

## MODEL 3801A MEMS DC ACCELEROMETER



### SPECIFICATIONS

- Gas Damped, DC Response
- Hermetically Sealed
- mV Output, Silicon MEMS
- 10,000g Over-Range Protection

The Model 3801A is a mV output piezoresistive MEMS accelerometer in a rugged welded hermetic package. The accelerometer incorporates mechanical stops for over-range protection up to greater than 10,000g. The model 3801A 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 triaxial package, TE Connectivity also offers the model 3803A accelerometer and for low-g ranges the model 4801A DC accelerometer is offered.

### APPLICATIONS

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

### FEATURES

- $\pm 50g$  to  $\pm 2000g$  Dynamic Range
- 10,000g Shock Protection
- Hermetically Sealed
- Gas Damping
- mV Output, DC Response
- Stud Mounting

**PERFORMANCE SPECIFICATIONS**

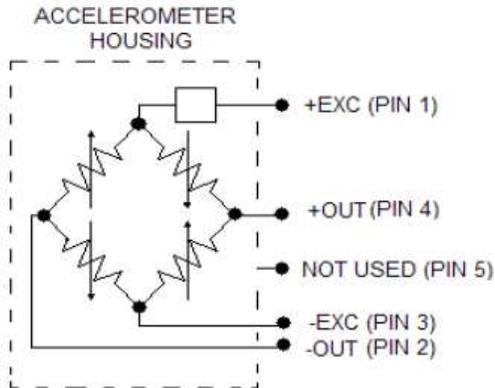
All values are typical at +24°C, 80Hz and 10Vdc excitation unless otherwise stated. TE Connectivity reserves the right to update and change these specifications without notice.

Parameters						<b>Notes</b>
<b>DYNAMIC</b>						
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)	0-800	0-1200	0-1300	0-1800	0-4000	±5%
Frequency Response (Hz)	0-1000	0-1500	0-1600	0-2300	0-5000	±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	<1.5% Option
Damping Ratio	0.7	0.7	0.6	0.5	0.15	
Shock Limit (g)	10000	10000	10000	10000	10000	
<b>ELECTRICAL</b>						
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					
<b>ENVIRONMENTAL</b>						
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	Hermetically Sealed, IP67					
<b>PHYSICAL</b>						
Case Material	Stainless Steel					
Weight (grams)	20					
Mounting	#10-32 to #10-32 Mounting Stud (included)					
Mounting Torque	18 lb-in (2.0 N-m)					
<b>Calibration supplied:</b>	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit				
<b>Supplied accessories:</b>	AC-D02298	10-32 to 10-32 mounting stud				
<b>Optional accessories:</b>	340A-060	Cable Assembly, #28 AWG, 5ft				
	340A-120	Cable Assembly, #28 AWG, 10ft				
	AC-A04773	Triaxial Mounting Block				
	121	3-Channel Precision Low Noise DC Amplifier				
	140A	Auto-zero Inline Amplifier				

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## SCHEMATIC



## ORDERING INFORMATION

<b>3801A</b>	<b>GGGG</b>	<b>XX</b>
<b>Range</b>		
0050=50g		
0100=100g		
0200=200g		
0500=500g		
1000=1000g		
2000=2000g		
<b>Excitation Voltage Option</b>		
Blank=10Vdc		
01=5Vdc		

Example; 3801A-0100  
Model 3801A, 100g range, no options

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