

Model 4803A Accelerometer



MEMS Triaxial Accelerometer
Ultra-Stable, DC Response
Hermetically Sealed
Advanced Temp Compensation



The **Model 4803A** is an ultra-stable MEMS triaxial accelerometer in a rugged, welded stainless steel package. The silicon MEMS accelerometer incorporates integral temperature compensation that provides a stable output over a wide temperature range from -55°C to $+125^{\circ}\text{C}$. Offered in ranges from ± 2 to $\pm 500\text{g}$, the model 4803A accelerometer also provides a wide bandwidth from DC to 2000Hz for both static and dynamic measurements.

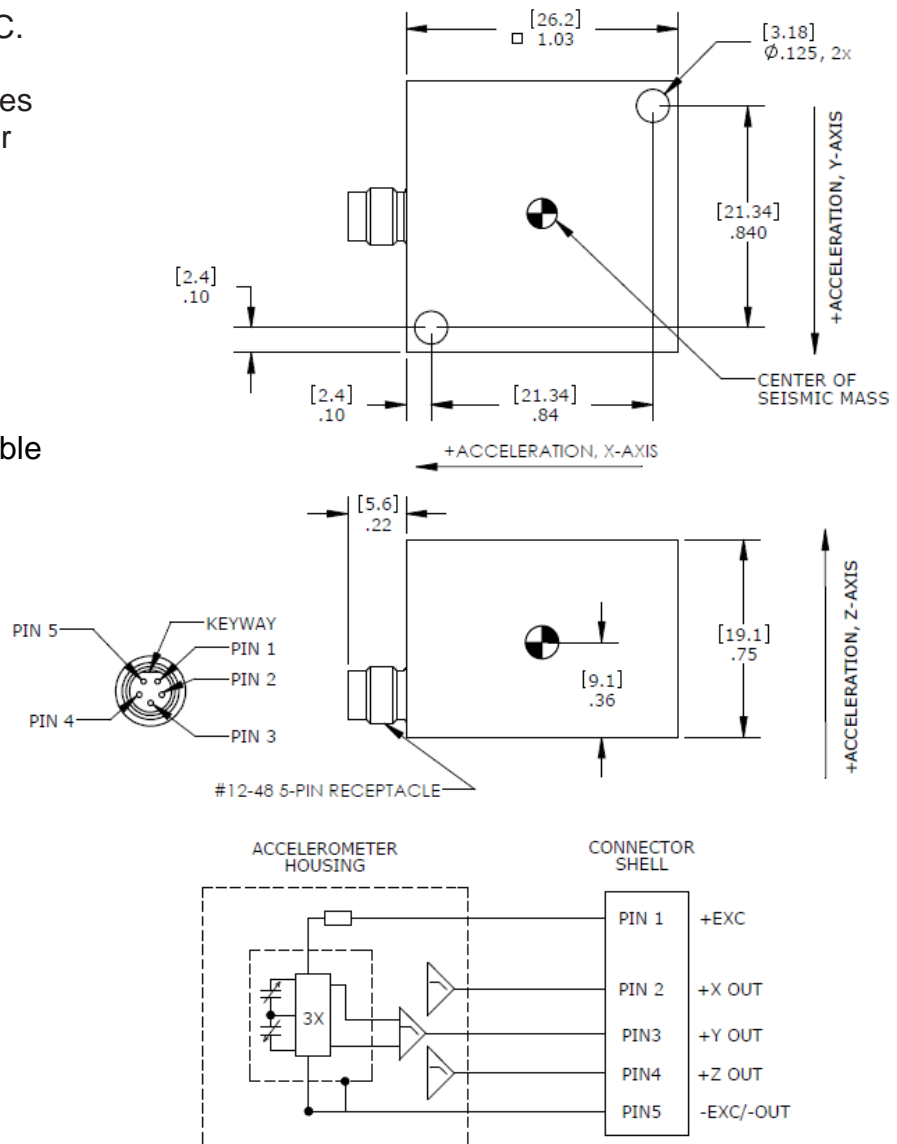
FEATURES

- $\pm 2\text{g}$ to $\pm 500\text{g}$ Dynamic Range
- Amplified Output
- 8-36Vdc Excitation Voltage
- Hermetically Sealed, Detachable Cable
- Gas Damped MEMS Element
- Temperature Compensated
- Low Transverse Sensitivity

APPLICATIONS

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

dimensions



Model 4803A 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. 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)	0-200	0-600	0-800	0-800	0-800	0-1000	0-1000	0-1200	±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)	<15								
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 ¹								

PHYSICAL

Case Material	Stainless Steel
Weight (grams)	56
Mounting	2x #4 or M3 Screws
Mounting Torque	6 lb-in (0.7 N-m)

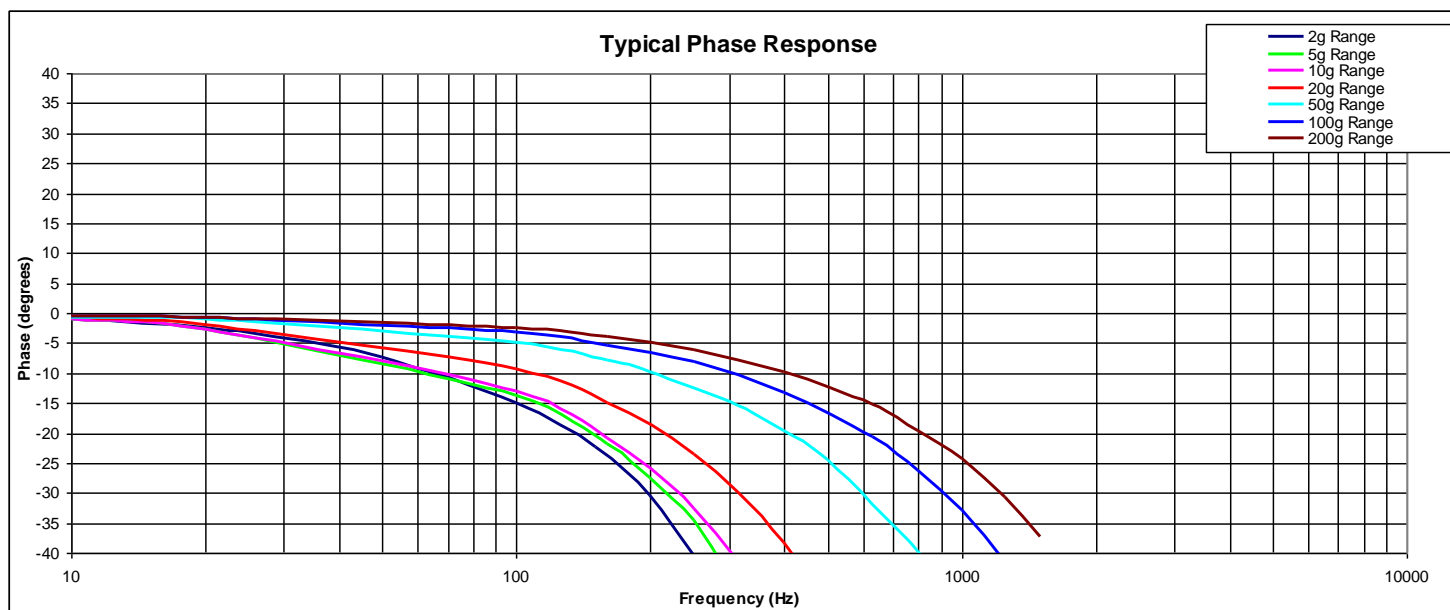
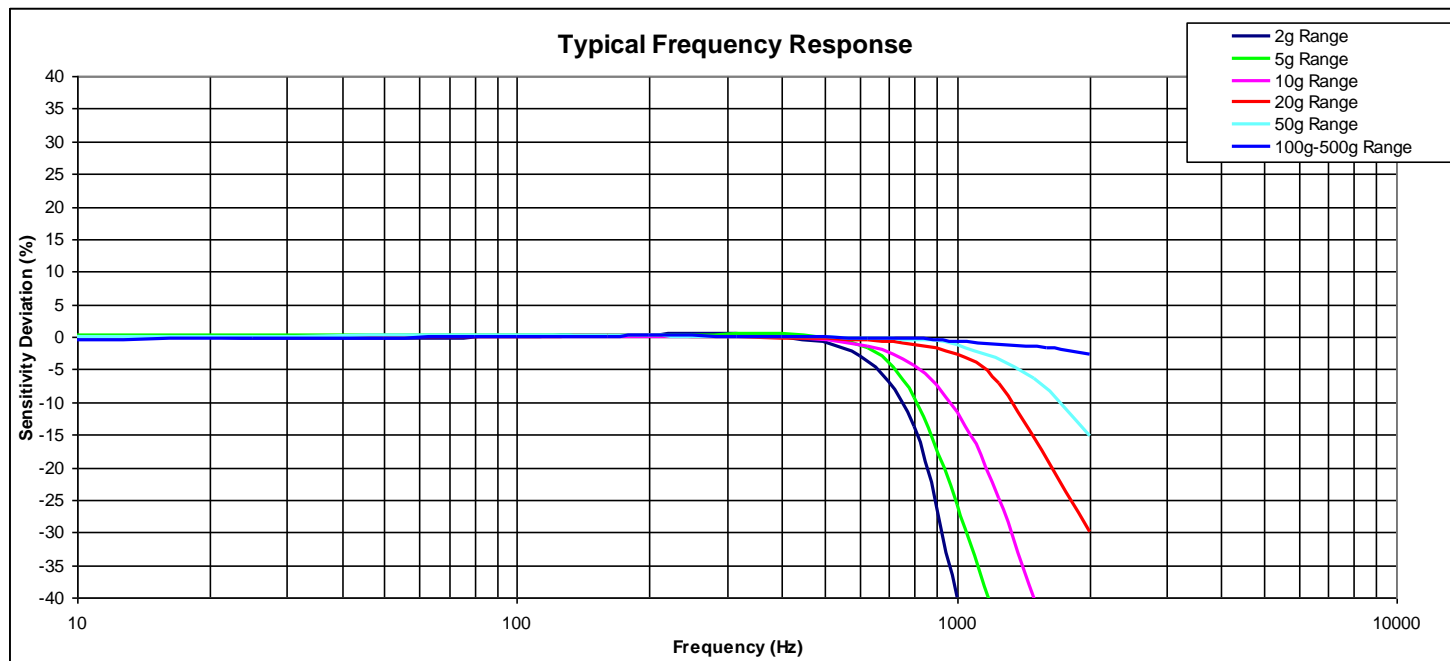
¹ Mating cable needs to also have minimum IP67 rating and be properly sealed to accel connector in accordance with IEC 60529.

Calibration supplied:	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit
Supplied accessories:	AC-D02995	2x #4-40 (7/8" length) Socket Head Cap Screw and Washer
Optional accessories:	350-XXX	Cable Assembly, #30 AWG, -54 to +121°C (XXX designates length in inches, 5ft standard)
	121	3-Channel Precision Low Noise DC Amplifier
	AC-D02744	Adhesive Mounting Adaptor

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performance specifications



ordering info

PART NUMBERING Model Number+Range

4803A-GGGG-C

I I _____ Range (0010 is 10g)

I _____ Electrical Interface (A; Connector, B; Integral Cable)

Example: 4803A-0010-C

Model 4803A, 10g, Connector