

# ISOTRON® Accelerometer

**ENDEVCO  
MODEL  
25A**

## Model 25A



- **World's Smallest ISOTRON**
- **Light Weight (0.2 gm)**
- **Flexible, Replaceable Cable**
- **Low Impedance Output**
- **Excellent for Printed Circuit Board and Disk Drive Testing**



Actual size



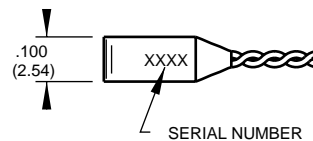
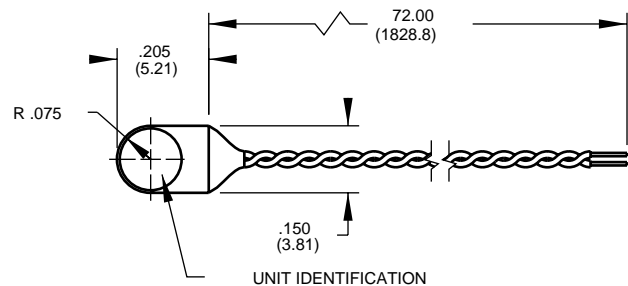
Optional triaxial mounting block

### DESCRIPTION

The ENDEVCO® Model 25A ISOMIN™ is an extremely small, adhesive mounted piezoelectric accelerometer with integral electronics, designed specifically for measuring vibration on very small objects. The unit weighs only 0.2 gm, reducing unwanted mass loading effects. The unit comes with two pre-installed fine gage (34 AWG) wires as output leads. These leads can be easily repaired in the field, or a new lead assembly may be reinstalled at the factory. A heavier gage (28 AWG) cable is also provided for extension purpose. The Model 25A is ideal for measuring vibration in scaled models, small electronic components, and biomedical research. An optional triaxial mounting block (Model 2950M16) is available for setting up three-axis measurement.

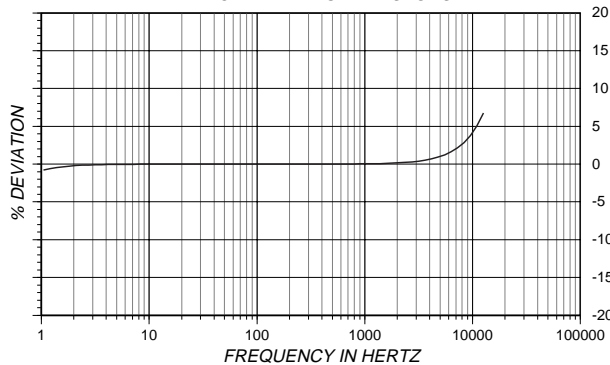
The Model 25A features ENDEVCO's PIEZITE® Type sensing element operating in shear mode. The internal electronics inside the accelerometer converts high impedance input into low impedance voltage output through the same cable that supplies the required 4 mA constant current power. Signal ground is isolated from the mounting surface of the unit by a hard anodized surface. A removal tool is included for proper removal in the field.

ENDEVCO Signal Conditioner Models 133, 4416B, 2792B, 2793, 2775A (set to 4 mA ± 0.5 mA), are recommended for use with this accelerometer.

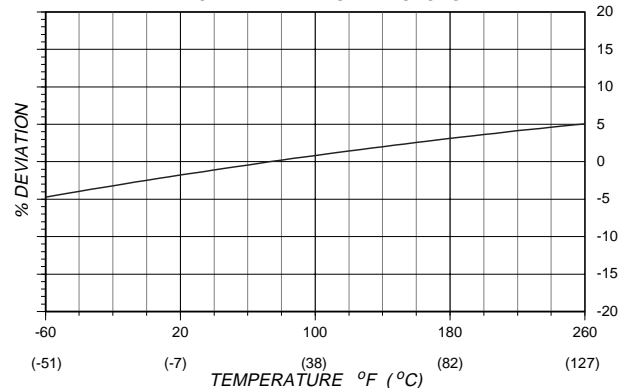


STANDARD TOLERANCE	
INCHES	(MILLIMETERS)
.XX = +/- .02	(.X = +/- .5)
.XXX = +/- .010	(.XX = +/- .25)

TYPICAL AMPLITUDE RESPONSE



TYPICAL TEMPERATURE RESPONSE



# 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	
RANGE	g	±1000
VOLTAGE SENSITIVITY		
Typical	mV/g	5
Minimum	mV/g	4
FREQUENCY RESPONSE		See Typical Amplitude Response
RESONANCE FREQUENCY	kHz	50
AMPLITUDE RESPONSE [2]		
±5%	Hz	2 to 8000
±1dB	Hz	1 to 12 000
TEMPERATURE RESPONSE		See Typical Curve
TRANSVERSE SENSITIVITY	%	≤ 5
AMPLITUDE LINEARITY	%	< 2 to FULL SCALE

## OUTPUT CHARACTERISTICS

OUTPUT POLARITY		Acceleration directed into the base of the unit produces positive output
DC OUTPUT BIAS VOLTAGE	Vdc	+8.5 to +11.5
OUTPUT IMPEDANCE	Ω	≤ 600
FULL SCALE OUTPUT VOLTAGE	V	±5.0
RESIDUAL NOISE	equiv. g rms	≤ 0.007
GROUNDING		Signal ground isolated from mounting surface.

## POWER REQUIREMENT

SUPPLY CURRENT [1]	mA	+3.5 to +4.5
VOLTAGE	Vdc	+18 to +24
WARM-UP TIME	sec	< 3

## ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE		-67°F to +257°F (-55°C to +125°C)
HUMIDITY		Epoxy sealed, non-hermetic
SINUSOIDAL VIBRATION LIMIT	g pk	500
SHOCK LIMIT [2]	g pk	2000
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.002
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.09

## PHYSICAL CHARACTERISTICS

DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	0.2 (.01)
CASE MATERIAL		Aluminum Alloy, Hard Anodized
MOUNTING [3]		Adhesive

## CALIBRATION

SUPPLIED:		
SENSITIVITY	mV/g	
TRANSVERSE SENSITIVITY	%	
FREQUENCY RESPONSE	%	20 Hz to 12 kHz

## ACCESSORIES

Model 3024-120 (10 ft) CABLE ASSEMBLY, TWISTED PAIR [4]  
P/N 31275 REMOVAL TOOL  
MOUNTING WAX

## OPTIONAL ACCESSORIES

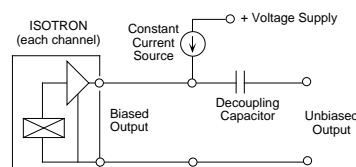
Model 2950M16 TRIAXIAL MOUNTING BLOCK  
P/N 31849 ADHESIVE MOUNTING KIT  
P/N 32227 MOUNTING WAX

## NOTES

- Excessive current supply may cause permanent damage to accelerometer.
- 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.
- Depending on the dynamic and environmental requirements, 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. When removing an epoxy-mounted accelerometer, first soften the epoxy with an appropriate solvent, then twist the unit off with the supplied removal tool. Failure to heed this caution may cause permanent damage to the transducer, which is not covered under warranty.

- Small gage wires are soldered to the terminals at the factory. They are to be spliced together with the supplied cable assembly in the field for extension purpose.
- 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.



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.