

# Piezoelectric Accelerometer

**ENDEVCO  
MODEL  
2224C**

## Model 2224C

- Low Cost
- Rugged
- Small Size
- Top Connector
- General Purpose Vibration Measurement



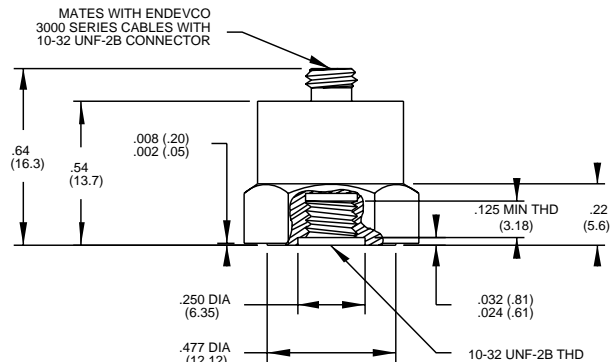
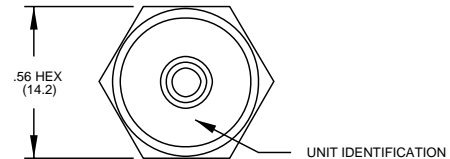
Actual size

### DESCRIPTION

The ENDEVCO® Model 2224C is a general purpose piezoelectric accelerometer designed for vibration measurement on small structures. The unit features a top connector for mounting convenience in limited space. The accelerometer is a self-generating device that requires no external power source for operation.

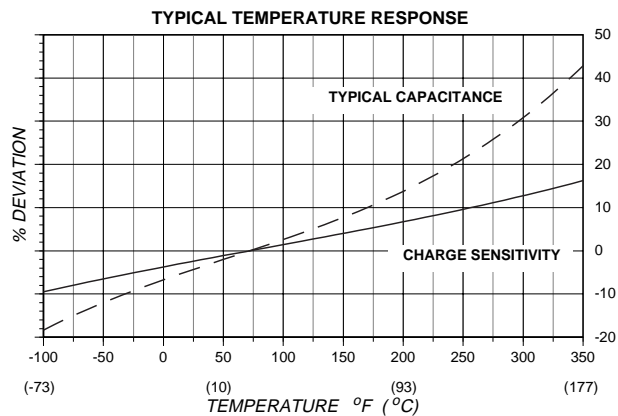
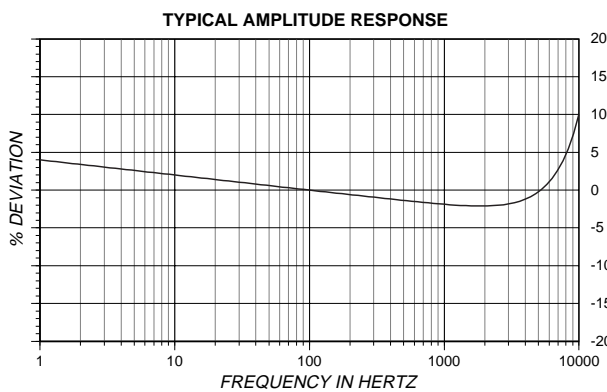
The Model 2224C features ENDEVCO's PIEZITE® Type P-8 crystal element operating in annular shear mode. This sensor exhibits low base strain sensitivity, high resonance frequency, and excellent output stability over time. Signal ground is connected to the outer case of the unit and, when used with an isolated mounting stud, the accelerometer case is electrically isolated from ground. A low-noise coaxial cable is 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.



NOTE:  
IF ALTERNATE STUD IS USED, THE LENGTH OF STUD FROM MOUNTING SURFACE MUST BE .140/.135 (3.56/3.43)

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	12.0
MINIMUM	pC/g	8.5
FREQUENCY RESPONSE		
RESONANCE FREQUENCY	kHz	32
AMPLITUDE RESPONSE [1]		
±5%	Hz	1 to 6000
±1dB	Hz	.5 to 6000
TEMPERATURE RESPONSE		
See Typical Curve		
TRANSVERSE SENSITIVITY		
≤ 3 (≤ 1 on special order)		
AMPLITUDE LINEARITY [2]		
1		
Per 250 g, 0 to 1000 g		

## ELECTRICAL CHARACTERISTICS

OUTPUT POLARITY	Acceleration into the base produces positive output	
RESISTANCE	GΩ	≥ 10
CAPACITANCE	pF	800
GROUNDING	Signal ground common to transducer case	

## 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
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.002
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (°C)	0.001 (0.002)
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.0001

## PHYSICAL CHARACTERISTICS

DIMENSIONS	See Outline Drawing	
WEIGHT	gm (oz)	16 (0.56)
CASE MATERIAL	303 stainless steel	
CONNECTOR	Coaxial, 10-32 thread, mates with Endevco 3000 Series cable	
MOUNTING TORQUE	lbf-in (Nm)	18 (2)

## CALIBRATION

SUPPLIED:		
CHARGE SENSITIVITY	pC/g	
CAPACITANCE	pF	
MAXIMUM TRANSVERSE SENSITIVITY	%	
CHARGE FREQUENCY RESPONSE	%	20 to 6 kHz
	dB	6 kHz to 40 kHz

## ACCESSORIES

Model 3090C-120 (10 ft) CABLE ASSEMBLY  
Model 2981-3 MOUNTING STUD, 10-32 to 10-32

- 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.

## OPTIONAL ACCESSORIES

Model 2771AM3 IN-LINE CHARGE CONVERTOR FOR USE WITH CONSTANT CURRENT SOURCE  
Model 2950 TRIAXIAL MOUNTING BLOCK

## NOTES

- Low-end response of the transducer is a function of its associated electronics.
- 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.

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.

ENDEVCO CORPORATION, 30700 RANCHO VIEJO ROAD, SAN JUAN CAPISTRANO, CA 92675 USA (800) 982-6732 (949) 493-8181 fax (949) 661-7231  
www.endevco.com Email:applications@endevco.com