

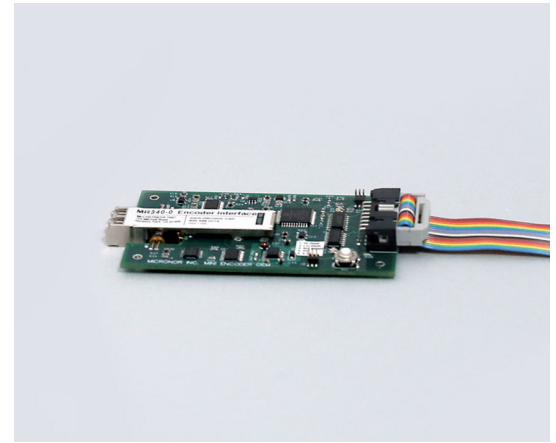
# FIBER OPTIC INCREMENTAL ENCODER

## MR340-0 OEM PCB Controller

The MR340-0 PCB Controller enables Original Equipment Manufacturers (OEMs) to compactly and cost effectively integrate MR340 Series Fiber Optic Incremental Encoders within their own equipment designs.

As the incremental code passes through an MR340 sensor's internal optical pick-up, the phase output of two light beams creates the classical A/B quadrature signals accessible via the controller's electrical interface.

The MR340-0 controller keeps track of position and also calculates the RPM and speed of the connected encoder. Both position and speed can be read via RS485/Modbus serial interface or USB.



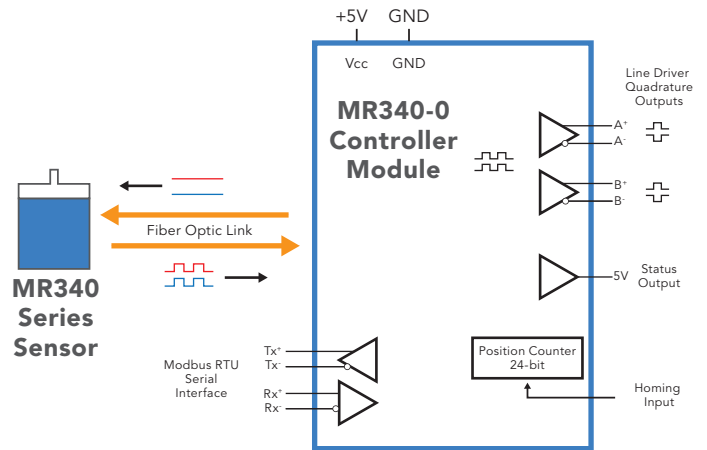
U.S. Patent 7,196,320  
Inherently Safe Optical Radiation  
For EPL Mb/Gb/Gc/Db/Dc

### Features

- Compact for ease of OEM system integration
- Supports all MR340 series rotary and linear sensors
- Operates from 5 VDC
- Feature rich Modbus RTU communications protocol
- Interference-free transmission up to 1600 meters
- Diagnostics via Modbus

### Interfaces

- A/A'/B/B' RS422 line driver quadrature outputs
- RS485/Modbus RTU serial interface
- USB interfacing available with optional converter



### System Planning

**MR340-0 Controller**  
Inherently Safe Optical Radiation

Electrical Connections:  
5 VDC Power, A/B Quadrature Output  
Modbus RTU Serial Interface

**MR340 Series Sensors**  
Simple Mechanical Device

MR343 MR341 MR348 MR342 MR344 MR346 MR345

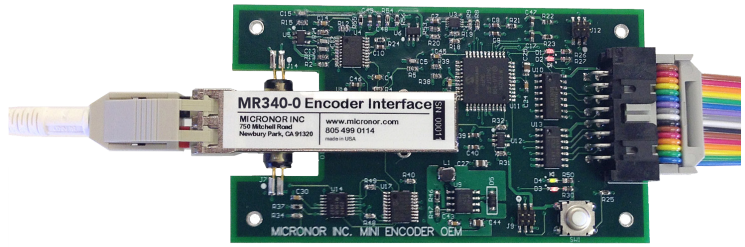


Duplex LC and ODVA IP-LC  
Multimode 62.5/125, Fiber Optic Cabling

# MR340-0 Electrical Connections

## Electrical Interface via Ribbon Connector 3M# N2516-5002-RB (Right Angle on PCB) Mating Part 3M# 89116-0103

Function	Pin	Pin	Function
---	1	2	+5V Power Supply
GND	3	4	---
Encoder A-	5	6	Encoder A+
Encoder B-	7	8	Encoder B+
+5V Power Supply	9	10	GND
RCV- (Serial)	11	12	RCV+ (Serial)
XMT- (Serial)	13	14	XMT+ (Serial)
ZERO INPUT	15	16	STATUS OUT (5V)



## Specifications

Electrical Interface	
Connector	16-pin ribbon cable receptacle, 3M N2516-5002-RB Recommended mating plug, 3M 89116-0103
Quadrature Outputs	A+/A-/B+/B- RS422 line driver outputs, 100 kHz maximum bandwidth
Discrete Signals	ZERO Input, STATUS out, 5V logic
Serial Interface	Modbus RTU or RS422/485 compatible, User selectable baud rate: 9,600 to 115,200 Default Baud Rate = 57,600 Byte format: 1 Start Bit, 8 Data Bits, 1 Stop Bit, No Parity
Power Supply	+5 VDC, 55mA typical, 100mA maximum Recommend 100mA power supply
Optical Interface	
Connector	LC Duplex
Fiber Type	Duplex 62.5/125µm, Graded Index Fiber, 0.275 NA, Type OM-1
System Loss Budget	10dB (Roundtrip)
Maximum Distance	Up to 1600 meters (5250 ft) with a MR34X series Sensor
Explosive Atmospheres Inherently Safe, Optical Radiation	
EX Classification	Controller shall be installed in non-hazardous location only Power supply shall be current limited to 200mA
ATEX	EPL Mb, Gb, Gc, Db, Dc
IEC Ex	EPL Mb, Gb, Gc, Db, Dc
Environmental Attributes	
Temperature/Humidity	-5°C to +55°C (23°F to +131°F), 0-95% RH, Non-Condensing
Ingress Protection	IP30, Keep free from contaminants
Physical Attributes	
Dimensions	98.9 x 50.8 x 12.7 mm (3.5 x 2.0 x 0.50 inches) plus ≈61.0 mm (2.40 inch) connector clearance
Mounting	4x #2-56 or M2.5 screws, Mounting pattern 3.10 x 1.60 inches
Weight	25g (0.9 oz)

Specifications subject to change without notice

## Ordering Info

# MR340 - 0

## OEM PCB Controller

### Compatible Sensors:

<b>MR341</b>	Size 11 Mini Rotary Encoder
<b>MR342</b>	Size 58 Standard Rotary Encoder
<b>MR343</b>	MRI Safe, Linear Encoder
<b>MR344</b>	High Resolution, Hollow Shaft Encoder
<b>MR345</b>	High Resolution, Shafted Encoder
<b>MR346</b>	Heavy Duty, IP66 Encoder
<b>MR348</b>	MRI Safe, Rotary Encoder

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