WIRELESS VIBRATION TEMPERATURE ACOUSTIC SENSOR

MODEL No: ERF-ZBW-VS173



Product Specification

Product Details:

ERF-ZBW-VS173 is a new generation of triaxial wireless sensor which integrates the collection of vibration, temperature, sound and rotation frequency with 19Ah big battery capacity design. It can predict and warn equipment failures. It is suitable for monitoring industrial equipment and ia a powerful tool for equipment care in industrial fields such as petrochemical, cement steel, mining etc.

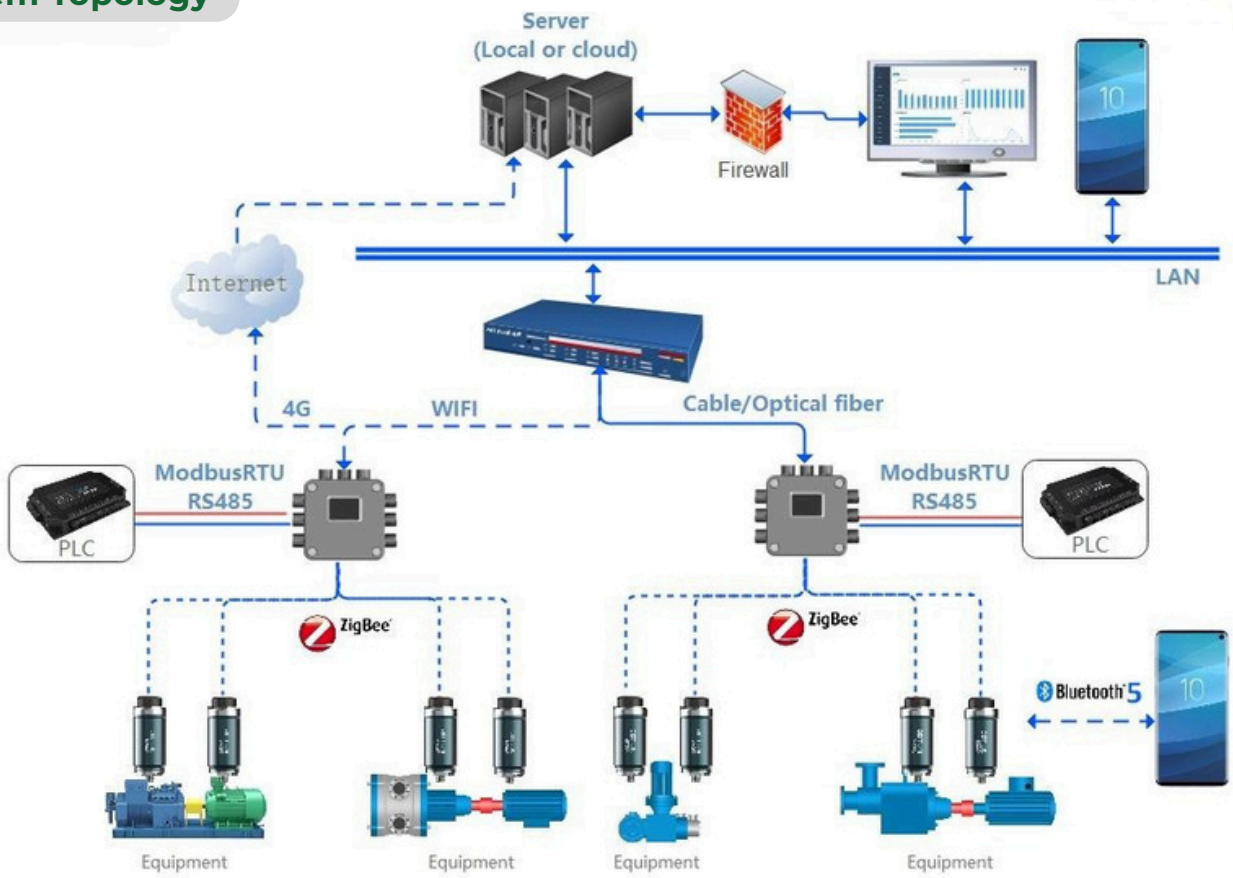
Application

- Monitor critical machinery and optimize its reliability.
- Extend equipment service life.
- Provide maintenance decisions based on monitored data.
- Reduce equipment maintenance costs.
- Reduce the risk of unplanned downtime.

Wireless vibration temperature acoustic integrated sensor provides a simple and convenient solution for expensive and complex cable laying, especially in hazardous gas locations.

WIRELESS VIBRATION TEMPERATURE ACOUSTIC SENSOR

System Topology



Product Features

- Integrate monitoring of vibration, temperature, sound and rotation frequency, providing more comprehensive fault diagnosis elements.
- One-touch power on/off and sleep wake-up, avoiding the risk of water leakage caused by the traditional screw-cover startup mode.
- 19Ah replaceable battery, making the battery life to be 5 years.
- Z-axis 0.1Hz~8KHz frequency response, supports 0.1Hz ultra-low frequency. XY axis 0.1Hz~8KHz frequency response, supports 0.1Hz ultra-low frequency.
- Bluetooth 5.0 and Zigbee dual protocols, can be used with mobile phone APP to realize temporary inspection function.
- Anti-lost hole design, configuration-free design.
- Communication distance with the gateway can reach 300 meters line of sight.
- 2M long waveform sampling, sensor synchronization within the gateway.

Mechanical Applications

ERF-ZBW-VS173 -Wireless sensor is applicable for machinery with roller bearings:

- Motor
- Fan
- Ball Mill
- Blower
- Centrifuge
- Mixer
- Pump
- Small reciprocating compressor etc
- Cooling Tower
- Motor

WIRELESS VIBRATION TEMPERATURE ACOUSTIC SENSOR

Harzardous Area Approvals

Wireless vibration temperature acoustic integrated monitor is designed for intrinsic safety and supports hazardous locations in Zone 0.
Zone 0 Class IIC gas environment

Technical Specification

Module	Parameter	Specification
Acceleration	Number of axes	3-axis
	Perception Unit	MEMS
	Amplitude range	X/Y/Z axis ± 60g Peak
	Measurement accuracy	±5% (160 Hz) X/Y/Z axis
	Lateral sensitivity (Typical value)	3% (100 Hz)
Data Collection	Acceleration response range	Z axis : 0.1 Hz to 8 kHz 3dB X/Y axis : 0.1 Hz to 8 kHz 3dB
	Acceleration amplitude range	± 60g
	Sampling rate	Max. 32 KHz
	Analysis frequency	High frequency: 6250Hz, 12500Hz Low frequency: 1563Hz, 3125Hz
	Waveform length	8K, 16K, 32K, 64K
	FFT spectrum lines	3200, 6400, 12800, 25600
	Measurement interval	10 minutes for global value 4 hours for time waveform (suggested)
	Output	Acceleration overall value, RMS, time waveform, spectrum
Temperature collection	Measuring range	-40°C to 120°C (-40°F to 248°F) (Probe measurement temperature range, not to be confused with product operation temperature)
	Accuracy	1°C
Voiceprint collection	Sampling rate	11 KHz
	Signal-to-Noise Ratio	66 dBA
	Sensitivity	-38 dBV
	Output method	Default sound level dB, voiceprint waveform optional

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Technical Specification

Module	Parameter	Specification
Wireless Communications	Network topology	Star
	RF Standards	IEEE 802.15.4
	Wireless frequency range	2.4 GHz ISM band
	Firmware upgrade method	Gateway wireless air upgrade
	Encryption/ Security	128-bit AES encrypted transmission
	RF output power (peak)	5dbm (max)
	Wireless communication distance	300meters of visual barrier-free distance (The actual distance depends on obstacles, gateway antenna model and direction, selection of on-site measurement point location, etc.)
Battery	Battery Model	Replaceable 3.6V disposable lithium ion battery **Warning: Only use the following battery types: ER 34615 and requires secondary processing.**
	Life	5 years by default configuration
Working conditions	Operating Temperature	-40°C to 70°C (-40°F to 158°F) (Working at or above the extreme temperature for a long time will affect the battery life and even damage the sensor)
Mechanical parameters	Corrosion resistance	Solvent-resistant nylon material, stainless steel body can be customized
	Drop resistance	1.5m drop to concrete
	Weight	220 grams (including battery)
	Dimensions	Main body height : 93 mm; Diameter: 39 mm
	Body material	304 stainless steel base and reinforced impact-resistant glass fiber nylon cover
	Fixing bolts	Main body M10* 1 mm x 8 mm
	IP grade	IP68 Waterproof and dustproof level

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Technical Specification

Module	Parameter	Specification
Compliance	Electromagnetic compatibility standards	IEC 61326-1
	Wireless Spectrum	ETSI EN 300 328
	Safety	Meet the technical requirements of micropower short-range radio equipment
	Explosion-proof safety	ExiallCT4 Ga Zone 0 IIc Gas Environment
	Certification	Conform to CE Requirements
Supporting Gateway	ERF-ZB-WG173 wireless gateway	
Dimension (mm)	Diameter 39mm, Height 93mm	

Dimension

Diameter 39mm, Height 93mm

