



High Resolution Accelerometer

MODEL 147-01/1

MODEL 147-01/3

Applications:

- Free Field Reference
- Building Arrays
- Structural Monitoring
- Site Response
- Aftershock Studies

Features:

- State-of-the-Art Force-Balance Accelerometer
- Low Noise
- Sensitivity and offset stable over wide temperature range
- Available in uniaxial, triaxial, and borehole models



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Related Sub-systems:

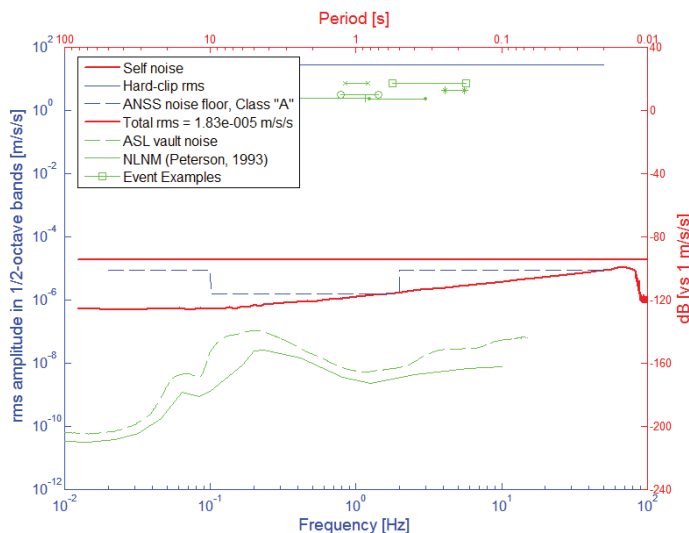
High Resolution Seismic Recorders, 130-01 & 130B-01
 Accelerometers, 131A & 131B
 Strong Motion Accelerographs, 130-SM & 130-SMA
 Miniature Seismic Recorder, 125A-01

Specifications subject to change without notice. Rev. 2.0
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Introduction

The 147-01 is a force balance accelerometer. The 147-01 converts motion acceleration signals into voltage signals to measure various low frequency and ultra low frequency motion. The 147-01 accelerometer adopts the force balance feedback technique to make up for the mechanical characteristic limitations of conventional accelerometers. This overcomes the shortcomings of nonlinear distortion and threshold of sensitivity of elastic measuring parts. The advanced features of the 147-01 accelerometer include high sensitivity, large linear range, high resolution, and high dynamic range. The 147-01 accelerometer has DC response. The 147-01 is available in uniaxial, triaxial and borehole.

Amplitude Operating-Range Diagram in Acceleration Units
 Test of "147-01 Ch1" ("Class A" Strong-motion accelerometer)



147-01 Specifications

Models: 147-01/1 Uniaxial
 147-01/3 Triaxial
 147-01/BH Borehole

Electrical

Full-scale Range: $\pm 4g$
 Full-scale Output: $\pm 10V$
 Type: Force-balance accelerometer
 Self Noise: $< 1 \mu m/s/s$
 Linearity: $< 0.03\%$ (tilt test)
 Sensitivity: $\pm 2.5 V/g$
 Frequency Response: DC - 150Hz
 Damping: 0.7
 Output Impedance: $< 50\Omega$
 Self-test Response: Logic level input will produce consistent g level output
 Lightning Protection: Built-in surge protection

Power

Average Power: $< 80mA$ (Triaxial)
 Power Supply: +12 VDC

Environmental

Operating Temperature: $-30^{\circ}C$ to $+60^{\circ}C$
 Storage Temperature: $-40^{\circ}C$ to $+85^{\circ}C$
 Humidity: 0 - 100% not-condensing

Mechanical

Size (Uniaxial): 4.0" wide x 2.5" long x 2.5" high (10×6.3×6.3cm)
 Size (Triaxial): 5.7" wide x 4.7" long x 2.9" high (14.5×11.8×7.3cm)
 Weight (Uniaxial): 2.2 lbs (1 kg)
 Weight (Triaxial): 4.4 lbs (2 kg)
 Watertight Integrity: IP 67
 Shock: Survives a 1 meter drop on any axis