

ISOTRON® Accelerometer

**ENDEVCO
MODEL
7251A-10
-100
-500**

Model 7251A-10, -100 and 500

- Hermetically Sealed
- Wide Bandwidth
- New Low Profile
- 360° Cable Orientation
- Machine Tool Measurements, Shaker Tables, Flight Test / Aerospace



Actual size

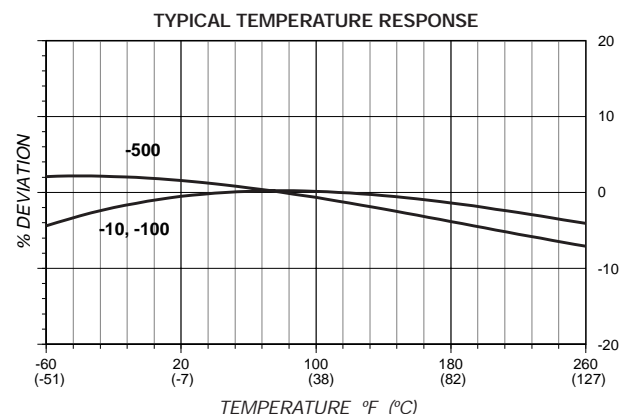
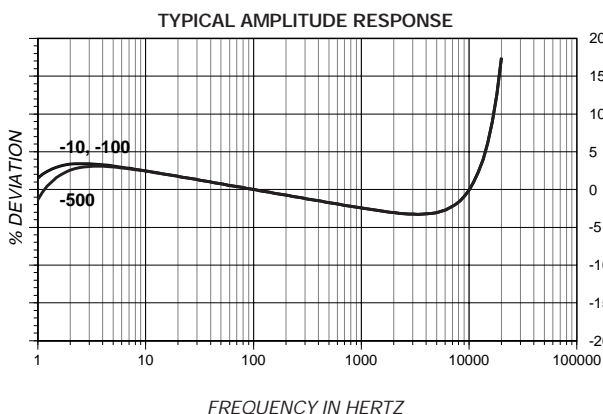
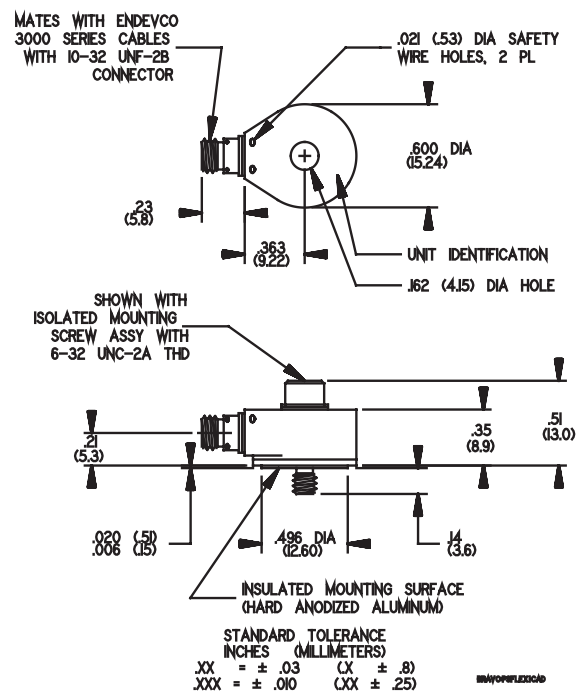


DESCRIPTION

The ENDEVCO® Model 7251A is a small piezoelectric accelerometer with integral electronics, designed specifically for measuring vibration on most structures. The unit is hermetically sealed against environment contamination, offers high output sensitivity, and wide bandwidth. This new light weight (10.5 gm) design effectively minimizes mass loading effects.

The Model 7251A 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. This accelerometer incorporates an internal hybrid signal conditioner in a two-wire system, which transmits its low impedance voltage output through the same cable that supplies the constant current power. Signal ground is connected to outer case of the unit and, when used with the supplied 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. A model number suffix indicates sensitivity in mV/g; i.e., 7251A-10 features output sensitivity of 10 mV/g.

ENDEVCO Signal Conditioner Models 133, 2792B, 2793, 2775A or OASIS 2000 Computer-Controlled System are recommended for use with this 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), 4 mA, and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

DYNAMIC CHARACTERISTICS	Units	-10	-100	-500
RANGE	g	±500	±50	±10
VOLTAGE SENSITIVITY, ±10% [1]	mV/g	10	100	500
FREQUENCY RESPONSE				
Resonance Frequency	kHz		45	
Amplitude Response [2]				
±5%	Hz	1 to 10 000	1 to 10 000	1 to 10 000
±1 db	Hz	.5 to 20 000	.5 to 20 000	.5 to 20 000
TRANSVERSE SENSITIVITY	%		≤ 5	
TEMPERATURE RESPONSE			See Typical Curve	
AMPLITUDE NONLINEARITY, to F.S. [3]	%	≤1	≤1	≤2

OUTPUT CHARACTERISTICS

OUTPUT POLARITY	Acceleration directed into base produces positive output			
DC OUTPUT BIAS VOLTAGE	Vdc		+11.3 to +12.7	
OUTPUT IMPEDANCE	Ω		≤ 100	
FULL SCALE OUTPUT VOLTAGE	V		±5	
RESOLUTION .5 to 20 kHz	equiv. g rms	0.001	0.00025	0.00015
OVERLOAD RECOVERY	μs		≤ 10	
GROUNDING	Signal ground connected to case and Isolated from mounting surface			

POWER REQUIREMENT

COMPLIANCE VOLTAGE	Vdc		+18 to +24	
SUPPLY CURRENT	mA		+2 to +10	
WARM-UP TIME	sec		< 5	

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE	-67°F to +257°F (-55°C to +125°C)			
HUMIDITY	Hermetically sealed			
SINUSOIDAL VIBRATION LIMIT	g pk		500	
SHOCK LIMIT	g pk		5000	
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain		0.04	
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (°C)		0.02 (0.036)	
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss		0.00004	

PHYSICAL CHARACTERISTICS

DIMENSIONS	See Outline Drawing			
WEIGHT	gm (oz)		10.5 (0.37)	
CASE MATERIAL	Stainless Steel			
CONNECTOR	10-32 receptacle, side mounted, mates with Endevco 3000 series cable			
MOUNTING TORQUE	lbf-in (Nm)		10 (1.1)	

CALIBRATION

SUPPLIED:				
VOLTAGE SENSITIVITY	mV/g			
MAXIMUM TRANSVERSE SENSITIVITY	%			
FREQUENCY RESPONSE	%		20 Hz to 10 kHz	

ACCESSORIES

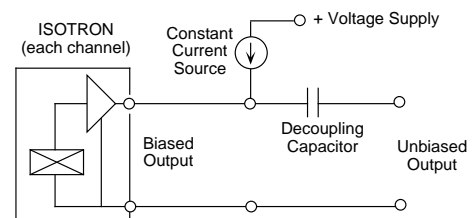
P/N 10207	ISOLATED MOUNTING SCREW ASSY, 6-32
P/N EHM49	ALLEN WRENCH, 7/64
Model 3061-120 (10 ft)	CABLE ASSEMBLY

OPTIONAL ACCESSORIES

Model 2987	ADHESIVE MOUNTING ADAPTOR
Model 2950M3	TRIAxIAL MOUNTING BLOCK
P/N EH303	NON-ISOLATED MTG. SCREW, 6-32
P/N 27580	NON-ISOLATED MTG. WASHERS, SST

NOTES

- ± 5% sensitivity on special order.
- ± 5% to 1 Hz available on special order.
- Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. Send for TP290 for more details.
- Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.



Model 133
3-Channel Signal Conditioner

Continued product improvement necessitates that Endevco reserve the right to modify these specifications without notice. Endevco maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the name Endevco synonymous with reliability.