



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

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)	0-800	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	

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	Hermetically Sealed, IP67

PHYSICAL

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)

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

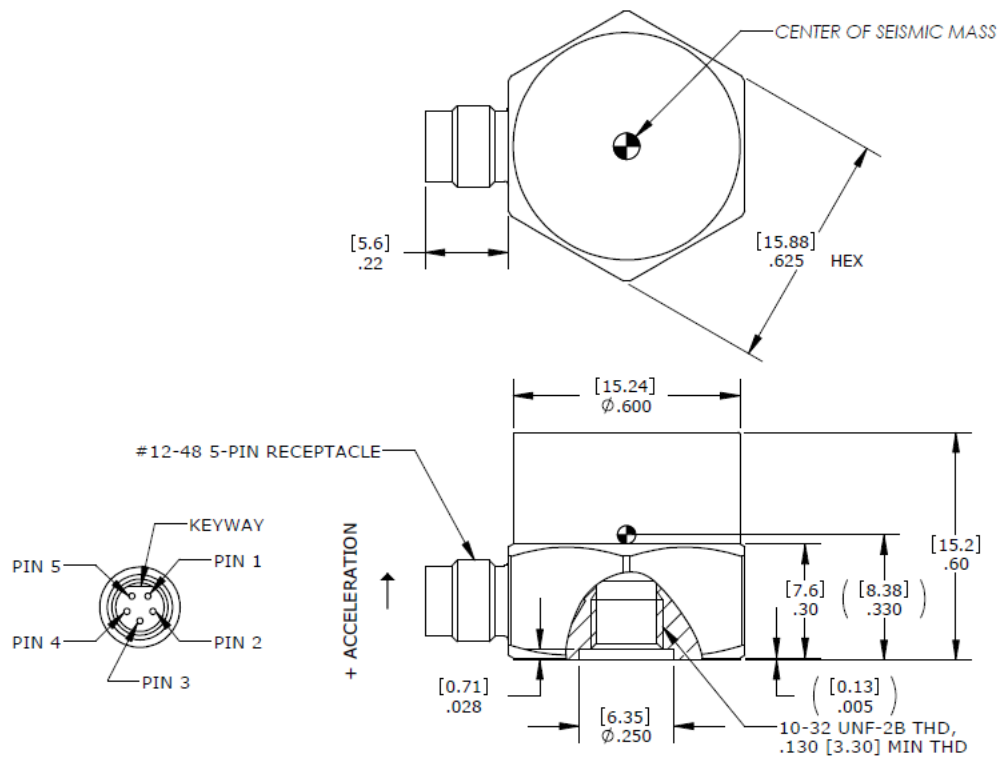
Supplied accessories: AC-D02298 10-32 to 10-32 mounting stud

Optional accessories:

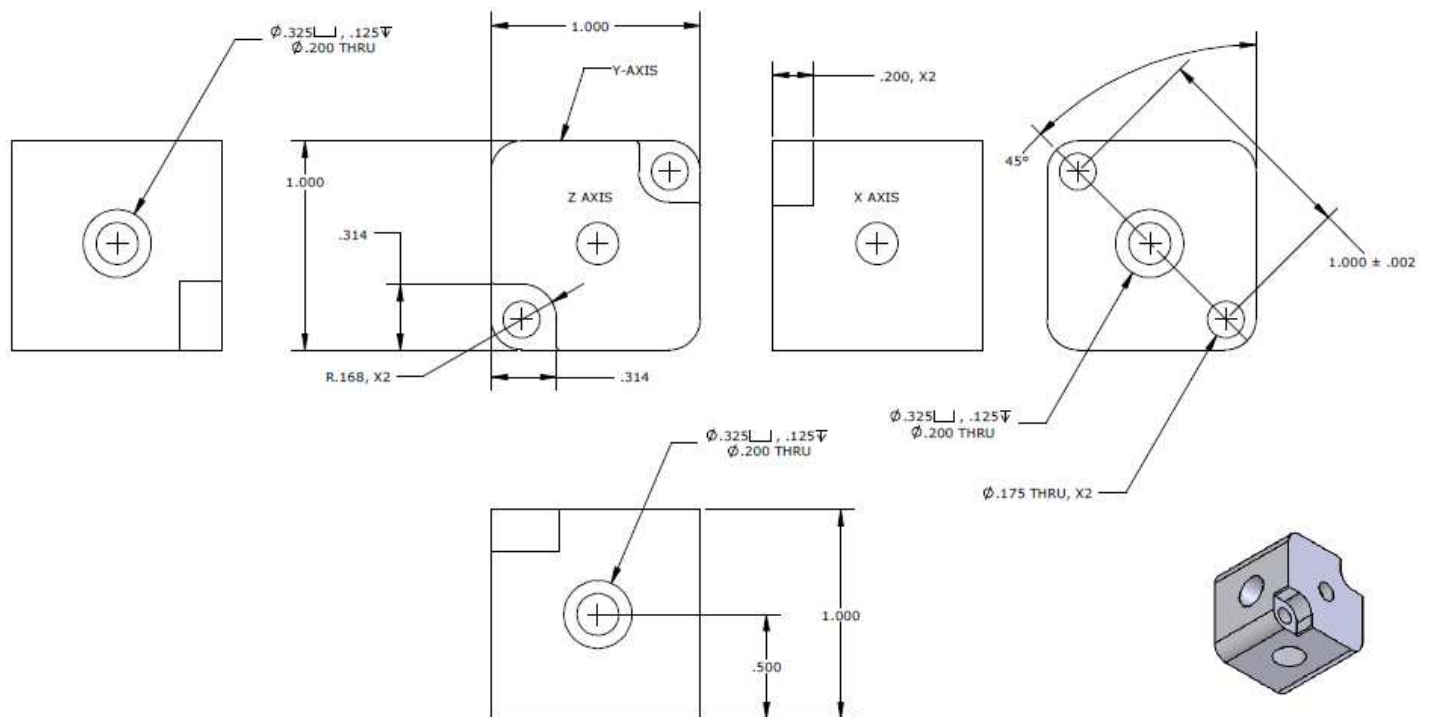
340A-060	Cable Assembly, #28 AWG, 5ft
340A-120	Cable Assembly, #28 AWG, 10ft
AC-A04773	Triaxial Mounting Block
121	3-Channel Precision Low Noise DC Amplifier
140A	Auto-zero Inline Amplifier

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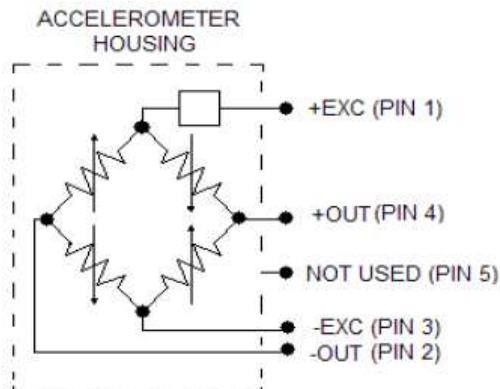
DIMENSIONS



TRIAXIAL MOUNTING BLOCK (PN AC-A04773)



SCHEMATIC



ORDERING INFORMATION

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

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

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