Fiber Optic Incremental Encoder

MR 346 Heavy Duty Incremental Encoder

MICRONOR®
optical sensors

Features

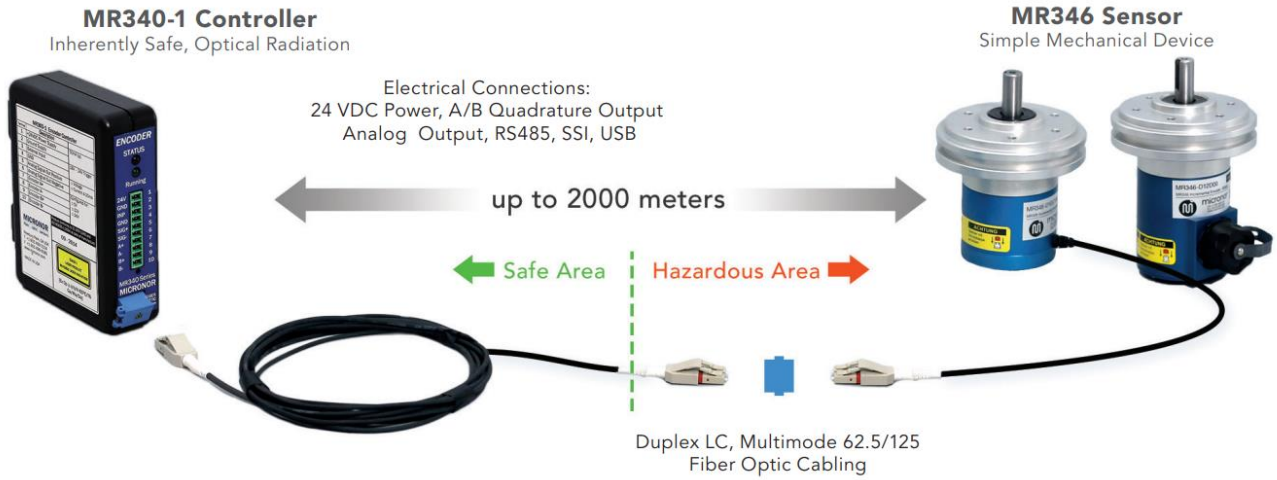
- 100% passive sensing design - no electronics
- Sensor can be installed in all manner of hazardous and potentially explosive atmospheres - mines, gas and dust
- Immune to EMI and RFI for safe use in and around medical equipment and “noisy” industrial environments
- IP66 - dust sealed and temporary submersion
- Link lengths to 2000 meters

Product Description

The MR346 Fiber Optic Incremental Sensor is purposely designed for the most challenging environments where electronics-based encoders and resolvers cannot perform. The Sensor is an entirely passive, intrinsically safe, fiber optic incremental rotary encoder – ideal for a wide range of harsh and hazardous environmental applications. The passive, all-optical Sensor connects to the remote Controller via a standard duplex 62.5/125 multimode optical fiber link.
Robust IP66 construction together with the optical and mechanical simplicity of the sensor’s design offers exceptional reliability in the most physical demanding indoor and outdoor applications, including cable cars, electric trains, steel mills, bridges, oil rigs, and mines.
ZapFREE® software is used for data acquisition.

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.

System Planning



1. Verify cabling and junction boxes compatible with the operating environment.
2. Verify that the optical link loss is within Controller’s Maximum Loss Budget.
3. Consult Application Note AN118 for more information, examples, and guidance on loss budget

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Specifications

Measurement Parameters	
Resolution	256 and 360ppr (Consult Micronor for special requirements)
Max Speed	8,000 RPM continuous Note: De-rate maximum speed by 100 RPM per degree Celsius when operating above 60°C for maintaining shaft seal integrity.
Mechanical Parameters	
Moment of Inertia	2.5095E-6 kg*mm^2
Starting Torque	3.0E-2 N*m
Max Shaft Loads	Radial = 140 N (31 lbf), Axial = 70 N (15 lbf)
System MTBF	L10 Bearing life calculated at 50% of max radial and axial load at 2500 RPM: 8.96E+05 hours (102.3 years)
Optical Interface	
Optical Interface	LC Duplex Pigtail or ODVA IP-LC Connector Receptacle
	62.5/125µm Graded Index Fiber, 0.275NA, Type OM1
Link Length	Up to 2000m (6560 ft) with MR340 Controller
Environmental Attributes	
Temperature/Humidity	Standard: -40°C to +80°C, 0%-95% RH (non-condensing) Extended: -60°C to +125°C, 0%-95% RH (non-condensing)
Ingress Protection	IP66 (strong water jets and temporary immersion)
Physical Attributes	
Housing Dimension	Ø90 mm x 82.5 mm
Unit Weight	615 g (21.5 oz)
Materials	Body: Anodized Aluminum, Shaft and Bearings: Stainless Steel

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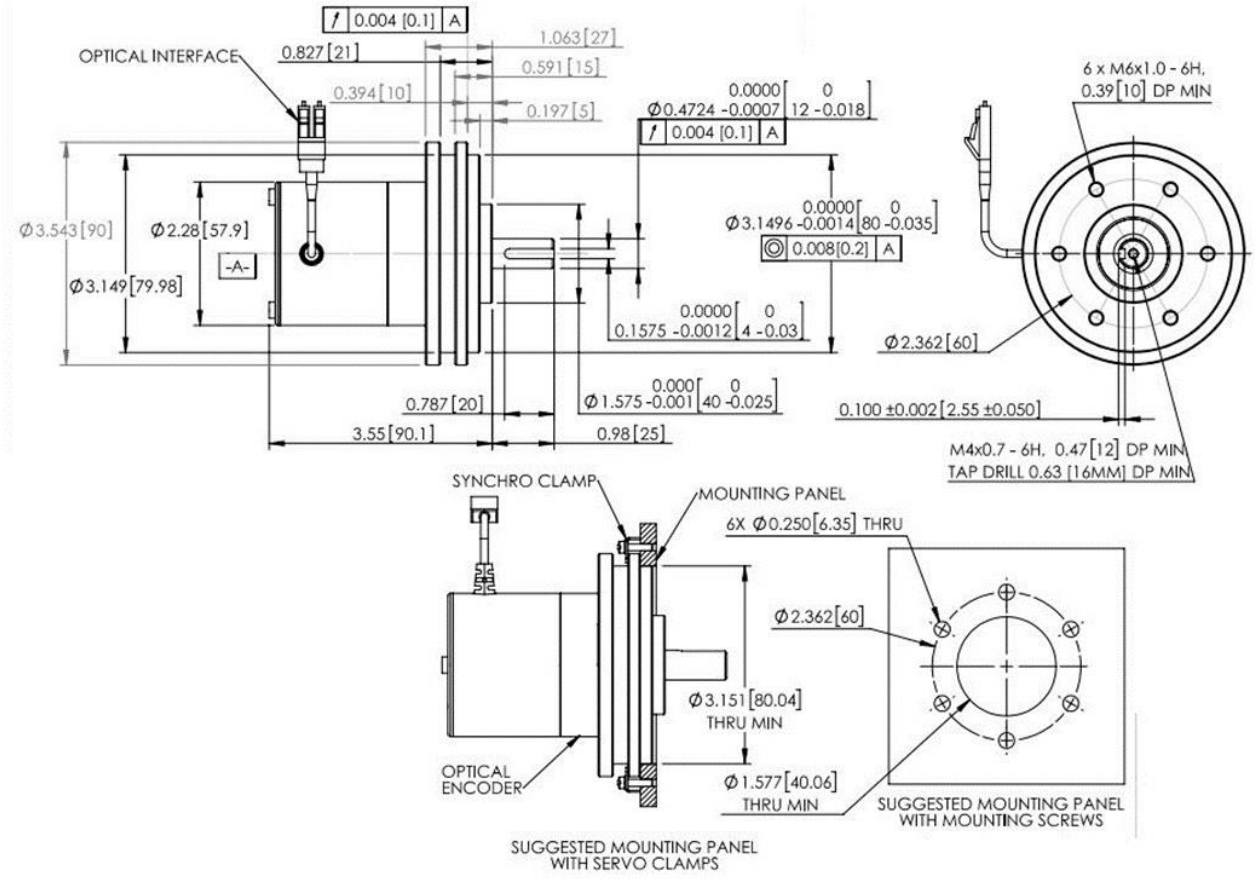
Drawing Inch [mm]



Order Code

9700.01.063	MR346-D-12-C1R5	Heavy Duty Rotary Sensor, 1.5m Duplex LC
9700.01.064	MR346-D-12-C03	Heavy Duty Rotary Sensor, 3m Duplex LC
9700.01.080	MR346-D-12-C05	Heavy Duty Rotary Sensor, 5m Duplex LC
9700.01.065	MR346-D-12-D00	Heavy Duty Rotary Sensor, ODVA IP-LC

Related Products

MR340-1	Controller for Fiber Optic Incremental Encoder Series MR340
MR341	Small Size Rotary Encoder Ø25mm
MR342	Rotary Encoder Ø58mm
MR343	Linear Encoder
MR344	Hollow Shaft Encoder
MR348	MRI Safe Rotary Encoder Ø58mm Metalfree
972XX.XX.XXX	Fiberoptic Extension Cable
974XX.XX.XXX	Fiberoptic Extension Cable

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