

# QRS28

Quartz MEMS Dual Axis Rate Sensor

emcore®



DATASHEET | DECEMBER 2023

*A New Era in Navigation*



## Applications

- Platform Stabilization
- Guidance and Control
- Autopilot Control
- Gun and Optical Line of Sight Stabilization
- Missile Seeker Head Stabilization
- Instrumentation
- Fast Slewing Low Noise Scanning Systems

## Key Performance Features

- Extremely Small Size
- Light Weight
- Fast Turn-On Time
- Low Noise
- Excellent Linearity
- Two Axes of Angular Rate
- Low Power Consumption
- High Reliability Long Life

## Ideal for High-Precision Applications

The QRS28 is a small, lightweight, two-axis MEMS rate sensor offering exceptional performance at a very attractive price. The sensor provides a simple DC-DC operation using two of EMCORE's quartz rate sensors.



The instrument is contained within a hermetically sealed, stainless steel cylinder measuring 1.05" [26.7 mm] x 0.71" [18.0 mm] diameter.

## Performance Highlights

Parameter	QRS28-00100-100	QRS28-00200-100	QRS28-00400-100
Standard Range Full Scale	100°/sec	200°/sec	400°/sec
Full-Scale Output (Nominal)	±3.50 V (Analog DC Voltage)		
Scale Factor	0.035 V/°/sec	0.0175 V/°/sec	0.00875 V/°/sec
Scale Factor Accuracy	±2% (factory set)		
Zero Rate Output (Bias)	<33 mV@25°C		
Bandwidth (-90° Phase Shift)	110 Hz ±10 Hz		



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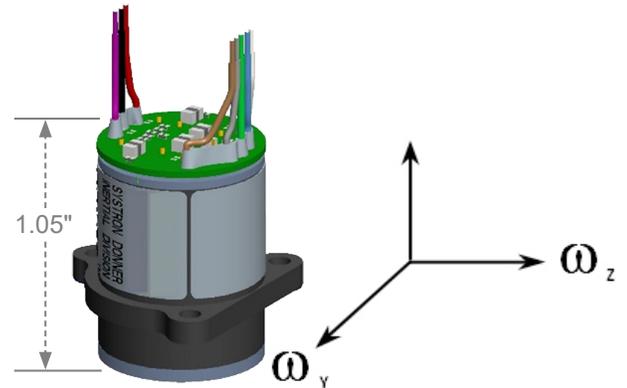
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## Performance Specifications

Parameter	QRS28-00100-100	QRS28-00200-100	QRS28-00400-100
<b>Power Requirements</b>			
Input Voltage (Dual Supply)	+ & - 4.75 to 5.35 Vdc		
Input Current	< 50 mA each supply		
<b>Performance</b>			
Standard Range Full Scale	100°/sec	200°/sec	400°/sec
Full-Scale Output (Nominal)	± 3.50 V (Analog DC Voltage)		
Over-Range Capability	> 110% of Full Scale		
Scale Factor	0.035 V/°/sec	0.0175 V/°/sec	0.00875 V/°/sec
Scale Factor Accuracy	± 2% (factory set)		
Zero Rate Output (Bias)	< 33 mV@25°C		
Linearity Error	< 0.05% of Full Range		
Turn On Time	<1.0 sec		
Random Noise (1-101 Hz)	< 0.005°/sec./√Hz.	< 0.005°/sec./√Hz	< 0.007°/sec./√Hz
Bandwidth (-90° Phase Shift)	110 Hz ±10 Hz		
Input Axis Alignment	<31 mrad, uncompensated**		
<b>Environmental</b>			
Operating Temperature	-55°C to +85°C		
Storage Temperature	-55°C to +105°C		
Shock	300 g's, ½ sine, 5 mSec		
G-Sensitivity	<0.02°/sec/g		
Weight	25 grams (0.88 oz)		

\*\* Reduced X-Axis alignment available – consult factory.

## Dimensions/Scale



EMCORE P/N 964485 Rev U1

## For More Information

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**MADE IN USA**

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