

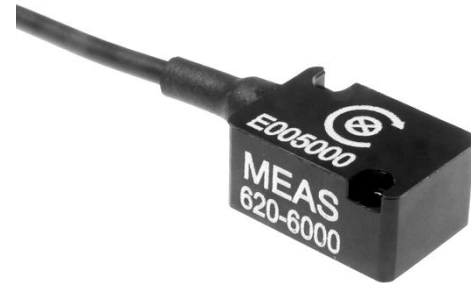
# Model 620 Angular Rate Sensor



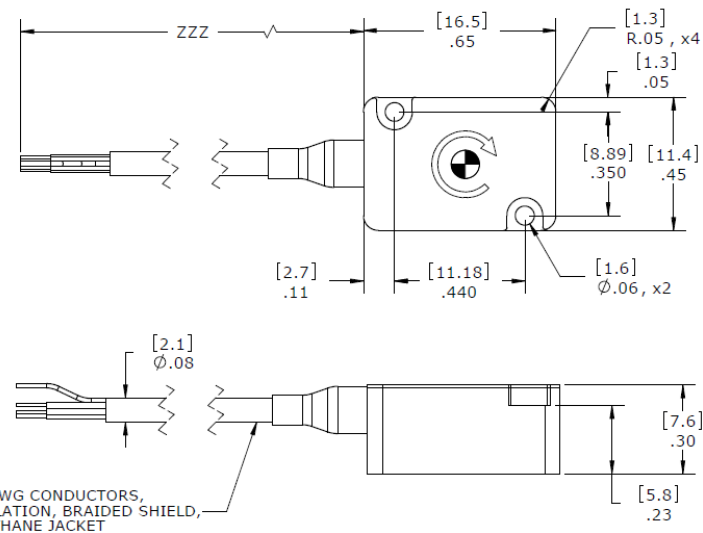
±500 to ±50,000°/sec Range  
Silicon MEMS, DC Response  
Insensitive to Shock  
Small, Lightweight Package

## The Model 620 Angular Rate Sensor

is a small analog gyroscope designed specifically for automotive safety testing and other system designs requiring accurate measurement of angular velocity. The Model 620 series utilizes silicon MEMS sensing elements with custom electronics and packaging to produce an angular rate sensor that is highly reliable even under excessive shock and vibration environments. A wide selection of ranges is available for your specific applications.



## dimensions

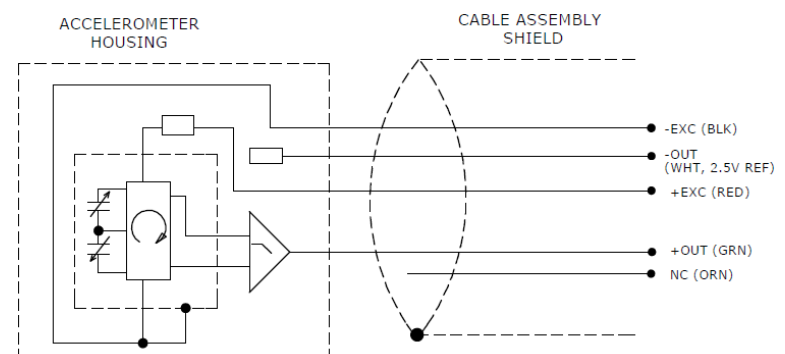


## FEATURES

- ±500 to ±50,000°/sec Ranges
- 7-16Vdc Excitation (5Vdc option)
- -40 to +105°C Temperature Range
- Shock Resistant Package
- Low Cross-Axis Sensitivity

## APPLICATIONS

- Auto Safety Crash Testing
- Dummy Instrumentation
- Pedestrian Impact
- Rollover Testing
- Motorsports
- Biomechanics Testing
- Robotic System Design
- Weapons Design



# Model 620 Angular Rate Sensor

## performance specifications

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

### Parameters

#### DYNAMIC

	±500	±1500	±6000	±12K	±18K	±24K	±50K	Notes
Range (deg/sec)	±500	±1500	±6000	±12K	±18K	±24K	±50K	
Sensitivity (mV/deg/sec)	4.00	1.33	0.333	0.167	0.111	0.083	0.040	Not ratiometric
Frequency Response (Hz)	0-1000	0-1000	0-1000	0-2000	0-2000	0-2000	0-3300	+1dB/-3dB
Non-Linearity (%FSO)	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	BFSL
Cross-Axis Sensitivity (%)	<1	<1	<1	<1	<1	<1	<1	
Shock Limit (g)	3000	3000	3000	5000	5000	5000	5000	
Residual Noise (mV RMS)	3.66	1.20	2.38	1.22	1.20	1.20	1.50	Passband

#### ELECTRICAL

Zero Acceleration Output (mV)	±100							Differential
Excitation Voltage (Vdc), Model 620	7 to 16							
Excitation Voltage (Vdc), Model 620M1	5.0 ±0.25							
Excitation Current (mA)	<8							
Influence of Linear Acceleration (deg/sec/g)	0.1							
Common Mode Voltage (Vdc)	2.5							±5%
Full Scale Output Voltage (Vpk)	±2							±15%
Output Resistance (Ω)	400							
Insulation Resistance (MΩ)	>100							@100Vdc
Turn On Time (msec)	<100							
Ground Isolation	Isolated from Mounting Surface							

#### ENVIRONMENTAL

Thermal Zero Shift (%FSO)	±2.5							-40 to +105°C
Thermal Sensitivity Shift (%)	±2.0							-40 to +105°C
Operating Temperature (°C)	-40 to +105							
Humidity (Active Element & Electronics)	Hermetically Solder Seal							
Humidity (Housing)	Epoxy Sealed, IP65							

#### PHYSICAL

Case Material	Anodized Aluminum
Cable	5x, #30 AWG Conductors, PFA Insulated, Braided Shield, PU Jacket
Weight (cable not included)	3 grams
Mounting	2x #0-80
Mounting Torque	4 lb-in (0.45 N-m)

**Calibration supplied:** CS-ARLIN NIST Traceable Linearity Calibration to FS Range

**Supplied accessories:** AC-A04531 2x #0-80 (3/8 length) Socket Head Cap Screw and Washer

**Optional accessories:** AC-A04532 Triaxial Mounting Block  
121 3-Channel Precision Low Noise DC Amplifier

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## ordering info

PART NUMBERING Model Number+Range+Cable Length+Options

620-GGGG-CCC-ZZZ

| | | | Options (contact factory for Lemo & Dallas ID chip options, otherwise leave blank)  
| | | | Cable (360 is 360 inches)  
| | | | Range (1500 is 1500deg/sec, 50K is 50,000deg/sec)  
| | | | Model (620 is 7 to 16Vdc excitation, 620M1 is 5Vdc excitation)

Example: 620-1500-360

Model 620, 1500deg/sec, 360" (30ft) Cable, No Options

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