

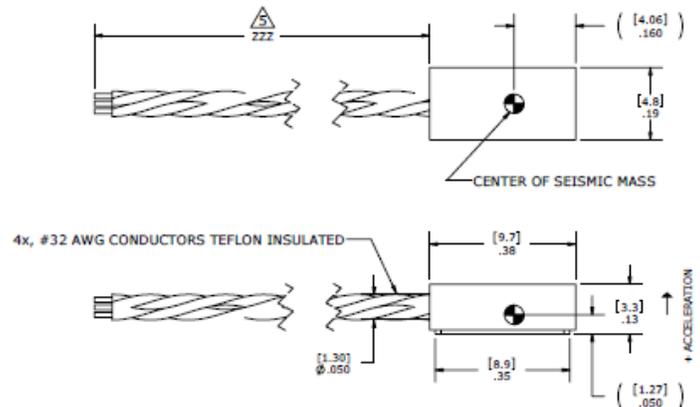
# Model 52 Accelerometer

DC Response  
 Miniature  
 Low Cost  
 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 +121°C. A slight amount of internal gas damping provides outstanding shock survivability and a flat amplitude/phase response up to 7kHz.

## dimensions

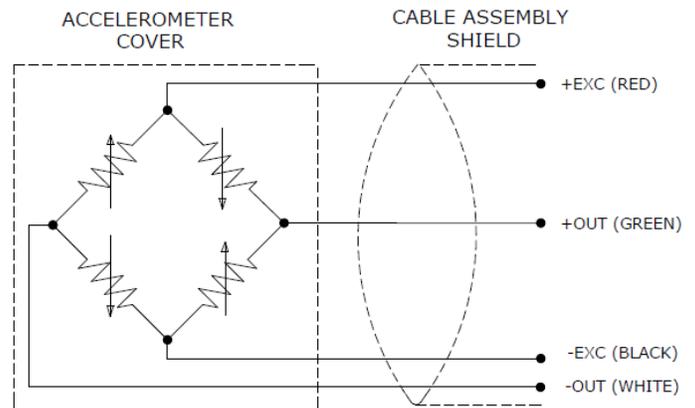


## FEATURES

- 2<sup>nd</sup> GEN MEMS Sensing Element
- 50, 200, 500 and 2,000 g Ranges
- 2-10 Vdc Excitation
- <math>\pm 50</math> mV Zero Offset

## APPLICATIONS

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



## 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

<b>DYNAMIC</b>					<b>Notes</b>
Range(g)	$\pm 50$	$\pm 200$	$\pm 500$	$\pm 2000$	
Sensitivity (mV/g)	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)	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	
Transverse Sensitivity (%)	$< 3$	$< 3$	$< 3$	$< 3$	
TZS (%FSO/ $^{\circ}\text{C}$ (%FSO/ $^{\circ}\text{F}$ ))*	$\pm 0.05 (\pm 0.03)$	$\pm 0.05 (\pm 0.03)$	$\pm 0.05 (\pm 0.03)$	$\pm 0.05 (\pm 0.03)$	
TSS(%/ $^{\circ}\text{C}$ (%/ $^{\circ}\text{F}$ ))*	$-0.20 \pm 0.05$	$-0.20 \pm 0.05$	$-0.20 \pm 0.05$	$-0.20 \pm 0.05$	
	$(-0.11 \pm 0.03)$	$(-0.11 \pm 0.03)$	$(-0.11 \pm 0.03)$	$(-0.11 \pm 0.03)$	

### ELECTRICAL

Zero Acceleration Output (mV)	$< \pm 50$
Excitation (Vdc)	2 to 10
Input Resistance	2400-5000
Output Resistance ( $\Omega$ )	2400-4800
Insulation Resistance ( $\text{M}\Omega$ )	$> 100$

**@50Vdc**

### ENVIRONMENTAL

Shock Limit (g)	5000
Operating Temperature ( $^{\circ}\text{C}$ )	-40 to +121
Humidity	Epoxy Sealed, IP61

### PHYSICAL

Case Material	Plastic
Cable (Integral 30 Foot Cable)	32 AWG
Weight (grams)	0.5
Mounting	Adhesive

**Exclude Cable**

**Wiring color code:** +EXC = Red, -EXC = Black, +OUT = Green, -OUT = White

**Calibration supplied:** CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to  $\pm 1\text{dB}$  Frequency Response Limit

**Optional accessories:** 101 Three Channel DC Signal Conditioner Amplifier

\*Thermal Zero Shift (TZS) and Thermal Sensitivity Shift (TSS) over temperature ( $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  ( $32^{\circ}\text{F}$  to  $122^{\circ}\text{F}$ ))

## 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 (0100 is 100 g)

Example: 52-2000-10-360-XY

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