DATASHEET

SM-JP4 V

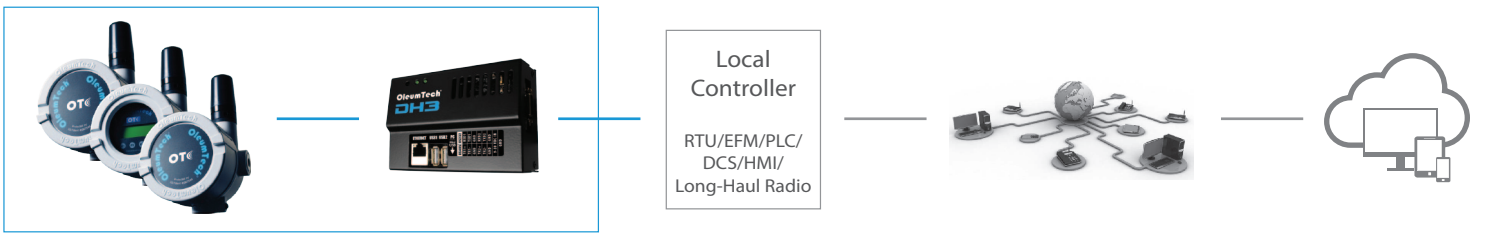
Accelerometer with magnetic mounting hardware included.

Highlights

- Remotely detect in-motion (run/stop) status
- User-defined sample duration for spot reading
- 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 life[1]
- Self-contained, rugged design
- Installs in minutes
- IP66, -40 ˚C to 70 ˚C (-40 ˚F to 158 ˚F)
- 900 MHz / 2.4 GHz
- Secure AES encryption
- Class I, Division 1 (Zone 0), Intrinsically Safe

C SP® US

US Patent #6967589



OTC Transmitters | OTC Gateway | Network Infrastructure | Cloud (Analytics)

Wirelessly Monitor Run/Stop Status of Critical Process Equipment

All-Inclusive Hardware Solution

The OleumTech® OTC Wireless Vibration Transmitter provides the ability to remotely monitor the run/stop status (on/off) of a critical process equipment using periodic 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.

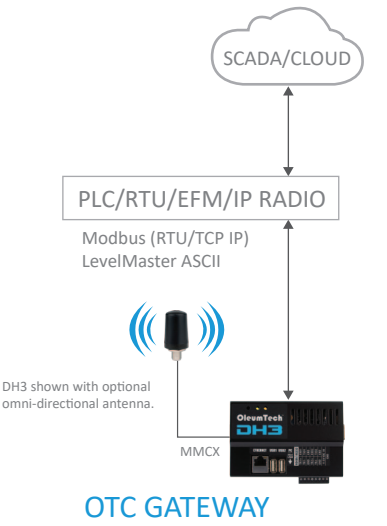
Safe, Scalable, and Easy to Use

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-year[1] 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.

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[1]
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, FSK, AES Encryption: 256-bit (900 MHz)
2.4 GHz	· 2.4 GHz: DSSS, 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] · 2.4 GHz: Up to 1.9 Miles / 3.1 km with Clear Line of Sight[2]
CERTIFICATIONS & COMPLIANCE	
EMC/EMI	· FCC Part 15 (USA), IC ICES-003 (Canada)
Safety	· Class I, Division 1, Groups A, B, C, D T3C; Ex ia IIC T3 · Class I, Zone 0; AEx 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	· Ambient Temperature (Class I, Division 1 / Zone 0): -40 °C to 70 °C (-40 °F to 158 °F) · Ambient Temperature (Non-Hazardous Applications): -40 °C to 80 °C (-40 °F to 176 °F) · Humidity: 0 to 99 %, Non-Condensing
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

Networking Diagram



OTC GATEWAY

OTC TRANSMITTERS

Point-to-Multipoint
"Star Topology"

[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.

MADE IN USA