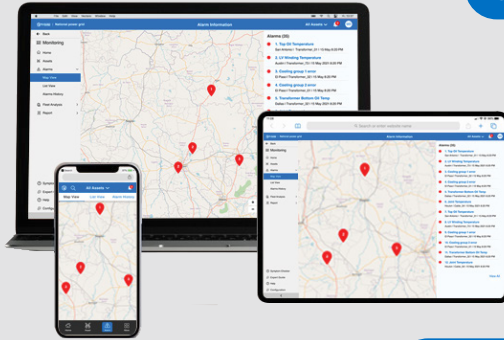
Learn more about our monitoring solutions and be part of the electric revolution. Visit our website or call us today!



# Asset Monitoring : Enterprise Architecture

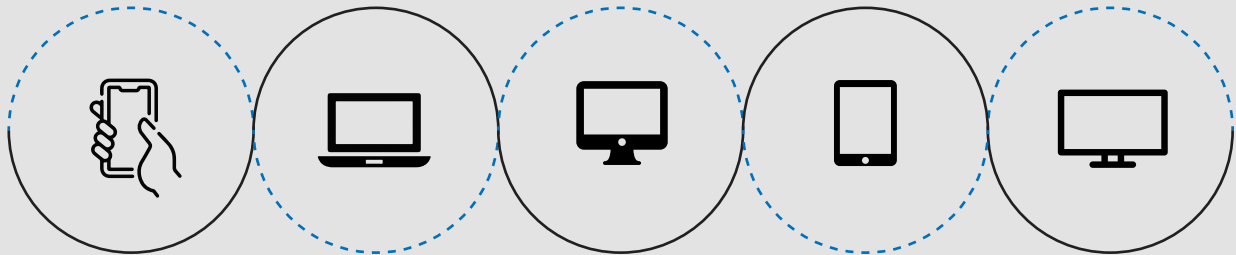
Compatible with Rugged Monitoring Enterprise Solution

## UI UX



- Data Layer
- Analytics
- User Interface
- Custom Dashboards
- Reporting
- Email/SMS Notifications

## RM EYE



Private Cloud (Customer Cloud),  
Rugged Monitoring Cloud

**IEC 60870-104**

**IEC 61850**

**FTP/SFTP**

- XML, JSON

- CSV, COMTRADE



**Data Collection**

**ODBC**

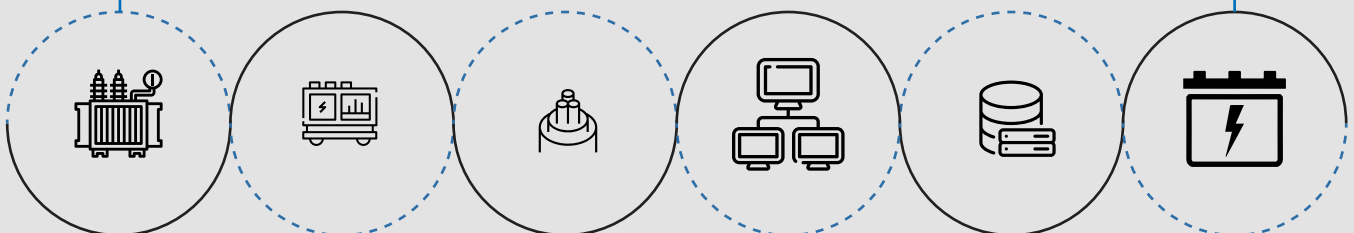
**MODBUS**

**DNP 3.0**

**HTTPS**

**MQTT**

## Asset Data



Transformer  
Monitoring  
System

Switchgear  
Monitoring  
System

Power Cable  
Monitoring  
System

- Offline Test Results  
- Inspection Records  
- Name Plate

- Historian  
- CMMS  
- SCADA/ DCS

Power Electronics  
(Battery, UPS,  
VFD, Relay)

# Why Customers Choose Us?

RM solution, the trusted monitoring solution for over 10000+ assets across 50+ countries. We are a leading High Value Electrical Asset Monitoring Company integrating fibre optic technology to the assets.



## Attention to Details

It's our attention to the small stuff, scheduling of timelines and keen project management that makes us stand out from the rest.



## A plan for Success

Our Customers are well satisfied with the advisory services that we offer to help them with best in class technological performance and a long durable life.



## Experts only

We bring in our diversified experienced team with over 100+ years of experience in Asset Monitoring



## Meeting Deadlines

Work with us, and you'll work with seasoned professionals – vigilant of deadlines, and committed to exceeding client expectations.



## Money Matters

We protect you against currency fluctuation with competitive and fair market prices





## Rugged Monitoring Services

Rugged Monitoring provides customization of sensors, monitors & software. In addition we offer on-site commissioning services, maintenance contracts and technical support to all customers worldwide.

## About Rugged Monitoring

Industry's leading team of asset condition monitoring experts with 100+ years of combined experience committed to delivering customizable solutions for challenging applications. We offer a range of reliable, high performance, customizable sensors and monitoring solutions that are immune to external influence.

# Certification



ISO 9001



ISO 14001



ISO 45001/  
OHSAS 18000



Lloyd's  
Register



ATEX  
Certification

# Our Presence Across the Globe



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