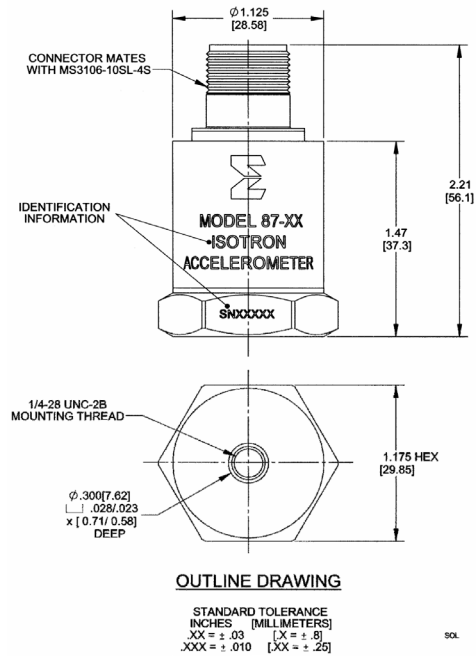


# Seismic accelerometer

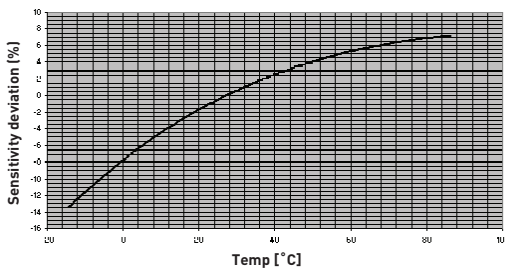
## Model 87



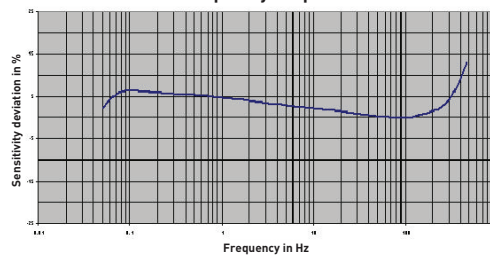
### Key features

- Ultra low-noise
- Near-DC response, flat to 0.05 Hz
- Output sensitivity, 1 V/g or 10 V/g available
- Overload protected to 400 g's
- Low impedance output (<10Ω)
- Ideal for floor isolation testing, photolithography applications, and seismic sensing or monitoring

Typical temperature response



Frequency response



The Endevco® model 87 is a piezoelectric accelerometer with integral electronics, designed specifically for measuring ultra-low level, seismic events and low frequency vibration on structures and objects. The unit is hermetically sealed against environmental contamination, features a 1 V/g or 10 V/g sensitivity, state-of-the-art signal-to-noise ratio, and near-dc frequency response.

The model 87 incorporates an advanced ultra low noise hybrid circuit operating in a constant current mode. A simple two-wire system transmits its low-impedance voltage output and the required power. Signal ground is isolated from the outer case and mounting surface to prevent ground loops. A specially designed cable assembly is available as an optional accessory.

Endevco brand signal conditioner model 4416BM1 is recommended for use with these accelerometers.

# Seismic accelerometer

## Model 87

### Specifications

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

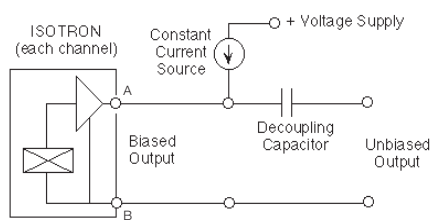
Dynamic characteristics	Units	-1		-10V
Range	g	±5		±0.5
Voltage sensitivity, typical	V/g	1		10
Frequency response			See typical curve	
Resonance frequency, typical	Hz	1220		1220
Amplitude response ±10%	Hz	0.015–380		0.05–380
Transverse sensitivity, typical	%		≤ 0.5	
Temperature response	°F [°C]		See typical curve	
Amplitude non-linearity	%		< 1	
Phase vs Frequency <5°	Hz	0.15–380		0.5–380
<b>Output characteristics</b>				
Output polarity		Acceleration directed into base produces positive output		
DC output bias voltage	Vdc		+10 ±2	
Output impedance	Ω		< 10	
Full scale output voltage	V pk		5	
Residual noise [1]				
broadband, 0.1 Hz to 1 kHz	equiv. ng rms	< 1500		< 400
spectral, 0.1 Hz	equiv. ng/√Hz	1000		340
spectral, 1 Hz	equiv. ng/√Hz	170		90
spectral, 10 Hz	equiv. ng/√Hz	36		25
spectral, 100 Hz	equiv. ng/√Hz	20		10
Output connection				
Pin A			Output signal	
Pin B			Signal ground	
Overload recovery, 2X full scale	sec	30		20
Insulation to ground	MΩ	7100		7100
<b>Supply requirement</b>				
Supply voltage	Vdc		+24 to +30	
Supply current	mA		+2 to +10	
Warm-up time, typical (90% of stabilized bias)	sec	120		25
<b>Environmental characteristics</b>				
Temperature range				
Storage		-65°F to +212°F [-54°C to +100°C]		
Operating		-4°F to +212°F [-20°C to +100°C]		
Humidity		Hermetically sealed		
Base strain sensitivity	eq. g/μstrain	1.4 x 10 <sup>-4</sup>		
Sinusoidal vibration limit	g pk	±50		
Shock limit	g pk	< 400		
Thermal transient sensitivity	eq. g/°F/°C	0.0018 (0.001)		
Electromagnetic sensitivity @ 60 Hz	equiv. g/gauss	0.00003		
<b>Physical characteristics</b>				
Dimensions		See outline drawing		
Weight, typical	oz [gm]	0.6 (170)		
Case material		Stainless steel		
Connector		Top mounted 2-pin MIL-C-5015		
Mounting		1/4-28 Female		
Mating connector		MS3106-10SL-4S		
<b>Calibration</b>				
Supplied:				
Output sensitivity	V/g		10 Hz	
Maximum transverse sensitivity	%			
Frequency response	%		1 Hz to 100 Hz	

# Seismic accelerometer

## Model 87

### Accessories

Product	Description	87
2984-2	Mounting stud, 1/4-28 to 1/4-28	Included
6923M9-120	Cable assembly, 10 ft, non-terminated (tinned leads)	Optional
6923M18-120	Cable assembly, 10 ft, terminated, BNC connector	Optional
2984-6	Mounting stud, 1/4-28 to M6	Optional
CS130UL	Low frequency from 0.1 Hz	Optional



### Notes:

- Noise values shown above include the electronic circuit's noise and the PE transducer's noise. The PE transducer's noise is determined based on the PE element's loss factor which is assumed to be constant over the entire frequency range.
- Maintain high levels of precision and accuracy using Endeveco's factory calibration services. Call Endeveco'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.

### Contact

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