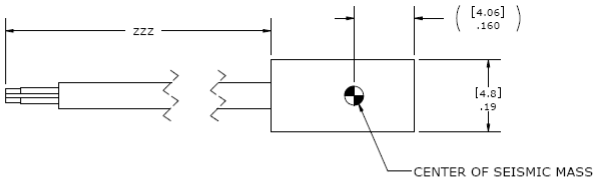
# MODEL 52M30 ACCELEROMETER

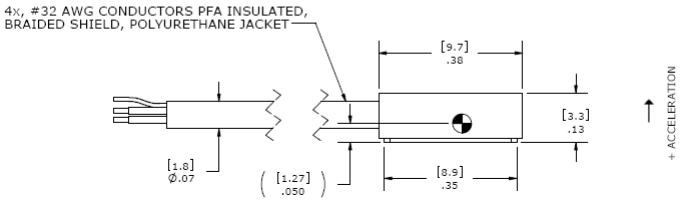

## SPECIFICATIONS

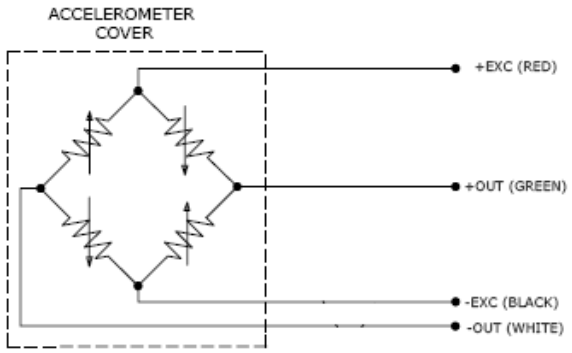
- **Small Size, Light Weight**
- **Jacketed & Shielded Cable**
- **Silicon MEMS Technology**
- **±50g to ±6000g Ranges**

**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°C and measurement ranges of ±50g to ±6,000g. A slight amount of gas damping provides outstanding shock survivability and a flat amplitude response to 7kHz.

## DIMENSIONS




## FEATURES

- 2-10 Vdc Excitation
- ±50g to ±6,000g Ranges
- DC Response
- ±10,000g Shock Protection
- Transverse Sensitivity <3%
- 26kHz Resonant Frequency
- Linearity ±1%
- Output Ratiometric to Excitation

## APPLICATIONS

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

## PERFORMANCE SPECIFICATIONS

All values are typical at ±24°C, 80Hz and 10Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice.

| Parameters | | | | | | |
|---|---|---|---|---|---|---|
| **DYNAMIC** | | | | | | **Notes** |
| Range(g) | ±50 | ±200 | ±500 | ±2000 | ±6000 | |
| Sensitivity (mV/g) [1] | 2.0 | 0.9 | 0.4 | 0.15 | 0.10 | |
| Frequency Response (Hz) | 0-400 | 0-600 | 0-800 | 0-2000 | 0-3000 | ±2% |
| | 0-1000 | 0-1400 | 0-2000 | 0-5000 | 0-5000 | ±5% |
| | 0-1400 | 0-1900 | 0-2800 | 0-7000 | 0-7000 | ±1dB |
| Resonant Frequency (Hz) | 4000 | 8000 | 15000 | 26000 | 26000 | |
| Non-Linearity (% FSO) | ±1 | ±1 | ±1 | ±1 | ±1 | |
| Transverse Sensitivity (%) | <3 | <3 | <3 | <3 | <3 | |
| Shock Limit (g) | 5000 | 5000 | 5000 | 5000 | 10000 | |
| **ELECTRICAL** | | | | | | |
| Zero Acceleration Output (mV) | <±50 | | | | | |
| Excitation (Vdc) | 2 to 10 | | | | | |
| Input Resistance | 2400-6000 | | | | | |
| Output Resistance (Ω) | 2400-6000 | | | | | |
| Insulation Resistance (MΩ) | >100 | | | | | @100Vdc |
| Ground Isolation | Isolated from mounting surface | | | | | |
| **ENVIRONMENTAL** | | | | | | |
| Thermal Zero Shift (%FSO/°C(%FSO/°F))* | ±0.05 (±0.03) | | | | | 0°C to +50°C |
| Thermal Sensitivity Shift (%/°C(%/°F))* | -0.20 ±0.05 (-0.11 ±0.03) | | | | | 0°C to +50°C |
| Operating Temperature (°C) | -40 to +90 | | | | | |
| Storage Temperature (°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 | | | | | |
| Weight (grams) | 0.5 | | | | | Cable not included |
| Mounting | Adhesive | | | | | |

[1] 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 |

## ORDERING INFORMATION

PART NUMBERING  Model Number+Range+Cable Length+Options

52M30-GGGG-CCC-ZZ
I  I  I_____Options
I  I_____Cable (360 is 360 inches)
I_____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