Wirelessly Monitor Run/Stop Status of Critical Process Equipment

The OleumTech® OTC Wireless Vibration Transmitter provides the ability to remotely monitor the run/stop status (on/off) of a critical process equipment using low frequency vibration detection. The Vibration Transmitter is a fully integrated solution that provides an accelerometer and a replaceable battery pack. The hassle of wiring and running conduit for the sensor is completely eliminated with the provided weatherproof 20 ft cable and M12 keyed connection. The sensor can be configured for X, Y, or Z-axis orientation to perfectly suit your application. The accelerometer can be calibrated for automatically setting the operating threshold. You can also control the signal gain of up to 5X using the Waveform Gain parameter.

All-Inclusive Hardware Solution

Safe, Scalable, and Easy to Use

No third-party mounting hardware is required since the provided accelerometer is equipped with magnetic direct mounting hardware that makes installation extremely quick and easy. The wireless accelerometer provides up to a 10-year1 life before needing a battery replacement. It communicates with an assigned wireless gateway within the OTC Wireless Sensor and I/O Network creating a highly scalable network, accommodating virtually any I/O requirement. The OleumTech Wireless Transmitter is certified for use in Class I, Division 1 (Zone 0) hazardous locations. It is intrinsically safe, designed not to cause a spark and can be serviced without being removed from a process.

Highlights

▪ Remotely detect in-motion (run/stop) status
▪ Configurable for X, Y, or Z-axis orientation
▪ Accelerometer with weatherproof cable included
▪ No wiring or running conduit required
▪ Provides calibration function and signal gain
▪ Up to a 10-year battery life1
▪ Self-contained, rugged design
▪ Installs in minutes
▪ IP66, -40 °C to 70 °C
▪ 900 MHz / 2.4 GHz
▪ Secure AES encryption
▪ Class I, Division 1 (Zone 0), Intrinsically Safe
# Technical Specifications

## Hardware Features
- **Device Functionality**: Low Frequency Wireless Vibration Sensor/Transmitter
- **Embedded Controller**: Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
- **Configuration**: Standard RS232 Serial / BreeZ® Software for PC
- **Vibration Sensor / Accelerometer**: Single-Axis (Read X, Y, or Z Axis), ±2g Range, Primarily Used for Run/Stop (On/Off) Detection
- **Sensor Cable**: 20 ft / 6.1 m, Weatherproof
- **Sensor to Transmitter Connection**: M12 Keyed
- **Minimum Tx/Read Interval**: 30 Seconds
- **Sensor Sample Rate**: Adjustable: 1000 ms to 2000 ms (Default: 1000 ms @ 3-Minute Interval)
- **Calibration**: Yes, For Setting Operating Threshold (0 = No Motion; 1 = In Operation)
- **Sensor Output Gain**: Up to 5x for Signal Amplification (Waveform Gain Parameter)
- **Power Source**: Self-Contained, Internal 3.6 Vdc Lithium Battery
- **Internal Battery Life**: Over 10 Years, Based on User Defined Reporting Intervals
- **Device Diagnostics**: Health Tags: Battery Voltage, Received Signal Strength Indication (RSSI), RF Refresh, RF Timeout

## Wireless Communications
- **Type**: 900 MHz
  - ISM Band, Spread Spectrum
  - 900 MHz: FHSS (Frequency Hopping), FSK, AES Encryption 256-bit (900 MHz)
- **2.4 GHz**
  - 2.4 GHz: DSSS (Direct-Sequence), AES Encryption 128-bit
  - Bit Rate: 900 MHz: 9600 bps / 115.2 kbps; 2.4 GHz: 250 kbps
- **Output Power (Max)**: 900 MHz: 10 mW; 2.4 GHz: 63 mW
- **Receiving Sensitivity**: 900 MHz: -110 dBm @ 9600 bps, -100 dBm @ 115.2 kbps; 2.4 GHz: -100 dBm @ 250 kbps
- **RF Range**: 900 MHz: Up to 7500 Feet / 1.4 Miles / 2.3 km with Clear Line of Sight; 2.4 GHz: Up to 4.3 Miles / 7 km with Clear Line of Sight

## Certifications & Compliance
- **FCC Part 15 (USA), IC ICES-003 (Canada)**
- **Safety**: Class I, Division 1, Groups A, B, C, D T3C; Ex ia IIC T3
- **MECHANICAL SPECIFICATIONS**
  - Dimensions: 5.25” (W) x 6” (H) x 4.25” (D) / 133.4 mm (W) x 152.4 mm (H) x 108 mm (D)
  - Package Dimensions: 10.25” (W) x 14” (H) x 6.5” (D) / 260 mm (W) x 356 mm (H) x 165 mm (D)
  - Weight: Net: 3 lbs ; Gross: 4.5 lbs
  - Enclosure Casing Material: Type 4X Aluminum; IP66

## General Specifications
- **Operating Conditions**: Transmitter: Ambient Temperature (Class I, Division 1 / Zone 0): -40 °F to 158 °F (-40 °C to 70 °C)
- **Warranty**: 2-Year Parts and Labor
- **Country of Origin**: USA

## Ordering Information
- **Model Numbers**: SM5000-JP4 V (900 MHz), SM5400-JP4 V (2.4 GHz)
- **Wirelessly Connects To**: OTC Wireless Gateway
- **Configuration Cable**: SX1000-CC2, 20-ft All-in-One Configuration Cable
- **Replacement Battery**: Use OleumTech SX1000-BP3 Only

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1. Ambient temperature and one transmission per 1 min interval without any retries were used to calculate battery life. Actual battery life may vary depending on environmental factors, application, and usage. Use data shown above only as general point of reference. See OleumTech Battery Life Expectancy Chart for predicted battery life based on reporting interval.
2. The maximum RF range data was collected under optimal test conditions, including a clear line of sight between antennas. Actual wireless RF range may vary depending on location, RF interference, weather, antenna type, cable type, and line of sight.

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