



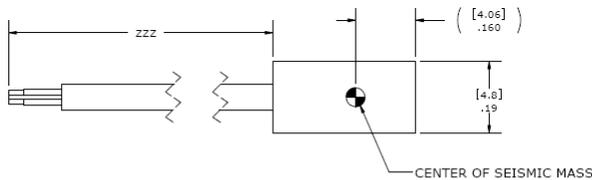
# MODEL 52M30 ACCELEROMETER

## SPECIFICATIONS

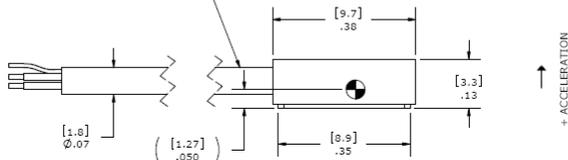
- ◆ Small Size, Light Weight
- ◆ Jacketed & Shielded Cable
- ◆ Silicon MEMS Technology
- ◆  $\pm 50g$  to  $\pm 6000g$  Ranges

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  $+90^{\circ}\text{C}$  and measurement ranges of  $\pm 50g$  to  $\pm 6,000g$ . A slight amount of gas damping provides outstanding shock survivability and a flat amplitude response to  $7\text{kHz}$ .

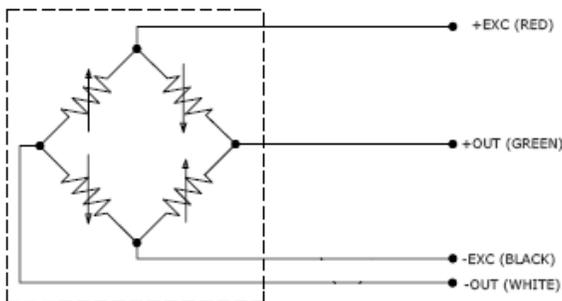
## DIMENSIONS



4x, #32 AWG CONDUCTORS PFA INSULATED,  
BRAIDED SHIELD, POLYURETHANE JACKET



ACCELEROMETER  
COVER



## FEATURES

- ◆ 2-10 Vdc Excitation
- ◆  $\pm 50g$  to  $\pm 6,000g$  Ranges
- ◆ DC Response
- ◆  $\pm 10,000g$  Shock Protection
- ◆ Transverse Sensitivity  $<3\%$
- ◆  $26\text{kHz}$  Resonant Frequency
- ◆ Linearity  $\pm 1\%$
- ◆ Output Ratiometric to Excitation

## APPLICATIONS

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

**PERFORMANCE SPECIFICATIONS**

All values are typical at  $\pm 24^{\circ}\text{C}$ , 80Hz and 10Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice.

**Parameters**

**DYNAMIC**

	$\pm 50$	$\pm 200$	$\pm 500$	$\pm 2000$	$\pm 6000$	<b>Notes</b>
Range(g)						
Sensitivity (mV/g) <sup>1</sup>	2.0	0.9	0.4	0.15	0.10	
Frequency Response (Hz)	0-400 0-1000 0-1400	0-600 0-1400 0-1900	0-800 0-2000 0-2800	0-2000 0-5000 0-7000	0-3000 0-5000 0-7000	$\pm 2\%$ $\pm 5\%$ $\pm 1\text{dB}$
Resonant Frequency (Hz)	4000	8000	15000	26000	26000	
Non-Linearity (% FSO)	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	
Shock Limit (g)	5000	5000	5000	5000	10000	

**ELECTRICAL**

Zero Acceleration Output (mV)	$<\pm 50$					
Excitation (Vdc)	2 to 10					
Input Resistance	2400-6000					
Output Resistance ( $\Omega$ )	2400-6000					
Insulation Resistance ( $M\Omega$ )	>100					@100Vdc
Ground Isolation	Isolated from mounting surface					

**ENVIRONMENTAL**

Thermal Zero Shift (%FSO/ $^{\circ}\text{C}$ (%FSO/ $^{\circ}\text{F}$ ))*	$\pm 0.05 (\pm 0.03)$					0 $^{\circ}\text{C}$ to +50 $^{\circ}\text{C}$
Thermal Sensitivity Shift (%/ $^{\circ}\text{C}$ (%/F))*	-0.20 $\pm$ 0.05 (-0.11 $\pm$ 0.03)					0 $^{\circ}\text{C}$ to +50 $^{\circ}\text{C}$
Operating Temperature ( $^{\circ}\text{C}$ )	-40 to +90					
Storage Temperature ( $^{\circ}\text{C}$ )	-40 to +90					
Humidity	Epoxy Sealed, IP61					

**PHYSICAL**

Case Material	Anodized Aluminum					
Cable (Integral 30 Foot Cable)	4x #32 AWG PFA Insulated, Braided Shield, PU Jacket					Cable not included
Weight (grams)	0.5					
Mounting	Adhesive					

<sup>1</sup> Output is ratiometric to excitation voltage

**Calibration supplied:** CS-SENS-0100 NIST Traceable Amplitude Calibration at 80Hz

**Optional accessories:** AC-D02346 Triaxial Mounting Block  
 121 3-Channel Precision Low Noise DC Amplifier  
 140A Auto-zero Inline Amplifier

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## ORDERING INFORMATION

PART NUMBERING Model Number+Range+Cable Length+Options

52M30-GGGG-CCC-ZZ

| | | Options  
| | Cable (360 is 360 inches)  
| Range (0500 is 500 g)

Optional Dash Numbers

-01 5Vdc Calibration

-02 2Vdc Calibration

Example: 52M30-2000-360

Model 52M30, 2000g Full Scale Range, 360 inches cable, No Options