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 ±4096°/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 ±1024°/s., which can be customized up to ±4096°/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 ±512°/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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PRESS CONTACT:
SensorDynamics
Jürgen Tittel
Tel: +49 (0) 89 54842220
E-Mail: jti@sensordynamics.cc

Text100 GmbH
Stefanie Weiß
Tel: +49 (0) 89 99837025
E-Mail: christiane.puia@text100.de

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[1] http://www.i-micronews.com/lectureArticle.asp?id=5761
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