

## **Fiber Optic Absolute Position Sensor Provides EMI Immunity**



**Absolute Position** MICRONOR introduces the world's first commercially-available absolute Fiber Optic Position Sensor (FOPS). The Model MR330 series position sensor is an innovative all-optical design immune to any electro-magnetic interference such as lightning, radiation, magnetic fields and other harsh environmental conditions. The fiber optic aspect of the sensor also makes it perfectly suited for long distance position sensing over hundreds of meters without being affected by ground loop problems. The FOPS system is based on Micronor's years of research, innovation and patents in fiber optic sensing technology.

The new absolute FOPS uses a 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 accurately 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 a precise position readout. The sensor requires no electrical power and houses no electronic components whatsoever.

The MR330's accuracy and EMI immunity make it an ideal sensor 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. The sensor is also classified as a "simple apparatus" and meets ATEX requirements for use in mines and other hazardous environments. The sensor's immunity to lightning make it especially suited for outdoor applications such as wind turbines and antennas.

This innovative product measures absolute angular position from 0° to 360° with

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13-bit (8192 count) resolution at speeds exceeding 2500 rpm. A complete system consists of the MR332 Passive Sensor, and MR330 Controller which interconnect via a duplex fiber optic link. The fiber cable used is readily available industry standard 62.5/125µm multimode fiber with Duplex LC connections. The MR330 controller is powered by 24 VDC and features multiple built-in interfaces and protocols for position read-out making it compatible with most any motion systems.

The MR330 controller's powerful embedded processor and firmware offers an extended set of built-in functions and multiple interface options not available in conventional encoders or resolvers. The Model MR330-1 SSI Controller offers SSI, USB, RS485 Serial, Modbus RTU, two analog outputs (4-20mA and ±10V) and two digital set points.

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