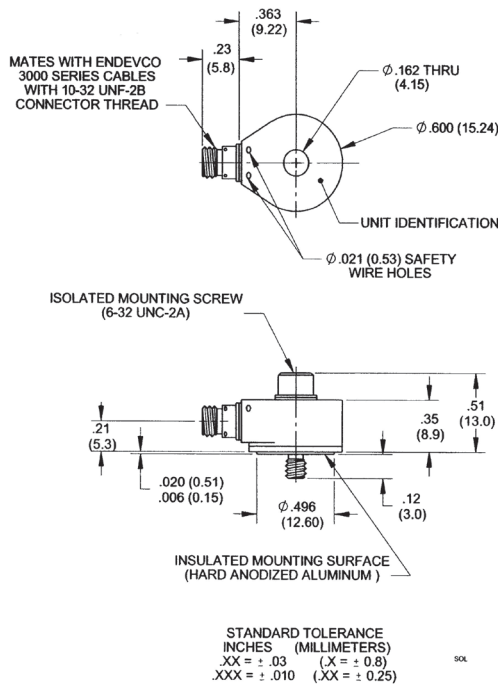


Isotron® accelerometer Model 7251A

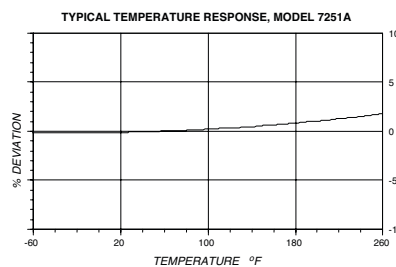
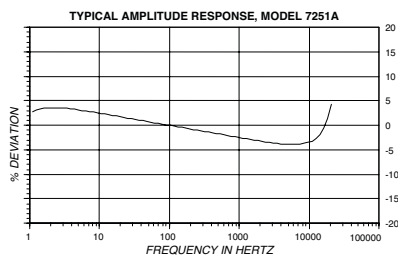


Key features

- Hermetically sealed
- Wide bandwidth
- Low profile, lightweight
- 360° cable orientation
- Machine tool measurements, shaker tables, flight test / aerospace

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.

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 the outer case of the unit and when used with the supplied isolated mounting screw, 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.



Isotron® accelerometer

Model 7251A

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	-10	-25	-50	-100	-500
Range	g (m/s ²)	±500 (4900)	±200 (1960)	±100 (980)	±50 (490)	±10 (98)
Voltage sensitivity, ±10%	mV/g (mV / m/s ²)	10 (1.02)	25	50	100 (10.2)	500 (51.0)
Frequency response				See typical curve		
Resonance frequency	kHz			45		
Amplitude response						
+/-10%	Hz			2 to 10,000		
+/-3%	Hz			2 to 20		
Transverse sensitivity	%			≤5		
Temperature response				See typical curve		
Amplitude nonlinearity, to F.S.	%	≤1	≤1	≤1	≤1	≤2

Output characteristics

Output polarity		Acceleration directed into base produces positive output				
DC output bias voltage	Vdc			+12.3 to +13.5		
-67°F to +257°F (-55°C to +125°C)	Vdc			+8.0 to +16.0		
Output impedance	Ω			≤100		
Full scale output voltage	V			±5		
Resolution .5 to 20 kHz	equiv. g rms	0.001	0.0005	0.0004	0.00025	0.00015
Overload recovery	μs			≤10		
Grounding		Signal ground connected to case and isolated from mounting surface				

Power requirement

Compliance voltage	Vdc			+23 to +30		
Supply current	mA			+2 to +20		
Warm-up	sec			<3		

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 [1]	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	oz (gm)			0.37 (10.5)		
Case material		Stainless steel				
Connector		10-32 receptacle, side mounted, mates with 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		

Isotron® accelerometer

Model 7251A

Accessories

Product	Description	7251A-10,-25,-50,-100,-250,500	7251A-10-R,-25-R,-50-R,-100-R,-500-R
10207	Isolated mounting screw assembly, 6-32	Included	Included
EHM49	Allen wrench, 7/64	Included	Optional
3061A-120	Cable assembly, 10 ft	Included	Optional
2987	Adhesive mounting adaptor	Optional	Optional
2950M3	Triaxial mounting block	Optional	Optional
EH303	Non-isolated mtg. screw, 6-32	Optional	Optional
31741	Isolated mounting screw assembly, 4mm	Optional	Optional
133	Signal conditioner	Optional	Optional
2793	Isotron signal conditioner	Optional	Optional
2775B	Signal conditioner	Optional	Optional
4990A-1	OASIS 2000 computer-controlled system	Optional	Optional

Notes

1. Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. See TP290 for more details.
2. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.

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