

# V4 Vibration Sensor

## Long-Range Industrial IoT Wireless Vibration & Temperature Sensor

V4/V4 PRO Vibration Sensor Technical Datasheet



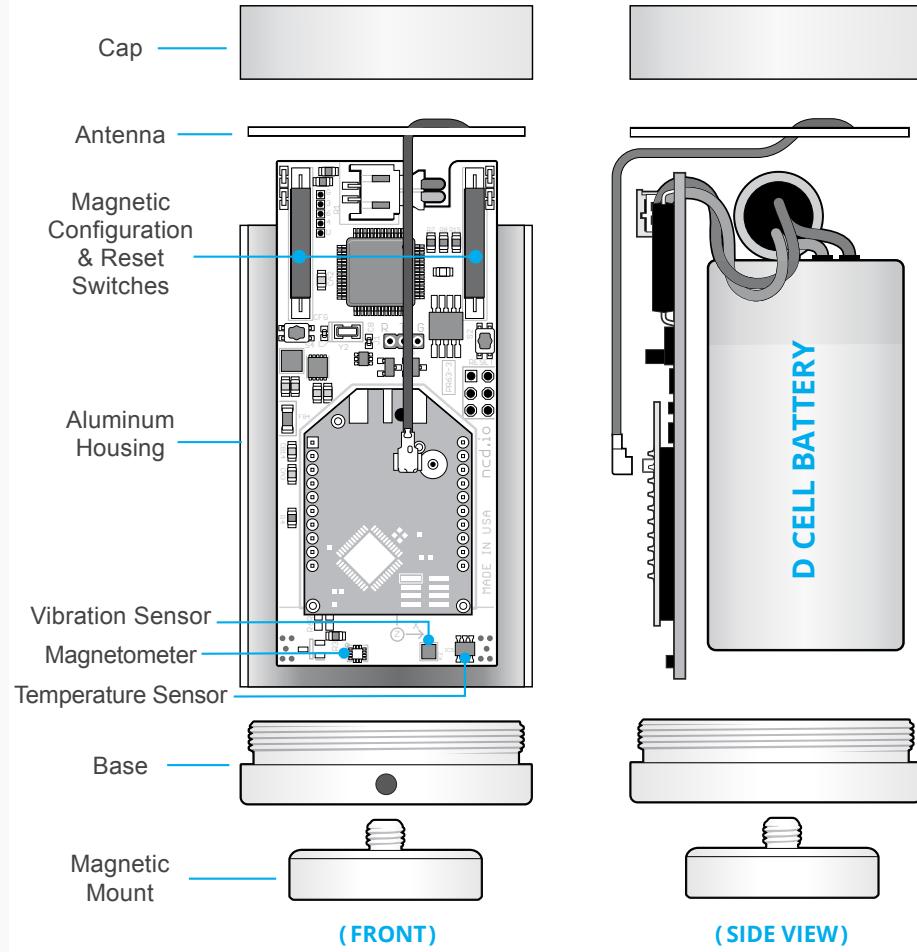
# V4

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:**  $\pm 16\text{g}$  or  $\pm 32\text{g}$
- **Noise:**  $100 \mu\text{g}/\sqrt{\text{Hz}}$
- **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:**  $-40^\circ\text{C}$  to  $85^\circ\text{C}$
- **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:**  $\pm 1^\circ\text{C}$  (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:**  $\pm 16\text{g}$
- **Noise:** 70  $\mu\text{g}/\sqrt{\text{Hz}}$

### 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°C to 85°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

