

# Model 7109A Accelerometer



IEPE Shock Accelerometer  
±5,000g to ±20,000g Ranges  
Filtered Output  
Miniature, Stud Mount



**The Model 7109A** is a miniature stud mount IEPE shock accelerometer available in ±5,000g to ±20,000g ranges. The accelerometer features a welded hermetic stainless steel construction with an integral cable for electrical connection. The model 7109A incorporates a stable piezo-ceramic crystal in annular shear mode with outstanding linearity for shock measurements. The accelerometer has an operating range of 0°C to +85°C and a flat frequency response to >10kHz.

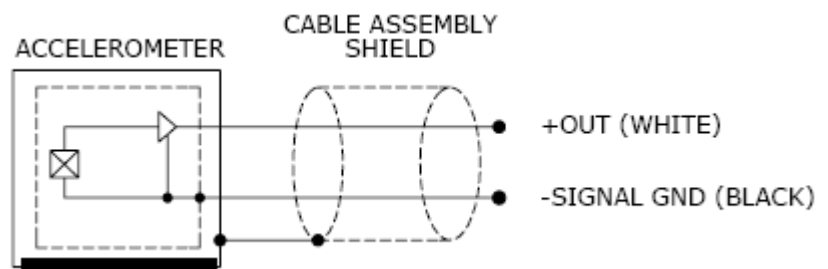
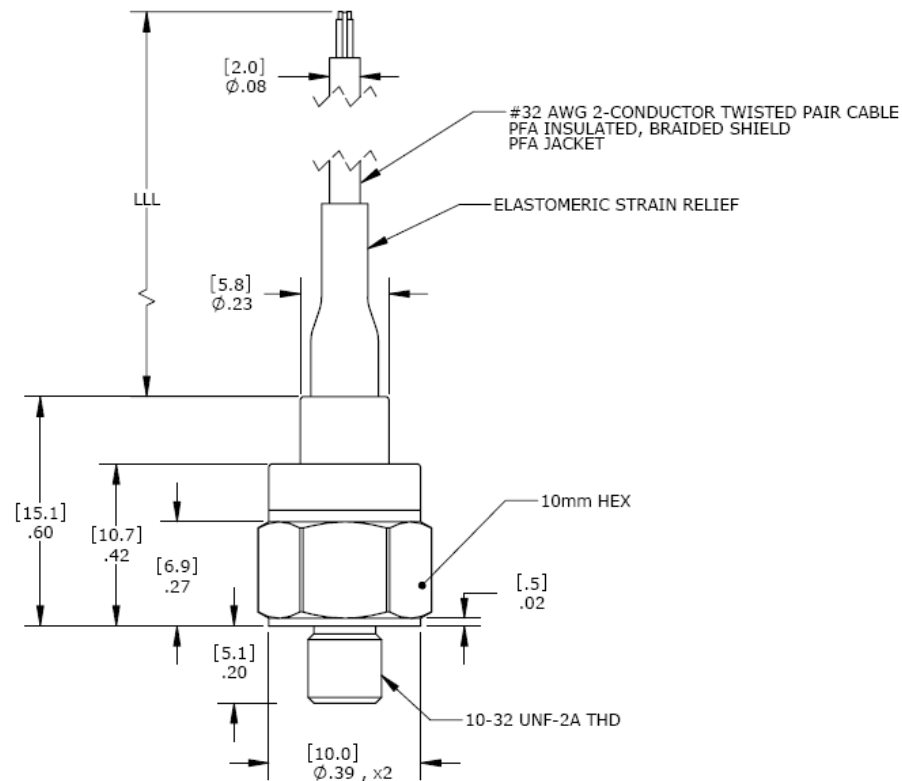
## FEATURES

- ±5,000g to ±20,000g Dynamic Range
- Welded Stainless Steel
- Hermetically Sealed
- 0°C to +85°C Operating Range
- Annular Shear Mode
- Case Isolated, Internally Shielded

## APPLICATIONS

- Far-field Shock Testing
- Drop Testing
- Structural Testing
- Impact Testing

## dimensions



# Model 7109A Accelerometer

## performance specifications

All values are typical at +24°C, 100Hz and 4mA excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Standard product parameters are described in PSC-1003 for Plug & Play AC Accelerometers.

### Parameters

#### DYNAMIC

	±5,000	±10,000	±20,000
Range (g)	±5,000	±10,000	±20,000
Sensitivity (mV/g)	1.00	0.50	0.25
Frequency Response (Hz)	2-8000	2-10000	2-10000
Filter Corner Frequency (-3dB)	25000	25000	25000
Natural Frequency (kHz)	>80	>90	>90
Non-Linearity (%FSO)	±1	±1	±1
Transverse Sensitivity (%)	<5	<5	<5
Shock Limit (g)	±50,000	±50,000	±50,000

#### Notes

±25%  
 ±1dB  
 -40dB/decade rolloff

#### ELECTRICAL

Compliance Voltage (Vdc)	18 to 30	18 to 30	18 to 30
Excitation Current (mA)	2 to 10	2 to 10	2 to 10
Bias Voltage (Vdc)	8 to 12	8 to 12	8 to 12
Bias Voltage (Vdc)	6 to 13	6 to 13	6 to 13
Output Impedance (Ω)	<100	<100	<100
Insulation Resistance (MΩ)	>50	>50	>50
Full Scale Output Voltage (V)	±5	±5	±5
Residual Noise (g RMS)	0.06	0.04	0.03
Discharge Time Constant (sec)	1 to 3		
Warm-Up Time (sec)	<5		
Ground Isolation	Case Isolated, Internally Shielded		

Room Temperature  
 -55 to +125°C

@100Vdc

Broadband 1Hz to 10kHz

#### ENVIRONMENTAL

Temperature Response (%)	See Typical Temperature Response Curve
Operating Temperature (°C)	0 to +85
Storage Temperature (°C)	-55 to +125
Humidity	Hermetically Sealed

#### PHYSICAL

Sensing Element	Ceramic (shear mode)
Case Material	Stainless Steel
Cable	#32 AWG PFA Insulated Leads, Braided Shield, PFA Jacket
Weight (grams)	5
Mounting	#10-32 or M5x0.8 Mounting Stud
Mounting Torque	18 lb-in (2.0 N-m)

See Note 1  
 Cable not included

<sup>1</sup> A 10-32 Connector Option is Available, Installed at End of Cable Leads

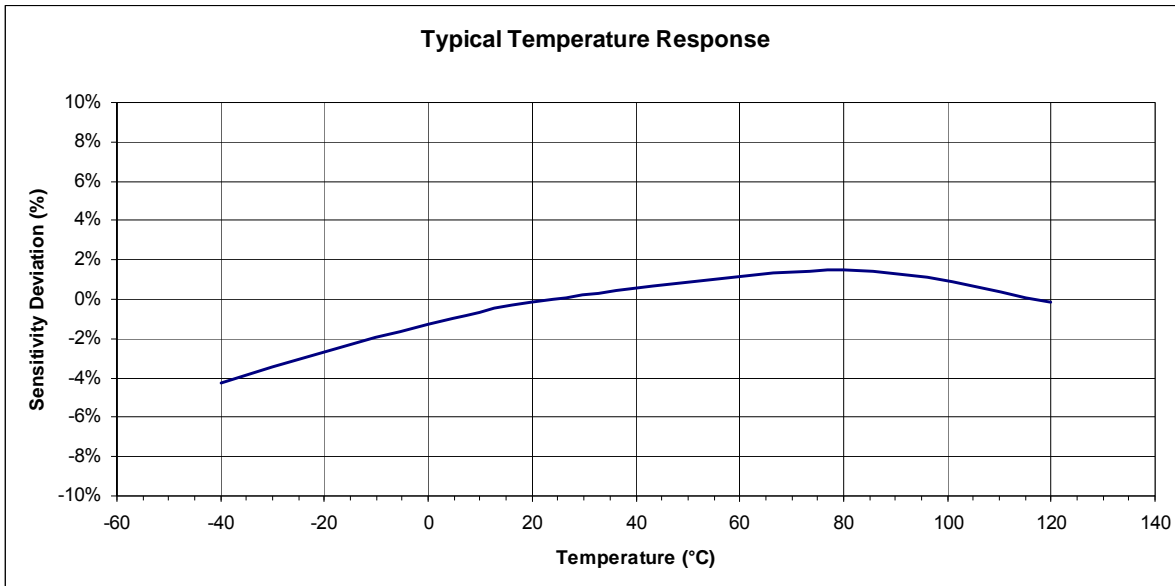
**Calibration supplied:** CS-SKLIN NIST Traceable Shock Calibration at 5000g

**Optional accessories:** 161A 4-Channel PE & IEPE Signal Conditioner

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# Model 7109A Accelerometer

## performance specifications



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## ordering info

PART NUMBERING Model Number+Range+Cable Length

7109A-GGG-LLL-XX

| | | Thread Option Dash Number  
 | | Cable Length (120 is 120 inches)  
 | Range (10K is 10,000g)

Dash Number	Thread Options
-01	#10-32 UNF-2B
-02	M5 x 0.8 6g

Example: 7109A-10K-120-01  
 Model 7109A, 10,000g, 120inch cable length, #10-32 UNF-2B stud