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QRS11 Micromachined Angular Rate Sensor

The QRS11 is a MEMS technology, solid-state "gyro on a chip." This DC input/high-level DC output device is fully self contained, extremely small and lightweight. Since the inertial sensing element is comprised of just one micromachined piece of crystalline quartz (no moving parts), it has a virtually "unlimited" life. The Model QRS11 is a mature product in volume production. It is fully qualified for use on numerous advanced aircraft, missile, and space systems.

SDG1000 Micromachined Angular Rate Sensor

The SDG1000 is a "solid-state" gyro that is small in size, light in weight, and completely enclosed in a rugged aluminum housing. The SDG1000 provides commercial users with a high-performance single-axis angular rate sensor with a low unit price. Because the unit is completely self-contained, the high-level DC output voltage of $\pm 5.0\text{Vdc}$ requires only a DC voltage input of plus and minus 10 to 16 Vdc. Internal temperature sensors may be used to further increase performance by modeling key performance parameters.



SDG500 Micromachined Angular Rate Sensor



The mid-priced SDG500 is a "solid state" single-axis angular rotation rate gyro that provides exceptional performance over similar sensors in its class. Its inertial sensing element is comprised of just one micromachined piece of crystalline quartz (no moving parts), with virtually "unlimited" life. This DC input/high-level DC output analog device is a self-contained unit, and completely enclosed in an easily-mountable, small form factor aluminum case housing. Internal temperature sensor performance is brought out to further improve temperature modeling and performance.

QRS14(GyroChip® II) Micromachined Angular Rate Sensor

The QRS14(GyroChip® II) is a compact, rugged, solid-state inertial sensor used to measure angular rotation rates. It features a monolithic quartz sensing element. Two versions are available. The +12 Vdc version features a high-level 0 to +5 Vdc output, integral POWER-SAVE (+12 Vdc version) mode, and operation from standard battery power. The $\pm 15\text{Vdc}$ version provides a high-level bipolar output of $\pm 5\text{Vdc}$, and is designed for use with conventional double-sided power supplies.



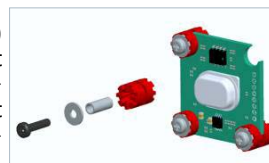
HORIZON Micromachined Angular Rate Sensor



The Horizon is a low cost, high reliability, solid-state angular rotation sensor designed for use by original equipment manufacturers (OEM). It features a monolithic quartz sensing element and a simple interface which provides a high level 0 to +5 Vdc output signal. Designed to operate from a +12 Vdc power supply, it also provides a +2.5 Vdc reference to allow for differential monitoring of the output.

LCG50 Low Cost Gyro

The LCG50 (Low Cost Gyro 50) offers a MEMS (Micro Electro Mechanical System) single axis angular rate sensor on a small pc board. The sensor is a complete unit and requires only a DC voltage input to measure angular rate. The LCG50 is ideally suited for embedded applications, where mounting versatility is required, unit price is low, environmental robustness is essential, and the performance characteristics must match that of much more expensive instrument grade rate sensors.



QDARS MEMS QUARTZ DUAL AXIS RATE SENSOR



Quartz Dual Axis Rate Sensor (QDARS) incorporates solid-state quartz MEMS inertial rate sensors. It is especially suited for missile seeker gimbal stabilization where extremely small in size, low cost and low power consumption is required. The QDARS is also suitable for high volume commercial applications requiring wide bandwidth capabilities, repeatable bias performance over temperature, and extreme ruggedness in a very small form factor.

QDARS employs two patented GyroChips rate sensors, which consist of a dual-ended quartz tuning fork. The QDARS offers outstanding performance, has no wear out modes, and is adaptable to a wide variety of applications for stabilization and control. At a typical weight OF 20 grams, the unit is lightweight.

MMQ50 MINIATURE MEMS QUARTZ

The Miniature MEMS Quartz IMU (MMQ50) incorporates solid-state quartz micromachined inertial rate sensors and silicon MEMS accelerometers. The MMQ is especially suited for embedded applications where extremely small size, low cost, and low power consumption are required. The MMQ50 IMU offers substantial performance for a very attractive price. It features a full six Degrees-of-Freedom sensing capability in an extremely compact size of less than 9 cubic inches. It uses three of SDI's patented GyroChip rate sensors which consist of a dual-ended quartz tuning fork. The MMQ50 uses high performance, low cost silicon MEMS accelerometers.



Honeywell Pressure Sensors and Transducers



PRECISION PRESSURE TRANSDUCER RANGE

Applications in avionic instruments, engine and flight test measurements, flow and pressure calibrators. Key features and benefits include:

- +/- 0.05% FSO typical accuracy including temperature effects, from -40 to +85C simplifies system design
- RS232 or RS485 compatible digital and 0-5VDC analogue outputs for efficient data acquisition
- User-selectable features enable application-specific customization
- Provides independent pressure and sensor temperature outputs

INTEGRATED PRESSURE TRANSDUCER (IPT) (NEW!)

Honeywell's Integrated Pressure Transducer (IPT) provides high accuracy pressure data in an industry standard SPI digital format. The core of the IPT is a proven Honeywell silicon piezoresistive pressure sensor with both pressure and temperature sensitive elements. The IPT is small and lightweight and can be easily integrated into a wide variety of applications that require high performance in a small package. Applying the coefficients stored in the on-board EEPROM to the normalized IPT pressure and temperature output yields highly accurate and stable pressure readings over the -40 to 85°C compensated temperature range.



PRECISION PRESSURE TRANSDUCER RUGGEDIZED SUBMERSIBLE (NEW!)

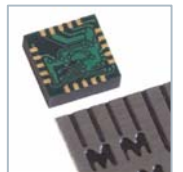
Honeywell's submersible PPTR transducer is a rugged, smart pressure transducer for use in the harsh environment of liquid measurements. It combines proven silicon sensor technology with microprocessor-based signal conditioning to provide an extremely smart pressure transducer. The PPTR submersible utilizes an integral SEA CON® electrical connector. The transducer is designed with an environmentally

sealed, stainless steel construction that can operate in severe environments. The PPTR has many software features that support a wide range of applications.

Honeywell Magnetic Sensors

SURFACE MOUNT MULTI-CHIP MODULE (NEW!)

The Honeywell HMC5843 is a surface mount multi-chip module designed for low field magnetic sensing with a digital interface for applications such as low cost compassing and magnetometry. The HMC5843 includes the state of the art 1043 series magneto-resistive sensors plus Honeywell developed ASIC containing amplification, strap drivers, offset cancellation, 12-bit ADC and an I2C serial bus interface. The HMC5843 is in a 4.0 by 4.0 by 1.3mm surface mount leadless chip carrier (LCC). Applications for the HMC5843 include Consumer Electronics, Auto Navigation Systems, Personal Navigation Devices, and Magnetometers.



SINGLE CHIP, LOW COST, 3 AXIS DIGITAL COMPASS MODULE

The HMC 6343 is a 3 axis digital compass module housed in a 9 x 9 x 1.9mm LCC surface package. A complete digital solution with heading / tilt outputs, hard iron calibration and a serial output interface, this innovative device combines 3 axes of magnetoresistive sensors and 3 axes of MEMS accelerometers with the required analogue and digital support circuits and includes the algorithms for heading computation.

Featuring low voltage operations (2.7 to 3.6V) it is available in tape and reel packaging, making it ideal for fast OEM assembly. The HMC 6343 is compatible with battery powered applications and complies with RoHS environmental standards. This versatile product is ideal for integration into mobiles, wireless phones, consumer electronics, vehicle compassing and antenna positioning.

DEMO/EVALUATION BOARDS FOR MAGNETIC CHIP MODULES (NEW!)

Honeywell has recently added a new line of evaluation and demonstration boards to the magnetic sensor family. These new products allow engineers to evaluate the products in a pin-out configuration as well as provide necessary application information such as product schematics.

THREE AXIS ELECTRONIC COMPASS

The HMR 3400 this innovative device is a three axis tilt compensated electronic compass with low power consumption. Incorporating Honeywell's magnetoresistive sensor technology coupled with a MEMS accelerometer to give a compact reliable tilt compensated compass, which provides compass headings as well as pitch and roll angle.

Included are provisions for hard and soft iron correction algorithms to handle magnetic distortion effects. The HMR 3400 has less than 1° nominal heading accuracy with 0.1 degree resolution with an update rate of up to 8Hz, with +/-60 degree pitch and roll. The operating temperature is -40 to 85° C and requires only 5V DC. The compass comes with a UART serial data interface and the industry standard Honeywell compass instruction set.



Honeywell Motion Sensors



700 SERIES THERMAL SWITCHES (NEW!)

The product line continues to evolve with the addition of many new standard configurations. The breadth of offerings allows a user to select any number of off-the-shelf designs. All welded stainless steel construction · 1000 cycles of run-in while monitoring contact resistance, 50 milliohms max · Residual gas analysis and Group B testing · Able to withstand high vibration and shock levels · Crisp, snap-action contact operation · Meets or exceeds requirements of MIL-PRF-24236.

Honeywell Motion Sensors (cont.)



GYRO-BASED INERTIAL MEASUREMENT UNIT
The Honeywell HG1900 is a Micro Electromechanical Systems (MEMS) gyro-based inertial measurement unit suitable for various commercial and military guidance and navigation applications. Small, robust, low-power and affordable, the HG1900 has a performance range consistent with tactical missile and smart munition requirements. The HG1900 is currently in service on a number of Laser Guided Munitions such as the Raytheon Paveway™ dual mode bomb.

FORCE REBALANCE ACCELEROMETER FOR INDUSTRIAL APPLICATIONS

The QA-650 is a force rebalance servo accelerometer designed for industrial applications incorporating the established Q-Flex etched quartz proof flexure seismic system.

Integral electronics develop an output current proportional to acceleration providing both static and dynamic acceleration measurements up to 30g.

The operating temperature is -55 to 96 degrees C with shock resistance exceeding 100g and vibration of 25g peak sine @ 5-500 Hz. Weighing only 65 grams maximum with a diameter of 26.54mm and a height of 15.67mm, it is ideal where space and weight are at a premium. Operating supply is +/-12 to +/-18 VDC.



DEAD RECKONING MODULE (DRM4000)

The DRM4000 is a miniature, electronic device for personnel on foot that provides the user's position relative to an initialization point. Dead Reckoning (DR) data and external GPS NMEA data are blended by an internal Kalman filter. Commercially available gyros are included to compensate for transient magnetic disturbances. A barometric altimeter provides vertical position accurate enough to discriminate between floors of a building (1.5 meter accuracy). High fidelity azimuth data from the magnetic compass is also available for use by the host system. The DRM™4000 unit can be directly interfaced to many GPS receivers.

NEW Honeywell High Temperature Semiconductor

The Honeywell HTOP01 is the first of a new generation of high temperature semiconductors. It is a precision low power op amp, offering very low input offset voltage and drift over an operating temperature range of -55° C to 225°C. Using autozeroing techniques input offset voltage is continuously sampled and compensated, providing near perfect offset voltage compensation over temperature and time.



NEW Computer Conversions products



SYNCHRO / RESOLVER OUTPUT CARDS

The Computer Conversions PC104-DS Series are Low Cost, Dual Channel, PC104 Compliant Synchro / Resolver Output Cards designed to simulate precision AC synchro and resolver formatted signals for use in Navigation and positioning systems or test sets on both industrial and COTS - military type applications.

All models provide 16 Bits resolution (0.0055°), and model selectable accuracy grades from +/-4 arc. minutes to +/-30 arc seconds.

NEW Silicon Designs products

TRIAxIAL ACCELEROMETER

The Silicon Designs Model 2460 triaxial accelerometer is a three axis version of the popular 2260 single axis device. It combines three orthogonally mounted, low noise, model 1221L accelerometers in a rugged case for measuring accelerations in commercial/industrial environments. This module is tailored for zero to medium frequency instrumentation applications. Its anodized aluminum case is epoxy sealed and is easily mounted via two #8 (or M4) screws. On-board voltage regulation and an internal voltage reference eliminate the need for precision power supplies. It is relatively insensitive to temperature changes and gradients. An optional initial calibration sheet (2460-CAL) and periodic calibration checking are also available. Full scale ranges from 2g to 400g are standard.



Applied Geomechanics products



DIGITAL CLINOMETERS WITH INTEGRAL DATA LOGGING

The internal sensor is a liquid filled electrolytic transducer with no moving parts. The five models in this range have a choice of single or dual axis, an angular range of +/-3 to +/-50 degrees with best resolution of 0.0001 degrees with a linearity of 0.1% of full span. An on board facility is included which allows data logging via non volatile memory and comes with graphic software display software. It is able to store up to 319 readings with a powerful command set to collect, process and store data or transmit to an external host. RS232 models have the option of a tilt switch output to operate alarms, programmable controllers etc.

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The logo consists of the lowercase letters 'a' and 'b' in a bold, serif font, positioned side-by-side within a thin black rectangular border.