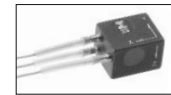


Piezoelectric Accelerometer

**ENDEVCO
MODEL
23**

Model 23

- World's Smallest Triaxial
- Very Light Weight (0.8 gm)
- Ground Isolated
- Adhesive Mounting
- Disk Drive, Circuit Board and Scale Model Testing



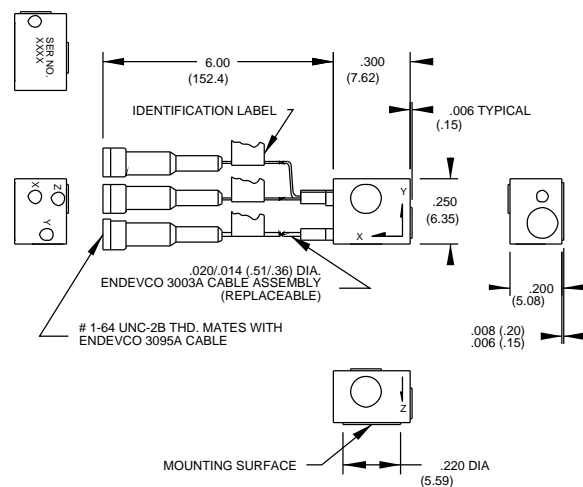
Actual size

DESCRIPTION

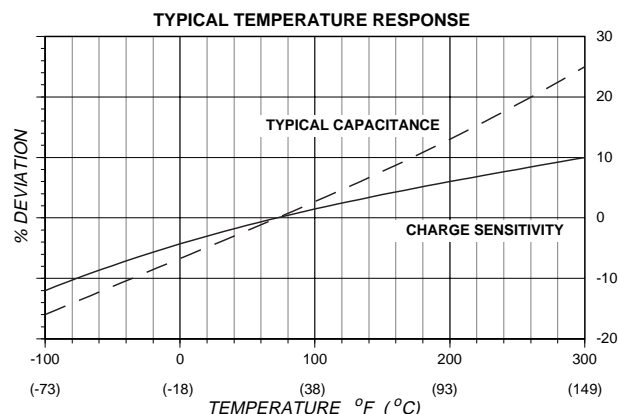
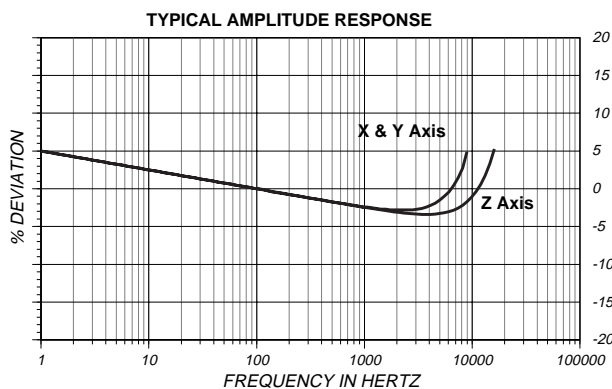
The ENDEVCO® Model 23 is the world's smallest triaxial piezoelectric accelerometer. It is designed specifically for vibration measurement in three orthogonal axes on small objects such as scaled models, circuit boards, and disk drives. Its light weight (.8 gm) without the replaceable low-noise cables, effectively eliminates mass loading. All three low-noise cables exit from a single surface to allow mounting flexibility. The accelerometer is a self-generating device that requires no external power source for operation.

The Model 23 features ENDEVCO's PIEZITE® Type P-8 crystal element, operating in radial shear mode, which exhibits excellent long term output sensitivity stability. Signal ground is isolated from the mounting surface of the unit by a hard anodized surface. Specially designed low-noise coaxial cables are supplied for error-free operation. A unit/cable removal tool is included in the package to ensure proper removal in the field.

ENDEVCO Signal Conditioner Models 133, 2775A or OASIS 2000 Computer-Controlled System are recommended for use with this high impedance accelerometer.



STANDARD TOLERANCE
INCHES (MILLIMETERS)
.XX = +/- .02 (X = +/- .5)
.XXX = +/- .010 (XX = +/- .25)



Piezoelectric Accelerometer

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	
CHARGE SENSITIVITY		
TYPICAL	pC/g	0.40
FREQUENCY RESPONSE		See Typical Amplitude Response
RESONANCE FREQUENCY	kHz	50
AMPLITUDE RESPONSE [1]		
Axis: ±5% (x,y,z)	Hz	1 to 10 000
±dB (x,y)	Hz	1 to 10 000
±1dB (z)	Hz	.5 to 10 000
TEMPERATURE RESPONSE		See Typical Curve
TRANSVERSE SENSITIVITY	%	≤ 5
AMPLITUDE LINEARITY [3]	%	1
Per 250 g, 0 to 2000 g		

ELECTRICAL CHARACTERISTICS

OUTPUT POLARITY		Acceleration applied in the direction of the arrow on the unit produces positive output
RESISTANCE	GΩ	≥ 10
ISOLATION	GΩ	≥ 1
CAPACITANCE	pF	230
Including 6 inch Model 3003 Cable Assy		

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE		-100°F to +300°F (-73°C to +149°C)
HUMIDITY		Epoxy sealed, non-hermetic
SINUOSIDAL VIBRATION LIMIT	g pk	1000
SHOCK LIMIT [2]	g pk	10 000 in any axis
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.008
ELECTROMAGNETIC SENSITIVITY	equiv. g rms	0.09

PHYSICAL CHARACTERISTICS

DIMENSIONS		See Outline Drawing
WEIGHT		
UNIT ONLY	gm (oz)	0.8 (0.03)
UNIT WITH CABLE	gm (oz)	1.7 (0.06)
CASE MATERIAL		Aluminum Alloy, hard anodized
CABLE DESCRIPTION [4]		Three 0.013 diameter TFE insulated coaxial cable, 0.003 diameter CRES center conductor, Teflon dielectric. CRES outer sheath
MOUNTING [5]		Adhesive

CALIBRATION

SUPPLIED:		
SENSITIVITY	pC/g	
Each Axis		
CAPACITANCE	pF	
Including 6 inch replaceable cable		
TRANSVERSE SENSITIVITY	%	
CHARGE FREQUENCY RESPONSE	%	20 Hz to 10 kHz

ACCESSORIES

P/N 18060	ACCELEROMETER AND CABLE REMOVAL WRENCH
Model 3095-120 (10 ft)	CABLE ASSEMBLY, Three each
P/N 16426	CAPSULE OF SILICONE COMPOUND
Model 3003A-6 (6 In.)	CABLE ASSEMBLY, Three each

NOTES

- Low-end response of the transducer is a function of its associated electronics.
- When exposed to high g and large displacement, the cables must be tied down as close to the accelerometer as possible to prevent cable whip and subsequent cable failure.
- 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.
- See instruction manual before removing cable assemblies.

- Adhesives such as petro-wax, hot-melt glue, and cyanoacrylate epoxy (super glue) may be used to mount the accelerometer temporarily to the test structure. An adhesive mounting kit (P/N 31849) is available as an option from Endevco. To remove an epoxy-mounted accelerometer, first soften the epoxy with an appropriate solvent and then twist the unit off with the supplied removal wrench. Damage to sensors caused by inappropriate removal procedures are not covered by Endevco's warranty.
- 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.

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.