

PIEZOELECTRIC ACCELEROMETER

MODEL 1100A

- Shock Measurements to 50,000 g
- Broad Frequency Response to 15 KHz
- High Resonance Frequency at 45 KHz
- Top Connector
- Stud Mounted



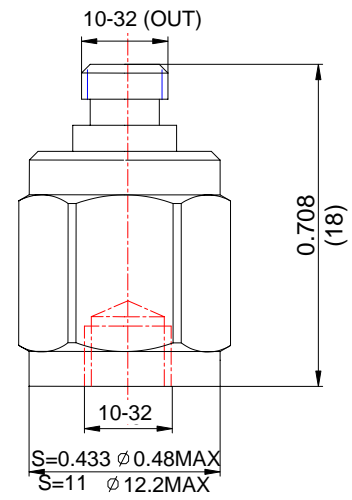
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Description

The VIP Sensors Model 1100A is a stud mounted piezoelectric accelerometer designed for shock measurements to 50,000 g. It has a broad frequency response range and a high resonance frequency. The accelerometer is a self-generating device that requires no external power source for operation.

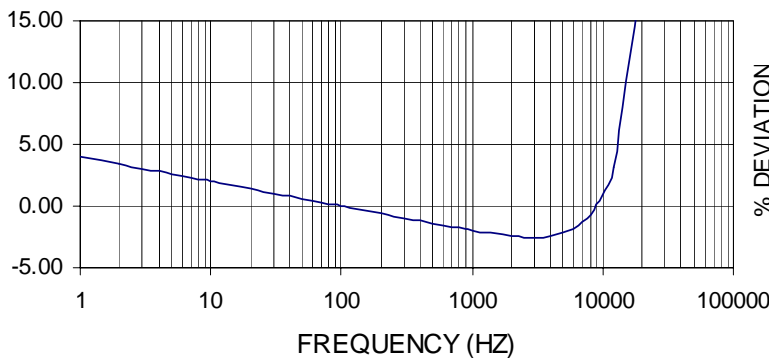
The Model 1100A design is a stainless steel welded case construction that is hermetically sealed against external contamination. Signal ground is connected to the outer case of the unit. When used with an isolated mounting stud, the accelerometer is electrically isolated from ground. The accelerometer features a 10-32 top 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.

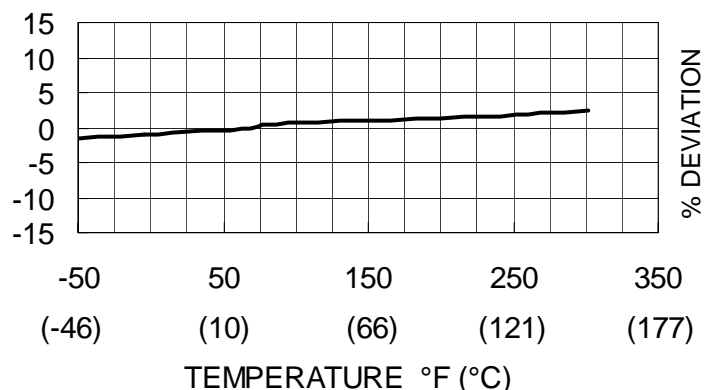


in (mm)

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	0.03 (0.02 minimum)
Transverse Sensitivity	%	≤ 5
Frequency Response		See Typical Amplitude Response
Resonance Frequency	Hz	45,000
Amplitude Response [1]		
± 5 %	Hz	10 – 12,000
± 1 dB	Hz	2 – 15,000
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	7
Grounding		Signal ground connected to case
ENVIRONMENTAL CHARACTERISTICS		
Temperature Range		-65°F to 482°F (-54°C to +250°C)
Humidity		Hermetically sealed, welded construction
Shock Limit	g pk	50,000
Base Strain	equiv. g pk/μ strain	0.0025
Magnetic Field Sensitivity	equiv. g rms/gauss (T)	2E-6 (0.2)
Thermal Transient Sensitivity	equiv. g pk/°F (°C)	0.1 (0.18)
PHYSICAL CHARACTERISTICS		
Weight	oz (grams)	0.35 (10)
Case Material		Stainless Steel
Mounting		10-32, torque 2 N-m (18 lbf-in)
Piezoelectric Material		Quartz
Structure		Center Compression
Output Connector		10-32 receptacle, top mounting
ACCESSORIES		
Included:		
9006-120	Cable, Low Noise 10-32/10-32, 10 ft (3.3 m)	
9504-8	Mounting Stud 10-32/10-32, x2	
Calibration Certificate		
Optional:		
9505-8	Mounting Stud, Isolated 10-32/10-32	
9604	Cable Adapter 10-32/10-32 (extend cable length)	

NOTES

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