

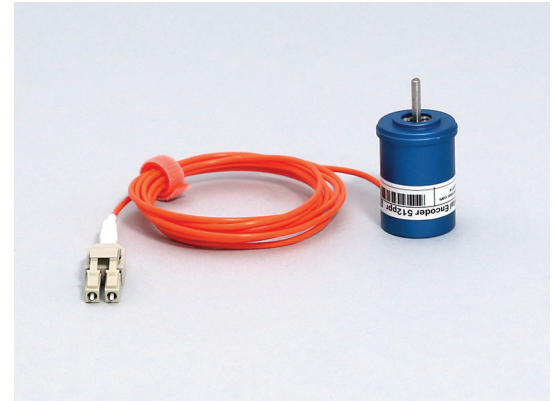
# FIBER OPTIC INCREMENTAL ENCODER

## MR304 Size 11 Mini Rotary Position Sensor

Questions?  
Call 805.389.6600

MR304 SERIES

The MR304 Mini Rotary Encoder is a Size 11, small form factor incremental encoder offering resolution to 512ppr. It is intermountable with resolvers, synchros and conventional electronics-based encoders of the same size.



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

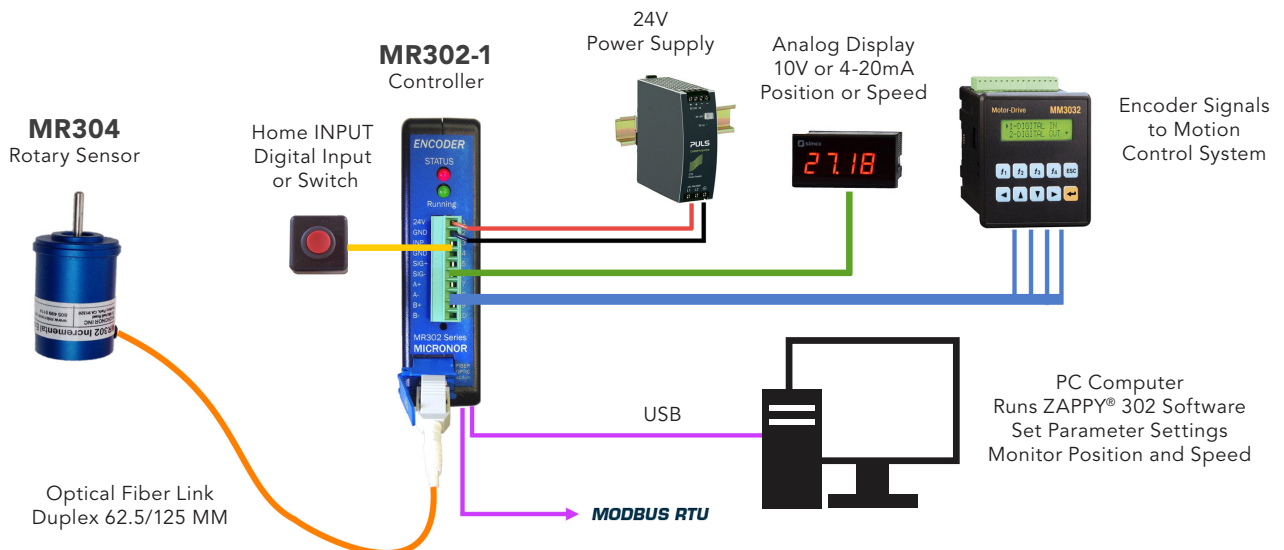
The MR304 Encoder is a 100% passive sensor which operates entirely in the optical domain. The sensor provides immunity to any electro-magnetic interferences such as lightning, radiation, magnetic fields and other harsh environment conditions. The innovative design provides 100% electrical isolation as well as immunity to high voltages - ideal for harsh environment applications such as feedback for welding robots, measuring anode position in smelters, and monitoring pantograph operation in electric rail applications.

### Features

- 100% passive optical sensor
- Size 11 small form factor
- Up to 512ppr resolution
- Immune to EMI, RFI, lightning and ground loops
- Immune to magnetic fields
- Inherently Safe, Simple Mechanical Device
- Fiber optic link can extend up to 2000 meters
- DIN rail mount and OEM PCB controller available

### Applications

- Medical
- MRI
- Robotics
- Industrial
- Transportation
- Oil & Gas



# MR304 Applications

## Medical

These passive sensors provide EMI immunity and electrical isolation. Ideal for motion control applications including surgical robots and other medical device requiring position feedback.

## Industrial

MR304 encoders are immune to EMI, RFI, lightning, high voltages and ground loops. The encoders offer exceptional shock and vibration performance. Ideal for the most physically demanding applications, such as welding robots, smelters, rolling mills and mines.

## Transportation

The high voltage isolation of fiber optic encoders are ideal for electric rail applications. Encoders are used to monitor pantograph operation, overhead wires and motor feedback.



# Specifications

Measurement	
Resolution	256, 360, 512ppr
Maximum Speed	10,000 RPM, Mechanical Limit
Optical Interface	
Connector	LC Duplex
Fiber	Duplex 62.5/125µm Graded Index Fiber, 0.27NA, Type OM-1
Maximum Distance	Up to 2000 meters with MR302 series Controller
Explosive Atmospheres	Inherently Safe, Simple Mechanical Device
EX Classifications	Inherently safe, simple mechanical device when used with MR302 Controller IEC ExTR Test Report TBD
ATEX	EPL Mb/Gb/Gc/Db/Dc
IEC Ex	EPL Mb/Gb/Gc/Db/Dc
NEC	Exempt
Environmental	
Temperature	-40°C to +80°C (-40°F to +176°F), 0-95% RH, Non-Condensing
Ingress Protection	IP40
Physical Attributes	
Dimensions	Ø25 mm x 50.9 mm (Ø0.98 x 2.00 inches)
Weight	20 g (0.7 oz)
Materials	Anodized aluminum housing, SS shaft, SS bearings

Specifications subject to change without notice

## Ordering Info

**M R 3 0 4 - [ E ] [ 0 3 ] [ C 1 R 5 ]**

**Resolution in ppr**

**C** 256  
**D** 360  
**E** 512

**Shaft Diameter**

**03** 3 mm

**Optical Connector Type and Pigtail Length**

**C1R5** Duplex LC pigtail with 1.5m length  
**C03** Duplex LC pigtail with 3m length  
**C05** Duplex LC pigtail with 5m length

**Quick Ship Configuration:**

**MR302-E03C03** 512 PPR, Pigtail Length=3m

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