

Sensordynamics: New robust 2d and 3d angular rate sensors for industrial, medical and high end consumer goods applications

Medical Design Technology

SensorDynamics, a producer of single-axis and multi-axis inertial and wireless sensors for the automotive and manufacturing industries, today announced the launch of its new SD742 and SD740 micromechanical gyroscopes. The SD742 adds an XY angular rate and the SD740 an XYZ angular rate device to the firm's line of 6x6x1.8 mm³ QFN40-packaged sensors. In addition to having two or three analog outputs, it comes with I²C and SPI digital interfaces, along with a wide measurement range of up to $\pm 4096^\circ/\text{s}$. These features make for a high degree of flexibility with respect to its applications. Also the SD742 and SD740 are temperature-compensated and factory calibrated to minimize offset error and temperature drift.

Sensor features

The SD742 and SD740 are designed for an operating voltage of 2.6 through 3.3 V and an operating temperature range of -40 through +85°C. Their maximum offset error is 10°/s at room temperature and 5°/s over the entire operating temperature range, while their sensitivity error at room temperature and temperature drift of sensitivity is maximal 5%, respectively. Those parameters can be improved by a factor of 2 upon special customer request. The two digital interfaces provide a full scale standard measurement range of $\pm 1024^\circ/\text{s}$, which can be customized up to $\pm 4096^\circ/\text{s}$.

The internal updating of measured values is provided at a high rate of at least 10 kHz. The ratio metric analog outputs can be configured for ± 64 , ± 128 , ± 256 or $\pm 512^\circ/\text{s}$ measurement ranges. The SD742 and SD740 devices also feature a special power-off mode in which no power is consumed, but the SPI interface remains high-impedance so that the sensor need not be removed from the bus.

For more technical data, please refer to the attached short-form data sheet [2D angular rate sensor](#); and [3D angular rate sensor](#), or visit www.sensordynamics.cc.

Applications

Its low power consumption of approx. 5 mA and small package outline of only 6x6x1.8 mm³ makes the SD742/SD740 suitable for battery-powered applications such as controlling artificial limbs in medicine. For instance it can also be utilized for sophisticated instrumentation and control purposes in the industry, such as robot control and navigation.

The sensors feature a continuously operating self-test that monitors the functional capability of the two or three dimensional angular rate sensor element without interrupting measurements.

Availability and price

The 2D gyroscope SD742 is available now and the 3D gyroscope SD740 will be available in December. Samples and evaluation boards can be ordered from www.sensordynamics.cc. If you wish to receive a competitive quote for series production, please contact your local SensorDynamics representative.

SensorDynamics - Leading in micro and wireless sensor products

SensorDynamics is a semi-fabless semiconductor company that focuses on innovative sensor solutions for high volume applications in automotive, industry and high-end consumer sectors.

SensorDynamics develops and supplies fail-safe micro and wireless semiconductor products for automotive, industry and high-end consumer key accounts and is certified under ISO/TS 16949. The company acts as a general contractor with in-house MEMS production and cooperates closely with leading international technology partners. With its headquarters in Lebring near Graz, Austria, SensorDynamics has subsidiaries in Italy and Germany and a world-wide sales network.

For more information on SensorDynamics and its products, please go to www.sensordynamics.cc.

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