



ioX Vibration Sensor

Long-Range Industrial IoT Wireless Vibration & Temperature Sensor

V4/V4 PRO Vibration Sensor Technical Datasheet

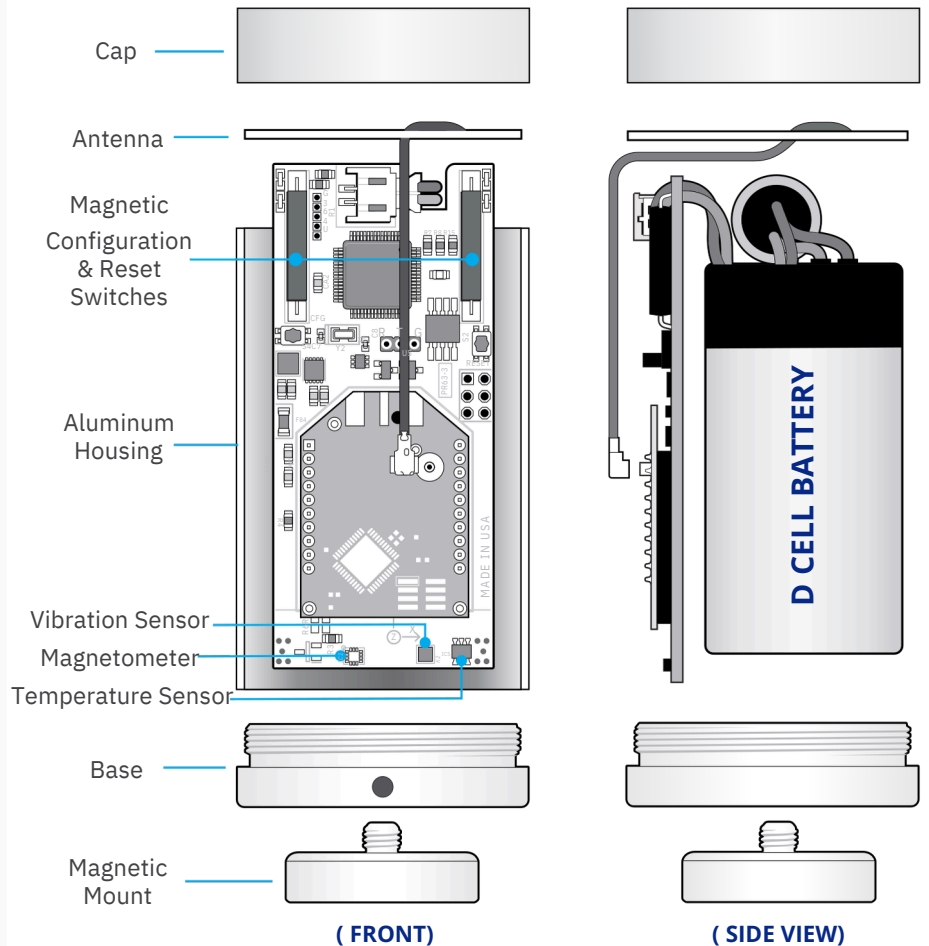
V4

Introducing ioX-Connect's V4 Long-Range Industrial IoT Wireless Vibration & Temperature Sensor. Lightweight rugged and reliable for accurate asset monitoring and boasting up to a 2-mile range using a wireless mesh networking architecture & incorporating a 16-bit Vibration and integrated Temperature sensor.

PRODUCT FEATURES:

- Small & lightweight for ease of installation.
- IP67 rated sealed enclosure for dust & moisture protection.
- Metal housing for durability in harsh industrial environments.
- D-cell battery for long-lasting operation.
- A versatile user-configurable sample rate for slow or fast-running machines
- Integrated temperature sensor in base.
- In-Built Machine Learning optimizes power consumption.
- Asset On-Time Calculator automatically tracks operational status.
- Hardware Accelerator enhances vibration sampling accuracy.
- Available Frequencies – 900Mhz, 868Mhz, and 2.4Ghz
- Supports MESH networking.

Internal Components



ioX Vibration Sensor | Technical Data

Key Features

Acceleration

- **Sample Rate:** 25.6 kHz
- **Bandwidth:** 6.3 kHz
- **Full-Scale Range:** $\pm 16g$ or $\pm 32g$
- **Noise:** 100 $\mu g/\sqrt{Hz}$
- **The versatile user-configurable sample rate** is suitable for both slow and fast-running machines.
- **In-Built Machine Learning:** Optimizes power consumption.
- **24x7 Data Sampling:** Ideal for intermittent machine operation, capturing spontaneous issues.
- **In-Built Temperature Sensor:** Provides temperature compensation for acceleration readings.

Mounting Options

- 1/4-28 UNF thread
- Magnetic mount

Build and Environment

- **Body Material:** Metal, designed for harsh environments.
- **Data Types:** Overall data and time-domain data.
- **RPM Measurement:** Calculated using acceleration.
- **Operating Temperature Range:** $-40^{\circ}C$ to $85^{\circ}C$
- **Power Source:** D-cell battery for long-lasting operation.

Advanced Features

- **Automatic Asset On-Time Calculator:** Automatically tracks operational status.
- **Hardware Accelerator:** Enhances vibration sampling accuracy.

Temperature Sensor

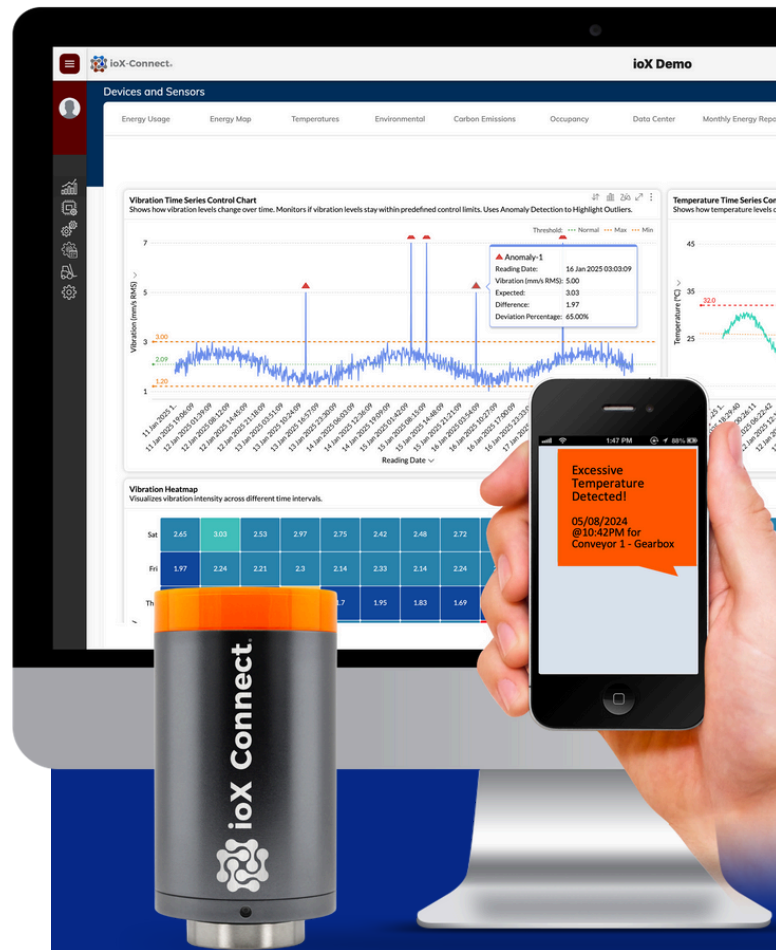
- **Location:** Integrated in the base.
- **Accuracy:** $\pm 1^{\circ}C$ (typical)

Wireless Connectivity

- **Range:**
 - 1,200 ft indoor
 - 2-mile line of sight (overall data)
- **Radio:** Sub-GHz frequency for better penetration through walls and objects.
- **Networking:** Supports MESH networking.
- **Available Frequencies** – 900Mhz, 868Mhz, and 2.4Ghz

Mode of Operation

- Time domain Mode
- Processed Data / Overall Data
- Processed Data / Overall Data + Time Domain On request
- Smart Mode Processed Data / Overall Data + Time Domain on request + Automatic sampling if vibration goes above the limit + Sample 24*7



ioX Sensors integrate seamlessly with **ioX-CMMS**, allowing you to automate maintenance workflows and implement condition-based and predictive maintenance strategies with ease. By continuously monitoring asset performance and detecting anomalies in real time, these sensors help reduce unplanned downtime, optimize maintenance schedules, and extend equipment lifespan. With automated alerts and data-driven insights, maintenance teams can proactively address issues before they escalate, improving operational efficiency and reducing overall maintenance costs.

ioX Vibration PRO | Technical Data

Key Features

3-Axis Acceleration

- **Sample Rate:** 26.6 kHz
- **Bandwidth:** 6.3 kHz
- **Full-Scale Range:** $\pm 16g$
- **Noise:** 70 $\mu g/\sqrt{Hz}$

3-Axis Magnetometer

- **Bandwidth:** 1,000 Hz
- **Full-Scale Range:** $\pm 4, \pm 8, \pm 16$ gauss
- **Noise:** 6,842 LSB/gauss
- **Temperature Compensation:** Ensures reliable readings across varied conditions.

Advanced Usability

- **User-configurable sample rate** for versatility across asset types.
- **In-Built Machine Learning:** Optimizes power consumption.
- **24x7 Data Sampling:** Ideal for intermittent machine operation, capturing spontaneous issues.
- **In-Built Temperature Sensor:** Provides temperature compensation for acceleration readings.

Build and Environment

- **Body Material:** Metal, designed for harsh environments.
- **Data Types:** Overall data and time-domain data.
- **RPM Measurement:** Calculated using acceleration & magnetometer.
- **Operating Temperature Range:** $-40^{\circ}C$ to $85^{\circ}C$
- **Power Source:** D-cell battery for long-lasting operation.

Wireless Connectivity

- **Range:**
 - 1,200 ft indoor
 - 2-mile line of sight (overall data)
- **Radio:** Sub-GHz frequency for better penetration of walls and objects.
- **Networking:** Supports MESH networking.
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Mode of Operation

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- Automatic sampling if vibration goes above the limit + Sample 24*7 Acceleration + Magneto Data + Smart Mode Processed Data / Overall Data + Time Domain on request + Automatic sampling if vibration goes above the limit + Sample 24*7

Mounting Options

- 1/4-28 UNF thread
- Magnetic mount

Mechanical

- **Dimension:** 85mm x 48mm
- **Weight:** 225gram

ioX Sensors are designed to endure harsh industrial environments while delivering precise and reliable data for accurate machine health monitoring, minimizing downtime. With exceptional range, accuracy, battery life, affordability, and robust security features, they surpass industry standards, making them an ideal choice for both industrial and consumer applications.

