

HGUIDE HG4930 MEMS IMU

The HGuide HG4930 is a proven low-SWaP, tactical-grade MEMS IMU that requires no export license and is fully calibrated across a wide temperature range.



AIR

- UAV Navigation
- 3D Mapping
- Loitering Munitions

LAND

- UGV Navigation
- 3D Mapping
- Sensor Stabilisation

SEA

- Marine Navigation
- Hydrography

HONEYWELL INERTIAL ADVANTAGE

Honeywell Aerospace is a global leader in high performance inertial measurement units (IMUs), delivering precise navigation, stabilization, and control across a wide range of applications.

Our extensive portfolio of inertial sensors and navigators serves diverse sectors within the aerospace, defense, and industrial markets.

Whether MEMS, FOG, or RLG-based, Honeywell IMUs offer exceptional accuracy and reliability— even in the most demanding environments.

Our globally recognized IMU manufacturing capabilities are backed by ISO 9001:2015 and AS9100D certifications, with over 1 million tactical-grade IMUs delivered to date.

THE HGUIDE HG4930 ADVANTAGE

- Best-in-Class MEMS IMU with unmatched performance for its size and price point
- Proven reliability and ruggedness - engineered for dependable operation throughout the unit's lifecycle
- Low SWaP, Cost-Effective Tactical-Grade IMU
- No Export License Required. ECCN = 7A994
- World-Class inertial sensor development - includes advanced calibration and compensation capabilities
- Available in three performance grades with SDL or asynchronous variants
- NovAtel SPAN-Compatible versions includes synchronization support

| GENERAL | |
|---|-----------------------------|
| Gyro Operating Range (°/sec) ¹ | 400 |
| Accelerometer Operating Range (G) | 20 |
| Output Data Rate (inertial data) (Hz) | 600 /100, Standard |
| Update rate (roll & pitch) | N/A |
| Start-up time to full performance | 15 seconds, standard |
| Output Data Protocol | ASYNCR or SDLC |
| Calibration | Over Full Temperature Range |
| Bandwidth, -90°/-3 dB (Hz) | 70/180 |

| MECHANICAL | |
|------------------------------|------------------------|
| Size (mm) | 65 x 51 x 35.5 |
| Weight (g) | 140 |
| Seal (IP Rating) | Semi-Hermetic |
| Materials/Construction | Machined Aluminium |
| External Connector | Samtec MTMM-107 Series |
| Recommended Mating connector | Samtec CLT Series |

¹ Full performance to ± 375 °/s in X and 325 °/s in Y & Z planes

| GYRO PERFORMANCE | Performance (Factory Fresh) | | | Performance (Full Life - 10 years) | | |
|---|-----------------------------|-----------|-----------|------------------------------------|-----------|-----------|
| | HG4930 AA | HG4930 BA | HG4930 CA | HG4930 AA | HG4930 BA | HG4930 CA |
| Gyro Bias In-Run Stability (RMS) (°/hr 1σ) ² | 0.45 | 0.35 | 0.25 | 2.0 | 1.5 | 1.0 |
| Gyro Bias Repeatability (turn-on to turn-on, RMS) (°/hr 1σ) | 20 | 10 | 7 | 60 | 40 | 20 |
| Gyro Noise – ARW (°/√hr) | 0.06 | 0.05 | 0.04 | 0.175 | 0.125 | 0.09 |
| Gyro Scale Factor Repeatability (ppm, 1σ) | 300 | 200 | 100 | 1000 | 800 | 600 |
| Gyro Scale Factor Static G-Sensitivity (ppm/g, 1σ) | 2 | 1 | 0.5 | 50 | 50 | 50 |
| Gyro Scale Factory Linearity Error (ppm 1σ) | 250 | 200 | 100 | 500 | 500 | 500 |
| Gyro Axis Misalignment (μrad 1σ) | 375 | 375 | 375 | 750 | 750 | 500 |
| Vibration Rectification Error (°/hr) | 10 | 8 | 5 | 40 | 30 | 30 |

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

| ACCEL PERFORMANCE | Performance (Factory Fresh) | | | Performance (Full Life - 10 years) | | |
|---|-----------------------------|-----------|-----------|------------------------------------|-----------|-----------|
| | HG4930 AA | HG4930 BA | HG4930 CA | HG4930 AA | HG4930 BA | HG4930 CA |
| Accel Bias In-Run Stability (RMS) (mg 1σ) | 0.075 | 0.050 | 0.025 | 0.075 | 0.05 | 0.025 |
| Accel Bias Repeatability (turnon to turn-on, RMS) (mg 1σ) | 3.0 | 2.0 | 1.7 | 10.0 | 10.0 | 5.0 |
| Accel Noise – VRW (m/s/√hr) | 0.06 | 0.04 | 0.03 | 0.12 | 0.09 | 0.09 |
| Accel Scale Factor Accuracy (ppm 1σ) | 120 | 90 | 70 | 1000 | 800 | 600 |
| Accel Scale Factory Nonlinearity (ppm 1σ) | 200 | 150 | 100 | 200 | 150 | 100 |
| Accel Axis Misalignment (μrad 1σ) | 375 | 375 | 375 | 750 | 750 | 750 |
| Vibration Rectification Error (mg) | 5 | 3 | 2 | 25 | 20 | 15 |

ELECTRICAL

| | |
|--|---|
| Input Supply Voltage (nominal & min/max) | +5 VDC +/- 5% |
| Power Consumption (Watts, typical & max) | < 3 Watts |
| Data Interfaces | 5V CMOS UART, RS-422 |
| ESD Compliance (rating & list of tests) | ISO 10605:2008/Amd 1:2014 Contact Discharge ± 4 kV, ± 6 kV, ± 8 kV Air Discharge ± 8 kV, ± 15 kV, ± 25 kV |
| EMC Compliance (list of tests) | DS/EN 13309, ISO 13766, EN ISO 14982 |

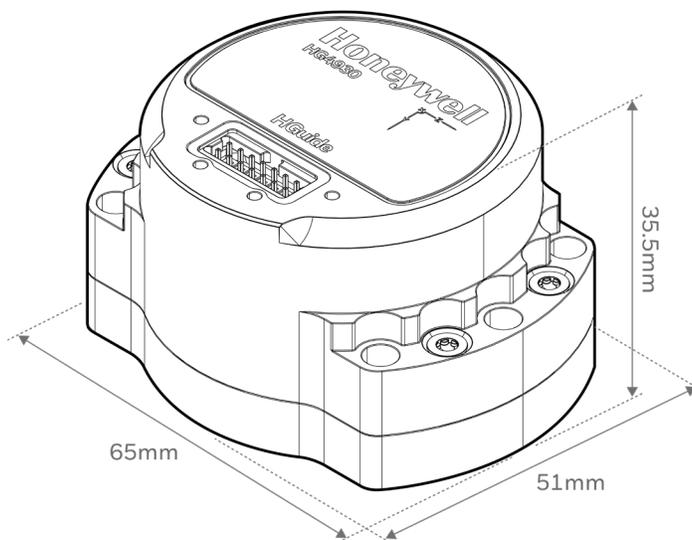
ENVIRONMENTAL

| | |
|----------------------------------|--|
| Mechanical Shock profiles tested | 10g half-sine, 3 msec standard |
| Vibration profiles tested | 3.9 gRMS 10-2000Hz random vibration standard |
| Operating Temperature | -54°C to +85°C |
| Storage Temperature | -55°C to +95°C |
| Humidity | Tested in combined environments up to 95% RH |
| MTBF | 102,000 hrs @ 25°C (GM) 59,000 hours @ 71°C (AUF) |
| Lifetime – operational | 1,500 hrs minimum (without recalibration) |
| Lifetime – storage | 10 years minimum |

CONNECTIONS

| PIN | LEGEND | DESCRIPTION |
|-----|---|---|
| 1 | DGND | Digital Power and Signal Return |
| 2 | +5VDC | +5 VDC Power |
| 3 | Reserved | User No Connect |
| 4 | Reserved | User No Connect |
| 5 | Reserved | User No Connect |
| 6 | RESET | IMU Reset Input Discrete, Active High (CMOS compatible) |
| 7 | Reserved | User No Connect |
| 8 | Reserved | User No Connect |
| 9 | SER_DATA_OUT_H Novatel: ICD_DATA_OUT_H | Serial Data High Output (RS-422) |
| 10 | SER_DATA_OUT_L Novatel: ICD_DATA_OUT_L | Serial Data High Output (RS-422) |
| 11 | DATA_SYNC_OUT_H | Data Sync High Output (RS-422) |
| 12 | DATA_SYNC_OUT_L | Data Sync Low Output (RS-422) |
| 13 | Reserved | User No Connect |
| 14 | Reserved | User No Connect |

Standard units - for more details see manual or contact Honeywell.





HOW TO BUY

For high volume OEM customers, we recommend purchasing directly from Honeywell via our online portal.

For small-volume orders or for customers who need faster delivery and local support, please contact one of our authorized channel partners listed here.

HG4930 ORDERING AND ACCESSORIES

| PRODUCT | ORDERING PART NUMBER | DESCRIPTION |
|-------------|----------------------|--|
| HG4930 AA51 | 68904930-AA51 | Standard A-Grade HG4930 IMU with ASYNC output, 600/100Hz |
| HG4930 BA51 | 68904930-BA51 | Standard B-Grade HG4930 IMU with ASYNC output, 600/100Hz |
| HG4930 CA51 | 68904930-CA51 | Standard C-Grade HG4930 IMU with ASYNC output, 600/100Hz |
| HG4930 AB50 | 68904930-AB50 | Standard A-Grade HG4930 IMU with SDLC output, 600/100Hz |
| HG4930 CB50 | 68904930-CB50 | Standard C-Grade HG4930 IMU with SDLC output, 600/100Hz |
| HG4930 AN01 | 68904930-AN01 | A-Grade HG4930 IMU compatible with NovAtel SPAN, 100Hz |
| HG4930 CN01 | 68904930-CN01 | C-Grade HG4930 IMU, 100Hz |
| HG4930 AN04 | 68904930-AN04 | A-Grade HG4930 IMU compatible with NovAtel SPAN, 400Hz |
| HG4930 CN04 | 68904930-CN04 | C-Grade HG4930 IMU, 400Hz |
| Eval Board | 68010308-001 | Evaluation board for HG4930 IMU |
| Eval Kit | 68009732-001 | Evaluation kit for HG4930 IMU |

Additional variants being available upon request

Tech. and Sales Support

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For more information

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The HGuide HG4930 is designed and built at a Honeywell facility in the USA.

It has an ECCN of 7A994 and is generally available without an export license.

This document does not contain EAR controlled technology or ITAR controlled technical data.

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