Columbia Research Laboratories, Inc.

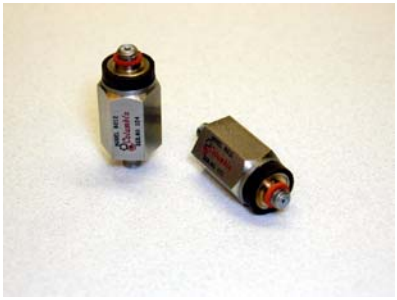
Integrated Accelerometers

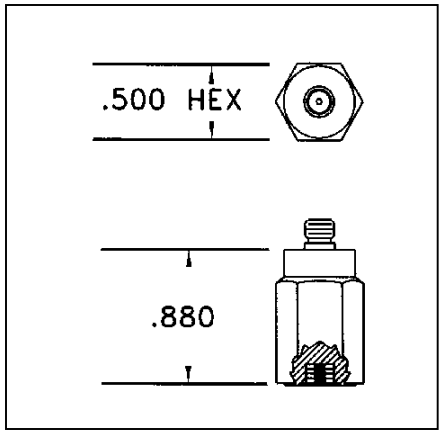
Models 8011 & 8012

- *Vibration & Shock
- *Low Impedance Output
- *Sensitivities 1 mV/g & 0.25 mV/g
- *Low Base Strain Sensitivity
- *Electrical Isolation
- *Hermetically Sealed

The Models 8011 and 8012 Piezoelectric Accelerometers are designed for the measurement of high frequency, moderate to high-level shock and vibration. They incorporate a hybrid electronic assembly within a rugged, welded, double-wall stainless steel body to enhance operation in humid and dirty environments.

The sensors' double-wall, electrically isolated construction provides additional isolation from metallic structures, which aids in acquiring accurate, wideband shock and vibration data uncorrupted by electrical ground loop currents. The sensor module is bonded into the outer stainless steel body with a high temperature, glass-filled polymer insulator. Low impedance output of 100 ohms or less allows operation directly into standard readout equipment without auxiliary signal conditioning, and is capable of driving up to 500 feet of shielded cable. ***Consult the factory for customized versions of these sensors.***





Specifications

Transfer / Electrical	8011	8012
Voltage Sensitivity[1]	1 mv/g +/-10%	0.25 mv/g +/-10%
Range	+/-5,000 g Peak	+/-20,000 g Peak
Frequency Linearity[2]	+/-5% Max, 2 Hz To 10,000 Hz	+/-5% Max, 2 Hz To 15,000 Hz
Mounted Resonant Frequency	50KHz, Nom.	75KHz, Nom.
Transverse Sensitivity	<5%	
Amplitude Linearity	+/-1.0% (BFSL) / 1,000 g	
Electrical Noise	0.04 g Equiv., Nom.	
Avg Temp Coeff of Sensitivity	0.03% / Deg F	
Output Bias Voltage	10 VDC	
Output Impedance	100 Ohms Max.	
Isolation Resistance	100M Ohm Min.	
Power Requirements	2 To 10 mA DC Constant Current with 12 To 30 VDC Compliance	
Environmental		
Vibration Limit	1,000 g	2,000 g
Shock Limit	5,000 g	20,000 g
Temperature Range	-65 To +250 Deg F (-54 To +121 Deg C)	
Humidity[3]	0 To 100% R.H.	
Base Strain Sensitivity	0.02 g/uE Equiv, Typical	
Electromagnetic Sensitivity	0.01 g (Equiv / 100 Gauss)	
Acoustic Sensitivity	0.05 g RMS (Equiv @ 124 dB SPL)	
Physical		
Configuration	Ring Shear	
Size	0.500 In. Hex. x 0.880 In. H (12.7 mm Hex x 22.4 mm H)	
Weight	0.6 Oz (17 Gm)	
Case Material	18-8 Stainless Steel	
Electrical Interface	Coaxial 10-32 Thread	
Mounting	10-32 Removable Stud	

NOTES:

[1] At +75 Deg F, 10g Peak, 100Hz; Power Supply 2 To 10 mA DC Constant Current with 12 To 30 VDC Compliance

[2] Referenced to Sensitivity @ 100 Hz.

[3] Unit is Hermetic Sealed.

Accessories Supplied:

(1) Miniature Cable Assembly, LNHT-3 Ft.
(1) 10-32 x 0.380"L Mounting Stud, St. Stl.
(1) Hardwood Storage Case
(1) Standard Calibration Data
(1) Certificate of Calibration Traceable to N.I.S.T.

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