measurement SPECIALTIES

Model 4000A & 4001A Accelerometer

Silicon MEMS Accelerometer
Signal Conditioned Output
Temperature Calibrated
Low Cost, Lightweight

4001A Connector Attachment

The Model 4000A & 4001A are economical signal conditioned accelerometers with integral temperature compensation. The accelerometers incorporate a 3rd generation silicon MEMS sensor providing outstanding performance. The accelerometers are packaged in a rugged aluminum housing ideal for transportation and instrumentation testing. The signal conditioned output incorporates a 2.5V reference that offers the user a differential or single-ended output.

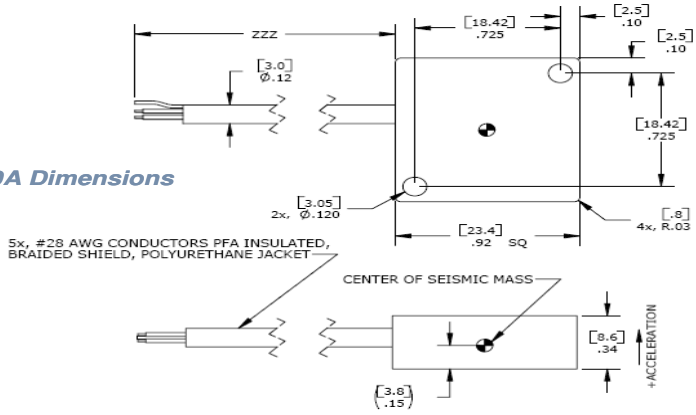
FEATURES

- ±2g to ±200g Dynamic Range
- High Over-Range Protection
- Signal Conditioned Output
- Low Power Consumption
- Lightweight
- Gas Damping
- 8 to 36Vdc Excitation Voltage

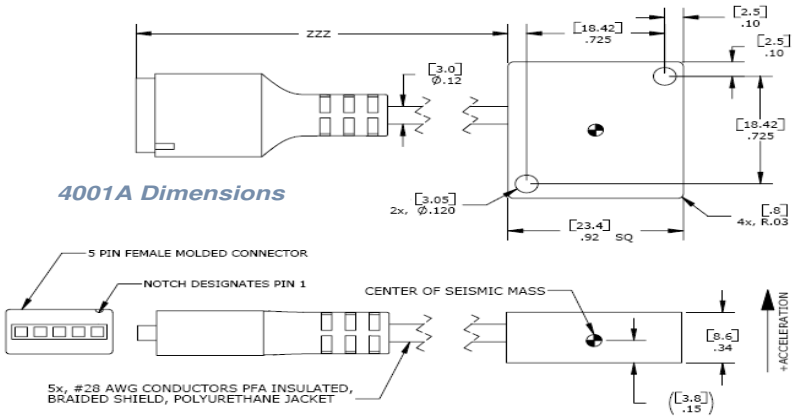
APPLICATIONS

- Low Frequency Monitoring
- Transportation
- Vibration Sensing
- Test & Instrumentation
- Machine Control
- Motion Analysis
- Tilt

dimensions



4000A Dimensions



4001A Dimensions

32 Journey Ste. 150 Aliso Viejo, CA 92656
949-716-5377
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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.

Parameters								
DYNAMIC								**Notes**
Range (g)	±2	±5	±10	±20	±50	±100	±200	
Sensitivity (mV/g)	1000	400	200	100	40	20	10	
Frequency Response (Hz)	0-200	0-300	0-350	0-600	0-800	0-1300	0-1500	±5%
Natural Frequency (Hz)	700	800	1000	1500	4000	6000	8000	
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	<1 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	
ELECTRICAL								
Zero Acceleration Output (mV)	±100	±100	±100	±100	±100	±100	±100	Differential
Excitation Voltage (Vdc)	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	8 to 36	
Excitation Current (mA)	<5	<5	<5	<5	<5	<5	<5	
Bias Voltage (Vdc)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Output Resistance (Ω)	<100	<100	<100	<100	<100	<100	<100	
Insulation Resistance (MΩ)	>100	>100	>100	>100	>100	>100	>100	@100Vdc
Turn On Time (msec)	<100	<100	<100	<100	<100	<100	<100	
Residual Noise (µV RMS)	500	300	300	350	400	350	400	Passband
Spectral Noise (µg/√Hz)	35	38	75	132	316	516	1033	Passband
Ground Isolation	Isolated from Mounting Surface							
ENVIRONMENTAL								
Thermal Zero Shift (%FSO/°C)	±0.014	±0.014	±0.014	±0.014	±0.014	±0.014	±0.014	Typical
Thermal Sensitivity Shift (%/°C)	±0.028	±0.028	±0.028	±0.028	±0.028	±0.028	±0.028	Typical
Operating Temperature (°C)	-20 to 85							
Compensated Temperature (°C)	-20 to 85							
Storage Temperature (°C)	-40 to 90							
PHYSICAL								
Case Material	Anodized Aluminum							
Cable	PFA Insulated Leads, Braided Shield, PU Jacket							
Weight (grams)	7							
Mounting	2x #4 or M3 Screws							
Mounting Torque	3 lb-in (0.3 N-m)							
AWG	#28							

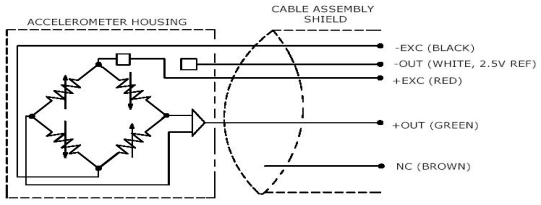
Wiring color code: 4000A: +Excitation = Red; -Excitation = Black; +Output = Green; -Output = White; Programming = Brown (brown wire is used for programming and is not to be connected)
4001A: +Excitation = Pin 3; -Excitation = Pin 1; +Output = Pin 4; -Output = Pin 2;

Supplied accessories: AC-D02295 Mating Pins (for model 4001A)

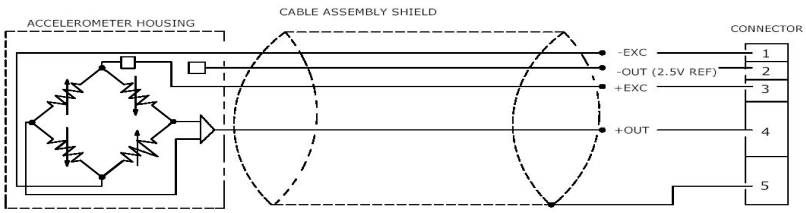
Optional accessories: AC-D02652 Triaxial Mounting Block
101 Three Channel DC Signal Conditioner Amplifier

schematic

4000A Schematic



4001A Schematic



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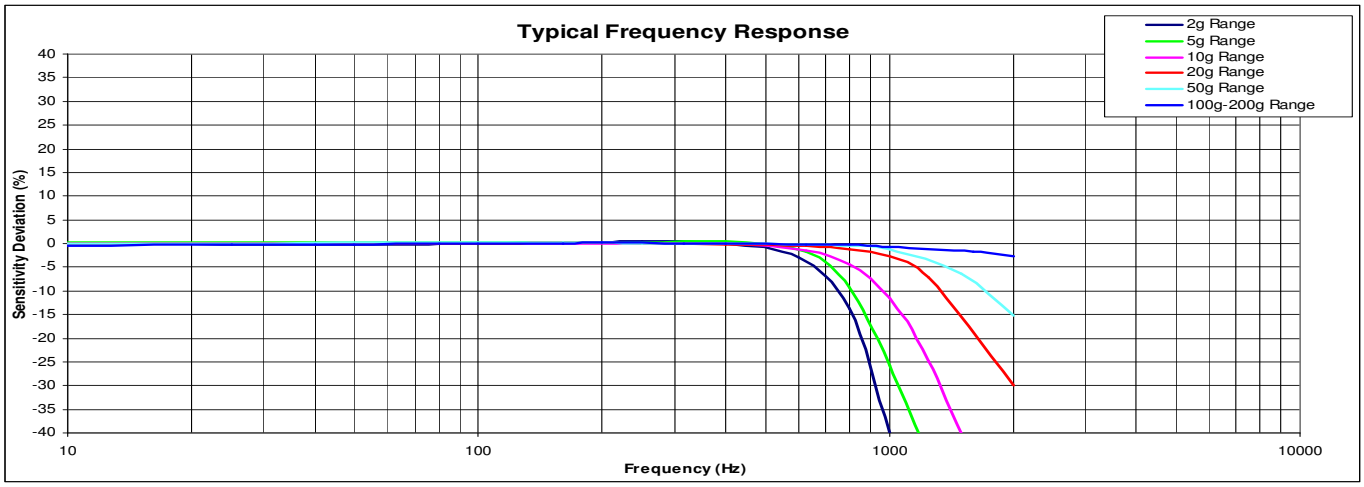

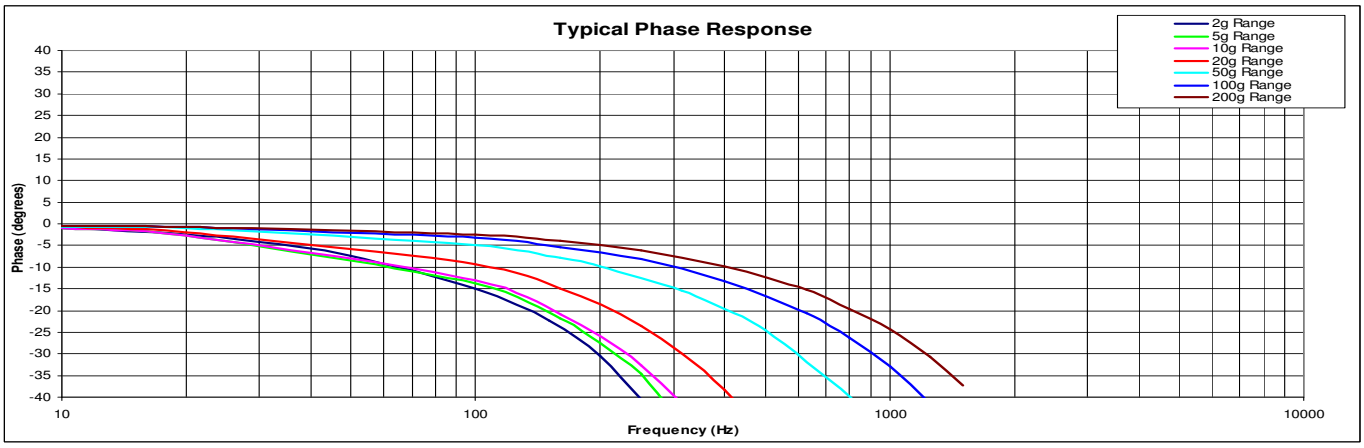

ordering info

PART NUMBERING Model Number+Range+ Cable Length

4000A-GGG-CCC
| |
| |_____Cable (060 is 60 inches)
|_____Range (020 is 20g)

Example: 4000A-020-060
Model 4000A, 20g, 60" (5ft) Cable

4001A-GGG-CCC
| |
| |_____Cable (014 is 14 inches)
|_____Range (020 is 20g)

Example: 4001A-020-014
Model 4001A, 20G, 14" Cable

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