

MODEL 4835A TRIAXIAL ACCELEROMETER



SPECIFICATIONS

- MEMS DC Triaxial Accelerometer
- Ultra-Stable, DC Response
- Light Weight Welded Titanium
- <2.0% Total Error Band
- <0.1% Linearity Accuracy

The Model 4835A is an ultra-stable MEMS DC triaxial accelerometer packaged in a rugged, welded Titanium housing. The model 4835A accelerometers incorporate gas damped silicon variable capacitance MEMS sensing elements with integral over-range stops for high-g shock protection. with exceptional performance over a full operating temperature range of -55°C to +125°C. The accelerometers are available in ranges from ± 2 to $\pm 200g$ with a wide bandwidth from DC to 2000Hz.

For single axis version, TE Connectivity also offers the model 4604, 4610 and 4810A accelerometers.

FEATURES

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

APPLICATIONS

- Low Frequency Monitoring
- Flight and Ground Testing
- Road Vehicle Testing
- Test and Instrumentation
- Performance Testing
- Transportation Applications

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 | | | | | | | | | Notes |
|----------------------------------|---|--------|--------|--------|--------|--------|--------|-----|--------------|
| DYNAMIC | | | | | | | | | |
| Range (g) | ±2 | ±5 | ±10 | ±30 | ±50 | ±100 | ±200 | | |
| Sensitivity (mV/g) | 1000 | 400 | 200 | 67 | 40 | 20 | 10 | | |
| Frequency Response (Hz) | 0-700 | 0-1000 | 0-1500 | 0-2000 | 0-2000 | 0-2000 | 0-2000 | ±5% | |
| Non-Linearity (%FSO) | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | | |
| Transverse Sensitivity (%) | <3 | <3 | <3 | <3 | <3 | <3 | <3 | | <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) | <15 total | | | | | | | | |
| Common Mode Voltage (Vdc) | 1.65 | | | | | | | | |
| Full Scale Output (differential) | ±2 Vpk (FSO=2V) | | | | | | | | |
| Full Scale Output (single-ended) | +0.65 to 2.65 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 | Titanium | | | | | | | | |
| Weight (grams) | 22 | | | | | | | | |
| Mounting | 2x #4 or M3 Screws | | | | | | | | |
| Mounting Torque | 6 lb-in (0.7 N-m) | | | | | | | | |

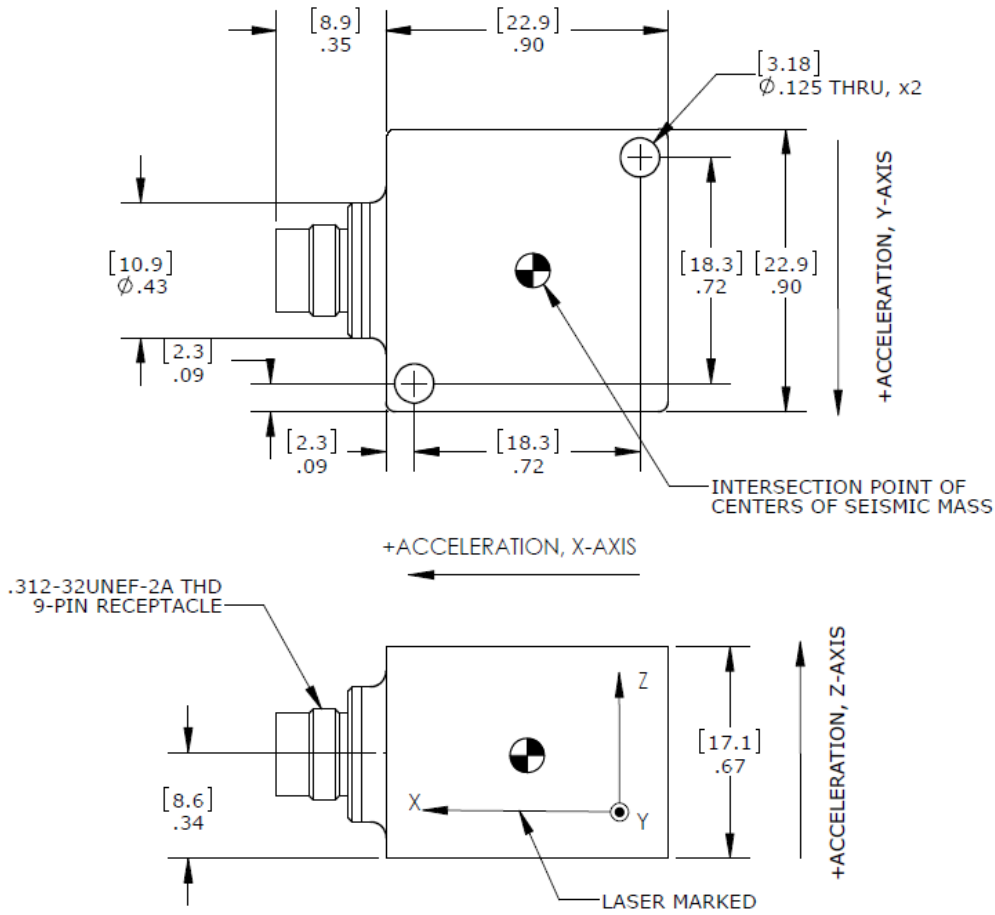
¹ Mating cable needs to also have minimum IP67 rating and be properly sealed to accelerometer connector in accordance with IEC 60529.

| | | |
|------------------------------|----------------|---|
| Calibration supplied: | CS-FREQ-0100 | NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit |
| Supplied accessories: | AC-D02995 | 2x #4-40 (7/8" length) Socket Head Cap Screw and Washer |
| Optional accessories: | 371-120 121 | Mating Cable Assembly, (XXX designates length in inches, 10ft standard) 3-Channel Precision Low Noise DC Amplifier |

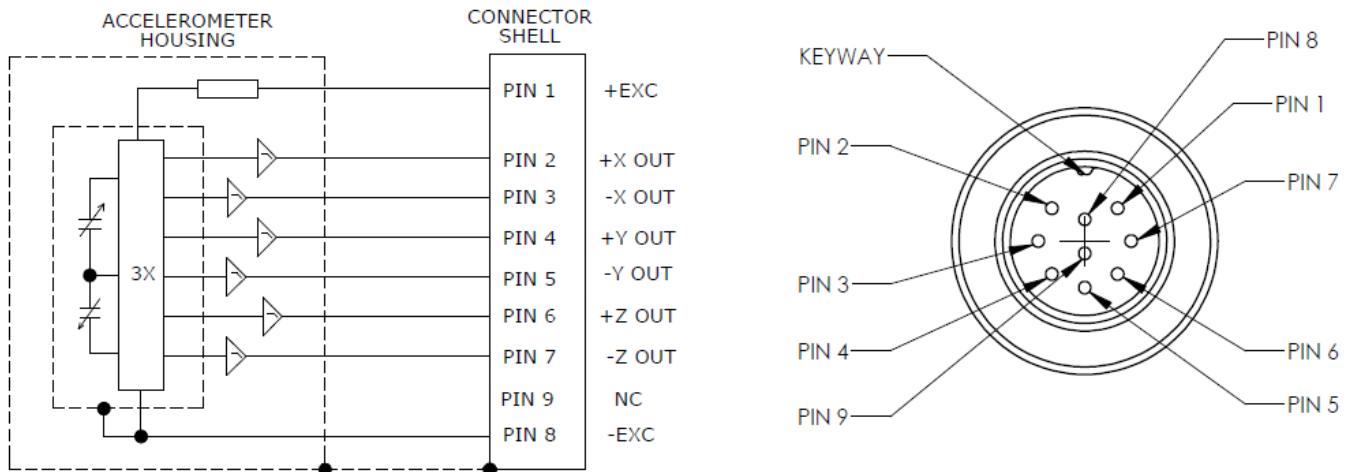
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MODEL 4835A ACCELEROMETER

DIMENSIONS



SCHEMATIC



ORDERING INFORMATION

| 4835A | GGG | D |
|--------------|-----|---|
| Range | | |
| 0002=2g | | |
| 0005=5g | | |
| 0010=10g | | |
| 0030=30g | | |
| 0050=50g | | |
| 0100=100g | | |
| 0200=200g | | |

Example; 4835A-0030-D
Model 4835A, 30g range

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