

Piezoresistive Accelerometer

**ENDEVCO
MODEL
2262A**

Model 2262A

- Rugged, Fluid Damped
- DC Response
- 25 to 2000 g Full Scale
- 500 mV Full Scale Output
- Hermetically Sealed



Actual size

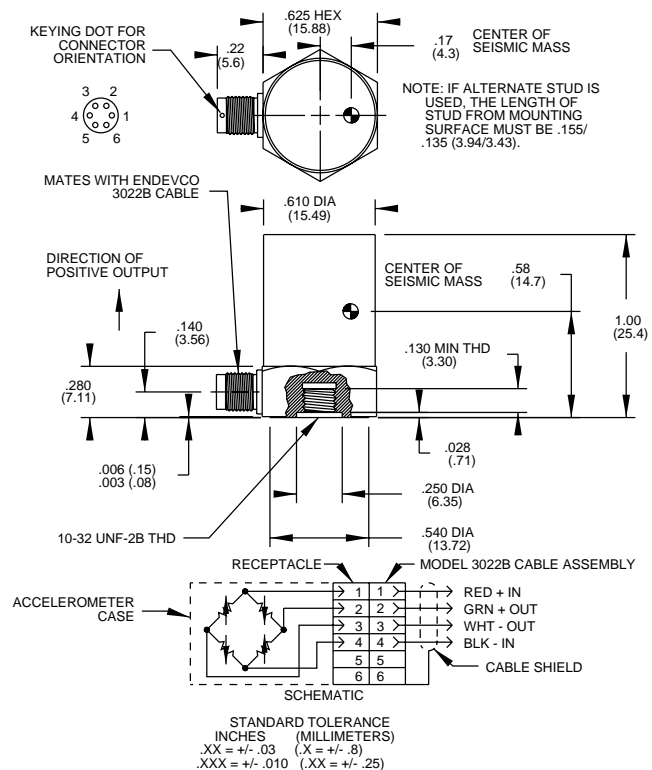
DESCRIPTION

The ENDEVCO® Model 2262A accelerometers are rugged, fluid damped transducers of the piezoresistive type. ENDEVCO's PIEZITE® Type P-11 semiconductor strain gage elements are used in a bridge configuration, providing a low impedance output with 10 Vdc excitation. The output is high enough to drive most tape recorders data acquisition systems, and low frequency galvanometers directly, without amplification.

A unique system of overrange stops (2262A-25, -100, and -200) limits the movement of the seismic element allowing the units to withstand shock up to 2000 g's without calibration shift. Viscous damping extends their useful frequency range and reduces the effect of spurious, high frequency vibrations.

Typical applications for these accelerometers include transportation environmental testing, transient accelerations on structural members and combined environments of steady state acceleration plus transient inputs.

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 stated. Calibration data, traceable to the National Institute of Standards and Technology (NIST), is supplied.

	Units	2262A-25	-100	-200	-1000	-2000
RANGE	g pk	±25	±100	±200	±1000	±2000
SENSITIVITY (at 100 Hz)	mV/g Typ	20	5	2.5	0.50	0.25
	(Min)	(16)	(4)	(2)	(0.38)	(0.18)
AMPLITUDE RESPONSE						
±5%	Hz	0 to 650	0 to 1300	0 to 1800	0 to 1500	0 to 3000
±1dB	Hz	0 to 800	0 to 1600	0 to 2000	0 to 1800	0 to 3600
Maximum Deviation (0 Hz to 2000 Hz) [1]	% Max		+5	+5	+5	+5
	% (Min)		(-12)	(-7)	(-8)	(-7)
MOUNTED RESONANCE FREQUENCY	Hz Typ	2500	5000	7000	8000	10 000
	(Min)	(2000)	(4000)	(5600)	(6400)	(8000)
DAMPING RATIO [2]		0.707	0.707	0.707	0.707	0.707
NON-LINEARITY AND HYSTERESIS						
(% of reading, to full range)	% Max	±1	±2	±2	±2	±2

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SPECIFICATIONS—continued

PERFORMANCE CHARACTERISTICS

	Units	2262A-25	-100	-200	-1000	-2000
TRANSVERSE SENSITIVITY	% Max	3	3	3	3	3
ZERO MEASURAND OUTPUT [3]	mV Max	±25	±25	±25	±25	±25
THERMAL ZERO SHIFT From 0°F to 200°F (-18°C to +93°C)	mV Max	±20	±20	±20	±20	±20
THERMAL SENSITIVITY SHIFT At 0°F and 150°F (-18°C and +66°C)	% Typ	-5	-5	-5	-5	-5
WARM-UP TIME	Minutes Max	2	2	2	2	2

ELECTRICAL

EXCITATION [4] [5]	10.0 Vdc, 15 Vdc maximum
INPUT RESISTANCE [4] [6]	1800 ohms for 2262A-25, -100 and -200; 600 ohms for -1000 and -2000
OUTPUT RESISTANCE [4] [6]	1400 ohms for 2262A-25, -100 and -200; 400 ohms for -1000 and -2000
INSULATION RESISTANCE	100 megohms minimum at 100 Vdc; all leads to case

PHYSICAL

CASE, MATERIAL	Stainless Steel (416 CRES)
ELECTRICAL, CONNECTIONS	ENDEVCO Model 3022B-30 (supplied)
IDENTIFICATION	Manufacturer's logo, model number and serial number
MOUNTING/TORQUE	Hole for 10-32 UNF x 1/8 inch mounting stud/18 lbf-in (2 Nm)
WEIGHT	28 grams (cable weighs 18 grams/meter)

ENVIRONMENTAL

ACCELERATION LIMITS (in any direction)						
Static	g	250	1000	1000	1000	2000
Sinusoidal Vibration	g pk	250	1000	1000	1000	2000
Shock (half-sine pulse)	g	2000	2000	2000	2500	5000
BASE STRAIN SENSITIVITY (at 250 microstrain)						
	Equiv. g	0.005	0.005	0.005	0.05	0.05
TEMPERATURE						
Operating		0°F to 200°F (-18°C to +93°C)				
Storage		-20°F to +220°F (-29°C to +104°C)				
HUMIDITY						
		Unaffected. Unit is hermetically sealed				
ALTITUDE						
		Unaffected				

CALIBRATION DATA SUPPLIED

SENSITIVITY (at 100 Hz and 10 g pk)	mV/g
FREQUENCY RESPONSE	20 to 2000 Hz for 2262A-25, to 4000 Hz for -100, to 6000 Hz for -200, to 5000 Hz for -1000 and -2000; % deviation reference 100 Hz
ZERO MEASURAND OUTPUT	mV
MAXIMUM TRANSVERSE SENSITIVITY	% of sensitivity
MOUNTED RESONANCE FREQUENCY	Hz
INPUT AND OUTPUT RESISTANCE	Ohms

ACCESSORIES

2981-3	MOUNTING STUD (10-32 UNF-2A)
3022B-30	CABLE ASSEMBLY

OPTIONAL ACCESSORIES

2950	TRIAXIAL MOUNTING BLOCK
2981-4	MOUNTING STUD (M5-0.8)
3022B-XX	CABLE ASSEMBLY (XX IDENTIFIES CABLE LENGTH IN INCHES)

NOTES

- The sensitivity increase at the mounted resonant frequency is less than 10%, reference 100 Hz.
- Damping ratio is 2.2/0.2, typical, at 0°F/200°F (-18°/+93°C).
- Zero Measurand Output (ZMO) is the transducer output with 0 acceleration applied.
- Rated excitation is 10.0 Vdc. The strain gage elements have a positive temperature coefficient of resistance of approximately 0.5% per °F. Power supply current capability (regulation) should

be carefully considered when operating at low temperature extremes, especially when exciting more than one transducer from a single power supply.

- Other excitation voltages may be used to 15.0 Vdc. Specify at time of order to obtain a more accurate calibration.
- Measured at approximately 1 Vdc. Bridge resistance increases with applied voltage due to heat dissipation in the strain gage elements.
- 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.