

# PIEZOELECTRIC ACCELEROMETER

## MODEL 1021A

- Miniature Design
- Ideal for High g Shock Measurements
- Frequency Response to 12 kHz
- Thru-Hole Bolt or Adhesive Mounting
- 360° Cable Orientation
- Replaceable Cable

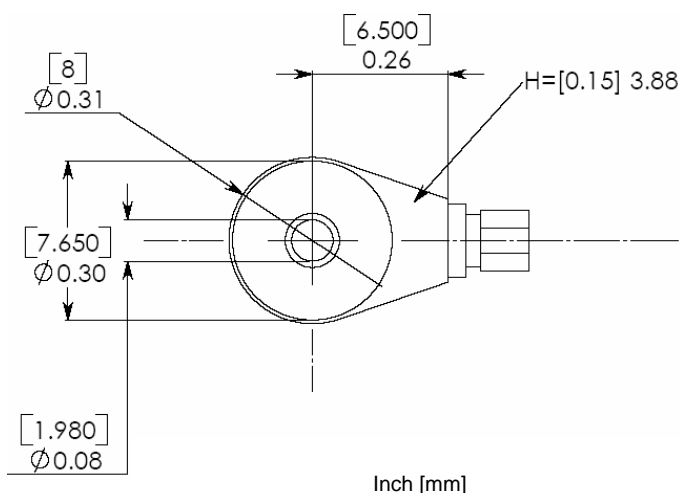


### Description

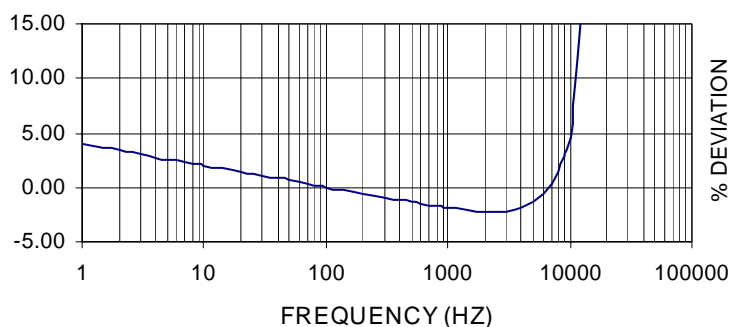
The VIP Sensors Model 1021A is a miniature piezoelectric accelerometer designed for shock and vibration measurements on small structures and objects. Its light weight minimizes or eliminates any mass loading effects on the object being tested. The accelerometer is a high-impedance, self-generating device that requires no external power source for operation.

The Model 1021A incorporates a thru-hole mounting design that allows for cable orientation in any direction. The unit is sealed against external contamination. Signal ground is connected to the outer case of the unit. The accelerometer features a M3 connector that is used with low-noise coaxial cable for connecting to signal conditioning electronics.

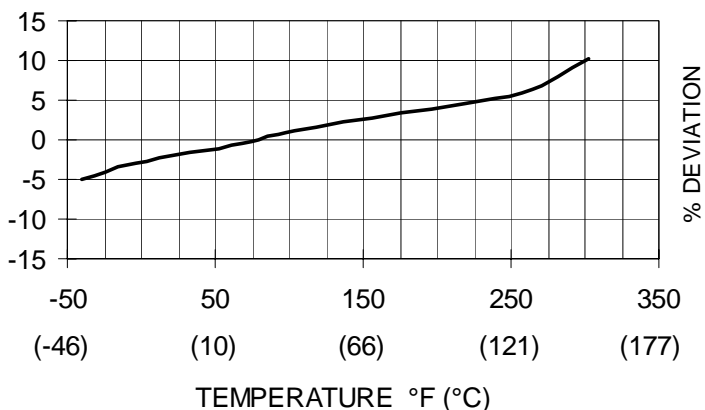
VIP Sensors Signal Conditioner Models 5002 and 5005 are recommended for use with this high impedance accelerometer.



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	
<b>DYNAMIC CHARACTERISTICS</b>		
Axial Sensitivity	pC/g	2 (1.7 minimum)
Transverse Sensitivity	%	≤ 5
Frequency Response		See Typical Amplitude Response
Resonance Frequency	Hz	40,000
Amplitude Response [1]		
± 5 %	Hz	2 – 10,000
± 1 dB	Hz	1 – 12,000
Temperature Response		See Typical Temperature Response
Amplitude Linearity	%	< 1
<b>ELECTRICAL CHARACTERISTICS</b>		
Output Polarity		Acceleration directed from the base into the transducer is defined as positive
Resistance	GΩ	>1
Capacitance	pF	1,000
Grounding		Signal ground connected to case
<b>ENVIRONMENTAL CHARACTERISTICS</b>		
Temperature Range	°F (°C)	-40 to +302 (-40 to +150)
Humidity		Epoxy sealed
Shock Limit	g pk	5,000
Base Strain	equiv. g pk/μ strain	0.005
Magnetic Field Sensitivity	equiv. g rms/gauss (T)	5E-6 (0.5)
Thermal Transient Sensitivity	equiv. g pk/°F (°C)	0.05 (0.09)
<b>PHYSICAL CHARACTERISTICS</b>		
Weight	oz (grams)	0.05 (1.4)
Case Material		Aluminum Alloy
Mounting		Thru-hole screw, torque 2 N-m (18 lbf-in)
Piezoelectric Material		PZT-5
Structure		Annular Shear
Output Connector		M3 receptacle

### ACCESSORIES

#### Included:

9009L10 Cable, Low Noise M3/10-32, 10ft (3.3 m)

Mounting Screw  
Calibration Certificate

#### Optional:

9604 Cable Adapter 10-32/10-32  
(extend cable length)  
9006L10 Cable, Low Noise 10-32/10-32, 10 ft (3.3 m)

### NOTES

- Low end response of the transducer is a function of its electronics.