

# PIEZOELECTRIC ACCELEROMETER

## MODEL 1400A

- Very High Sensitivity at 1000 pC/g
- Low-g Measurement Applications
- Frequency Response Down to 0.3 Hz
- Side Connector
- Stud Mounted



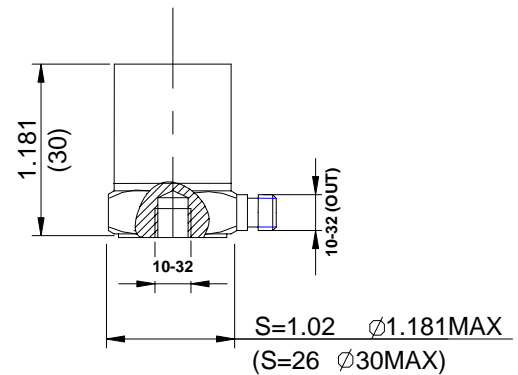
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### Description

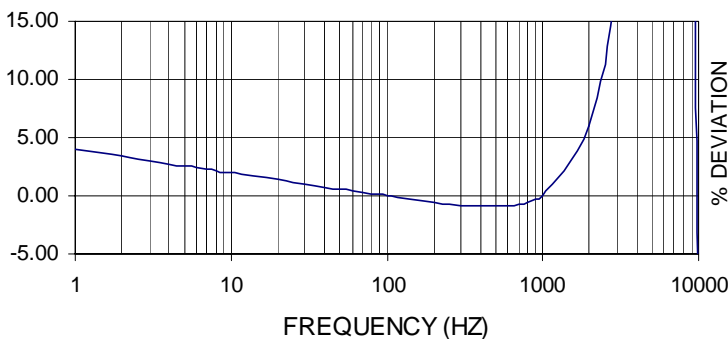
The VIP Sensors Model 1400A is a stud mounted piezoelectric accelerometer designed for general vibration measurement on structures and objects. The high sensitivity (1000 picocoulombs per g) makes it very useful low-g measurement applications. The accelerometer is a self-generating device that requires no external power source for operation.

The Model 1400A design is sealed against external contamination. Signal ground is connected to the outer case of the unit. When used with an isolated mounting stud, the accelerometer is electrically isolated from ground. The accelerometer features a 10-32 side connector that is used with low-noise coaxial cable for error-free operation.

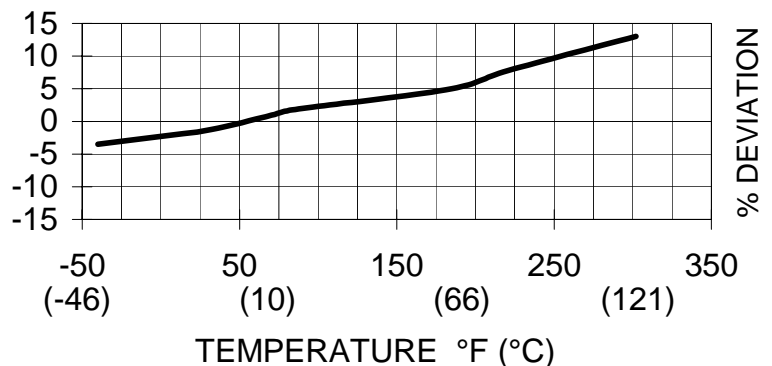
VIP Sensors Signal Conditioner Models 5002 and 5005 are recommended for use with this high impedance accelerometer.



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	
<b>DYNAMIC CHARACTERISTICS</b>		
Axial Sensitivity	pC/g	1000 (850 minimum)
Transverse Sensitivity	%	≤ 5
Frequency Response		See Typical Amplitude Response
Resonance Frequency	Hz	7,000
Amplitude Response [1]		
± 5 %	Hz	1 – 2,000
± 1 dB	Hz	0.3 – 2,500
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	500
Grounding		Signal ground connected to case
<b>ENVIRONMENTAL CHARACTERISTICS</b>		
Temperature Range		-40°F to 302°F (-40°C to +150°C)
Humidity		Epoxy sealed
Shock Limit	g pk	200
Base Strain	equiv. g pk/μ strain	0.0002
Magnetic Field Sensitivity	equiv. g rms/gauss (T)	1.2E-5 (1.2)
Thermal Transient Sensitivity	equiv. g pk/°F (°C)	0.01 (0.018)
<b>PHYSICAL CHARACTERISTICS</b>		
Weight	oz (grams)	3.5 (100)
Case Material		Stainless Steel
Mounting		10-32, torque 2 N-m (18 lbf-in)
Piezoelectric Material		PZT-5
Structure		Annular Shear
Output Connector		10-32 receptacle, side mounting

### ACCESSORIES

#### Included:

9006L10 Cable, Low Noise 10-32/10-32, 10 ft (3.3 m)  
9504-8 Mounting Stud 10-32/10-32

Calibration Certificate

#### Optional:

9505-8 Mounting Stud, Isolated 10-32/10-32  
9604 Cable Adapter 10-32/10-32  
(extend cable length)

### NOTES

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