

HG5700 **INERTIAL** **MEASUREMENT** **UNIT**

Honeywell

HG5700 INERTIAL MEASUREMENT UNIT

KEY HONEYWELL ADVANTAGES

- All inertial sensors utilized in our tactical IMUs are designed, developed, and manufactured by Honeywell
- RLG design is based on the highly successful navigation grade GG1320 technology
- Industry standard RS-422 serial interface
- Units feature a wide range of factory configurable interface protocols including Synchronous Data Link Control (SDLC), Asynchronous serial (UART), and Gated Clock
- Drop-in replacement for the HG1700 IMU for enhanced performance



High-Performance Gyrocompassing Grade IMU

The HG5700 IMU is an enhanced performance version of the HG1700 IMU in a similar form factor. It also serves as a drop-in replacement for its precursor, the HG1700, which has been successfully deployed on a wide range of weaponry, UAVs, stabilized platform, surface mapping, ground survey, and oceanographic survey, showing unsurpassed performance and reliability.

The HG5700 IMU contains three Ring Laser Gyroscopes (RLG) and three quartz Vibrating Beam Accelerometers (VBA) with excellent stability characteristics environmentally sealed in a rugged aluminum housing. The HG5700 IMU offers gyrocompassing performance grade at a low price, size, and weight, while employing an external environmental ring isolator to filter unwanted sensor inputs commonly encountered in real-world applications. The HG5700 consumes less power than competing fiber optic gyro-based systems. External heat sinks and cooling are not required by the HG5700, facilitating greater flexibility in systems design and integration.

Three different performance grades of the HG5700 are available off-the-shelf. The HG5700 offers many configurable features, such as data rate output and flight control filtering to simplify system integration.

The HG5700s Export Control Classification Number (ECCN) is 7A003.d.1.

HG5700 IMU TYPICAL KEY CHARACTERISTICS

Volume	46 in ³
Height	4 in (10.16 cm)
Weight	<3lbs (1.36 kg)
Power Consumption	7 Watts typical (<10 Watts max)
Operating Temperature Range	-54°C to +85°C
Data Rate	100 Hz (Guidance) and 600 Hz (Control) — Other data rates available
Built-In-Test-Coverage	>90%
Gyro Operating Range	± 1074 deg/sec
Accelerometer Operating Range	± 37 g
Supply Voltages	+15V, +5V

HG5700 IMU PERFORMANCE OVER FULL OPERATING TEMPERATURE RANGE

Part Number ¹	Gyro Bias Repeatability (°/HR 1σ)	Gyro Bias Stability (°/HR 1σ)	Gyro ARW (°/√HR)	Accel Bias Repeatability (μg 1σ)	Accel Bias Stability (μg 1σ)	Accel VRW (FPS/√HR)
HG5700CA01 ²	0.035	0.01	0.006	200	35	0.065
HG5700BA01	0.070	0.02	0.012	300	50	0.065
HG5700AA01	0.140	0.04	0.025	300	50	0.065

¹ When ordering direct from Honeywell, use part numbers 68905700-AA01, 68905700-BA01, 68905700-CA01

² Future Offering

For More Information

Please visit us at: aerospace.honeywell.com/imu

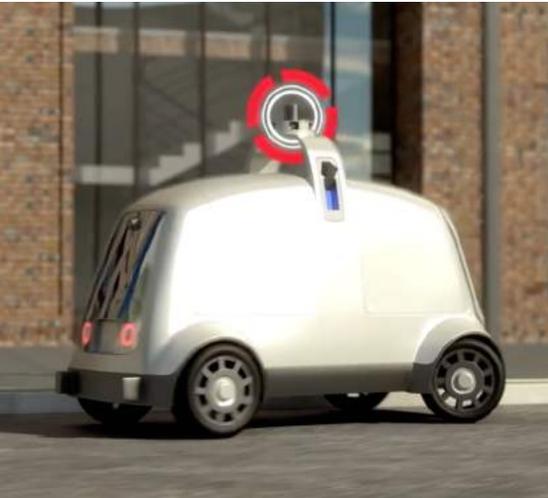
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HGUIDE i200 **MEMS INERTIAL** **MEASUREMENT UNIT**

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HGUIDE i200 MEMS INERTIAL MEASUREMENT UNIT



Proven - Dependable - Accurate

The HGuide i200 is a high-performance micro-electro-mechanical system (MEMS) based inertial measurement unit (IMU) designed to meet the needs 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 HGuide i200 is easily integrated into a variety of architectures. The extremely small size, light weight, and low power make the HGuide i200 ideal for many applications.

The HGuide i200 includes MEMS gyroscopes and accelerometers. In addition, the HGuide i200 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 HGuide i200 is rugged enough to meet the needs of the most demanding users.

The HGuide i200 is both hardware and software compatible with the HG4930 IMU.

The HGuide i200 is not ITAR controlled. Its Export Control Classification Number (ECCN) is 7A994.

KEY HONEYWELL ADVANTAGES

- World-class inertial sensor development, calibration and compensation.
- Units feature a range of user configurable options with selectable output data rates and filtering.
- Multiple, configurable communication protocols.
- Proven reliability, dependability and ruggedness, through unit life.

HGUIDE i200 IMU TYPICAL KEY CHARACTERISTICS	
Volume/ Size	17 cm ³ (1 in ³)/ 42 x 28 x 14 mm
Weight	35 grams
Power Consumption	0.5 Watts
Operating Temperature Range	-40°C to +85°C
Data Rate	300 Hz nominal (User configurable)
Gyro Operating Range	+/- 490 deg/s in all axes
Accelerometer Operating Range	±1.6g in all axes
Supply Voltages	+5.0 to +36 VDC
Bandwidth	200Hz at 90° phase, 400Hz at -3dB (Output frequency dependent)
Vibration	Random : 20-2000Hz MIL-STD-810G 2.2 grams Sinusoidal : 10-2000Hz 2g Peak Non-operating : 7.7G RMS
Shock	40g, 11ms per MIL-STD-810G 25g bump half-sine per IEC 60068-2-27
Communication Protocols	RS-422, 5V TTL, CAN
Asynchronous Baud Rate	Configurable: 921.6 Kbs default
Discrete Signals	Data ready output

HGUIDE i200 IMU TYPICAL PERFORMANCE – ROOM TEMPERATURE						
Marketing Part Number ¹	Gyro Bias Repeatability (%/hr 1σ)	Gyro Bias In-run Stability (%/hr 1σ)	ARW (%/√hr)	Accel Bias Repeatability (mg 1σ)	AccelBias In-run Stability (mg 1σ)	VRW (m/s/√hr)
i200CA50	260	10	0.3	5	0.03	0.04

¹ When ordering direct from Honeywell, use part number 68910200-CA50.

For More Information

aerospace.honeywell.com/HGuide

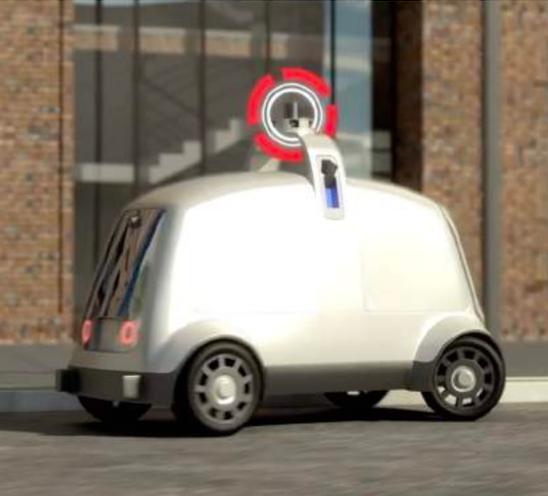
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HGUIDE i300 **MEMS INERTIAL** **MEASUREMENT UNIT**

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HGUIDE i300 MEMS INERTIAL MEASUREMENT UNIT



Proven - Dependable - Accurate

The HGuide i300 is a high-performance micro-electro-mechanical system (MEMS) based inertial measurement unit (IMU) designed to meet the needs 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 HGuide i300 is easily integrated into a variety of architectures. The extremely small size, light weight, and low power make the HGuide i300 ideal for many applications.

The HGuide i300 includes MEMS gyroscopes and accelerometers. In addition, the HGuide i300 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 HGuide i300 is rugged enough to meet the needs of the most demanding users.

The HGuide i300 is both hardware and software compatible with the HG4930 IMU. It is also software-compatible with the HG1120 IMU.

The HGuide i300 is not ITAR controlled. Its Export Control Classification Number (ECCN) is 7A994.

KEY HONEYWELL ADVANTAGES

- World-class inertial sensor development, calibration and compensation.
- Units feature a range of user configurable options with selectable output data rates and filtering.
- Multiple, configurable communication protocols.
- Proven reliability, dependability and ruggedness, through unit life.

HGUIDE i300 IMU TYPICAL KEY CHARACTERISTICS	
Volume/ Size	17 cm ³ (1 in ³)/ 42 x 28 x 14 mm
Weight	35 grams
Power Consumption	0.5 Watts
Operating Temperature Range	-40°C to +85°C
Data Rate	300 Hz nominal (User configurable)
Gyro Operating Range	+/- 490 deg/s in all axes
Accelerometer Operating Range	±1.6g in all axes
Supply Voltages	+5.0 to +36 VDC
Bandwidth	200Hz at 90° phase, 400Hz at -3dB (Output frequency dependent)
Vibration	Random : 20-2000Hz MIL-STD-810G 2.2 grams Sinusoidal : 10-2000Hz 2g Peak Non-operating : 7.7G RMS
Shock	40g, 11ms per MIL-STD-810G 25g bump half-sine per IEC 60068-2-27
Communication Protocols	RS-422, 5V TTL, CAN
Asynchronous Baud Rate	Configurable: 921.6 Kbs default
Discrete Signals	Data ready output

HGUIDE i300 IMU TYPICAL PERFORMANCE – ROOM TEMPERATURE						
Marketing Part Number ¹	Gyro Bias Repeatability (%/hr 1σ)	Gyro Bias In-run Stability (%/hr 1σ)	ARW (%/√hr)	Accel Bias Repeatability (mg 1σ)	AccelBias In-run Stability (mg 1σ)	VRW (m/s/√hr)
i300BA50	65	3	0.15	1.0	0.02	0.02
i300AA50	90	5	0.25	2.0	0.03	0.03

¹ When ordering direct from Honeywell, use part numbers 68910300-BA50 and 68910300-AA50.

For More Information

aerospace.honeywell.com/HGuide

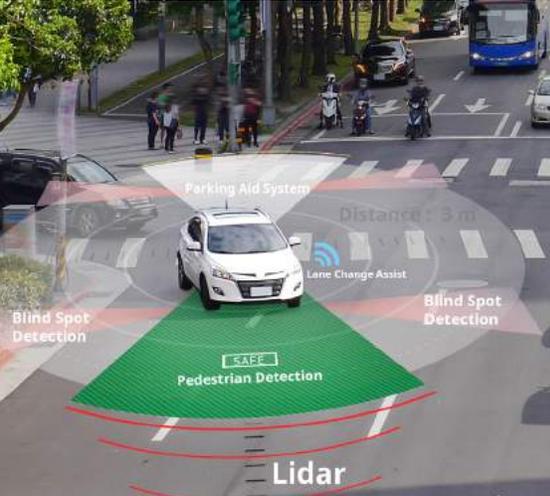
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HG4930 MEMS INERTIAL MEASUREMENT UNIT

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HG4930 MEMS INERTIAL MEASUREMENT UNIT



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.

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.

HG4930 IMU TYPICAL KEY CHARACTERISTICS

Volume/Size	82 cm ³ (5in ³), 65 x 51 x 35.5 mm
Weight	140 grams (0.3 lbs)
Gyroscope Operating Range	-400°/s to +400°/s ³
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 ¹ Part Number	Gyro Bias Repeatability (°/hr 1σ)	Gyro Bias In-run Stability ² (°/hr 1σ)	Gyro ARW (°/√hr)	Accel Bias Repeatability (mg 1σ)	Accel Bias In-run Stability (mg 1σ)	VRW (m/s/√hr)
HG4930CA51 HG4930CB50 ⁴	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

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

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

³ Full performance to +/- 325°/s.

⁴ SDLC protocol. All others are asynchronous protocol.

For More Information

aerospace.honeywell.com/HGGuide

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HG4930 S-CLASS **MEMS INERTIAL** **MEASUREMENT UNIT**

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HG4930 S-CLASS MEMS INERTIAL MEASUREMENT UNIT

KEY HONEYWELL ADVANTAGES

- S-Class models provide the high bandwidth and high data rates needed for precision stabilization applications.
- World-class inertial sensor development, calibration and compensation.
- Proven reliability, dependability and ruggedness, through unit life.
- RS-422 Asynchronous standard protocol.
- Highest performing MEMS IMU of its size and price.
- Smaller, lower power and cost effective replacement for a FOG.



Proven - Dependable - Accurate

The HG4930 S-Class stabilization variant is a micro-electro-mechanical system (MEMS) based inertial measurement unit (IMU) designed to meet the needs of platform stabilization applications. It optimizes latency and bandwidth without sacrificing accuracy. Typical applications include optical sensor (e.g., camera) and antenna stabilization. With an industry standard communication interface, it is easily integrated into the variety of architectures that these applications present. The extremely small size, light weight, and low power make it ideal for most applications.

The HG4930 S-Class includes MEMS gyroscopes and accelerometers. In addition, the HG4930 S-Class 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 S-Class is rugged enough to meet the needs of the most demanding users.

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

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

S-CLASS MODEL - HG4930 IMU TYPICAL KEY CHARACTERISTICS

Volume/Size	82 cm ³ (5in ³), 65 x 51 x 35.5 mm
Weight	140 grams (0.3 lbs)
Gyroscope Operating Range	-400°/s to +400°/s ³
Accelerometer Operating Range	-20 g to +20g
Supply Voltage	+5 VDC +/- 5%
Power Consumption	< 3 Watts
Operating Temperature Range	-54°C to +85°C
Gyro Bandwidth, -90°/-3 dB (Hz)	175/470
Accel Bandwidth, -90°/-3 dB (Hz)	125/225
Data Rate (Hz)	3600
Baud Rate	4 MBit

S-CLASS MODEL - HG4930 TYPICAL PERFORMANCE OVER FULL OPERATING TEMPERATURE RANGE

Marketing Part Number ¹	Gyro Bias Repeatability (°/hr 1σ)	Gyro Bias In-run Stability ² (°/hr 1σ)	ARW (°/√hr)	Accel Bias Repeatability (mg 1σ)	Accel Bias In-run Stability (mg 1σ)	VRW (m/s/√hr)
HG4930CS36	7	0.25	0.04	1.7	0.025	0.03
HG4930BS36	10	0.35	0.05	2.0	0.050	0.04
HG4930AS36	20	0.45	0.06	3.0	0.075	0.06

¹ When ordering direct from Honeywell, use part numbers 68904930-AS36, 68904930-BS36, 68904930-CS36.

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

³ Full performance to +/- 325°/s

For More Information

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