

# Piezoresistive Accelerometer

**ENDEVCO  
MODEL  
2262CA**

## Model 2262CA

- Rugged, Fluid Damped
- DC Response
- 25 to 2000 g Full Scale
- Six Wire System For Shunt Calibration
- Hermetically Sealed



Actual size

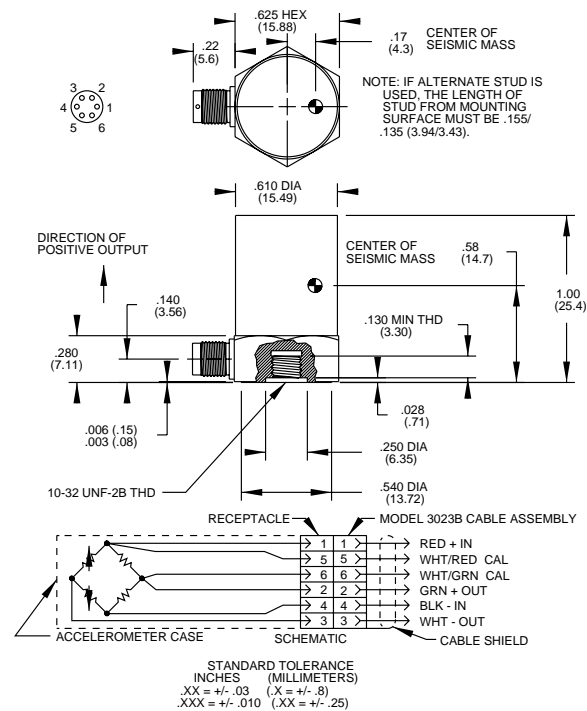
### DESCRIPTION

The ENDEVCO® Model 2262CA 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.

The Model 2262CA has two active arms and two precision fixed resistors of 900 Ω each to provide for shunt calibration in a six-wire system. It is provided with a six-conductor shielded cable assembly.

These models feature a wide frequency range. Positive overtravel stops (2262CA-25, -100, and -200) prevent damage to the seismic system, giving an overrange capability of 2000 g. The use of viscous damping extends their useful frequency range and reduces the effect of spurious, high frequency vibrations.

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), 100 Hz and 10 Vdc excitation unless otherwise stated. Calibration data, traceable to the National Institute of Standards and Technology (NIST), is supplied.

	Units	2262CA-25	-100	-200	-1000	-2000
RANGE	g pk	±25	±100	±200	±1000	±2000
SENSITIVITY (at 100 Hz)	mV/g Typ	10	2.5	1.25	0.25	0.13
	(Min)	(8)	(2.0)	(1.0)	(0.19)	(0.09)
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—continued

	Units	2262CA-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]	900 ohms
OUTPUT RESISTANCE [4] [6]	900 ohms
FIXED RESISTORS	900 ohms ±1%
INSULATION RESISTANCE	100 megohms minimum at 100 Vdc; all leads to case

### PHYSICAL

CASE, MATERIAL	Stainless Steel (416 CRES)
ELECTRICAL, CONNECTIONS	ENDEVCO Model 3023B-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	1000	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 2262CA-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)
3023B-30	CABLE ASSEMBLY

### OPTIONAL ACCESSORIES

2950	TRIAxIAL MOUNTING BLOCK
2981-4	MOUNTING STUD (M5-0.8)
3023B-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.