

Model 3803A Accelerometer



Triaxial DC Accelerometer
Gas Damped, mV Output
Hermetically Sealed
5,000g Over-Range Protection

The **Model 3803A** is a triaxial piezoresistive MEMS accelerometer in a rugged welded hermetic package. The accelerometer incorporates mechanical stops for over-range protection up to greater than 5,000g. The model 3803A is offered in ranges from ± 2 to $\pm 2000g$ and is gas damped to provide a wide frequency response. The accelerometer is temperature compensated to provide a stable output over the operating environment.

FEATURES

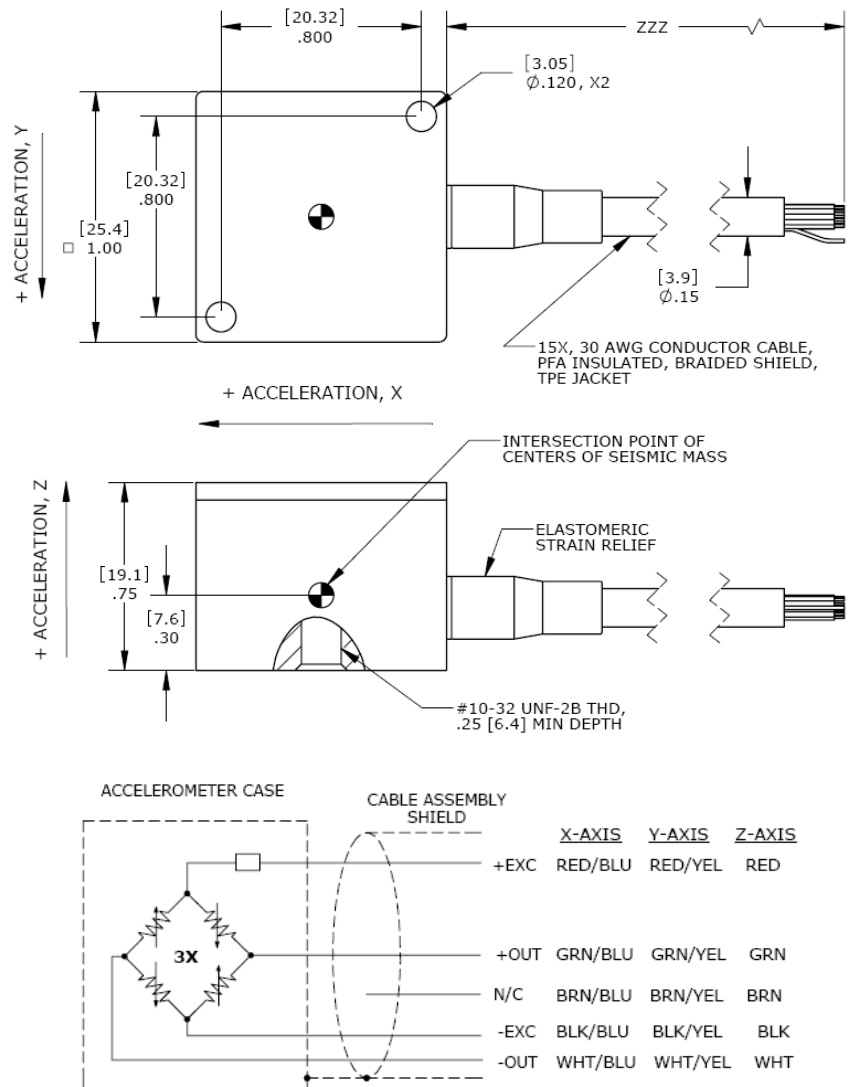
- $\pm 2g$ to $\pm 2000g$ Dynamic Range
- 5,000g Shock Protection
- Hermetically Sealed
- Gas Damping
- mV Output, DC Response
- Stud or Screw Mounting

APPLICATIONS

- Impact Testing
- Structural Testing
- Test and Instrumentation
- Environmental Testing
- Vehicle Testing



dimensions



Model 3803A Accelerometer

performance specifications

All values are typical at +24°C, 100Hz and 10Vdc 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									Notes
DYNAMIC									
Range (g)	±2	±10	±20	±50	±100	±200	±500	±2000	
Sensitivity (mV/g)	12	6	3	1.5	0.7	0.7	0.3	0.1	@10Vdc Exc
Frequency Response (Hz), Z Axis	0-100	0-300	0-400	0-800	0-1200	0-1300	0-1800	0-4000	±5% ¹
Frequency Response (Hz), X & Y Axis	0-100	0-300	0-400	0-600	0-700	0-800	0-1100	0-2500	±1dB
Natural Frequency (Hz)	300	500	1000	3000	5000	6000	7000	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	
Damping Ratio	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.3	
Shock Limit (g)	2000	2000	2000	5000	5000	5000	5000	5000	
ELECTRICAL									
Zero Acceleration Output (mV)	±25								Differential
Excitation Voltage (Vdc)	5 to 10								
Input Resistance (Ω)	4000 to 10000								
Output Resistance (Ω)	2400 to 6000								
Insulation Resistance (MΩ)	>100								@100Vdc
Residual Noise (µV RMS)	10								Maximum
Ground Isolation	Isolated from Mounting Surface								
ENVIRONMENTAL									
Thermal Zero Shift (%FSO/°C)	±0.04								
Thermal Sensitivity Shift (%/°C)	±0.05								
Operating Temperature (°C)	-40 to +105								
Compensated Temperature (°C)	-20 to +85								
Storage Temperature (°C)	-40 to +105								
Humidity	Environmentally Sealed, IP65								
PHYSICAL									
Case Material	Stainless Steel								
Weight (grams)	65								
Mounting	2x #4 or M3 Screws, or #10-32 to #10-32 Mounting Stud								
Mounting Torque	18 lb-in (2 N-m)								
Calibration supplied:	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit ¹							
Supplied accessories:	AC-D02995	2x #4-40 (7/8" length) Socket Head Cap Screw and Washer							
Optional accessories:	121	3-Channel Precision Low Noise DC Amplifier							
	140	Auto-zero Inline Amplifier							

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ordering info

PART NUMBERING Model Number+Range+Cable Length

3803A-GGG-CCC

| |
 | | _____ Cable (120 is 120 inches)
 | _____ Range (050 is 50g)

Example: 3803A-050-120
 Model 3803A, 50g, 120" (10ft) Cable