Endevco

Model 256 -10,-100 Isotron® accelerometer

Features

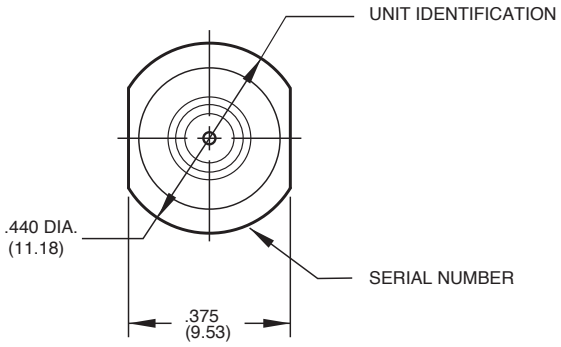
- Light weight (3.5 gm)
- Hermetically sealed
- Milli-g's resolution
- Flat to 10 kHz
- Various vibration and shock measurements on small structures
- Low cost, modal ready

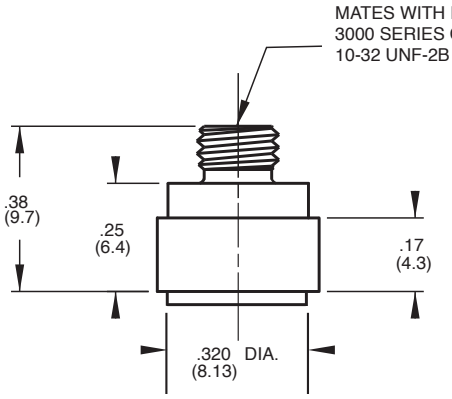
Description

The Endevco® model 256 is a small piezoelectric accelerometer with integral electronics, designed specifically for making modal and general vibration measurements on small structures. The transducer is designed for adhesive mounting. A dielectric layer isolates the case ground from the mounting surface. The hermetically sealed top connector and welded housing provide long-term reliability even in harsh environments. Its light weight (3.5 gm) effectively minimizes mass loading effects.

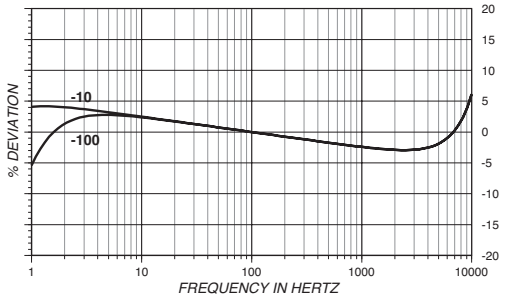
The model 256 features Endevco's unique Piezite® type P-8 crystal element, operating in annular shear mode, which exhibits excellent thermal transient stability. This accelerometer uses a built-in low noise microelectronic amplifier which transmits its low impedance voltage output through the same two-conductor cable that supplies the required constant current power. A model suffix indicates output sensitivity in mV/g; i.e., 256-10 features output sensitivity of 10 mV/g.

Endevco signal conditioner models 4416B, 133, 2793, 2775B, 4999, 6634C or Oasis 2000 (4990A-X with cards 428 and/or 433) computer-controlled system are recommended for use with this accelerometer.

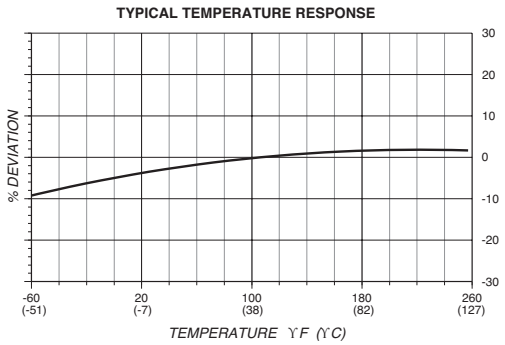




TYPICAL AMPLITUDE RESPONSE



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), 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
Range	g	±500	±50
Voltage sensitivity (±10%)	mV/g	10	100
Frequency response		See typical amplitude response	
Resonance frequency (typical)	kHz	20	20
minimum	kHz	16	16
Amplitude response (±10 %)	Hz	1 to 9000	1 to 9000
Temperature response		See typical curve	
-67°F (-55°C) max	%	-15	-15
+257°F (+125°C) max	%	+5	+5
Transverse sensitivity	%	≤5	≤5
Amplitude linearity	%	≤+1 to full scale	

Output characteristics			
Output polarity		Acceleration into the base produces positive output	
DC output bias voltage typical	Vdc	+8.5 to +11.5	+8.5 to +11.5
-67°F to 257°F (-55°C to 125°C)	Vdc	+6.5 to +13.0	+6.5 to +13.0
Output connection		See connection diagram	
Output impedance	Ω	≤200	≤200
Full scale output voltage	V	±5	±5
Residual noise (0.5 Hz to 10 kHz, broadband)			
typical	equiv. g rms	0.001	0.0003
Overload recovery	µsec	≤45	≤45
Grounding		Signal ground connects to case, and is isolated from the mounting surface by a dielectric layer.	

Power requirement			
Supply voltage	Vdc	+18 to +24	+18 to +24
Supply current	mA	+2 to +10	+2 to +10
Warm-up time (to within 10% of final bias)	sec	8	8
Stray voltage output			
(with 10 Vrms at 100 Hz applied to the mounting surface)	equiv. g	≤0.001	≤0.001

Environmental characteristics			
Temperature range		-67°F to +257°F (-55°C to +125°C)	
Humidity		Hermetically sealed	
Sinusoidal vibration limit	g	1000	1000
Shock limit	g	2000	2000
Base strain sensitivity	equiv. g / µ strain	0.0008	0.0008
Thermal transient sensitivity	equiv. g / °F (°C)	0.5 (0.9)	0.5 (0.9)
Electromagnetic sensitivity	equiv. g rms / gauss	0.01	0.001

Physical characteristics			
Dimensions		See outline drawing	
Weight	oz (gm)	0.12 (3.5)	0.12 (3.5)
Case material		Stainless steel	
Connector		Coaxial, 10-32 thread, mates with Endevco 3000 series cable	
Mounting		Isolated mounting surface provided for adhesive mounting	

Calibration			
Supplied:			
Sensitivity	mV/g		
Maximum transverse sensitivity	%		
Frequency response	%	20 Hz to 10 kHz	20 Hz to 10 kHz
	dB	10 kHz to 50 kHz	10 kHz to 50 kHz

Accessories

Product	Description	256-10,-100	256-10,-100 -R
32279	Mounting wax	Included	Optional
3061A-120	Cable assembly, 10 ft	Included	Optional
133	Signal conditioner	Optional	Optional
2775B	Signal conditioner	Optional	Optional
2793	Isotron signal conditioner	Optional	Optional
4416B	Signal conditioner	Optional	Optional
4999	Signal conditioner	Optional	Optional
6634C	Signal conditioner	Optional	Optional
4990A-X	Oasis 2000 computer-controlled system with cards 428 and/or 433	Optional	Optional

Notes

1. 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 turnaround time for these services as well as for quotations on our standard products.
2. To remove an epoxy mounted accelerometer, first soften the epoxy with an appropriate solvent and then twist the unit off. Damage to sensors caused by inappropriate removal procedures are not covered by Endevco's warranty.

CERTIFIED ISO 9001 — ACCREDITED — APPLIES TO CALIFORNIA FACILITY

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.

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