Endevco

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Model 2223D
Piezoelectric accelerometer

Features

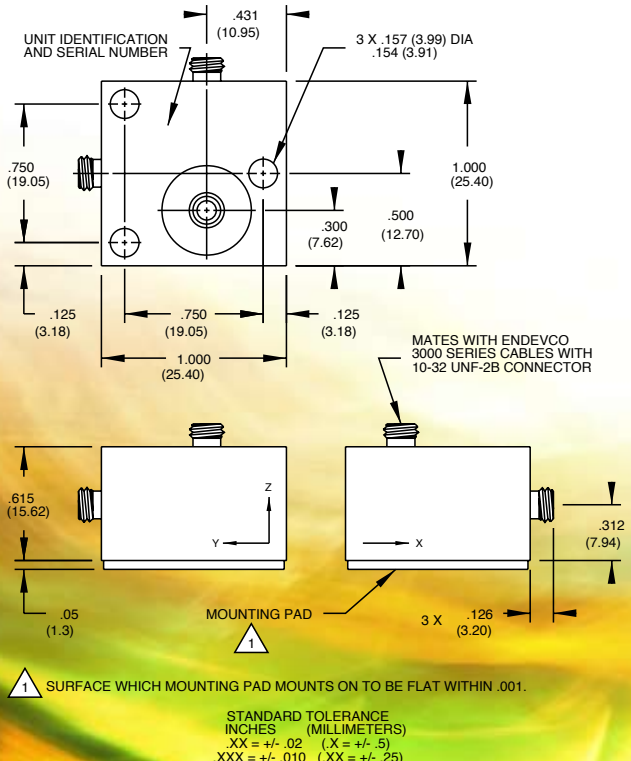
- Triaxial
- Light weight (41 gm)
- Ground isolated
- 12 pC/g
- General purpose and package-testing

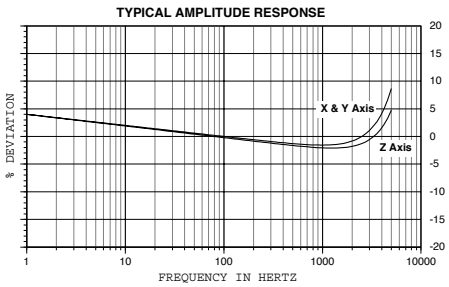
Description

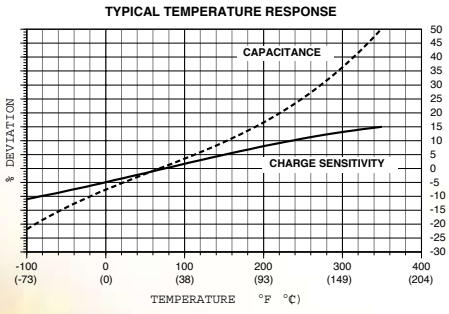
The Endevco® Model 2223D is a triaxial piezoelectric accelerometer designed specifically for vibration measurement of three orthogonal axes on small structures and objects. Its light weight (41 gm) effectively minimizes mass loading. All three individual sensors are isolated from each other and from the mounting surface by a hard anodized isolator. The accelerometer is a self-generating device that requires no external power source for operation.

The Model 2223D features Endevco's Piezite® Type P-8 crystal elements operating in annular shear mode. This device exhibits excellent output sensitivity stability over time. Low-noise coaxial cables are supplied for error-free operation.

Endevco signal conditioner Models 133, 2775A or Oasis 2000 computer-controlled system are recommended for use with this high impedance accelerometer.







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smart engineering for
extreme environments

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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	
CHARGE SENSITIVITY		
TYPICAL	pC/g	12
MINIMUM	pC/g	9.5
FREQUENCY RESPONSE		See Typical Amplitude Response
RESONANCE FREQUENCY		
X and Y Axis	kHz	14
Z Axis	kHz	28
AMPLITUDE RESPONSE [1]		
±5% (x,y)	Hz	1 to 3000
±5% (z)	Hz	1 to 6000
±1dB (x,y)	Hz	1 to 5000
±1dB (z)	Hz	1 to 8000
TEMPERATURE RESPONSE		See Typical Curve
TRANSVERSE SENSITIVITY	%	≤ 5
AMPLITUDE LINEARITY [4]	%	1
Per 250 g, 0 to 1000 g		

ELECTRICAL CHARACTERISTICS		
OUTPUT POLARITY		Markings on unit indicate direction of positive output for each axis
RESISTANCE	GΩ	≥ 10
ISOLATION [2] [3]	MΩ	≥ 1
CAPACITANCE	pF	800
GROUNDING [2] [3]		Signal return isolated from mounting surface

ENVIRONMENTAL CHARACTERISTICS		
TEMPERATURE RANGE		-67°F to +350°F (-55°C to +177°C)
HUMIDITY		Epoxy sealed, non-hermetic
SINUSOIDAL VIBRATION LIMIT	g pk	1000
SHOCK LIMIT	g pk	2000 in any direction
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.002
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (/°C)	0.002 (0.004)
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.01

PHYSICAL CHARACTERISTICS		
DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	41 (1.5)
CASE MATERIAL		Aluminum alloy, hard anodize
CONNECTOR		10-32 NF-2A thread, mates with Endevco 3000 Series Cable
MOUNTING TORQUE	lbf-in (Nm)	8 (1)

CALIBRATION		
SUPPLIED:		
CHARGE SENSITIVITY	pC/g	All three axes
MAXIMUM TRANSVERSE SENSITIVITY	%	All three axes
FREQUENCY RESPONSE		
X and Y axis	%	20 to 3000 Hz
Z axis	%	20 to 6000 Hz
	dB	Through resonance

INCLUDED ACCESSORIES

Model 3090C-120(10 ft)	CABLE ASSEMBLY, Three each
P/N 14891	INSULATED SCREW, 4-40 x 7/8 in

OPTIONAL ACCESSORIES

Model 2771AM3	IN-LINE CHARGE CONVERTOR FOR USE WITH CONSTANT CURRENT SOURCE

NOTES

1. Low-end response of the transducer is a function of its associated electronics.
2. The three sensing elements are electrically isolated from each other and from the mounting surface. The X axis signal ground is connected to the transducer case to provide electrostatic shielding for all three sensors.
3. Insulated mounting screws (3 supplied, 4-40 x 7/8 in) must be used to ensure transducer isolation from the mounting surface.
4. 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.
5. 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.