

Model 40A Accelerometer

±25g to ±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.

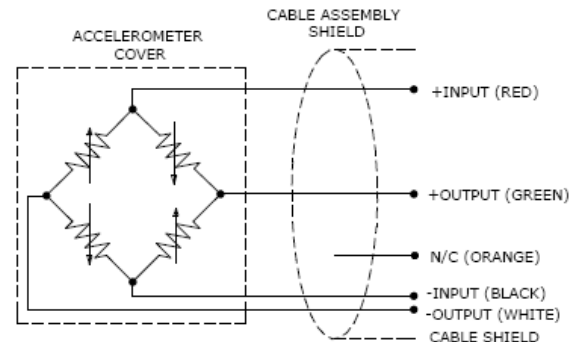
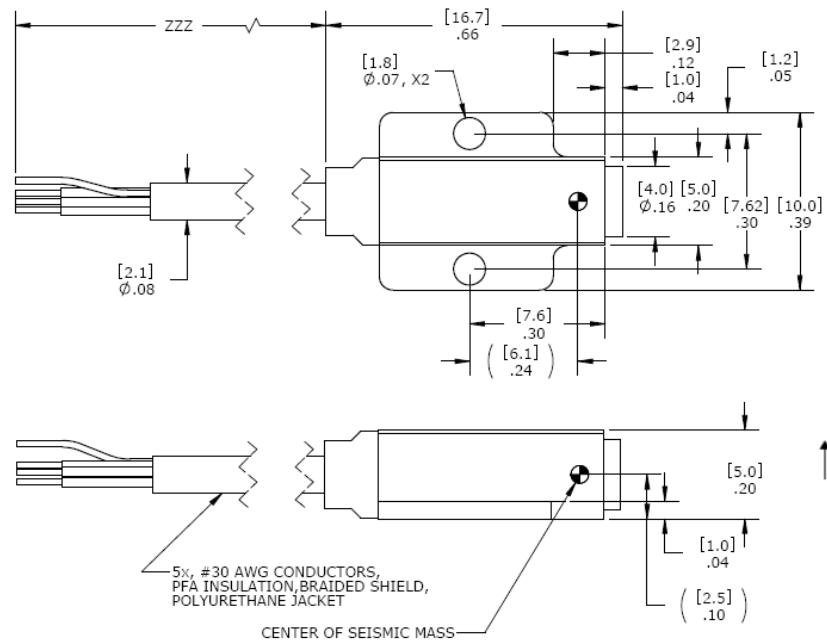
FEATURES

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

APPLICATIONS

- Safety Crash Testing
- Auto
- Truck
- Recreational Vehicles
- Shock Testing

dimensions



Model 40A Accelerometer

performance specifications

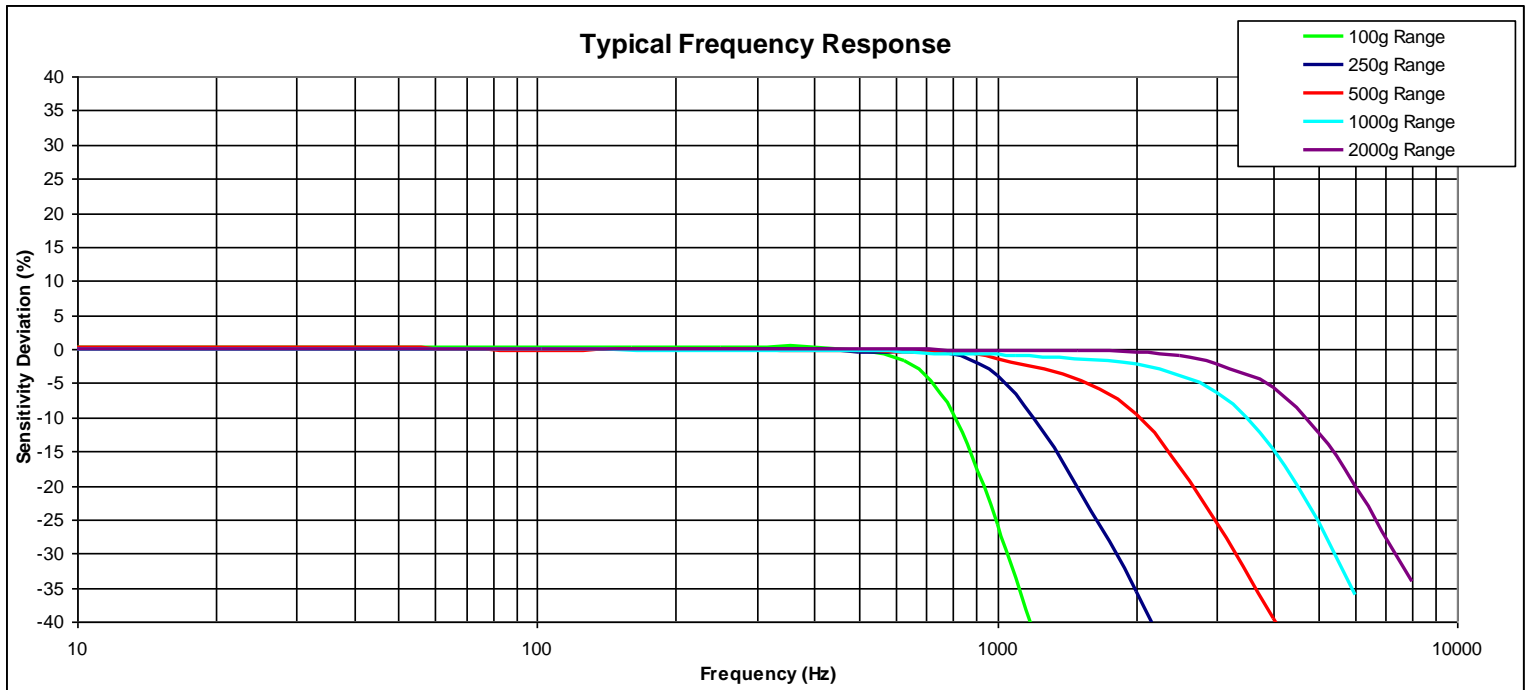
All values are typical at $\pm 24^{\circ}\text{C}$, 80Hz and 10Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Standard product parameters are described in PSC-1004 for Plug & Play DC Accelerometers.

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 (M Ω)	>100						@ 100Vdc
Ground Isolation	Isolated from mounting surface.						
ENVIRONMENTAL							
Thermal Zero Shift (%FSO/ $^{\circ}\text{C}$)	± 0.05						From -10 to $+50^{\circ}\text{C}$
Thermal Sensitivity Shift (%/ $^{\circ}\text{C}$)	± 0.1						From -10 to $+50^{\circ}\text{C}$
Operating Temperature ($^{\circ}\text{C}$)	-20 to +80						
Storage Temperature ($^{\circ}\text{C}$)	-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					
	140	Auto-zero Inline Amplifier					

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performance specifications



ordering info

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)