

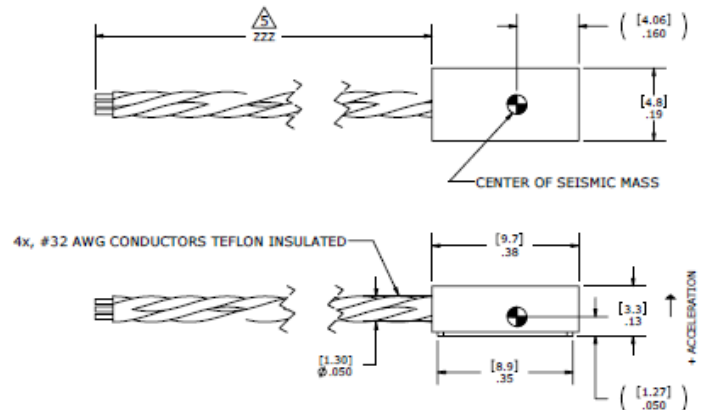
# Model 52 Accelerometer

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

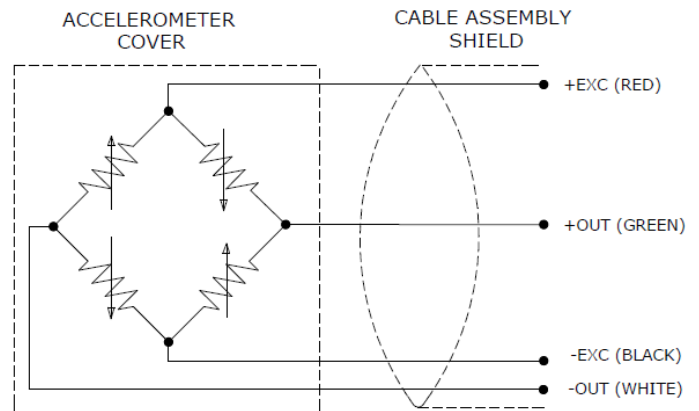


## FEATURES

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

## APPLICATIONS

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



# 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

<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(%/ $^{\circ}\text{C}$ (%/ $^{\circ}\text{F}$ ))*	$-0.20 \pm 0.05$	$-0.20 \pm 0.05$	$-0.20 \pm 0.05$	$-0.20 \pm 0.05$	
	$(-0.11 \pm 0.03)$	$(-0.11 \pm 0.03)$	$(-0.11 \pm 0.03)$	$(-0.11 \pm 0.03)$	
<b>ELECTRICAL</b>					
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
<b>ENVIRONMENTAL</b>					
Shock Limit (g)			5000		
Operating Temperature ( $^{\circ}\text{C}$ )			-40 to +121		
Humidity			Epoxy Sealed, IP61		
<b>PHYSICAL</b>					
Case Material			Plastic		
Cable (Integral 30 Foot Cable)			32 AWG		
Weight (grams)			0.5		Exclude Cable
Mounting			Adhesive		

**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  $122^{\circ}\text{F}$ ))

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.

## 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

### CONTATO

#### Endereço

Rua Sete de Setembro, 2671 - Centro  
13560-181 - São Carlos - SP - Brasil

#### Telefone

+ 55 (16) 3371-0112

#### Fax

+ 55 (16) 3372-7800

#### Internet

[www.metrolog.net](http://www.metrolog.net)  
[metrolog@metrolog.net](mailto:metrolog@metrolog.net)



Metrolog Controles de Medição