



MODEL 4801A ACCELEROMETER

SPECIFICATIONS

- **MEMS DC Accelerometer**
- **Ultra-Stable, DC to 2000Hz Response**
- **Hermetically Sealed**
- **<2.0% Total Error Band**
- **<0.1% Linearity Accuracy**

FEATURES

- $\pm 2g$ to $\pm 200g$ Dynamic Range
- Amplified Output, Signal Conditioned
- Gas Damped MEMS Sensors
- Hermetically Sealed, Detachable Cable
- Stud Mounting
- 4 to 30Vdc Excitation Voltage
- 6000g Shock Protection

APPLICATIONS

- Flight Testing
- Vehicle Testing
- Structural Testing
- Test and Instrumentation
- Transportation Applications
- Environmental Testing

The Model 4801A is an ultra-stable MEMS accelerometer packaged in a rugged, hermetically sealed stainless steel housing. The accelerometer is available in ranges from ± 2 to $\pm 200g$ with a wide bandwidth from DC to 2000Hz. The model 4801A accelerometers incorporate gas damped variable capacitance MEMS sensing elements that provide exceptional performance over a full operating temperature range of -55°C to $+125^{\circ}\text{C}$.

The accelerometer is designed for 4 to 30Vdc excitation voltage and is incorporates a #10-32 stud mounting with a detachable model 340A cable assembly

For a triaxial version, TE Connectivity also offers the model 4835A accelerometer.

PERFORMANCE SPECIFICATIONS

All values are typical at +24°C, 80Hz and 12Vdc excitation unless otherwise stated. TE Connectivity reserves the right to update and change these specifications without notice.

Parameters

DYNAMIC

	±2	±5	±10	±30	±50	±100	±200	Notes
Range (g)	1000	400	200	67	40	20	10	
Sensitivity, Differential (mV/g)	1000	400	200	67	40	20	10	±5%
Frequency Response (Hz)	0-250	0-700	0-1000	0-1500	0-1500	0-1500	0-1500	±5%
Frequency Response (Hz)	0-500	0-1000	0-1500	0-2000	0-2000	0-2000	0-2000	±1dB
Non-Linearity (%FSO)	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	
Transverse Sensitivity (%)	<2	<2	<2	<2	<2	<2	<2	<1 Typical
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Shock Limit (g)	6000	6000	6000	6000	6000	6000	6000	
Residual Noise (µV RMS)	360	380	400	440	480	500	500	Passband
Spectral Noise (µg/√Hz)	14	28	45	137	231	464	920	Passband

ELECTRICAL

Zero Acceleration Output (mV)	±50							Differential
Excitation Voltage (Vdc)	4 to 30							
Excitation Current (mA)	<7							
Common Mode Voltage (Vdc)	1.22							
Full Scale Output (differential)	±2 Vpk (FSO=2V)							
Full Scale Output (single-ended)	+0.22 to 2.22 Vpk (FSO=1V)							
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)	±0.008							Typical
Operating Temperature (°C)	-55 to 125							
Storage Temperature (°C)	-55 to 125							
Humidity	Hermetically Sealed, IP67 ¹							
Total Error Band	<2% (RSS of Non-Linearity, Thermal Zero Shift, and Thermal Sensitivity Shift)							

PHYSICAL

Case Material	Stainless Steel
Weight (grams)	20
Mounting	#10-32 to #10-32 Mounting Stud (included)
Mounting Torque	18 lb-in (2 N-m)

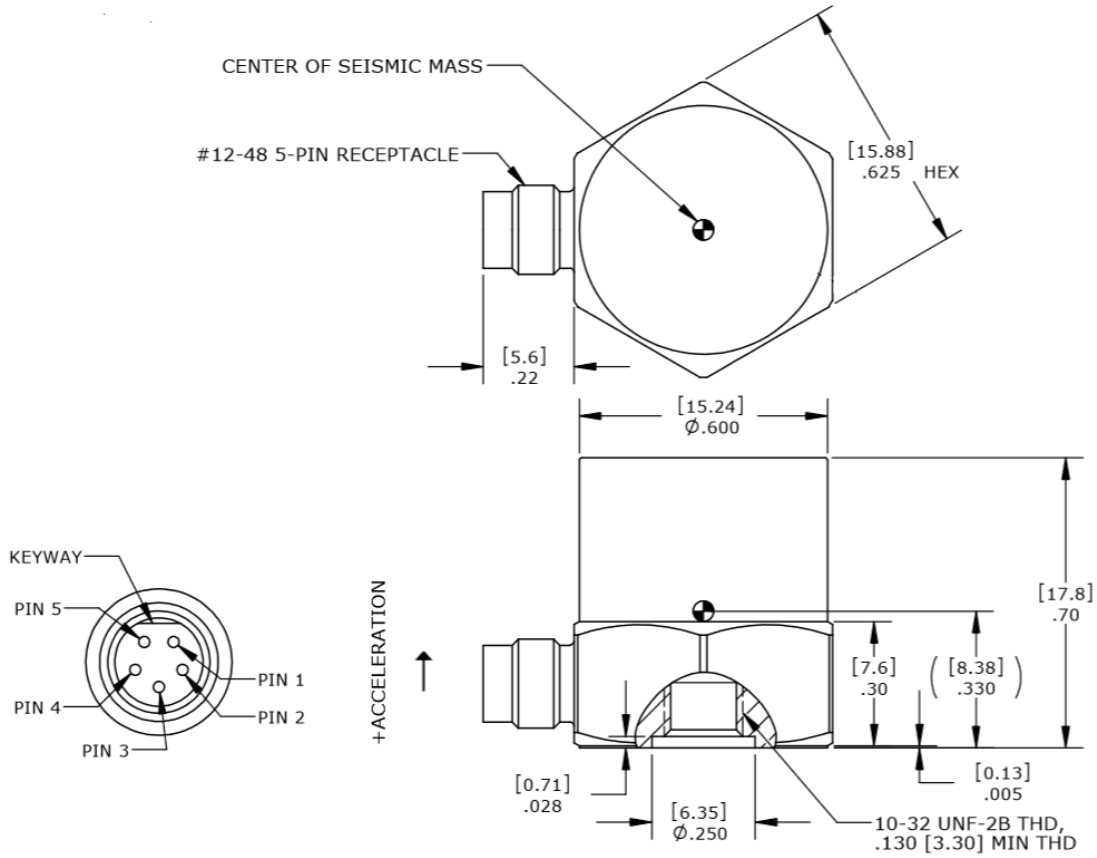
¹ Mating cable needs to also have minimum IP67 rating and be properly sealed to accel connector in accordance with IEC 60529.

Calibration supplied:	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit
Supplied accessories:	AC-D02298	10-32 to 10-32 mounting stud
Optional accessories:	340A-XXX 121 AC-D02741 AC-D04716	Cable Assembly, #28 AWG, -54 to +121°C (XXX designates length in inches, 5ft standard) 3-Channel Precision Low Noise DC Amplifier Adhesive Mounting Adaptor Triaxial Mounting Block

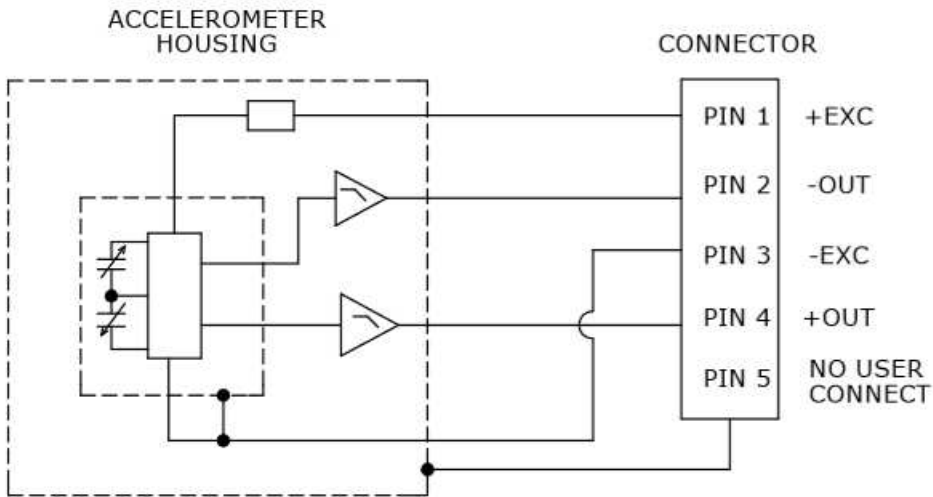
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DIMENSIONS



SCHEMATIC



ORDERING INFORMATION

4801A	GGGG	D
Range		
0002 = 2g		
0005 = 5g		
0010 = 10g		
0030 = 30g		
0050 = 50g		
0100 = 100g		
0200 = 200g		

Example; 4801A-0010-D
 Model 4801A, 10g range

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