

# Piezoelectric Accelerometer

**ENDEVCO  
MODEL  
2273A**

## Model 2273A

- Operates at High Temperatures (+399°C)
- Radiation Hardened
- Side Mounted Receptacle
- Case Grounded
- Vibration Measurements in Nuclear, and High Temperature Environments



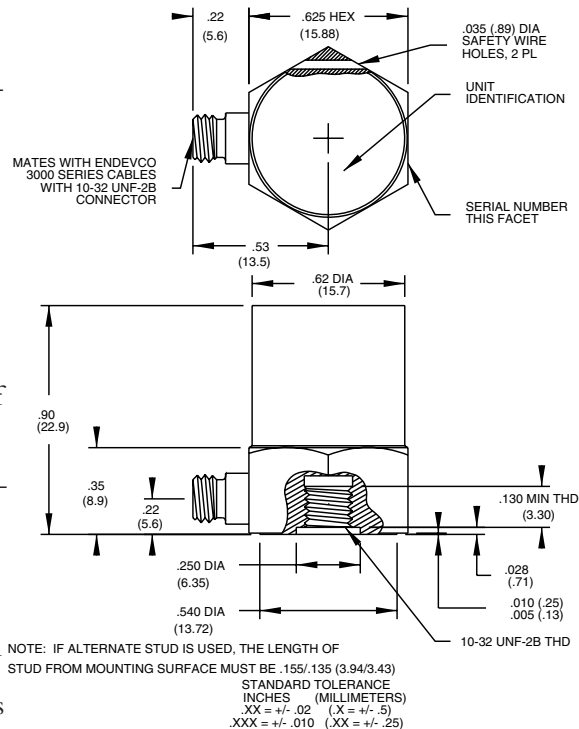
Actual size

## DESCRIPTION

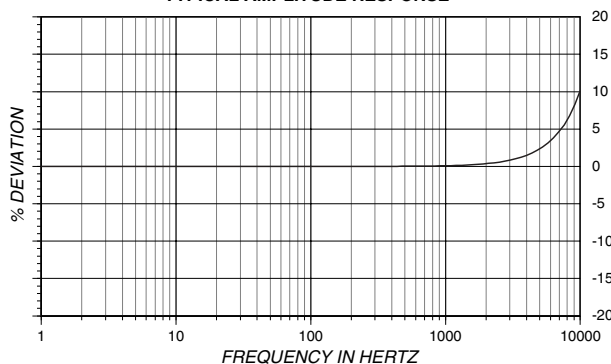
The ENDEVCO® Model 2273A is a precision piezo-electric accelerometer for use in industrial or laboratory applications involving high temperature or nuclear environments. It is capable of operation in the presence of Gamma and Neutron radiation. The 2273A incorporates a side mounted 10-32 receptacle and hex base construction with a 10-32 or M5 center stud mount. The accelerometer is a self-generating device that requires no external power source for operation.

The 2273A features ENDEVCO's PIEZITE® Type P-14 crystal in our patented ISOBASE® construction, to provide for flat temperature response over the range of -300°F to +750°F (-184°C to 399°C). In addition, ISOBASE construction provides mechanical isolation of bending motion from the mounting base. These features, together with an all-welded hermetically sealed enclosure, assure accurate and reliable data at high temperatures.

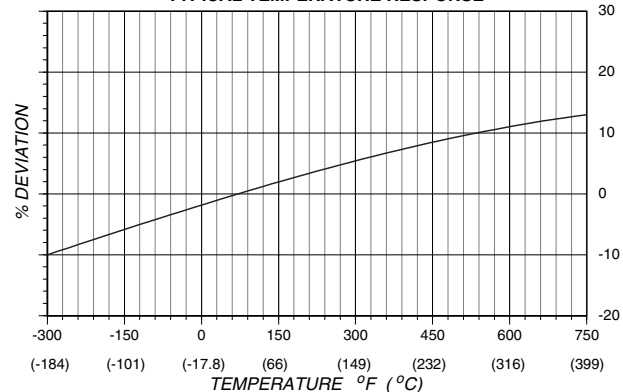
ENDEVCO Signal Conditioner Models 133, 2721B, 2775A, 6634B or 68203 are recommended for use with this accelerometer. The 2771A Remote Charge Convertor is also compatible for applications using this high impedance accelerometer.



TYPICAL AMPLITUDE RESPONSE



TYPICAL TEMPERATURE RESPONSE



# ENDEVCO MODEL 2273A

## 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	3.0
MINIMUM	pC/g	2.5
FREQUENCY RESPONSE		
RESONANCE FREQUENCY	kHz	30
AMPLITUDE RESPONSE [1]		
±5%	Hz	1 to 6000
±1dB	Hz	.5 to 8000
TEMPERATURE RESPONSE		
TRANSVERSE SENSITIVITY	%	≤ 3 (≤ 1 available on special order)
AMPLITUDE LINEARITY [2]	%	1
Per 500 g, 0 to 10 000 g		

### ELECTRICAL CHARACTERISTICS

OUTPUT POLARITY		Acceleration directed into base of unit produces positive output
RESISTANCE	GΩ	≥ 1
At +750°F (+399°C)	MΩ	≥ 10
CAPACITANCE	pF	110
GROUNDING		Signal return connected to case

### ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE		-300°F to +750°F (-184°C to +399°C)
HUMIDITY		Hermetically sealed
SINUSOIDAL VIBRATION LIMIT	g	1000
SHOCK LIMIT	g	10 000
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.004
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.0003
RADIATION		
INTEGRATED GAMMA FLUX	rad	Up to 6.2 x 10 <sup>10</sup>
INTEGRATED NEUTRON FLUX	N/cm <sup>2</sup>	Up to 3.7 x 10 <sup>18</sup>

### PHYSICAL CHARACTERISTICS

DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	25 (0.88)
CASE MATERIAL		Stainless Steel
CONNECTOR		10-32 UNF-2A Thd mates with Endevco 3075M6 Cable Assembly or equivalent
MOUNTING TORQUE		18 (2)

### CALIBRATION

SUPPLIED:		
FREQUENCY RESPONSE	%	20 to 6000 Hz
	dB	6000 Hz thru resonance
MAXIMUM TRANSVERSE SENSITIVITY		
	%	
MOUNTED RESONANCE FREQUENCY		
	kHz	
CAPACITANCE		
	pF	

### ACCESSORIES

Model 3075M6-120 (10 ft) CABLE ASSEMBLY, High Temp.  
Model 2981-12 MOUNTING STUD, 10-32 to 10-32

EHM464 Hex ID  
HEX KEY WRENCH

### OPTIONAL ACCESSORIES

Model 3090C-120 (10 ft) CABLE ASSEMBLY, for under +500°F  
Model 2981-4 MOUNTING STUD, 10-32 to M5  
Model 2985 INSULATED MOUNTING STUD

### 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.

- 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.

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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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