

# Model 52 Accelerometer



DC Response  
Miniature  
Low Cost  
Reliable Performance



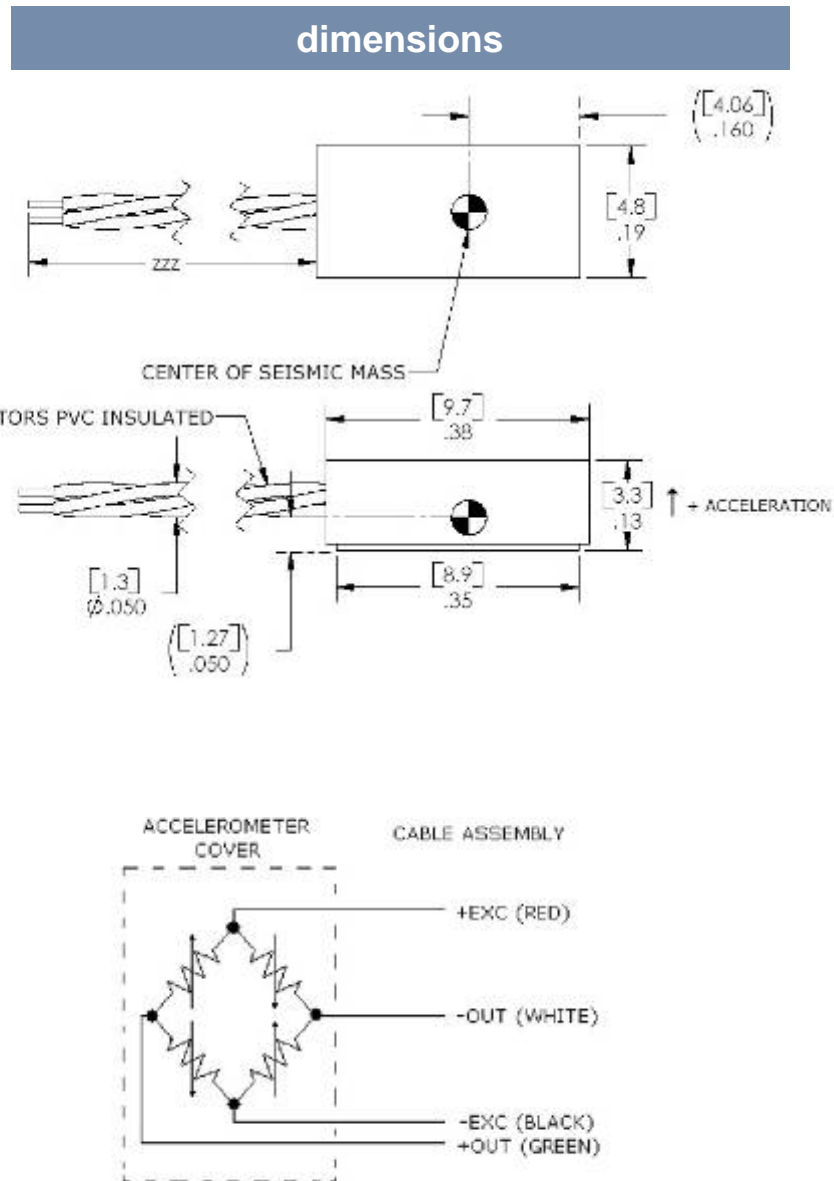
**The Model 52 Accelerometer** is based on an advanced piezoresistive MEMS sensing element which offers exceptional dynamic range and stability. This unit features a full bridge output configuration with an operating temperature range from -40 to +121°C. A slight amount of internal gas damping provides outstanding shock survivability and a flat amplitude/phase response up to 7kHz.

## FEATURES

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

#### DYNAMIC

	$\pm 50$	$\pm 200$	$\pm 500$	$\pm 2000$	Notes
Range(g)					
Sensitivity (mV/g)	2	0.9	0.4	0.15	
Frequency Response (Hz)	0-400	0-800	0-1200	0-2000	$\pm 2\%$
	0-1000	0-2000	0-3000	0-5000	$\pm 5\%$
	0-1400	0-2800	0-4200	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 (%)	$< 3$	$< 3$	$< 3$	$< 3$	
Thermal Zero Shift (%FSO/ $^{\circ}\text{C}$ )	$\pm 0.2$	$\pm 0.2$	$\pm 0.2$	$\pm 0.2$	From 0 to $+50^{\circ}\text{C}$
Thermal Sensitivity Shift (%/ $^{\circ}\text{C}$ )	$\pm 0.4$	$\pm 0.4$	$\pm 0.4$	$\pm 0.4$	From 0 to $+50^{\circ}\text{C}$

#### ELECTRICAL

Zero Acceleration Output (mV)	$< \pm 50$	$< \pm 50$	$< \pm 50$	$< \pm 50$	
Excitation (Vdc)	2 to 10	2 to 10	2 to 10	2 to 10	
Input Resistance	3500-4800	3500-4800	3500-4800	3500-4800	
Output Resistance ( $\Omega$ )	2700-4800	2700-4800	2700-4800	2700-4800	
Insulation Resistance ( $\text{M}\Omega$ )	$> 100$	$> 100$	$> 100$	$> 100$	@50Vdc

#### ENVIRONMENTAL

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

#### PHYSICAL

Case Material	Plastic				
Cable (Integral 30 Foot Cable)	32 AVG	32 AVG	32 AVG	32 AVG	
Weight (grams)	0.5				Cable Not Included
Mounting	Adhesive				

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

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