



## MODEL 603 TRIAXIAL RATE SENSOR

### SPECIFICATIONS

- Silicon MEMS Gyro, DC Response
- $\pm 100^\circ/\text{sec}$  to  $\pm 24,000^\circ/\text{sec}$  Ranges
- Insensitive to Shock Events
- SAE J211 & ISO 6487 Compliant
- NHTSA FMVSS 202a Compliant

The Model 603 is a small, lightweight triaxial angular rate sensor designed for demanding test applications in high-g shock environments. The sensor incorporates high reliability MEMS gyroscope sensing elements with integral electronics designed for accurate measurement of angular velocity. The Model 603 is offered in dynamic angular rate ranges from  $\pm 100\text{deg}/\text{sec}$  to  $\pm 24,000\text{deg}/\text{sec}$ . Contact factory for inquiries into any custom ranges not listed on datasheet.

The Model 603 triaxial gyro is packaged in a shock resistant housing specifically designed for critical measurement applications such as automotive safety testing, biomechanics and aerospace testing.

For single axis rate sensors with similar performance, TE Connectivity also offers the model 609 and 610 angular rate sensors.

### FEATURES

- 5 to 16Vdc Excitation Voltage
- Low Noise Jacketed Cable
- Rugged Integral Strain Relief
- $-40^\circ\text{C}$  to  $+105^\circ\text{C}$  Temperature Range
- Shock Resistant Design
- High Reliability Silicon MEMS Sensors

### APPLICATIONS

- Auto Safety Crash Testing
- Dummy Instrumentation
- Pedestrian Impact
- Rollover Testing
- Motorsports
- Biomechanics Testing
- Aerospace Testing
- Robotics Motion Control

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### PERFORMANCE SPECIFICATIONS

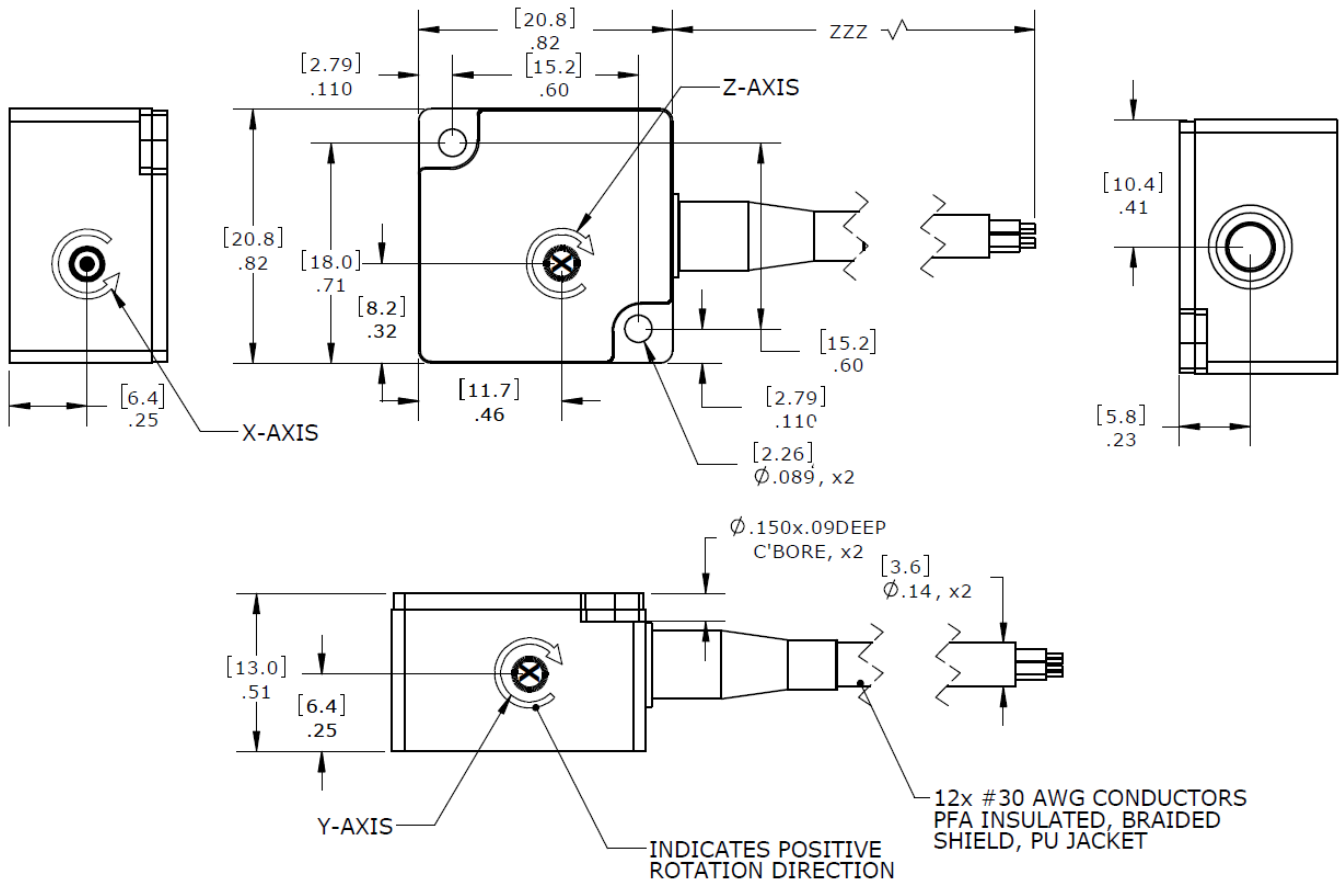
All values are typical at +24°C and 10Vdc excitation unless otherwise stated. TE Connectivity reserves the right to update and change these specifications without notice.

Parameters								Notes
<b>DYNAMIC</b>								
Dash Number	-0100	-0500	-1500	-6000	-12K	-18K	-24K	See Ordering Info
Range (deg/sec)	±100	±500	±1500	±6000	±12K	±18K	±24K	
Sensitivity (mV/deg/sec)	20.0	4.00	1.33	0.333	0.167	0.111	0.083	±15%
Frequency Response (Hz)	0-1000	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	±0.5	BFSL
Cross-Axis Sensitivity (%)	<1	<1	<1	<1	<1	<1	<1	
Shock Limit (g)	5000	5000	10,000	10,000	10,000	10,000	10,000	
Residual Noise (mV RMS)	18.0	3.66	1.20	3.30	1.22	1.50	1.80	Passband
<b>ELECTRICAL</b>								
Zero Acceleration Output (mV)	±100							Differential
Excitation Voltage (Vdc)	4.9 to 16.0							Per channel
Excitation Current (mA)	<8							Per channel
Influence of Linear Acceleration (°/sec/g)	0.1							
Common Mode Voltage (Vdc)	2.5							
Full Scale Output Voltage (Vpk)	±2							
Output Resistance (Ω)	<400							
Insulation Resistance (MΩ)	>100							@100Vdc
Turn On Time (msec)	<100							
Ground Isolation	Isolated from Mounting Surface							
<b>ENVIRONMENTAL</b>								
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							
<b>PHYSICAL</b>								
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)							
<b>Calibration Supplied:</b>	CS-ARLIN	NIST Traceable Linearity Calibration to FS Range						
<b>Supplied Accessories:</b>	AC-D03548	2x #2-56 (3/4" length) Socket Head Cap Screw						
<b>Optional Accessories:</b>	121	3-Channel Precision Low Noise DC Amplifier						

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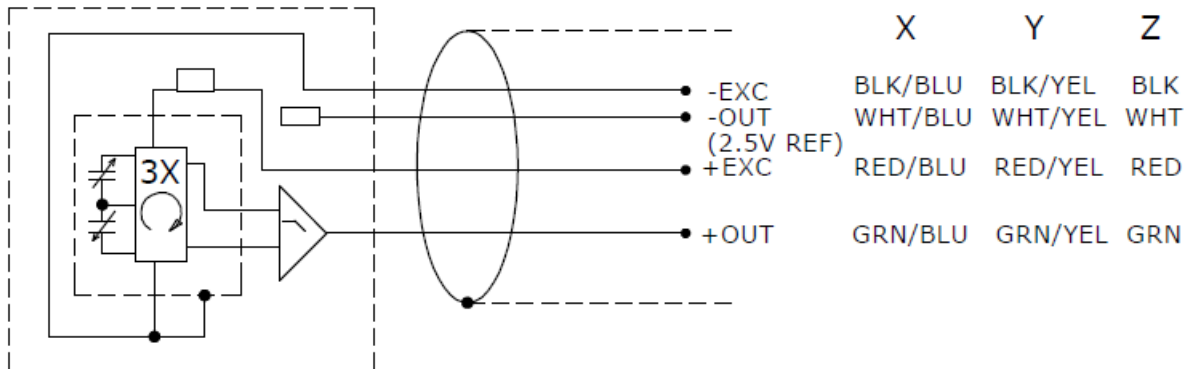
## DIMENSIONS



## SCHEMATIC

### RATE SENSOR HOUSING

### CABLE ASSEMBLY SHIELD



## ORDERING INFORMATION

<b>603</b>	<b>GGGG</b>	<b>ZZZ</b>	<b>XX</b>
<b>Range</b>			
100 = 100deg/sec			
500 = 500deg/sec			
1500 = 1500deg/sec			
6000 = 6000deg/sec			
12K = 12,000deg/sec			
18K = 18,000deg/sec			
24K = 24,000deg/sec			
<b>Cable length</b>			
120 = 120 inches, 10 feet			
240 = 240 inches, 20 feet			
360 = 360 inches, 30 feet			
197 = 197 inches, 5 meters			
276 = 276 inches, 7 meters			
Reserved for custom designs. Leave blank for standard options listed above.			

Example; 603-1500-360  
Model 603, 1500deg/sec range, 360inch (30ft) cable length

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