

Model 201 Accelerometer



MEMS DC Accelerometer
Temperature Calibrated
Robust Cable and Strain Relief
Amplified Output



The **Model 201** is a rugged, low-profile MEMS accelerometer designed for both static and dynamic applications. The accelerometer is available in ranges from ± 2 to $\pm 100g$ and offers a signal conditioned and amplified output. Featuring gas damped MEMS sensing element and a LP filtering circuit, the model 201 provides a flat frequency response to 100Hz over an operating temperature range of -40°C to $+125^{\circ}\text{C}$.

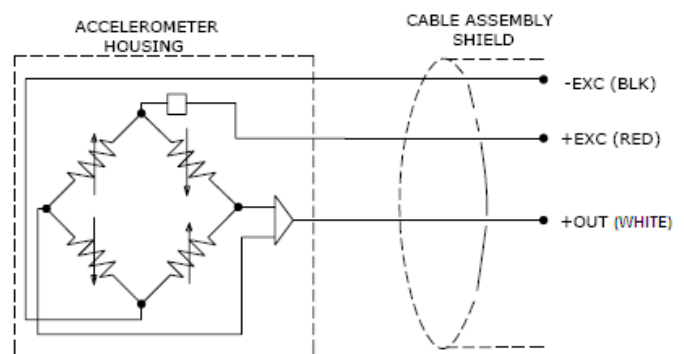
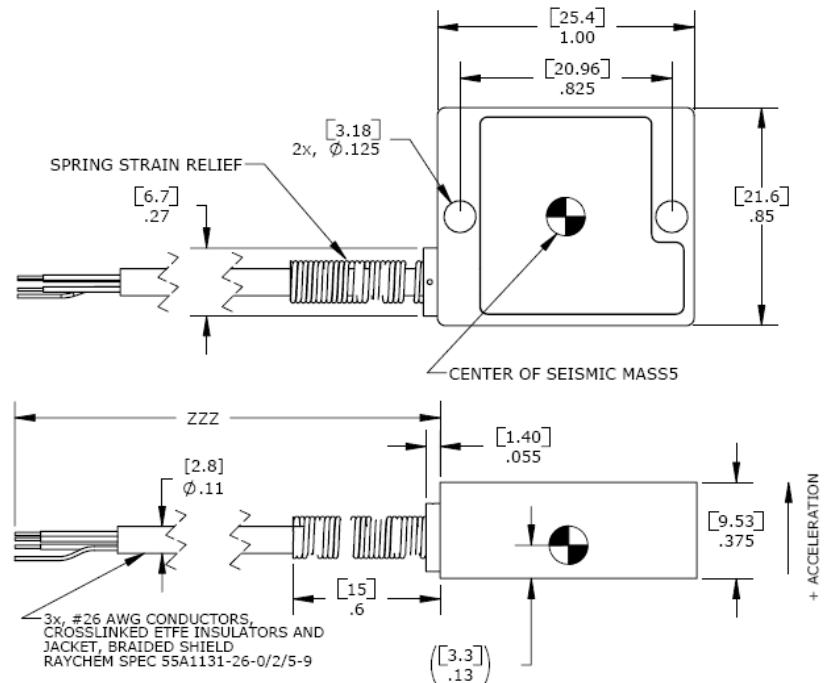
FEATURES

- $\pm 2g$ to $\pm 100g$ Dynamic Range
- Amplified Output
- Low Power Consumption
- Gas Damping
- #26 AWG Rugged Cable
- DC, Low Frequency Response
- 5 to 30Vdc Excitation Voltage

APPLICATIONS

- Transportation Measurements
- Vibration & Shock Monitoring
- Road Vehicle Testing
- Low Frequency Applications
- Motion Analysis

dimensions



Model 201 Accelerometer

performance specifications

All values are typical at +24°C, 100Hz 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

| | ±2 | ±5 | ±10 | ±20 | ±30 | ±50 | ±100 | Notes |
|---|---------|---------|---------|---------|---------|---------|---------|------------|
| Range (g) | ±2 | ±5 | ±10 | ±20 | ±30 | ±50 | ±100 | |
| Sensitivity (mV/g) | 1000 | 400 | 200 | 100 | 67 | 40 | 20 | |
| -3dB Cutoff Frequency (Hz) | 100 ±15 | 100 ±15 | 100 ±15 | 100 ±15 | 100 ±15 | 100 ±15 | 100 ±15 | |
| Rolloff Above Cutoff Frequency (dB/dec) | -40 | -40 | -40 | -40 | -40 | -40 | -40 | |
| Natural Frequency (Hz) | 700 | 800 | 1000 | 1500 | 1500 | 4000 | 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 | <2 Typical |
| Damping Ratio | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | |
| Shock Limit (g) | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | |
| Residual Noise (µV RMS) | 80 | 50 | 50 | 60 | 50 | 60 | 60 | Passband |
| Residual Noise (µg/√Hz RMS) | 8 | 13 | 25 | 60 | 75 | 150 | 300 | Spectral |

ELECTRICAL

| | | | | | | | | |
|---------------------------------------|--------------------------------|--|--|--|--|--|--|---------|
| Zero Acceleration Output (V) | 2.5 ±0.1 | | | | | | | |
| Excitation Voltage (Vdc) | 5 to 30 | | | | | | | |
| Excitation Current (mA) | <5 | | | | | | | |
| 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 |
| Compensated Temperature (°C) | 0 to 85 |
| Storage Temperature (°C) | -40 to 125 |
| Humidity | Epoxy Encapsulated, IP65 |

PHYSICAL

| | |
|-----------------|---|
| Case Material | Anodized Aluminum |
| Cable | ETFE Insulated Leads, Braided Shield, Crosslinked ETFE Jacket |
| Weight (grams) | 10 |
| Mounting | 2x #4 or M3 Screws |
| Mounting Torque | 6 lb-in (0.7 N-m) |

Calibration supplied: CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to 100Hz

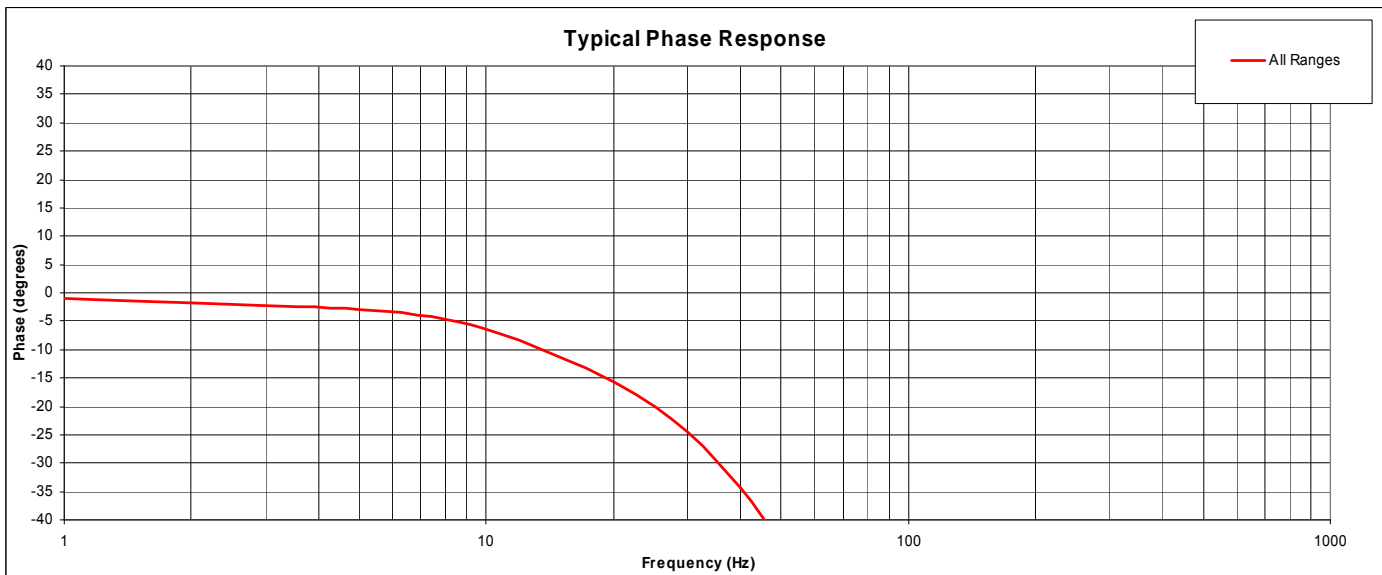
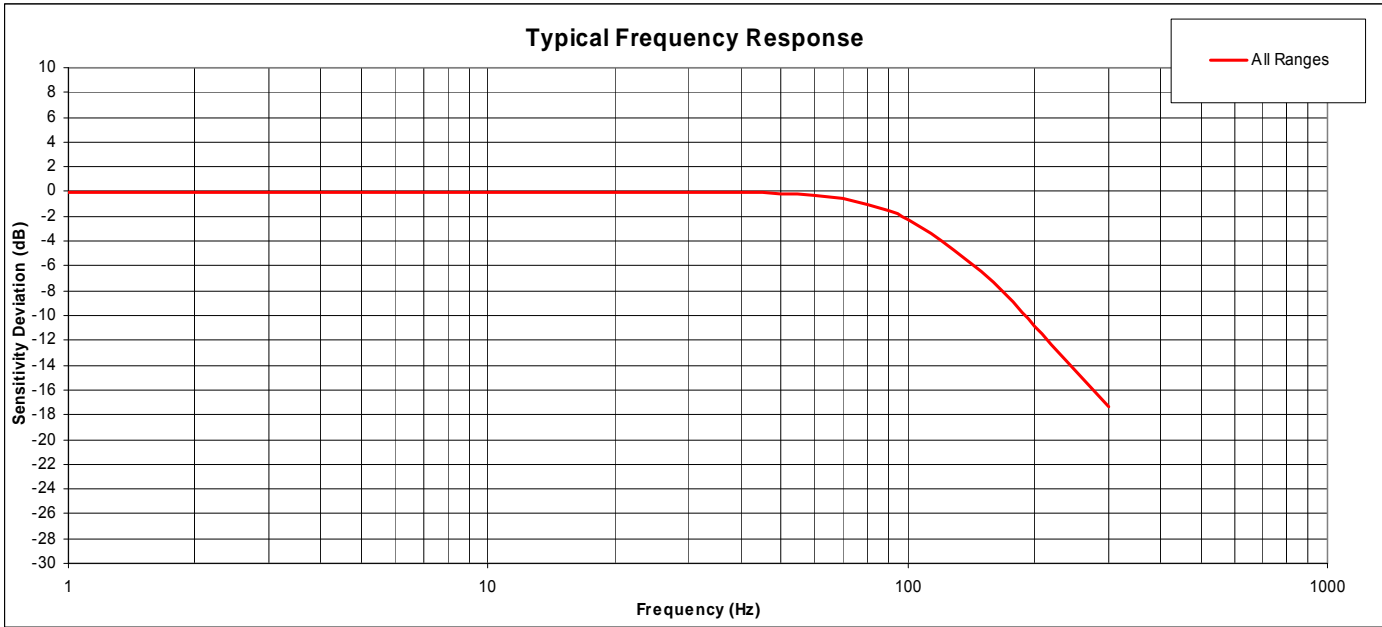
Supplied accessories: AC-A03654 2x #4-40 (1/2" length) Socket Head Cap Screw and Washer

Optional accessories: AC-D02669 101 Triaxial Mounting Block
Three Channel DC Signal Conditioner Amplifier

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Model 201 Accelerometer

performance specifications



ordering info

PART NUMBERING Model Number+Range+Cable Length

201-XX-CCC

| | Cable (060 is 60 inches)
 | | Range (05 is ±5g, 100 is ±100g)

Example: 201-05-060
Model 201, 5g, 60" (5ft) Cable