micronor

FIBER OPTIC INCREMENTAL ENCODER

MR348 MRI-Safe Fiber Optic Incremental Rotary Encoder

Questions?
Call 805.389.6600

MR340 SERIES

The MR348 series ZapFree® Fiber Optic Incremental Sensor is an entirely passive, non-metallic incremental rotary encoder designed for use in Magnetic Resonance Imaging (MRI), nanomagnetic detection, EMC test labs, and similar applications where immunity and transparency to electromagnetic fields is required. The passive, all-optical Sensor connects to the remote Controller via a standard duplex 62.5/125 multimode optical fiber link.

ZAP FREE®

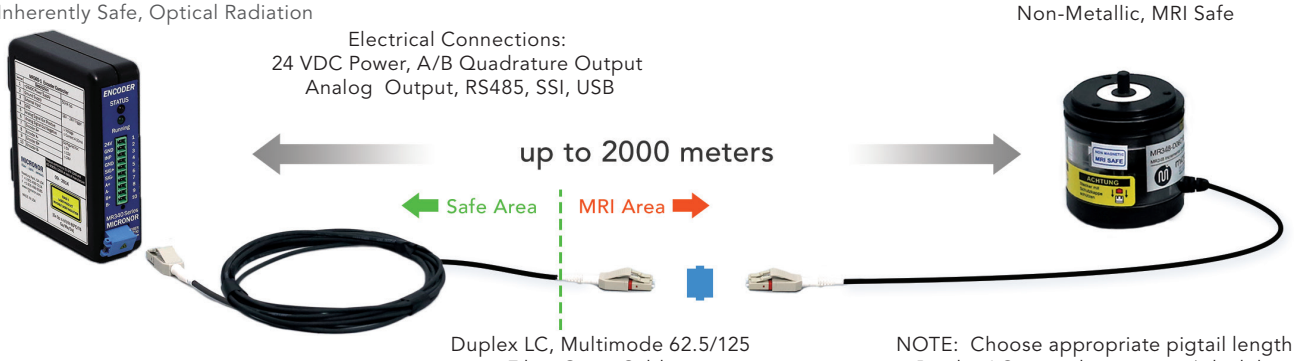
MR

The remote MR340 Controller Module transmits and converts optical signals to/from the Sensor. The Controller's multiple built-in interfaces insure compatibility with industry standard motor drives, PLCs, quadrature counters and motion control systems.

U.S. Patent 7,196,320
Inherently Safe, Simple Mechanical Device
EPL Mb/Gb/Gc/Db/Dc

MR340-1 Controller
Inherently Safe, Optical Radiation

MR348 Sensor
Non-Metallic, MRI Safe



Duplex LC, Multimode 62.5/125
Fiber Optic Cabling

NOTE: Choose appropriate pigtail length so that Duplex LC optical connector (which has small metal parts) is outside the MRI active zone.

Features

- 100% passive sensing design - no electronics whatsoever
- Immune and invisible to magnetic fields - does not leave artifacts in MRI Scans
- Non-metallic for safe use in MRI Zone
- Immune to EMI, RFI, lightning and ground loops
- Immune to lightning and high voltages
- EX classified "Inherently Safe, Simple Mechanical Device"
- Outdistances copper, link lengths to 2000 meters
- DIN Rail Mount and OEM PCB controllers available

Micronor MRI Safe position sensors are enabling MRI performance improvements and development of new medical devices

Specifications

Measurement Parameters	
Resolution	360ppr (Contact Micronor for special requirements)
Max Speed	6000 RPM (Contact Micronor for special requirements)
Mechanical Parameters	
Rotor Moment of Inertia	5.455E-7 kg*m^2
Starting Torque	1.93E-4 N*m
Max Shaft Loads	Radial = 60 N (13.5 lbf), Axial = 30 N (6.75 lbf)
System MTBF	L10 Bearing life calculated at 50% of max radial and axial load at 1000 RPM: 3.01E+06 hours (343.2 years)
Optical Interface	
Optical Interface	LC Duplex, 62.5/125µm Graded Index Fiber, 0.275NA, Type OM1
Link Length	Up to 2000 meters (6250 ft) with MR340 Controller
MR Attributes	**ACR Guidance Document for Safe MR Practices**
MRI Useage Zones	MR348 sensor is designed for safe use in all MR Zones I-IV
Materials	Non-metallic except for fiber optic connector end, ceramic bearings, polycarbonate shaft
Environmental Attributes	
Temperature/Humidity	+10°C to +35°C, 0%-95% RH (non-condensing)
Ingress Protection	IP50 (Contact Micronor for special requirements)
Physical Attributes	
Housing Dimension	Ø58 mm x 58 mm
Unit Weight	180 g (6.35 oz)

Specifications subject to change without notice

Ordering Info

M R 3 4 8 - D 0 6 C 1 0

Resolution Options
D 360ppr

Shaft Size
06 6mm OD

Termination Option
C05 Duplex LC Pigtail, 5m
C10 Duplex LC Pigtail, 10m

Quick Ship Configurations:
MR348-D06C10 Sensor, 360ppr, 6mm Shaft, Duplex LC Pigtail 10m
MR340-0 OEM Controller
MR340-1 DIN Rail Mount Controller

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