micronor

FIBER OPTIC SIGNALING

MR380-1 Universal SM/MM DIN Rail Mount Controller

Questions?
Call 805.389.6600

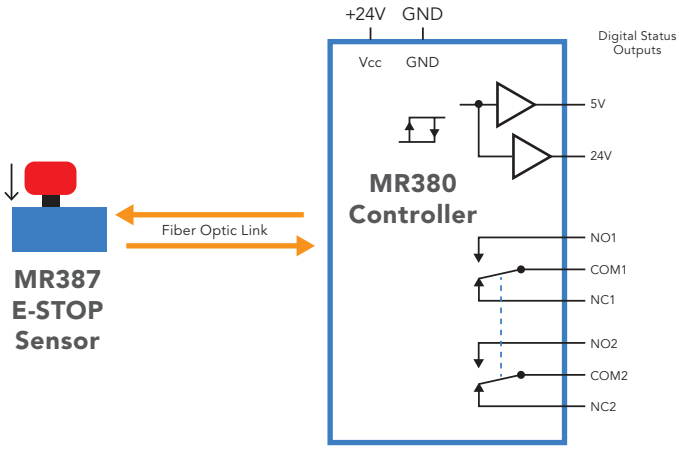
MR380 SERIES

MR380 Series Fiber Optic Signaling Sensors are used anywhere conventional electromechanical controls cannot be used, especially where EMI immunity is required and harsh environments. The MR380-1 Controller is the active optical and electrical interface for the MR380 ZapFREE® E-Stop, E-Actuator and other Signaling Sensor products.

ZAP FREE®

Ex

Inherently Safe Optical Radiation
For EPL Mb/Gb/Gc/Db/Dc



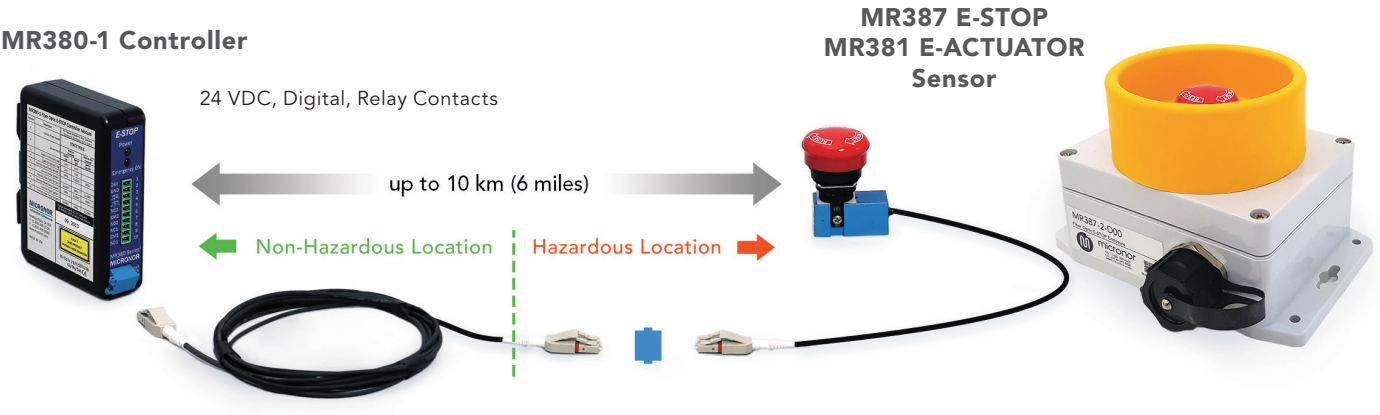
Features

- Universal Controller - for single mode and multimode
- DIN rail mountable module
- Ex rated Inherently Safe Optical Radiation
- Controller is installed outside the hazardous area
- Choice of multimode or single mode fiber controllers
- Interference-free transmission up to 4 km with multimode fiber or 10 km with single mode fiber
- Depending on sensor type, multiple sensors can be optically wired in series

Interfaces

- DPDT relay contacts
- Digital status outputs, 5V and 24V
- Depending on sensor type, digital outputs and relay implement known default failure state

System Planning



Fiber Optic Cabling
Duplex LC or ODVA IP-LC Connections
Multimode 50/125 or 62.5/125 or Single Mode 9/125 Fiber

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

Specifications

Functional States	As Applies to MR387 E-Stop Sensor
Normal RESET (Up Position)	Red LED is OFF Digital 5V and 24V Outputs=HI Relay NC contacts=Closed, NO contacts=Open
ACTIVATED (Down Position) Broken Fiber, Loss of Optical Signal, or Controller Failure	Red LED is ON Digital 5V and 24V Outputs=LOW Relay NC contacts=Open, NO contacts=Closed
Digital Outputs	
5V Logic	5 VDC/2k Ω Load Max
24V Logic	24 VDC/2k Ω Load Max
Relay Contacts	**2x Form C (COM-NO-NC)**
Switching Power Rating	60 W / 62.5 VA
Contact Material	AgNi, Gold Covered
DC Rating	75 V @ 0.75A; 24 V @ 2A
AC Rating	50 V @ 1A; 24 V @ 2A
Optical	**Class I Eye Safe**
MR380-1-3	1310nm, Class I Eye Safe, System Loss Budget=25dB
Maximum Optical Link Length	Distance is a function of user's system loss budget which is the total round-trip loss of all optical link components - sensor(s), connectors, splices and cable segments. Consult Application Note AN118 for more information. Contact Micronor for longer distance applications.
Interface	**NOTE: Electrical connections shall not exceed 3 meters.**
Electrical	10-pin Screw Terminal, 30-14 AWG (Phoenix Mating Plug 1803659)
Optical	LC-Duplex, Multimode or Single Mode fiber type depends on model
Power Supply	+24 VDC, <80 mA input
Functional Safety	**For MR387 E-Stop Sensor + MR380-1 Multimode Controller**
ISO 13849	Category 2
MTTFd	6.20 E+05 hours (70.8 years)
Performance Level (PL)	PL=c
Safety Integrity Level (SIL)	SIL=1
Safe Failure Fraction	SFF=97.85%
Diagnostic Coverage	DC=75.76%
Explosive Atmospheres	**Inherently Safe Optical Radiation (Multimode Controllers Only)**
Ex Classification	Controller shall be installed in non-hazardous location only Power supply to Controller shall be current limited to 200mA or less IECEx Test Report (ExTR) GB/CML/ExTR 16.0105/00 (Multimode Controllers)
ATEX	CE [EPL Mb/Gb/Gc/Db/Dc]
EAEU/GOST	[EPL Mb/Gb/Gc/Db/Dc]
IEC Ex	[EPL Mb/Gb/Gc/Db/Dc]
North America	Controller shall be installed in non-hazardous location only
Environmental Performance	
Temperature/Humidity	-5°C to +55°C (23°F to +131°F), 0-95% RH, Non-Condensing
Ingress Protection	IP50
Physical Attributes	
Mounting	35mm DIN Rail
Housing	11.4 x 8.9 x 3.2 cm (4.5 x 3.5 x 1.25 inches)
Weight	230 g (8.1 oz)

Specifications subject to change without notice

Ordering Info

M R 3 8 0 - 1 - 3

Product
1 Controller

Fiber Type/Wavelength
3 Universal Single Mode/Multimode, 1310nm

Quick Ship Controllers and Sensors:

MR380-1-3 DIN Rail Mount Controller, Universal Singlemode/Multimode, 1310nm

MR387-2S-03 E-STOP, Ø30mm Button, 62.5/125 MMF, LC Duplex pigtail, 3m
MR387-2S-D00 E-STOP in Housing, Ø30mm Button, 62.5/125 MMF, ODVA IP-LC Interface
MR387-3S-03 E-STOP, Ø30mm Button, Single Mode, LC Duplex pigtail, 3m
MR387-3S-D00 E-STOP in Housing, Ø30mm Button, Single Mode, ODVA IP-LC Interface
MR387-5S-03 E-STOP, Ø30mm Button, 50/125 MMF, LC Duplex pigtail, 3m
MR387-5S-D00 E-STOP in Housing, Ø30mm Button, 50/125 MMF, ODVA IP-LC Interface.

Compatible Sensors:

MR381 E-ACTUATOR Switch Sensor
MR382 U-BEAM Slot Sensor
MR383 KEY SWITCH Sensor. Contact Micronor for product information.
MR384 PUSHBUTTON Sensor. Contact Micronor for product information.
MR385 FOOT SWITCH Sensor. Contact Micronor for product information.
MR386 MICROSWITCH Sensor
MR387 EMERGENCY STOP Switch Sensor

MICRONOR INC, 900 Calle Plano, Suite K,
Camarillo, CA 93012 USA
T +1 805 389 6600 F +1 805 389 6605
sales@micronor.com www.micronor.com

MICRONOR AG, Pumpwerkstrasse 32,
CH-8105 Regensdorf, Switzerland
T +41 44 843 4020 F +41 44 843 4039
sales@micronor.ch www.micronor.com