

BluVib Sensors



Bluetooth Wireless Vibration Sensor

The BluVib wireless vibration sensor is an ultra-low power, battery operated, wireless sensor that measures vibration and temperature. It uses the latest Bluetooth low power wireless communications standard and can operate stand alone, or in a network of multiple sensor devices. Operation is user programmable, from waking up at pre-determined intervals to take vibration and temperature measurements, through near continuous operation, constantly monitoring data and signaling pre-set 'events'.

Raw data is then transferred to our Asset Minder IoT cloud platform for processing, trending and archiving.

The main components of the wireless sensor are a piezo-electric accelerometer, signal conditioning electronics, anti-aliasing low pass filter, analog-to-digital conversion, processor section, power/wake-up control and a low power radio module. The field replaceable battery is contained in a sealed compartment and the device mounts, via a screw thread, directly onto the machine which it is monitoring.

The wireless vibration sensor provides a solution for condition monitoring of rotating machinery. It is used primarily in process industries where common applications are monitoring of motors, fans, pumps, gearboxes etc. The device provides data from which overall values of vibration, bearing condition and temperature (often referred to as process variables) as well as high resolution spectra of vibration and bearing envelope, can be determined.

When compared with wired alternatives, the wireless vibration sensor offers the advantages of extreme ease of installation and battery life up to 5 years.

- Monitors vibration and temperature
- Measuring Range +/- 20g
- Measures acceleration, velocity and bearing condition
- High resolution spectra available
- Operates on low power Bluetooth V5 standard
- Self-contained device that mounts directly onto the machine
- Rugged and corrosion resistant
- Field replaceable battery, up to 5 years life

HIGH PERFORMANCE

Outstanding measurement capability. User selectable operating modes.

SIMPLE INSTALLATION

Simply fix the sensor to your machine, set it running and it measures, unattended for up to 5 years.

RUGGED

Suitable for harsh industrial conditions. Corrosion resistant.

WIRELESS OPERATION

Low power radio, with power management, ensuring long battery life.

FLEXIBLE

Available in OEM versions, can be installed using various methods including strong permanent magnets, screw on and glue on nodes, making installation quick and easy. Contact DMS for details.



MEASUREMENTS

BluVib Specification

Number of Channels: 2 (1 x vibration and 1 x temperature)

Accelerometer Input

Sensor Type:

Piezoelectric accelerometer, ultra low power

Sensitivity:

Programmable (50mV/g, 100mV/g, 200 mV/g, 500mV/g)

Measurement Range:

+/-20g at 50mV/g

Frequency Range (+/-3dB):

0.3 to 10000 Hz

Resonant Frequency:

25kHz

Amplitude Linearity:

±1% typical in passband

Dynamic Range:

>70dB

Temperature Input

Temp Measurement Range:

-30°C to +85°C

Accuracy:

+/-2.0°C, (0.5°C from 0°C to +65°C)

DATA ACQUISITION

ADC:

16-bit SAR

Sample Rate:

256Hz to 25.6kHz

Anti-Aliasing Filter:

Compound analog/digital

Data Block Lengths:

64 to 32768 samples

Spectral Line Equivalent:

100 to 12800 lines

Modes:

Continuous, Wake Up, Triggered ('g' level)

Manual wake-up via magnetic switch

PROCESSING

Processor:

Ultra Low Power, 32 bit

Configuration:

Over Radio Network

Programming:

Firmware upgrades over radio network

COMMUNICATIONS

Network:

Bluetooth 5.0 Low Power

Certifications:

Europe: R&TTE

USA, Canada, International: FCC/IC

MECHANICAL

Enclosure:

Base: 316 Stainless Steel, Cover: Nylon 2200

Weight 170g

Dimensions:

33mm diameter x 90mm high

Mounting:

Internal ¼-28 UNF or M6 thread

ENVIRONMENTAL

Operating Temperature:

-30°C to +85°C

Sealing:

IP66

Compliance:

CE, RoHS

POWER

Battery Type:

Lithium Thionyl Chloride, 3.6V

Battery Monitor:

Internal battery monitor and critical battery shutdown

Battery Life:

Up to 5 years (on default measurement intervals)

Replacement:

Field Replaceable

Specification subject to change without notice.

For more information on any of our products or services please visit us at: www.dmsinteractive.co.uk

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