



# Advanced Vibration Evaluation

## The secret to a long, productive life

By “listening” to HVAC equipment, a skilled technician can tell if the machinery is working properly, has a malfunction, and even predict future failures.

**Advanced Vibration Evaluation** from Johnson Controls uses vibration and ultrasonic sensors, the gold standard in predictive maintenance, to listen to HVAC equipment and measure the sound that it makes. Collected data is immediately analyzed against data previously collected from that machine, as well as similar pieces of equipment. The slightest change can be detected, warning you of developing malfunctions, and the results are displayed on our technician’s smartphone within seconds.

## Prevent and solve problems before they cause failures

- Identifies root causes (imbalance, misalignment, etc.)
- Helps prevent secondary damage
- Extends equipment life
- Eliminates emergency repairs
- Ensures repairs have been made correctly
- Reduces maintenance costs
- Improves energy efficiency

## Advanced Vibration Evaluation

### Equipment

Johnson Controls uses the latest technology to perform our Advanced Vibration Evaluation predictive service. This includes data collectors, used in conjunction with our technicians' smartphones, that send the data off for immediate analysis. Both vibration and ultrasound data is collected to provide as precise of an analysis as possible. Data is processed within minutes to give our customers feedback in a short order.

### Data collection

Vibration data is collected at various measurement points at the load zones on the machine. This data is used to assess the condition of the machine components, by using the machine's trend and other similar machines in our expansive database.

### Analysis and diagnoses

We collect spectral data, along with other high frequency techniques, that allow for early identification of bearing problems. This data is analyzed by a proprietary algorithm, as well as trained and certified technicians.

Johnson Controls technicians use ISO standards and specialized diagnostic rules developed by Johnson Controls vibration experts. This, combined with the knowledge of our technicians, helps us solve problems faster and solve problems others might struggle with.

### Enterprise-wide service consistency

Johnson Controls has nearly 130 branch offices located across North America. As a result, we can deliver consistent service expertise and technologies to support your HVAC needs, no matter where your facilities are located.



### Verification

After a repair is done, a follow-up Advanced Vibration Evaluation is conducted to ensure root problems have been identified and resolved. This ensures we provide the highest level of quality corrective services. Data is stored indefinitely to use as a baseline for future measurements and trending.

### Reports

Our Advanced Vibration Evaluation report not only indicates when a machine needs repair, it also trends all equipment conditions to indicate that improvements are made over time. This confirms our predictive services are having a positive impact on the overall condition of your facility.

For machines that are experiencing problems, we provide a detailed assessment of the problems that were found and repair recommendations to fix the problems.

### Solutions

Using our Advanced Vibration Evaluation data collection process and analysis expertise, Johnson Controls technicians have the unique ability to arrive at solutions quickly. We can not only identify the root cause of the vibration problems, but deliver the precision maintenance techniques to solve the problem the first time.