

PIEZOELECTRIC ACCELEROMETER

MODEL 1017A

- **Small Size, Light Weight (2.8 grams)**
- **Frequency Response to 5 KHz**
- **Resonance Frequency at 21 KHz**
- **Good for Shock Measurements**
- **No External Power Required**
- **Adhesive Mounting**



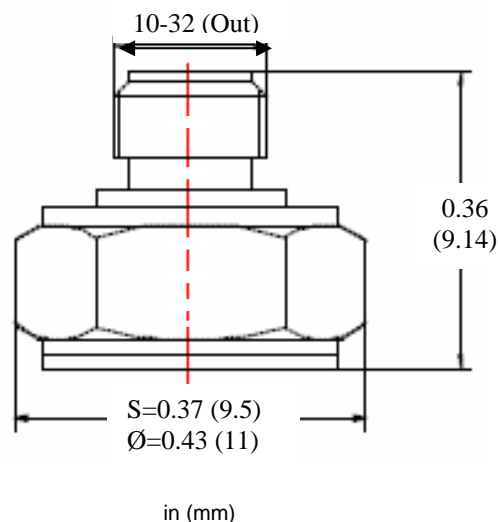
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Description

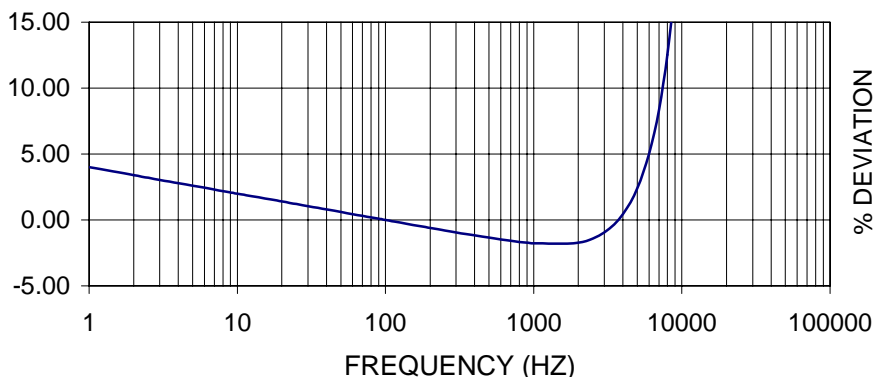
The VIP Sensors Model 1017A is a small piezoelectric accelerometer for vibration measurement on small structures and objects. Its light weight of 2.8 grams (without the low-noise cable) effectively minimizes mass loading. The accelerometer is a self-generating device that requires no external power source for operation.

The Model 1017A exhibits a broad frequency response range and a high resonance frequency. Low-noise, flexible coaxial cables are used for error-free operation.

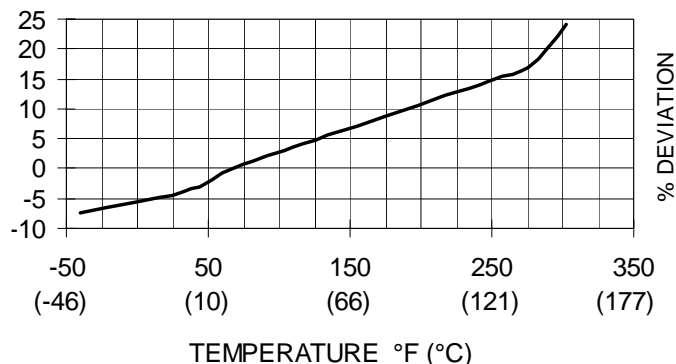
VIP Sensors Signal Conditioner Models 5002 and 5005 are recommended for use with this high impedance accelerometer.



Typical Amplitude Response



Typical Temperature Response



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SPECIFICATIONS

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C) and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

| | UNITS | |
|--|------------------------|--|
| DYNAMIC CHARACTERISTICS | | |
| Axial Sensitivity | pC/g | 2 |
| Transverse Sensitivity | % | ≤ 5 |
| Frequency Response | | See Typical Amplitude Response |
| Resonance Frequency | Hz | 21,000 |
| Amplitude Response [1] | | |
| ± 5 % | Hz | 1 to 5000 |
| ± 1 dB | Hz | 0.5 to 7000 |
| Temperature Response | | See Typical Temperature Response |
| Amplitude Linearity | % | < 1 |
| ELECTRICAL CHARACTERISTICS | | |
| Output Polarity | | Acceleration directed from the base into the transducer is defined as positive |
| Resistance | GΩ | >1 |
| Capacitance | pF | 300 |
| Grounding | | Signal ground connected to case |
| ENVIRONMENTAL CHARACTERISTICS | | |
| Temperature Range | | -40°F to 302°F (-40°C to +150°C) |
| Humidity | | Epoxy sealed |
| Shock Limit | g pk | 2000 |
| Base Strain | equiv. g pk/μ strain | 0.002 |
| Magnetic Field Sensitivity | equiv. g rms/gauss (T) | 1E-5 (1) |
| Thermal Transient Sensitivity | equiv. g pk/°F (°C) | 0.018 (0.01) |
| PHYSICAL CHARACTERISTICS | | |
| Weight | oz (grams) | 0.1 (2.8) |
| Case Material | | Stainless Steel |
| Mounting | | Adhesive [2] |
| Piezoelectric Material | | PZT-5 |
| Structure | | Annular Shear |
| Output Connector | | 10-32 receptacle, top mounting |
| ACCESSORIES | | |
| Included: | | Optional: |
| 9006-120 Cable, Low Noise 10-32/10-32, 10 ft (3.3 m) | | 9604 Cable Adapter 10-32/10-32 (extend cable length) |
| Calibration Certificate | | |

NOTES

- Low end response of the transducer is a function of its electronics.
- Adhesives such as cyanoacrylate epoxy (super glue), petro-wax and hot-melt glue and may be used to mount the accelerometer.