

Machine Health Diagnostic & Reporting

Engineering Solutions

KEY FEATURES

- Comprehensive Machinery Health Assessment
- Flexible Installation Options
- Multi-Sensor Configuration
- On-Site Sensor Calibration
- Customized Operating Conditions Analysis



Related applications



Hydrogenerators



Windturbines



Turbogenerators



Pumps, fan, cooling towers...



Gearless millsdrives



Gas & steam turbines

Monitoring solution



Endwinding monitoring



Air gap monitoring



Magnetic flux monitoring



Roller bearing monitoring



Axial thrust position monitoring



Shaft & bearing vibration monitoring



Rotor poles temperature monitoring



Runner clearance monitoring

DESCRIPTION

MC-monitoring SA is a leader in providing advanced condition monitoring and predictive maintenance solutions, known for our precision and reliability in vibration analysis. We are proud to offer the Machine Health Diagnostic & Reporting as a key part of our comprehensive range of services. This service is tailored to empower industries with an accurate assessment of their machinery's current health.

Vibration analysis is a fundamental aspect of predictive maintenance, enabling organizations to transition from reactive to proactive maintenance strategies. Our Machine Health Diagnostic & Reporting plays a pivotal role in this shift. It offers a precise, real-time picture of a machine's condition at any given moment, making continuous monitoring more effective and allowing for the early detection of even the smallest anomalies. This proactive approach is crucial in preventing costly breakdowns and reducing unplanned downtime.

The Machine Health Diagnostic & Reporting service offers several key advantages:

- **Early Fault Detection:** Identifying potential issues early helps prevent major failures and ensures uninterrupted operations.
- **Improved Machinery Reliability:** Increases the reliability of critical machinery, thus reducing the risk of unplanned outages.
- **Cost Savings:** Helps in minimizing maintenance costs by optimizing repair schedules and reducing unnecessary downtime.
- **Enhanced Safety:** Contributes to a safer working environment by preventing catastrophic equipment failures.
- **Customized Solutions:** We tailor our service to meet the unique needs of each client, ensuring both flexibility and precision in our approach.

DESCRIPTION (continued)

Data Security and Confidentiality

At MC-monitoring SA, we prioritize the security and confidentiality of your data. We employ robust security measures to protect sensitive information collected during the monitoring process. Our stringent protocols ensure that data remains confidential, and access is restricted to authorized personnel only. We adhere to industry best practices and regulations to safeguard your information.

Service Customization

Recognizing the unique needs of different industries and machinery, our Machine Health Diagnostic & Reporting service is highly customizable. We collaborate closely with our clients to select suitable sensors, monitoring frequencies, and analysis parameters, tailoring our approach to meet your specific requirements. This ensures that our service provides the most relevant and effective insights for your machinery's health.

SERVICE OVERVIEW

Monitoring Equipment

For effective Machine Health Diagnostic & Reporting, MC-monitoring SA uses state-of-the-art monitoring equipment. Depending on your existing infrastructure and specific needs, we offer two installation options. Each backed by our team of certified engineers. All our engineers hold the Vibration Analyst: Category II certification, ensuring expert installation and accurate analysis across both options.

Option 1: Utilizing Existing Protection Systems

In situations where clients already have an established protection system, we offer the capability to complement their existing setup. For example, if only relative sensors are installed on bearings, we can enhance the system by adding absolute sensors to each bearing. This method of integrating additional sensors allows us to enrich the existing vibration data and provide a more comprehensive analysis. This approach is both cost-effective and efficient, enabling clients to evaluate the benefits of our services without undertaking a full-scale installation. It's important to note that while this supplementary installation is beneficial for a more complete data comparison, it remains optional and is particularly recommended when existing setups haven't been recently upgraded or evaluated.

Option 2: Temporary Monitoring System

In scenarios where no existing protection system exists, we offer the temporary installation of a comprehensive monitoring system. This typically includes the placement of the following sensors, along with our advanced data acquisition units to facilitate accurate data collection and analysis:

- Two proximity sensors (X and Y) on each bearing.
- Two absolute sensors (LVS or PAS) in both the X and Y directions on each bearing.
- One absolute sensor (LVS) in the Z direction on the thrust bearing.
- One 4mm proximity sensor in the Z direction.
- Four absolute sensors (PAS) on the stator core.

Our data acquisition units are designed to seamlessly integrate with these sensors, providing a robust and comprehensive solution for temporary monitoring needs.

Optional - Calibration on Site

We understand the importance of precise data collection. To ensure accurate results, our team performs on-site calibration of each sensor. This meticulous calibration process guarantees that the data collected accurately represents the machine's vibrations, enabling reliable analysis. Please note that while this service is highly recommended for the utmost accuracy, it is optional.

SERVICE OVERVIEW (continued)

Operating Conditions

The Machine Health Diagnostic & Reporting excels under various operating conditions. We provide a set of predefined conditions for thorough analysis and can customize these to suit your specific needs.

Non-Stationary Working Mode

- Start-up
- Shut-down
- Emergency shut-down

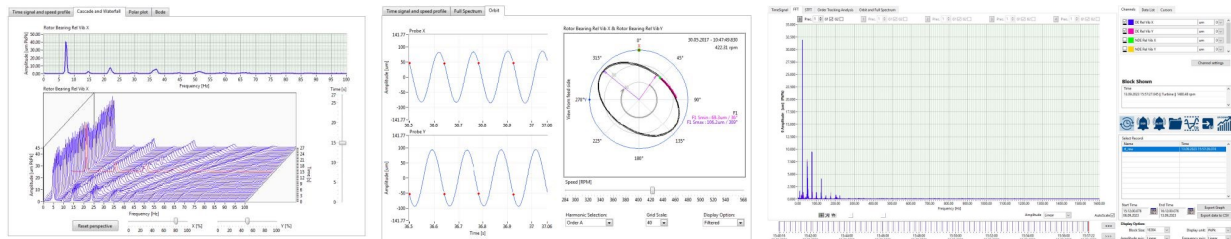
Stationary Working Mode

- Generator loaded – 25% nominal power
- Generator loaded – 50% nominal power
- Generator loaded – 75% nominal power

Comprehensive Reporting

Our service provides a detailed report with a wide range of information, including:

- Trends for non-stationary working modes.
- Polar / Bode plots for non-stationary working modes.
- Cascade plots for non-stationary working modes.
- Orbits evolution for non-stationary working modes.
- SFTP (Short Time Fourier Transform) for non-stationary working modes.
- FFT (Fast Fourier Transform) for stationary working modes.
- Processed values across various ranges of interest, including broad-band RMS, Peak, Smax, Filtered RMS, Peak, and spectral analysis such as 1X, 2X, and more.
- Vector analysis for stationary working modes.
- Shaft centreline and other processed values as a function of the load.



Establishing Quality Criteria

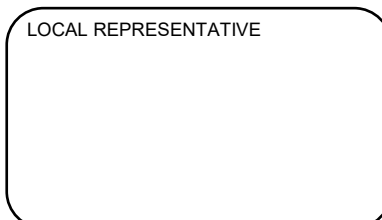
Our Machine Health Diagnostic & Reporting adheres to EN 20816-5 standards, ensuring precise assessment of machinery health and offering actionable insights for maintenance and optimization.

For more details or to schedule a consultation regarding our Machine Health Diagnostic & Reporting service, please contact us. Our team is dedicated to enhancing machinery reliability and minimizing operational risks.

MC-monitoring Quality certifications



LOCAL REPRESENTATIVE



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