micronor sensors

FIBER OPTIC ENCODER EXTENDER SYSTEM

MR361-1 FO XMTR/RCVR Extender for Incremental Encoders

Questions?
Call +1-805-389-6600

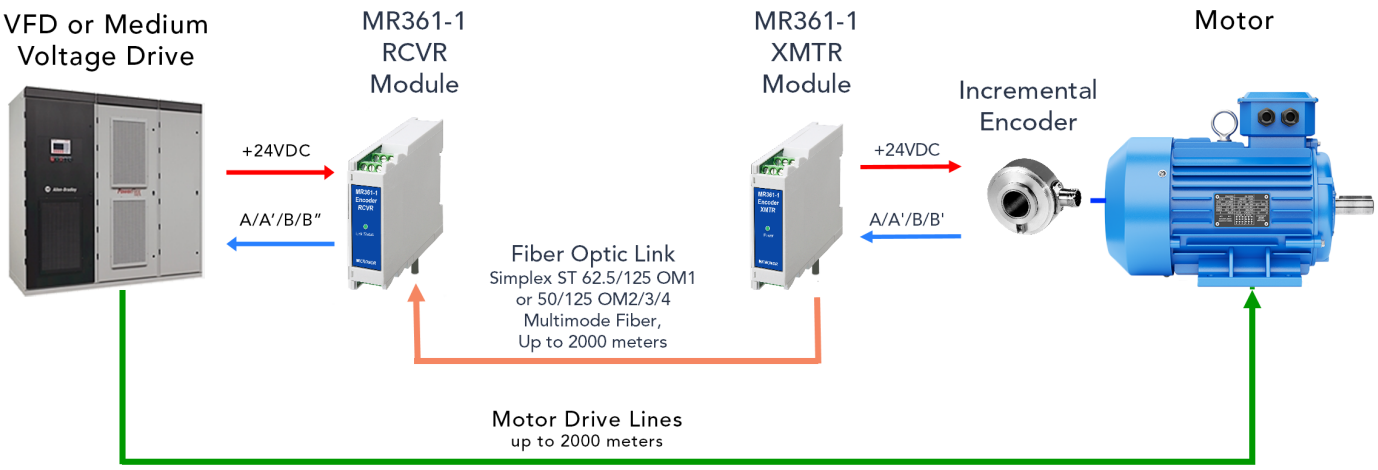
MR360 SERIES

The MR361-1 series Fiber Optic Extenders allow conventional electronic-based incremental encoders (optical or magnetic) to reach longer distances by converting the encoder's A/B/Z quadrature pulses to optical signals which can then be transmitted interference-free up to 2000 meters.

The system is made up of a MR361-1 fiber optic transmitter and a MR361-1 fiber optic receiver. The transmitter converts the electrical signals of an incremental encoder to optical signals. The receiver module converts the optical signals back into electrical signals which are connected to the encoder input of the user's motor drive or motion control system. Able to transmit up to 4 channels, any unused channels can be used for other system signaling purposes - e-stop status, limit switch status,etc.

MR361-1
FO Transmitter/Receiver Modules

Typical Application



Features

- Simple means of extending encoder reach via one 50/125 or 62.5/125 multimode fiber
- Provides interference free transmission up to 2000m
- Allows encoder signals to pass safely through hazardous areas and explosive atmospheres
- Input frequency up to 400 kHz
- Supports RS422 or HTL/Push-Pull encoder signals
- Optical system can transmit 4 channels, unused channels can transmit other signals - limit switch, e-stop, etc.
- Temperature range: -10°C to +60°C
- Compact DIN rail mount modules

Applications

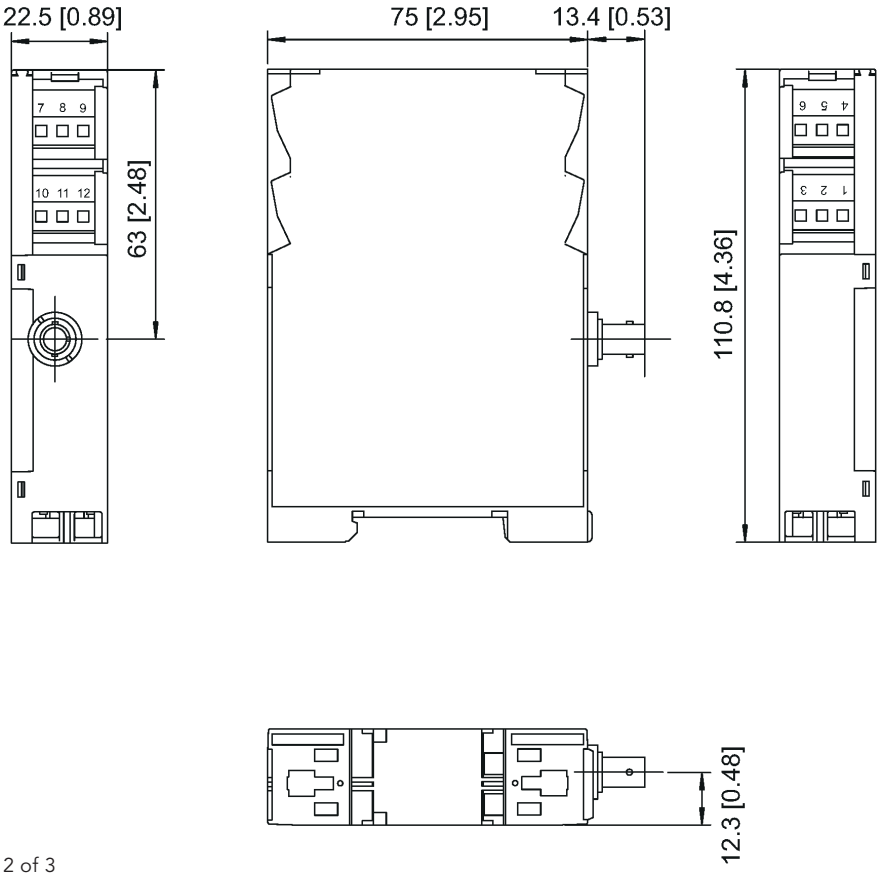
- Applications sensitive to interference
- Passing signals safely through explosive areas
- Variable frequency drive systems (VFD)
- Mines, conveyors, robotic, and similar process control and plant automation applications extending long distances
- High voltage plants
- Remote robotic systems

Specifications

Encoder Compatibility	
Encoder Inputs	A, A', B, B', C, C', D, D' (total of 4 channels)
Input Signals	RS422 Differential Line Driver (5V TTL) or HTL (Push-Pull) Differential Line Driver (10-30V), depending on model
Input Frequency	Up to 400kHz, Input sampling rate=10 MSamples/s
Encoder Supply Voltage	10-30V DC or 5V DC ±5%, depending on model
Electrical Interface	
Module Supply Voltage	10-30V DC or 5V DC ±5%, depending on model, <2W
Terminals	Max conductor diameter, 2.5mm^2 (AWG 23)
HD-Sub-D15	15 pin, Micro D-Sub Connector (also called VGA connector)
Optical Interface	**Inherently safe, optical radiation**
Optical Interface	ST-PC receptacle, located on bottom of module 62.5/125µm Graded Index Multimode Fiber, 0.275NA, type OM1, or 50/125µm Graded Index Multimode Fiber, 0.2NA, types OM2/OM3/OM4
Link Length	Lesser of 6 dB or 2000 meters (6560 ft)
Optical Transmission	850nm LED, 120 Mbit/s
Optical Synchronization	Indicated by LED on the receiver
Environmental Attributes	
Temperature/Humidity	-10°C to +60°C (+14°F to +140°F), 0%-95% RH (non-condensing
Ingress Protection	IP40, terminals IP20
Physical Attributes	
Housing Dimension	22.5 W x 110.8 L x 75mm W (0.89 x 4.36 x 2.95")
Unit Weight	85 g (3.0 oz)
Construction	Housing for DIN Rail mounting acc. to EN 50022

Specifications subject to change without notice

Terminal Clamp Model



Top Terminals	
Pin#	**Signal**
1	A-
2	B-
3	C-
4	A+
5	B+
6	C+
Bottom Terminals	
7	D-
8	+V
9 (linked internally)	0V
10	D+
11,12 (linked internally)	0V

Ordering Info

M R 3 6 1 - 1 - 0 - 3 - 0

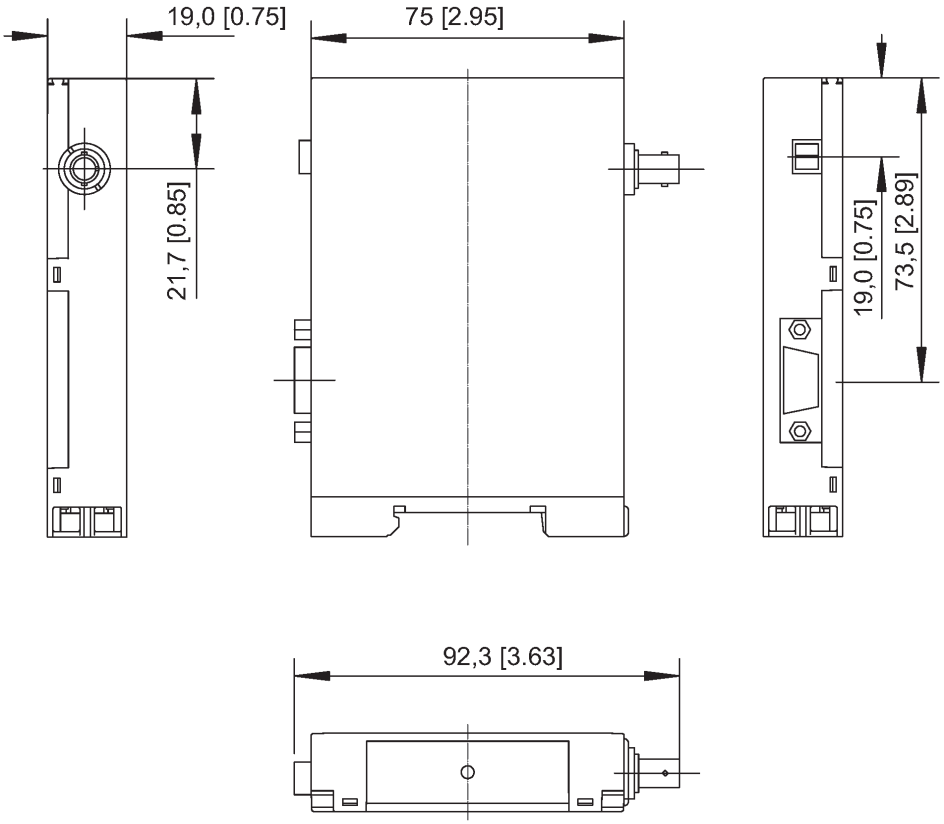
Module Type
0 Transmitter Module
1 Receiver Module

Signal Type
0 RS422 Line Driver Signals, 10-30V DC Operation
2 RS422 Line Driver Signals, 5V DC Operation
3 HTL/Push-Pull, 10-30V DC Operation

Connection Type
0 Standard terminal clamp
1 HD-Sub-D15 (VGA-type Micro DSub15) connector

Quick Ship Configurations:
MR361-1-0-3-0 Transmitter Module for HTL Line Driver Signals, Wire Terminal Interface
MR361-1-1-3-0 Receciver Module for HTL Line Driver Signals, Wire Terminal Interface

Plug-In Connector Model, HD-Sub-D15



Wire Terminals	
Pin#	**Signal**
1	0V
2	+Vin
HD-Sub-D15 Pins	
1	D-
2	D+
3	C-
4	C+
6	B-
7	B+
8	A-
9	A+
11,12,13 (linked internally)	0V
15	+V

MICRONOR SENSORS, INC.
2085 Sperry Ave, Suite A-1, Ventura, CA 93003, USA
+1 805 389 6600 sales@micronor.com
www.micronor.com