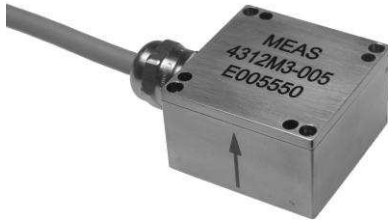
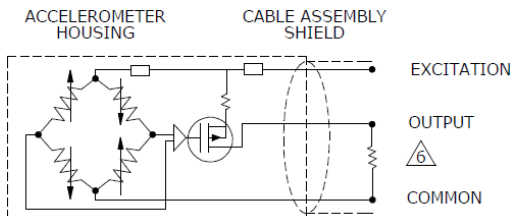
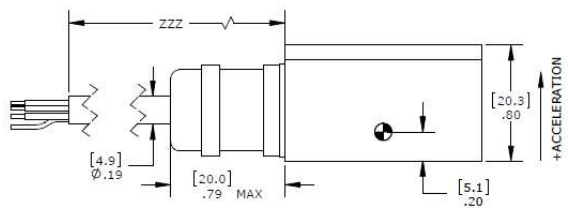
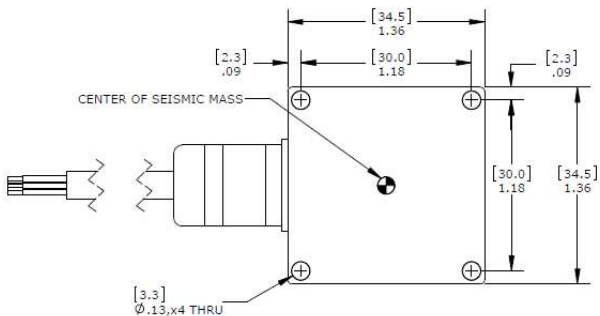


# MODEL 4312M3 ACCELEROMETER



## DIMENSIONS



WIRE DESIGNATIONS: WHITE = INPUT (EXCITATION)  
 PINK = OUTPUT  
 YELLOW = COMMON (CIRCUIT GROUND)  
 THE OTHER THREE WIRES ARE NOT CONNECTION

△ LOAD RESISTOR (USER INSTALLED) < 250 ohms.

## SPECIFICATIONS

- ◆ 4-20mA Signal Output
- ◆ MEMS DC Accelerometer
- ◆ IP68 Protection
- ◆ Low Noise, High Resolution

The **Model 4312M3** is 4-20mA output MEMS accelerometer offering both static and dynamic response. The accelerometer is packaged in a corrosion resistant stainless steel housing and is offered in  $\pm 2g$  to  $\pm 20g$  range. The **model 4312M3** features an integral cable and is certified to IP68 protection up to 40m depth with an operating temperature range of  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

## FEATURES

- ◆ Stainless Steel Housing
- ◆ Corrosion Resistant
- ◆ Integral Cable
- ◆  $\pm 2g$  to  $\pm 20g$  Dynamic Range
- ◆ DC Response
- ◆ Temperature Compensation

## APPLICATIONS

- ◆ Transportation Measurements
- ◆ Structural Monitoring
- ◆ Bridge, Tunnel & Dam Monitoring
- ◆ Low Frequency Applications
- ◆ Submersible Measurements
- ◆ Shipboard Installations

## MODEL 4312M3 ACCELEROMETER

### PERFORMANCE SPECIFICATIONS

All values are typical at +24°C, 10Hz and 12Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice.

#### Parameters

##### DYNAMIC

	4312M3-002	4312M3-005	4312M3-010	4312M3-020	Notes
Model Number	4312M3-002	4312M3-005	4312M3-010	4312M3-020	
Range (g)	±2	±5	±10	±20	
Sensitivity (mA/g)	4.0	1.6	0.8	0.4	±10%
Frequency Response (Hz)	0-200	0-300	0-300	0-300	±5%
-3dB Cutoff Frequency (Hz)	1000	1000	1000	1000	
Rolloff Above Cutoff Frequency (dB/dec)	-40	-40	-40	-40	
Natural Frequency (Hz)	700	800	1000	1500	
Non-Linearity & Hysteresis (%FSO)	±0.5	±0.5	±0.5	±0.5	
Transverse Sensitivity (%)	<3	<3	<3	<3	<2 Typical
Damping Ratio	0.7	0.7	0.7	0.7	
Shock Limit (g)	5000	5000	5000	5000	
Residual Noise (µg RMS)	25	50	100	200	Passband

##### ELECTRICAL

Zero Acceleration Output (mA)	12.0 ±0.25				
Excitation Voltage (Vdc)	7 to 24				
Quiescent Current (mA)	<15				
Full Scale Span (mA)	4 to 20				
Insulation Resistance (MΩ)	>100				@100Vdc
Load Resistor (Ω)	<250				User Installed
Turn On Time (msec)	<100				
Grounding	Case Grounded, Internally Isolated Circuit				

##### ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	±0.04				0 to +65°C
Thermal Sensitivity Shift (%/°C)	±0.04				0 to +65°C
Operating Temperature (°C)	-40 to 85				
Compensated Temperature (°C)	0 to 65				
Storage Temperature (°C)	-40 to 85				
Humidity	IP68, 40m Depth				

##### PHYSICAL

Case Material	316 Stainless Steel
Cable	PVC Insulated Leads (6x 0.14 mm <sup>2</sup> ), Braided Shield, PVC Jacket
Weight (without cable)	<100 grams
Mounting	4x #4 or M3 Screws
Mounting Torque	6 lb-in (0.7 N-m)

**Calibration supplied:** CS-LFREQ-0010 NIST Traceable Amplitude Calibration from 1Hz to 100Hz

**Supplied accessories:** 4x #4-40 (1 ½" length) Socket Head Cap Screw and Washer

**Optional accessories:** 121 3-Channel Precision Low Noise DC Amplifier  
AC-A05172 Adhesive Mounting Adaptor

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### ORDERING INFORMATION

PART NUMBERING    Model Number+Range+ Cable Length

4312M3-GGG-CCC

      |      |\_\_\_\_\_ Cable Length (-120 is 120 inches)  
      |\_\_\_\_\_ Range (002 is 2g)

Example: 4312M3-002-120

          Model 4312M3, 2g, 120" Cable