



## MODEL 3803A TRIAXIAL DC ACCELEROMETER

### SPECIFICATIONS

- Gas Damped, DC Response
- Rugged Stainless Steel Housing
- mV Output, Silicon MEMS
- 5,000g Over-Range Protection

The Model 3803A is a triaxial piezoresistive MEMS accelerometer in a rugged stainless steel package. The accelerometer incorporates mechanical stops for over-range protection up to greater than 5,000g. The model 3803A is offered in ranges from  $\pm 50g$  to  $\pm 2000g$  and is gas damped to provide a wide frequency response with optimum high frequency attenuation. The accelerometer is temperature compensated to provide a stable output over the operating environment.

For a single axis version, TE Connectivity also offers the model 3801A accelerometer and for low-g ranges the model 4630 and 4835A DC accelerometers are offered.

### APPLICATIONS

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

### FEATURES

- $\pm 50g$  to  $\pm 2000g$  Dynamic Range
- 5,000g Shock Protection
- Environmentally Sealed
- Rugged Integral Cable
- mV Output, DC Response
- Stud Mounting or Screw Mounting

## PERFORMANCE SPECIFICATIONS

All values are typical at +24°C, 80Hz and 10Vdc excitation unless otherwise stated. TE Connectivity reserves the right to update and change these specifications without notice.

### Parameters

#### DYNAMIC

	±50	±100	±200	±500	±2000	Notes
Range (g)	±50	±100	±200	±500	±2000	
Sensitivity (mV/g)	1.0-2.2	0.49-1.0	0.49-1.0	0.22-0.48	0.07-0.22	@10Vdc Exc.
Frequency Response (Hz)	0-600	0-700	0-800	0-1100	0-2000	±5%
Frequency Response (Hz)	0-800	0-1200	0-1300	0-1500	0-3500	±1dB
Natural Frequency (Hz)	4000	6000	7000	8000	10000	
Non-Linearity (%FSO)	±1.0	±1.0	±1.0	±1.0	±1.0	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	
Damping Ratio	0.7	0.7	0.6	0.5	0.15	
Shock Limit (g)	5000	5000	5000	5000	5000	

#### ELECTRICAL

Zero Acceleration Output (mV)	±25					Differential
Excitation Voltage (Vdc)	5 to 10					
Input Resistance (kΩ)	4 to 10					
Output Resistance (kΩ)	2.4 to 4.8					
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)	-55 to +125
Compensated Temperature (°C)	-20 to +85
Storage Temperature (°C)	-55 to +125
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 (2.0 N-m)

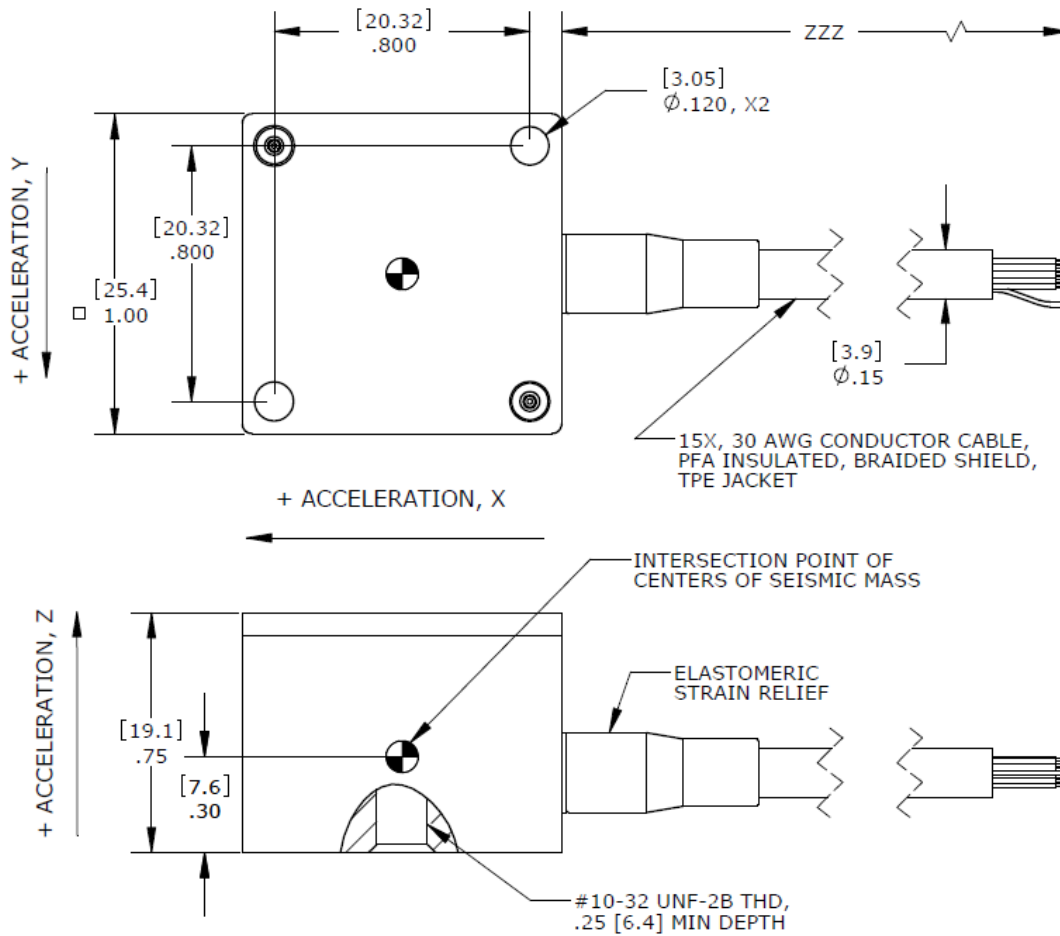
**Calibration supplied:** CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit

**Supplied accessories:** AC-D02995 2x #4-40 (7/8" length) Socket Head Cap Screw and Washer

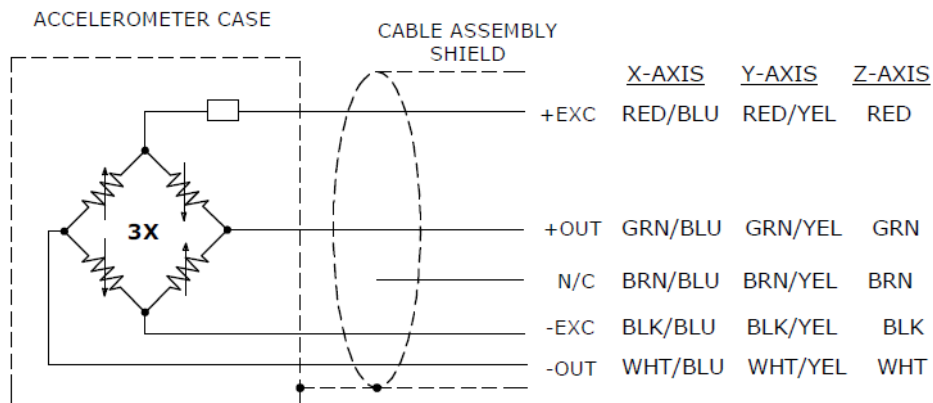
**Optional accessories:** 121 3-Channel Precision Low Noise DC Amplifier  
140A Auto-zero Inline Amplifier

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## DIMENSIONS



## SCHEMATIC



## ORDERING INFORMATION

3803A	GGGG	ZZZ	XX
<b>Range</b> 0050=50g 0100=100g 0200=200g 0500=500g 2000=2000g			
<b>Cable length</b> 120=120 inches 240=240 inches 360=360 inches  197=197 inches, 5 meters 394=394 inches, 10 meters			
<b>Excitation Voltage Option</b> Blank=10Vdc 01=5Vdc			

Example; 3803A-0500-120  
Model 3803A, 500g range, 120inch (10ft) cable length

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