

PIEZOELECTRIC ACCELEROMETER

MODEL 1021B

- **Miniature Design**
- **Lightweight - 1.4 grams**
- **Ideal for High g Shock Measurements**
- **Frequency Response to 12 kHz**
- **Thru-Hole Bolt or Adhesive Mounting**
- **360° Cable Orientation**

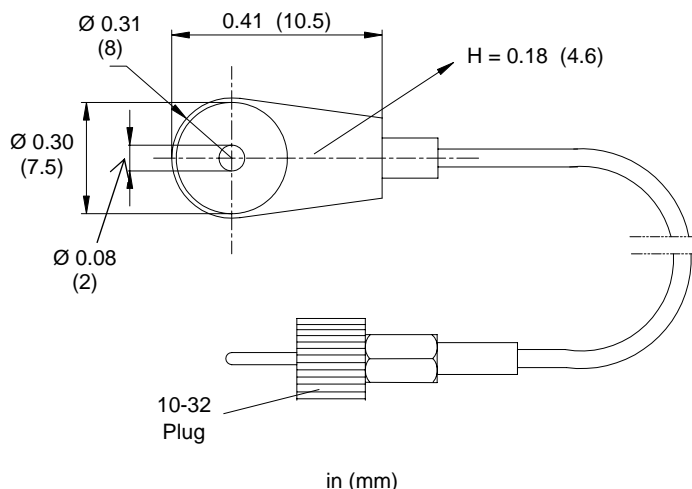


Description

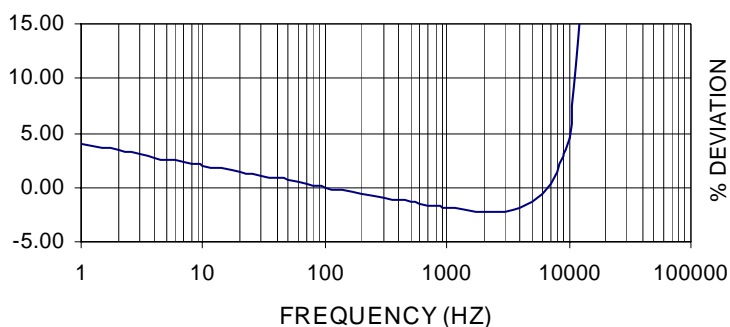
The VIP Sensors Model 1021B is a miniature piezoelectric accelerometer designed for shock and vibration measurements on small structures and objects. Its mass of only 1.4 grams minimizes or eliminates any mass loading effects on the object being tested. The accelerometer is a high-impedance, self-generating device that requires no external power source for operation.

The Model 1021B 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, but can be electrically isolated from ground when used with an isolated mounting bolt. The accelerometer features an integral cable with a 10-32 plug for connecting to signal conditioning electronics.

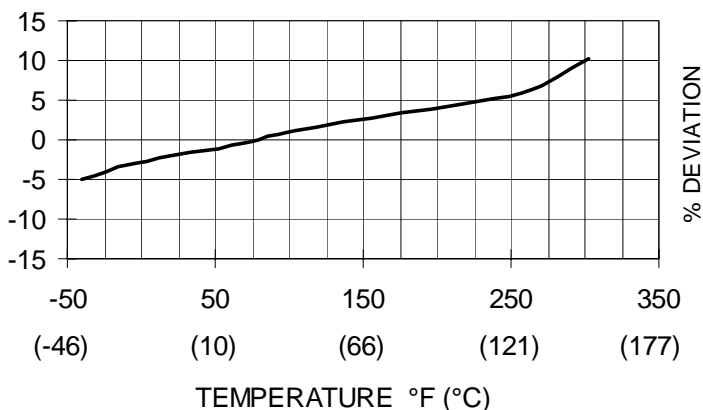
VIP Sensors Signal Conditioner Models 5002 and 5005 are recommended for use with this high impedance accelerometer.



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	
DYNAMIC CHARACTERISTICS		
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
ELECTRICAL CHARACTERISTICS		
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
ENVIRONMENTAL CHARACTERISTICS		
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)
PHYSICAL CHARACTERISTICS		
Weight	oz (grams)	0.05 (1.4)
Case Material		Aluminum Alloy
Mounting		Thru-hole bolt, torque 2 N-m (18 lbf-in)
Piezoelectric Material		PZT-5
Structure		Annular Shear
Output Connector		10-32 plug with integral cable, 10 ft (3.3 m)
ACCESSORIES		
Included:		Optional:
Mounting Screw		9604 Cable Adapter 10-32/10-32 (extend cable length)
Calibration Certificate		9006-120 Cable, Low Noise 10-32/10-32, 10 ft (3.3 m)

NOTES

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