



Data Centre Monitoring Solutions

From Manual to Digital

Evolving strategies in electrical asset condition monitoring
for modern data centres

Assisting data centers

in digitizing electrical asset maintenance processes to provide clients with enhanced reliability in services.



Data centers are vital hubs in our modern world, supporting the storage and processing of vast amounts of data. They serve as the foundation of our digital infrastructure. However, managing these centers effectively and keeping them running smoothly can be quite a challenge.

The importance of handling data center assets is increasing as data interruptions become more closely linked to financial and reputational risks. The monetary impact of power outages is becoming more

apparent, prompting electrical teams to focus on restoring services in terms of cost per minute rather than the traditional timeframe of hours or days.

In data centers, electrical assets encompass various components and systems that manage power distribution. These include generators, transformers, switchgear, and UPS (uninterruptible power supply) systems. Effective management of these electrical assets is crucial to ensure optimal operation, prevent failures, minimize energy waste, and improve overall performance.

It is the responsibility of Operations and Maintenance crews to proactively identify and address potential threats, ensuring the efficient management of outages to uphold the stability of business operations. Data centres serve as critical infrastructure, and their locations are strategically chosen to ensure access to well-designed power sources. Many of these centres are equipped with contingency feeds to maintain stable operations in the face of faults or failures.



Data Centre Industry Challenges

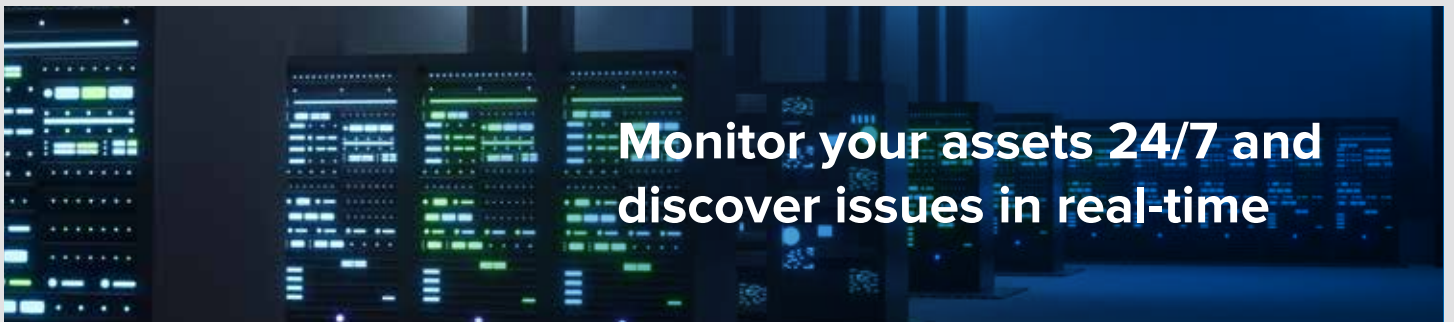
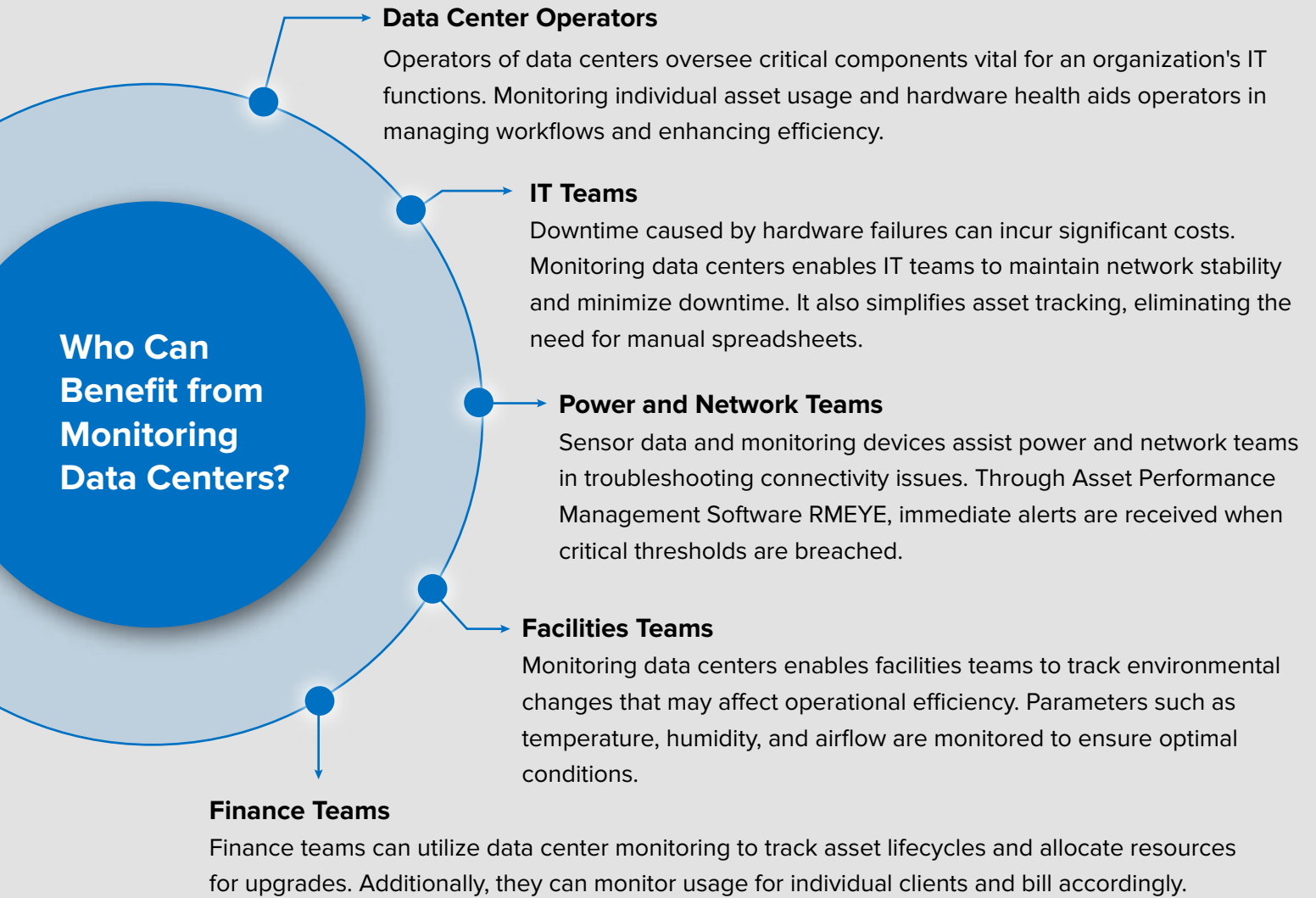
Business Rely on Data to Operate

Ensuring Reliable Power

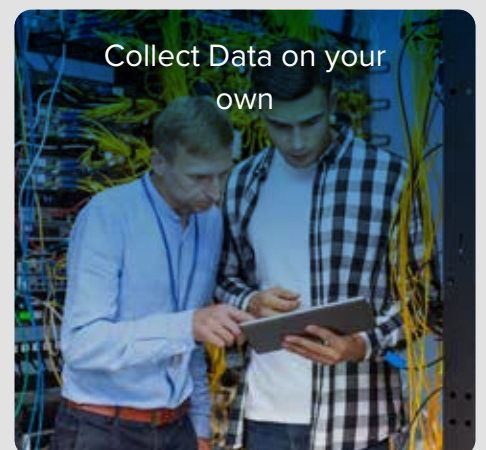
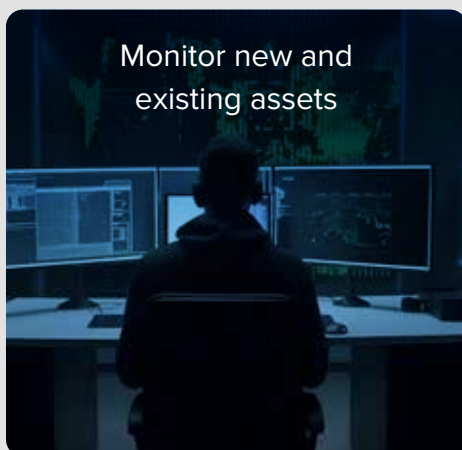
Risk Management

Integrating continuous asset management through online monitoring offers several advantages. It enables operations and maintenance management to reduce costs, make data-driven decisions, and enhance the safety of both personnel and property.

At Rugged Monitoring, we've innovatively crafted an extensive array of products, encompassing sensors, monitors, and our cutting-edge asset performance management software, known as "RMEYE." These offerings have been specifically designed to address and fulfil the diverse monitoring requirements of data centres. Our commitment to providing comprehensive solutions underscores our dedication to optimizing and enhancing the efficiency of data centre operations.



How Does Monitoring Aid in Data Center Asset Management?



What Can be Monitored?



Transformers



Switchgears



Rotating Machines



Power Electronics

Features

- Realtime Monitoring
- Fault Detection and Analysis
- Data Driven Decision Making
- Predictive Maintenance
- Advanced Alarm and Notification Systems
- Scalability and Customization
- Reporting and Analytics



Benefits

- Higher productivity
- Increase asset life expectancy
- Greater cost efficiencies
- Optimize maintenance schedules
- Asset digitization and analysis
- Improve facility and operator safety

Plan, Manage, and Automate Your Data Center Infrastructure

Rugged Monitoring offers a comprehensive solution to streamline data center infrastructure management. Our platform provides real-time insights into asset visibility and energy usage, enabling prompt response to anomalies. Operators can automate inventory tracking, resource allocation, and task scheduling, enhancing efficiency and minimizing errors.

By centralizing data and processes, our solution enhances operational efficiency and minimizes the risk of errors or oversights.



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 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

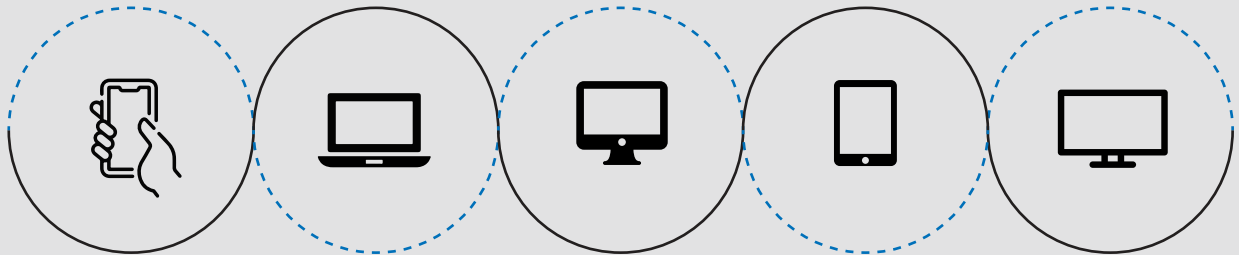
Compatible with Rugged Monitoring Enterprise Solution

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

IEC 61850

FTP/SFTP

- XML, JSON

- CSV, COMTRADE

Data Collection

ODBC

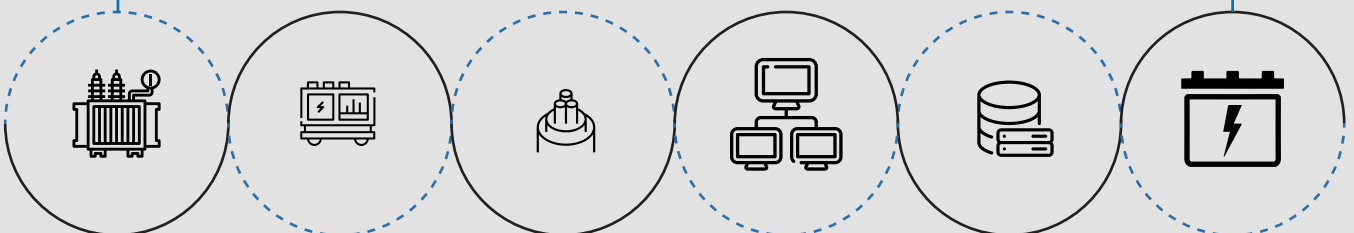
MODBUS

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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