

Model 52 Accelerometer



DC Response Accelerometer
Low Cost, Miniature Package
Gas Damped MEMS
Reliable Performance



The Model 52 Accelerometer

is based on an advanced piezoresistive MEMS sensing element which offers exceptional dynamic range and stability. This unit features a full bridge output configuration with an operating temperature range from -40 to +90°C. A slight amount of internal gas damping provides outstanding shock survivability and a flat frequency response up to 7kHz.

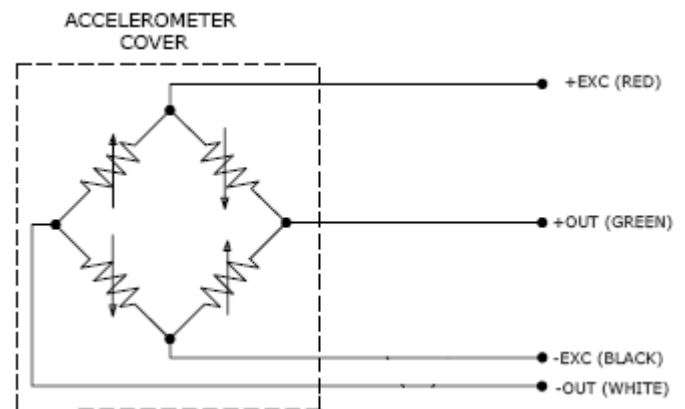
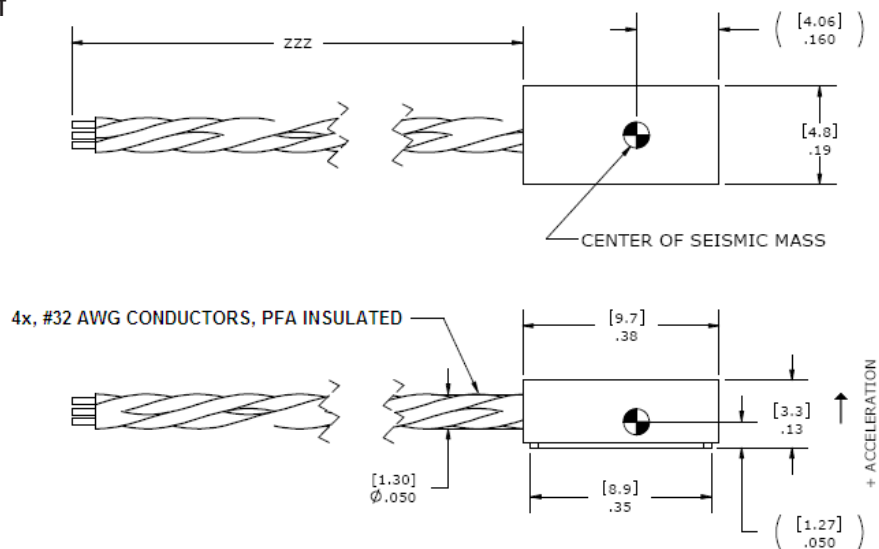
FEATURES

- Piezoresistive MEMS Sensor
- ±50g to ±2,000g Ranges
- 2-10 Vdc Excitation
- <± 50 mV Zero Offset
- -40 to +90 °C Temperature Range
- Linearity ±1%

APPLICATIONS

- Safety Impact Testing
 - Auto
 - Truck
 - Recreational Vehicles
- Shock Testing

dimensions



Model 52 Accelerometer

performance specifications

All values are typical at $\pm 24^{\circ}\text{C}$, 100 Hz and 10 Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Standard product parameters are described in PSC-1004 for Plug & Play DC Accelerometers.

Parameters

DYNAMIC

	± 50	± 200	± 500	± 2000	Notes
Range(g)	± 50	± 200	± 500	± 2000	
Sensitivity (mV/g) ¹	2	0.9	0.4	0.15	
Frequency Response (Hz)	0-400	0-600	0-800	0-2000	$\pm 2\%$
	0-1000	0-1400	0-2000	0-5000	$\pm 5\%$
	0-1400	0-1900	0-2800	0-7000	$\pm 1\text{dB}$
Resonant Frequency (Hz)	4000	8000	15000	26000	
Non-Linearity (% FSO)	± 1	± 1	± 1	± 1	
Transverse Sensitivity (%)	<3	<3	<3	<3	
Shock Limit (g)	5000	5000	5000	5000	

ELECTRICAL

Zero Acceleration Output (mV)	< ± 50				
Excitation (Vdc)	2 to 10				
Input Resistance	2400-6000				
Output Resistance (Ω)	2400-6000				
Insulation Resistance ($M\Omega$)	>100				@100Vdc
Ground Isolation	Isolated from mounting surface				

ENVIRONMENTAL

Thermal Zero Shift (%FSO/ $^{\circ}\text{C}$ (%FSO/ $^{\circ}\text{F}$))*	$\pm 0.05 (\pm 0.03)$				0°C to $+50^{\circ}\text{C}$
Thermal Sensitivity Shift (%/ $^{\circ}\text{C}$ (%/F))*	$-0.20 \pm 0.05 (-0.11 \pm 0.03)$				0°C to $+50^{\circ}\text{C}$
Operating Temperature ($^{\circ}\text{C}$)	-40 to +90				
Storage Temperature ($^{\circ}\text{C}$)	-40 to +90				
Humidity	Epoxy Sealed, IP61				

PHYSICAL

Case Material	Plastic				
Cable (Integral 30 Foot Cable)	4x #32 AWG Conductors PFA Insulated				
Weight (grams)	0.5				Cable not included
Mounting	Adhesive				

¹ Output is ratiometric to excitation voltage

Calibration supplied: CS-SENS-0100 NIST Traceable Amplitude Calibration at 100Hz

Optional accessories: 101 Three Channel DC Signal Conditioner Amplifier
140 Auto-zero Inline Amplifier

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ordering info

PART NUMBERING Model Number+Range+Excitation+Cable Length+Options

52-GGGG-VV-CCC-XY

| | | | Options
 | | | Cable (360 is 360 inches)
 | | Excitation (10 is 10 Vdc)
 | Range (0500 is 500 g)

Example: 52-2000-10-360-XY

Model 52, Standard Configuration: 2000g, 10V Excitation, 360" (30ft.) Cable, No Options