

# Model 4810A Accelerometer

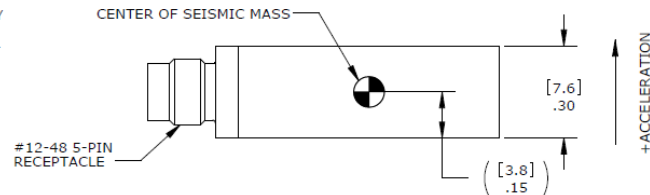
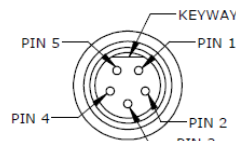
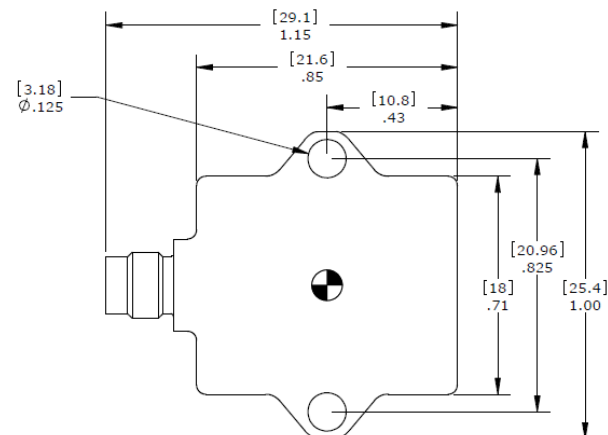


High Performance DC Response  
Ultra-Stable MEMS Accelerometer  
Advanced Temp Compensation  
Hermetically Sealed



The **Model 4810A** is an ultra-stable MEMS accelerometer in a welded stainless steel package. The accelerometer offers an amplified signal conditioned output in ranges from  $\pm 2$  to  $\pm 500g$ . The model 4810A incorporates a gas damped silicon MEMS sensing element that incorporates mechanical overload stops for shock protection to 5,000g and a wide bandwidth from DC to 2000Hz.

## dimensions

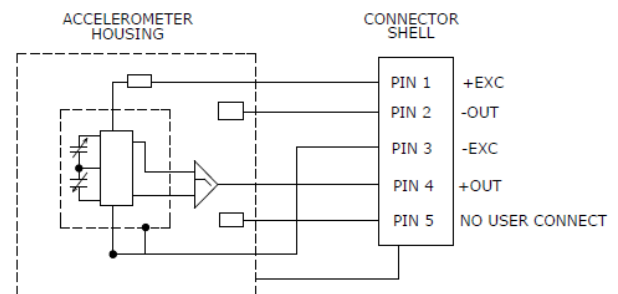


## FEATURES

- $\pm 2g$  to  $\pm 500g$  Dynamic Range
- 8-36Vdc Excitation Voltage
- Hermetically Sealed, Detachable Cable
- Integral Cable Option, Model 4810B
- Gas Damped MEMS Element
- Temperature Compensated

## APPLICATIONS

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



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## 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. Standard product parameters are described in PSC-1004 for Plug & Play DC Accelerometers.

### 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)	0-250	0-700	0-1000	0-1000	0-1000	0-1500	0-1500	0-1500	±5%
Natural Frequency (Hz)	700	800	1000	1500	4000	6000	8000	10000	
Non-Linearity (%FSO)	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	<3	<3	<3	<1 Typical
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.5	
Shock Limit (g)	5000	5000	5000	5000	5000	5000	5000	5000	
Residual Noise (µV RMS)	600	750	800	800	800	400	400	400	Passband
Spectral Noise (µg/√Hz)	35	38	75	132	316	516	1033	2582	Passband

#### ELECTRICAL

Zero Acceleration Output (mV)	±50								Differential
Excitation Voltage (Vdc)	8 to 36								
Excitation Current (mA)	<5								
Bias Voltage (Vdc)	2.5								
Full Scale Output Voltage (V)	±2								
Output Resistance (Ω)	<100								
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								
Humidity	Hermetically Sealed, IP67 <sup>1</sup>								

#### PHYSICAL

Case Material	Stainless Steel
Weight (grams)	16
Mounting	2x #4 or M3 Screws
Mounting Torque	6 lb-in (0.7 N-m)

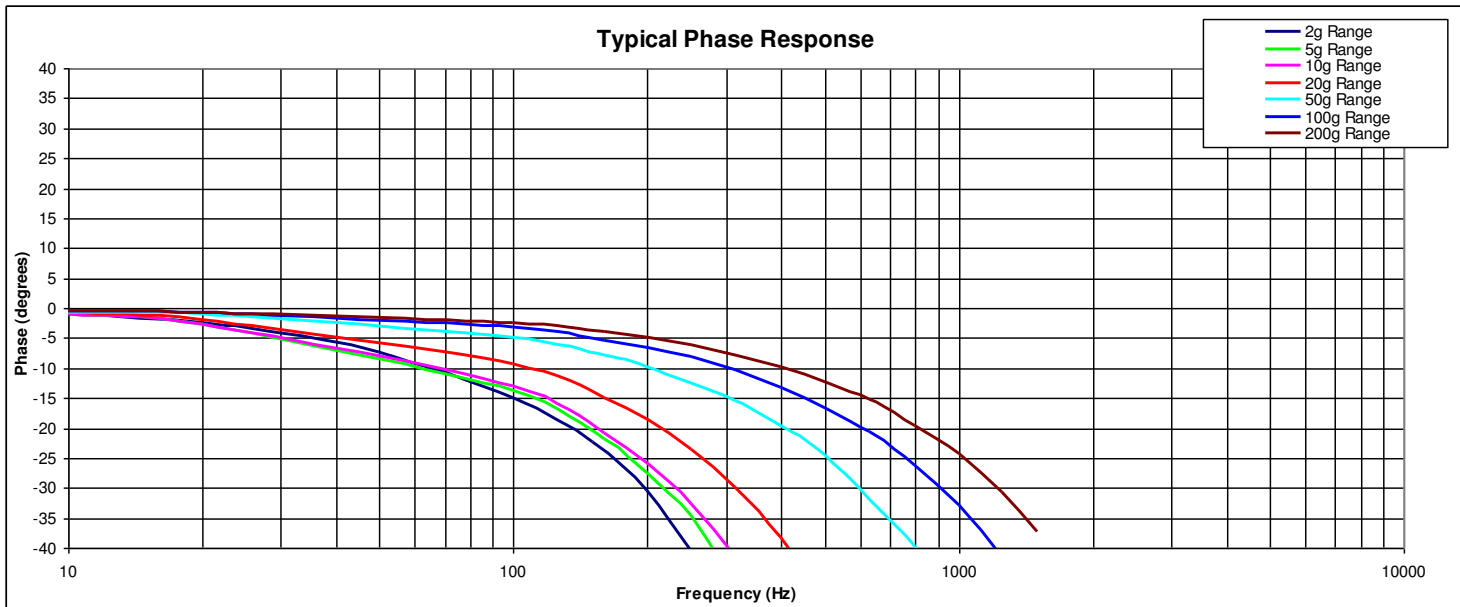
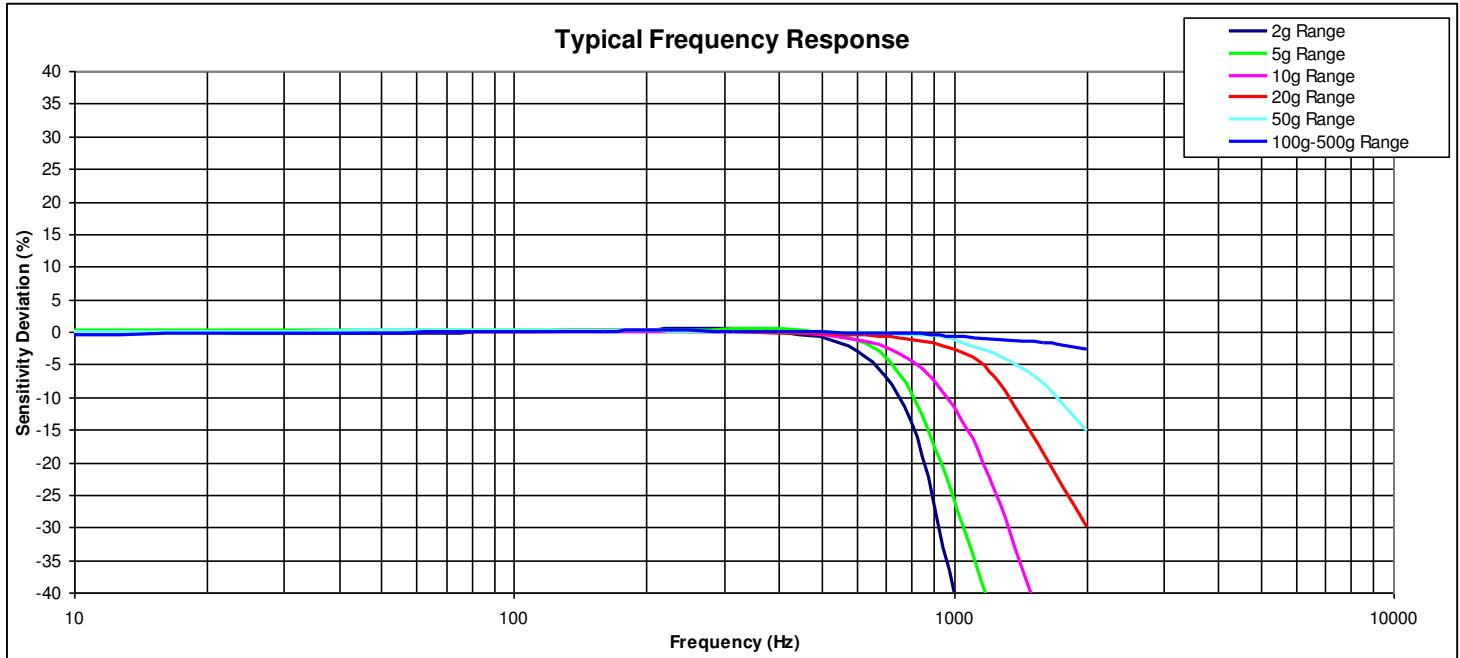
<sup>1</sup> Mating cable needs to also have minimum IP67 rating and be properly sealed to accel connector in accordance with IEC 60529.

<b>Calibration supplied:</b>	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit
<b>Supplied accessories:</b>	AC-A02285	2x #4-40 (7/16 length) Socket Head Cap Screw and Washer
<b>Optional accessories:</b>	AC-D02669	Triaxial Mounting Block
	340A-XXX	Cable Assembly, #28 AWG, -54 to +121°C (XXX designates length in inches, 5ft standard)
	343-XXX	Cable Assembly, #28 AWG, -40 to +85°C (XXX designates length in inches, 5ft standard)
	121	3-Channel Precision Low Noise DC Amplifier

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## performance specifications



## ordering info

PART NUMBERING Model Number+Range

4810A-GGGG-C

| | Range (0010 is 10g)  
| Electrical Interface (A; Connector, B; Integral Cable)

Example: 4810A-0010-C  
Model 4810A, 10g, Connector