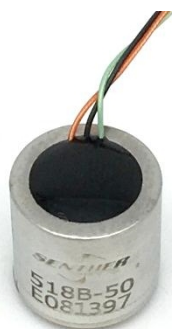


Embedded vibration sensor



Description

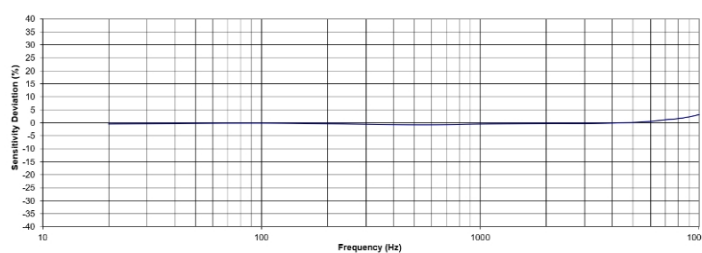
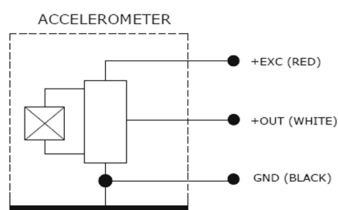
Model 518B is an embedded accelerometer permitting simultaneous vibration monitoring and shock measurements. 518B features an annular shear ceramic crystal which exhibits excellent output stability over time. The accelerometer incorporates an internal circuit in a three-wire signal system which powered by voltage excitation and output with voltage signal. Excellent electrical design enables the low current consumption that ideal for wireless device with battery power supply. Signal ground is connected to the outer case of the unit, Isolated mounting washer is available. Polarity inversion protection for the amplify circuit is inherent in the circuit design. The stainless-steel construction provides a lightweight hermetic housing. Three wire lead cable are convenient for structure assembly and electrical connection. Compact columnar configuration is fit with most of the impact testing device. The 518B provides wide frequency response, which is ideal for dynamic vibration and shock measurement especially for lightweight structures.

Features

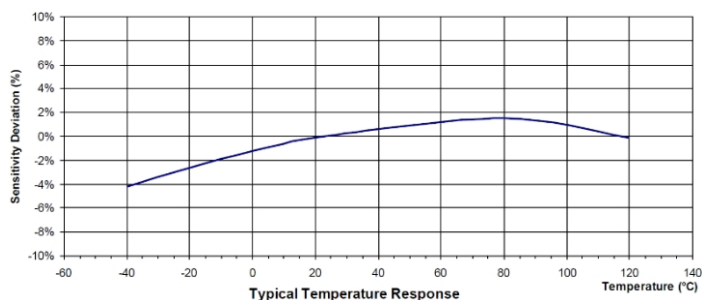
- Miniature size
- Low power consumption
- Lead wire output
- Wide temperature range
- Wide frequency response
- Adhesive mounting
- Annular shear mode

Application

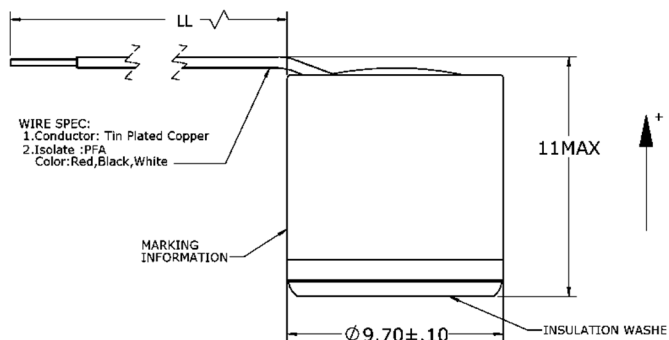
- Vibration testing
- Machine health monitoring
- Embedded device
- Industrial IoT
- Wireless device



Typical Frequency Response



Typical Temperature Response



Specification

Typical at +24°C (+75°F), 5Vdc and 100 Hz, unless otherwise stated.

| Measurement Range | 20 | 50 | 100 | 500 | g |
|--|------------|------------|------------|------------|--------------|
| Sensitivity $\pm 10\%$ | 100 | 40 | 20 | 4 | mV/g |
| Frequency Range $\pm 10\%$ | 1-7000 | 1-7000 | 1-7000 | 1-7000 | Hz |
| Frequency Range $\pm 3\text{dB}$ | 0.4-10000 | 0.4-10000 | 0.5-12000 | 0.5-12000 | Hz |
| Resonant Frequency | 38 | 38 | 38 | 38 | kHz |
| Transverse Sensitivity | <5 | <5 | <5 | <5 | % |
| Temperature Response, -55 to +125°C | ± 10 | ± 10 | ± 10 | ± 10 | % |
| Broadband Resolution | 0.0006 | 0.0008 | 0.001 | 0.0012 | Equiv. g RMS |
| Non-Linearity | ± 1 | ± 1 | ± 1 | ± 1 | % |
| Shock Limit | ± 5000 | ± 5000 | ± 5000 | ± 5000 | g pk |

Environmental

| | | | | | |
|-------------------|---------|---------|---------|---------|----|
| Temperature Range | -50-125 | -50-125 | -50-125 | -50-125 | °C |
|-------------------|---------|---------|---------|---------|----|

Electrical

| | | |
|---|------------------------|------------|
| Bias Voltage | EXC VOLTAGE/2 | Vdc |
| Full Scale Output Voltage | ± 2 | Vdc |
| Output Impedance | <100 | Ω |
| Insulation Resistance (@50Vdc) | >100 | M Ω |
| Supply Voltage | 3.0 to 5.5 | VDC |
| Total Supply Current | <0.15 | mA |
| Warm-up Time(To within 5% of final bias) | <500 | ms |
| Electrical connection | Three-colors PTFE wire | |
| Grounding | Case Grounded | |

Physical

| | | |
|------------------|-----------------|----|
| Weight | 5 | gm |
| Sensing Element | Ceramic | |
| Sensing Geometry | Shear | |
| Housing Material | Stainless Steel | |
| Sealing | Epoxy Sealed | |

Accessories

Calibration certificate included.

| Part Number | Description | Availability |
|-------------|-----------------------------|--------------|
| PM0125 | Insulation washer | Included |
| IN-91 | Portable vibration analyzer | Optional |

Ordering information

| | | | | | |
|--------------|------------------------------------|---|--|---|-----------------------|
| 518 | B | - | 50 | - | 0.05 |
| Model | Output signal | - | Range | - | Cable length in meter |
| 518 | B=3-wire voltage excitation/output | - | 20=20g 50=50g 100=100g 500=500g | - | 0.05=0.05meter=50mm |



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