

Model 8102 Accelerometer



Triaxial Piezoelectric Accelerometer
 $22\mu\text{A}$ Current Consumption
 Low Excitation Voltage
 Great Value



8102A Pictured

The Model 8102 is a low cost, plug & play triaxial accelerometer. Featuring stable piezo-ceramic crystals, the accelerometer incorporates full power and signal conditioning with a maximum current consumption of only 22 micro-amps. The model 8102 is available from $\pm 25\text{g}$ to $\pm 6000\text{g}$ ranges and provides a flat frequency response up to 6kHz. The housing provides two holes for screw mounting and is offered in anodized Aluminum or stainless steel options.

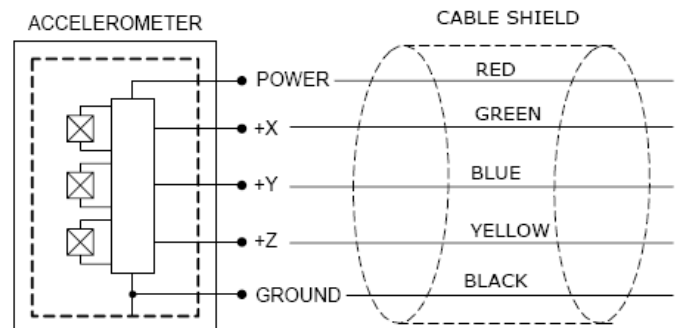
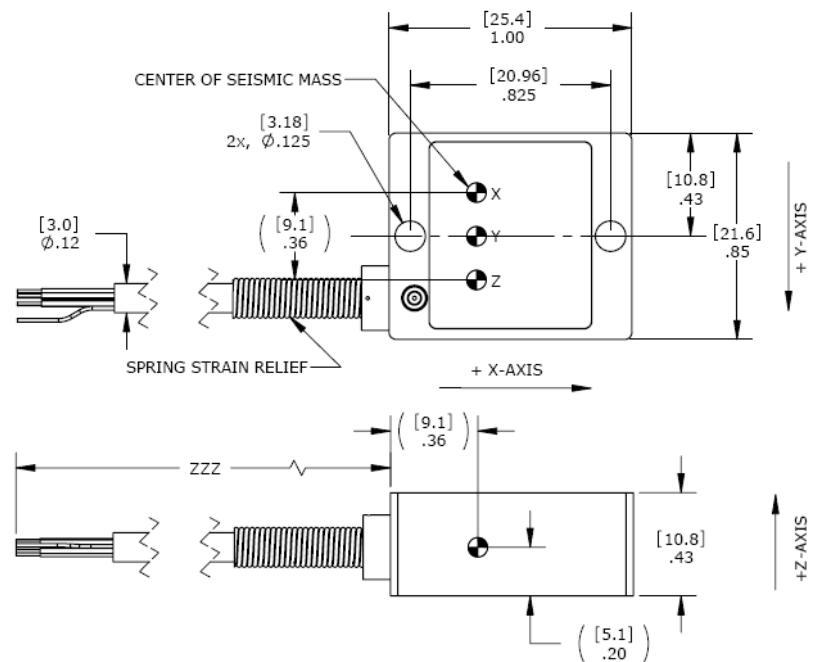
FEATURES

- $\pm 25\text{g}$ to $\pm 6000\text{g}$ Full Scale Ranges
- Low Cost Triaxial
- Potted Construction
- Piezo-Ceramic Shear Design
- -40° to $+125^\circ\text{C}$
- Integral Cable for Plug & Play

APPLICATIONS

- Asset Monitoring
- Data Loggers
- Impact Monitoring
- Machine Health Monitoring
- System Wake-Up Switch
- Product R&D

dimensions



Model 8102 Accelerometer

performance specifications

All values are typical at +24°C, 100Hz and 3.3Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Standard product parameters are described in PSC-1003 for Plug & Play AC Accelerometers.

Parameters								Notes
DYNAMIC								
Range (g)	±25	±50	±100	±200	±500	±2000	±6000	
Sensitivity (mV/g)	50.0	25.0	12.5	6.25	2.5	0.62	0.20	±30%
Frequency Response (Hz)	2-6000	2-6000	2-6000	2-6000	2-6000	2-6000	2-6000	±2dB
Natural Frequency (Hz)	>10000	>10000	>10000	>10000	>10000	>30000	>30000	
Non-Linearity (%FSO)	±2	±2	±2	±2	±2	±2	±2	
Transverse Sensitivity (%)	<8	<8	<8	<8	<8	<8	<8	
Shock Limit (g)	5000	5000	5000	5000	5000	10000	10000	
ELECTRICAL								
Bias Voltage (Vdc)	Exc Volt / 2	Exc Volt / 2	Exc Volt / 2	Exc Volt / 2	Exc Volt / 2	Exc Volt / 2	Exc Volt / 2	
Total Supply Current (µA)	<22	<22	<22	<22	<22	<22	<22	
Excitation Voltage (Vdc) ¹	3.0 to 5.5	3.0 to 5.5	3.0 to 5.5	3.0 to 5.5	3.0 to 5.5	3.0 to 5.5	3.0 to 5.5	
Output Impedance (Ω)	<100	<100	<100	<100	<100	<100	<100	
Insulation Resistance (MΩ)	>100	>100	>100	>100	>100	>100	>100	@100Vdc
Residual Noise (g RMS)	0.008	0.008	0.010	0.020	0.048	0.350	0.520	2Hz to 10kHz
Spectral Noise, 10Hz (mg√Hz)	0.80	0.80	0.80	1.6	3.2	26	32	
Spectral Noise, 100Hz (mg√Hz)	0.16	0.16	0.16	0.64	1.0	6.2	10	
Spectral Noise, 1kHz (mg√Hz)	0.07	0.07	0.07	0.26	0.64	3.2	8	
Shielding	100%							
Ground Isolation	Isolated from Mounting Surface							
ENVIRONMENTAL								
Temperature Response (%)	-20/+30 from -40°C to +125°C							
Operating Temperature (°C)	-40 to +125							
Storage Temperature (°C)	-40 to +125							
Humidity	Epoxy Sealed, IP67							
PHYSICAL								
Case Material	Anodized Aluminum or Stainless Steel							
Cable	Teflon® Insulated Leads, Braided Shield, Teflon Jacket							
Weight (grams)	14							
Mounting	2x #4 or M3 Screws							
Mounting Torque	6 lb-in (0.7 N-m)							
AWG	#26							

¹ The model 8102 can be operated with 2.8V excitation but the full-scale range will be limited.

Calibration supplied: CS-SENS-0100 NIST Traceable Amplitude Calibration at 100Hz

Wiring color code: +Excitation = Red; Ground = Black;
+Output = Green, X-axis; Blue, Y-axis; Yellow, Z-axis

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

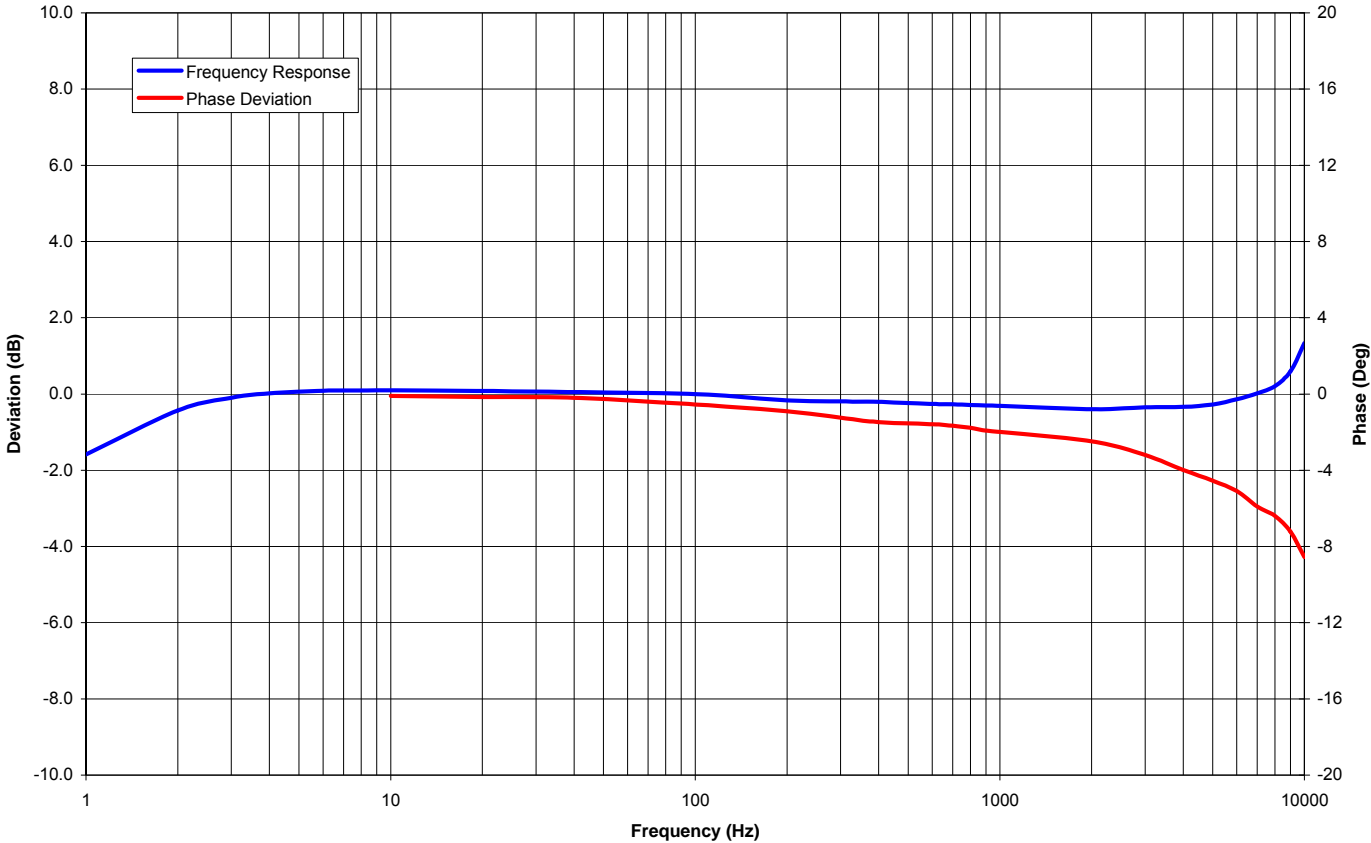
Optional accessories: CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to ±2dB Frequency Response Limit

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.

Model 8102 Accelerometer

performance specifications

Typical Frequency Response & Phase Deviation



ordering info

PART NUMBERING Model Number+Range+Cable Length

8102A-GGGG-CCC-XY

- | | | | Connector Options (Contact Factory, otherwise leave blank)
- | | | | Cable (060 is 60 inches)
- | | | | Range (0200 is 200g)
- | | | | Housing Configuration (A is Anodized Aluminum, B is Stainless Steel)

Example: 8102A-0200-060
Model 8102A, 200g, 60" (5ft) Cable, No Connector Options