



**Predictive insights.  
Reliable performance.**

# Motomea MotoGuard

## Predictive Maintenance Solution

INTELLIGENT MONITORING. MAXIMUM UPTIME

### Motomea Maintenance Solution

MotoGuard, Motomea's Predictive Maintenance solution, is a cutting-edge, AI-driven platform, designed to revolutionize predictive maintenance for electrical rotating machines across all industries, including manufacturing, logistics, automotive, aerospace, mobility, railway, maritime, water, wind, and solar. By leveraging advanced algorithms and predictive analytics, our solution continuously monitors motor health and performance, ensuring optimal functionality and minimizing unexpected downtime.

### Comprehensive, Intelligent Monitoring

Our real-time monitoring system tracks critical motor parameters such as speed, vibration, temperature, power quality, and electrical imbalances, to identify any deviations and trends of motor performance. With instant alerts and notifications, users can address potential issues before they escalate, improving operational efficiency and extending equipment lifespan.



### Why MotoGuard?

In today's fast-paced industries, unexpected downtime is no longer acceptable. MotoGuard empowers companies with 24/7 monitoring of critical assets during their normal operation, not only predicting when failures might occur but prescribing the exact actions needed to prevent them.

Through its unique P<sup>2</sup>dM technology, MotoGuard transitions maintenance strategies from reactive or even predictive to truly prescriptive — dramatically enhancing asset performance, safety, and operational reliability.

**SMARTER MAINTENANCE  
STARTS HERE**

### What Others Miss, MotoGuard Detects

Unlike conventional systems that only monitor vibration and temperature, MotoGuard goes further—integrating real-time motor performance metrics with thermal and vibration analysis. This comprehensive approach delivers a deeper, more accurate understanding of machine health, enabling faster diagnostics, smarter maintenance decision, and decisions, and greater operational reliability.



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## How MotoGuard Works: Technology Architecture

MotoGuard follows a complete smart data lifecycle

### Sensor Installation

High-resolution sensors are deployed on motors and rotating machines, even in harsh, remote, or hard-to-reach locations. These sensors capture live performance data across multiple physical variables.

### Secure Data Transmission

Collected data is securely transferred to the cloud using encrypted communication channels to maintain confidentiality and data integrity.

### AI-Based Data Analysis

Using advanced machine learning algorithms, MotoGuard detects deviations, develops health trends, and identifies potential faults. The system establishes baseline conditions for each motor and updates them continuously for improved accuracy.

### Prescriptive Insights Generation

MotoGuard doesn't just alert you when a motor is behaving abnormally — it diagnoses the probable cause and provides prescriptive recommendations for corrective action.

### Real-Time Dashboards and Alerts

All insights are accessible through an intuitive, mobile-friendly dashboard, offering live status monitoring and detailed reports. Users receive clear status indicators — Green (Normal), Yellow (Alert), Orange (Warning), Red (Alarm) — based on defined limits.

## Unique Capabilities: What Sets MotoGuard Apart

**P<sup>2</sup>dM – Prescriptive and Predictive Maintenance:** MotoGuard leverages multiple data sets and proprietary AI techniques to predict failures and recommend precise corrective actions.

**Dynamic and Static Testing:** MotoGuard is the only predictive maintenance system worldwide capable of conducting full motor diagnostics using only input lines — no need for external mechanical load setups.

**Cloud-Enabled Remote Access:** Monitor your assets from anywhere, at any time — securely through any PC, tablet, or smartphone.

**Fast and Easy Deployment:** The system is designed for minimal disruption to operations, with fast installation even in extreme industrial conditions.



## Data Collection with Real-Time Monitoring

MotoGuard significantly reduces unexpected motor failures, helping businesses optimize asset management and minimize downtime. The system continuously collects and stores real-time data for each individual motor or rotating machine under working conditions. During operation, re-tests are performed, and the system automatically retrieves historical data from its extensive database.

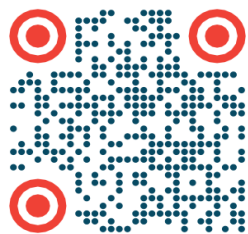
Through advanced analytics, MotoGuard detects performance degradation by analyzing dynamic and static data trends over time. It also compares these values against user-defined upper & lower limits to identify any anomalies that may indicate potential issues.

## Data Transmission

For seamless operation and enhanced accessibility, MotoGuard offers multiple communication options, including wireless connectivity to a centralized gateway, enabling real-time monitoring and proactive maintenance.

## Machine health involves measuring speed, vibration, temperature, current, and voltage

Sensors are installed on rotating machines, and measure speed, vibration, and temperature. The MotoGuard utilizes machine learning to establish baseline, warning, and alarm levels, providing easy predictive analysis. This approach, along with manual threshold setting based on the machine and environment, triggers notifications upon exceeding limits. Additionally, by installing current sensors and voltage sensors on an AC power supply wires, you can monitor for changes in amperage and voltage, and trigger notifications based on manually-configured threshold values.



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## MotoGuard Predictive Maintenance Benefits

Revolutionizing Electric Motor Monitoring with Dual Testing & AI Intelligence

### Unique Testing Capabilities

MotoGuard is the only predictive maintenance solution that combines dynamic and static motor testing with direct mechanical torque diagnostics—all through the motor's input lines. This ensures complete, non-intrusive motor evaluation without external mechanical loading.

### Intelligent Fault Detection

AI-powered analytics detect and predict motor faults before failure occurs. Early detection minimizes downtime, optimizes maintenance schedules, and reduces repair costs.

### Cloud-Based Accessibility

Access real-time and historical data from any device—PC, tablet, or mobile. Monitor rotating machines remotely, receive predictive insights, and automate maintenance scheduling for maximum reliability.

### Motor-Specific Optimization

MotoGuard is optimized for

- BLDC (Brushless DC) Motor
- PMSM (Permanent Magnet Synchronous Motors)
- Induction Motors
- Switched Reluctance Motors
- Hub and eAxle Motors
- Micro, Servo & Stepper Motors

### Intuitive Visualization

User-friendly dashboards display real-time and historical data using clear graphs and tables—enabling easy evaluation, trend analysis, and quality assurance.



### Real-Time Diagnostic Scope

Motor Data

- Stator, rotor, air gap
- Static and dynamic torque
- Efficiency

### Machine Load Data

- Bearings, friction, misalignment
- Torque-speed load
- Noisy gears, unbalance, overload
- Torque, speed, and current spectrum

### Power & Circuit Quality

- Voltage/current imbalance
- Harmonics and amplitude spectrum

### System Features

- Real-time cloud monitoring across all machines
- Custom user-defined thresholds
- Alert notifications to predefined contacts
- Automated summary reports of machine condition

### Why MotoGuard

- Reduce total maintenance costs
- Improve operational uptime
- Cutting downtime and related costs
- Extend equipment life
- Make proactive, data-driven decisions

## What MotoGuard Monitors and Measures

MotoGuard continuously tracks and analyzes a wide array of machine parameters, including:

- Speed
- Vibration
- Temperature
- Current
- Voltage
- Torque and Torque Ripple
- Friction
- Load imbalance
- Power quality metrics (voltage and current imbalance, harmonics, crest factor)

By intelligently monitoring these parameters, MotoGuard identifies developing issues before they escalate into costly failures.



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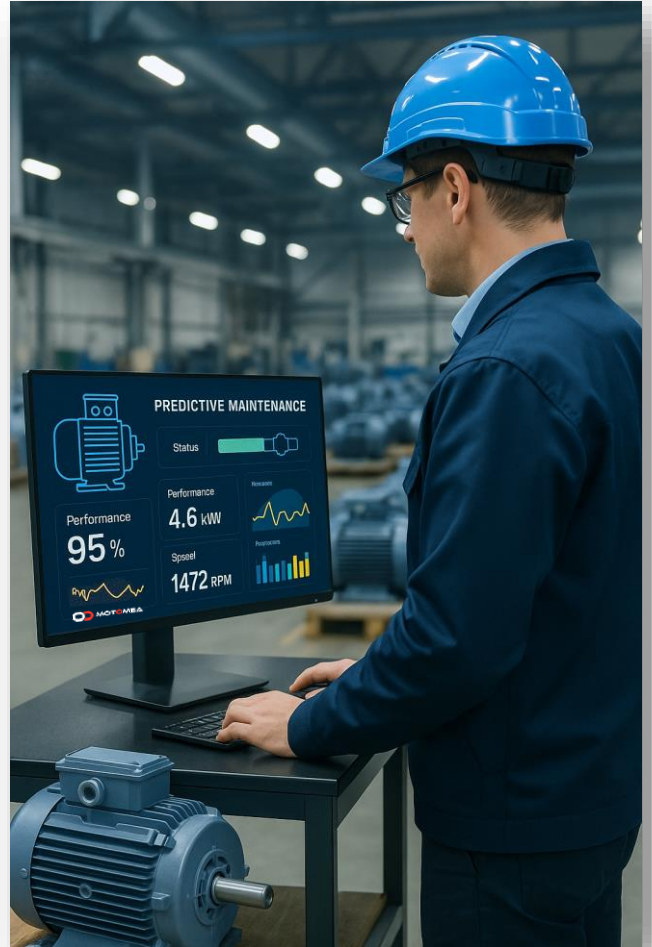


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## Why Should You Start Using MotoGuard

- Prolong Asset Lifespan**  
 Maximize the operational life of your electric motors and rotating machines through real-time health monitoring.
- Intelligent, Condition-Based Maintenance**  
 Perform maintenance only when necessary—based on actual equipment condition, not rigid schedules.
- Smart Alerts for Proactive Action**  
 Receive advanced warnings to schedule interventions at the most convenient and cost-effective times.
- Real-Time Insights with Seamless Monitoring**  
 Our integrated hardware and software continuously track performance to flag potential issues early.
- Reduce Downtime and Maintenance Costs**  
 Minimize failures and service interruptions by addressing faults before they escalate.
- Optimize Field Crew Efficiency**  
 Eliminate guesswork and unnecessary trips with targeted diagnostics and actionable insights.
- Enhance Production Line Effectiveness**  
 Keep systems running at peak performance to support consistent output and quality.
- Strengthen Compliance and Safety**  
 Achieve regulatory alignment and operational safety through consistent asset visibility and control.



## Industries and Applications

MotoGuard serves a wide range of industries, including:

- **Automotive** (EV motors, powertrain systems)
- **Aerospace** (electric airplane, UAV, and helicopter motors)
- **Railways** (train traction systems)
- **Maritime** (propulsion, auxiliary, and anchor motors)
- **Utilities** (pump and motor management)
- **Logistics** (conveyor belts, cranes, hoists)
- **Renewable Energy** (wind and solar farm equipment)
- **Manufacturing** (industrial automation, robotics)
- **Home Appliances** (washing machines, fans, refrigerators)

From motor manufacturers and testing labs to large-scale production and logistics operations, MotoGuard is adaptable across the entire electric motor ecosystem.

## Contact us



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