



# Sensei

## MACHINE VITALS

### MONITOR, PREDICT, PROTECT: MACHINE VITALS AT WORK

#### Predictive Maintenance in Pulp and Paper

In pulp and paper manufacturing, machine reliability is crucial. However, the challenging environment, characterized by excessive heat, dust, and high moisture, presents significant obstacles. Additionally, the equipment's high speeds, rotating parts, and hard-to-reach locations make maintenance even more complex. That's where Machine Vitals™, an advanced condition monitoring device, part of Sensei® IIoT Network, steps in.

#### Overcoming Industry Challenges for Uninterrupted Operations

Machine Vitals is a game-changer in predictive maintenance, offering real-time insights into critical machinery. By utilizing advanced sensors and analytics, it detects potential issues before they escalate into breakdowns, empowering reliability and maintenance managers to take proactive measures.

#### Unparalleled Features for Optimal Performance

With Machine Vitals, you can expect a comprehensive solution that addresses the unique challenges faced in the pulp and paper industry. Here are some key features:

- ➔ **Elimination of Equipment Inspections:** Say goodbye to time-consuming manual inspections. Machine Vitals provides continuous monitoring, eliminating the need for frequent physical checks of equipment.
- ➔ **Postmortem Failure Analysis Data:** Gain valuable insights from post-failure data analysis, enabling you to understand the root causes of breakdowns and prevent future occurrences.
- ➔ **Aggregated Site Performance:** Get a holistic view of your entire facility's performance, allowing you to identify trends, patterns, and areas for improvement.
- ➔ **Custom Alerts and Alarms:** Stay informed about critical machine conditions with customizable alerts and alarms, ensuring timely interventions and preventing costly downtime of operations.
- ➔ **Multi-Application Design:** Machine Vitals' versatility allows it to be used across various equipment types and lubrication points, providing flexibility and cost-effectiveness.
- ➔ **Comparative Analysis:** Identify performance variables by comparing equipment types, locations (inside/outside), and oil types. This data-driven approach enables targeted maintenance strategies.

#### Industry Challenges

- **Harsh Environments:** Dust and moisture in pulp and paper mills can corrode equipment and reduce efficiency.
- **Extreme Heat:** High-speed machines generate heat, leading to wear and tear and lower productivity.
- **Equipment Complexity:** Various types of equipment with rotating parts require intricate maintenance and inspections.
- **Spread-out Equipment:** Wide distribution of equipment makes it challenging to monitor and access all points effectively.
- **Hard-to-Reach Areas:** Some equipment is located in difficult-to-access areas, hindering routine inspections and maintenance.



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## Eight Sensing Parameters in One

Machine Vitals monitors key sensory parameters and empirical data to detect potential issues. Gain insights into equipment performance and anomalies. Compare external atmospheric conditions to internal ones for easy identification of unfavorable trends. Make proactive maintenance decisions from your desktop from the insights provided through the Sensei Platform.



### External Conditions

External (ambient) condition measurements enable users to monitor the external environment and assess its impact on equipment performance.



Temperature



Humidity



Pressure

### Internal Conditions

Internal (headspace) monitoring to track internal conditions, for measuring, analyzing trends, and receiving alerts regarding conditional parameters.



Temperature



Humidity



Pressure



Acoustic



Acceleratory  
Variance

## Power at Your Fingertips



### Streamlining with Digital Solutions

The Trico Companion Mobile App is designed to seamlessly integrate with Trico's digital solutions, such as Sensei® or the Orbital® Oil Analysis portal. It enables users to input companion information and activities, enhancing the overall functionality of these platforms.

#### Mobile App Functionality:

- ➔ Quick and easy installation with guided instructions and system pairing
- ➔ Easy add other devices to network
- ➔ Record maintenance activities
- ➔ Input pertinent information
  - Equipment type
  - Reservoir size
  - Oil type
  - Environment
  - Breather type
  - Seal type
  - Oil inspection equipment
  - Operating speeds



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