



MODEL 64B CRASH TEST ACCELEROMETER

Specifications

- Next Generation Crash Test Accelerometer
- Advanced Piezoresistive MEMS Sensor
- Excellent Accuracy in Crash Testing
- Compliant to SAE J211/J2570
- Compliant to ISO 6487
- $\pm 50g$ to $\pm 6000g$ Dynamic Range
- Mechanical Over Range Stops

Features

- Standard $<3\%$ Transverse Sensitivity
- Wide bandwidth to $>8kHz$
- Standard $<20mV$ ZMO
- Linearity $<1\%$
- 10,000g Shock Protection
- 2-10Vdc Excitation
- IP66 Environmentally Sealed
- Optimum Gas Damping
- $<10sec$ Warm-Up Time

Applications

- Anthropomorphic Dummy Instrumentation
- Crush Zone Testing
- Pedestrian Impact Testing
- Auto Safety Testing Applications
- Shock and Impact Testing
- Transient Drop Testing

The TE Connectivity model 64B is an exceptional piezoresistive MEMS accelerometer designed for both crush zone and anthropomorphic dummy instrumentation. The accelerometer features a full bridge output configuration with ideal gas damping tailored for outstanding shock survivability and a flat frequency response to $>8kHz$. The model 64B accelerometer has a standard cross-talk accuracy of $<3\%$ (with option for $<1\%$), a standard ZMO of $<\pm 25mV$ and a linearity accuracy specification of $<\pm 1.0\%$.

The model 64B crash test accelerometer is offered in ranges from ± 50 to $\pm 6000g$ and has a standard operating temperature range of $-40^{\circ}C$ to $+121^{\circ}C$. The sensor is fully encapsulated in Stycast for IP66 environmental protection rating. The nominal 4000Ω bridge impedance limits current draw resulting in quick warm-up time and minimal drift, unlike lower impedance designs on the market which are subject to much longer warm-up time due to gage heating effects.

TE Connectivity also supplies the calibration data in a user friendly excel format which enables high volume users to quickly upload the calibration information for each sensor installed.

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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 | | | | | | | NOTES |
|---------------------------------|---------|---------|---------|---------|----------|-----------|-------------------|
| Range (g) | ±50 | ±100 | ±200 | ±500 | ±2000 | ±6000 | |
| Sensitivity (mV/g) ¹ | 1.2-3.0 | 0.6-1.2 | 0.6-1.2 | 0.3-0.6 | 0.12-0.3 | 0.05-0.12 | @10Vdc Excitation |
| Frequency Response (Hz) | 0-1000 | 0-1200 | 0-1400 | 0-2000 | 0-6000 | 0-6000 | ±5% |
| | 0-1400 | 0-1600 | 0-1900 | 0-2800 | 0-8000 | 0-8000 | ±1dB |
| Natural Frequency (Hz) | 4000 | 6000 | 8000 | 15000 | 26000 | 28000 | |
| Transverse Sensitivity (%) | <3 | <3 | <3 | <3 | <3 | <3 | <1% on 'T' Option |
| Non-Linearity (%FSO) | ±1 | ±1 | ±1 | ±1 | ±1 | ±1 | |
| Damping Ratio | 0.5 | 0.5 | 0.5 | 0.3 | 0.15 | 0.10 | |
| Shock Limit (g) | 10000 | 10000 | 10000 | 10000 | 10000 | 10000 | |

ELECTRICAL

| | | |
|-------------------------------|--------------------------------|-------------------|
| Zero Acceleration Output (mV) | <±25 | Differential |
| Excitation Voltage (Vdc) | 2 to 10 | |
| Input Resistance (Ω) | 3500-4500 | |
| Output Resistance (Ω) | 3500-4500 | |
| Insulation Resistance (MΩ) | >100 | @100Vdc |
| Residual Noise (μV RMS) | <10 | |
| Ground Isolation | Isolated from mounting surface | |
| Warm-up Time | <10 seconds | @10Vdc Excitation |

ENVIRONMENTAL

| | | |
|----------------------------------|--------------------|-----------------|
| Thermal Zero Shift (%FSO/°C) | ±0.04 | From 0 to +50°C |
| Thermal Sensitivity Shift (%/°C) | -0.20 ±0.05 | From 0 to +50°C |
| Operating Temperature (°C) | -40 to +121 | |
| Humidity | Epoxy Sealed, IP66 | |

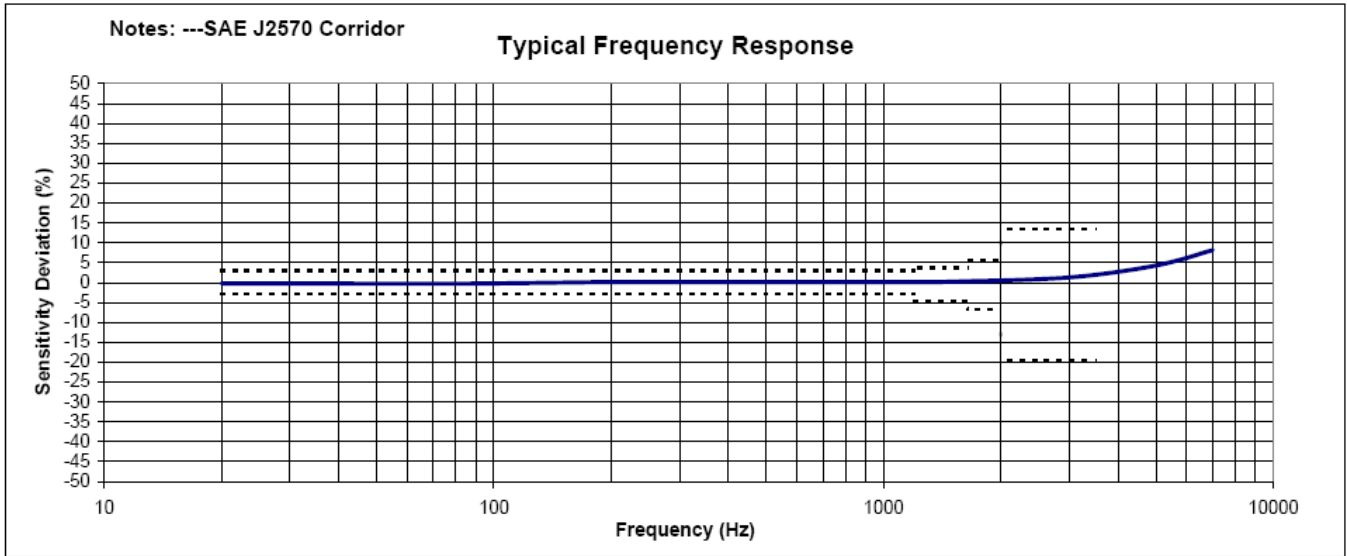
PHYSICAL

| | | |
|----------------|---|--------------------|
| Case Material | Anodized Aluminum, Black | |
| Cable | 4x #32 AWG Leads, PFA Insulated, Braided Shield, TPE Jacket | |
| Weight (grams) | 1.0 | Cable not included |
| Mounting | 2x #0-80 x 1/4" Socket Head Cap Screws | |

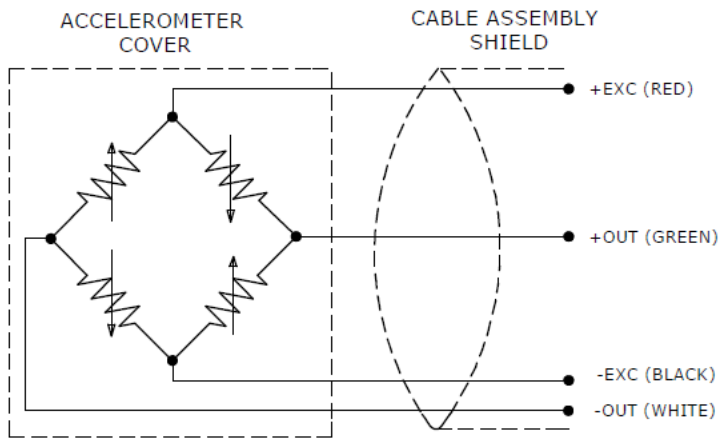
¹ Output is ratiometric to excitation voltage

| | | |
|------------------------------|---------------|--|
| Calibration supplied: | CS-FREQ-0100 | NIST Traceable Amplitude Calibration from 20Hz to ±1dB Frequency Limit |
| Optional accessories: | MTG-E4 121 | Triaxial Mounting Block 3-Channel Precision Low Noise DC Amplifier |

Typical Frequency Response

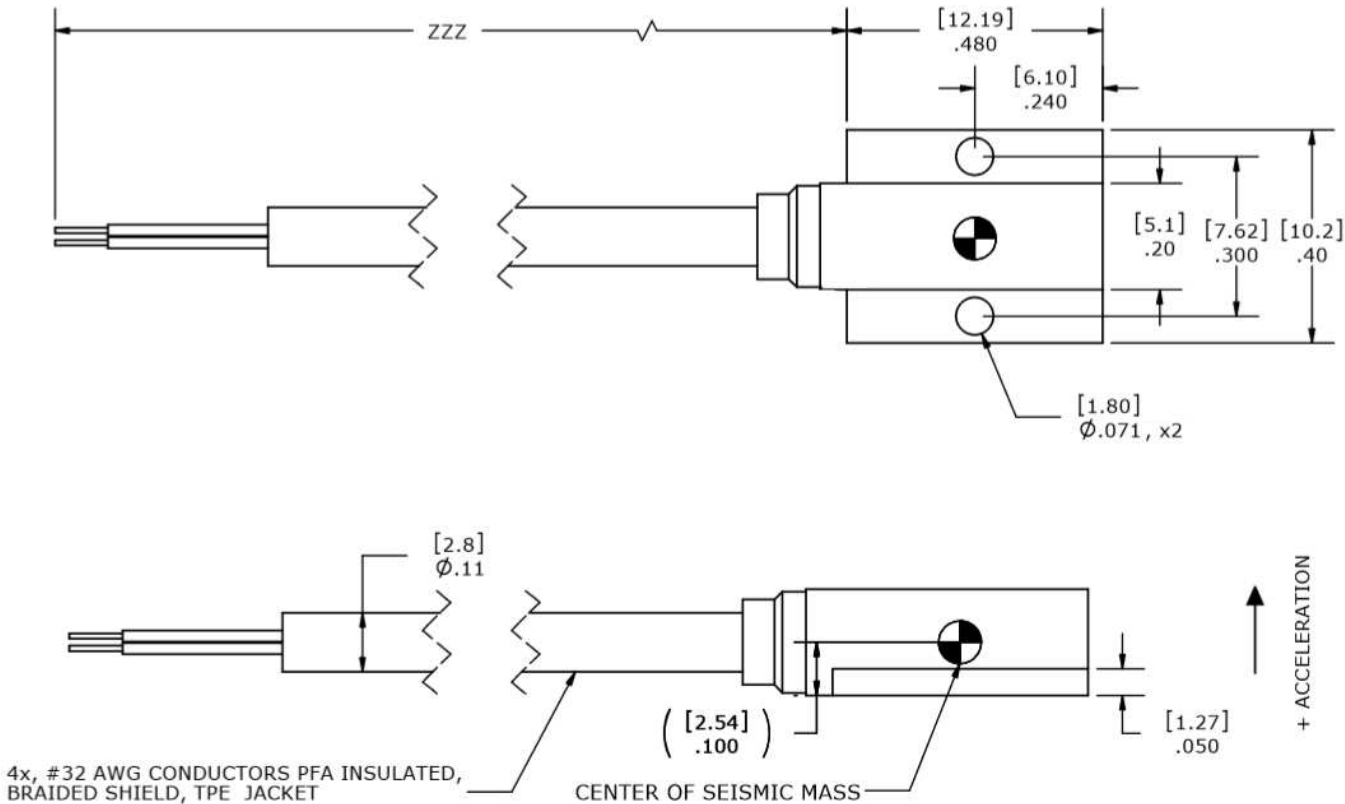


Schematic

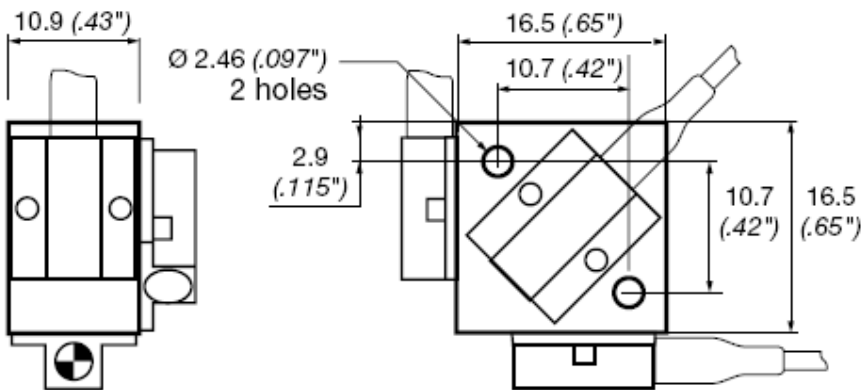


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Dimensions



Triaxial Mounting Block



Ordering Information

| 64B | GGGG | ZZZ | T | XXX |
|---|------|-----|---|-----|
| Range 0050 = 50g 0100 = 100g 0200 = 200g 0500 = 500g 2000 = 2000g 6000 = 6000g | | | | |
| Cable length 240 = 240 inches, 20 feet 360 = 360 inches, 30 feet 276 = 276 inches, 7 meters | | | | |
| Transverse Sensitivity Option Blank = <3% T = <1% | | | | |
| Excitation Voltage Option Blank = 10Vdc 001 = 5Vdc 005 = 2Vdc | | | | |

Example; 64B-2000-360
Model 64B, 2000g range, 360inch (30ft) cable length

Example; 64B-0500-276T-001
Model 64B, 500g range, 276inch (7m) cable length, <1% transverse sensitivity option, 5V calibration

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