

Piezoresistive Accelerometer

**ENDEVCO
MODEL
7264**

Model 7264

- **Small Size**
- **200 and 2000 g Full Scale**
- **DC Response**
- **Undamped**

DESCRIPTION

The ENDEVCO® Model 7264 series is a family of very low mass piezoresistive accelerometers weighing only 1 gram. They are designed for flutter testing, modal testing, biodynamics measurements and similar applications that require minimum mass loading and broad frequency response. They may also be used for shock testing of lightweight systems or structures and meets SAEJ211 specifications for anthropomorphic dummy instrumentation.

Model 7264 accelerometers have minimum damping, thereby producing no phase shift over their useful frequency range. The Model 7264-200 has ENDEVCO's exclusive sapphire needle positive mechanical stops to protect against overrange shock. With a frequency response extending down to dc or steady state acceleration, these transducers are ideal for measuring long duration transients as well as short duration shocks.

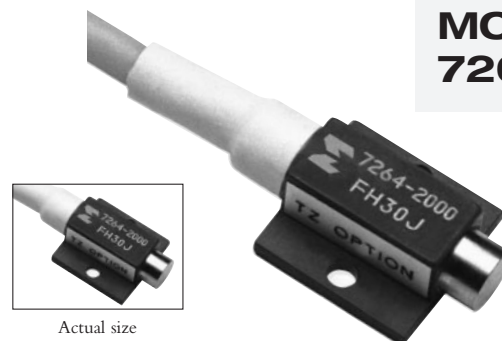
The Model 7264 utilizes ENDEVCO's PIEZITE® P-11 semiconductor elements in a half-bridge circuit, providing a low impedance output of 500 mV full scale at 10 Vdc excitation. Bridge completion resistors are normally located in the signal conditioning equipment and allow shunt calibration of the transducer. This unit is also available with increased performance, providing for 1% transverse sensitivity ("T" option), and ± 25 mV zero measurand output ("Z" option).

ENDEVCO Model 136 Three-Channel System, Model 4430A or OASIS 2000 Computer-Controlled System are recommended as signal conditioner and power supply.

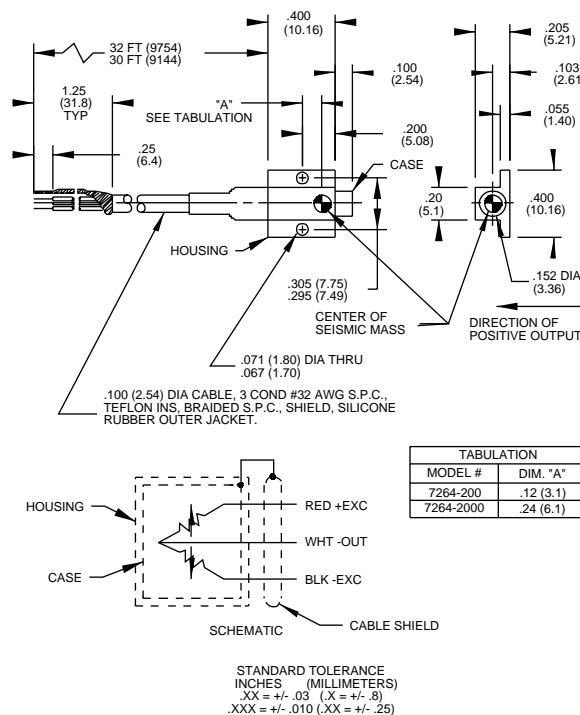
SPECIFICATIONS

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

	Units	7264-200	-2000
RANGE	g pk	± 200	± 2000
SENSITIVITY (at 100 Hz)	mV/g Typ	2.5	0.25
	(Min)	(2.0)	(0.20)
AMPLITUDE RESPONSE			
±5%	Hz	0 to 1000	0 to 4000
±1dB	Hz	0 to 1400	0 to 5400
MOUNTED RESONANCE FREQUENCY	Hz	6000	25 000
DAMPING RATIO		0.005	0.005
NON-LINEARITY AND HYSTERESIS			
(% of reading, to full range)	% Max	± 3	± 3



Actual size



Piezoresistive Accelerometer

SPECIFICATIONS—continued

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

	Units	7264-200	-2000
TRANSVERSE SENSITIVITY [1]	% Max	3	3
ZERO MEASURAND OUTPUT [2]	mV Max	±50	±50
THERMAL ZERO SHIFT [3]			
From 0°F to 150°F (-18°C to +66°C)	mV Max	±40	±40
THERMAL SENSITIVITY SHIFT			
At 0°F and 150°F (-18°C and +66°C)	% Typ	-5	-5
WARM-UP TIME	Minutes Max	2	2

ELECTRICAL

EXCITATION [4] [5]	10.0 Vdc, 15 Vdc maximum
INPUT RESISTANCE [4] [6]	2800 ohms
INSULATION RESISTANCE	100 megohms minimum at 100 Vdc; between sensors, cable shield and housing

PHYSICAL

CASE, MATERIAL	Anodized aluminum alloy
ELECTRICAL, CONNECTIONS	Integral cable, three conductor No. 32 AWG Teflon® insulated leads, braided shield, silicone jacket
IDENTIFICATION	Manufacturer's logo, model number and serial number
MOUNTING/TORQUE	Holes for two 0-80 mounting screws/6 in-ozf (0.04Nm)
WEIGHT	1 gram (cable weighs 9 grams/meter)

ENVIRONMENTAL

ACCELERATION LIMITS (in any direction) [7]			
Static	g	1000	5000
Sinusoidal Vibration	g pk	1000, below 1000 Hz	1000, below 4000 Hz
Shock (half-sine pulse) longer	g	2000, 1 msec or longer	5000, 200 µsec or longer
TEMPERATURE			
Operating		0°F to +150°F (-18°C to +66°C)	
Storage		-65°F to +200°F (-54°C to +93°C)	
HUMIDITY		Unaffected. Unit is epoxy sealed	
ALTITUDE		Unaffected	

CALIBRATION DATA SUPPLIED

SENSITIVITY (at 100 Hz and 10 g pk)	mV/g
FREQUENCY RESPONSE	20 Hz to 1000 Hz for 7264 -200, to 4000 Hz for -2000, % deviation reference 100Hz; dB plot continued through resonance frequency
ZERO MEASURAND OUTPUT	mV
MAXIMUM TRANSVERSE SENSITIVITY	% of sensitivity
MOUNTED RESONANCE FREQUENCY	Hz
INPUT RESISTANCE	Ohms

ACCESSORIES

EHM35	ALLEN WRENCH
EHW196	(2) SIZE-0 FLAT WASHERS
EH468	(2) 0-80 X 1/8 INCH SOCKET HEAD CAP SCREWS

OPTIONAL ACCESSORIES

23842	3 CONDUCTOR SHIELDED CABLE
7953	TRIAXIAL MOUNTING BLOCK (7264-200)
7954	TRIAXIAL MOUNTING BLOCK (7264-2000)

NOTES

- 1% transverse sensitivity available as "T" option.
- ±25 mV zero measurand output available as "Z" option. Combination of T and Z options are available as "TZ" option.
- Thermal Zero Shift millivolts specified are at 0°F/+150°F (-18°C/+66°C), reference 75°F (24°C).
- Rated excitation is 10.0 Vdc. The strain gage elements have a positive temperature coefficient of resistance of approximately 0.5% per °F.
- Other excitation voltages may be used to 15.0 Vdc. Specify at time

- of order to obtain a more accurate calibration.
6. Half-bridge input resistance measured across the excitation leads. It does not include external bridge completion resistance. Measured at approximately 1 Vdc. Bridge resistance increases with applied voltage.
 7. The safety sleeve should be kept on the unit when not in use to prevent possible handling damage.
 8. 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.