Piezoelectric Accelerometer

ENDEVCO MODEL 7240B

Model 7240B

- **Requires No External Power**
- **Annular Shear**
- **High Frequency Measurement**
- **Wide Bandwidth (Flat to 30 kHz)**
- **To +500°F (+260°C)**
- **Hermetically Sealed**
- **Light Weight (4.8 gm)**



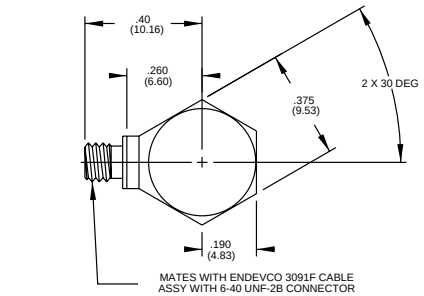
Actual size

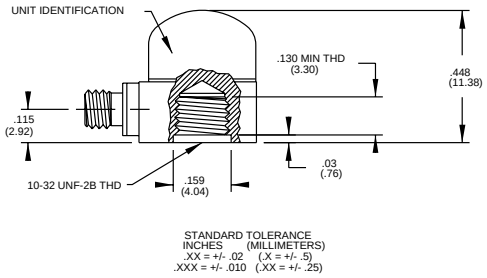
DESCRIPTION

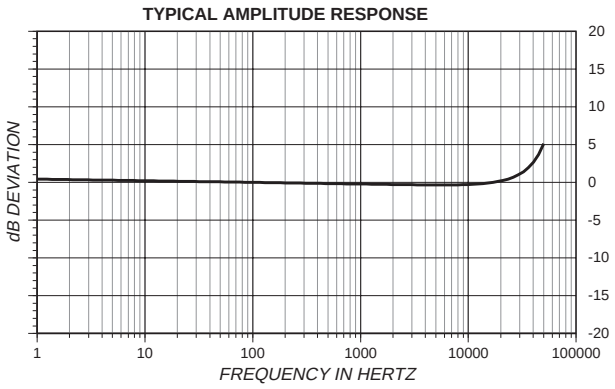
The ENDEVCO® Model 7240B is a miniature, light weight piezoelectric accelerometer designed specifically for high frequency vibration measurement on structures and objects. Its unique sensor design allows high seismic resonance and ruggedness in the same package. The unit is hermetically sealed against environmental contamination, and its light weight (4.8 gm) effectively minimizes mass loading effects. The accelerometer is a self-generating device that requires no external power source for operation.

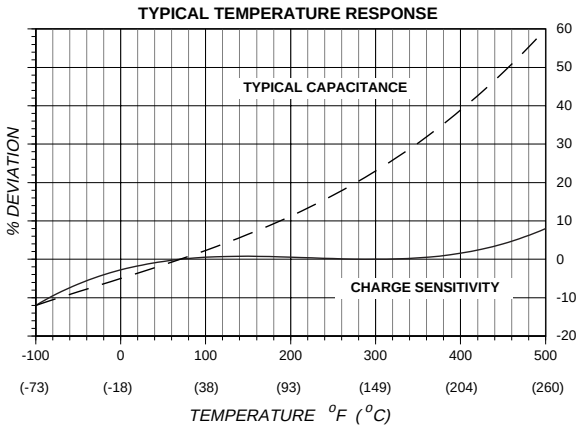
The Model 7240B features ENDEVCO's PIEZITE® Type P-8 crystal element, operating in annular shear mode, which exhibits low base strain sensitivity, wide bandwidth, and excellent output stability over time. Signal ground is connected to the outer case of the unit. When used with one of the supplied isolated mounting studs, the accelerometer is electrically isolated from ground. A specifically designed low-noise coaxial cable is supplied for error-free operation.

ENDEVCO Signal Conditioner Models 133, 2775A or CCAS™ are recommended for use with this high impedance accelerometer.









MEGGITT

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ENDEVCO
MODEL
7240B

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	2.7
MINIMUM	pC/g	2.3
FREQUENCY RESPONSE		See Typical Amplitude Response
RESONANCE FREQUENCY	kHz	80
AMPLITUDE RESPONSE [1] ±1 dB	Hz	1 to 20 000
TEMPERATURE RESPONSE		See Typical Curve
TRANSVERSE SENSITIVITY	%	≤ 5
AMPLITUDE LINEARITY [2] Per 500 g, 0 to 5000 g	%	1

ELECTRICAL CHARACTERISTICS		
OUTPUT POLARITY		Acceleration directed into base of accelerometer produces positive output
RESISTANCE	GΩ	≥ 10
CAPACITANCE	pF	730
GROUNDING		Signal ground connected to case

ENVIRONMENTAL CHARACTERISTICS		
TEMPERATURE RANGE		-67°F to +500°F (-55°C to +260°C)
HUMIDITY		Hermetically sealed
SINUSOIDAL VIBRATION LIMIT	g pk	1000
SHOCK LIMIT	g pk	5000
BASE STRAIN SENSITIVITY		
WITH 2980M12 & 2980M13	equiv. g pk/μ strain	0.0005
WITH 2981-11	equiv. g pk/μ strain	0.005

PHYSICAL CHARACTERISTICS		
DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	4.8 (0.17)
CASE MATERIAL		Stainless Steel
CONNECTOR		Coaxial, 6-40 NF-2A thread
MOUNTING TORQUE With 2981-11	lbf-in (Nm)	18 (2)

CALIBRATION		
SUPPLIED:		
CHARGE SENSITIVITY	pC/g	
CAPACITANCE	pF	
TRANSVERSE SENSITIVITY	%	
FREQUENCY RESPONSE	dB	20 Hz to 50 kHz

ACCESSORIES

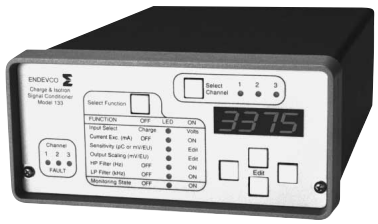
Model 2980M12	10-32 to 10-32 ISOLATED STUD
Model 2981-11	10-32 TO 10-32 MOUNTING STUD
Model 3091F-120 (10 ft)	CABLE ASSEMBLY
Model 2980M13	ISOLATED ADHESIVE STUD

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. 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.



Model 133

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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