

PIEZOELECTRIC ACCELEROMETER

MODEL 1010A

- **Small Size, Light Weight (1.2 grams)**
- **1 pC/g Sensitivity**
- **Frequency Response to 15 KHz**
- **Resonance Frequency at 50 KHz**
- **Adhesive Mounting**

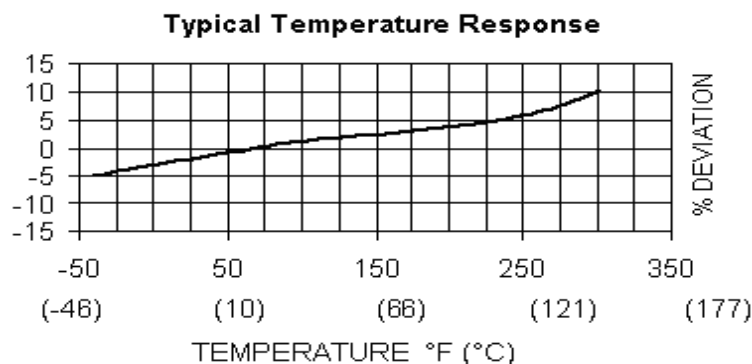
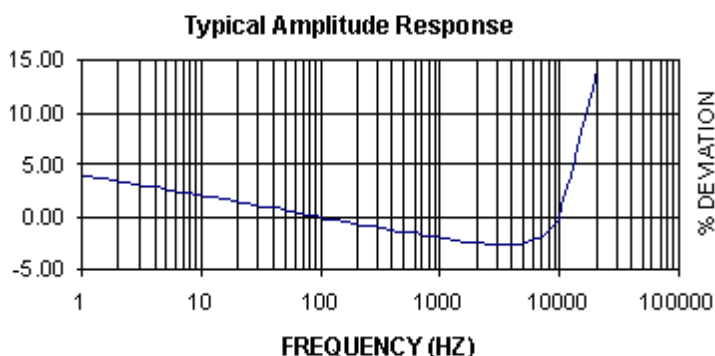
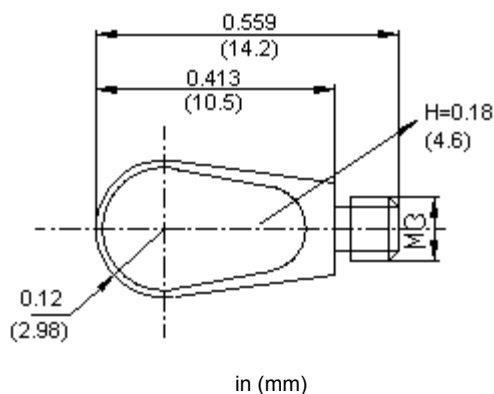


Description

The VIP Sensors Model 1010A is a miniature piezoelectric accelerometer for vibration measurement on mini-structures and small objects. Its light weight of 1.2 grams effectively minimizes mass loading. The accelerometer is a self-generating device that requires no external power source for operation.

The Model 1010A exhibits a broad frequency response range and a high resonance frequency. It utilizes a piezoelectric crystal material that exhibits stable output sensitivity over the operating temperature range. The accelerometer features a M3 connector for low-noise, flexible coaxial cables that are used for error-free operation.

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



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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, typical	pC/g	1.2 (0.9 minimum)
Transverse Sensitivity	%	≤ 5
Frequency Response		See Typical Amplitude Response
Resonance Frequency	Hz	50,000
Amplitude Response		10 – 15,000
± 5 %		
± 1 dB	Hz	5 – 20,000
Temperature Response		See Typical Temperature Response
Amplitude Linearity	%	< 1
ELECTRICAL CHARACTERISTICS		
Output Polarity		Acceleration directed from base into the transducer defined as positive
Resistance	GΩ	>1
Capacitance	pF	500
Grounding		Signal ground connected to case
ENVIRONMENTAL CHARACTERISTICS		
Temperature Range		-4°F to 302°F (-40°C to +150°C)
Humidity		Epoxy sealed
Shock Limit	g pk (m/s ² pk)	20,000 (196,13)
Base Strain	equiv. g /μstrain	0.005
Magnetic Field Sensitivity	equiv. g rms /gauss (°T)	5E-4 (5)
Thermal Transient Sensitivity	equiv. g /°C	0.005
PHYSICAL CHARACTERISTICS		
Weight	oz (grams)	0.04 (1.2)
Case Material		Stainless Steel
Mounting		Adhesive
Piezoelectric Material		PZT-5
Structure		Annular Shear
Output Connector		M3 Coax
ACCESSORIES		
Included:		Optional:
9004L10 Coaxial Cable 10-32/M3, 10ft (3.3 m)		9604 Cable Adapter 10-32/10-32 (extend cable length)
Calibration Certificate		9006L10 Coaxial Cable 10-32/10-32, 10 ft (3.3 m)

NOTES

- Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors.