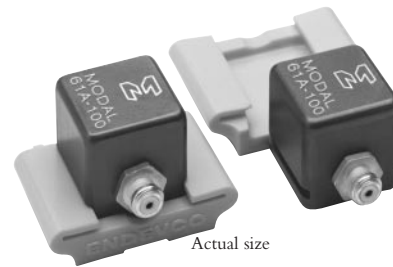


# ISOTRON® Accelerometer

## MODAL 61A-100 and -500

- Low Impedance Output
- Light Weight, Rugged
- Outstanding Phase and Amplitude Response
- Innovative  $\Sigma$ Z-mount Quick Release
- General Purpose Vibration & Modal Studies

**ENDEVCO**  
**MODEL**  
**61A -100**  
**-500**

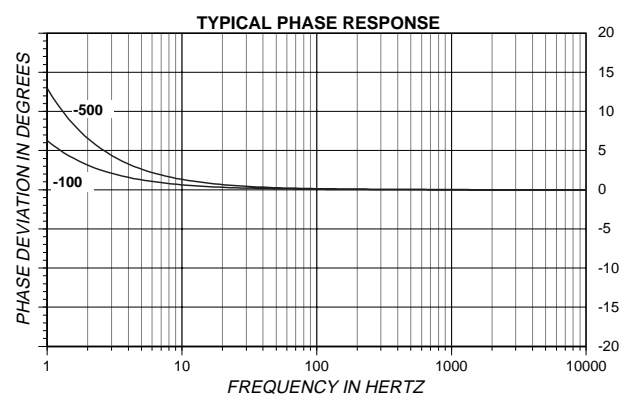
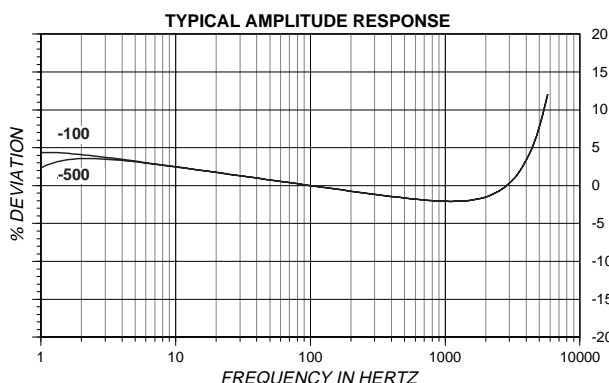
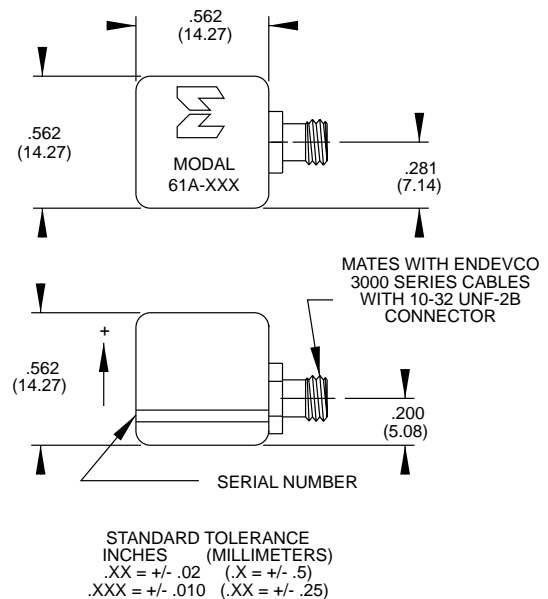


### DESCRIPTION

The ENDEVCO® MODAL 61A is a lightweight piezoelectric accelerometer with integral electronics, designed specifically for modal analysis. This accelerometer offers exemplary dynamic range and frequency response, and maintains good phase characteristics over its entire operating frequency range. MODAL 61A also demonstrates outstanding shock survivability. This unit is designed to withstand most rough handling in laboratory environments without sustaining internal damage. In addition to adhesive mounting, MODAL 61A comes with the option of using ENDEVCO's  $\Sigma$  Z-mount, a convenient mounting scheme that reduces set-up time during installation and calibration. The MODAL 61A can be powered by any signal analyzer that features a 2 to 10 mA constant current supply.

The MODAL 61A features ENDEVCO's PIEZITE® Type P-8 crystal element, operating in bender mode, which offers the highest transduction efficiency without sacrificing ruggedness. This accelerometer incorporates an internal hybrid signal conditioner in a two-wire system which transmits its low impedance voltage output through the same cable that supplies the required constant current power. Signal ground is isolated from the mounting surface. The model number suffix indicates acceleration sensitivity in mV/g; i.e., 61A-500 features output sensitivity of 500 mV/g.

ENDEVCO Signal Conditioner Models 133, 2792B, 2793, 4416B or OASIS 482A, 433, 428 are recommended for use with this accelerometer.



**ENDEVCO**  
**MODEL**  
**61A -100**  
**-500**

**ISOTRON® Accelerometer**

**SPECIFICATIONS**

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C), 4 mA, and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

DYNAMIC CHARACTERISTICS	Units	-100	-500
RANGE	g	±50	±10
VOLTAGE SENSITIVITY, Typical	mV/g	100	500
FREQUENCY RESPONSE		See Typical Curves	
Amplitude Response			
±5%	Hz	1 to 3000	1 to 3000
±1dB	Hz	.5 to 4000	.5 to 4000
Phase Response, ±5°	Hz	2 to 3000	4 to 3000
Resonance Frequency	Hz	15 000	
TRANSVERSE SENSITIVITY	%	≤ 3	
TEMPERATURE RESPONSE			
±5%		+32°F to +104°F (0°C to +40°C)	
±10%		-4°F to +185°F (-20°C to +85°C)	
AMPLITUDE NONLINEARITY	%	≤ 1	

**OUTPUT CHARACTERISTICS**

OUTPUT POLARITY	Acceleration applied in the direction of arrow provides positive output		
DC OUTPUT BIAS VOLTAGE	Vdc	+9.5 to +10.5	
OUTPUT IMPEDANCE			
2 mA to 3 mA	Ω	≤ 300	
3 mA to 20 mA	Ω	≤ 100	
FULL SCALE OUTPUT VOLTAGE		±5	
RESIDUAL NOISE (0.5 Hz to 10 kHz bandwidth)	eq. g rms	0.0005	0.0004
GROUNDING	Signal ground is connected to the case and isolated from the mounting surface		

**POWER REQUIREMENT**

COMPLIANCE VOLTAGE	Vdc	+21 to +24
SUPPLY CURRENT	mA	+2 to +10
WARM-UP TIME (to reach 90% of final bias)	sec	< 5

**ENVIRONMENTAL CHARACTERISTICS**

TEMPERATURE RANGE	- 4°F to + 185°F (- 20°C to + 85°C)		
HUMIDITY	Epoxy sealed		
SINUSOIDAL VIBRATION LIMIT	g	±100	±20
SHOCK LIMIT	g pk	10000	
BASE STRAIN SENSITIVITY	eq. g/μstrain	0.001	
At 250 μstrain			
THERMAL TRANSIENT SENSITIVITY	eq. g /°F (°C)	.02	

**PHYSICAL CHARACTERISTICS**

DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	6.1 (0.22)
CASE MATERIAL	Aluminum Alloy, Anodized	
CONNECTOR	Coaxial receptacle w/10-32 UNF thread designed to mate with Endevco Model 3000 series cable	
MOUNTING	Adhesive or ΣZ-mount	

**CALIBRATION**

SUPPLIED:		
VOLTAGE SENSITIVITY	mV/g	
MAXIMUM TRANSVERSE SENSITIVITY	%	
FREQUENCY RESPONSE	%	20 Hz to 5 kHz

**ACCESSORIES**

Model 3061-120 (10 ft) CABLE ASSEMBLY  
P/N 30908 ΣZ-MOUNTS, X3

**OPTIONAL ACCESSORIES**

P/N 31849 ADHESIVE MOUNTING KIT

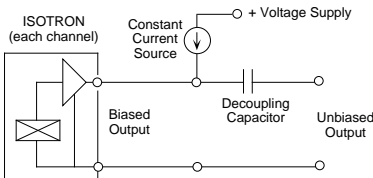
**OTHER ENDEVCO PRODUCTS FOR MODAL MEASUREMENT**

Model 3024-120 (10 ft) TWISTED-PAIR CABLE ASSEMBLY  
Model 28959E PORTABLE PRECISION  
CALIBRATION  
Model 28981A MODAL HAMMER KIT  
Model 2793 16-CHANNEL SIGNAL CONDITIONER

**NOTES**

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.

Model 133 3-channel  
Signal Conditioners



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.