

Model 4201 Accelerometer



Critically Gas Damped Accelerometer
Silicon MEMS Technology
Temperature Compensation
EMI/RFI Protection
Custom 8-Pole LP Filters



The Model 4201 single axis accelerometer is designed with performance and reliability in mind. The rugged, gas damped accelerometer is ideally tailored for motorsport applications and road vehicle testing. The model 4201 features an 8-pole low-pass filter to ensure no high frequency engine noise will leak into the passband. A heavy-duty shielded cable and an EMI/RFI module protects the accelerometer from the harsh operating environment. Available in ranges from $\pm 6g$ to $\pm 50g$, the model 4201 will provide reliable measurements from -40°C to $+125^{\circ}\text{C}$.

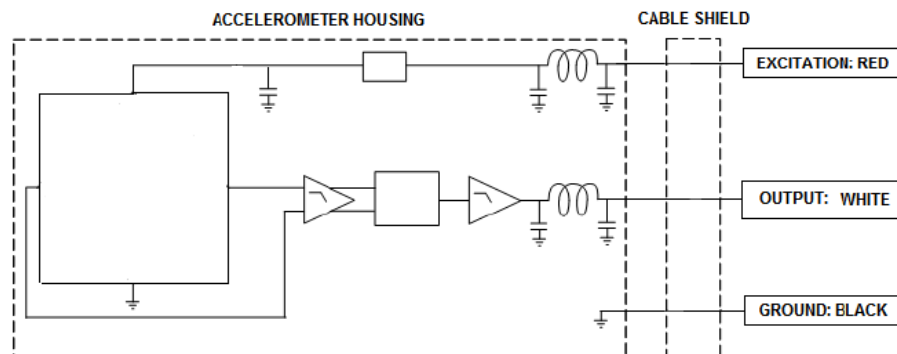
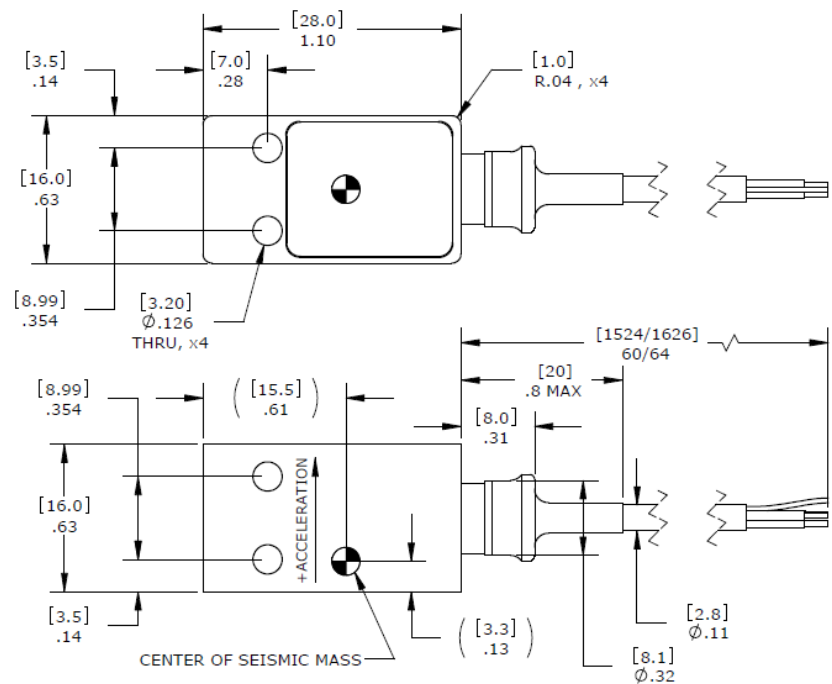
FEATURES

- 8-16 Vdc Excitation
- Ranges up to ± 50 g's full scale
- Measures static & dynamic acceleration
- Over shock protection to $\pm 5,000$ g's
- Operating range from -40 to $+125^{\circ}\text{C}$
- Built-in 8-pole low-pass filter
- EMI/RFI protection

APPLICATIONS

- Motorsport Racing
- Engine Testing
- Road Vehicle Testing
- Low Frequency Measurements

dimensions



Model 4201 Accelerometer

performance specifications

All values are typical at +24°C, 80Hz and 12Vdc 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

	±6	±10	±20	±30	±50	Notes
Range (g)	±6	±10	±20	±30	±50	
Sensitivity (mV/g)	333	200	100	67	40	±10%
-3dB Cutoff Frequency (Hz)	100 ±15	100 ±15	100 ±15	100 ±15	100 ±15	See alternate options below
Rolloff Above Cutoff Frequency (dB/dec)	-160	-160	-160	-160	-160	
Non-Linearity (%FSO)	±1.0	±1.0	±1.0	±1.0	±1.0	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	<1% Option
Damping Ratio	0.7	0.7	0.7	0.7	0.7	
Shock Limit (g)	5000	5000	5000	5000	5000	
Resolution (mg RMS)	0.5	0.5	1.0	1.0	3.0	Passband

ELECTRICAL

Zero Acceleration Output (V)	2.50 ±0.10					Single-ended
Excitation Voltage (Vdc)	8 to 16					
Excitation Current (mA)	<10					
Full Scale Output Voltage Swing (Vdc)	0.5 to 4.5					
Output Resistance (Ω)	<100					
Insulation Resistance (MΩ)	>100					@100Vdc
Turn On Time (msec)	<100					
Ground Isolation	Isolated from Mounting Surface					

ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	±0.012
Thermal Sensitivity Shift (%/°C)	±0.020
Operating Temperature (°C)	-40 to 125
Storage Temperature (°C)	-40 to 125
Humidity	Epoxy Encapsulated, IP65

PHYSICAL

Case Material	Titanium
Cable	3x #24 AWG Conductors, ETFE Insulated, Braided Shield, Crosslinked ETFE Jacket
Weight (grams)	20 (cable not included)
Mounting	2x #4 or M3 Screws
Mounting Torque	6 lb-in (0.7 N-m)

Calibration supplied: CS-LFREQ-0010 NIST Traceable Amplitude Calibration from 1Hz to 100Hz

Optional accessories: 121 3-Channel Precision Low Noise DC Amplifier

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ordering info

PART NUMBERING Model Number+Range+Filter Option

4201-XX-WW-C
 | |
 | | Filter Option (G1 Standard)
 | Range (06 is ±6g, 10 is ±10g)

Example: 4201-10-G1-C
 Model 4201, 10g, 60Hz Low-pass Filter

Dash Number	Filter Cutoff Frequency
-G1	60 Hz
-G2	40 Hz
-G4	6 Hz
-G5	100 Hz
-G8	80 Hz

北京赛斯维测控技术有限公司
 北京市朝阳区望京西路48号
 金隅国际D座302
 电话: +86 010 8477 5646
 传真: +86 010 5894 9029
 邮箱: sales@sensorway.cn
<http://www.sensorway.cn>