

## News Release

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### Fiber Optic Position Sensor Offers 13-bit Resolution, EMI Immunity, Intrinsic Safety and Modbus RTU Interface

*New absolute encoder outperforms resolvers and encoders in harsh and hazardous environments*

MICRONOR introduces the world's first commercially-available high resolution [Absolute Fiber Optic Position Sensor](#). The new [Model MR330](#) series position sensor offers an all-optical design which makes it immune to any electromagnetic interference such as lightning, radiation, magnetic fields and other extreme conditions. It is also suited for long distance position sensing over hundreds of meters without being affected by ground loop problems.



This innovative product measures absolute angular position from 0° to 360° with 13-bit (8192-count) resolution at speeds exceeding 2500 rpm. Multiple turns can be tracked to 12-bits (4096-revolutions).

"The uniqueness of the system is that the sensor is entirely passive, meaning that there are no electronic components whatsoever in the unit," says Robert Rickenbach, Chief Engineer for Micronor. "The result is that the sensor can be directly deployed in extreme environments where conventional electronic-based encoders have distinct limitations."

The new sensor uses a [new novel optical technique](#) embedded in a [passive sensor](#) and [active controller](#) connected by a duplex fiber optic link. The controller transmits a burst of light to the code disk in the sensor which modulates the spectral components of the light based on angular position. The position information is imprinted in the optical spectrum of the light and guided back to the controller for precise position readout.

The MR330's accuracy and EMI immunity make it ideal for applications that require precise motion control and position measurement in challenging environments: oil rigs, satellite antennas, solar panel arrays, actuator systems, transportation systems, steel mills and medical instrumentation. This "simple apparatus" meets [ATEX](#) requirements for use in mines and other explosive atmospheres. The sensor's immunity to lightning makes it especially suited for outdoor applications such as [wind turbines](#) and antennas.

A complete system consists of the [MR332 Passive Sensor](#) and [MR330-1 SSI Controller](#) interconnected with industry-standard duplex 62.5/125 multimode optical cabling. The controller module is powered by 24 VDC and multiple built-in interfaces and protocols ensure compatibility with most any motion system. Interfaces include SSI, RS422/RS485, Modbus RTU, USB, two programmable analog outputs plus three digital set points.

#### About Micronor

Since 1968, Micronor has been a leading global supplier of automation and motion control products for industrial, military, aerospace, medical and other challenging environments. Products include fiber optic sensors, encoders, resolvers, rotary limit switches and custom-engineered feedback units. Micronor has facilities in [California-USA](#) and [Switzerland](#).

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