

MODEL 40B ACCELEROMETER

SPECIFICATIONS

- ◆ $\pm 100\text{g}$ to $\pm 2000\text{g}$ Dynamic Range
- ◆ Fluid Damped, DC Response
- ◆ Compliant to SAE J211/J2570
- ◆ Compliant to ISO 6487
- ◆ Temperature Compensated

The **Model 40B Accelerometer** is a small fluid damped 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.

APPLICATIONS

- ◆ Anthropomorphic Dummy Instrumentation
- ◆ Crush Zone Testing
- ◆ Pedestrian Impact Testing
- ◆ Auto Safety Testing Applications
- ◆ Shock and Impact Testing
- ◆ Transient Drop Testing

FEATURES

- ◆ Silicon Piezoresistive Elements
- ◆ ± 100 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

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PERFORMANCE SPECIFICATIONS

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

Parameters	-0100	-0250	-0500	-1000	-2000	Notes
DYNAMIC						
Range(g)	± 100	± 250	± 500	± 1000	± 2000	
Sensitivity (mV/g) ¹	1.5	0.60	0.30	0.15	0.075	@10Vdc excitation
Frequency Response (Hz)	0-400	0-600	0-1100	0-1500	0-2500	+2.5%/-8%
	0-675	0-1100	0-2000	0-2700	0-4500	+2.5%/-20%
Natural Frequency (Hz)	>1500	>2500	>4500	>6000	>10000	
Non-Linearity (% FS)	± 1	± 1	± 1	± 1	± 1	
Damping Ratio	0.7	0.7	0.7	0.7	0.7	Typical
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	
Shock Limit (g)	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 (mV)	± 3.0					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, IP62					
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)					

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

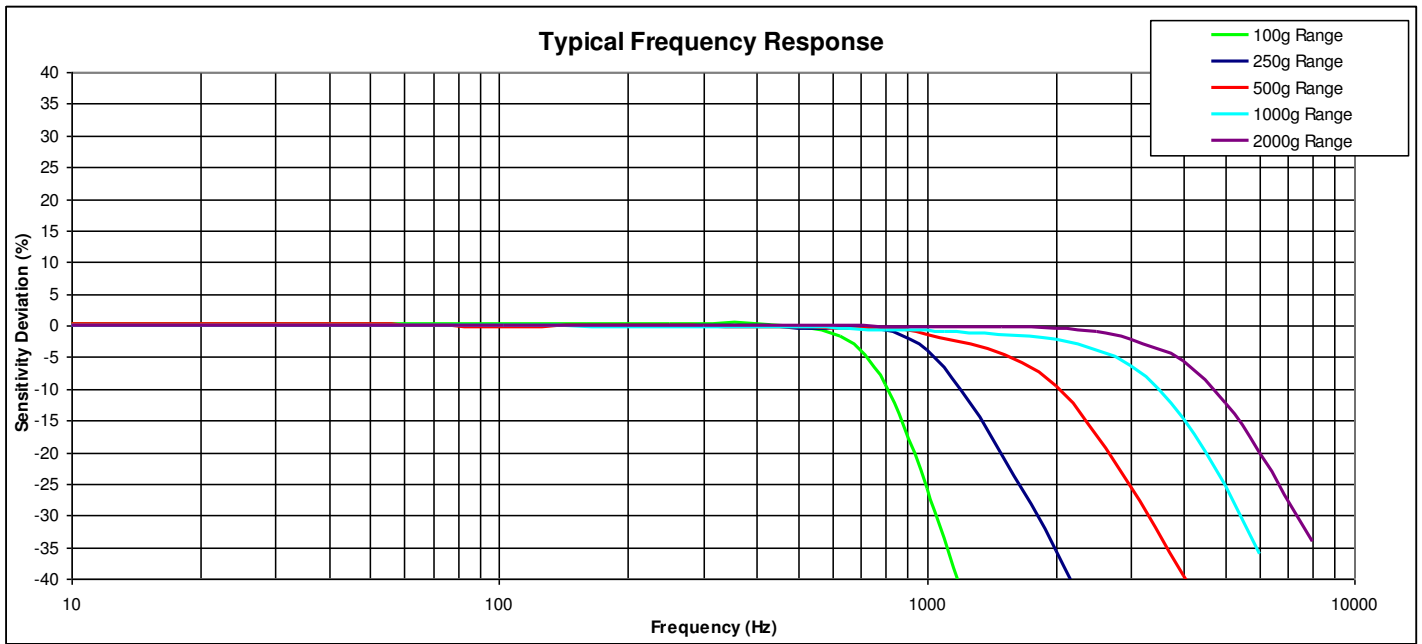
Supplied accessories: AC-A03923 2x #0-80 (3/16" length) Socket Head Cap Screw, 2x #0 Washer, 1x Allen Key

Optional accessories: MTG-E4 Triaxial Mounting Block
121 3-Channel Precision Low Noise DC Amplifier
140A Auto-zero Inline Amplifier

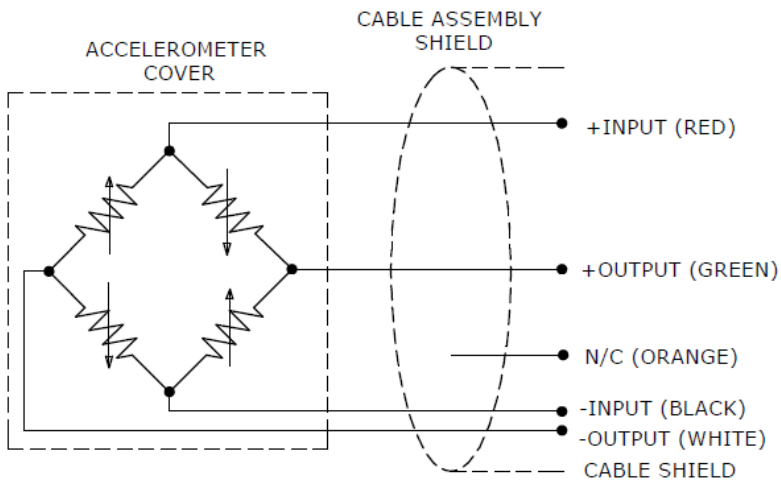
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TYPICAL FREQUENCY RESPONSE

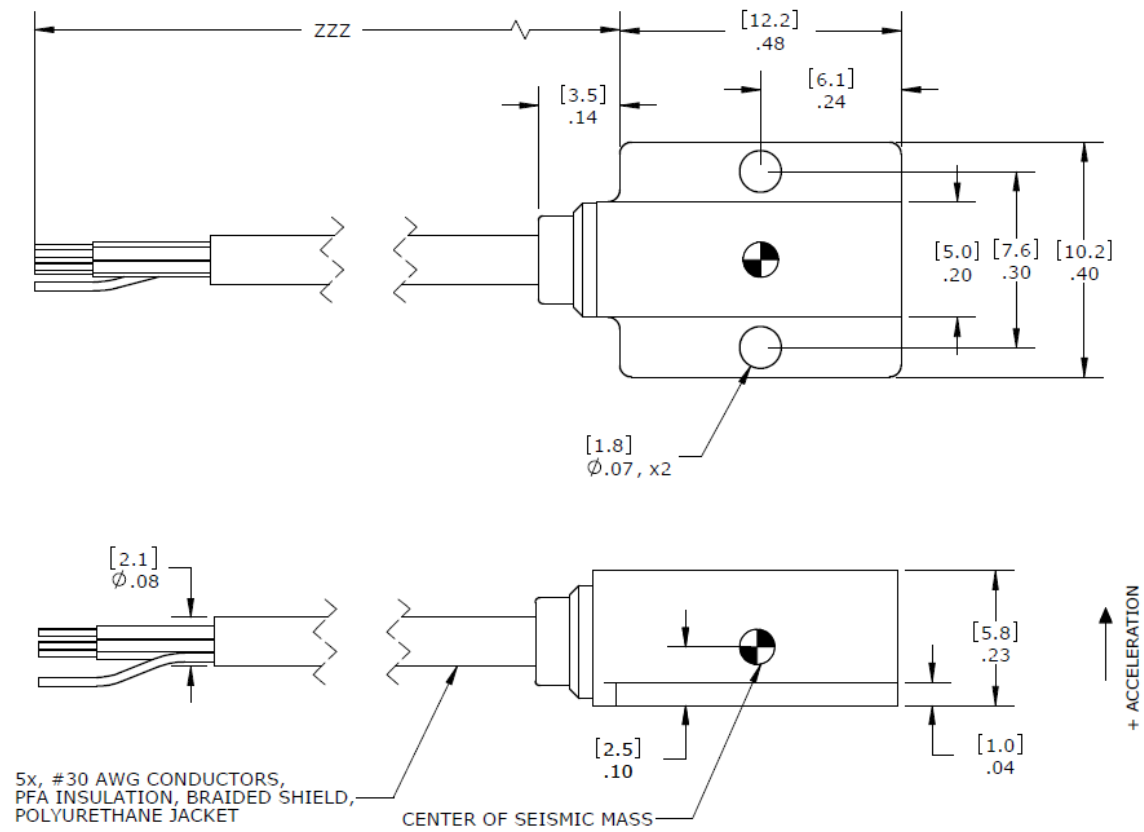


SCHEMATIC

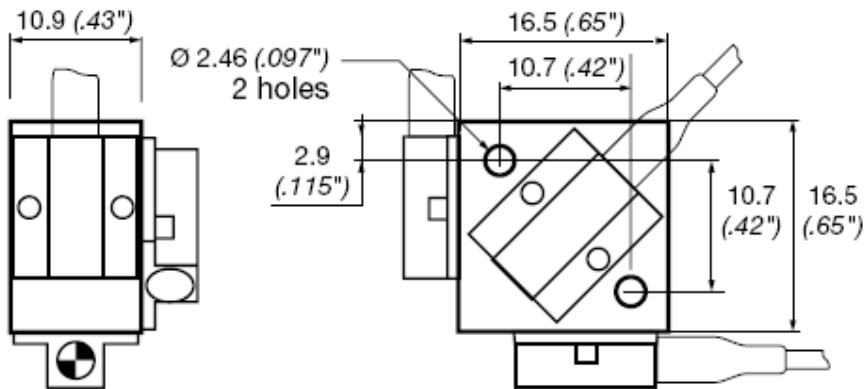


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DIMENSIONS



TRIAxIAL MOUNTING BLOCK



ORDERING INFORMATION

40B	GGGG	ZZZ	T	XXX
Range 0100=100g 0250=250g 0500=500g 1000=1000g 2000=2000g				
Cable length 240=240 inches 300=300 inches 360=360 inches 197=197 inches, 5 meters 276=276 inches, 7 meters 394=394 inches, 10 meters				
Transverse Sensitivity Option Blank=<3% T=<1%				
Excitation Voltage Option Blank=10Vdc 001=5Vdc 002=2Vdc				

Example;40B-2000-360
Model 40B, 2000g range,360inch cable length