

MODEL 64C 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

The TE Connectivity model 64C crash test accelerometer is a remarkable MEMS piezoresistive sensor specifically designed for auto safety testing in both crush zone and anthropomorphic dummy applications. 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 64C 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 64C ATD dummy 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 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.

Users of the model 64C accelerometer are strongly recommended to also review the model 64X accelerometer which is the latest evolution of the TE Connectivity 64 series crash test sensors.

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

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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, IP61						

PHYSICAL

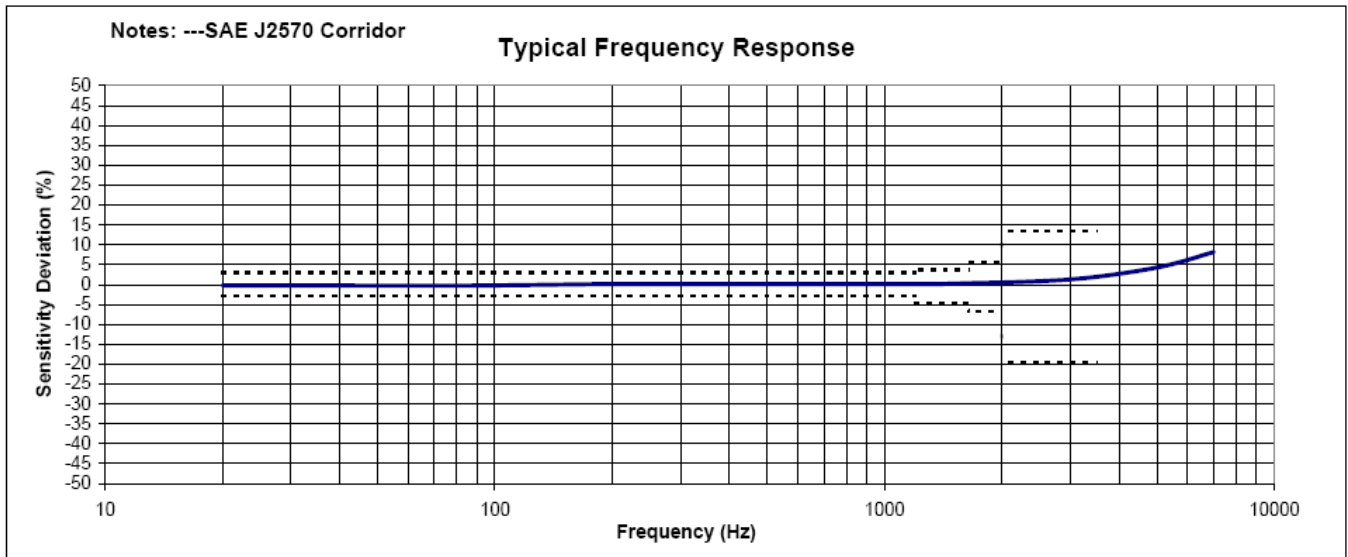
Case Material	Anodized Aluminum, Black						
Cable	4x #32 AWG Leads, PFA Insulated, Braided Shield, TPE Jacket						
Weight (grams)	1.0						Cable not included
Mounting	2x #0-80 x 1/4" Socket Head Cap Screws						

¹ Output is ratiometric to excitation voltage

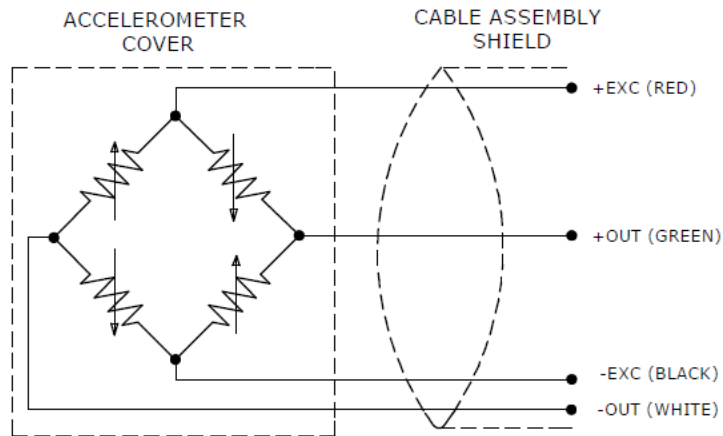
Calibration supplied:	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±1dB Frequency Limit
Optional accessories:	MTG-E2 121	Triaxial Mounting Block 3-Channel Precision Low Noise DC Amplifier

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Typical Frequency Response

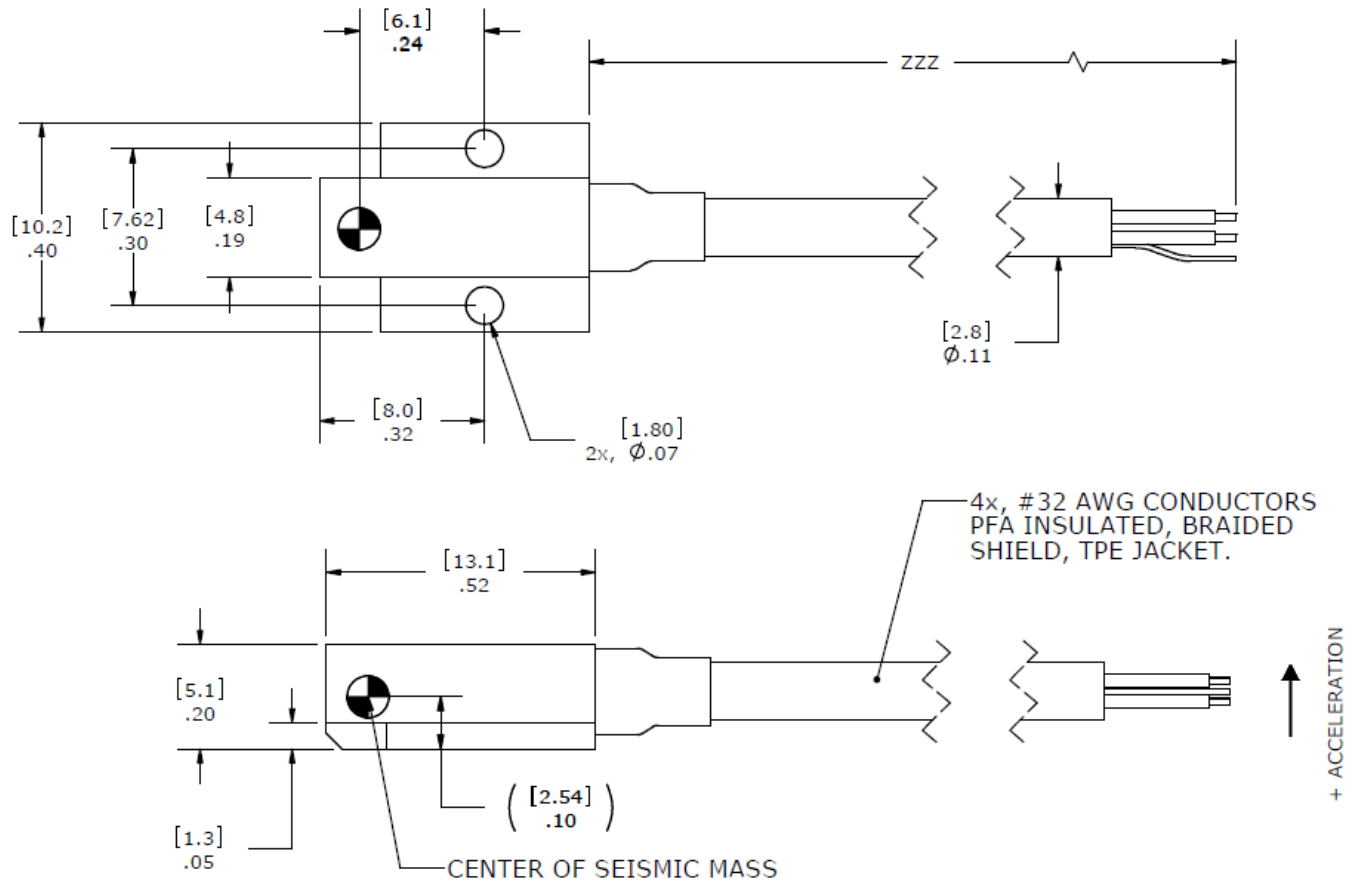


Schematic

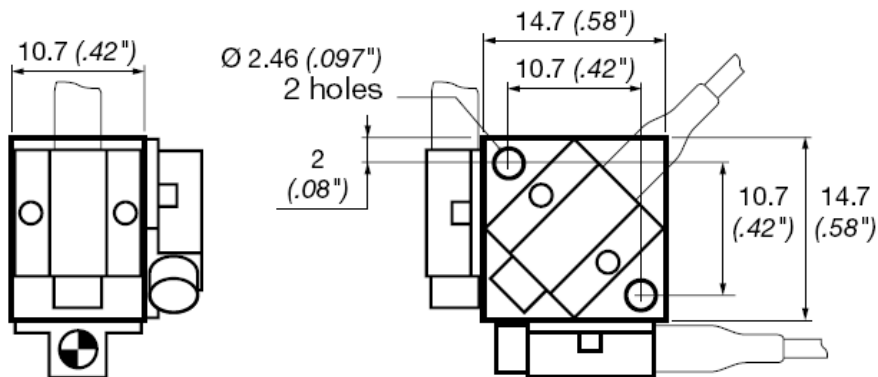


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Dimensions



Triaxial Mounting Block



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Ordering Information

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

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

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Version # 10/2020

