# 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.

**1 Channel Vibration & Temperature Sensor**
(PR55-61E)

**2 Channel Vibration & Temperature Sensor**
(PR55-61N)

## Key Features

### Acceleration

- **Sample Rate:** 25.6 kHz
- **Bandwidth:** 6.3 kHz
- **Full-Scale Range:** ±16g or ±32g
- **Noise:** 100 µg/√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

- **¼-28 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°C to 85°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:** ±1°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

> Built for **accurate** asset monitoring in **tough** industrial environments.

## Key Features

### ⬡ 3-Axis Acceleration

- **Sample Rate:** 26.6 kHz
- **Bandwidth:** 6.3 kHz
- **Full-Scale Range:** ±16g
- **Noise:** 70 µg/√Hz

### ⊘ 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.

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

### ⤓ Mounting Options

- ¼-28 UNF thread
- Magnetic mount

### ⊕ Mechanical

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

**NCD Sensors** are deigned to give you precise, reliabile data in harsh industrial environments. 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.

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## Enclosure Dimensions



2.165" (54.99 mm)

5.709" (144.78 mm)

**Front View**

3.597" (91.36 mm)

**Side View**

RST          CFG

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2 CHANNEL VIBRATION SENSOR **PLUS**

PR55-61N

-6xAA+

SENSOR 1          SENSOR 2

3.597" (91.36 mm)

**Top View**
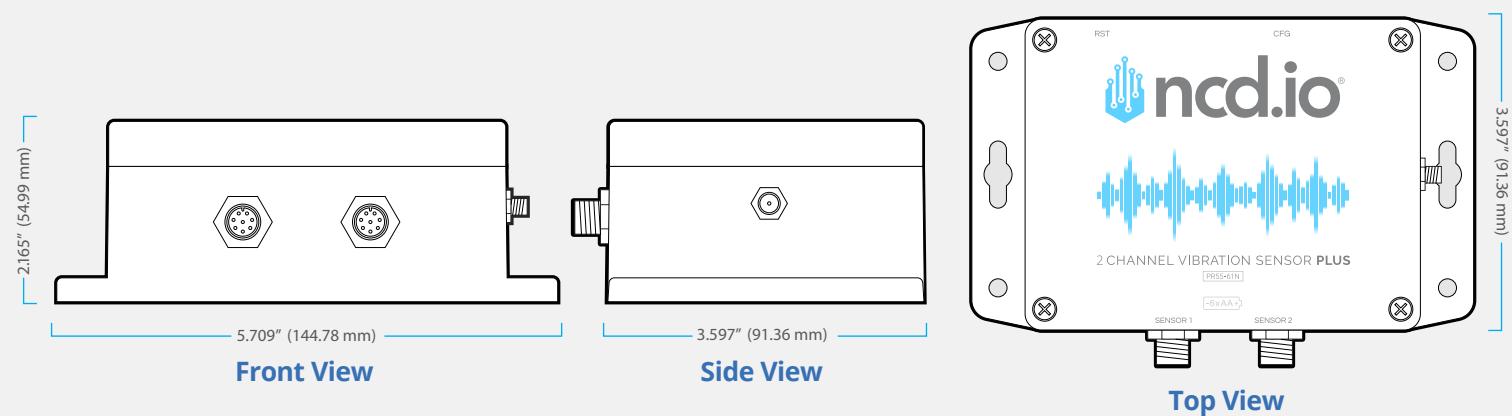
## Alternate Enclosure
### (based on product availability)



2.25" (57.15 mm)

5.25" (133.35 mm)

**Front View**

3.563" (90.5 mm)

**Side View**

RST          CFG

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2 CHANNEL VIBRATION SENSOR **PLUS**

PR55-61N

-6xAA+

SENSOR 1          SENSOR 2

3.563" (90.5 mm)

**Top View**

## Vibration Sensor Probe



6.5 foot cable

Vibration and
Temperature
Sensor

X
ncd.io

5/8" Socket

Magnetic
Mount

Y

X

Z

X
ncd.io
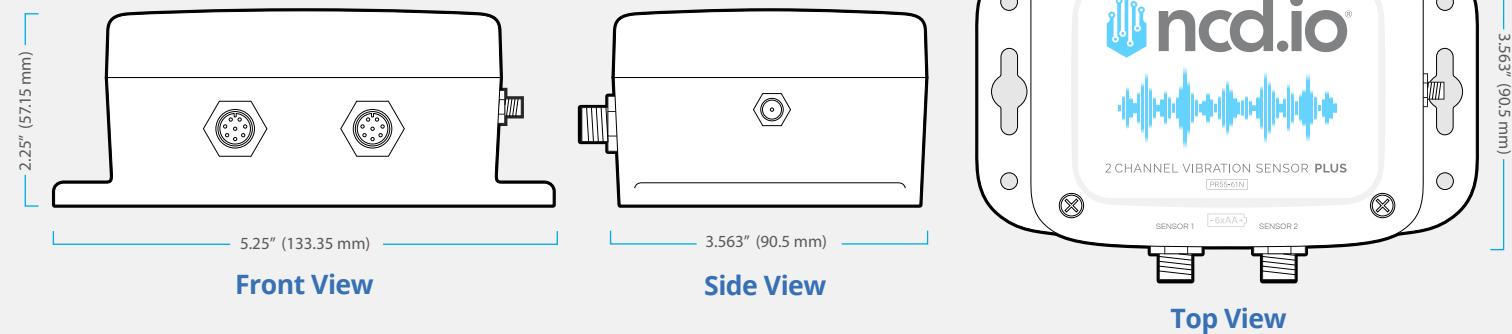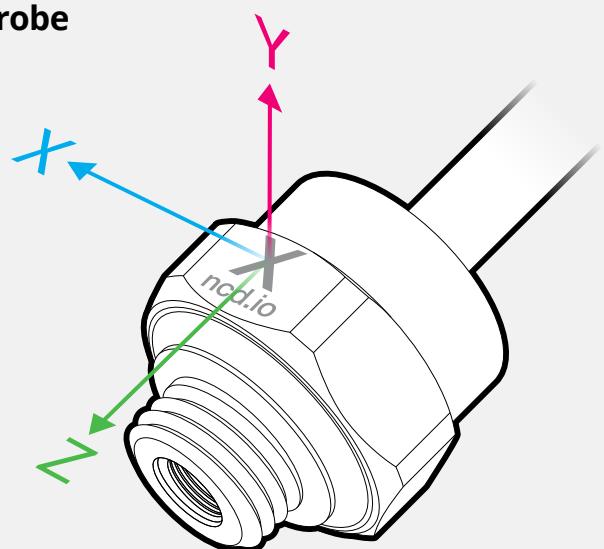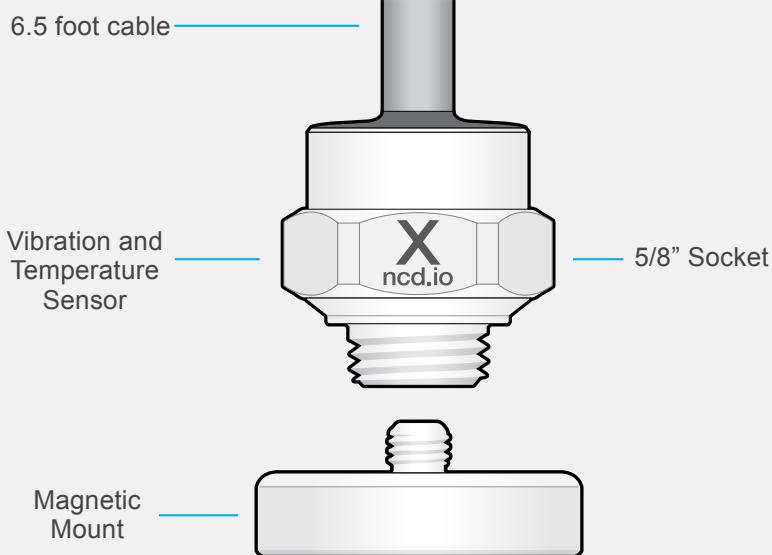
**"X" print indicates 3-Axis centerpoint**