

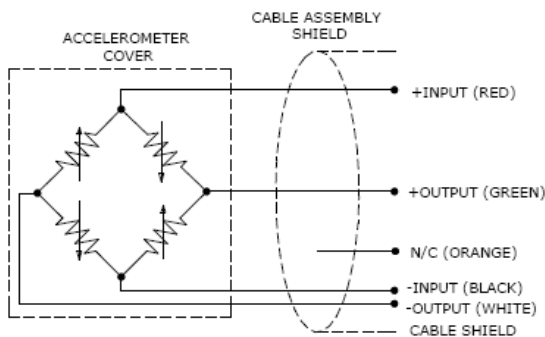
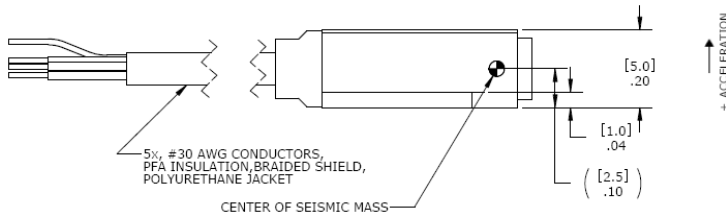
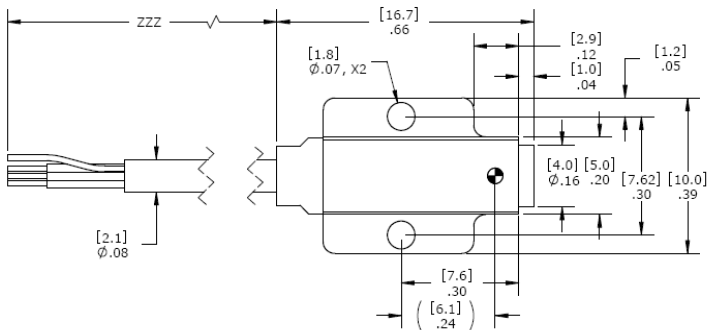
MODEL 40A ACCELEROMETER

SPECIFICATIONS

- $\pm 25g$ to $\pm 2000g$ Dynamic Range
- Fluid Damped, DC Response
- Compliant to SAE J2570
- Temperature Compensated

The **Model 40A Accelerometer** is a small piezoresistive accelerometer designed to be compliant with the latest SAE J211/J2570 (AUG2009) specifications. This unit features built-in mechanical stops, anodized aluminum alloy housing and flexible cable output. The sensing element is fluid damped to extend useful frequency range and reduce the adverse effect of high frequencies ringing caused by sensor resonance

DIMENSIONS



FEATURES

- Silicon Piezoresistive Elements
- ± 25 to $\pm 2,000$ g Ranges
- 2-10 Vdc Excitation
- -20 to +80 °C Temperature Range
- Critically Damped Sensor
- Low Transverse Sensitivity
- $< \pm 20$ mV Zero Offset

APPLICATIONS

- Safety Crash Testing
- Auto
- Truck
- Recreational Vehicles
- 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 | -0025 | -0100 | -0250 | -0500 | -1000 | -2000 | Notes |
|---------------------------------|-------|-------|--------|--------|--------|--------|-------------------|
| DYNAMIC | | | | | | | |
| Range(g) | ±25 | ±100 | ±250 | ±500 | ±1000 | ±2000 | |
| Sensitivity (mV/g) ¹ | 6.0 | 1.5 | 0.60 | 0.30 | 0.15 | 0.075 | @10Vdc excitation |
| Frequency Response (Hz) | 0-200 | 0-400 | 0-600 | 0-1100 | 0-1500 | 0-2500 | +2.5%/-8% |
| | 0-350 | 0-675 | 0-1100 | 0-2000 | 0-2700 | 0-4500 | +2.5%/-20% |
| Natural Frequency (Hz) | >800 | >1500 | >2500 | >4500 | >6000 | >10000 | |
| Non-Linearity (% FS) | ±1 | ±1 | ±1 | ±1 | ±1 | ±1 | |
| Damping Ratio | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | Typical |
| Transverse Sensitivity (%) | <3 | <3 | <3 | <3 | <3 | <3 | |
| Shock Limit (g) | 5000 | 10000 | 10000 | 10000 | 10000 | 10000 | |

ELECTRICAL

| | | | | | | | |
|-------------------------------|---------------------------------|--|--|--|--|--|---------|
| Zero Acceleration Output (mV) | <±20 | | | | | | |
| Excitation (Vdc) | 2 to 10 | | | | | | |
| Input Resistance (Ω) | 2000 | | | | | | Typical |
| Output Resistance (Ω) | 1000 | | | | | | Typical |
| Insulation Resistance (MΩ) | >100 | | | | | | @100Vdc |
| Ground Isolation | Isolated from mounting surface. | | | | | | |

ENVIRONMENTAL

| | | | | | | | |
|----------------------------------|--------------------|--|--|--|--|--|-------------------|
| Thermal Zero Shift (%FSO/°C) | ±0.05 | | | | | | From -10 to +50°C |
| Thermal Sensitivity Shift (%/°C) | ±0.1 | | | | | | From -10 to +50°C |
| Operating Temperature (°C) | -20 to +80 | | | | | | |
| Storage Temperature (°C) | -20 to +80 | | | | | | |
| Humidity | Epoxy Sealed, IP61 | | | | | | |

PHYSICAL

| | | | | | | | |
|--------------------------------|---|--|--|--|--|--|--------------------|
| Case Material / Cover Material | Anodized Aluminum | | | | | | |
| Cable (Integral 30 Foot Cable) | 5x #30 AWG Conductors, PFA Insulated, Braided Shield, PU Jacket | | | | | | |
| Weight (grams) | <5 | | | | | | Cable Not Included |
| Mounting | 2x 0-80 x 3/16 socket head cap screws | | | | | | |
| Mounting Torque | 3 lb-in (0.7 N-m) | | | | | | |

OPTION

Model 40L-GGGG-ZZZ With transverse sensing direction (parallel to mounting surface)

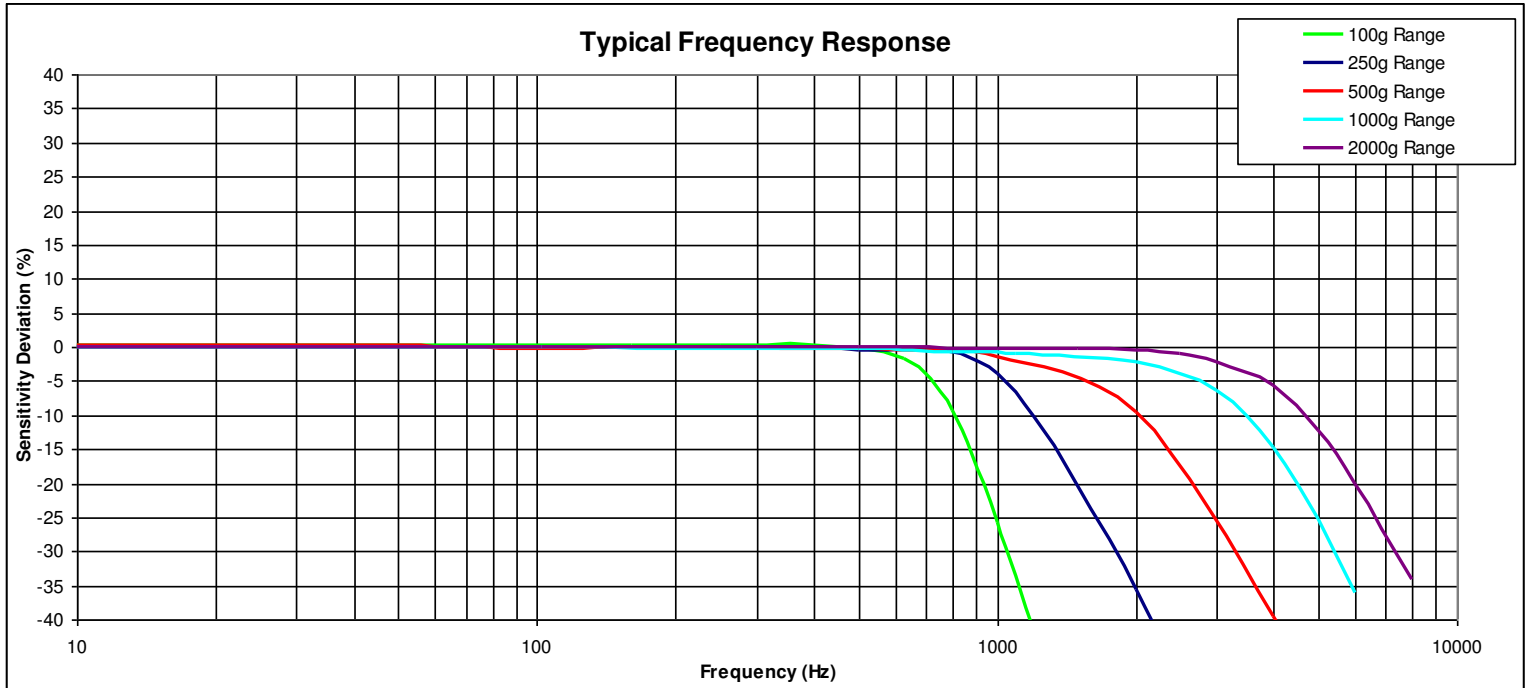
¹ Output is ratiometric to excitation voltage. Tolerance is +50%/-30%.

Calibration supplied: CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to Upper Frequency Limit

Supplied accessories: AC-A03923 2x #0-80 (3/16" length) Socket Head Cap Screw, 2x #0 Washer, 1x Allen Key

Optional accessories: MTG-E2 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

40A-GGGG-ZZZT-XXX

| | | | Options (otherwise leave blank)
 | | | | 1% Transverse Sensitivity when "T" is present
 | | | | Cable (360 is 360 inches)
 | | | | Range (0100 is 100 g)

Optional Dash Numbers
 -001 5Vdc Calibration
 -002 2Vdc Calibration

Example: 40A-2000-360
 Model 40A, 2000g, 360" (30ft) Cable, No Options

Option: Model 40L-GGGG-ZZZ with transverse sensing direction (parallel to mounting surface)

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