

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 ± 2 to $\pm 200g$ the accelerometer is ideal for low frequency measurements in temperature ranges of -20°C to $+85^{\circ}\text{C}$. The MEMS sensing element is gas damped with a broad and stable frequency response.

FEATURES

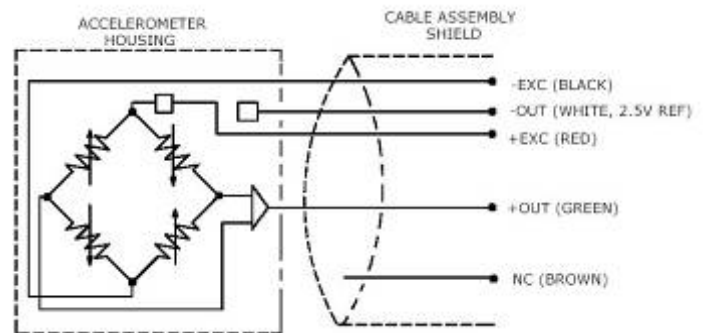
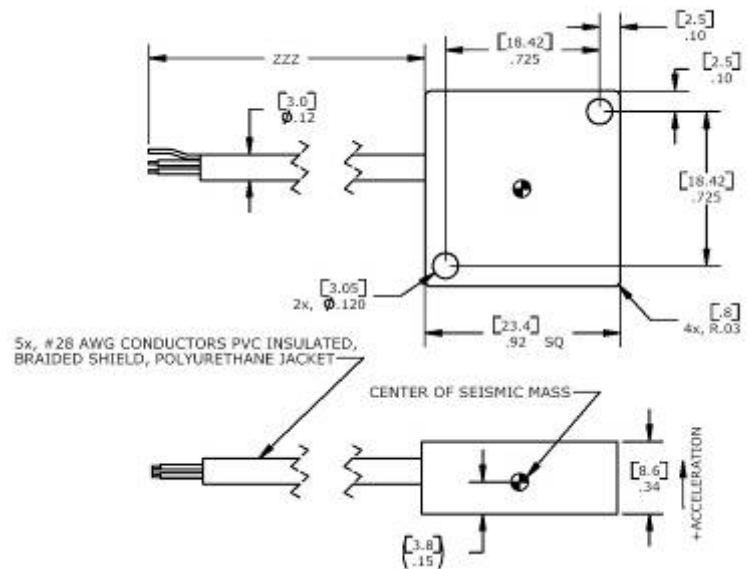
- $\pm 2g$ to $\pm 200g$ Dynamic Range
- Amplified, Filtered Output
- 8 to 32Vdc Excitation
- Gas Damped MEMS Element
- Micro-g Resolution
- DC, Low Frequency Response

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

DYNAMIC

	±2	±5	±10	±20	±50	±100	±200	Notes
Range (g)								
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)

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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