

TECH PAPER

Jumpstart Your Condition Monitoring Program with the Fluke 3563 Analysis Vibration Sensor

The piezoelectric sensor technology with software analytics, easy 3563 sensor setup process, and expert professional support enable you to build a robust condition monitoring program quickly.

The benefits of high-level customer support are often undervalued. Fluke Reliability 3563 Analysis Vibration Sensor customers will receive guidance, support, and training from our experts throughout the configuration, commissioning, and installation process.

Vibration analysis eliminates common operational pitfalls and better ensures a successful sensor and condition monitoring program — resulting in immediate value and growth of your vibration analysis program.

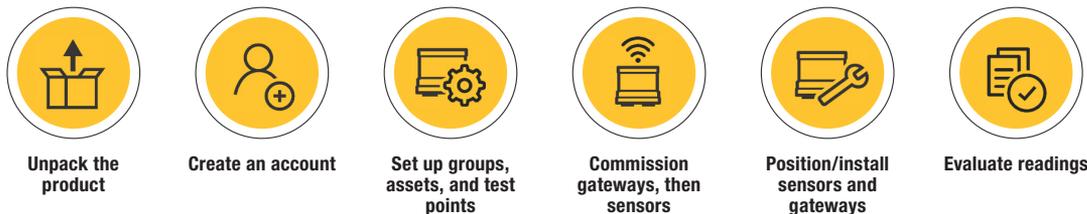


Figure 1. The 3563 Analysis Vibration Sensor configuration, commissioning, and installation sequence.

Simple sensor setup plus expert support equals a quick start

The software used to display the data from the 3563 sensor is called the LIVE-Asset™ Portal, and it's where users enter critical and semi-critical equipment information and configure the corresponding sensor. It takes just minutes to enter your data and get things up and running.

Once the information is entered, users can see an overall view of equipment health via dashboards and vibration trending graphs. These insights enable experts to easily identify trends and quickly determine next steps depending on what the sensor data is telling them.

- Monitor and track machine health at fixed intervals
- Identify a particular fault and pinpoint the machine causing it
- Determine the fault severity based on measurement readings

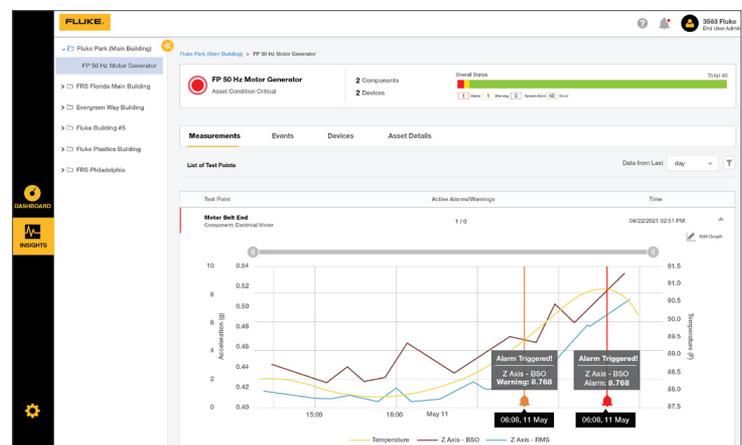


Figure 2. Configure the LIVE-Asset™ Portal graph to show data from all three axes (X, Y, Z), velocity, or acceleration, and show Bearing Severity Overall trend — an exclusive 3563 sensor feature.

The software has three primary tools:

Dashboard, Insights, and Configuration. Each one has a unique purpose.



DASHBOARD:

What it does

When you click the dashboard icon, it reveals an at-a-glance display of the overall condition of your assets based on the wireless vibration sensor readings. The graphic below shows the condition of six sensed assets.

- 2 assets are in "Good" condition - Green
- 2 assets are in "Critical" condition - Red
- 1 asset has a "Warning," - Orange
- 1 asset has a "System Error" - Black

Click any of the colored buttons, such as the "Red" Motor #2 button, and you'll go to INSIGHTS.

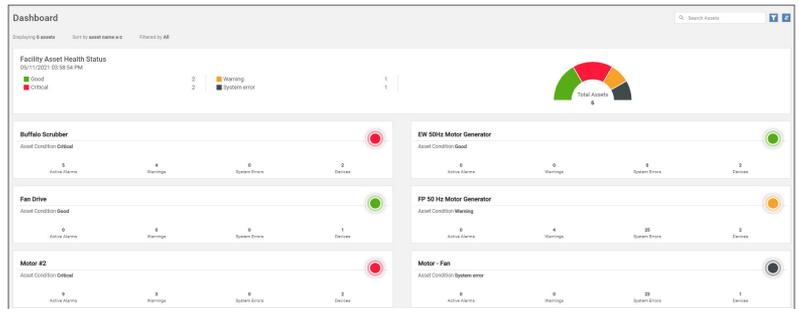


Figure 3. The dashboard provides a snapshot of each asset's condition based on the 3563 sensor data

INSIGHTS:

What it does

This section provides comprehensive information about sensor events/active alarms and warnings, sensed devices, and details about each asset's current state. Users can apply the data to decide next steps.

In this instance, Motor #2 shows a change in condition beyond a threshold, triggering email notifications to be sent to designated reliability team members.

Early warnings of a potential asset malfunction ensure you have enough time to take corrective action before a catastrophic failure.

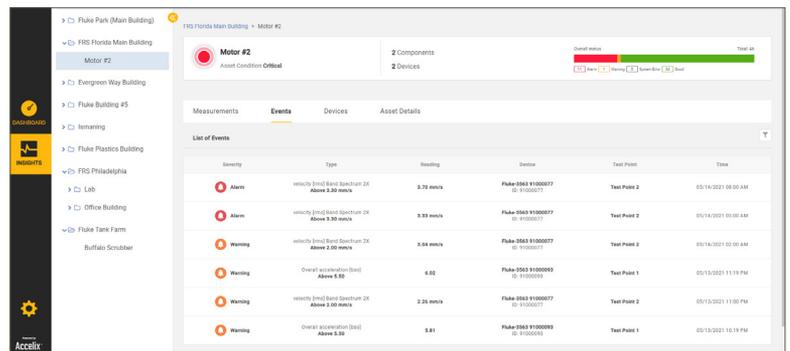


Figure 4. The events tab shows the details of the Motor #2 notifications

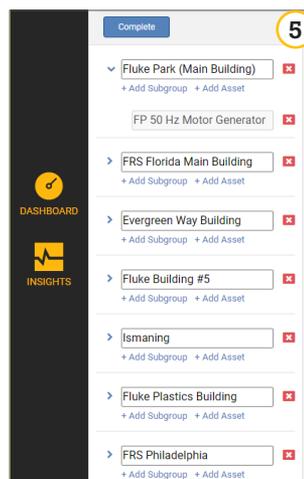
CONFIGURATION:

What it does

You start the configuration process by creating equipment groups and subgroups.

Next, you'll add equipment details, test points and alarms, and device setting preferences.

Figure 5. Configuration first steps include adding groups, subgroups, and assets



Asset Details Components Test Points Tasks & Alarms Device Settings **6**

Asset Name
FP 50 Hz Motor Generator

Default speed [RPM]
1780

Asset ID (CMMS ID)
Asset ID (CMMS ID)

Power [kW]
29.83

Description
Belt Drive 1780 to 1475 RPM, 60 to 50 Hz
Location: Core 3 Electrical Room

Foundation
RIGID

Asset Details

Add the asset name, machinery ID, description, and RPM. If you don't want to complete all entries at once, you can still move forward and return to this section later.

With the primary asset data entered, the user moves to the "next" task, adding component details, followed by test points.

Figure 6. Accurate asset detail inputs such as motor speed are critical to enabling reliable, quality data.

Fluke Park (Main Building) > FP 50 Hz Motor Generator

Asset Details Components **Test Points** Tasks & Alarms Device Settings **7**

Point properties

Test point name
[Dropdown menu]

Position on the machine
Driven end

Electrical Motor

Components and Test Points

During the configuration process, you created equipment groups, subgroups and entered asset details. As a result, you'll see your components displayed.

In the dropdown menu, you'll enter additional component information. Once completed, you can add the test points indicating where you want to place the sensor on the machine.

Figure 7. Add device setting details to the component, including sensor placement.

Recommended alarm limits **8**

Do you want to set our recommended alarm limits for the asset?

Skip Apply recommended alarm limits

Tasks, alarms, and preferences

After you "save" the test point information, you'll have the opportunity to select whether to apply the 3563 Analysis Vibration Sensor's auto-generated thresholds or enter custom alarm limits.

If you decide to "apply the recommended alarm limits," you'll see that the data auto-generates based on the asset details you entered during configuration and ISO 10813 specifications.

Figure 8. Choose "skip" to input custom thresholds

Trend Measurements **9**

Overall Velocity

Z-Direction

Task Name	Warning	Alarm	Unit
Overall Velocity (Z-Direction)	4.00	6.50	mm/s
Lower Frequency	8.00	13.00	mm/s

XY-Direction

Task Name	Warning	Alarm	Unit
Overall Velocity (XY-Direction)	4.00	6.50	mm/s
Lower Frequency	8.00	13.00	mm/s

Figure 9. Threshold values appear based on initial sensor configurations

Asset Details Components Test Points Tasks & Alarms **Device Settings** **10**

Overall Measurement Interval
30 min

Overall Reporting Interval
30 min

Band Measurement and Reporting Interval
1 hr

Last sensor configuration update
03/29/2021 12:42:36 AM

Update Sensors

Longer intervals will increase the battery life of sensors.

Device Settings

This section is where users determine how often they want the system to collect measurements and send measurement reports. You can adjust the intervals to reflect changing needs at any time.

Figure 10. Being strategic about how often you receive data can elongate sensor battery lifetime

How the Fluke 3563 Sensor data flows

The Fluke 3563 Analysis Vibration Sensor data is transmitted by a short-wave wireless technology standard to the Fluke gateway and then to the Accelix Data Platform via WiFi or an Ethernet connection. A reliability professional analyzes the data, event, and machine condition via the LIVE-Asset™ Portal web application.

As you start receiving data, you'll understand which data matters most and what it's telling you. You might decide to fine-tune your data intervals. If you're receiving too much information and/or having trouble comprehending the data, Fluke Reliability experts can help.

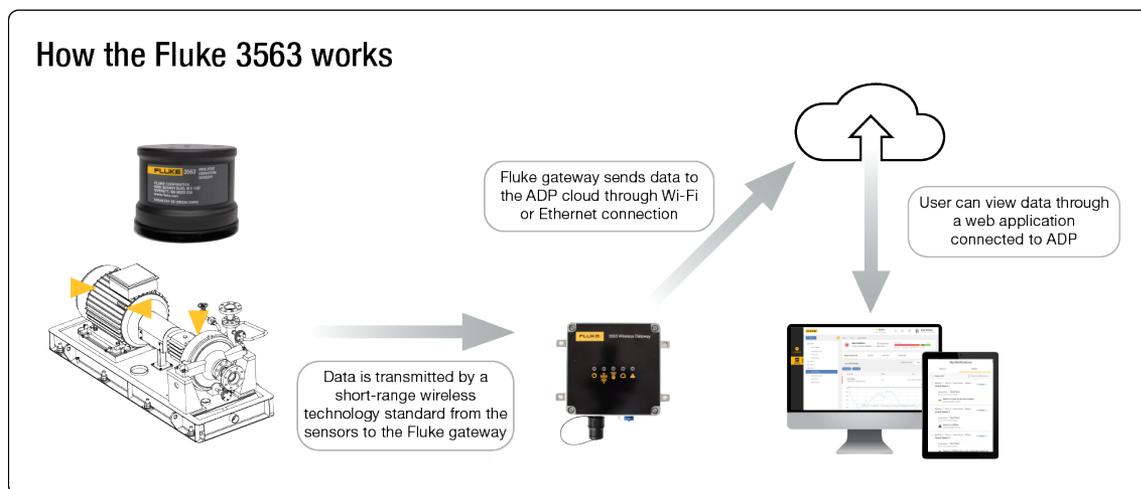


Figure 11. A single gateway communicates with up to 20 sensors

Glossary of important terms

- **LIVE-Asset™ Portal** –The software where users configure the machinery to be sensed, including critical asset details such as motor speed, components, and sensor test point locations.
 - Delivers rich data insights rapidly
 - Provides detailed information across a wide range of frequencies
 - Enables experienced users to pinpoint where action is required
- **Gateway:** The system gateway is the central data bridge between your 3563 Analysis Vibration Sensors and the Accelix Data Platform.
- **Accelix Data Platform (ADP):** Accelix is an open cloud platform that connects maintenance software, equipment, and critical plant systems. It is the underlying backbone/architecture of the LIVE-Asset Portal and where functionality updates take place.

Fluke Corporation
PO Box 9090, Everett, WA 98206 U.S.A.

Fluke Europe B.V.
PO Box 1186, 5602 BD
Eindhoven, The Netherlands

For more information call:
In the U.S.A. 856-810-2700
In Europe +353 507 9741
In UK +44 117 205 0408
Email: support@accelix.com
Web access: <http://www.accelix.com>

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