Cable
Condition Monitoring

Monitoring and Analyzing the condition of power cables continuously with early detection of potential risks while reducing the operational costs.

RUGGED
MONITORING

MONITORING SIMPLIFIED

RM's Solution for Cable

Monitor cable conditions such as Temperature, Partial Discharge, Voltage, Current, and Moisture warning levels, these are collected and stored for further analysis, coupled with real time data they enable user to make right decision at right time.

The monitoring solution is the innovative platform that enables operators to monitor and manage electrical cable system. User can monitor the performance of the system real time to prevent, predict conditions anytime from anywhere optimizing maintenance and operational costs. The monitoring solution can be installed as integral part of the cable system at the time of manufacturing, or the solution can also be integrated to the retrofit cables.

Expert machinery monitoring, diagnostics, and performance analytics can be performed and delivered remotely via secure connections to provide timely and actionable insights that help teams improve operations, mitigate unplanned downtime, and bridge onsite personnel gaps. The monitoring solution installed on multiple or single cable system can be connected to Rugged Connect/ RMEYE to enable predictive capabilities that reduces downtime needed for maintenance and enables plant operators to reduce operational costs. Depending on specific operating requirements and application, we customize our condition monitoring solutions for

- AC Power Cables
- HVDC Power Cables

What can be tested

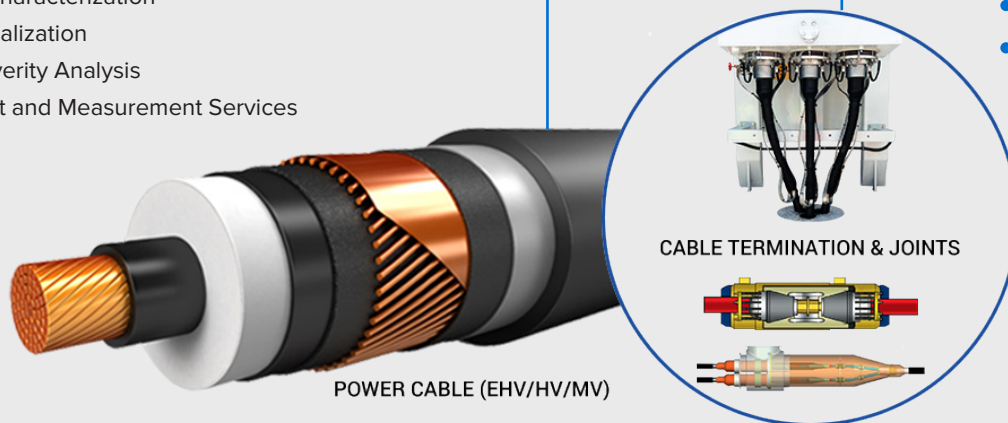Temperature   Sheath Current   Partial Discharge

Schematic Diagram

Partial Discharge Monitoring

- PD Detection
- Fault Characterization
- PD Localization
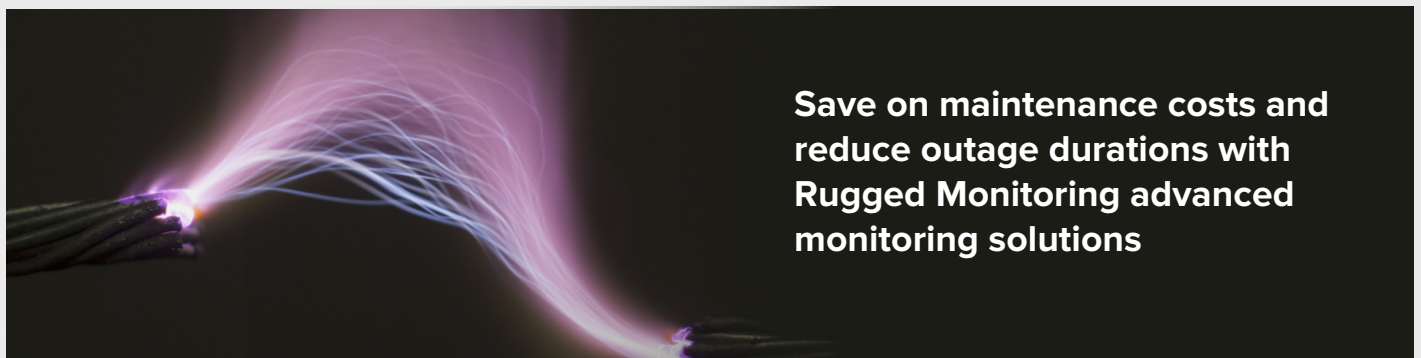- PD Severity Analysis
- PD Test and Measurement Services

Temperature Monitoring

- Thermal Profiling
- Hot Spot Identification
- Hot Spot Localization

CABLE TERMINATION & JOINTS

POWER CABLE (EHV/HV/MV)

Continuous monitoring will help to identify and to implement the right operation and maintenance strategy consequently preventing any break down of the machine before the end of the design life. The real time monitoring can monitor, diagnose, and predict failures on less critical but widely utilized AC Power Cables and HVDC Power Cables. The system will help in proactive life cycle planning, minimizing maintenance costs & unplanned outages. The detailed trends from the solution help the user to get the deep insight of the system performance and aids in taking actionable decisions before a catastrophic failure occurs.

We develop and deploy the most advanced cable condition monitoring solutions to serve energy and industrial companies looking for more efficient, more reliable, and cleaner solutions.

Save on maintenance costs and reduce outage durations with Rugged Monitoring advanced monitoring solutions

Features

- Intelligent and customizable solution
- Proactive tuning to limit nuisance alarms
- Unique and Reliable Prediction
- Alarms and Alerts for any potential problems
- Built on well-established remote and cloud-based monitoring technology
- Realtime process parameters monitoring

Benefits

- Withstands elevated temperatures in harsh conditions
- Prevents gas penetration and explosive decompression with proprietary material
- Delivering solutions to maximize total asset value
- Predict assets at risk of failure to improve maintenance and planning
- Detect small life-sapping issues early

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.

R501
ADVANCED MULTI ASSET MONITOR

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)
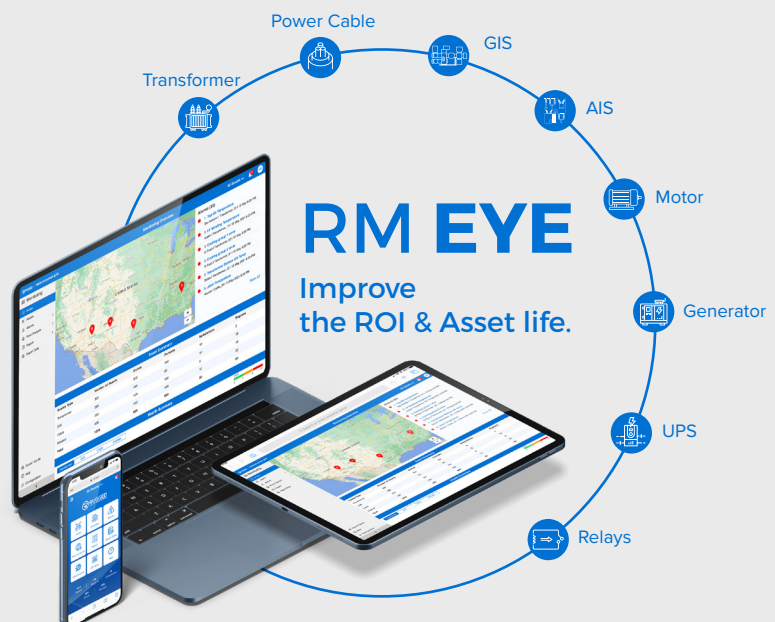
Benefits of R501

- 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.

RM EYE
Improve
the ROI & Asset life.

Power Cable · GIS · Transformer · AIS · Motor · Generator · UPS · Relays

03

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 inquires or troubleshoot problems proactively

- **Systematic fleet management analysis**

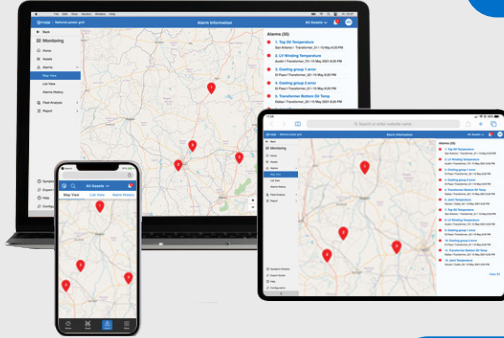- **Offline test data integration and analysis**

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

Asset Monitoring :
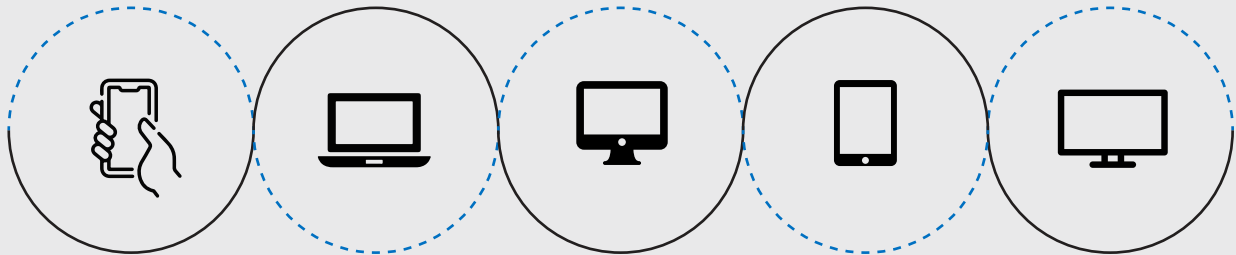# **Enterprise Architecture**
Compatible with Rugged Monitoring Enterprise Solution

UI UX

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

RM EYE

Private Cloud (Customer Cloud), Rugged Monitoring Cloud

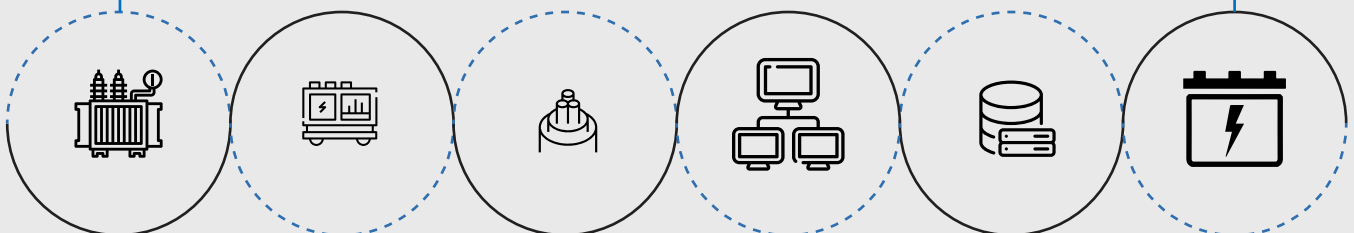|		
IEC 60870-104		**ODBC**
IEC 61850		**MODBUS**
FTP/SFTP	**Data Collection**	**DNP 3.0**
- XML, JSON		**HTTPS**
- CSV, COMTRADE		**MQTT**

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 | Llyod's Register | ATEX Certification |

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