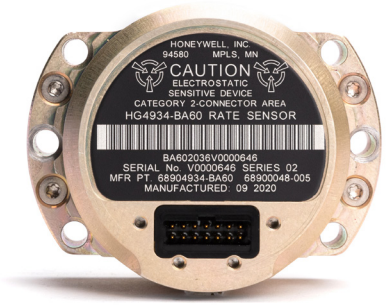
HG4934SRS
3-AXIS RATE SENSOR

Honeywell Rate Sensor for Small Sats: MEMS-Based 3-Axis Rate Sensor

Honeywell has adapted our highly successful angular rate sensor technology for the small satellite market.



The demands of this market are low cost, size, weight and power. Using our heritage designs and adapting them to the specific Space market needs, Honeywell has created a market-leading rate sensor with a volume less than 82cm³, that weighs less than 145g, and nominally only requires 3 Watts of power. In-run bias stability is better than 1 deg/hr (1σ).

The HG4934SRS follows a strict part selection and management plan that ensures the HG4934SRS achieves guaranteed TID and SEE radiation performance. The qualified design incorporates additional features that make it suited for use in Space such as sensor technology insensitive to helium exposure, mitigation of floating metal, and SEFI/SEU mitigation features.

PARAMETER	UNIT	CAPABILITY
Sample Rate	Hz	600 Hz
Dynamic Range	deg/s	+/-200deg/s to > +/-115deg/s
Max Gyro Bias (including repeatability)	deg/hr, 3σ	<225
Scale Factor	ppm, 3σ	<3000
Bias In-Run Stability (Over Temperature, >0.75 °C/min)	deg/hr, 3σ	<3.0
Angular Random Walk (ARW)	deg/rt-hr, 3σ	<0.2
Peak System Power - nominal	Watts	<5.5 W peak, <3 W nominal
Mass	g	<145 g
Envelope, H x D	cm	3.6 by 6.5
Configuration	-	single string 3-axis
On Orbit Mission Life	Years	>6
Storage	Years	>10
Parts Level	-	Tactical and Space Rated
Operating Temp Range	°C	-41 to +71°C
Power Bus	V	5 V +/-10%
Interface	-	Async UART (SDLC Option)

KEY HONEYWELL ADVANTAGES

- Small, low-cost space rate sensor based on proven tactical grade IMUs delivered for Military applications
  - Over 500,000 IMU systems delivered
- Space Rated Rate Sensor
  - RadHard controller and electronics
  - Mix of tactical and space qualified parts
- Manufactured and tested at Honeywell – Minneapolis, MN
  - High-rate production facility
  - 50,000 IMUs per year
  - Experience in high-volume production for space
- Qualified for a six year LEO mission with five years of ground integration on the satellite
- Design qualified in 2020
- Flight units have been delivered to multiple customers

THE FUTURE IS WHAT WE MAKE IT

Honeywell Aerospace
1944 East Sky Harbor Circle
Phoenix, AZ 85034
aerospace.honeywell.com

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