

V4 Vibration Sensor

Long-Range Industrial IoT Wireless Vibration & Temperature Sensor

V4/V4 PRO Vibration Sensor Technical Datasheet



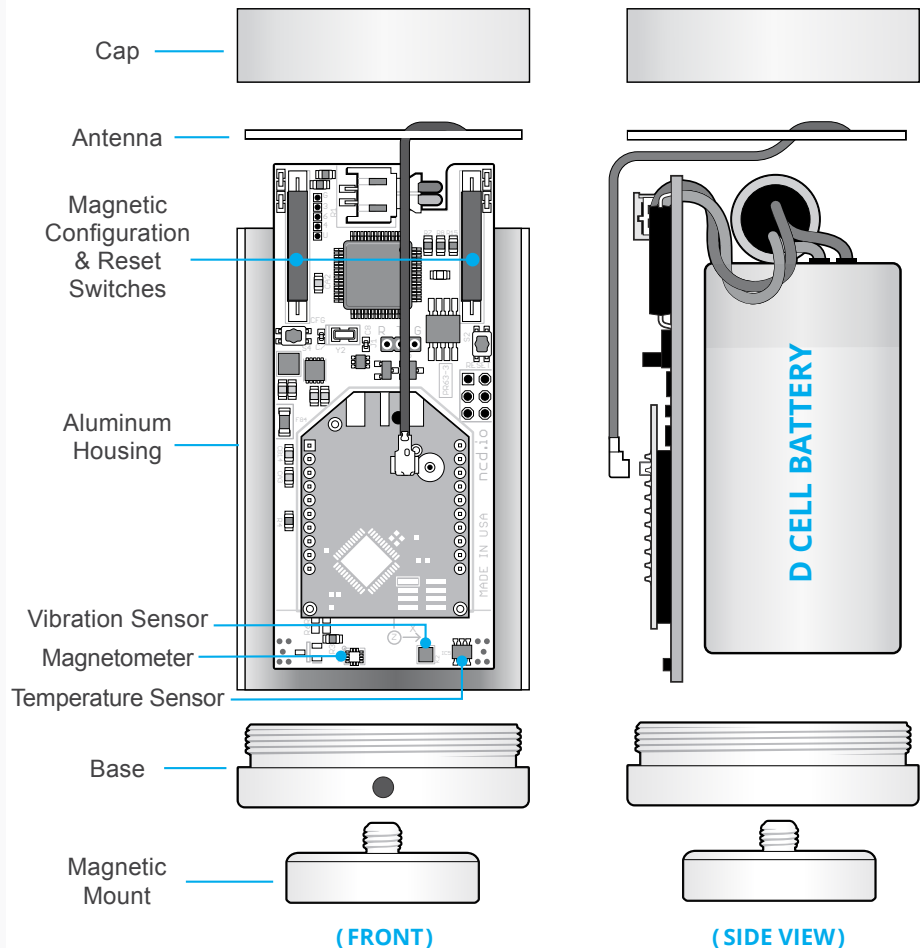
V4

Introducing NCD'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



V4 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

- $\frac{1}{4}$ -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



NCD Sensors are built to withstand the harsh industrial environment while giving you precise and reliable data for accurate machine-health monitoring resulting in less downtime. Their long-range, accuracy, battery life, price, and security features make them a great choice which exceed requirements for most industrial and consumer market applications.

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:** ± 4 , ± 8 , ± 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.
- **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
- 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



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