
micronor
FIBER OPTIC KINETIC SENORS

Industries Served

- Medical and MRI
- Mines and Steel Mills
- Nuclear Plants
- Transportation
- Bridges and Dams
- Energy
- Food Production
- Aerospace and defense
- EMC Test Labs

Achievements

- 2004-World's First Commercial FO Incremental Encoder
- 2007-FO Incremental Encoder US Patent 7,196,320 issued
- 2010-World's First Commercial MRI-compatible FO Encoder
- 2011-World's First 13-bit FO Position Sensor (MR330)
- 2012-World's First Commercial MRI-safe FO Position Sensor
- 2013-FO Absolute Position Sensor US Patent 8,461,514 issued

Incremental Encoders

Fiber optic incremental encoders are used to sense speed or position of a motor shaft or linear actuator where conventional electronics-based encoders and resolvers are inadequate. The A/B quadrature signals are inherently free of noise and electromagnetic interference. Optical encoder links are free of ground loops and may extend beyond 2500 meters, especially useful in mining applications. Rotary encoder resolution available to 1024ppr.

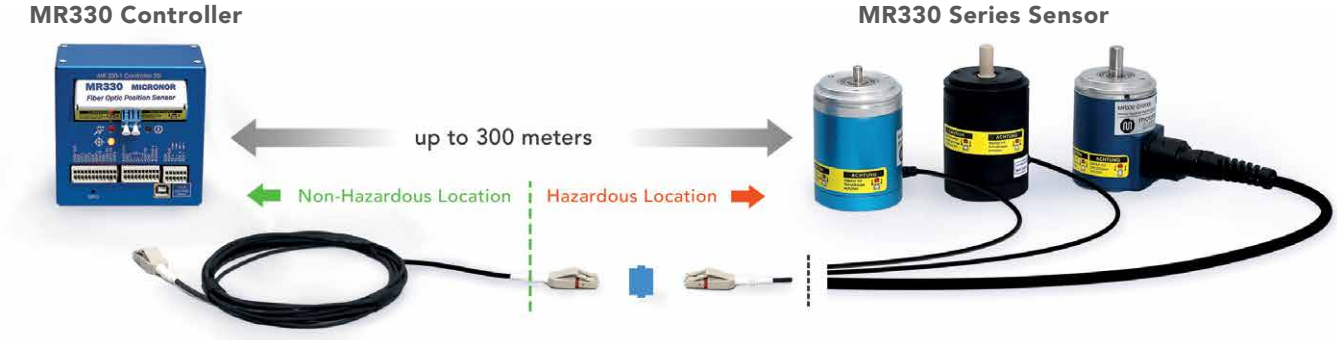
Rotary Incremental Encoders

- New MR304 Mini Encoders in Size 11 for robotic applications
- New MR309 Series offers an integrated OEM Maxon motor/fiber optic encoder solution for robotic applications

Linear Incremental Encoders

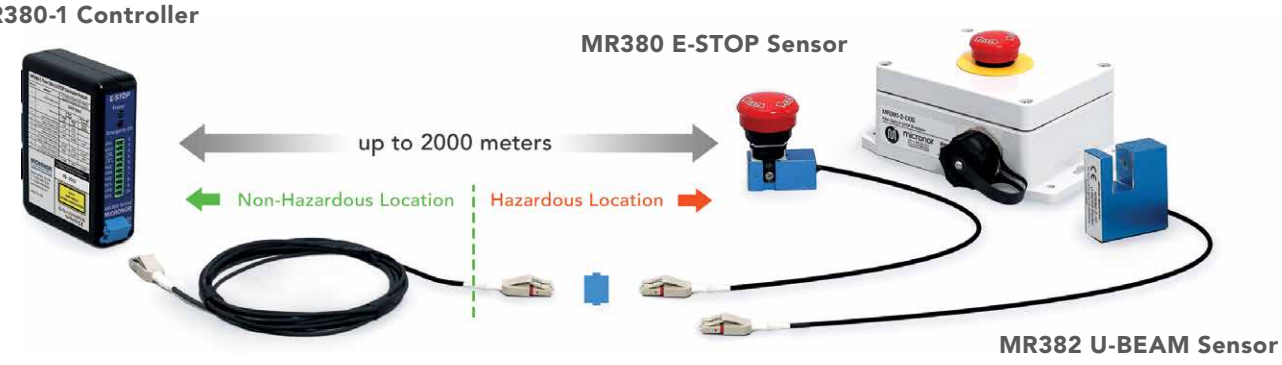
- New MR303 Linear Encoders ideal for compact mechanisms, including industrial and medical robots
- MR320 Series Rotary Encoders can be supplied with draw string module with range options to 50m

Absolute Encoders



Fiber optic absolute encoders are used where it is necessary to track absolute angular or linear position. An absolute encoder retains position when there is loss of power or disconnect to the sensor. These rotary encoders measure absolute angular position from 0° to 360° with 14-bit resolution of 0.025° and multi-turn tracking up to 12 bits (4096 turns). For linear position measurement, MR330 Series Sensor can be supplied with a draw wire module with range options from 1.5m to 50m. A special MRI safe draw string encoder system is also available.

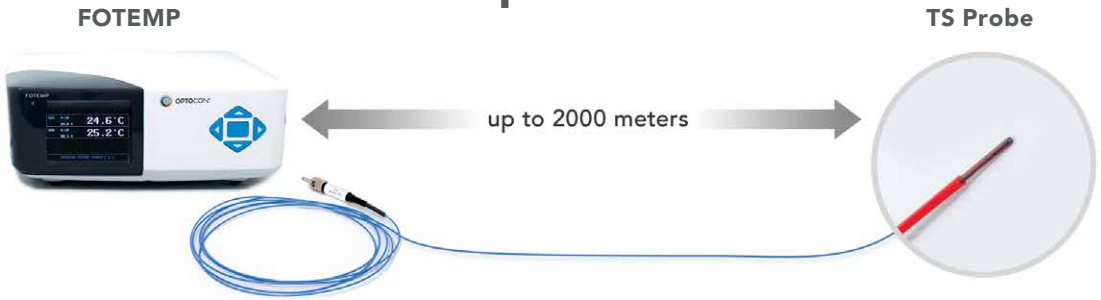
Safety and Signaling



Micronor offers discrete signaling solutions for use in a wide range of medical, industrial, research and safety-related applications. These sensors are especially ideal for potentially explosive (EX) environments such as mines and chemical processing plants where inherent safety is required.

- MR380 Emergency Stop (E-STOP) is a functionally safe solution which operates beyond the reach of traditional electro-mechanical E-STOP switches
- MR382 U-BEAM is a general purpose photo interruption/slot sensor for use as gear tooth sensor, edge detector, code reader or proximity sensor.

Temperature



Fiber optic thermometers are used in applications and environments where thermocouples, thermistors and IR cameras cannot be used:

- Electromagnetic, RF, microwave, high voltage and lightning environments
- Potentially explosive (EX) environments, including mines, storage tanks and chemical plants
- Hot spot monitoring in power transformers
- Medical applications, including MRI and X-ray
- Harsh chemical conditions, including radiation environments
- Small size ideal for hard-to-reach areas and catheters
- Extreme temperatures, -200°C to +300°C

Micronor Inc. was founded 2003 in Newbury Park, California. The founders accurately predicted the need for fiber optic kinetic sensors which provide immunity from lightning, EMI/RFI, radiation and magnetic fields. Based on an innovative and patented technology, using wavelength as the information carrier, the first product introduced to the market were the incremental encoders. These products are used in the transportation, mining, oil and gas industries for position sensing and controlling the speed of VFD drives. As an innovative and flexible company, Micronor offers a wide range of fiber optic sensors as depicted within this brochure.

OEM Solutions

Innovation and a deep technical fiber optics know-how allows Micronor to tackle challenging tasks for position measuring solutions that will work reliably in hostile environments. Micronor has also partnered with numerous companies solving and implementing measurement solutions for nuclear research, medical MRI applications and mining.

Who To Contact:

For sales support or to order, contact Dennis Horwitz at +1-805-389-6600 or dennis@micronor.com

For special OEM solutions, contact Robert Rickenbach at +1-805-389-6600 or robert@micronor.com

MR326 Incremental Encoder
Rugged bearing 180ppr-360ppr

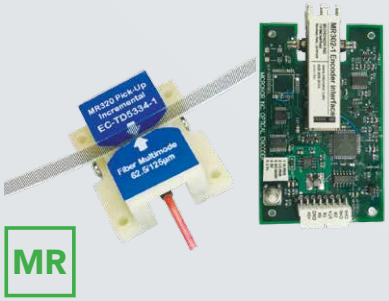
MR320 Controller Incremental
Used for all incremental sensors

MR325 Incremental Encoder
1024ppr, VFD drive / water sealed

MR328 Incremental Encoder
360ppr

MR330 Controller Absolute

Absolute Sensing Measurement



MR302 OEM System
Linear Sensing

MR324 Incremental Encoder
1024ppr, hollow shaft VFD

MR338 Absolute Sensor
High Accuracy, 0.0258° resolution

MR380 Series
E-STOP, U-BEAM devices

MRI Safe String Encoder

512ppr

MR302 Series
Small form factor incremental

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