

Model 52M30 Accelerometer

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



The **Model 52M30** 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

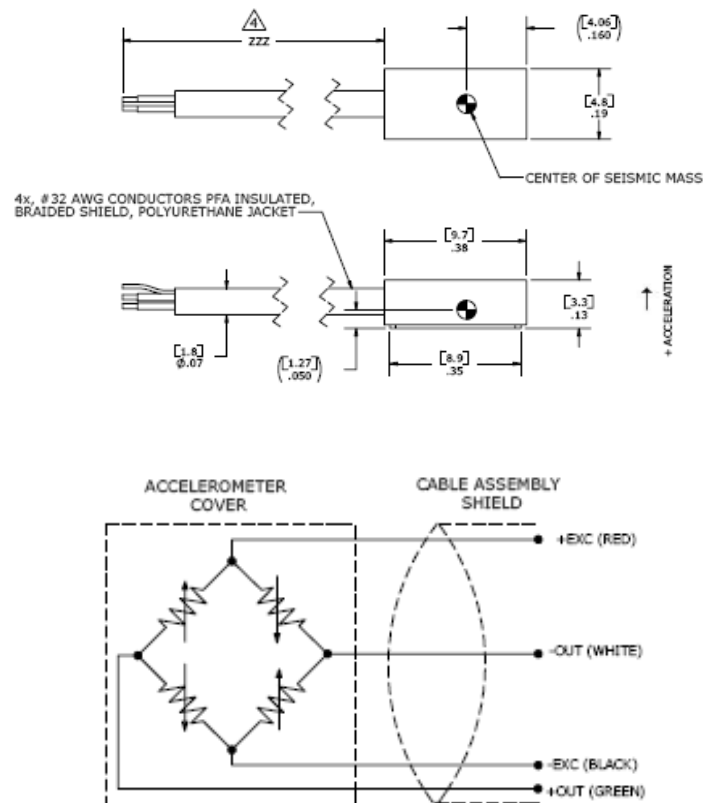
- 2-10 Vdc Excitation
- Ranges to ± 2000 g's
- Measures static acceleration
- Over shock protection to $\pm 5,000$ g's
- Transverse sensitivity <3%
- Weight <5 grams
- Output ratiometric to excitation
- Resonant frequency to 26,000 Hz
- Linearity $\pm 1\%$

APPLICATIONS

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

dimensions

(Dimensions in Inches)



Model 52M30 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

DYNAMIC

	± 50	± 200	± 500	± 2000	Notes
Range(g)	2	0.9	0.4	0.15	
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	$\pm 1\text{dB}\%$
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)	$< \pm 50$	$< \pm 50$	$< \pm 50$	$< \pm 50$	
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 (%/ $^{\circ}\text{C}$ (%/ $^{\circ}\text{F}$))*	$\pm 0.4(\pm 0.22)$	$\pm 0.4(\pm 0.22)$	$\pm 0.4(\pm 0.22)$	$\pm 0.4(\pm 0.22)$	

ELECTRICAL

Excitation (Vdc)	2 to 10	2 to 10	2 to 10	2 to 10	
Input Resistance (Ω)	3500-4800	3500-4800	3500-4800	3500-4800	
Output Resistance (Ω)	2700-4800	2700-4800	2700-4800	2700-4800	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)	0.5	0.5	0.5	0.5	Without cable
Mounting	Adhesive	Adhesive	Adhesive	Adhesive	

ENVIRONMENTAL

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)

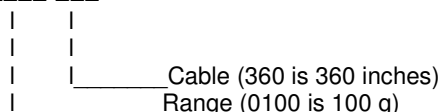
* 0°C to $+50^{\circ}\text{C}$ (32°F to 122°F)

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ordering info

PART NUMBERING Model Number+Range+Cable Length

52M30-ZZZZ-ZZZ



Example: 52M30-0500-360

Model 52M30, 500g Full Scale Range, 360 inches cable