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**

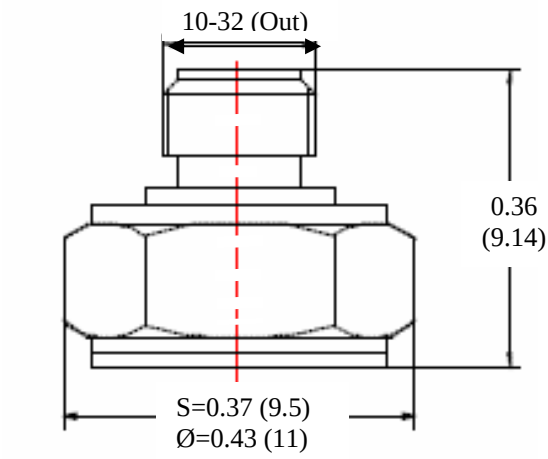
actual size

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.

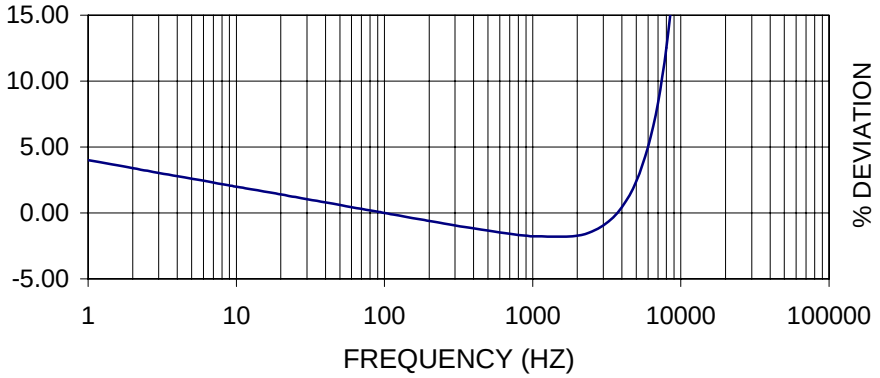
The Model 1017A exhibits a broad frequency response range and a high resonance frequency. Low-noise, flexible coaxial cables are used for error-free operation.

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

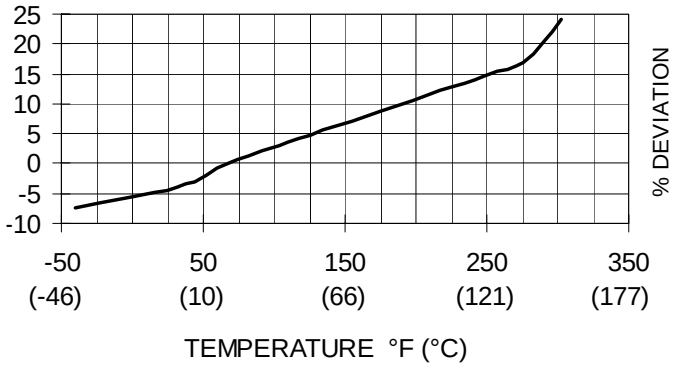


in (mm)

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:

9006-120 Cable, Low Noise 10-32/10-32, 10 ft (3.3 m)

Calibration Certificate

Optional:

9604 Cable Adapter 10-32/10-32 (extend cable length)

NOTES

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