DATASHEET

Wireless 24V Powered Vibration Sensor

SKU: IVIB161410-24V-PWR

Category: Sensors

Description

Industrial Wireless 24V Powered Vibration Sensor

The iQunet Vibration Monitoring Sensor is a device that monitors asset health of rotating equipment which fits well in the predictive maintenance and asset reliability strategy.

The iQunet wireless 24V powered machine condition sensor combines a sensor, data collector and radio into one compact device that measures **both vibration and temperature data**. The sensor collects **triple axis** time series vibration data. The sensor is powered with a **24V power supply** (6VDC-60VDC). The sensor also has 1 **standard coin cell** on board acting as a backup during short power interruptions. Sensor parameters can be set remotely such as sampling rate, samples number, dynamic range, automatic measurement interval, etc.

The difference with the Battery-Powered Vibration Sensor is that the 24V Powered Vibration Sensor is always actively measuring. This "always on" listening function makes the sensor very suitable for the detection of the maximum peak vibration signal within a measurement interval on machinery or equipment that is only active for a limited time (1 or more times) within the measurement interval e.g. CNC machine, conveyor belt... The 24V Powered Vibration Sensor also has a smart self-learning signal peak detector function on board for plug and play commissioning. This function ensures that the sensor will only collect relevant vibration data.

The sensor makes a network direct to the central Base Station node or via the optional Repeater. Sensor data is visualized in the iQunet **Sensor Dashboard** on the iQunet Data Server, offering temperature graphs, time series in acceleration (g) and velocity (mm/s), spectrum graphs in (g) and (mm/s) including waterfall plots, RMS trend values and graphs in (g) and (mm/s), crest factor, peak values, etc.

Remark: this sensor can only be used in combination with the new generation iQunet Servers with software version 1.3.1 or higher.

Used in: condition monitoring of bearings, misalignment, unbalance, ... of rotating equipment, condition monitoring of equipment with short or unknown interval periods like for example CNC machines and conveyor belts

DATASHEET

Technical specifications

- **Physical:**
  - **Dimensions (mm):** 57 x 47 x 14
  - **Weight:** 35g
  - **Case material:** thermoplastic
  - **Sealing:** IP65 (IP68 with upgrade set)
- **Installation:** M3 screws (epoxy adhesive for permanent mount)
- **Operating temperature:** -20°C to +70°C
- **Recommended storage temperature:** +30 °C maximum
- **Certifications:**
  - CE
  - FCC
  - KC
- **Wireless communications range:** up to 50 m typically in plant (actual range depends on specific site topology and device placement)
- **Power supply:** 24VDC typical (6VDC to 60VDC accepted)
  - Power entry: 3 pole M8 cable (signal not used)
  - Gilded contacts
  - Reversal protected
  - EMI filtered against RF disturbance
  - Max 80V overvoltage protection (with internal fuse)
  - Double conversion (accepts voltage drops)
  - 1 x 3V replaceable CR2032 battery as battery failover (for short interruptions only)
- **Power consumption:** <10mA (at peak)
- **Measurements:**
  - **Amplitude range:** 2G, 4G, 8G or 16G
  - **Measurement axis:** X, Y and/or Z (3 axis)
  - **Sampling rate:** 12 to 3200 Hz
  - **Number of samples:** 32 to 8192 samples
  - **Units:** g or mm/s
  - **Activity threshold:** 0G to 1G
- **Postprocessing:**
  - Time series, frequency or waterfall plots
  - 1/f flicker noise detrending (for velocity spectra)
  - DFT averaging for noise reduction
  - Trend tracking: RMS or Kurtosis (g and mm/s)
  - Configurable high pass cut off filter
  - optional: Anomaly Detection Service (based on AI/ML unsupervised learning)
- **Temperature sensor on board:** yes
- **Start data acquisition:**
  - Manual trigger (REC button in Sensor Dashboard)
  - Automatic measurements (programmable time interval)
  - Conditional automatic measurements (programmable threshold level)
- **Communication protocols:**
  - Subscribe to sensor parameters and data with OPC UA
  - Control sensor settings and start measurements using GraphQL mutations
  - Read out sensor parameters and data using GraphQL queries
- **Data storage:** on iQunet Data Server
- **Compliance:**
  - RoHS: 2011/65/EU and 2015/863
  - EMC: EN 301 489-1 / EN 301 489-3
  - SPECTRUM: EN 300 220-2
    868.8 Mhz, Max. EIRP < 10dBm (<10mW)