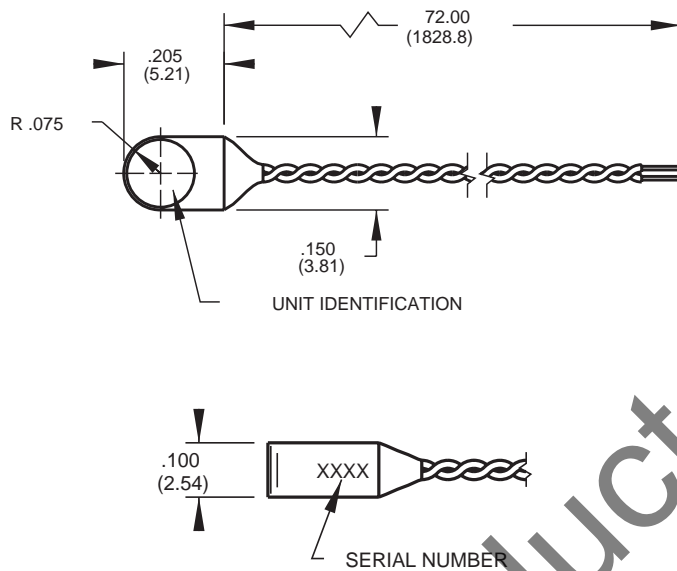


# Miniature IEPE accelerometer

## Model 25A



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

### Key features

- Light weight (0.2 gm)
- Flexible cable
- Low impedance output
- Excellent for printed circuit board and disk drive testing

### Description

The Endevco® model 25A 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. If a detachable coaxial cable, which can be replaced by the user in the field, is desired, model 25B is available.

The model 25A features a shear mode design, which provides excellent protection from base strain and temperature transients. 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.

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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.

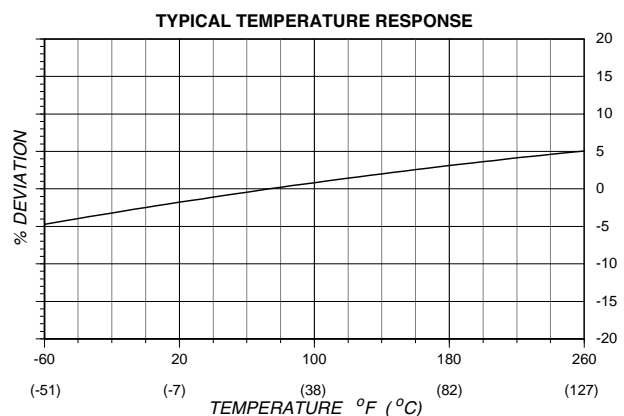
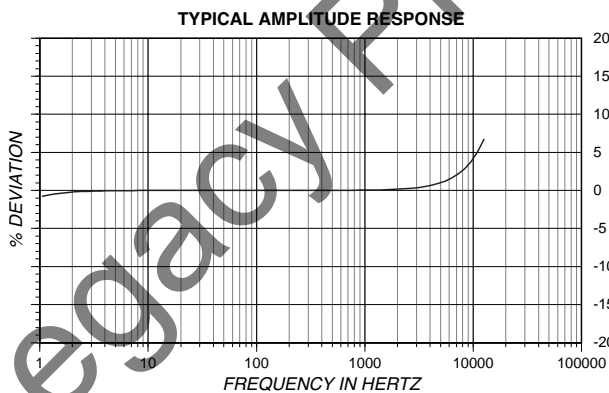
Specifications		
Dynamic characteristics	Units	
Range	g	±740
Voltage sensitivity		
Typical	mV/g	5
Minimum	mV/g	4
Frequency response		See typical amplitude response
Resonance frequency		
Typical	kHz	50
Minimum	kHz	45
Amplitude response		
±5%	Hz	2 to 8000
±1 dB	Hz	1 to 12 000
Temperature response		See typical curve
Transverse sensitivity	%	≤ 5
Amplitude linearity	%	< 2 to full scale
Output characteristics		
Output polarity		Acceleration directed into base of unit produces positive output
DC output bias voltage	Vdc	+8.5 to +11.5
-67°F to +257°F (-55°C to +125°C)	%	±5 typical
Output impedance	Ω	≤ 600
Full scale output voltage	V	±3.7
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 (survival)	g pk	1000
Shock limit (survival) [2]	g pk	2000
Base strain sensitivity	equiv. g pk/μstrain	0.002
Electromagnetic sensitivity	equiv. g rms/gauss	0.09
Acoustic sensitivity at 140 dB SPL	equiv. g	0.008
Physical characteristics		
Dimensions		See outline drawing
Weight without cable	oz (gm)	0.01 (0.2)
Case material		Aluminum alloy, hard anodized
Mounting [3]		Adhesive
Calibration		
Supplied:		
Sensitivity	mV/g	
Transverse sensitivity	%	
Frequency response	%	20 Hz to 12 kHz

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Accessories		
Product	Description	25A
3024-120	Twisted Pair cable assembly, 10-32 plug to pigtail, 10 feet [4]	Included
31275	Removal tool	Included
32279	Mounting wax	Included
2950M16	Triaxial mounting block	Optional
4416C	Signal conditioner	Optional

## 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. See Tech Paper 290 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. 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 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.



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