



## **HG1120 MEMS Inertial Measurement Unit**

Aerospace performance. Industrial prices.

Possibilities of Navigation. *Made Easy.*

# HG1120 MEMS Inertial Measurement Unit



Proven - Dependable - Accurate

The HG1120 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 industry standard communication interfaces and a wide input voltage range the HG1120 is easily integrated into the variety of architectures that these applications present. The extremely small size, light weight, and low power make the HG1120 ideal for most applications.

The HG1120 includes MEMS gyroscopes, accelerometers, and magnetometers. In addition, the HG1120 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 HG1120 is rugged enough to meet the needs of the most demanding users.

Three different performance grades of the HG1120 are available as off-the-shelf items. The HG1120 offers configurable features, such as output data rate and control signal filtering, to simplify system integration. Honeywell screens and calibrates all of the MEMS inertial sensors utilized in the HG1120 IMU. The HG1120 is not ITAR controlled. Its Export Control Classification Number (ECCN) is 7A994.

## Find Out More

Visit us at: [aerospace.honeywell.com/IMU4U](http://aerospace.honeywell.com/IMU4U)

## Honeywell Aerospace

2600 Ridgeway Parkway  
 Minneapolis MN 55413  
[aerospace.honeywell.com](http://aerospace.honeywell.com)

## Key Honeywell Advantages

- World class inertial sensor development, calibration, and compensation.
- Proven reliability, dependability, and ruggedness, through unit life.
- RS-422 Asynchronous, CAN2A / CAN2B, and SPI Interface Protocols.
- Suitable applications include autonomous vehicles, precision agriculture, surveying, platform control, and motion compensation.
- Units feature a range of user configurable options with selectable output data rates and filtering.
- Precision Delta Velocity/Angle outputs enable direct yaw, pitch, and roll integration.

HG1120 IMU TYPICAL KEY CHARACTERISTICS	
Gyroscope Operating Range	-500°/sec to +500°/sec
Accelerometer Operating Range	-16g to +16g
Magnetometer Operating Range	-16 gauss to +16 gauss
Supply Voltage	+3.0 to +5.5 VDC
Power Consumption	< 0.4 Watts
Operating Temperature Range	-40°C to 85°C
Volume / Size	29 cm <sup>3</sup> (1.7in <sup>3</sup> ), 4.70 cm x 4.39 cm x 1.41 cm
Weight	54 grams (0.12 lbs) Typical
Selectable Data Rates	Incremental/Control Data Rates of 100 Hz/600 Hz or 300 Hz/1800 Hz
Baud Rate	1MBit CAN/RS422, 2-9 MBit SPI
Dual Navigation/Control Serial Outputs	Fully Compensated Incremental/Delta Outputs are Ready for Integration into Position/Attitude Control Message Optimizes Latency & Bandwidth Without Sacrificing Accuracy

HG1120 IMU STANDARD MODELS TYPICAL PERFORMANCE - STABLE ROOM TEMPERATURE						
Distributor Ordering Part Number <sup>1</sup>	Gyro Bias Repeatability (°/hr, 1σ)	Gyro Bias In-Run Stability (°/hr, 1σ)	ARW (°/√hr)	Accel Bias Repeatability (mg, 1σ)	Accel Bias In-run Stability (mg, 1σ)	VRW (m/s/√hr)
HG1120CA50	260	10	0.3	5	0.03	0.04
HG1120BA50	520	24	0.4	10	0.05	0.06
HG1120AA50	780	48	0.5	15	0.08	0.10

HG1120 IMU TYPICAL PERFORMANCE OVER FULL TEMPERATURE RANGE						
Distributor Ordering Part Number <sup>1</sup>	Gyro Bias Repeatability (°/hr, 1σ)	Gyro Bias In-run Stability (°/hr, 1σ)	ARW (°/√hr)	Accel Bias Repeatability (mg, 1σ)	Accel Bias In-run Stability (mg, 1σ)	VRW (m/s/√hr)
HG1120CA50	500	38	0.6	8	0.11	0.06
HG1120BA50	720	65	0.7	16	0.15	0.09
HG1120AA50	1080	120	1.3	24	0.20	0.15

<sup>1</sup> Honeywell internal part numbers are 68901120-CA50, 68901120-BA50, 68901120-AA50