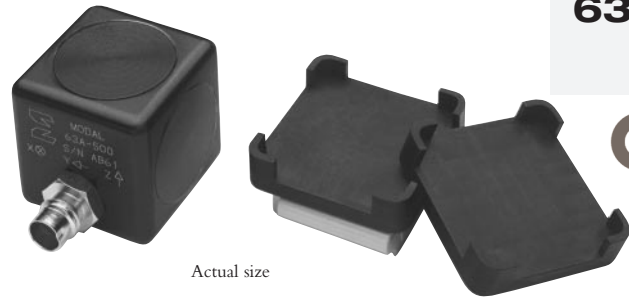


ISOTRON® Accelerometer

**ENDEVCO
MODEL
63A-100
-500**

MODAL 63A-100 and -500

- Triaxial, Low Impedance Output
- Σ Z-mount Quick Release Compatible
- Outstanding Phase and Amplitude Response
- Light Weight, Single Cable, Rugged, Low Cost
- Designed for Modal Analysis



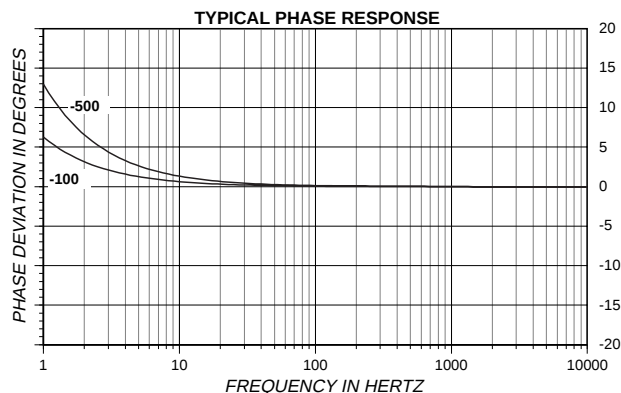
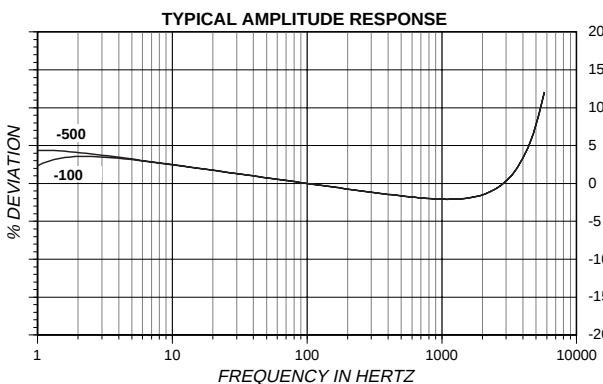
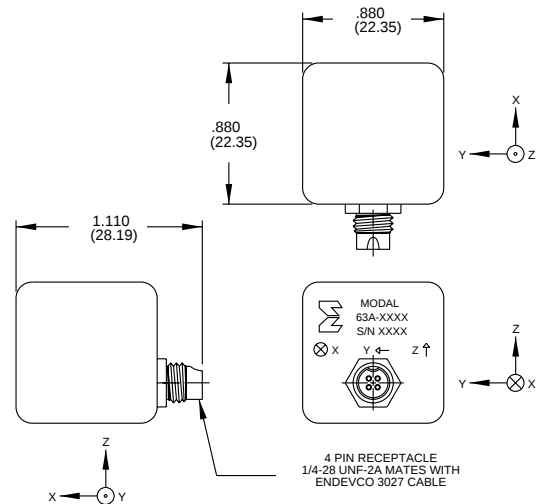
Actual size

DESCRIPTION

The ENDEVCO® MODAL 63A is a lightweight triaxial piezoelectric accelerometer with integral electronics, designed specifically to measure modal responses in three orthogonal axes. This accelerometer offers exemplary dynamic range and frequency response, and maintains good phase characteristics over its entire operating temperature. MODAL 63A also demonstrates outstanding shock survivability. This unit is designed to withstand most rough handling in laboratory environments without sustaining internal damage. The MODAL 63A also takes advantage of ENDEVCO's unique Σ Z-mount quick release mounting system.

The MODAL 63A 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 three independent internal hybrid signal conditioners operating in constant current mode, which is a common feature in many popular signal analyzers. Its low impedance voltage outputs are connected to the same 4-wire 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., 63A-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
63A-100
-500

ISOTRON® Accelerometer

SPECIFICATIONS (EACH AXIS)

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 2000	1 to 2000
±1dB	Hz	.5 to 3000	.5 to 3000
Phase Response, ±5°	Hz	2 to 2000	4 to 2000
Resonance Frequency	Hz	15 000	
TRANSVERSE SENSITIVITY	%	≤ 5	
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]	%	≤ 1	

OUTPUT CHARACTERISTICS

OUTPUT POLARITY	See Outline Drawing		
DC OUTPUT BIAS VOLTAGE	Vdc	+11.5 to +12.5	
OUTPUT IMPEDANCE			
2 mA to 3 mA	Ω	≤ 300	
3 mA to 20 mA	Ω	≤ 100	
FULL SCALE OUTPUT VOLTAGE		±5	
RESOLUTION (0.5 Hz to 3 kHz bandwidth)	eq. g rms	0.0005	.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)	0.08 (014)	

PHYSICAL CHARACTERISTICS

DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	20 (0.71)
CASE MATERIAL	Aluminum Alloy, Anodized	
CONNECTOR	Microtech DR-4S-4H receptacle mates with Endevco Model 3027AM3 Series Cable	
MOUNTING	Adhesive or  Z-mount [2]	

CALIBRATION

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

ACCESSORIES

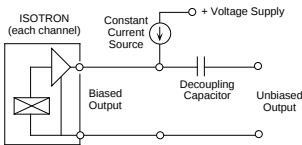
Model 3027AM3 (10 ft) TRIAXIAL CABLE ASSEMBLY, 3 BNC's
P/N 31235 ADAPTOR FOR Z-MOUNT

OPTIONAL ACCESSORIES

Model 3027AM4-120 (10 ft) TRANSDUCER EXTENSION CABLE,
BETWEEN TRANSDUCER AND 3027AM3
Model 3027A-120 TRIAXIAL CABLE ASSEMBLY, PIGTAILS

NOTES

1. Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. Send for TP290 for more details.



2. Use of Z-mount would limit the response of X and Y axis to about 300 Hz.
3. 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.
4. Adhesives such as petro-wax, hot-melt glue, and cyanoacrylate epoxy (super glue) may be used to mount the accelerometer temporarily to the test structure. An adhesive mounting kit (P/N 31849) is available as an option from Endevco. To remove an epoxy-mounted accelerometer, first soften the epoxy with an appropriate solvent and then twist the unit off with the supplied removal wrench. Damage to sensors caused by inappropriate removal procedures are not covered by Endevco's warranty.

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.