

**RELIABILITY SERIES**

# Making an Informed Decision About CBM Solutions



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In the evolving landscape of Condition-Based Monitoring (CBM), selecting the right vibration monitoring solution is crucial for achieving optimal maintenance and operational efficiency. Emerson's AMS Wireless Vibration Monitors are well-regarded in the industry, but how do they stack up against the competition? In this article, we will delve into the key features of the Emerson solution and provide a comparative summary of alternative options.



## AMS Wireless Vibration Monitors: Key Features

**High Sensitivity and Accuracy:** Emerson's monitors are equipped with advanced sensors that provide high-resolution vibration measurements, which are essential for detecting subtle changes in equipment health. The 20K Hz FMAX sensor can detect faults like microscopic stress cracks in bearings within a 6-month horizon. That's half a year that you and your maintenance and operations team will have to plan a safe and cost-effective response to known and inevitable functional failures.

**PeakVue™ Plus:** Emerson's patented prescriptive analytics focus on providing machine health insights primarily for the two most common failure modes of rotating assets—lubrication and bearing defects. These two failures comprise roughly 80% of all rotating asset failures. That's detailed insight and detection horizons on 4 out of 5 of your asset failures.

**User-Friendly Interface:** The AMS Machine Works software provides an intuitive user interface for analyzing vibration data, generating reports, and setting up alerts. Even without having a background in vibration analysis, machine health insights can be easily determined through the simplistic graphs and trending visualizations provided.

**Robust Wireless Technology:** Emerson's wireless technology ensures reliable data transmission even in challenging environments. The system supports long-range communication and can handle multiple data points simultaneously. Furthermore, these wireless vibration monitors utilize a mesh network—that is to say, each sensor is also a repeater. If an asset does not have a direct line of sight back to the gateway, it can bounce the data from one sensor to another that does.

**Scalability:** Designed to scale with the needs of your organization, Emerson's monitors can be deployed across any asset with rotating components at the site level and can be reviewed at the enterprise level within the same dashboard.

**Hazardous Ratings:** With a Class 1, Div 1 rating, Emerson's monitors can be installed and operated in almost any hazardous environment, keeping you and your team safe from spending unnecessary time maintaining assets in less-than-safe conditions.

**Battery Life:** Using a replaceable, non-proprietary battery, you can expect each sensor to last between 3-5 years before replacements are required, depending on the data collection interval set on each sensor.

## Comparative Summary

**Data Accuracy and Sensitivity:** Emerson's AMS Wireless Vibration Monitors are known for their high sensitivity and accuracy, essential for detailed fault detection. The next best alternative options are known to have an FMAX of 10K, or half of the detection horizon capacity Emerson can provide.

**Cost and Value:** While some alternative options may prove to be more cost effective on the surface, you may end up paying more in the long run. Some options don't come with replaceable batteries, meaning the entire sensor assembly must be removed and replaced to continue monitoring. Furthermore, with significantly decreased measurement capacity, you run the risk of a sensor missing a functional failure that may give way to unplanned downtime.

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## Conclusion

Selecting the right vibration monitoring solution depends on your organization's specific needs, budget, and desired features. Emerson's AMS Wireless Vibration Monitors are a strong choice for those seeking high accuracy and value from their machine health insights. Alternative options exist, but it's important to understand the risks of choosing a less effective solution. By evaluating these options against your requirements, you can make an informed decision that aligns with your maintenance and operational goals.



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