

INTEGRAL ELECTRONICS (IEPE) PIEZOELECTRIC ACCELEROMETER

MODEL 2401A

- Measurement Range to 50 g
- Sensitivity at 100 mV/g
- Frequency response to 5 KHz
- Low Impedance Output
- Stud Mounted

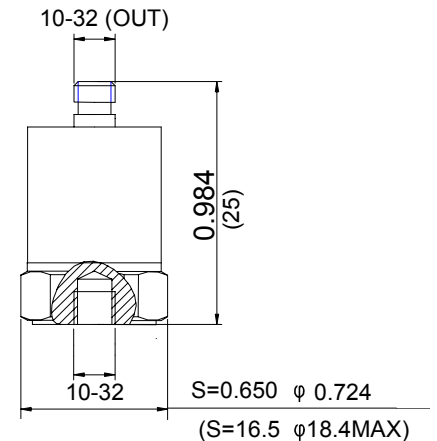


Description

The VIP Sensors Model 2401A is a stud mounted piezoelectric accelerometer designed for vibration measurements up to 50 g. It offers a sensitivity of 100 mV/g and a frequency response to 5 KHz. The accelerometer transmits its low impedance voltage output through the same cable that supplies the constant current power.

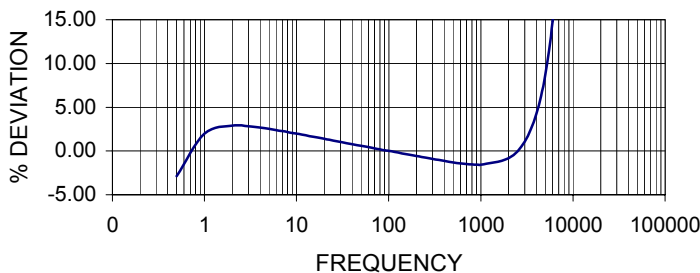
The Model 2401A design is a welded stainless steel construction that is hermetically sealed against external contamination. Signal return is isolated from the outer case of the unit. The accelerometer features a 10-32 top connector that is used with coaxial cable for error-free operation.

VIP Sensors Signal Conditioner Models 5005, 5100 and 5102 are recommended for use with this low impedance accelerometer.

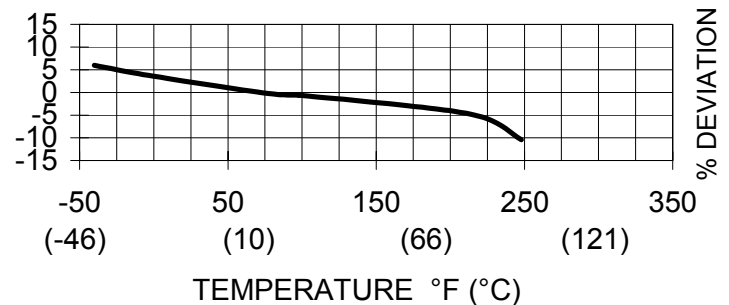


In (mm)

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			
Range	g (m/s ²)	50 (490.3)	
Voltage Sensitivity, typical	mV/g (mV/m/s ²)	100 (10.20)	
Transverse Sensitivity	%	≤ 5	
Frequency Response		See Typical Amplitude Response	
Resonance Frequency	Hz	15,000	
Amplitude Response			
± 5 %	Hz	2 – 4,000	
± 1 dB	Hz	1 – 5,000	
Temperature Response		See Typical Temperature Response	
Amplitude Linearity	%	< 1	
ELECTRICAL CHARACTERISTICS			
Output Polarity		Acceleration directed from base into the transducer defined as positive	
Power Source Voltage (Constant Current)	VDC	+12 to +28	
Supply Current	mA	2 to 10	
Bias Voltage	V	7 ±1	
Full Scale Output Voltage (peak)	Vp	≤ 5	
Output Impedance	Ω	< 100	
Noise	mg (mm/s ²)	< 0.04 (<0.39)	
Grounding		Signal return isolated from case	
ENVIRONMENTAL CHARACTERISTICS			
Temperature Range		-4°F to 248°F (-20°C to +120°C)	
Humidity		Hermetically sealed, welded construction	
Shock Limit	g pk (m/s ² pk)	2000 (19,613)	
Base Strain	equiv. g /μstrain	0.0002	
Magnetic Field Sensitivity	equiv. g rms /gauss (°T)	1.5E-5 (1.5)	
Thermal Transient Sensitivity	equiv. g /°C	0.008	
PHYSICAL CHARACTERISTICS			
Weight	oz (grams)	0.8 (24)	
Case Material		Stainless Steel	
Mounting		10-32	
Piezoelectric Material		PZT-5	
Structure		Annular Shear	
Output Connector		10-32 receptacle, top mounting	
ACCESSORIES			
Included:		Optional:	
9005L10	Coaxial Cable 10-32/BNC, 10ft (3.3 m)	9006L10	Coaxial Cable 10-32/10-32, 10 ft (3.3 m)
9504-8	10-32/10-32 Mounting Stud	9505-8	10-32/10-32 Isolated Mounting Stud
	Calibration Sheet	9505-15	10-32/Isolated Adhesive Mounting Plate

NOTES

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