

# Model 4002 Accelerometer



Signal Conditioned  
DC Response  
Temperature Compensated  
Micro-G Resolution



The **Model 4002** is a low frequency DC response accelerometer with exceptional resolution. The accelerometer is designed for optimum signal-to-noise ratio and offers an amplified signal conditioned output. Available in ranges from  $\pm 2$  to  $\pm 200g$  the accelerometer is ideal for low frequency measurements in temperature ranges of  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ . The MEMS sensing element is gas damped with a broad and stable frequency response.

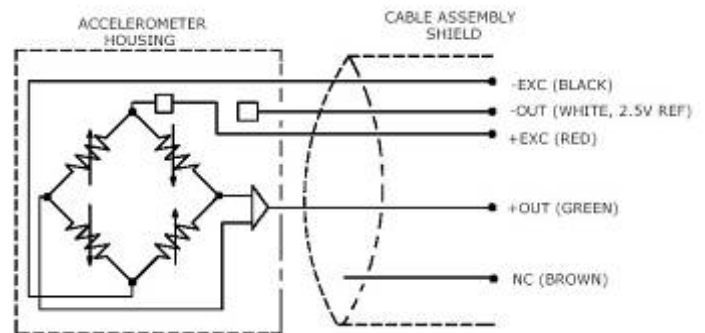
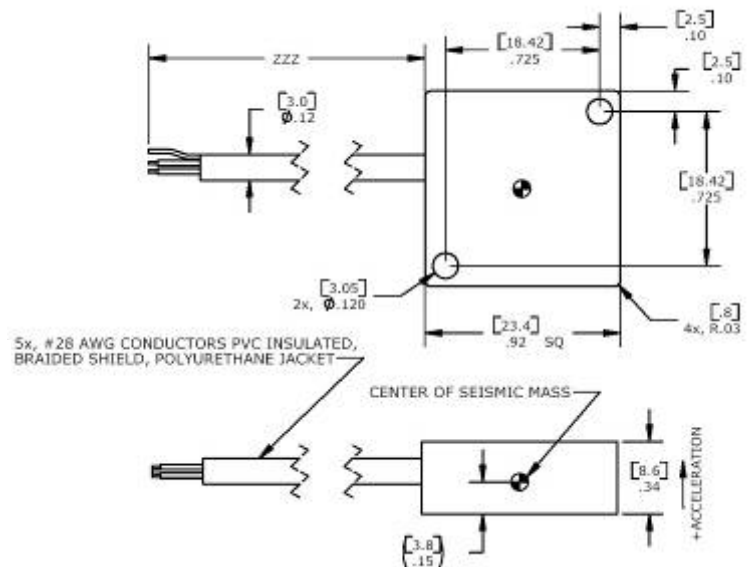
## FEATURES

- $\pm 2g$  to  $\pm 200g$  Dynamic Range
- Amplified, Filtered Output
- 8 to 32Vdc Excitation
- Gas Damped MEMS Element
- Micro-g Resolution
- DC, Low Frequency Response

## APPLICATIONS

- Low Frequency Testing
- Motion Control
- Tilt Measurements
- Test & Instrumentation
- Transportation Measurements

## dimensions



# Model 4002 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

<b>DYNAMIC</b>								<b>Notes</b>
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 32	8 to 32	8 to 32	8 to 32	8 to 32	8 to 32	8 to 32	
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
Residual Noise (µV RMS)	300	250	250	300	350	350	350	Passband
Ground Isolation	Isolated from Mounting Surface							

### ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	±0.057	±0.057	±0.057	±0.057	±0.057	±0.057	±0.057	(0 to 70°C)
Thermal Sensitivity Shift (%/°C)	±0.071	±0.071	±0.071	±0.071	±0.071	±0.071	±0.071	(0 to 70°C)
Operating Temperature (°C)	-20 to 85							
Compensated Temperature (°C)	0 to 70							
Storage Temperature (°C)	-40 to 90							

### PHYSICAL

Case Material	Anodized Aluminum
Cable	PVC 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:** +Excitation = Red; -Excitation = Black; +Output = Green; -Output = White; Programming = Brown (brown wire is used for programming and is not to be connected)

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.

## ordering info

PART NUMBERING Model Number+Range+Cable Length

4002-GGG-CCC

|     |  
 |     | \_\_\_\_\_ Cable (060 is 60 inches)  
 | \_\_\_\_\_ Range (020 is 20g)

Example: 4002-020-060

Model 4002, 20g, 60" (5ft) Cable