



## The New MaxGyro™ Angular Rate Sensor

### Description:

Watson Industries has been designing and making solid-state gyros since 1980. They now provide a new series of rate gyros, the MaxGyro™. This breakthrough new gyro is built, using a monolithic three-dimensional tuning fork resonator, to be a VSG replacement and much more. Based on proven technology, this gyro is built with new features including built-in test and enhanced EMI/RFI protection.

The MaxGyro™ has best-in-class performance for stability, acceleration insensitivity, low mounting sensitivity and excellent vibration rejection. This is achieved by having a much larger sensing element that is solidly mounted. The larger element allows better relative tolerances for tuning and better signal to noise performance. Solid mounting holds the gyro sensing element in a stable alignment. In contrast, all the competitive MEMS gyros use sensing elements that are supported by thin filaments as springs that are resonant at disturbingly low frequencies. These springs allow the sensing element to shift and resonate under shock and vibration, which affects their performance significantly.



### MaxGyro™ features:

- Accurate in severe environments
- Excellent performance (time, temperature, vibration)
- Rugged
- Wide bandwidth
- Low drift
- Low noise
- High reliability
- One-year warranty

### Applications:

- Aircraft flight instrumentation and control
- Platform stabilization (antenna, camera, etc.)
- Robotics
- Short-term navigation
- Vehicle test instrumentation
- Train tilt controls

### Watson Industries MaxGyro™ Models\*

<u>Model</u>	<u>Range</u>	<u>Output</u>	<u>Zero Ref (0°/sec)</u>	<u>Scale Factor</u>
MAX-122-1A	±50°/sec	±10 VDC	0.0 VDC	200mV/°/sec
MAX-132-1A	±100°/sec	±10 VDC	0.0 VDC	100mV/°/sec
MAX-142-1A	±200°/sec	±10 VDC	0.0 VDC	50mV/°/sec

\*Custom ranges are available



### Watson Industries

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## MaxGyro™ Specifications

### Angular Rate

Range:	±100°/sec (Typical)	See table on front page
Resolution:	0.006°/sec	
Analog Scale Factor:	100mV/°/sec (Typical)	See table on front page
Scale Factor Accuracy:	±1%	Constant temperature
Scale Factor Temp Coefficient:	±1%	Over temperature range
Bias: Room Temperature	±0.6°/sec	
Bias: Over Temp Range	±0.3°/sec	
Bias: Stability	< 20°/hr rms	Constant temp – 1 hr
Warmup Drift:	±0.2°/sec	30 min
Non-Linearity:	< 0.03%	Full scale range
Bandwidth:	> 70 Hz	
Noise:	< 0.03°/sec rms	0.1 Hz to 100 Hz

### Environmental

Temperature: Operating	-40°C to +85°C	
Temperature: Storage	-55°C to +85°C	
Noise Under Vibration: (0.1 to 100Hz)	< 0.1°/sec/g	12g rms (20 to 2kHz)
Vibration: Survival	12g rms	20Hz to 2kHz
Shock: Survival	300g (2ms ½ sine wave)	50g (11ms ½ sine wave)

### Electrical

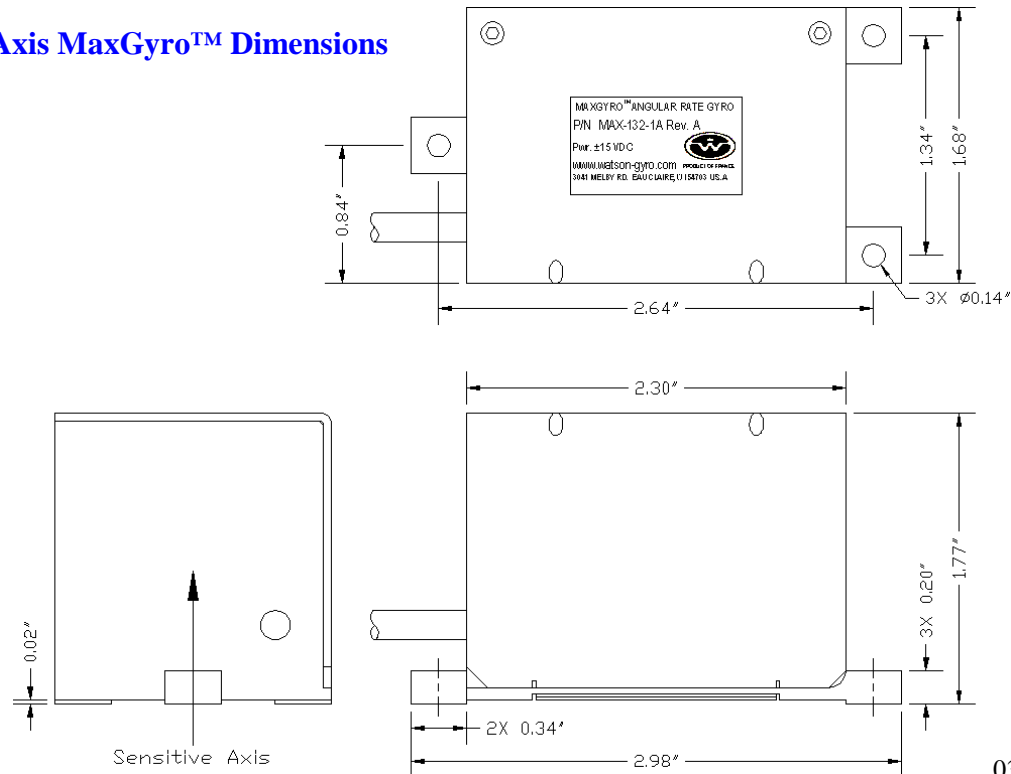
Startup Time:	< 1 sec	
Input Power: Positive	+15 VDC ±5%	1.0 W
Input Power: Negative	-15 VDC ±5%	0.5 W
Analog Output	±10VDC	

### Physical

Size: Including Mounting Flanges	1.68"W x 2.98"L x 1.77"H	43 x 76 x 45 (mm)
Weight:	8.1 oz (0.5 lb)	230g (0.23Kg)
Connection:	Wire bundle	

- Specifications are subject to change without notice.
- This product may be subject to export restrictions. Please consult the factory.

### Single Axis MaxGyro™ Dimensions



03/10 DAO



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