

# Model 4610 Accelerometer



MEMS Accelerometer  
DC Response, Ultra-Stable  
Advanced Temp Compensation  
Signal Conditioned Output  
5,000g Over-Range Protection



The **Model 4610** is an ultra-stable MEMS accelerometer ideal for static and dynamic applications. The accelerometer offers integral temperature compensation with dynamic range from  $\pm 2$  to  $\pm 200g$ . The model 4610 incorporates a gas damped MEMS element with mechanical overload stops that provide shock protection to 5,000g. The accelerometer has an operating temperature range of  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ .

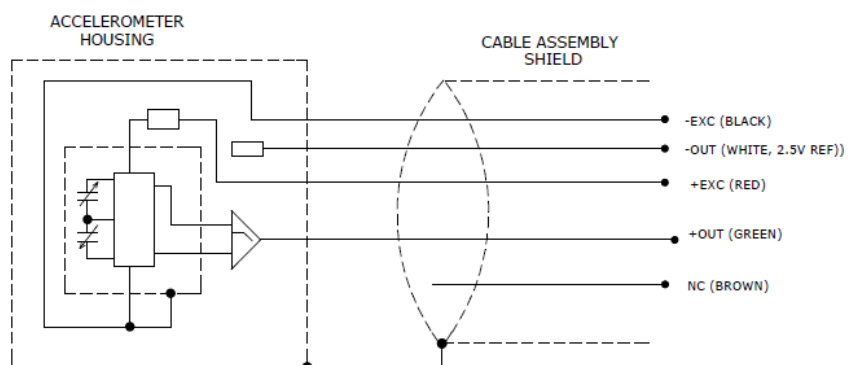
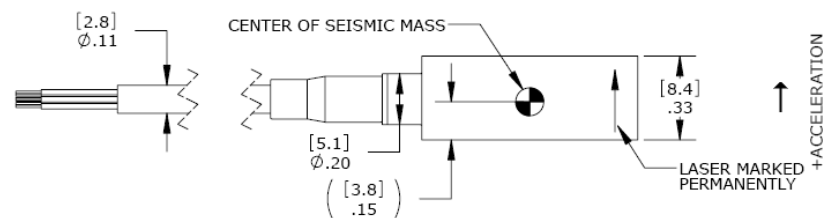
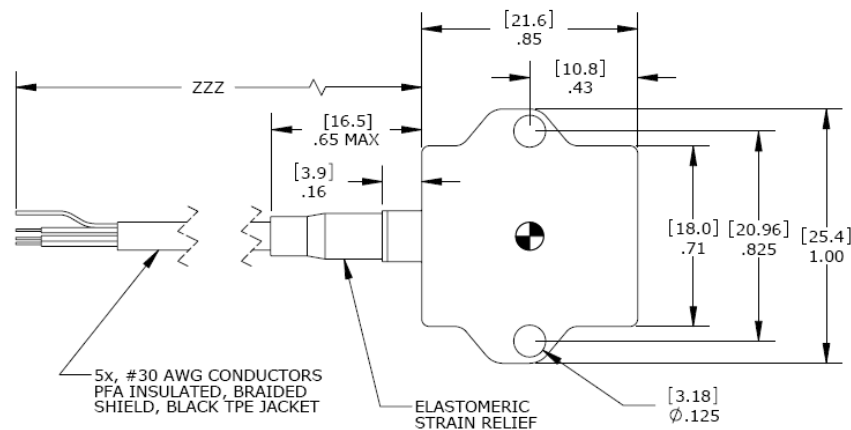
## FEATURES

- $\pm 2g$  to  $\pm 200g$  Dynamic Range
- 5000g Shock Protection
- $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  Operating Range
- 8 to 36Vdc Excitation Voltage
- Gas Damping, DC Response
- Integral Cable
- Temperature Compensated

## APPLICATIONS

- Low Frequency Monitoring
- Transportation
- Test & Instrumentation
- Machine Control
- Road Vehicle Testing

## dimensions



# Model 4610 Accelerometer

## performance specifications

All values are typical at +24°C, 80Hz and 12Vdc 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

#### DYNAMIC

	±2	±5	±10	±20	±50	±100	±200	Notes
Range (g)								
Sensitivity (mV/g)	1000	400	200	100	40	20	10	
Frequency Response (Hz)	0-250	0-700	0-1000	0-1000	0-1000	0-1000	0-1000	±5% <sup>1</sup>
Natural Frequency (Hz)	700	800	1000	1500	4000	6000	8000	
Non-Linearity (%FSO)	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	<3	<3	<1 Typical
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Shock Limit (g)	5000	5000	5000	5000	5000	5000	5000	
Residual Noise (µV RMS)	600	750	800	1200	800	800	800	Passband
Spectral Noise (µg/√Hz)	38	71	126	379	632	1265	2530	Passband

#### ELECTRICAL

Zero Acceleration Output (mV)	±50							Differential
Excitation Voltage (Vdc)	8 to 36							
Excitation Current (mA)	<5							
Bias Voltage (Vdc)	2.5							
Output Resistance (Ω)	<100							
Full Scale Output Voltage (V)	±2							
Insulation Resistance (MΩ)	>100							@100Vdc
Turn On Time (msec)	<100							
Ground Isolation	Isolated from Mounting Surface							

#### ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	±0.004							Typical
Thermal Sensitivity Shift (%/°C)	±0.010							Typical
Operating Temperature (°C)	-55 to 125							
Storage Temperature (°C)	-55 to 125							
Housing (Active Element & Electronics)	Hermetic Solder Seal							
Humidity (Housing)	Epoxy Seal, IP65							

#### PHYSICAL

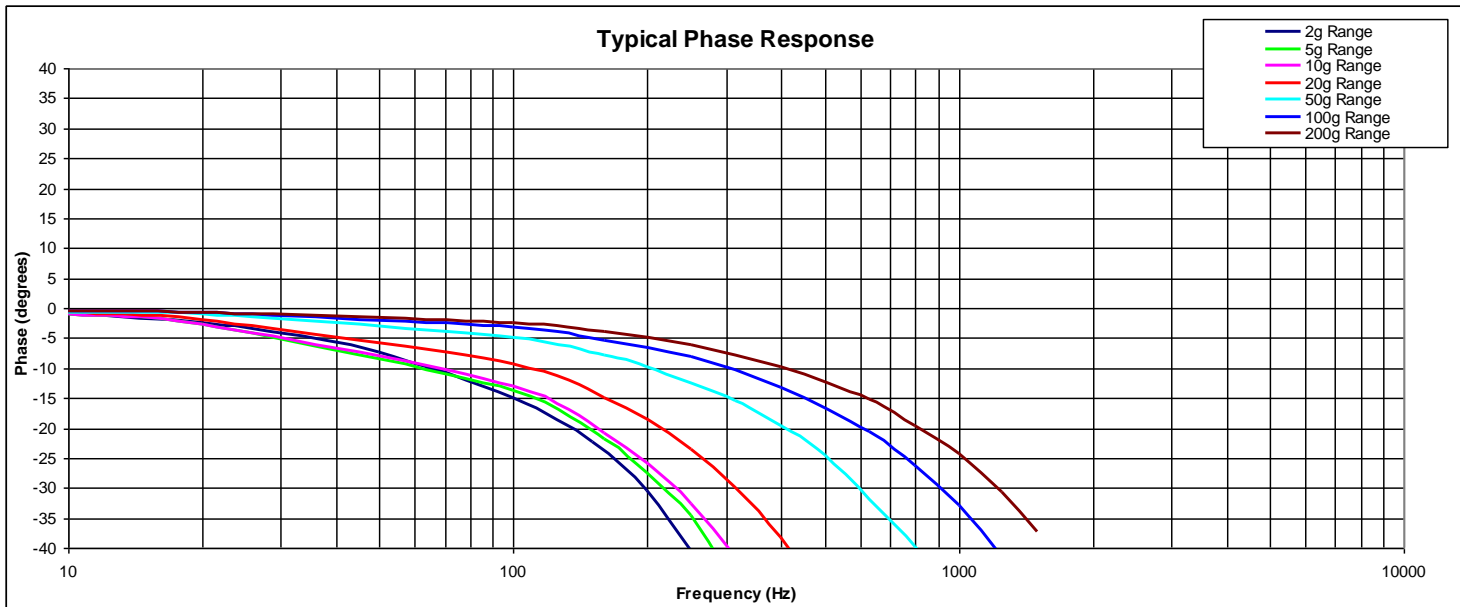
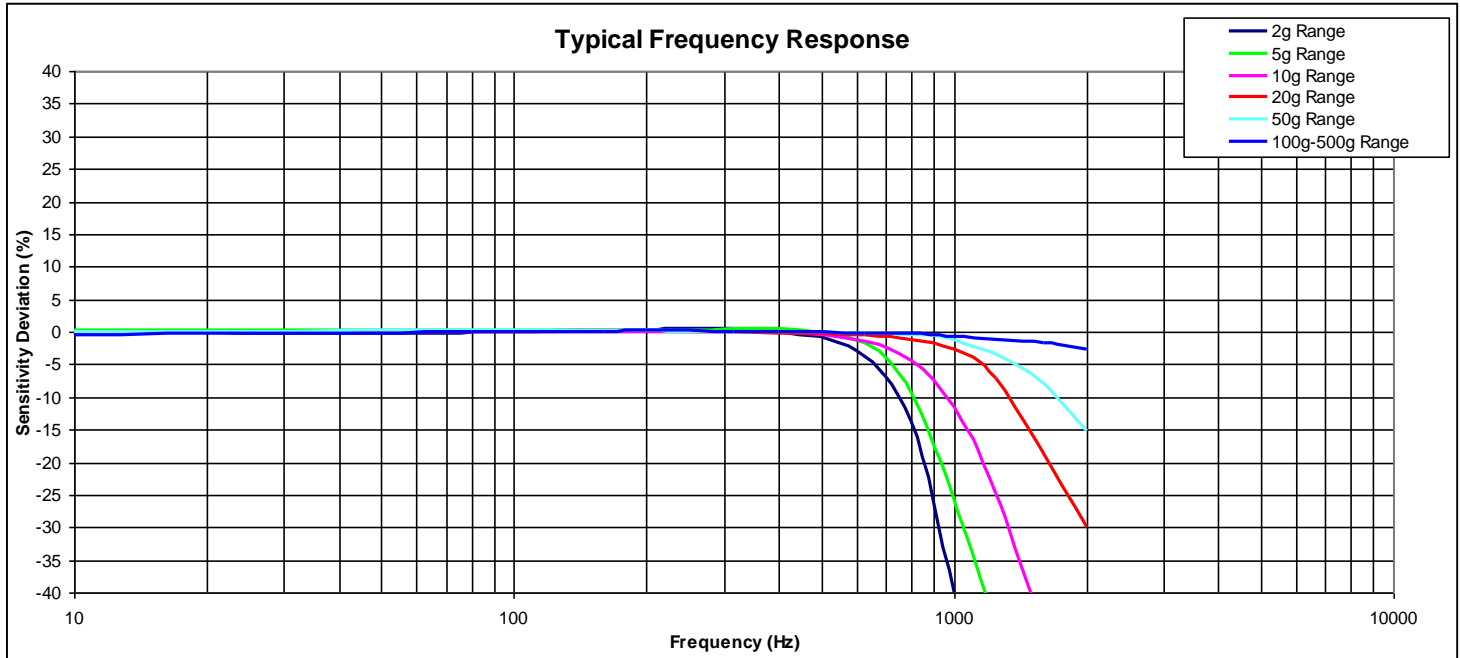
Case Material	Anodized Aluminum
Cable	5x #30 AWG Conductors PFA Insulated Leads, Braided Shield, TPE Jacket
Weight (grams)	6 (cable not included)
Mounting	2x #4 or M3 Screws
Mounting Torque	6 lb-in (0.7 N-m)

<b>Calibration supplied:</b>	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit <sup>1</sup>
<b>Supplied accessories:</b>	AC-A02285	2x #4-40 (7/16 length) Socket Head Cap Screw and Washer
<b>Optional accessories:</b>	AC-D02669 121	Triaxial Mounting Block 3-Channel Precision Low Noise DC Amplifier

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## performance specifications



## ordering info

PART NUMBERING Model Number+Range+Cable Length

4610-GGG-ZZZ-C

| |  
 | | Cable (060 is 60 inches)  
 | | Range (020 is 20g)

Example: 4610-020-060-C  
Model 4610, 20g, 60" (5ft) Cable