

- Small Size
- Jacketed Cable
- Integral Cable Shield
- Aluminum Housing
- Silicon MEMS Technology
- High g Ranges



3 x Original Size

The **Model 52M50** accelerometer has an advanced piezoresistive MEMS sensing element which offers excellent dynamic range and stability. This unit features a full bridge output with an operating temperature range from -40 to 121°C. A slight amount of gas damping provides outstanding shock survivability and a flat amplitude response to 7kHz.

## FEATURES

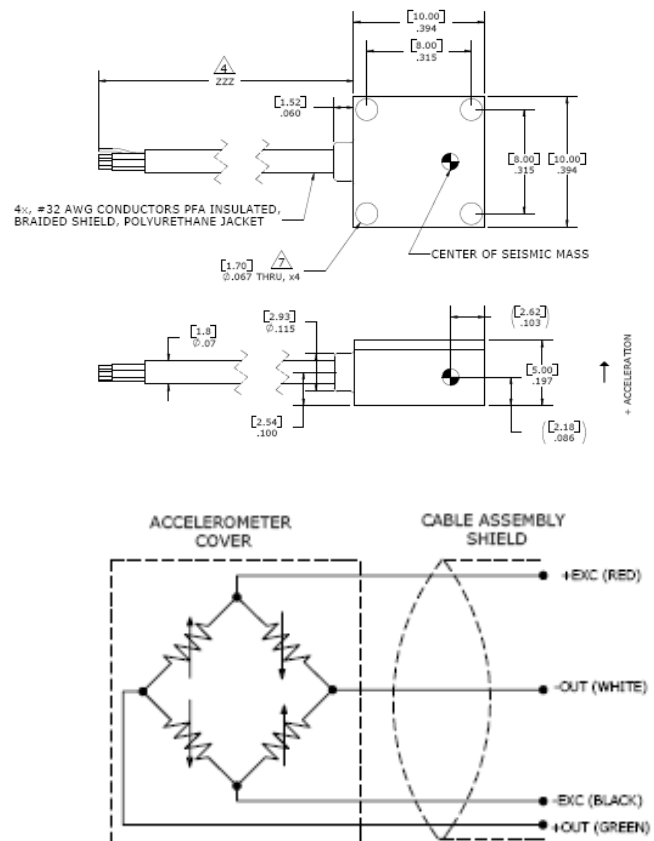
- 2-10 Vdc Excitation
- Ranges to  $\pm 2000$  g's
- Measures static acceleration
- Over shock protection to  $\pm 5,000$  g's
- Transverse sensitivity <3%
- Weight <5 grams
- Output ratiometric to excitation
- Resonant frequency to 26,000 Hz
- Linearity  $\pm 1\%$

## APPLICATIONS

- Automotive crash testing
- High impact research
- Biomechanical studies
- Shock testing

## dimensions

(Dimensions in Inches)



# Model 52M50 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.

### Parameters

	$\pm 50$	$\pm 200$	$\pm 500$	$\pm 2000$	Notes
<b>DYNAMIC</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	0-800	0-1200	0-2000	$\pm 2\%$
	0-1000	0-2000	0-3000	0-5000	$\pm 5\%$
	0-1400	0-2800	0-4200	0-7000	$\pm 1\text{dB}\%$
	4000	8000	15000	26000	
Resonance (Hz)	4000	8000	15000	26000	
Shock Limit (g)	5000	5000	5000	5000	
Non-Linearity (% FSO)	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	
Transverse Sensitivity (%)	<3	<3	<3	<3	
Zero Acceleration Output (mV)	$<\pm 50$	$<\pm 50$	$<\pm 50$	$<\pm 50$	
Thermal Zero Shift (%FSO/ $^{\circ}\text{C}$ (%FSO/ $^{\circ}\text{F}$ ))*	$\pm 0.2(\pm 0.11)$	$\pm 0.2(\pm 0.11)$	$\pm 0.2(\pm 0.11)$	$\pm 0.2(\pm 0.11)$	
Thermal Sensitivity Shift (%/ $^{\circ}\text{C}$ (%/ $^{\circ}\text{F}$ ))*	$\pm 0.4(\pm 0.22)$	$\pm 0.4(\pm 0.22)$	$\pm 0.4(\pm 0.22)$	$\pm 0.4(\pm 0.22)$	
<b>ELECTRICAL</b>					
Excitation (Vdc)	2 to 10	2 to 10	2 to 10	2 to 10	
Input Resistance ( $\Omega$ )	3500-4800	3500-4800	3500-4800	3500-4800	
Output Resistance ( $\Omega$ )	2700-4800	2700-4800	2700-4800	2700-4800	Varies with current
Insulation Resistance ( $\text{M}\Omega$ )	>100	>100	>100	>100	
<b>PHYSICAL</b>					
Case Material	Aluminum	Aluminum	Aluminum	Aluminum	Black anodized
Cable (Polyurethane Jacket, 4 wire+shield)	32 AWG	32 AWG	32 AWG	32 AWG	PVC insulated
Weight (grams)	0.5	0.5	0.5	0.5	Without cable
Mounting	Screw	Screw	Screw	Screw	Adhesive Optional
<b>ENVIRONMENTAL</b>					
Operating Temperature ( $^{\circ}\text{C}$ )	-40 to +121	-40 to +121	-40 to +121	-40 to +121	
Humidity		Epoxy Sealed			Epoxy Sealed

### PART NUMBERING

Model Number + Range (g's)+Cable Length (Options require factory-specified Model Numbers)

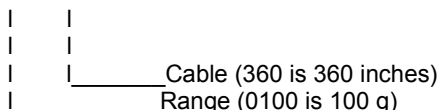
\*  $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  ( $32^{\circ}\text{F}$  to  $122^{\circ}\text{F}$ )

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## ordering info

PART NUMBERING Model Number+Range+Cable Length

52M50-ZZZZ-ZZZ



Example: 52M50-0500-360

Model 52M50, 500g Full Scale Range, 360 inches cable