

Model 1210F Accelerometer

MEMS DC Response
Durable Cable, Integral Relief
Temperature Compensation
Reliable Performance



The **Model 1210F** accelerometer is a small, compact uniaxial MEMS accelerometer designed for vehicle impact and road testing. Its mechanical overload stops provide high shock protection in rugged applications. Featuring ranges from 2g to 200g and frequency response to 2000 Hz, this sensor is easily mounted in hard to get places on vehicles under test.

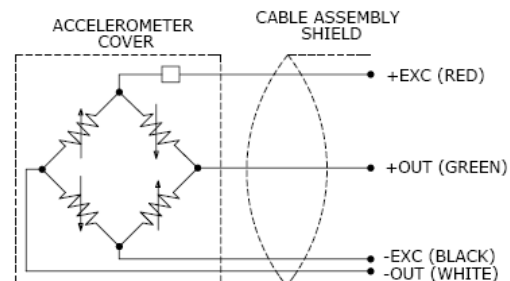
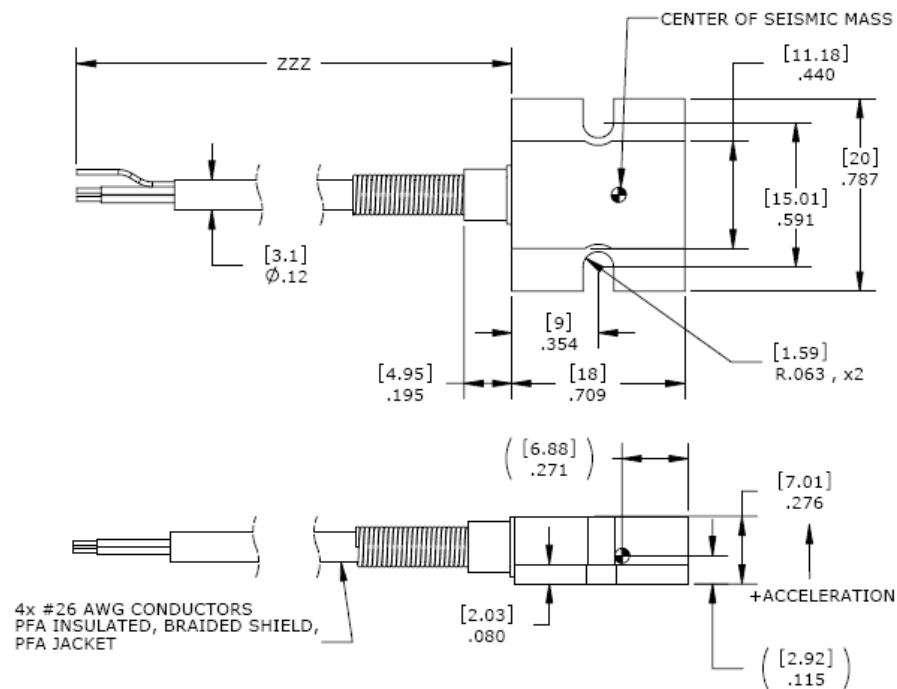
FEATURES

- ±2g to ±200g Dynamic Range
- Environmentally Sealed
- -40°C to +125°C Operating Range
- Rugged Strain Relief
- Mechanical Overload Stops
- Gas Damping
- mV Output
- Bolt Mounted

APPLICATIONS

- Crash Testing
- Impact testing
- Off-Road Testing
- Vehicle Testing

dimensions



Model 1210F Accelerometer

performance specifications

All values are typical at +24°C, 100Hz and 10Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Standard product parameters are described in PSC-1004 for Plug & Play DC Accelerometers.

Parameters

DYNAMIC

	±2	±5	±10	±20	±50	±100	±200	Notes
Range (g)	±2	±5	±10	±20	±50	±100	±200	
Sensitivity (mV/g)	12	9	6	3	1.5	0.7	0.7	@10Vdc Excitation
Frequency Response (Hz)	0-100	0-200	0-300	0-400	0-800	0-1300	0-1500	±5% ¹
Frequency Response (Hz)	0-200	0-300	0-400	0-500	0-1000	0-1500	0-1800	±1dB
Phase Response	0-20	0-30	0-40	0-50	0-100	0-200	0-250	±5°
Natural Frequency (Hz)	300	400	500	1000	3000	5000	6000	
Non-Linearity (%FSO)	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	<3	<3	
Damping Ratio	0.7	0.7	0.7	0.7	0.6	0.6	0.5	
Shock Limit (g)	10000	10000	10000	10000	10000	10000	10000	

ELECTRICAL

	±25	±25	±25	±25	±25	±25	±25	Notes
Zero Acceleration Output (mV)	±25	±25	±25	±25	±25	±25	±25	Differential
Excitation Voltage (Vdc)	5 to 10	5 to 10	5 to 10	5 to 10	5 to 10	5 to 10	5 to 10	
Input Resistance (kΩ)	4 to 10	4 to 10	4 to 10	4 to 10	4 to 10	4 to 10	4 to 10	
Output Resistance (kΩ)	2.4 to 4.8	2.4 to 4.8	2.4 to 4.8	2.4 to 4.8	2.4 to 4.8	2.4 to 4.8	2.4 to 4.8	
Insulation Resistance (MΩ)	>100	>100	>100	>100	>100	>100	>100	@100Vdc
Residual Noise (µV RMS)	10	10	10	10	10	10	10	Maximum
Ground Isolation	Isolated from Mounting Surface							

ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	±0.04	±0.04	±0.04	±0.04	±0.04	±0.04	±0.04
Thermal Sensitivity Shift (%/°C)	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
Operating Temperature (°C)	-40 to +125						
Compensated Temperature (°C)	-20 to +85						
Storage Temperature (°C)	-40 to +125						

PHYSICAL

Case Material	Anodized Aluminum
Cable	PFA Insulated Leads, Braided Shield, Polyurethane Jacket
Weight (grams)	3.5
Mounting	2x #4 or M3 Screws
Mounting Torque	4.0 lb-in (0.5 N-m)
AWG	#28

Wiring color code: +Excitation = Red; -Excitation = Black; +Output = Green; -Output = White;

Calibration supplied: CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit¹

Supplied accessories: 2x #4-40 (1/4" length) Socket Head Cap Screw and Washer

Optional accessories: 101 Three Channel DC Signal Conditioner Amplifier

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ordering info

PART NUMBERING Model Number+Range+Cable Length

1210F-XXXX-ZZZ

| |
 | | _____ Cable (360 is 360 inches)
 | _____ | _____ Range (0050 is 50g)

Example: 1210F-0050-360

Model 1210F, 50g, 360" (30ft) Cable