



Condition Monitoring System for Solar Farms

We help deliver enhanced reliability and security to your solar farms. From delivering insightful monitoring to providing Higher ROI, RM's condition monitoring system plays an ever-increasing role within renewable energy installations.

Our Solution

The increasing numbers of solar power plants are putting more stress into the electrical assets of current infrastructure. Higher transients and harmonics from converted power supply of ESS (Energy Storage Systems), Increasing supply related fluctuations and the impact of climactic changes are some of the major issues that impact the long-term sustainability of our transmission and distribution network.

RM's condition monitoring systems perform more efficiently to cater the needs of solar power industry. It facilitates planned maintenance with deep insight into the component failures before they affect energy production. Ensuring that the integrity of processed data is not compromised by severe and extreme climates.

We at Rugged Monitoring have developed wide range of products with deep understanding of the stress and strain placed on renewable energy applications. Delivering several advantages over conventional equipment, the popularity of condition monitoring solutions in solar farm has gathered much attention than yesteryears.



Solar Farm Condition Monitoring System Benefits

- Reduces expensive emergency repairs by detecting problems early, avoiding unplanned downtime and optimizing the planned outage cost with planned maintenance.
- Real time monitoring of electrical assets
- Detailed diagnosis of the faults in different assets
- Root cause analysis of damage event
- Data trending
- Operational and economic benefits are realized through reduced downtime
- Seamless communication among multiple systems

Features of Condition Monitoring System

- High precision modular design
- Accurate measurement
- Multiple Digital and Analog Outputs
- Plug and Play, No Re-Calibration
- Accessible Installation and Commissioning
- Data integration with high level systems

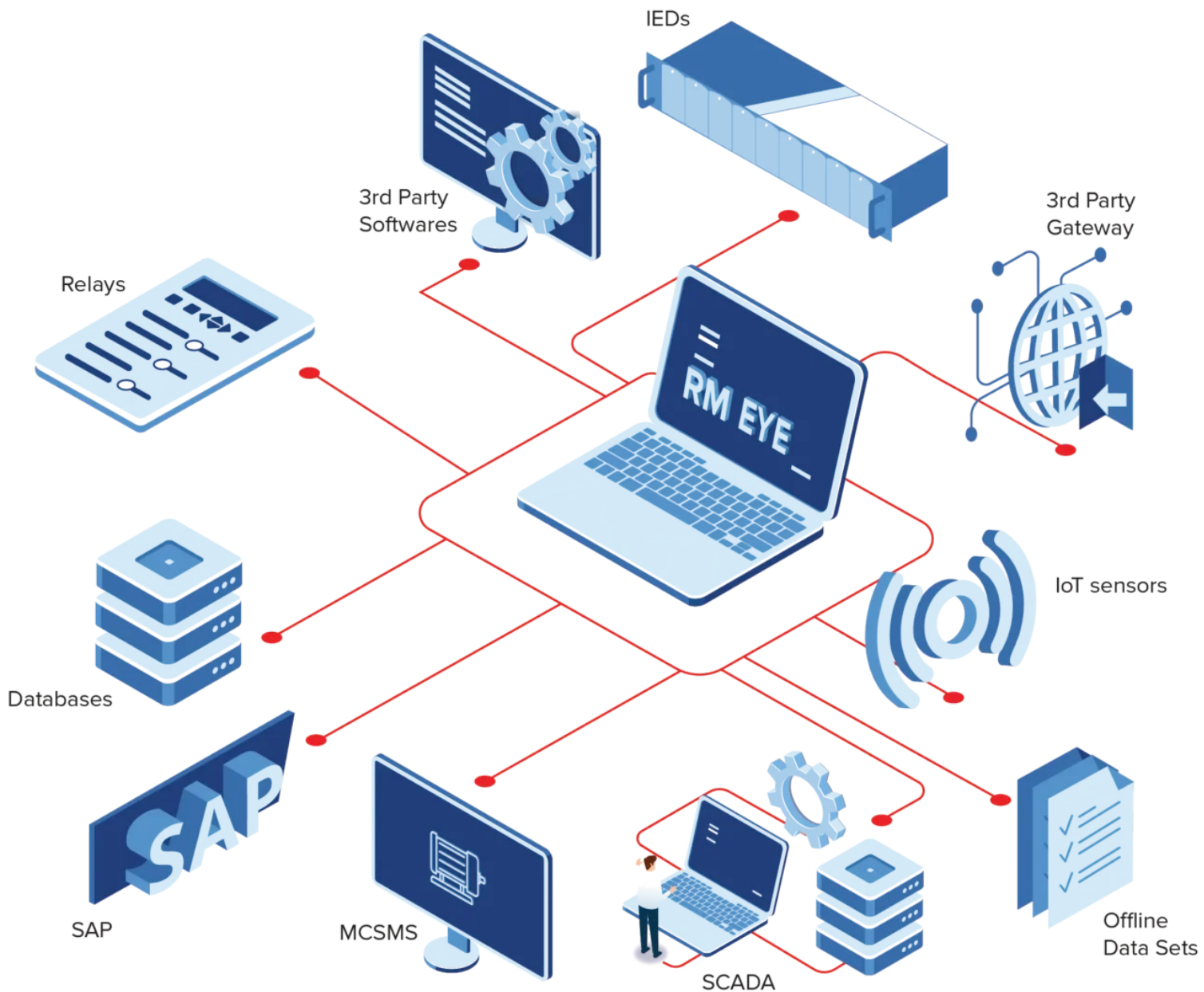
Flexible solutions for Renewable Energy Applications

	Solar Panel	Ess/Battery	Power Cables	Inverter/ Power Electronic	Switchgear	GIS	Transformer
Temperature	✓	✓	✓	✓	✓	✓	✓
Voltage	✓	✓	✓	✓	✓	✓	✓
Current	✓	✓	✓	✓	✓	✓	✓
Gas Density Monitoring					✓	✓	
Moisture			✓	✓	✓	✓	✓
UHF PD			✓		✓	✓	✓
HF PD			✓		✓		✓
Breaker Condition Monitoring					✓	✓	
Vibration Sensor							✓



Enterprise APM Suite: RM EYE

RM EYE represents a paradigm shift in enterprise asset performance management through the condition monitoring of electrical assets. It uses an AI-driven approach to assess the health and performance of diverse assets, delivering transformative and sustainable outcomes related to their health, performance, energy efficiency, and integrity.



Rugged Monitoring's RM EYE transforms traditional time-based maintenance into a proactive approach, equipping businesses with real-time insights into the health of their electrical assets. By detecting potential issues early on it helps create a dependable and efficient predictive maintenance system.

RM EYE Architecture

Multi-Asset

Multi-Site
Monitoring



RM EYE



UI/UX



Real-time/ Historical
Trends



Analytics



User
Interface



Custom
Dashboards



Reporting



Email/ SMS
Notifications



Mobile -
Progressive
Web Access

Cloud

Private (Customer)
Rugged Monitoring
On-Premises (Optional)

AWS, Azure
Google Cloud



- RM Enterprise Data Layer
- RM Enterprise Analytics

CYBER SECURITY



IEC 62443

NERC CIP-5

Data
Collection

Modbus

DNP 3

IEC
61850

FTP/
SFTP

XML, JSON,
CSV, COMTRADE/OPC

ODBC

IEC
60870-104

MQTT

HTTPS

Assets
Data



Transformer
Monitoring System



Switchgear
Monitoring System



GIS
Monitoring System



Power Cable
Monitoring System



Generator
Monitoring System



Offline Data/
Inspection



Power Electronics
(Battery, UPS,
VFD, Relay)



Historian
CMMS,
SCADA/DCS

One Solution for Multi-Site Multi Asset Monitoring

**RM EYE - Unified platform to monitor entire network
of electrical 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**

Why Customers Choose Us ?



Expertise You can Trust

Backed by 100+ years of experience, we understand the unique demands of critical asset management across diverse industries.



Focus on Sustainability

Our Solutions are designed to help you reduce energy consumption, minimize waste, and align with your sustainability goals.



Money Matters

We offer competitive and transparent market pricing to protect you from currency fluctuations.



Customer Centric Approach

From consultation to deployment and beyond, we are committed to delivering exceptional support, personalized service, and timely project completion.

CERTIFICATIONS



ISO 9001:2015



ISO 14001:2015



ISO 45001:2018



Lloyd's
Register



Atex
Certification



NIST
Certification

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