

Model 603 Triaxial Rate Sensor



MEMS Triaxial Rate Sensor
±500 to ±24,000°/sec Rate Range
Silicon MEMS, Lightweight
Rugged Shock Resistant Housing



The Model 603 is a small, lightweight triaxial rate sensor designed for high impact testing. The sensor utilizes reliable silicon MEMS sensing elements with custom electronics in angular rate ranges of ±500 to ±24,000deg/sec. The model 603 is packaged in a shock resistant housing specifically designed for critical measurement applications such as automotive safety, biomechanics and aerospace testing.

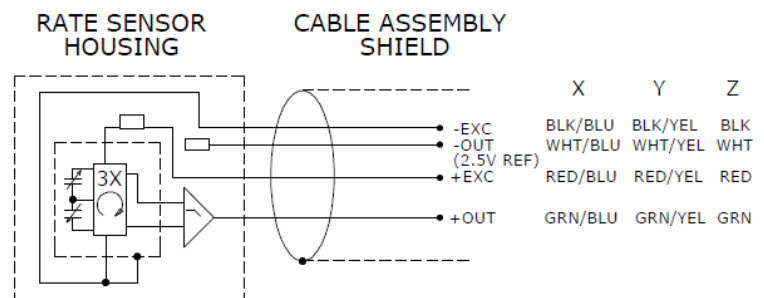
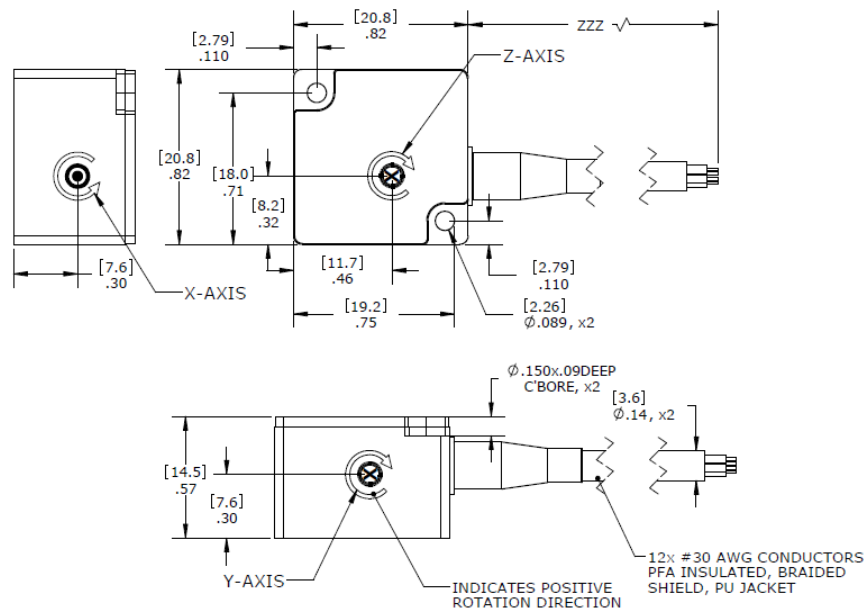
FEATURES

- Low Noise Jacketed Cables
- Rugged Integral Strain Relief
- Reliable Silicon MEMS Sensors
- -40 to +105°C Temperature Range
- Shock Resistant Package
- 5-16Vdc Excitation Voltage
- SAE J211 Compliant Performance

APPLICATIONS

- Auto Safety Crash Testing
- Aerospace Testing
- Pedestrian Impact
- Rollover Testing
- Motorsports
- Biomechanics Testing
- Robotic System Design

dimensions



Model 603 Triaxial Rate Sensor

performance specifications

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

Parameters

DYNAMIC (RATE SENSORS)

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

ELECTRICAL

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

ENVIRONMENTAL

Thermal Zero Shift, Rate Sensors (%FSO)	±2.5						-40 to +105°C
Thermal Sensitivity Shift, Rate Sensors (%)	±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	12x #30AWG Cond PFA Insulated, Braided Shield, PU Jacket
Weight (cable not included)	8.5 grams
Mounting	2x #2.56 or M2 Mounting Screw
Mounting Torque	4 lb-in (0.45 N-m)

¹ Output is ratiometric to excitation voltage

Calibration supplied:	CS-ARLIN	NIST Traceable Linearity Calibration to FS Range
Supplied accessories:	AC-D03548	2x #2-56 (3/4" length) Socket Head Cap Screw
Optional accessories:	121	3-Channel Precision Low Noise DC Amplifier

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ordering info

PART NUMBERING Model Number+Rate Range+Cable Length

633-RRR-ZZZ

I I Cable (120 is 120 inches)

I Rate Range (-500 for 500deg/sec, -12K for 12000deg/sec)

Example: 603-6K-120

Model 603, 6000deg/sec, 120" Cable