



## MODEL 40A ACCELEROMETER

### SPECIFICATIONS

- ◆  $\pm 25\text{g}$  to  $\pm 2000\text{g}$  Dynamic Range
- ◆ Fluid Damped, DC Response
- ◆ Compliant to SAE J211/J2570
- ◆ Compliant to ISO 6487
- ◆ Temperature Compensated

The **Model 40A 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
- ◆  $\pm 25$  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

**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	-0025	-0100	-0250	-0500	-1000	-2000	Notes
<b>DYNAMIC</b>							
Range(g)	$\pm 25$	$\pm 100$	$\pm 250$	$\pm 500$	$\pm 1000$	$\pm 2000$	
Sensitivity (mV/g) <sup>1</sup>	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)	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	
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	
<b>ELECTRICAL</b>							
Zero Acceleration Output (mV)	< $\pm 20$						
Excitation (Vdc)	2 to 10						
Input Resistance ( $\Omega$ )	2000						Typical
Output Resistance ( $\Omega$ )	1000						Typical
Insulation Resistance (M $\Omega$ )	>100						@100Vdc
Ground Isolation	Isolated from mounting surface.						
<b>ENVIRONMENTAL</b>							
Thermal Zero Shift (mV)	$\pm 3.0$						From -10 to +50°C
Thermal Sensitivity Shift (%/°C)	$\pm 0.1$						From -10 to +50°C
Operating Temperature (°C)	-20 to +80						
Storage Temperature (°C)	-20 to +80						
Humidity	Epoxy Sealed, IP61						
<b>PHYSICAL</b>							
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)						

<sup>1</sup> 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

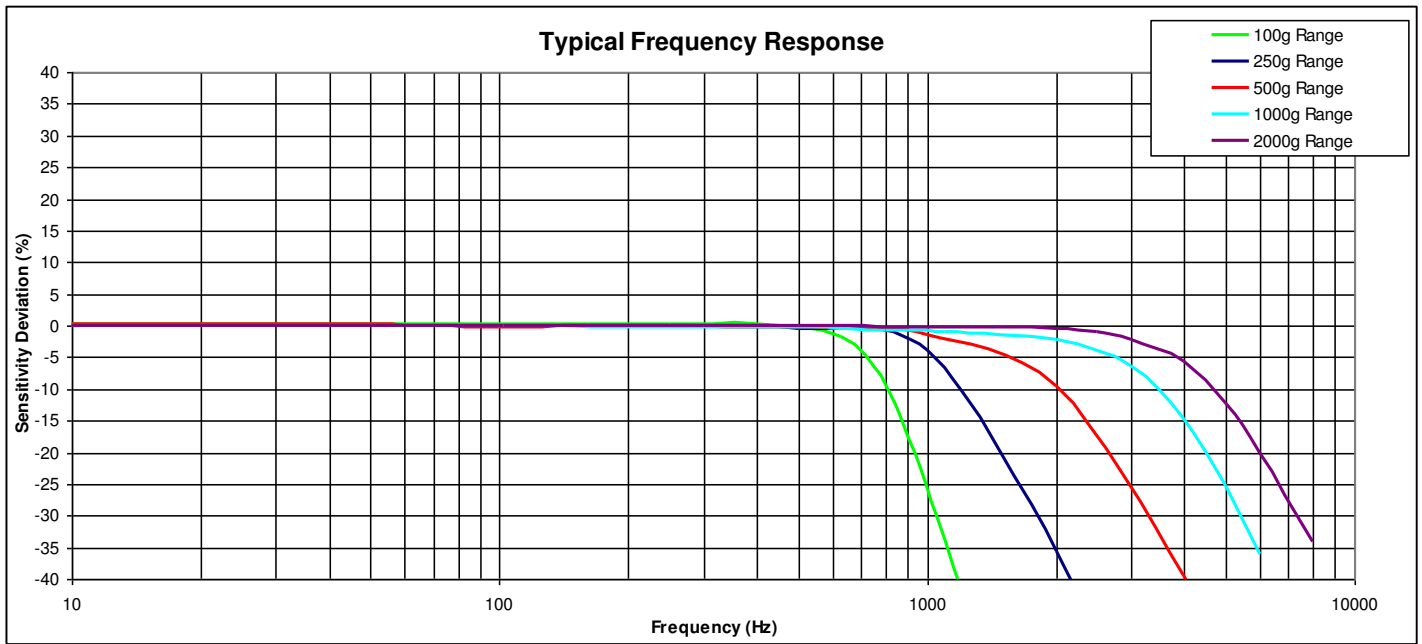
**Supplied accessories:** AC-A03923 2x #0-80 (3/16" length) Socket Head Cap Screw, 2x #0 Washer, 1x Allen Key

**Optional accessories:** MTG-E2 Triaxial Mounting Block  
 121 3-Channel Precision Low Noise DC Amplifier  
 140A Auto-zero Inline Amplifier

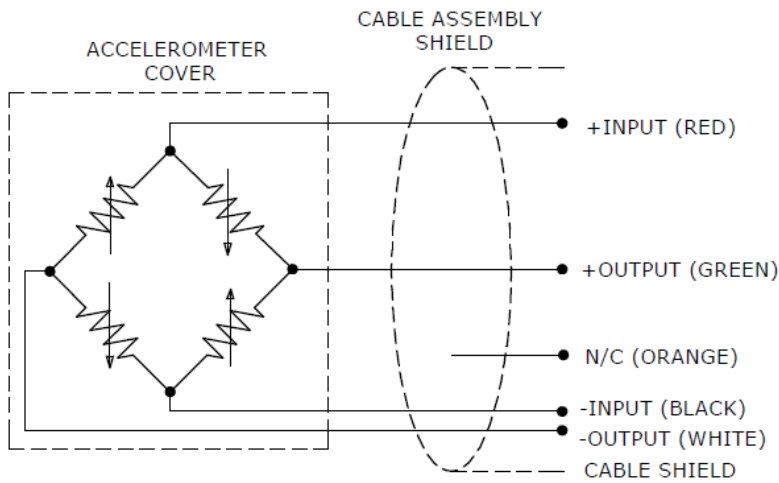
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## TYPICAL FREQUENCY RESPONSE

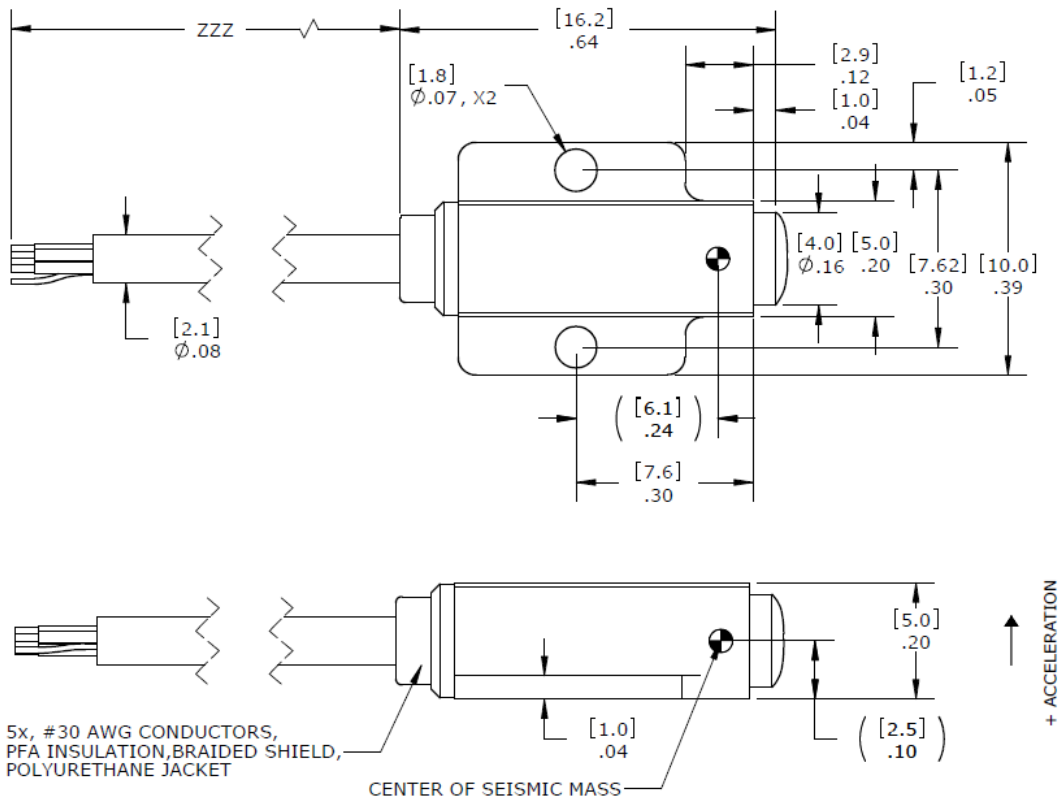


## SCHEMATIC

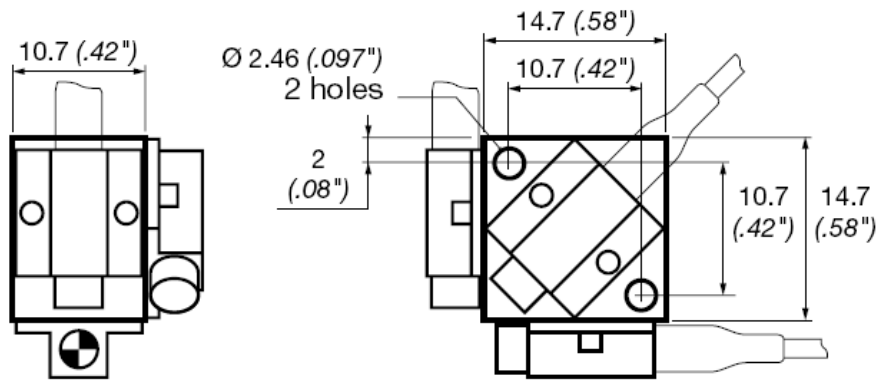


# MODEL 40A ACCELEROMETER

## DIMENSIONS



## TRIAxIAL MOUNTING BLOCK



## MODEL 40A ACCELEROMETER

### ORDERING INFORMATION

<b>40A</b>	<b>GGGG</b>	<b>ZZZ</b>	<b>T</b>	<b>XXX</b>
<b>Range</b> 0025=25g 0100=100g 0250=250g 0500=500g 1000=1000g 2000=2000g				
<b>Cable length</b> 240=240 inches 300=300 inches 360=360 inches  197=197 inches, 5 meters 276=276 inches, 7 meters 394=394 inches, 10 meters				
<b>Transverse Sensitivity Option</b> Blank=<3% T=<1%				
<b>Excitation Voltage Option</b> Blank=10Vdc 001=5Vdc 002=2Vdc				

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