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## Industry's First High-Temperature MEMS Gyroscope Improves Productivity of Oil and Gas Drilling Equipment

*Specified to 175-degree Celsius operation, the  $\pm 2,000^\circ/\text{sec}$  ADXRS645 MEMS gyroscope replaces magnetometers in down-hole drilling applications as a reliable method of rotational measurement*

NORWOOD, Mass.--(BUSINESS WIRE)-- [Analog Devices, Inc.](#) (NASDAQ: ADI) today introduced the first and only [MEMS gyroscope](#) specified to withstand temperatures of up to 175 degrees Celsius commonly encountered by oil and gas drilling equipment.

The ADXRS645 MEMS (micro-electromechanical) gyroscope provides excellent vibration immunity and a minimum rotational measurement range of  $\pm 2,000^\circ/\text{sec}$ , which are critical performance criteria for drilling tools operating in harsh, high-temperature environments. The ability to accurately sense angular rotation prevents drill string damage by detecting the difference between drill head rotation and the motor turning the drill. The ADXRS645 allows rig operators in the oil and gas industries to extend the life of their equipment and reduce costly downtime by ensuring that the drill string is operating properly.

The ADXRS645 joins ADI's portfolio of [precision high-temperature components](#) designed for drilling applications, including the ADXL206  $\pm 5g$  precision MEMS accelerometer, the AD8229 ultra-low-noise instrumentation amplifier, the ADR225 2.5-V band gap voltage reference and the AD8634 dual amplifier with rail-to-rail outputs, all of which are specified to operate at 175 degrees Celsius and higher.

- Download [ADXRS645](#) data sheet, view product page and order samples:
- Learn more about [ADI's high-temperature portfolio](#)
- For more on ADI's MEMS gyroscopes visit: [www.analog.com/gyroscopes](http://www.analog.com/gyroscopes)
- Connect with engineers and experts on [EngineerZone™](#) an online technical support community:

The down-hole drilling industry is adopting a multitude of sensors to better understand the motion of the drill string below the surface to better optimize operations, prevent drill damage, and increase productivity. Other approaches to rotational measurement, such as the use of magnetometers, are susceptible to drill vibration, are unable to precisely capture fast-changing rotational speeds and their readings can be impacted by ferrous material or metal casings used in the well.

### More About the ADXRS645 MEMS Gyroscope

The ADXRS645 features low, 5-V single-supply operation and is the only MEMS gyroscope to operate at up to 175 degrees Celsius for a minimum of 1,000 hours of operation. Its unique ceramic vertical-mount package allows the device to be robustly mounted to the PCB and eliminates the need for an orthogonally-mounted daughtercard.

### Pricing and Availability

| Product                  | Production Availability | Operating Temperature Range | Price Each Per 1,000 | Packaging                                                    |
|--------------------------|-------------------------|-----------------------------|----------------------|--------------------------------------------------------------|
| <a href="#">ADXRS645</a> | Now                     | -40° C to +175° C           | \$975.00             | 8-mm x 9-mm x 3-mm ceramic, side-braze, through-hole package |

### About Analog Devices

Innovation, performance, and excellence are the cultural pillars on which Analog Devices has built one of the longest standing, highest growth companies within the technology sector. Acknowledged industry-wide as the world leader in data conversion and signal conditioning technology, Analog Devices serves over 60,000 customers, representing virtually all types of electronic equipment. Analog Devices is headquartered in Norwood, Massachusetts, with design and manufacturing facilities throughout the world. Analog Devices is included in the S&P 500 Index.

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