QI2500 – Full Data Sheet (Technical)

1. Overview

The QI2500 Wireless Vibration Sensor is a battery-powered, triaxial vibration and temperature monitoring device optimized for predictive maintenance and industrial reliability programs. It detects imbalance, misalignment, looseness, bearing defects, gear mesh issues, lubrication breakdown, and thermal anomalies. The sensor stores up to 10,000 data sets. The data can be downloaded for storage and further analysis. Graphs with the last 200 data sets and can be viewed directly through a web browser.

2. Key Features

Triaxial vibration sensing

- Up to 60 g
- 16 kHz bandwidth
- 4096 sample FFT

Temperature monitoring (–4 °F to 158 °F) (-20 °C to °70 C)

Browser-based setup and data viewing

Programmable ISO-based thresholds for velocity and temperature

Advanced diagnostic metrics:

- Velocity
- Dominant frequency
- Dominant velocity
- Band-limited velocity (ISO 13373 methodology)
- Acceleration
- Crest factor

Adjustable sample rate (500–32,000 Hz)

Sample time based on sample rate (0.128 - 8.192 seconds)

200 viewable data sets

10,000 downloadable data sets

IP68 waterproof stainless-steel construction

Magnetic or threaded mounting

Low power with 1–2 year battery life

2.4 GHz Wi-Fi access point

Remote firmware updates

3. Mechanical Specifications

Sensor Dimensions:1.5 in (38 mm) diameter × 3.25 in (83 mm) height

Sensor Weight: 230 g

Magnet Weight: 160 g

Base Material: 304 stainless steel

Cap Material: HDPE (industrial grade)

Mounting: Magnetic flat or curved base, or threaded mount

Sealing Conformal coated electronics

4. Environmental Specifications

IP Rating: IP68 waterproof

Operating Temperature: –4 °F to 158 °F (–20 °C to 70 °C)

Humidity: High-humidity compatible

Use Environments: Manufacturing, food processing, mining, ski lifts, wastewater, refrigeration

5. Sensing Specifications

Sensor Type: Industrial triaxial MEMS

Acceleration Range: Up to 60 g (588 m/s^2)

Frequency Range: 0–16,000 Hz

Velocity Range: 0–375 mm/s RMS

Resolution: 4096 lines/axis

Sample Frequency: 500–32,000 Hz configurable

Data Types: Velocity, acceleration, crest factor, band velocity, dominant frequency

Temperature Range: –4 °F to 158 °F

6. Wireless & Interface

Wireless Type: Wi-Fi

Frequency: 2.4 GHz

Protocol: 802.11

Range: Up to 100 ft

Connectivity: Built-in access point (no IT involvement)

7. Power Specifications

Battery: CR123A lithium

Typical Life: 1–2 years (depends on sample interval)

Low Battery Alert: LED red-blink

Voltage Thresholds: Adjustable

Battery measurements and thresholds appear on the Graph page.

8. Operating Modes

Mode	Activation	LED
Data Collection	Single press	Blue blink
Setup Mode	Double press	Solid green
Hibernate	Triple press	Yellow → yellow blink

9. Software / Data Processing

Threshold Logic: Based on ISO 10816 machine classes (C1–C4)

Averaging: Alerts determined from the last five readings

FFT Processing: 4096-point transform

Dominant Frequency Detection: Identifies fault signatures

Advanced Filters: Windowing, High-pass filter, Band pass filter

Trend Graphs: Accessible via web interface, no app required, full data set can be downloaded

10. Installation Guidelines

Mount near the bearing or structural load path

Clean paint/oil to ensure firm magnetic coupling

Avoid mounting to guards or lightweight covers

Allow at least five readings to establish baseline trends

11. Maintenance

Check battery: Every 3 months

Inspect mount: Every 3 months

Review trend graphs: As needed

12. Included in the Box

QI2500 Sensor

Flat magnetic mount

CR123A battery

Quick Start Guide

13. Warranty & Support

Two-year limited warranty

Phone, email, and online support

www.qi-dynamics.com