



## MODEL 4610A ACCELEROMETER

### SPECIFICATIONS

- High Performance DC Response
- Micro-g Resolution, Low Noise
- Advanced Temp Compensation
- 5,000g Over-Range Protection

The Model 4610A is an ultra-low-noise accelerometer designed for both static and dynamic measurements. The accelerometer offers integral temperature compensation with dynamic range from  $\pm 2$  to  $\pm 100g$ . The model 4610A incorporates a gas damped MEMS element with mechanical overload stops for high-g shock protection. The accelerometer has an operating temperature range of  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ .

For a triaxial version, TE Connectivity also offers the model 4630A accelerometer.

### APPLICATIONS

- Transportation Testing
- Vibration & Shock Monitoring
- Road Vehicle Testing
- Low Frequency Applications
- Modal Analyses
- Structural Monitoring

### FEATURES

- $\pm 2g$  to  $\pm 100g$  Dynamic Range
- 5,000g Shock Protection
- Signal Conditioned Output
- 8 to 30Vdc Excitation Voltage
- Gas Damping
- Integral Strain Relief
- Temperature Compensated

**PERFORMANCE SPECIFICATIONS**

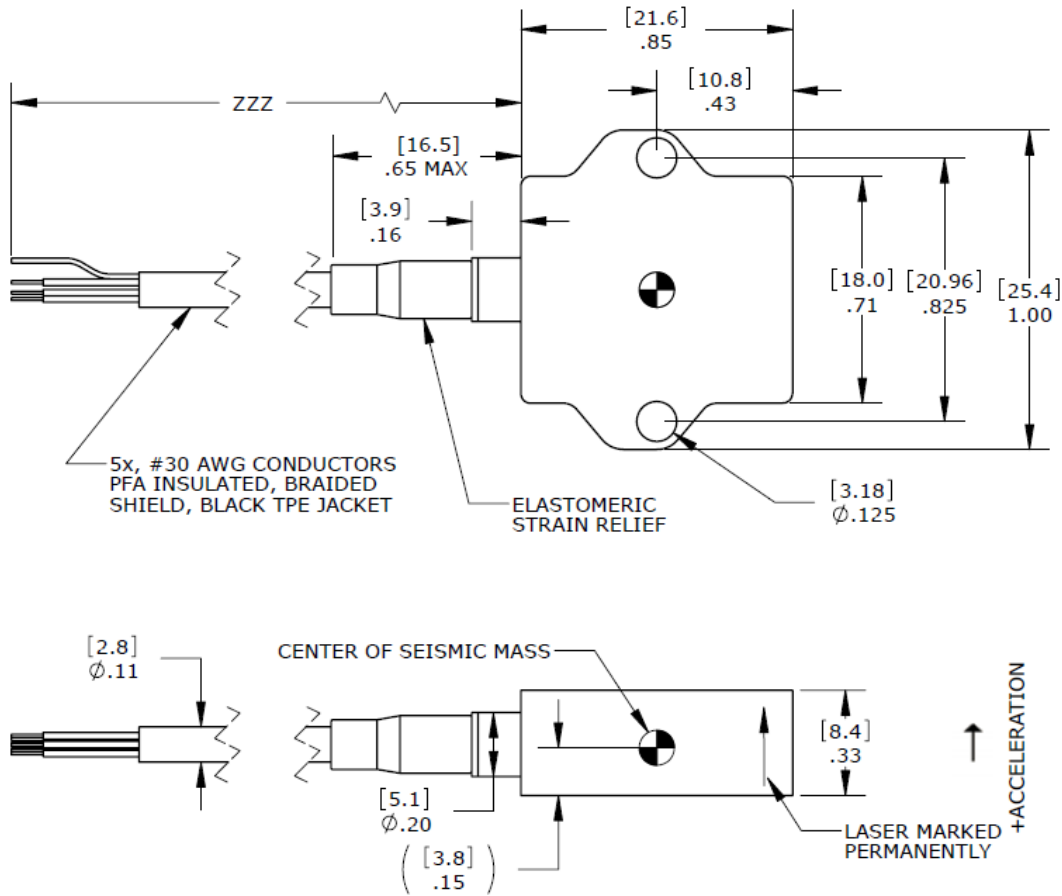
All values are typical at +24°C, 80Hz and 12Vdc excitation unless otherwise stated. TE Connectivity reserves the right to update and change these specifications without notice.

| Parameters                       |   |  |       |        |        |        |  | Notes         |
|----------------------------------|---|--|-------|--------|--------|--------|--|---------------|
| <b>DYNAMIC</b>                   |   |  |       |        |        |        |  |               |
| Range (g)                        | ±2  | ±5   | ±10   | ±20    | ±50    | ±100   |  |               |
| Sensitivity (mV/g)               | 1000  | 400  | 200   | 100    | 40     | 20     |  | ±10%          |
| Frequency Response (Hz)          | 0-200   | 0-300  | 0-400 | 0-600  | 0-1000 | 0-1500 |  | ±5%           |
| Frequency Response (Hz)          | 0-400   | 0-500  | 0-600 | 0-1000 | 0-1500 | 0-2000 |  | ±1dB          |
| Natural Frequency (Hz)           | 700   | 800  | 1000  | 1500   | 4000   | 6000   |  |               |
| Non-Linearity (%FSO)             | ±1.0  | ±1.0   | ±1.0  | ±1.0   | ±1.0   | ±1.0   |  |               |
| Transverse Sensitivity (%)       | <3  | <3   | <3    | <3     | <3     | <3     |  | <1 Typical    |
| Damping Ratio                    | 0.7   | 0.7  | 0.7   | 0.7    | 0.7    | 0.7    |  |               |
| Shock Limit (g)                  | 2000  | 2000   | 5000  | 5000   | 5000   | 5000   |  |               |
| Residual Noise (µV RMS)          | 25  | 20   | 23    | 31     | 26     | 32     |  | Passband      |
| Residual Noise (µg/√Hz RMS)      | 2   | 3  | 6     | 13     | 21     | 41     |  | Spectral      |
| <b>ELECTRICAL</b>                |   |  |       |        |        |        |  |               |
| Zero Acceleration Output (mV)    | ±50   |  |       |        |        |        |  | Differential  |
| Excitation Voltage (Vdc)         | 8 to 30   |  |       |        |        |        |  |               |
| Excitation Current (mA)          | <12   |  |       |        |        |        |  |               |
| Bias Voltage (Vdc)               | 2.5   |  |       |        |        |        |  |               |
| Full Scale Output Voltage (Vdc)  | ±2  |  |       |        |        |        |  |               |
| Output Resistance (Ω)            | <100  |  |       |        |        |        |  |               |
| Insulation Resistance (MΩ)       | >100  |  |       |        |        |        |  | @100Vdc       |
| Turn On Time (msec)              | <100  |  |       |        |        |        |  |               |
| Ground Isolation                 | Isolated from Mounting Surface  |  |       |        |        |        |  |               |
| <b>ENVIRONMENTAL</b>             |   |  |       |        |        |        |  |               |
| Thermal Zero Shift (%FSO/°C)     | ±0.010  |  |       |        |        |        |  | -40 to +100°C |
| Thermal Sensitivity Shift (%/°C) | ±0.014  |  |       |        |        |        |  | -40 to +100°C |
| Operating Temperature (°C)       | -55 to +125   |  |       |        |        |        |  |               |
| Compensated Temperature (°C)     | -40 to +100   |  |       |        |        |        |  |               |
| Humidity                         | Epoxy Sealed, IP65  |  |       |        |        |        |  |               |
| <b>PHYSICAL</b>                  |   |  |       |        |        |        |  |               |
| Case Material                    | Anodized Aluminum   |  |       |        |        |        |  |               |
| Cable                            | 4x #30 AWG Conductors PFA Insulated Leads, Braided Shield, TPE Jacket |  |       |        |        |        |  |               |
| Weight (grams)                   | 7 (cable not included)  |  |       |        |        |        |  |               |
| Mounting                         | 2x #4 or M3 Screws  |  |       |        |        |        |  |               |
| Mounting Torque                  | 6 lb-in (0.7 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-A02285   | 2x #4-40 (7/16 length) Socket Head Cap Screw and Washer                        |       |        |        |        |  |               |
| <b>Optional accessories:</b>     | AC-D02669<br>121  | Triaxial Mounting Block<br>3-Channel Precision Low Noise DC Amplifier          |       |        |        |        |  |               |

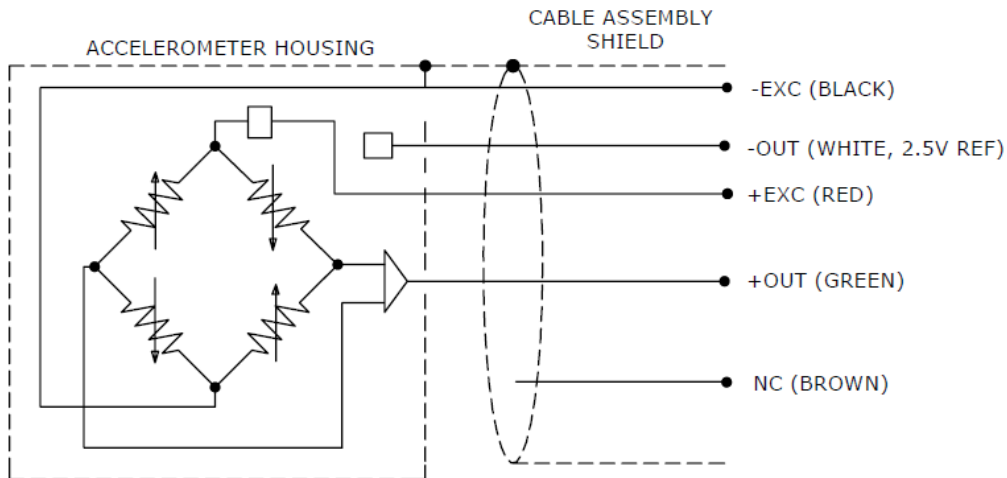
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## DIMENSIONS

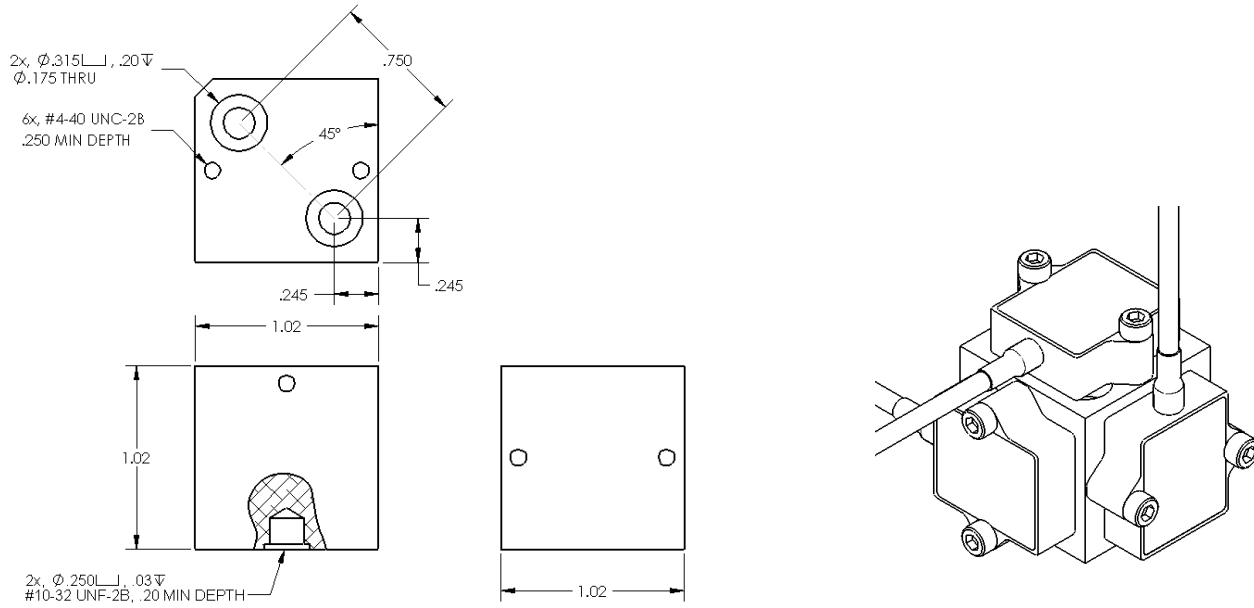


## SCHEMATIC



# MODEL 4610A ACCELEROMETER

## TRIAxIAL MOUNTING BLOCK (PN AC-D02669)



## ORDERING INFORMATION

| 4610A   | GGG | ZZZ |
|---|-----|-----|
| <b>Range</b><br>002=2g<br>005=5g<br>010=10g<br>020=20g<br>050=50g<br>100=100g   |     |     |
| <b>Cable length</b><br>060=60 inches<br>120=120 inches<br>240=240 inches<br>360=360 inches<br>480=480 inches<br>600=600 inches<br><br>197=197 inches, 5 meters<br>394=394 inches, 10 meters |     |     |

Example; 4610A-002-060  
Model 4610A, 2g range, 60inch (5ft) cable length



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