TECHNICAL DATA SHEET

HIGH-PRECISION 3-AXIS VIBRATION SENSOR

ORDER CODE: TP-400V
PRODUCT CATEGORY: SENSORS

Advanced Vibration Intelligence for Reliable Operations.

PRODUCT OVERVIEW

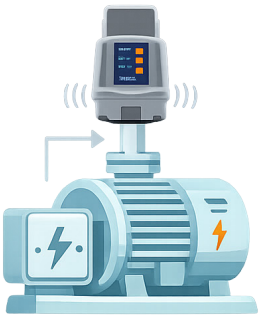
General Description

E4A's advanced 3-axis vibration sensor provides accurate, real-time monitoring of rotating machinery and vibrating structures, including generators, pumps, compressors, and piping systems. It detects issues such as structural oscillations, excessive vibration from worn bearings, motor failures, disconnected couplings, and inactive valves before they lead to downtime.

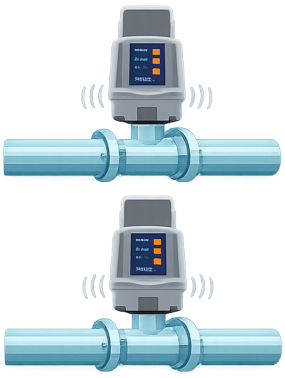
Equipped with a high-performance accelerometer with a configurable range up to ±64g, the TP-400V captures detailed vibration data and performs frequency analysis using a custom Fast Fourier Transform (FFT) algorithm. Powered by E4A's BP-100 and BP-100R battery packs, it delivers reliable long-term operation for predictive maintenance and improved operational reliability.

TYPICAL APPLICATIONS

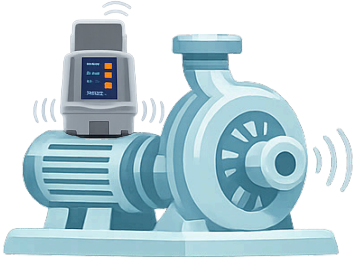
Generators



Piping Systems



Pumps



TECHNICAL SPECIFICATIONS

Power Supply	
Main Power	3VDC, BP-100 (non-rechargeable) 3.6VDC, BP-100R (rechargeable)
Battery Capacity	6000mAh (non-rechargeable) 6800mAh (rechargeable)
Input Voltage Range	1.8VDC to 5.0VDC
Current Consumption	22uA (avg.)

Operating Specifications	
Operating Temperature	-20°C to +60°C
Storage Temperature	-20°C to +70°C (with battery) -20°C to +70°C (without battery)
Permissible Humidity	20-85% (operating and storage)
Ingress Protection Rating	IP30
Pollution Degree	2
Protection Class	3
Altitude	2000m

Measurement Characteristics	
Velocity Accuracy	±5mm/s
Accelerometer	±8g,±16g, ±32g,±64g ±8g: 4096 counts/g ±16g: 2048 counts/g ±32g: 1024 counts/g ±64g: 512 counts/g

Physical Characteristics	
Housing Material	Flame Retardant Polycarbonate/ABS
Physical Dimensions	Height: 110mm / 4.3inch (without battery) Height: 147.5mm / 5.8inch (with battery) Width (diameter): 100mm / 3.9inch
Weight	320g (without battery) 525g (with battery)
Mounting	1/4-28 UNF thread mount 13.5mm deep bolt hole

Communications	
Wireless Module	2.4GHz Bluetooth® 5 transceiver
Communication Range	200m line of sight
Reporting Interval	User programmable in 30s increments

Security	
Encryption	AES 128-bit crypto accelerator ECC and RSA public key accelerator (PKA) SHA2 accelerator (full suite to SHA-512) True Random Number Generator (TRNG)

User Interface	
Pushbuttons	3 pushbuttons (pairing, trigger data report, enable/disable serial terminal interface)
Status LED	5 status LED's (red, green, amber)

PRODUCT CERTIFICATIONS

FCC ID	2AXVKTP400
Industry Canada	26661-TP400
Safety Standards	CSA C22.2 No. 61010-1:12; UPD 1:2015; UPD 2:2016; UPD: 3:2023; UPD 4:2024; A1:2018 CSA C22.2 No. 61010-2-030:18 UL 61010-1: Ed.3, 2012 (R2024) UL 61010-2-030: Ed.2, 2018 (R2023)

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