TECH PAPER

Cool technology in the new Fluke 3563 Analysis Vibration Sensor

The Fluke 3563 Analysis Vibration Sensor has a powerful combination of technologies. A piezoelectric high-frequency sensor, MEMS sensors, and software give maintenance teams detailed insights for anything from performance tracking to fault analysis.

What stands out about the Fluke 3563 Analysis Vibration Sensor is its powerful combination of technologies.

It pairs a piezoelectric high-frequency sensor with MEMS sensors and software to enable maintenance teams to track and analyze vibration readings continuously. Detailed insights can be used for anything from performance tracking to fault analysis.

The ability to monitor both critical and semi-critical assets gives maintenance teams a way to assess their facility's overall asset health at a glance. Vibration data from the sensors is transmitted by a short-range wireless technology standard to the Fluke 3503 Gateway, which has dual network connection capabilities—both Wi-Fi and Ethernet—to work with the existing communication infrastructure of any facility.

A unique set of features in the Fluke 3563

Here are the Fluke 3563 Analysis Vibration Sensor's striking features at a glance:

- **"Floating" sensor architecture:** The podded, or floating, design of the sensor itself means that it collects the best possible vibration data. Because only a tiny mass situated in a larger sensor is directly connected with the machine's metal itself, its resonance doesn't affect the structure it sits on. The sensor, floating in an architecture similar to a life preserver, delivers more precise vibration readings than other designs. The design also shields the sensor from local vibration influence.

- **The blend of piezoelectric and MEMS sensors:** Each Fluke 3563 device features one piezoelectric sensor and two MEMS sensors, offering the best of both worlds. MEMS sensors help give the 3563 its long battery life, while the piezo is highly accurate, dependable, and not susceptible to heat, humidity, or other elements. The combination of piezoelectric and MEMS sensors within an analysis sensor sets the 3563 apart—the sensor can handle both screening and analysis. The concept is similar to a hybrid car, with both a gas engine and a battery.

- **Customized data capture:** Users can set predefined data parameters specific to each machine type. However, engineers who wish to can choose to set their own parameters. Setup takes just minutes per sensor. Data and insights are generated immediately, based on ISO standards, for screening or analyzing potential machine risks and faults. The customization possibilities of the 3563 mean that maintenance technicians of any experience level can find and use asset insights.

- **Frequency bands:** Once collected by the sensors, the highly precise vibration data is fed into the associated software. Frequency bands allow users to pinpoint specific problems better. Within the software, users can analyze banded overall values and narrowband values to determine which fault impacts an asset and the root cause of that fault. The auto-generated alarm thresholds are specific to every asset, and users can customize the thresholds if desired. This functionality enables teams to determine what steps they should take next.

Prime benefits of condition monitoring

Condition monitoring helps maintenance teams reduce unplanned downtime, prevent potentially catastrophic failures from occurring, and dedicate their time and attention to their facilities' most critical assets.

Consistent monitoring and alarm notifications ensure early warnings of potential asset malfunctions. Faults can be identified, and corrective action can be taken before failure occurs. Condition monitoring ultimately improves uptime and reduces maintenance and operations costs.

Data collected by sensors such as the 3563 can establish a baseline, document performance and trends, and identify changes or abnormalities. Data-driven decision-making is only possible when enough relevant data exists, and in the past, it could be cost-prohibitive to monitor every tier of assets. But with solutions such as the 3563, vibration monitoring can be done at scale—helping teams optimize their maintenance and reliability.



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