

Model 52M32 Accelerometer

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



The **Model 52M32** 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 $+90^{\circ}\text{C}$. A slight amount of gas damping provides outstanding shock survivability and a flat amplitude response to 6kHz.

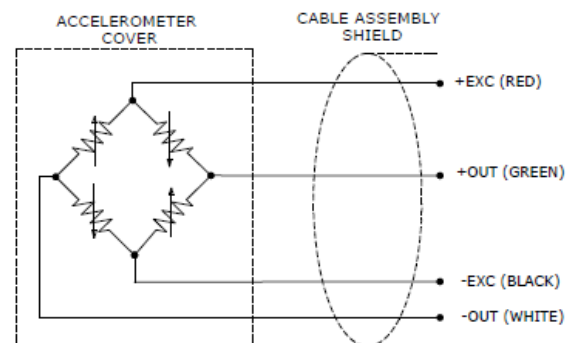
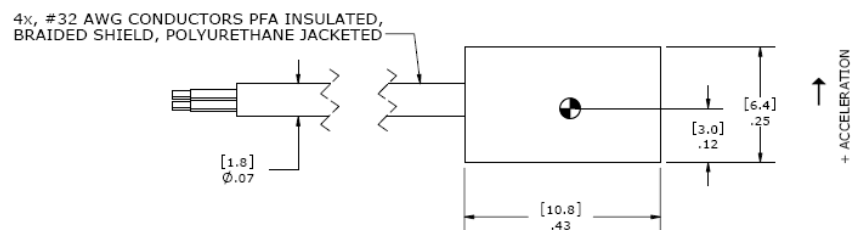
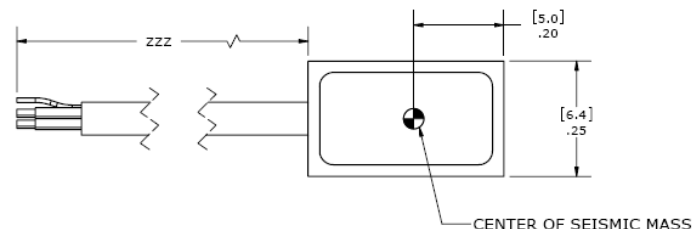
FEATURES

- 2-10 Vdc Excitation
- Ranges to ± 2000 g's
- Measures static acceleration
- Over shock protection to ± 5000 g's
- Transverse sensitivity $< 3\%$
- Weight < 0.9 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



Model 52M32 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)	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	0-4500	$\pm 5\%$
	0-1400	0-2800	0-4200	0-6000	$\pm 1\text{dB}$
Resonance (Hz)	4000	8000	15000	26000	
Shock Limit (g)	5000	5000	5000	5000	
Non-Linearity (% FSO)	± 1	± 1	± 1	± 1	
Transverse Sensitivity (%)	<3	<3	<3	<3	
Zero Acceleration Output (mV)	< ± 50	< ± 50	< ± 50	< ± 50	
Thermal Zero Shift (%FSO/ $^{\circ}\text{C}$ (%FSO/ $^{\circ}\text{F}$))*	$\pm 0.05 (\pm 0.03)$	$\pm 0.05 (\pm 0.03)$	$\pm 0.05 (\pm 0.03)$	$\pm 0.05 (\pm 0.03)$	
Thermal Sensitivity Shift (%/ $^{\circ}\text{C}$ (%/ $^{\circ}\text{F}$))*	-0.20 ± 0.05 (-0.11 ± 0.03)	-0.20 ± 0.05 (-0.11 ± 0.03)	-0.20 ± 0.05 (-0.11 ± 0.03)	-0.20 ± 0.05 (-0.11 ± 0.03)	

ELECTRICAL

Excitation (Vdc)	2 to 10	2 to 10	2 to 10	2 to 10	
Input Resistance (Ω)	2400-5000	2400-5000	2400-5000	2400-5000	
Output Resistance (Ω)	2400-4800	2400-4800	2400-4800	2400-4800	Varies with current
Insulation Resistance ($M\Omega$)	>100	>100	>100	>100	

PHYSICAL

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)	0.9	0.9	0.9	0.9	Without cable
Mounting	Adhesive	Adhesive	Adhesive	Adhesive	

ENVIRONMENTAL

Operating Temperature ($^{\circ}\text{C}$)	-40 to +90	-40 to +90	-40 to +90	-40 to +90	
Humidity					Epoxy Sealed

PART NUMBERING

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

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

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

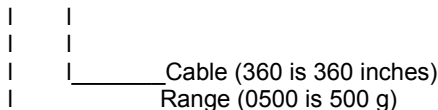
Optional accessories: 101 Three Channel DC Signal Conditioner Amplifier

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ordering info

PART NUMBERING Model Number+Range+Cable Length

52M32-ZZZZ-ZZZ



Example: 52M32-0500-360
Model 52M32, 500g Full Scale Range, 360 inches cable