

## MODEL 1201 & 1201F CRASH TEST ACCELEROMETER

### Specifications

- DC Response Crash Test Accelerometer
- Next Generation Piezoresistive MEMS Sensor
- $\pm 50g$  to  $\pm 2000g$  Ranges
- Designed for Demanding Crush Zone Testing
- Compliant to SAE-J211

The Model 1201 & 1201F Series Accelerometers are some of the most popular auto safety test accelerometers used in crush zone installations. The accelerometers feature the next evolution of the reliable TE Connectivity piezoresistive MEMS sensor, with optimum amount of internal gas damping for outstanding shock survivability and a flat amplitude response up to frequencies greater than 6000Hz (1000g & 2000g ranges).

The model 1201 & 1201F accelerometers are available in ranges from  $\pm 50g$  to  $\pm 2000g$  and feature a full-bridge configuration with a nominal  $4000\Omega$  impedance that offers quick warm-up time and minimal drift, far superior to competitive sensors in market.

The accelerometers are packaged in a rugged housing with a shielded low-noise cable specifically designed for crush zone testing. The model 1201 is design for adhesive mounting while the 1201F has an integral flange for screw mounting with supplied #2-56 socket head cap screws.

The model 1201 & 1201F series accelerometers are fully encapsulated in Stycast for IP65 protection over the full operating temperature range of  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ . 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.

### Features

- Standard  $<40\text{mV ZMO}$
- Linearity  $<1\%$
- 10,000g Shock Protection
- 2-10Vdc Excitation
- IP65 Environmentally Sealed
- Optimum Gas Damping
- Low Noise, Durable Cable

### Applications

- Crush Zone Testing
- Auto Safety Testing Applications
- Shock and Impact Testing
- Transient Drop Testing
- Helmet Impact 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	±1000	±2000	
Sensitivity (mV/g) <sup>1</sup>	1.2-3.0	0.6-1.2	0.6-1.2	0.3-0.6	0.12-0.3	0.12-0.3	@10Vdc Excitation
Frequency Response (Hz)	0-800 0-1200	0-1000 0-1600	0-1400 0-1800	0-2000 0-2700	0-4000 0-6000	0-4000 0-6000	±5% ±1dB
Natural Frequency (Hz)	4000	6000	8000	11000	28000	28000	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	<3	
Non-Linearity (%FSO)	±1	±1	±1	±1	±1	±1	
Damping Ratio	0.5	0.5	0.5	0.3	0.15	0.15	
Shock Limit (g)	5000	5000	5000	10000	10000	10000	

#### ELECTRICAL

Zero Acceleration Output (mV)	<±40	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)	-20 to +85	
Storage Temperature (°C)	-20 to +85	
Humidity	Epoxy Sealed, IP65	

#### PHYSICAL

Case Material	Anodized Aluminum, Black	
Cable	4x #28 AWG Leads, PFA Insulated, Braided Shield, PU Jacket	
Weight (grams)	2.0	Cable not included
Mounting	Adhesive mount for 1201, Screw mount for 1201F,	

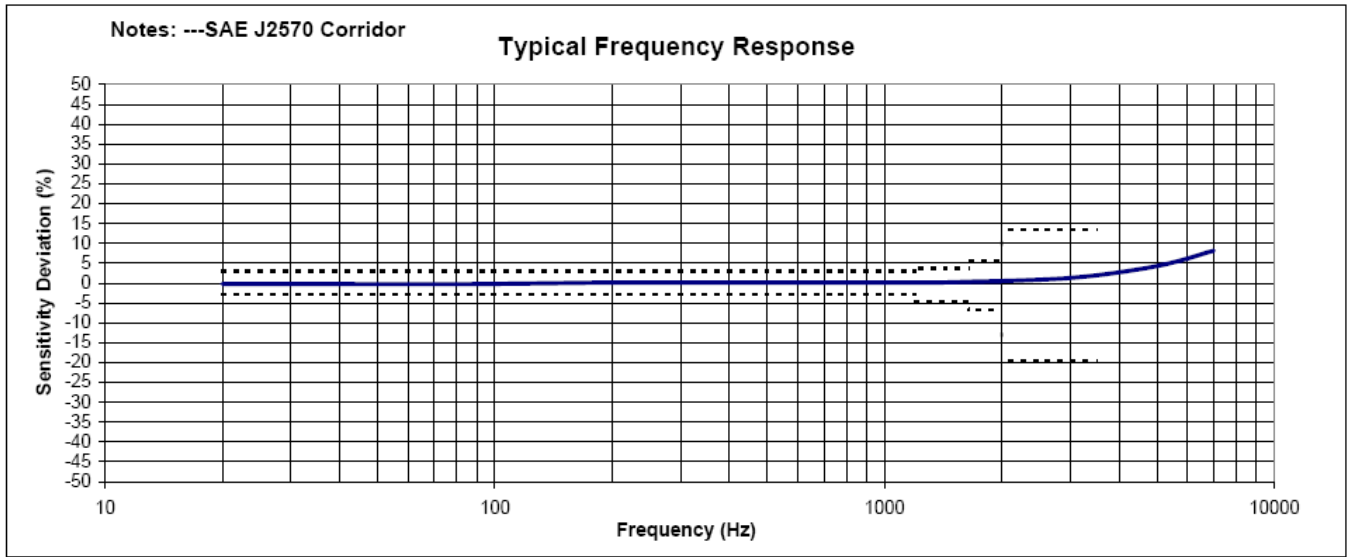
<sup>1</sup> Output is ratiometric to excitation voltage

**Calibration supplied:** CS-FREQ-0100      NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Limit  
**Optional accessories:** 121      3-Channel Precision Low Noise DC Amplifier

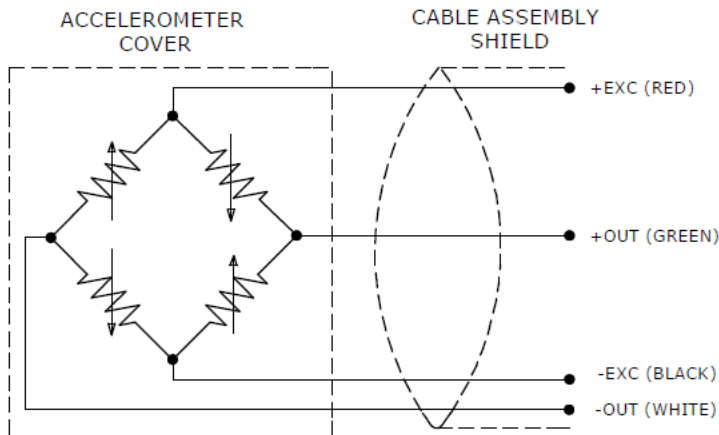


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## TYPICAL FREQUENCY RESPONSE

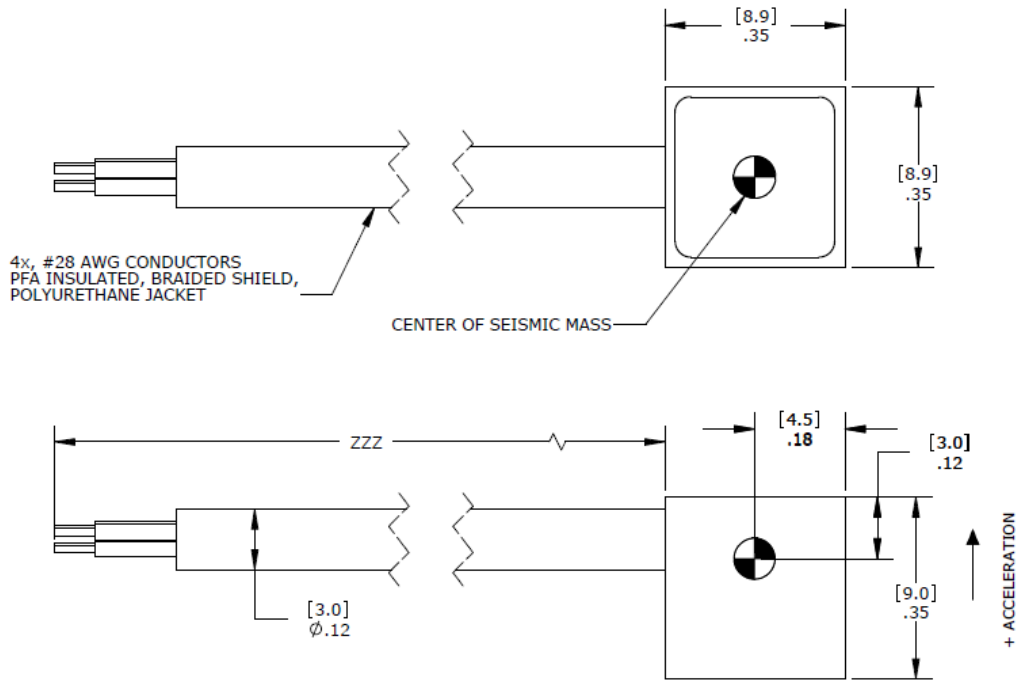


## SCHEMATIC

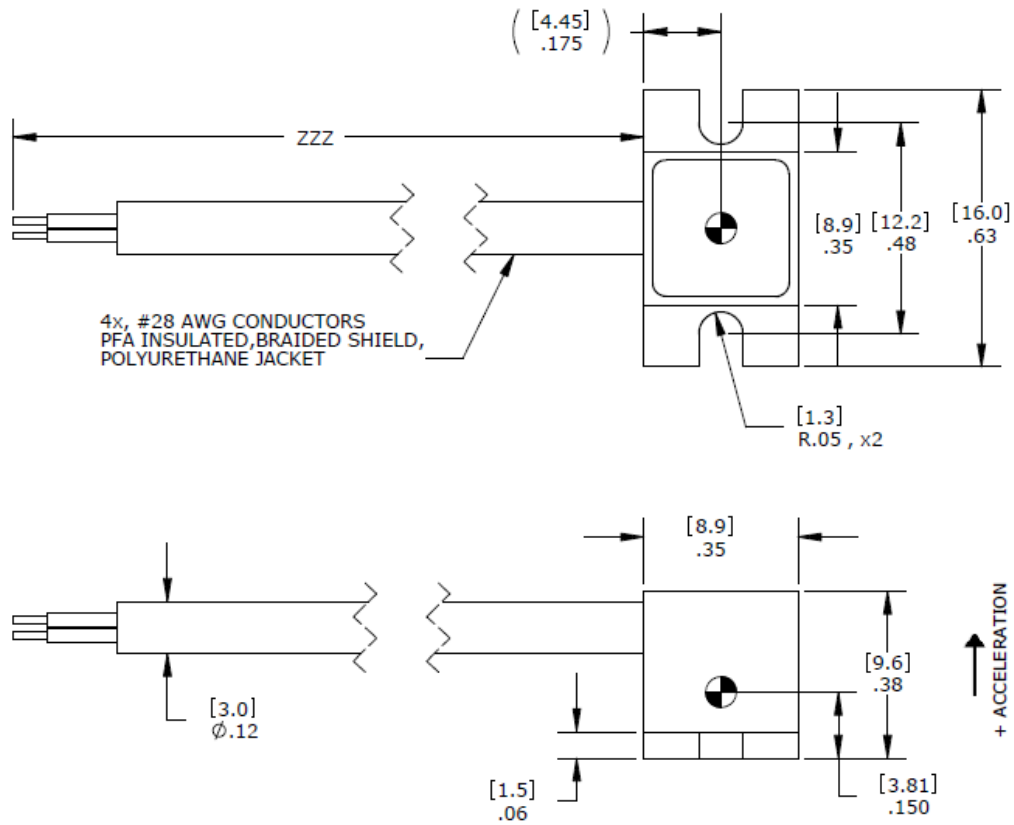


# MODEL 1201 & 1201F CRASH TEST ACCELEROMETER

## DIMENSIONS, MODEL 1201



## DIMENSIONS, MODEL 1201F



# MODEL 1201 & 1201F CRASH TEST ACCELEROMETER

## ORDERING INFORMATION

<b>1201 (adhesive mount) 1201F (screw mount)</b>	<b>GGGG</b>	<b>ZZZ</b>	<b>XXX</b>
<b>Range</b> 0050 = 50g 0100 = 100g 0200 = 200g 0500 = 500g 1000 = 1000g 2000 = 2000g			
<b>Cable length</b> 240 = 240 inches, 20 feet 360 = 360 inches, 30 feet 276 = 276 inches, 7 meters			
<b>Excitation Voltage Option</b> Blank = 10Vdc 001 = 5Vdc 002 = 2Vdc			

Example;1201-1000-360  
Model 1201 (adhesive mount), 1000g range, 360inch (30ft) cable length

Example;1201F-0500-276-001  
Model 1201F (screw mount), 500g range, 276inch (7m) cable length, 5V excitation at calibration test

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中国大陆  
西安鑫源宇通电子科技有限公司  
陕西省西安市高新区锦业路70号航  
天恒星园区1号厂房一层南  
Tel: 400-780-9688  
[sales@senstechxyz.com](mailto:sales@senstechxyz.com)

中国香港  
深大实业有限公司  
香港新界沙田安平街6号新贸易  
中心B座13楼06室  
Tel: +86 17792099916  
[info@caltropinstruments.com](mailto:info@caltropinstruments.com)

新加坡  
深大实业有限公司  
香港新界沙田安平街6号新贸易  
中心B座13楼06室  
Tel: +86 17792099919  
[info@senstechxyz.com](mailto:info@senstechxyz.com)

