



**A COMPLETE SUITE OF PRECISION
SENSORS AND COMPONENTS**

**Value-added solutions for specialized
sensor and electronics applications**

Honeywell Precision Sensors is a supplier to growing markets for personal navigation, compassing, air data and engine control, test and measurement, energy exploration, and process control. Honeywell's precision sensor products provide sustainable value through the integration of sensors, microelectronics and firmware.

Honeywell is an experienced precision sensor manufacturer with ISO9001 and ISO14001 supplier certifications and in-house manufacturing. These products are developed and manufactured utilizing Six Sigma methodologies to produce robust products. We build all Honeywell products with our Total Quality Management (TQM) commitment, which means we do more than just supply products for your needs — we understand customer needs and aim to exceed expectations. Plus, all our products are backed by Honeywell, recognized as a global leader in sensor manufacturing, technology and quality.



Accelerometers

Honeywell accelerometers are the recognized industry leader for aerospace inertial navigation, guidance and control, measurement while drilling, and industrial motion control and vibration monitoring applications.

Honeywell's inertial sensors portfolio of products includes:

- **Navigation:** offering the highest inertial navigation-grade performance sensors
- **Control:** offering cost-effective inertial-grade sensors
- **Measurement:** offering economical sensor for moderate performance
- **Energy:** performs in demanding down-hole applications (MWD).

Honeywell's Q-Flex® Accelerometers feature a patented Q-Flex etched-quartz-flexure seismic system. An amorphous quartz proof-mass structure provides excellent bias, scale factor, and axis alignment stability. These accelerometers are designed and built to tolerate demanding measurement-while-drilling (MWD) and wireline environments while providing precision accuracy. Years of downhole experience and an extensive test regime ensure that our sensors exhibit superior reliability. Some features include analog output, an environmentally rugged and compact design, a built-in test, and field-adjustable range.

Honeywell's Accelerex® resonating beam accelerometer (RBA) measures acceleration as a function of the frequency difference between two sets of vibrating quartz beams. Output is thermally compensated, and delta velocity is directly provided to the user's system. The RBA500 is primarily used to supplement GPS navigation systems and is a good choice where frequency output, high-g, small size, low power, and light weight are necessary. Other features include an integral two-fastener mounting flange, hermetically sealed case, internal temperature sensor for thermal consumption and frequency output for direct interface to digital electronics.



Thermal Switches

Honeywell thermal switches are a basic bimetallic snap acting device used to open or close circuits in demanding aerospace and industrial applications. Honeywell thermal sensors are offered in a wide range of configurations to fit a variety of applications.

Applications may include:

- Space
- Commercial aviation
- Military
- Transportation
- Commercial/Industrial applications

Honeywell sensors provide quality, precision and durability. These sensors are fully tested, hermetically sealed with an all-welded stainless steel construction, and are both NASA S-311-641 and Mil-PRF-24236 qualified. Though small and lightweight – weighing less than 1 pound (450 grams) each – Honeywell thermal sensors are quite rugged.

For the past 60 years Honeywell continues to deliver the high level of quality, reliability and overall excellence that our customers have come to expect.

DPA, RGA are available upon request.



Magnetic Sensors, Compassing, Magnetometry and Dead Reckoning

Honeywell's magnetic sensors are among the most sensitive and reliable low-field sensors in the industry. Our magnetic sensors are designed to accurately detect the direction and magnitude of external magnetic fields for compassing and magnetometry applications. From discrete sensors for low-cost, high-volume applications, to high-performance solid-state compasses, magnetometers and dead reckoning solutions, Honeywell magnetic sensor products operate on nearly any platform.

Honeywell's magnetic sensors, designed with Anisotropic Magneto-resistive (AMR) technology, provide significant advantages over traditional sensors. They are extremely sensitive, low-field, solid-state magnetic sensors designed to measure direction and magnitude of Earth's magnetic fields, from 27 microgauss to six gauss (0.6 milli-Tesla). Our magneto-resistive sensors are sensitive enough to determine the change in magnetic fields due to the presence of nearby ferromagnetic objects. With a bandwidth up to five MHz, our sensors detect vehicles and other ferrous objects, even at high speeds.

Honeywell combines the time-tested reliability of our technology with new and innovative solid-state magnetic sensors and dead reckoning solutions. Our sensors are ruggedly designed to function optimally in a wide variety of environments and products. Honeywell offers a full line of magnetic sensor components, modules and solutions.



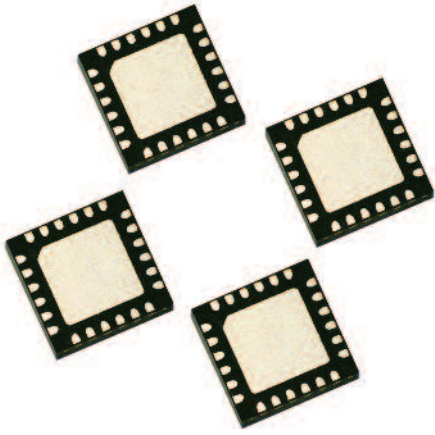
Pressure Sensors and Pressure Transducers

Honeywell high precision pressure sensors and pressure transducers offer outstanding features and benefits for a variety of applications including aircraft instruments, engine controls, flight test and test stands, barometric pressure instrumentation and altimeters.

Honeywell's precision pressure transducers and barometers are among the most accurate and stable sensor-based pressure products. The ability to provide exceptionally accurate pressure readings over a wide temperature range, coupled with many advanced features and a compact rugged design, makes Honeywell's precision pressure transducers among the highest value, versatile solutions available.

Our LG1237, PPT, PPTR, IPT, HPB and HPA product set combined pressure sensors with microcontrollers to achieve less than 0.10% full scale accuracy over temperature with the ability for digital communication using standard protocols.

Honeywell has more than 40 years of experience designing and fabricating Micro-Electro-Mechanical Systems (MEMS) piezoresistive pressure sensors and precision pressure transducers. Honeywell's pressure sensors provide dynamic pressure measurement and barometric readings for high-performance meteorological and aerospace measurement applications such as manned and unmanned vehicles, ocean data buoys, remote meteorological stations, airborne measurements and weather balloons.



Find out more

For more information on Honeywell's Precision Sensors contact us at:

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For the GG1320 contact by phone at

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Honeywell also offers Radiation Hardened Microelectronics and High Temperature Electronics. For more information about Microelectronics and Precision Sensors visit us online at www.honeywell.com/ssec.

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RF Microwave Attenuators and Switches

Honeywell offers high-performance radio frequency (RF) electronic circuit designs, innovative products and reliable solutions required in the fast-paced communications industry. Honeywell is leveraging its long-standing history, advanced wafer foundry relationships and leadership position in Silicon On Insulator (SOI) CMOS technology to bring you a family of CMOS-based high-performance products for wireless and broadband communications applications.

Differentiating features of the Honeywell Attenuators include low insertion loss, fast settling time after switching states, and accurate attenuation of radio frequency (RF) signal amplitude with serial or parallel digital control. They offer the unique combination benefits of low DC power consumption found in CMOS with the attenuation accuracy and GHz frequency range of a GaAs product. We offer attenuators in both serial and parallel architectures in small, space-saving 4x4 mm QFN packages.

Differentiating features of the Honeywell Switches include low insertion loss, high channel-to-channel isolation and fast switching time. Honeywell Switches meet the needs of both 50 ohm and 75 ohm systems used in wireless and cable television applications. In addition to providing low-power consumption in an ultra small package, our family of switches offers integrated CMOS control logic with built-in ESD protection. Attributes of Honeywell switches ideally suit a wide range of wireless applications, including cellular, Personal Communications Service (PCS), Global System for Communications (GSM) base stations and 2.4 GHz Wireless Local Area Networks (WLAN).

Honeywell reserves the right to make changes to improve reliability, function or design. Honeywell does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights nor the rights of others.

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GG1320 Digital Laser Gyro

The Honeywell GG1320 digital laser gyro is an affordable inertial sensor with the electronics and ring laser gyro packaged into an easy-to-use compact unit. With its digital I/O, the gyro can be integrated into almost any system and used in a variety of commercial, transportation and military applications around the globe.

Each gyro benefits from advanced technology that Honeywell has developed and utilized over the last 40 years. The result is a reliable sensor for all types of inertial sensing.

Performance highlights include start-up time 1 second typical, Bias Stability less than 0.04 degree/hour (non-military), and Angular Random Walk less than 0.04 degree/root-hour (non-military). The GG1320 Gyro measures 1.77 inches (45 mm) high and is 3.45 inches (87.6 mm) in diameter and weighs 1 lb. (450 grams). Its temperature range in an operating mode is -65°F to +185°F (-18.3°C to 85°C) with an operating altitude of up to +70,000 ft. (21 km).

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