

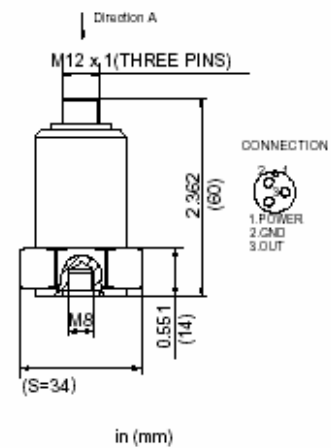
- + Low-g Seismic Measurements**
- + Very High Sensitivity at 10 V/g**
- + Low Impedance Output**
- + 0.040 mg Resolution**
- + Stud Mounted**



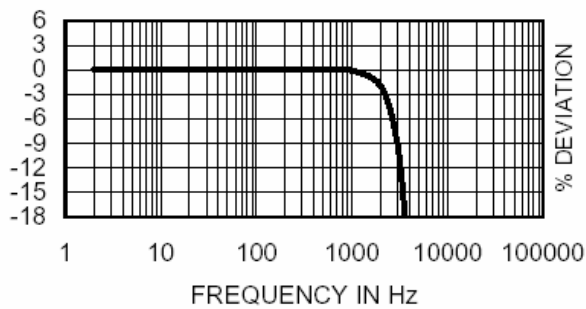
Description

The Sensors Model 159 is a stud mounted piezoelectric accelerometer designed for vibration measurements up to 1g. It offers a very high sensitivity of 10 V/g with a resolution as small as 40 micro-g. The accelerometer transmits its low impedance voltage output through the same cable that supplies the constant current power.

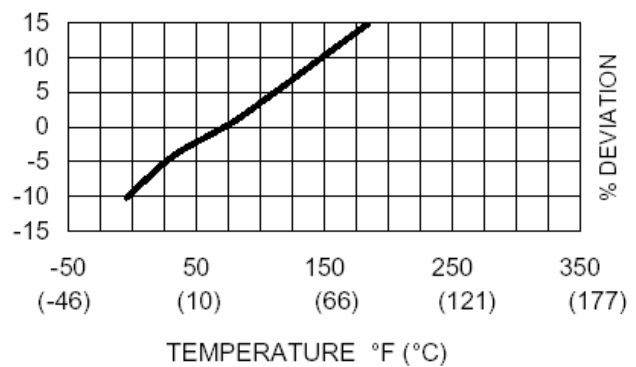
The Model 159 design is a welded stainless steel construction that is hermetically sealed against external contamination. Signal return is isolated from the outer case of the unit. The accelerometer features a M12 3-pin top connector.



Typical Amplitude Response



Typical Temperature Response



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.

	UNITS	
DYNAMIC CHARACTERISTICS		
Range	g (m/s ²)	1 (9.8)
Voltage Sensitivity, typical	mV/g (mV/m/s ²)	10,000 (1019.7)
Transverse Sensitivity	%	≤ 5
Frequency Response		See Typical Amplitude Response
Resonance Frequency	Hz	3,500
Amplitude Response		
± 5 %	Hz	0.5 – 800
± 1 dB	Hz	0.2 – 1,000
Temperature Response		See Typical Temperature Response
Amplitude Linearity	%	< 1
ELECTRICAL CHARACTERISTICS		
Output Polarity		Acceleration directed from base into the transducer defined as positive
Power Source Voltage (Constant Current)	VDC	+24 to +30
Supply Current	mA	2 to 10
Bias Voltage	V	0
Full Scale Output Voltage (peak)	Vp	≤ 10
Output Impedance	Ω	< 200
Noise	mg (mm/s ²)	< 0.04 (<0.39)
Grounding		Signal return isolated from case
ENVIRONMENTAL CHARACTERISTICS		
Temperature Range		-4°F to 176°F (-20°C to +80°C)
Humidity		Hermetically sealed, welded construction
Shock Limit	g pk (m/s ² pk)	500 (4903.3)
Base Strain	equiv. g /μstrain	0.0002
Magnetic Field Sensitivity	equiv. g rms /gauss (°T)	1.5E-5 (1.5)
Thermal Transient Sensitivity	equiv. g /°C	0.01
PHYSICAL CHARACTERISTICS		
Weight	oz (grams)	8.8 (250)
Case Material		Stainless Steel
Mounting		M8
Piezoelectric Material		PZT-5
Structure		Annular Shear
Output Connector		M12 (three-pin) receptacle, top mounting

ACCESSORIES

Included:

9510 M8/ 1/4-28 Mounting Stud
Calibration Sheet

Optional:

9030-120 Cable, M12 three-pin connector

NOTES

1. Low end response of the transducer is a function of its electronics.