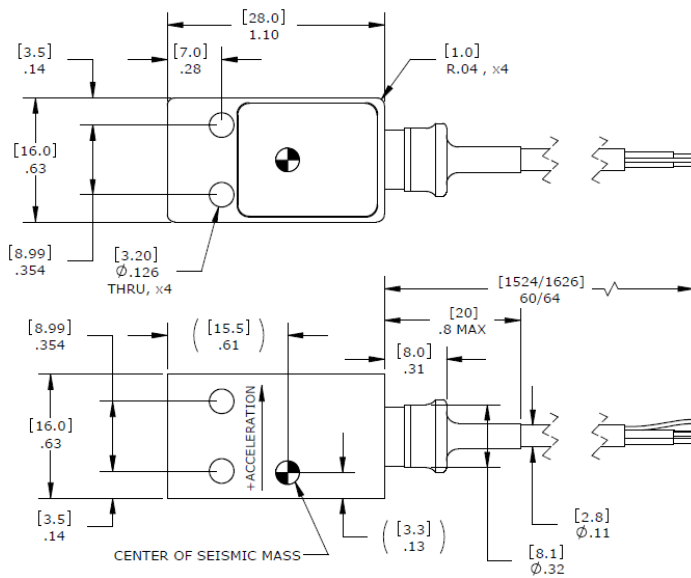


MODEL 4201 ACCELEROMETER



dimensions



SPECIFICATIONS

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

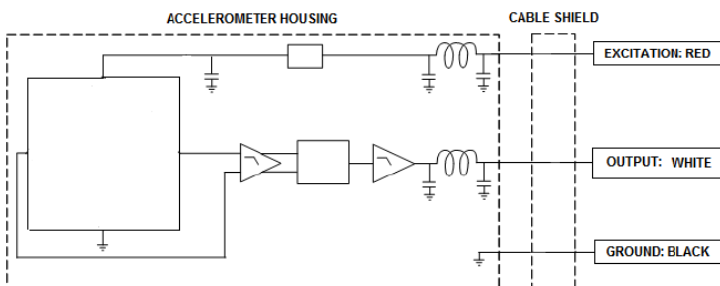
The Model 4201 single axis accelerometer is designed with performance and reliability in mind. The rugged, gas damped accelerometer is ideally tailored for motorsport applications and road vehicle testing. The model 4201 features an 8-pole low-pass filter to ensure no high frequency engine noise will 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 $\pm 50 g$'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



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.

Parameters

DYNAMIC

| | ±6 | ±10 | ±20 | ±30 | ±50 | Notes |
|---|---------|---------|---------|---------|---------|-----------------------------|
| Range (g) | | | | | | |
| 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 |

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