



Model 4000A & 4001A Accelerometer

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

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

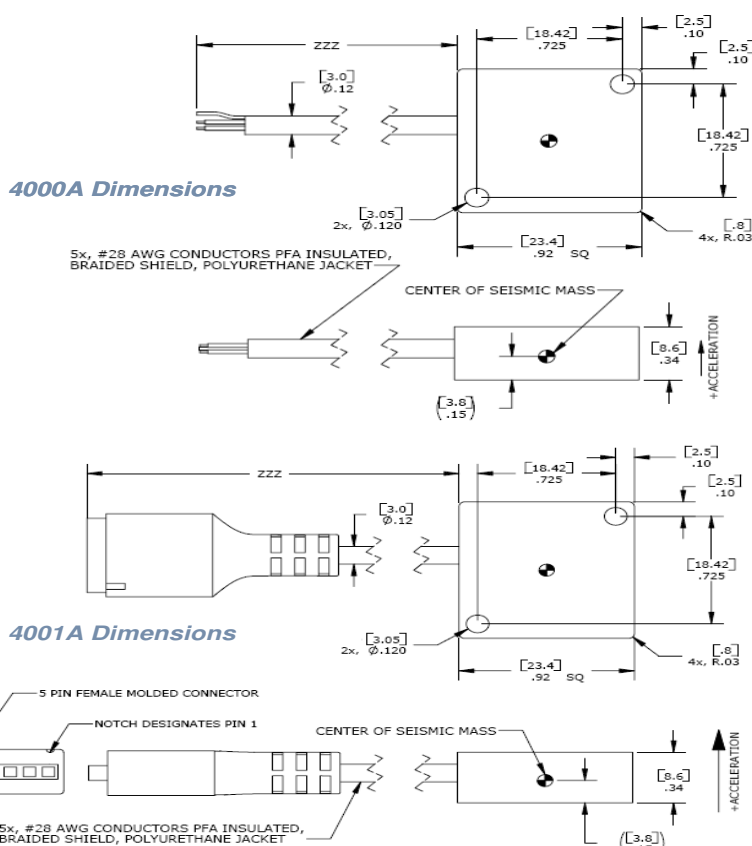
- $\pm 2\text{g}$ to $\pm 200\text{g}$ Dynamic Range
- High Over-Range Protection
- Signal Conditioned Output
- Low Power Consumption
- Lightweight
- Gas Damping
- 8 to 36Vdc Excitation Voltage

APPLICATIONS

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



dimensions



Model 4000A & 4001A Rev A

www.meas-spec.com

01/15/2010

32 Journey Ste. 150 Aliso Viejo, CA 92656

949-716-5377

enduser@meas-spec.com

Component Distributors Inc. (CDI)

Toll-Free: 1-800-777-7334 • E-Mail: sales@cdiweb.com

Web: www.cdiweb.com

Model 4000A & 4001A Accelerometer

performance specifications

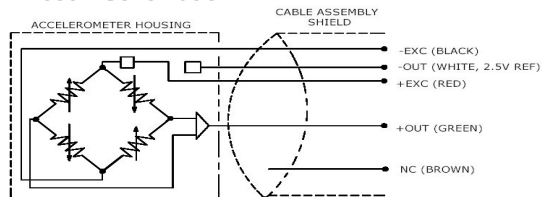
All values are typical at +24 °C, 100Hz and 12Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice.

Parameters								Notes
DYNAMIC								
Range (g)	±2	±5	±10	±20	±50	±100	±200	
Sensitivity (mV/g)	1000	400	200	100	40	20	10	±5%
Frequency Response (Hz)	0-200	0-300	0-350	0-600	0-800	0-1300	0-1500	
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							

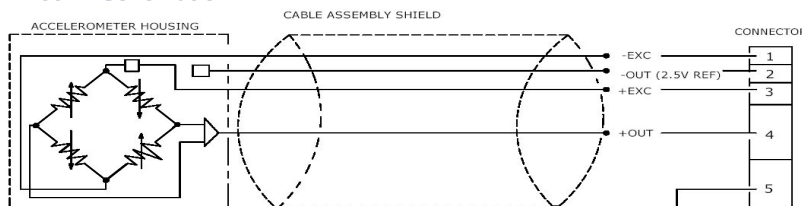
The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, 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.

schematic

4000A Schematic



4001A Schematic



Model 4000A & 4001A Rev A

www.meas-spec.com

01/15/2010

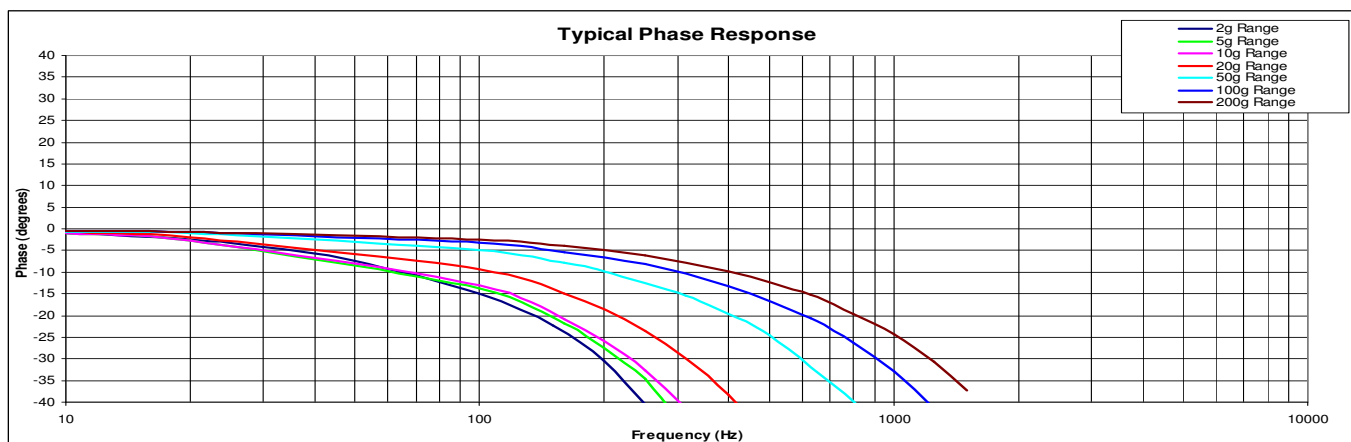
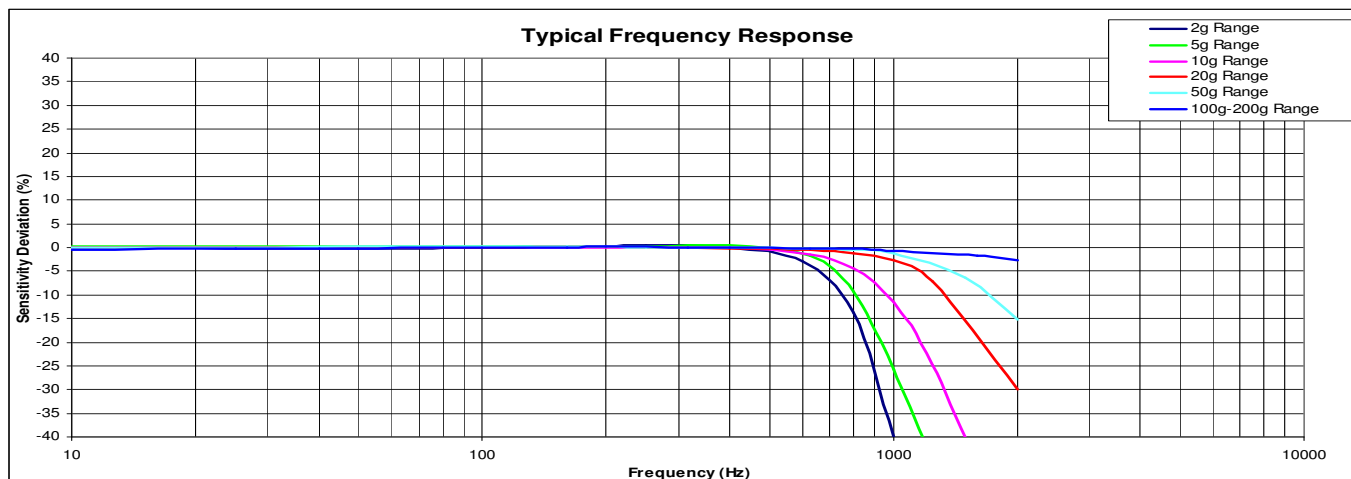
32 Journey Ste. 150 Aliso Viejo, CA 92656

949-716-5377

enduser@meas-spec.com

Model 4000A & 4001A Accelerometer

performance specifications



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