



# **HG4930** **MEMS INERTIAL** **MEASUREMENT UNIT**

**Honeywell**

# HG4930 MEMS INERTIAL MEASUREMENT UNIT

## KEY HONEYWELL ADVANTAGES

- World-class inertial sensor development, calibration and compensation.
- Proven reliability, dependability and ruggedness, throughout unit life.
- RS-422 Asynchronous or SDLC standard protocols.
- Highest performing MEMS IMU of its size and price.
- Smaller, lower-power and cost-effective replacement for a FOG.



Proven - Dependable - Accurate

The HG4930 is a micro-electro-mechanical system (MEMS) based inertial measurement unit (IMU) designed to meet the needs of a range of applications across various markets including agriculture, AUVs, industrial equipment, robotics, survey/mapping, stabilized platforms, transportation, UAVs, and UGVs. With an industry standard communication interface, the HG4930 is easily integrated into the variety of architectures that these applications present. The extremely small size, light weight, and low power make the HG4930 ideal for most applications.

The HG4930 includes MEMS gyroscopes and accelerometers. In addition, the HG4930 employs an internal environmental isolation system to attenuate unwanted inputs commonly encountered in real world applications. The internal isolation and other proprietary design features ensure the HG4930 is rugged enough to meet the needs of the most demanding users.

Three different performance grades of the HG4930 are available as off-the-shelf items. Honeywell screens and calibrates all of the MEMS inertial sensors utilized in the HG4930 IMU.

The HG4930 is not ITAR controlled. Its Export Control Classification Number (ECCN) is 7A994.

### HG4930 IMU TYPICAL KEY CHARACTERISTICS

|                                  |  |
|----------------------------------|--|
| Volume/Size                      | 82 cm <sup>3</sup> (5in <sup>3</sup> ), 65 x 51 x 35.5 mm                                    |
| Weight                           | 140 grams (0.3 lbs)  |
| Gyroscope Operating Range        | -400°/s to +400°/s <sup>3</sup>  |
| Accelerometer Operating Range    | -20 g to +20g  |
| Supply Voltage                   | +5 VDC +/- 5%  |
| Power Consumption                | < 2 Watts  |
| Operating Temperature Range      | -54°C to +85°C   |
| Data Type                        | Fully-Compensated Incremental/Delta Outputs are Ready for Integration into Position/Attitude |
| Gyro Bandwidth, -90°/-3 dB (Hz)  | 70/180   |
| Accel Bandwidth, -90°/-3 dB (Hz) | 70/180   |
| Data Rates (Hz)                  | 600 Hz / 100 Hz  |
| Baud Rate                        | 1 MBit   |

### HG4930 IMU TYPICAL PERFORMANCE OVER FULL OPERATING TEMPERATURE RANGE

| Marketing <sup>1</sup> Part Number    | Gyro Bias Repeatability (°/hr 1σ) | Gyro Bias In-run Stability <sup>2</sup> (°/hr 1σ) | Gyro ARW (°/√hr) | Accel Bias Repeatability (mg 1σ) | Accel Bias In-run Stability (mg 1σ) | VRW (m/s/√hr) |
|---------------------------------------|-----------------------------------|---|------------------|----------------------------------|-------------------------------------|---------------|
| HG4930CA51<br>HG4930CB50 <sup>4</sup> | 7                                 | 0.25  | 0.04             | 1.7                              | 0.025                               | 0.03          |
| HG4930BA51                            | 10                                | 0.35  | 0.05             | 2.0                              | 0.050                               | 0.04          |
| HG4930AA51                            | 20                                | 0.45  | 0.06             | 3.0                              | 0.075                               | 0.06          |

<sup>1</sup> When ordering direct from Honeywell, use part numbers 68904930-CA51, 68904930-BA51, 68904930-AA51 and 68904930-CB50.

<sup>2</sup> Gyro bias stability is >0.5 °/hr when measured over a constant operating period of one month.

<sup>3</sup> Full performance to +/- 325%/s.

<sup>4</sup> SDLC protocol. All others are asynchronous protocol.

## For More Information

[aerospace.honeywell.com/HGGuide](http://aerospace.honeywell.com/HGGuide)

## Honeywell Aerospace

2600 Ridgeway Parkway  
Minneapolis MN 55413

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FUTURE  
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