

HG1900 Inertial Measurement Unit

Honeywell



**High performance
17 cubic inch MEMS IMU**

HG1900 Inertial Measurement Unit



Proven - Dependable - Accurate

The HG1900 is an Inertial Measurement Unit (IMU) designed to meet the needs of a range of applications including flight control and navigation of UAVs, missiles, munitions and projectiles. These platforms require high performance under the most demanding environmental conditions. The small size, light weight, and low power make the HG1900 ideal for tactical guidance applications.

The HG1900 includes Micro-Electro-Mechanical Systems (MEMS) gyros and quartz resonating beam accelerometers. In addition, the HG1900 employs an internal environmental isolation system to attenuate unwanted inputs commonly encountered in real world applications.

Three different performance grades of the HG1900 are available as off-the-shelf items. The HG1900 offers many configurable features, such as data rate output and flight control filtering, to simplify system integration. Honeywell designs, develops and manufactures all of the inertial sensors utilized in the HG1900 IMU. The HG1900 has been successfully deployed by the U.S. DoD and international militaries on a wide range of weaponry, UAV, and platform stabilization applications as well as in commercial applications.

Key Honeywell Advantages

- All inertial sensors utilized in our tactical IMUs are designed, developed and manufactured by Honeywell.
- Proven performance in a wide range of military and commercial applications.
- Industry standard RS-422 serial interface is offered on all IMUs.
- Units feature a wide range of factory configurable interface protocols, including a Synchronous Data Link Control (SDLC) option, an asynchronous serial option, a gated clock option and a custom serial option.
- Solid-state electronics improve dependability and reliability throughout unit operational life.

HG1900 IMU Key Characteristics

Volume	17 in ³ (285 cm ³)
Weight	<1.1 lb (0.50 kg)
Power Consumption	<3 Watts
Operating Temperature Range	-54°C to +85°C (Varies by configuration)
Data Rate	100 Hz (Guidance) and 600 Hz (Control) – other rates available
Built-In-Test Coverage	>83%
Gyro Operating Range	+/- 1,000 deg/sec
Accelerometer Operating Range	+/- 30g
Supply Voltages	+/-15V and +5V

A universal interface box and flex tape connector are available to meet your unique computer or hardware-in-the-loop interface requirements

Find out more

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HG1900 IMU Standard Models and Performance

Device	Gyro Bias Repeatability ¹ (°/hr 1σ)	Gyro Bias In-run Stability ² (°/hr 1σ)	ARW ³ (°/√hr max)	Accel Bias Repeatability ¹ (mg 1σ)	Accel Bias In-Run Stability ² (mg 1σ)	VRW ³ (fps/√hr max)
HG1900CA50	<10	1.0	0.06	1	0.3	0.065
HG1900BA50	15	1.5	0.09	1	0.3	0.065
HG1900AA50	30	1.5	0.175	2	0.3	0.065

Notes:

- 1) Bias repeatability measurements calculated as the Root Mean Square (RMS) of combined bias thermal model + residuals from dynamic tumble test
- 2) Bias in-run stability measurements based on Allan Variance Bias Instability (BI) coefficient
- 3) Angular Random Walk (ARW) and Velocity Random Walk (VRW) measurements based on Allan Variance Random Walk (RW) coefficient