

APPLICATION NOTE

How piezoelectric technology adds data-pulling power to the Fluke 3563 Analysis Vibration Sensor

A piezoelectric sensor is combined with MEMS (microelectromechanical systems) sensors to make the Fluke 3563 Analysis Vibration Sensor a powerful solution to jumpstart or revitalize your condition-based maintenance program.

The prefix “piezo” is Greek for “press” or “squeeze.” A piezoelectric sensor measures changes in pressure, acceleration, temperature, strain, or force by converting these changes to electrical charges. With this capability, they become ideal for use as part of a vibration analysis environment with a broad array of machine types, including critical, semi-critical, and non-critical.

Piezoelectric sensors are versatile devices for numerous vital processes involving industrial equipment. These include quality assurance, process control, and research and development across industries.



Piezoelectric sensors: 5 key benefits at a glance

1. High-quality, high-frequency data

The piezoelectric sensor collects data over a range of up to 12,000 Hz, which is high-frequency data you can leverage to analyze a variety of machine performance characteristics and faults.

High-frequency data is valuable in determining a machine problem. Many sensors available today can measure only up to 1,000 Hz, which constitutes a low-frequency range.

2. Monitors critical production assets

Enable your maintenance team to regularly track and analyze asset vibration readings by combining the piezoelectric sensor with software analytics.

Monitor an extensive portfolio of production-critical assets and get early warnings of potential asset malfunction to ensure enough time for corrective action before a catastrophic failure.

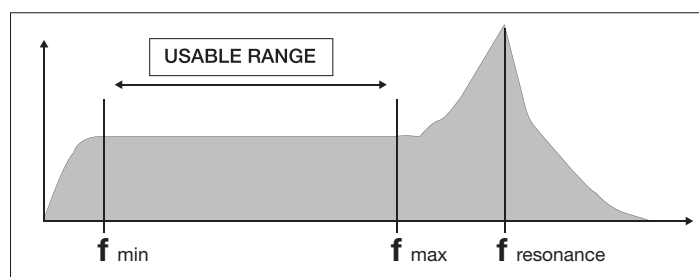


Figure 1. Each vibration sensor has a usable frequency range and response curve, as shown above. Fluke Reliability’s piezoelectric sensor collects data over the entire usable range.

3. Rugged design

Another advantage of piezoelectric pressure sensors is their ruggedness. This durability makes them suitable for use in a variety of harsh environments.

4. Long battery life

The piezo sensor and software combine to produce a unique, smart battery management capability with a user-determined data transmission rate. Users can adjust and extend the sensor battery life while still getting the necessary data.

5. Wireless and scalable

The wireless gateway possesses dual network connection capabilities—Wi-Fi and Ethernet—so your system can fit your facility.

