

Application Note AN127

New MR34X Series Fiber Optic Incremental Encoders Replace Legacy MR30X/MR31X/MR32X series

Objective

This application note introduces the 3rd Generation MR340 series Fiber Optic Incremental Encoders and its relationship and replacement of the legacy encoder series MR30X, MR31X, MR32X series incremental encoders.

Background

The new MR340 series is the 3rd Generation of Micronor's innovative Fiber Optic Incremental Encoders, which was first introduced in 2004. The MR340 series is an update of the MR320 series incorporating the lower cost optical technology introduced in the MR30X series.



Features

- 100% passive, inherently safe rotary and linear sensors
- Resolution to 1024ppr or 100µm
- Special MRI Safe / High Voltage Immune, non-metallic, all-dielectric models available
- Interference free fiber optic transmission up to 2000 meters
- DIN Rail and OEM Controllers available
- Programmable line driver quadrature outputs: 5V, 12V or 24V
- Programmable analog output: 10V or 4-20mA
- Emulates absolute encoder with built-in SSI interface
- Built-in USB, SSI and RS485/Modbus RTU serial interfaces

If you are using the MR30X series...

The corresponding MR340 products are simply part number changes. The lower cost, 850nm/980nm technology developed for the MR30X Linear and Rotary Encoders are the foundation of the MR340 series. The corresponding MR34X products are 100% compatible and interchangeable.

- 100% compatible and interchangeable, no changes required.
- SSI interface added
- RS485 interface connector changed from IEEE 1394 to Hirose

MR30X P/N	Description	Replace With MR34X	Use Controller	Notes
MR302-1	DIN Controller	MR340-1	----	100% interchangeable except for change in RS485 interface connector
MR302-2	OEM Controller	MR340-0	----	100% Interchangeable
MR303	Linear Sensor	MR343	MR340-0 or MR340-1	100% Interchangeable
MR304	Rotary Sensor	MR341	MR340-0 or MR340-1	100% Interchangeable

If you are using the MR32X series...

The corresponding MR340 encoders are physically interchangeable but not compatible with the MR320 Controller. This is because the MR320 system uses 850nm/1300nm optical technology which is not compatible with the lower cost 850nm/980nm optics of the MR340 system.

- The MR32X series is no longer available. For new applications, use the MR34X series.
- From a fiber optic link perspective, the MR340 system uses the same OM1 62.5/125 multimode fiber cabling and Duplex LC / IP-LC connections. Only the Sensor and Controller need to be changed.
- There is no Divider Output on the MR340 Controller.

MR32X P/N	Description	Replace With MR34X	Use Controller	Notes
MR320	DIN Controller	MR340-1	----	For new applications only. Must also use MR34X sensors.
MR322	Rotary Sensor	MR342	MR340-1	100% Intermountable
MR324	Hollow Shaft Sensor	MR344	MR340-1	100% Intermountable
MR325	Rotary Sensor	MR345	MR340-1	100% Intermountable
MR326	Rotary Sensor	MR346	MR340-1	100% Intermountable
MR328	MRI Safe Rotary Sensor	MR348	MR340-1	100% Intermountable

If you are using the MR31X series...

The corresponding MR340 encoders are physically interchangeable but not compatible with the MR310 Controller or the simplex ST fiber cabling. This is because the MR310 system uses 850nm/1300nm optical technology which is not compatible the 850nm/980nm optics of the MR340 system. Also, the MR340 system is dual fiber using Duplex LC connections so an extra fiber would be needed.

- The MR31X series is no longer available. For new applications, use the MR34X series.
- From a fiber optic link perspective, the MR340 system uses the same OM1 62.5/125 multimode fiber cabling but requires two fibers instead of two.
- There is no Divider Output on the MR340 Controller.

MR31X P/N	Description	Replace With MR34X	Use Controller	Notes
MR310	DIN Controller	MR340-1	----	For new applications only. Must also use MR34X sensors.
MR312	Rotary Sensor	MR340-1	MR340-1	100% intermountable and requires additional fiber
MR314	Hollow Shaft Sensor	MR342	MR340-1	100% intermountable and requires additional fiber
MR315	Rotary Sensor	MR345	MR340-1	100% intermountable and requires additional fiber
MR316	Rotary Sensor	MR346	MR340-1	100% intermountable and requires additional fiber
MR318	MRI Safe Rotary Sensor	MR348	MR340-1	100% intermountable and requires additional fiber

If any questions, please contact Micronor technical support at support@micronor.com