

# Piezoelectric Accelerometer

## Model 7201-10, -50 and -100

- Hermetically Sealed
- Stable Output
- Insensitive to Base Bending
- Requires No External Power
- Excellent General Purpose Accelerometer



Actual size

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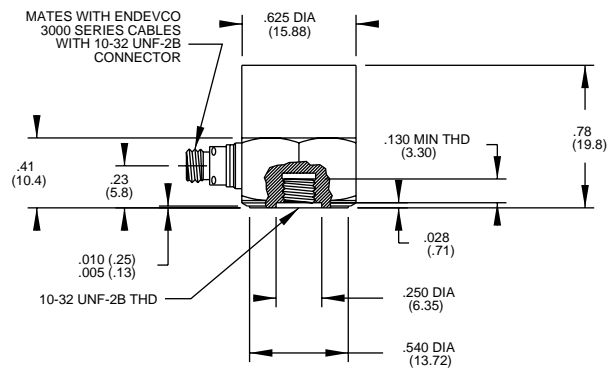
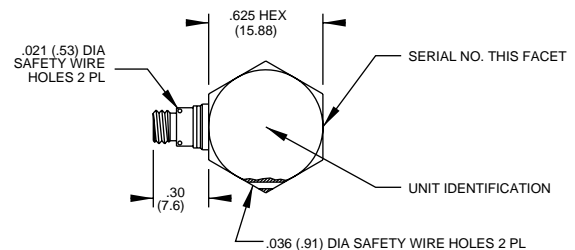
**ENDEVCO  
MODEL  
7201-10  
-50  
-100**

### DESCRIPTION

The ENDEVCO® Model 7201 is a stud mounted, ISOSHEAR piezoelectric accelerometer designed for general vibration measurement on structures and objects. The ISOSHEAR design is extremely stable and insensitive to such environmental inputs as base bending and thermal transients. The unit is hermetically sealed against external contamination. The accelerometer is a self-generating device that requires no external power source for operation.

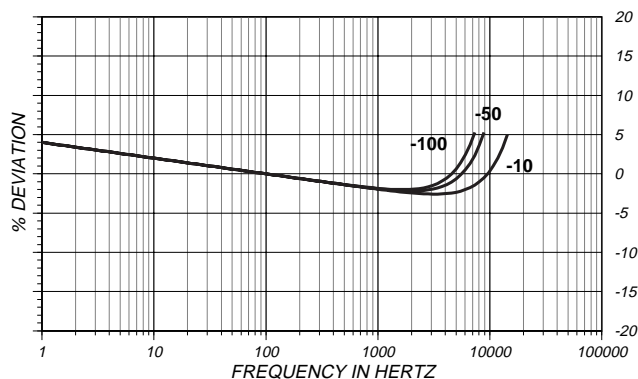
The Model 7201 features ENDEVCO's PIEZITE® Type P-8 crystal element, operating in shear mode. This device exhibits low base strain sensitivity, high resonance frequency, and excellent output stability over time. Signal ground is connected to outer case of the unit. When used with an isolated mounting stud, the accelerometer is electrically isolated from ground. The accelerometer features a 10-32 side-connector. A low-noise coaxial cable is supplied for error-free operation. A model number suffix indicates acceleration sensitivity in mV/g; i.e., 7201-50 features output sensitivity of 50 pC/g.

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

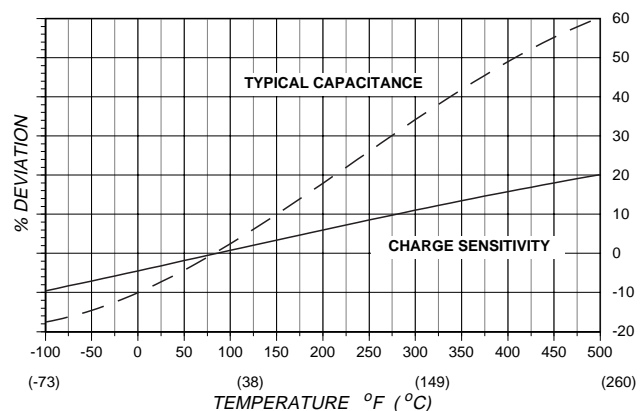


STANDARD TOLERANCE  
INCHES (MILLIMETERS)  
.XX = +/- .02 (X = +/- .5)  
.XXX = +/- .010 (.XX = +/- .25)

#### TYPICAL AMPLITUDE RESPONSE



#### TYPICAL TEMPERATURE RESPONSE



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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	-10	-50	-100
CHARGE SENSITIVITY				
TYPICAL	pC/g	10	50	100
MINIMUM	pC/g	9	45	90
FREQUENCY RESPONSE				
See Typical Amplitude Response				
RESONANCE FREQUENCY	kHz	48	30	25
AMPLITUDE RESPONSE [1]				
±5%	Hz	1 to 12 000	1 to 6000	1 to 5000
±1dB	Hz	.5 to 16 000	.5 to .8000	.5 to 7000
TEMPERATURE RESPONSE				
See Typical Curve				
TRANSVERSE SENSITIVITY	%	≤ 5% (≤ 2% Available)		
AMPLITUDE LINEARITY [2]	%	1		

Per 250 g, 0 to 2000 g

## ELECTRICAL CHARACTERISTICS

OUTPUT POLARITY	Acceleration directed into base of unit generates positive output			
RESISTANCE	GΩ	≥ 10		
CAPACITANCE	pF	1300	3600	3600
GROUNDING	Signal ground connected to case			

## ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE	-100°F to +500°F (-73°C to +260°C)			
HUMIDITY	Hermetically sealed			
SINUSOIDAL VIBRATION LIMIT	g pk	2000	2000	2000
SHOCK LIMIT	g pk	20 000	10 000	5000
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.0016	0.002	0.001
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (°C)	0.003 (0.005)	0.004 (0.007)	0.002 (0.0035)
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.0002	0.0002	0.0001

## PHYSICAL CHARACTERISTICS

DIMENSIONS				
See Outline Drawing				
WEIGHT	gm (oz)	18 (0.64)	20 (0.70)	25 (0.88)
CASE MATERIAL				
Stainless Steel				
CONNECTOR				
10-32 UNF 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 Hz to 10 kHz	20 Hz to 6 kHz	20 Hz to 5 kHz
	dB	10 kHz thru resonance	6 kHz thru resonance	6 kHz thru resonance

## ACCESSORIES

Model 3090C-120 (10 ft)	CABLE ASSEMBLY
Model 2981-12	MOUNTING STUD, 10-32 to HEX I.D.
EHM464	HEX KEY WRENCH.

- 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 2981-4	MOUNTING STUD, 10-32 to M5
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## 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.

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