

Model 27AM1 Isotron[®] accelerometer

Features

- Low impedance output
- Adhesive mounting
- Light weight (1 gm)
- Flexible, detachable cable
- Hermetically sealed, titanium case

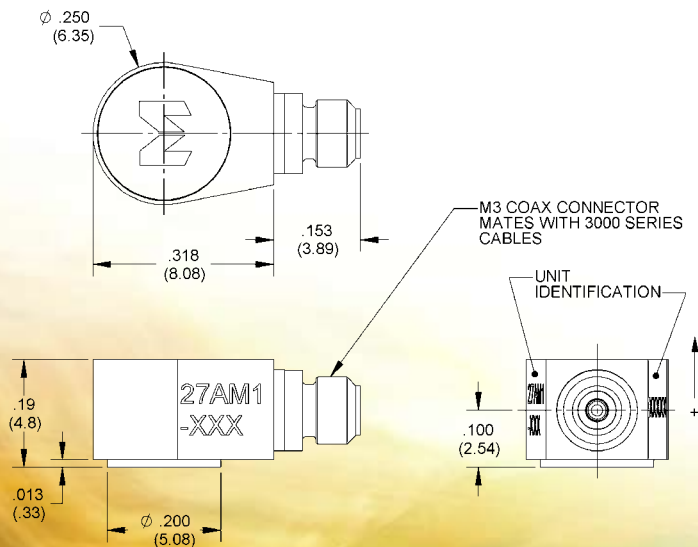


Description

The Endevco[®] Model 27AM1 is an extremely small, adhesive mounting piezoelectric accelerometer with integral electronics, designed specifically for measuring vibration on mini-structures and small objects. These accelerometers offer high resonance frequency and wide bandwidth, their light weight (1 gm) effectively eliminates mass loading effects. A field-replaceable miniature cable is supplied with the accelerometer.

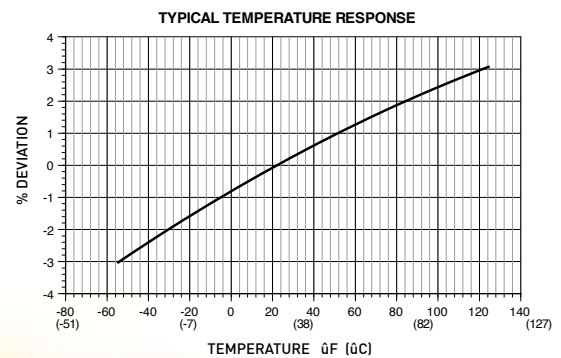
Model 27AM1 feature Endevco's Piezite[®] Type P-8 crystal element, operating in annular shear mode, which exhibits excellent output sensitivity stability over time. These accelerometers incorporate an internal hybrid signal conditioner in a two-wire system, which transmits its low impedance voltage output through the same cable that supplies the constant current power. A tool is included in the package to ensure proper removal of the accelerometer from its mounting surface.

Endevco signal conditioner Models 4416B, 133, 2792B, 2793, 2775B or OASIS 2000 computer-controlled system are recommended for use with these accelerometers.



STANDARD TOLERANCE
INCHES (MILLIMETERS)
.XX = $\pm .02$ (X = $\pm .5$)
.XXX = $\pm .010$ (XX = $\pm .25$)

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Endevco

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	-10	-100
RANGE	g pk	±500	±50
VOLTAGE SENSITIVITY	mV/g	10	100
±10%			
FREQUENCY RESPONSE		See Typical Amplitude Response	
RESONANCE FREQUENCY	kHz	50	
AMPLITUDE RESPONSE			
±10% (typical)	Hz	2 to 10 000	3 to 10 000
±3 dB	Hz	1.0 to 15 000	1.5 to 15 000
TEMPERATURE RESPONSE		See Typical Curve	
TRANSVERSE SENSITIVITY	%	5 max	
AMPLITUDE LINEARITY	%	< 2 to full scale	

OUTPUT CHARACTERISTICS

OUTPUT POLARITY	Acceleration directed into base of unit produces positive output		
DC OUTPUT BIAS VOLTAGE	Vdc	+12.3 to +13.5	
OUTPUT IMPEDANCE	Ω	< 200	
FULL SCALE OUTPUT VOLTAGE	V	±5	
RESOLUTION	equiv. μg rms	2000	400
1 Hz to 10 kHz, broadband			
OVERLOAD RECOVERY	μs	< 10	
GROUNDING		Signal ground connects to case	

POWER REQUIREMENT

SUPPLY VOLTAGE	Vdc	+23 to +30
SUPPLY CURRENT	mA	+2 to +10
WARM-UP TIME	sec	2
To within 10% of final bias		

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE	-67°F to +257°F (-55°C to +125°C)		
HUMIDITY	Hermetically Sealed		
SINUSOIDAL VIBRATION LIMIT	g pk	1000	
SHOCK LIMIT [1]	g pk	5000	
BASE STRAIN SENSITIVITY	equiv. g pk/μstrain	0.13	0.05
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (°C)	0.16 (0.29)	0.07 (0.12)
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	.0001	.00006

PHYSICAL CHARACTERISTICS

DIMENSIONS	See Outline Drawing		
WEIGHT	oz (gm)	.028 (0.8)	.035 (1.0)
CASE MATERIAL	Titanium Alloy		
CONNECTOR	Coaxial, M3 Thread		

CALIBRATION

SUPPLIED:	
SENSITIVITY	mV/g
MAXIMUM TRANSVERSE SENSITIVITY	%
FREQUENCY RESPONSE	20 Hz to 10 kHz

ACCESSORIES

3053HM1-120	CABLE ASSEMBLY, (10 ft)
32279	MOUNTING WAX
2943M1	REMOVAL TOOL
2987M9	ISOLATION MOUNT

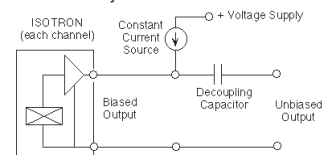
OPTIONAL ACCESSORIES

32227	MOUNTING WAX
3053VM1-120	CABLE ASSEMBLY, (10 ft)

NOTES:

- 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.

- 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.
- 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.

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