

Model 4610 Accelerometer



High Performance DC Response
Low Noise, Signal Conditioned
Advanced Temp Compensation
10,000 g Over-Range Protection

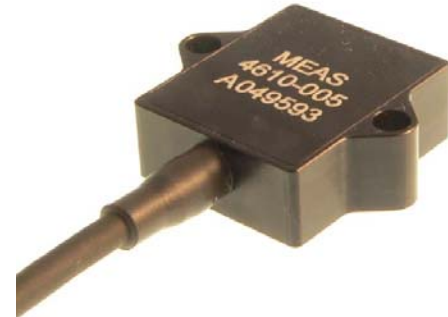
The **Model 4610** is a high performance signal conditioned accelerometer ideal for static and dynamic applications. The accelerometer offers integral temperature compensation with dynamic range from ± 2 to $\pm 500g$. The model 4610 incorporates a gas damped MEMS element with mechanical overload stops that provide shock protection to 10,000g. The accelerometer has an operating temperature range of -55°C to $+125^{\circ}\text{C}$.

FEATURES

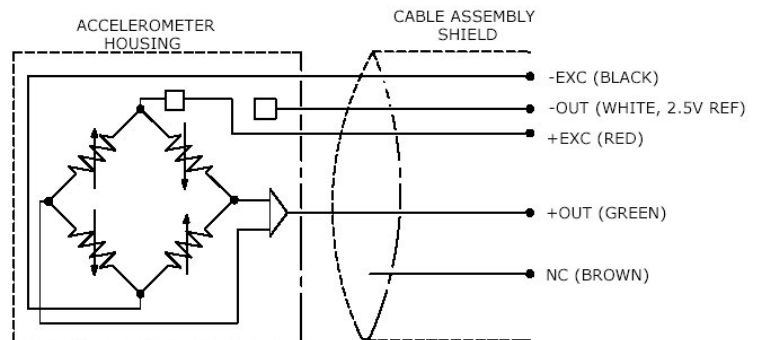
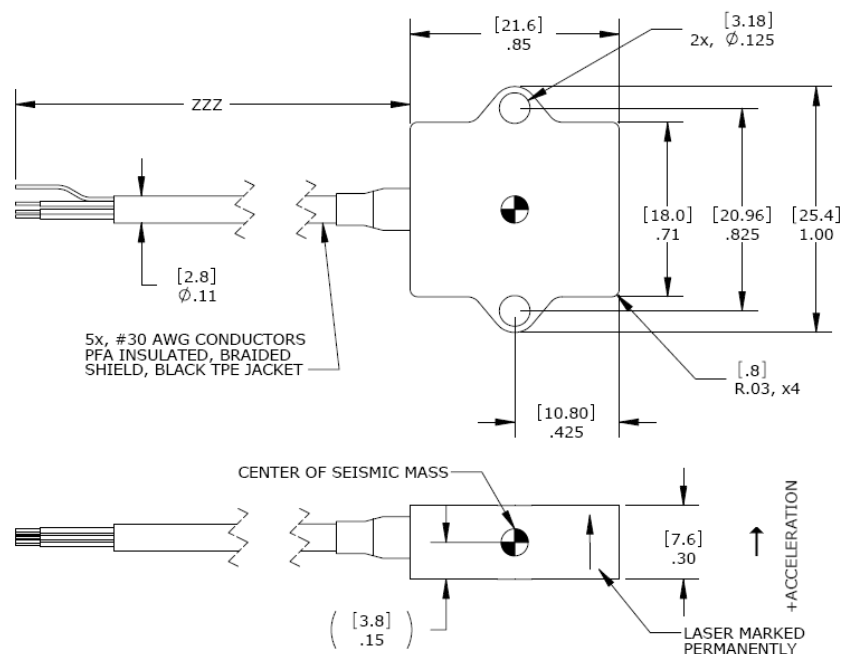
- $\pm 2g$ to $\pm 500g$ Dynamic Range
- 10,000g Shock Protection
- Signal Conditioned Output
- 8 to 36Vdc Excitation Voltage
- Gas Damping
- Integral Cable
- Temperature Compensated

APPLICATIONS

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



dimensions



Model 4610 Accelerometer

performance specifications

All values are typical at +24°C, 100Hz and 12Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice.

Parameters

DYNAMIC

	±2	±5	±10	±20	±50	±100	±200	±500	Notes
Range (g)									
Sensitivity (mV/g)	1000	400	200	100	40	20	10	4	
Frequency Response (Hz)	0-200	0-300	0-400	0-700	0-1000	0-1500	0-1500	0-1500	±5% ¹
Frequency Response (Hz)	0-400	0-500	0-600	0-1000	0-1600	0-2000	0-2000	0-2000	±1dB
Natural Frequency (Hz)	700	800	1000	1500	4000	6000	8000	10000	
Non-Linearity (%FSO)	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	
Transverse Sensitivity (%)	<2	<2	<2	<2	<2	<2	<2	<2	<1 Typical
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.5	
Shock Limit (g)	10000	10000	10000	10000	10000	10000	10000	10000	

ELECTRICAL

Zero Acceleration Output (mV)	±50	±50	±50	±50	±50	±50	±50	±50	Differential
Excitation Voltage (Vdc)	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	
Excitation Current (mA)	<5	<5	<5	<5	<5	<5	<5	<5	
Bias Voltage (Vdc)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Output Resistance (Ω)	<100	<100	<100	<100	<100	<100	<100	<100	
Insulation Resistance (MΩ)	>100	>100	>100	>100	>100	>100	>100	>100	@100Vdc
Turn On Time (msec)	<100	<100	<100	<100	<100	<100	<100	<100	
Residual Noise (μV RMS)	500	300	300	350	400	400	400	400	Passband
Spectral Noise (μg/√Hz)	35	38	75	132	316	516	1033	2582	Passband
Ground Isolation	Isolated from Mounting Surface								

ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	Typical
Thermal Sensitivity Shift (%/°C)	±0.010	±0.010	±0.010	±0.010	±0.010	±0.010	±0.010	±0.010	±0.010	Typical
Operating Temperature (°C)	-55 to 125									
Compensated Temperature (°C)	-40 to 100									
Storage Temperature (°C)	-55 to 125									

PHYSICAL

Case Material	Anodized Aluminum
Cable	Teflon Insulated Leads, Braided Shield, TPE Jacket
Weight (grams)	6
Mounting	2x #4 or M3 Screws
Mounting Torque	6 lb-in (0.7 N-m)
AWG	#30

Wiring color code: +Excitation = Red; -Excitation = Black; +Output = Green; -Output = White; Programming = Brown (brown wire is used for programming and is not to be connected)

Calibration supplied: CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit¹

Supplied accessories: AC-A02285 2x #4-40 (7/16 length) Socket Head Cap Screw and Washer

Optional accessories: AC-D02669 Triaxial Mounting Block
101 Three Channel DC Signal Conditioner Amplifier

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performance specifications

