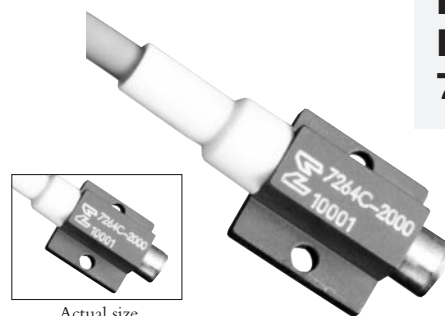


# Piezoresistive Accelerometer

**ENDEVCO  
MODEL  
7264C**

## Model 7264C

- Mechanical Overtravel Stops
- Small Size, Rugged
- 500 g and 2000 g Full Scale Ranges
- DC Response - Long Duration Transients
- Crash and Shock Testing



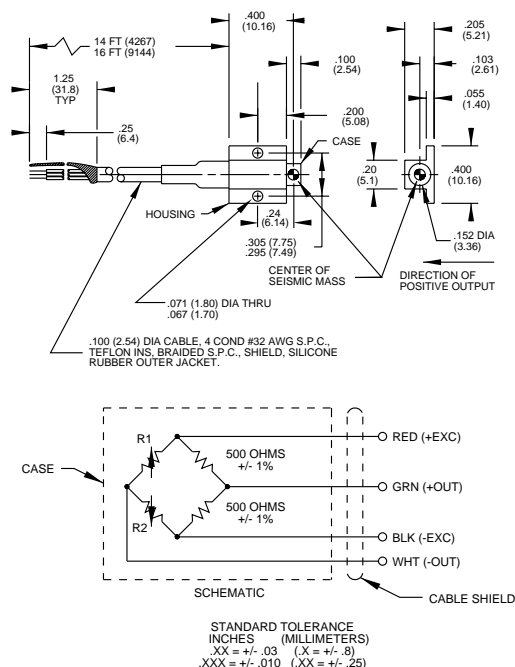
Actual size

### DESCRIPTION

The ENDEVCO® Model 7264C is a very low mass piezoresistive accelerometer weighing only 1 gram. This accelerometer is designed for crash testing, flutter testing, rough road testing and similar applications that require minimal mass loading and a broad frequency response. This accelerometer meets SAEJ211 specifications for anthropomorphic dummy instrumentation. It is a direct replacement for the Endevco Model 7264-2000 in that the location of the center of seismic mass is the same.

The Model 7264C utilizes an advanced micromachined sensor which includes integral mechanical stops. This monolithic sensor offers improved ruggedness, stability and reliability over previous designs. The Model 7264C has minimum damping, thereby producing no phase shift over the useful frequency range. With a frequency response extending down to dc or steady state acceleration, this accelerometer is ideal for measuring long duration transient shocks.

This accelerometer has a full bridge circuit with fixed resistors for shunt calibration. Full scale output is 400 mV with 10Vdc excitation. It is also available with less than 1% transverse sensitivity ("T" option) and less than  $\pm 25$  mV zero measurand output ("Z" option).



Endevco Model 136 DC Differential Voltage Amplifier, Model 4430A Bridge Conditioner, or OASIS 2000 Computer-Controlled System are recommended as signal conditioner and power supply.

U.S. Patents 4,498,229 and 4,605,919 apply.

### SPECIFICATIONS

**CERTIFIED PERFORMANCE:** All values are typical at 75°F (+24°C), 100 Hz and 10 Vdc excitation unless otherwise specified. Calibration data, traceable to the National Institute of Standards (NIST), is supplied.

	Units	7264C-500	7264C-2000
RANGE	g	$\pm 500$	$\pm 2000$
SENSITIVITY (at 100 Hz & 10g)	mV/g Typ (Min)	0.80 (0.50)	0.20 (0.15)
FREQUENCY RESPONSE [1]			
±2%	Hz		0 to 2000
±5%	Hz	0 to 3000	0 to 5000
±1dB	Hz	0 to 4000	0 to 7000
MOUNTED RESONANCE FREQUENCY	Hz	17 000	26 000
DAMPING RATIO			0.05
NON-LINEARITY (% of reading, to full range)	% Max		±1
REPEATABILITY (after full scale shock)	equiv. g		0.2

# Piezoresistive Accelerometer

## SPECIFICATIONS—continued PERFORMANCE CHARACTERISTICS—continued

	Units	7264C-500	7264C-2000
TRANSVERSE SENSITIVITY [1]	% Max	3	3
ZERO MEASURAND OUTPUT [2]	mV Max	±50	±50
THERMAL ZERO SHIFT			
	mV Typ	±10	±10
From 0°F to +150°F (-18°C to +66°C)	mV Max	±25	±25
THERMAL SENSITIVITY SHIFT	%/°F Typ	- 0.06	- 0.06
From 0°F to +150°F (-18°C to +66°C)	%/°C Typ	- 0.10	-0.10
From 65°F to +85°F (+18°C to +29°C)	%	1.0	1.0
WARM-UP TIME	ms Max	1, 15 µ sec typical	1, 15 µ sec typical
BASE STRAIN SENSITIVITY (Per ISA 37.2 @ 250 µ strain)	Equiv. g's	< 0.1	< 0.1
MECHANICAL OVERTRAVEL STOPS	g's	1500 g typical, 750 g minimum	5000 g typical, 2500 g minimum

### ELECTRICAL

EXCITATION [3]	10.0 Vdc
INPUT RESISTANCE [4]	300 to 900 ohms
OUTPUT RESISTANCE [4]	400 to 1600 ohms
FIXED RESISTORS	500 ohms ±1%
INSULATION RESISTANCE	100 megohms minimum at 100 Vdc; leads to case, leads to shield, shield to case

### PHYSICAL

CASE, MATERIAL	Green Anodized aluminum alloy
ELECTRICAL, CONNECTIONS	Integral cable, four conductor No. 32 AWG Teflon® insulated leads, braided shield, silicone jacket (-1 red, -2 white, -3 blue - cable color)
MOUNTING/TORQUE	Holes for two 0-80 mounting screws/3 lbf-in (0.3 Nm)
WEIGHT	1 gram (cable weighs 9 grams/meter)

### ENVIRONMENTAL

ACCELERATION LIMITS (in any direction)		
Static	5000 g	10 000 g
Sinusoidal Vibration	1000 g pk below 3kHz	1000 g pk below 5kHz
Shock (half-sine pulse duration)	5000 g, 300 µsec or longer	10 000 g, 200 µsec or longer
TEMPERATURE		
Operating	0°F to +150°F (-18°C to +66°C)	
Storage	-65°F to +250°F (-54°C to +121°C)	
HUMIDITY	Unit is epoxy sealed	
ALTITUDE	Unaffected	

### CALIBRATION DATA SUPPLIED

SENSITIVITY (at 100 Hz and 10 g pk)	mV/g
FREQUENCY RESPONSE	20 Hz to 3000 Hz, % deviation reference 100 Hz; dB plot continued from 3000 to 30 000 Hz for 7264B-500; 20 Hz to 5000 Hz, % deviation reference 100 Hz; dB plot continued from 5000 to 30 000 Hz for 7264B -2000
ZERO MEASURAND OUTPUT	mV
MAXIMUM TRANSVERSE SENSITIVITY	% of sensitivity
INPUT AND OUTPUT RESISTANCE	Ohms

### ACCESSORIES

EHM35	(1) ALLEN WRENCH
EHW196	(2) SIZE-0 FLAT WASHERS
EH492	(2) 0-80 X 3/16 INCH SOCKET HEAD CAP SCREWS

### OPTIONAL ACCESSORIES

24328	4 CONDUCTOR SHIELDED CABLE
7593	TRIAxIAL MOUNTING BLOCK

### NOTES

- 1% transverse sensitivity available as "T" option.
- ±25 mV zero measurand output available as "Z" option
- Lower excitation voltages may be used but should be specified

- at time of order to obtain best calibration.
4. Measured at approximately 1 Vdc. Bridge resistance increases with applied voltage due to heat dissipation in the strain gage elements.
5. The safety sleeve should be kept on unit when not in use to prevent possible handling damage.
6. 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.

NOTE: Tighter specifications available on special order.

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.