



## SiRRS02® MEMS RATE SENSOR

# IMPROVED BIAS AND NOISE MITIGATION

## Delivering high performance in the harshest conditions

SiRRS02 is a high-performance microelectromechanical system (MEMS) gyroscope. With the use of our silicon

vibrating structure (SiVSG® MEMS) angular rate sensor, SiRRS02 delivers improved bias and noise performance, significantly outperforming similar products on the market today.

Collins Aerospace has a long and respected heritage in the design and development of inertial sensors and today specializes in MEMS products.

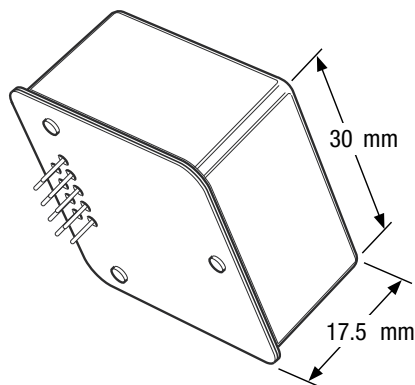


## COMPANY PEDIGREE

- Selected by over 60 customers worldwide – over 130,000 MEMS products delivered
- Used in missile and weapons navigation, platform stabilization and navigation
- Rigorous performance and simulated aging ensures conformance to specification throughout the life cycle



SiRRS02®

**PRODUCT FEATURES**

- Excellent shock and vibration performance
- Improved performance in the critical parameters of bias and noise
- Range available from 50 deg/sec to 300 deg/sec

**INCREASED FUNCTIONALITY AVAILABLE****Bias performance after thermal compensation**

- Temperature 16.9mV/°C output provided for compensation (Pin 5)

**General**

- Built-in test (BIT) Commanded, alarm

**PARAMETERS****Power requirements**

Input voltage	+5V, -5V
Input current	42mA

**Performance (typical)**

Input ranges	±50°/s	(RRS02-55)
	±110°/s	(RRS02-51)
	±200°/s	(RRS02-59)
	±300°/s	(RRS02-53)

**Output full scale**

Scale factor (nominal)	±2V	
	40mV/°/s	(RRS02-55)
	18.18mV/°/s	(RRS02-51)
	10mV/°/s	(RRS02-59)
	6.67mV/°/s	(RRS02-53)

**Scale factor calibration (at 20° C)**

Scale factor calibration (at 20° C)	1%
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Scale factor variation over temp	≤3%
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Linearity	1%
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Bias calibration (at 20° C)	±0.3°/s
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Bias variation over temp	≤1.5°/s
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G sensitivity	7°/h/g
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Start-up time	300ms
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Output noise (in band)	0.1°/s rms	(RRS02-55)
	0.12°/s rms	(RRS02-51)
	0.15°/s rms	(RRS02-59)
	0.2°/s rms	(RRS02-53)

Bandwidth (90° phase lag)	50 Hz	(RRS02-09)
	60 Hz	

**Pin connections**

		9	Case ground
-5V	4	8	Rate reference
Commanded BIT	3	7	Rate output
Alarm BIT	2	6	0V
+5V	1	5	Temperature

**Environmental**

Operating temperature	-40° C to 85° C
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Operation vibration	10g rms
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Shock	1000g 1ms
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Weight	Mass <35gm
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Size (mm)	30 mm x 30 mm x 17.5 mm
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Specifications subject to change without notice.

**COLLINS AEROSPACE**

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