

Sigfox Piezo-Electric 10kHz Vibration Sensor



Smart Agriculture, Smart Building, Smart City, Smart Energy, Smart Facility, Smart Factory, Smart Farm, Smart Retail, Smart Utilities

SKU: WSSFC-V1A

SIGFOX PIEZO-ELECTRIC 10KHZ VIBRATION SENSOR WSSFC-V1A



WSSFC-V1A-H1.JPG



Safe Zone

Hazardous Zones

WSSFC-V1A is a cost-effective, Sigfox accelerometer single-axis vibration sensor designed for condition monitoring and preventive maintenance applications. The piezo-electric accelerometer is available in ranges $\pm 25g$ or $50g$ and features a flat frequency response up to $>10kHz$. Besides that, it can also measure the temperature at the mounting point. With Ultra-low power design and smart firmware allow the complete Wireless and Sensor package run on 2 x AA battery up to 10 years. It can support all regions of Sigfox network in over the World, RC1, RC2, RC3, RC4, RC5, RC6, RC7. Typical Applications: Machine Health Monitoring, Predictive Maintenance Installations, Vibration Monitoring, Impact & Shock Monitoring, Bearing monitoring, ...

Applications

Condition Based Monitoring, Machine Health Monitoring, Safety Monitoring, Vibration Monitoring

Notes For Applications

- Measure Single-axis vibration and/or surface temperature of Motor, Bearing, Pump, Fan, Gearbox, Rotary machine/equipment... with vibration from 2 to 10,000 Hz.
- Deliver the overall calculated parameters: RMS acceleration, RMS and peak velocity, RMS and peak-peak displacement, frequency, temperature and crest factor.
- DO NOT deliver raw values (acceleration G value in time domain) and parameters in frequency domain (FFT function).

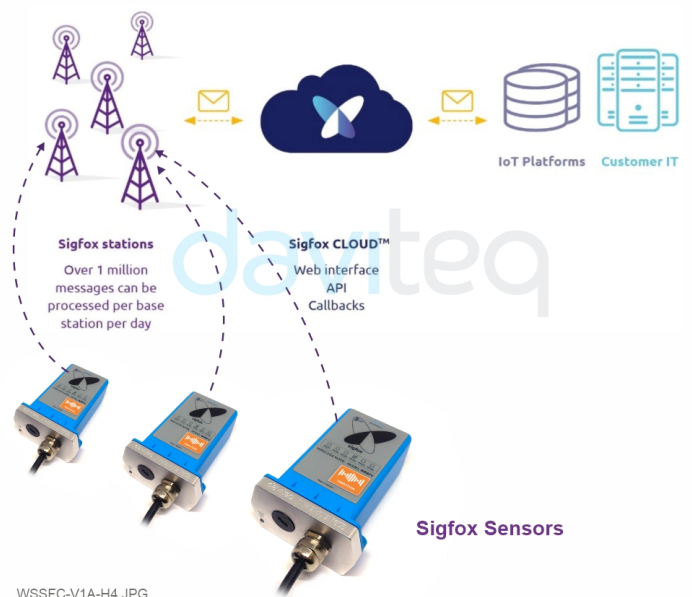
Sigfox Ready
Device are best operating performance on the SIGFOX network

10-Year battery
Ultra-low power sensing technology from Daviteq with Ultra-low power wireless technology allow the sensor can last up to 10 years with 2 x AA batteries 1.5VDC

10kHz Bandwidth
Wide bandwidth up to 10,000 Hz

High Performance Piezo-electric sensor
Hermetically Sealed, Piezo-Ceramic Crystal, Shear Mode accelerometer sensor is designed and qualified for machine health monitoring and has superior Resolution, Dynamic Range and Bandwidth to MEMS devices

SYSTEM ARCHITECTURE



WSSFC-V1A-H4.JPG

DAVITEQ TECHNOLOGIES INC

Ho Chi Minh City, VN | Koblenz, DE | Melbourne, AU | Zurich, CH

+84.28.6268.2523 / 6268.2524

info@daviteq.com

www.iot.daviteq.com

Created date: Dec-21-2022

Updated date: Aug-28-2024

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Specification

(* Note: All below values are typical at +24 °C, 80Hz)

Sensor technology	Hermetically Sealed, Piezo-Ceramic Crystal, Shear Mode
8-Parameter Measurement	Acceleration Peak, Velocity RMS & Peak, Displacement RMS & Peak, Frequency, Temperature, and Crest Factor
Acceleration Range & Shock Limit (g)	±25, 10000
Acceleration resolution	6.1mg
Velocity range and resolution	0~50mm/s, 0.1mm/s
Displacement range and resolution	±5000µm, 1µm
Frequency Response and Resonant (Hz)	2~10000, > 30000
Frequency resolution	2~10000Hz, 1Hz
Non-Linearity, Transverse Sensitivity	±2% FSO, < 5%
Temperature measuring and operating	-40~85°C, with accuracy: ±0.5 and resolution: 0.125
Sensor Material, rating and mounting	304SUS, IP67, M6 Screw
Connector	M12-M 5-pin (Coding A) with 2m cable, wired to LoRaWAN node
COMMUNICATION	
Sigfox zones	RC1~RC7
Antenna	Internal Antenna 2.0 dbi
Configuration	via offline USB cable (PC software is supplied at free) and via Downlink
Battery	02 x AA Type 1.5VDC, working time up to 10 years (depends on configuration) ** 7 years working with 30 minutes update, RC4, 1 x transmit
RF Module complies to	CE, FCC, ARIB
Working temperature	-40~60°C (using Energizer® Lithium Ultimate AA battery)
Dimensions & Net-weight	H106xW73xD42, 190g
Housing	Aluminum+Polycarbonate, IP67
Mounting	Wall mount bracket

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WIRELESS SIGFOX VIBRATION SENSOR
INSTALLED ON MOTOR/FAN



WSSFC-V1A-H2.JPG

WIRELESS VIBRATION SENSOR INSTALLED ON BEARING



WSSFC-V1A-H3.JPG

VIBRATION SENSOR WITH M6 SCREW



M6 x 1.0

WSSFC-V1A-H5.JPG

RECOMMENDED BATTERIES

E91 AA Alkaline battery

L91 AA Lithium battery

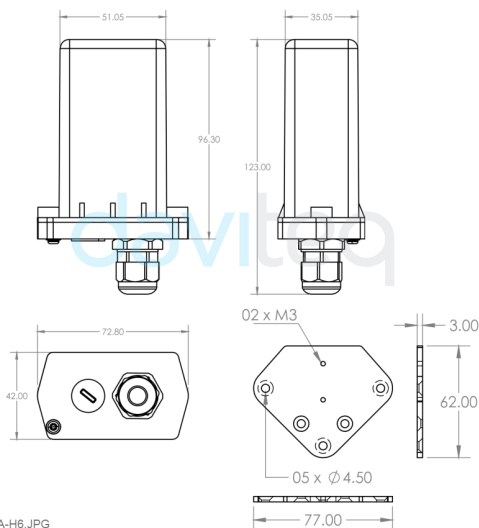


-18 .. + 60 oC working temperature
10-year shelf life
3000 mAh Capacity
Price: 1X

-40 .. + 60 oC working temperature
20-year shelf life
3500 mAh Capacity
Price: 3.5X

WSSFC-V1A-H7.JPG

DIMENSION DRAWING OF WIRELESS NODE
(Unit: mm)



WSSFC-V1A-H8.JPG

PRODUCT PACKAGE



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Ordering Information

ITEM CODE	DESCRIPTIONS
WSSFC-V1A-025	SIGFOX-READY PIEZO-ELECTRIC 10KHZ VIBRATION SENSOR, ±25G, INTERNAL ANTENNA, TYPE AA BATTERY 1.5VDC, IP67, for ALL RC ZONES

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