A CASE STUDY IN RELIABILITY & ASSET PERFORMANCE

Predictive Maintenance Evolution

PROCONEX

THE PROJECT

Building a Scalable Predictive Maintenance Program Across Manufacturing Sites

A global leader in ceiling and wall system solutions sought to strengthen its reliability program to reduce equipment failures, maximize uptime, and enhance production throughput.

After years of managing an increasingly unstable vibration monitoring platform, they launched an initiative to evaluate new technologies that could provide deeper asset insights, improve technician efficiency, and support long-term reliability goals.

This case study highlights two essential facets of their Predictive Maintenance (PdM) transformation:

- Evolution from a legacy vibration platform to Emerson's reliability ecosystem
- Operational improvements and cost savings achieved through enhanced insights, detection, and system stability

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THE CHALLENGE

Replacing an Ineffective Reliability Solution to Reduce Failures

Their existing vibration monitoring system had reached its performance limits. Technicians were spending a substantial amount of time on manual analysis, troubleshooting unstable sensors, and replacing hundreds of batteries annually, thereby diverting resources away from proactive reliability work. Frequent failures on critical equipment across sites contributed to unplanned downtime and operational inefficiencies.

Recognizing the need for a more advanced and scalable solution, they launched an RFQ process that spanned five vendors and 25 technical requirements. Emerson emerged as the highest-scoring provider due to system capabilities, analytics strength, and wireless device flexibility.

Proconex was selected to support the company's Maintenance, Reliability, and IT teams by designing and implementing a unified reliability architecture that could scale program-wide.

See how we helped our customer transform reliability by:

- Modernizing Predictive Maintenance through advanced Emerson technologies
- Improving asset detection, insights, and performance across all manufacturing sites

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FOCUS AREA

#1

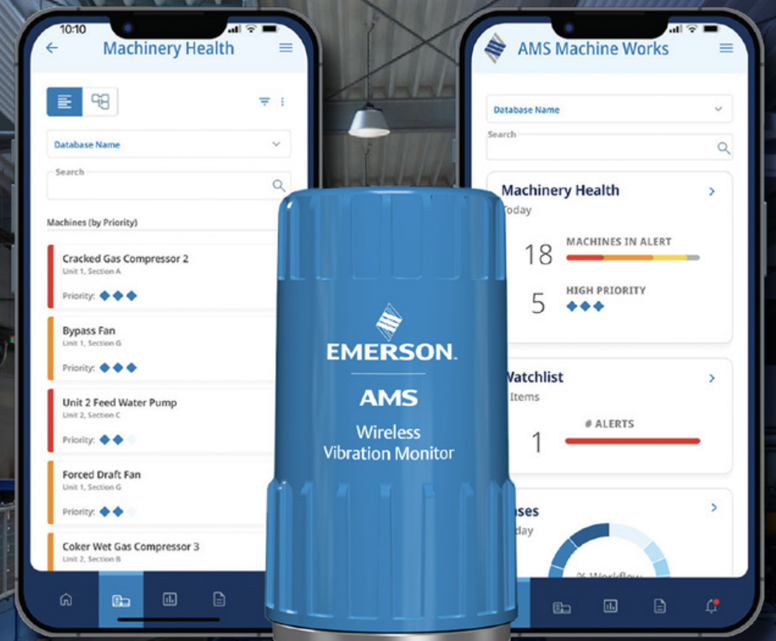
Modernizing Predictive Maintenance Technologies

THE ISSUE

The company's vibration monitoring vendor presented multiple unique challenges:

- Short battery life requiring ~400 replacements annually at some sites
- Limited frequency ranges and harmonic details
- Time-consuming analysis and troubleshooting
- Stability issues that disrupted asset monitoring
- Data gaps that failed to detect early-stage equipment degradation

The result: unplanned failures, reduced technician efficiency, and higher operational risk.



THE SOLUTION

We partnered with our customer to develop a scalable PdM architecture anchored in Emerson's reliability technologies. The program began with a pilot installation featuring 150 wireless vibration sensors and AMS 2140 analyzers for side-by-side performance comparison against the company's legacy system.

The Emerson technology stack included:

- **AMS Wireless Vibration Monitors**
- **AMS 2140 Machinery Health Analyzer (with balancing capabilities)**
- **AMS Machine Works**
- **AMS Machinery Health Manager**
- **AMS Optics**

The pilot delivered immediate, measurable improvements, and our customer expanded the solution across its network.

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FOCUS AREA

#2

Enhancing Detection, Analysis & Operational Insights

THE ISSUE

The company needed stronger diagnostic visibility, more accurate trending, and the ability to detect failures before they cascaded into major downtime events. Their Spinner operations were especially vulnerable due to high-speed, high-criticality equipment.

THE SOLUTION

Proconex deployed an integrated monitoring and analytics strategy that amplified our customer's ability to identify emerging issues across motors, spindles, fans, and other critical assets. Key outcomes included:

- **Battery life extended,** reducing annual replacement labor and cost
- **Early bearing defect detection** that the prior system missed
- **Higher-quality vibration data,** especially for spindle applications (up to 6,400 RPM)
- **Improved balancing accuracy,** increasing precision from 40% to 84%
- **Reduced catastrophic spindle failures,** lowering rebuild and downtime costs

This unified platform enabled them to streamline technician workflows, reallocate labor more efficiently, and strengthen system stability across all five manufacturing sites.

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RESULTS & BUSINESS IMPACT

Driving Reliability Excellence & Measurable ROI

With Emerson's PdM technologies implemented across our customer's manufacturing footprint, they achieved significant reliability improvements and quantifiable business impact.

$21K annual savings
from extended wireless sensor battery life

$32K cost avoidance
from early motor bearing defect detection

$216K cost avoidance
on a critical high-speed spindle application

$1.1MM in increased production
at one site due to reliability-driven operational improvements

Stronger early warning detection,
reducing risk of catastrophic failures

Higher technician efficiency,
allowing more value-added reliability work

A scalable PdM program
poised for expansion across their network

THE RESULT

A long-term reliability strategy that continues to deliver value across equipment, processes, and production performance.

ABOUT PROCONEX

Proconex is the exclusive Emerson Impact Partner for Emerson Automation Solutions in the Mid-Atlantic region. We provide a complete portfolio of Process Automation Control Systems, Valves and Control Devices, and related technologies and services to a range of customers across Life Sciences, Chemical, Power, Refining, Oil & Gas, Food & Beverage, Paper, Metals, and other industries, as well as commercial enterprises and campus facilities. With three strategically located offices, Proconex maintains a deep dedication to its 300+ employees, a sharp focus on safety and quality, and the drive to deliver. The Proconex family of companies includes Atlantic Valve Services, Valspec, Valpro, and Linque.

GET STARTED ON YOUR PROJECT

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PROCONEXDIRECT.COM
610.495.1835

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