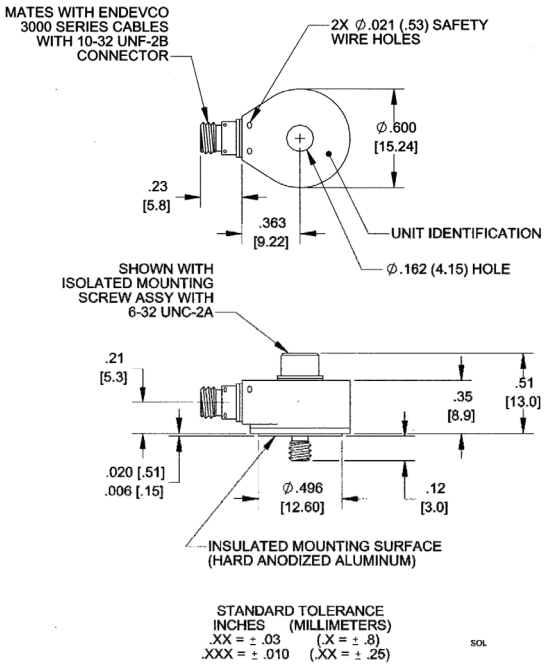
ENDEVCO
AN AMPHENOL COMPANY

Piezoelectric accelerometer

Model 7221A



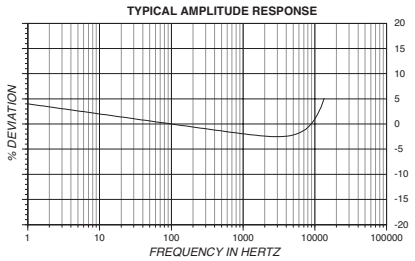
Key features

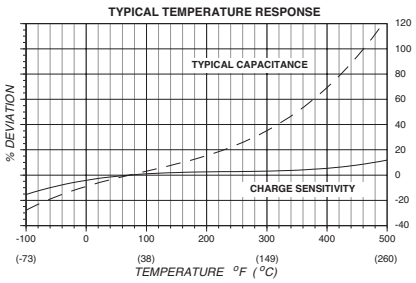
- 360° cable orientation
- Hermetically sealed
- To +500°F (+260°C)
- Requires no external power
- General purpose, aerospace applications

Model 7221A is a small, piezoelectric accelerometer designed specifically for general vibration measurement. The accelerometer offers wide bandwidth and operational temperature range, it is also hermetically sealed for high reliability. Its light weight (10.5 gm) effectively minimizes mass loading effects on small structures. This accelerometer is a self-generating device that requires no external power source for operation.

7221A features Endevco's Piezite® type P-8 crystal element, operating in annular shear mode, which exhibits low base strain sensitivity and excellent output stability over time. Signal ground is connected to the outer case of the unit. When used with an isolated mounting screw, it is electrically isolated from ground. The centrally located mounting bolt permits 360° cable orientation, a very desirable feature in many applications. The supplied low-noise coaxial cable is required for error-free operation.

Signal conditioner models 133, 2775B, 2771C, 6634C, Oasis 2000 (4990A-X with 428 and/or 433 cards) are recommended for use with this accelerometer.





Our measurement product competencies:
Piezoelectric accelerometers | Piezoresistive accelerometers | Isotron accelerometers | Variable capacitance accelerometers | Pressure transducers | Acoustic sensors | Electronic instruments | Calibration systems | Shakers | Modal hammers | Cable assemblies

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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.

Dynamic characteristics	Units	7221A
Charge sensitivity		
Typical	pC/g	10
Minimum	pC/g	7.5
Frequency response		See typical amplitude response
Typical		45
Minimum		40
Resonance frequency	kHz	45
Amplitude response [1]		
±5%	Hz	1 to 10 000
±1 dB (reference)	Hz	.1 to 12 000
Temperature response		See typical curve
Transverse sensitivity	%	≤ 5
Amplitude linearity	%	1
Per 350 g, 0 to 2000 g		

Electrical characteristics		
Output polarity		Acceleration directed into base produces positive output.
Resistance	GΩ	≥ 20
at +500°F (+260°C)	GΩ	≥ 1
Isolation	MΩ	≥ 10
Capacitance	pF	850
Grounding		Signal ground connected to case and isolated from mounting surface by insulated screw assembly.

Environmental characteristics		
Temperature range		-67°F to +500°F (-55°C to +260°C)
Humidity		Hermetically sealed
Sinusoidal vibration limit	g pk	1000
Shock limit [2]	g pk	5000
Base strain sensitivity	equiv. g pk/μ strain	0.04
Thermal transient sensitivity	equiv. g/°F (/°C)	0.004 (0.007)

Physical characteristics		
Dimensions		See outline drawing
Weight	oz (gm)	0.37 (10.5)
Case material		Stainless steel
Connector		10-32 receptacle, mates with Endevco 3000 series cable.
Mounting torque [3]	lbf-in (Nm)	10 (1.1)

Calibration		
Supplied		
Charge sensitivity	pC/g	
Capacitance	pF	
Maximum transverse sensitivity	%	
Frequency response	%	20 Hz to 10 kHz

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Accessories

Product	Description	7221A
3090C-120	Cable assembly, 10 ft	Included
10207	Isolated mounting screw assembly, 6-32	Included
EHM49	Allen wrench 7/64	Included
27580	Non-isolated mounting washer	Optional
EH303	Screw, cap 6-32 x1/2	Optional
EH700	Non-isolated mounting screw, metric 4mm	Optional
2987	Adhesive mounting	Optional
2950	Triaxial mounting block	Optional
133	Signal conditioner	Optional
2771C	In-line charge converter IEPE powered	Optional
2775B	Signal conditioner	Optional
6634C	Signal conditioner -does not support i-TEDS	Optional
4990A-X	OASIS 2000 computer-controlled system with 428 and/or 433	Optional
31741	Isolated mounting screw assembly 4mm	Optional

Notes

1. Low-end response of the transducer is a function of its associated electronics.
2. Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. Request the TP290 for more details.
3. Mounting torque for use with optional mounting screws, or equivalent 6-32 screw.
4. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at +1 (866) 363-3826 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.

Contact

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