Fiber Optic Signaling

MR 387 Emergency Stop Sensor

MICRONOR®
optical sensors

Features

→ Can be used in industrial

→ Interchangeable with V15-series electrical micro switch

→ 100% passive sensing design - no electronics

→ Immune to EMI, RFI, high Voltages and ground loops

→ Link lengths to 10000 meters

ZAP FREE®

Product Description

The MR387 series Fiber Optic Emergency Switch paired with a MR380 series Controller provides a new, innovative signaling solution that can be deployed in difficult and hazardous environments over long distances. The switch sensor employs a photo interrupt scheme operating over a duplex optical link that allows for reliable signal detection. This provides the same mechanical attributes typically associated with ubiquitous electrical micro switches.
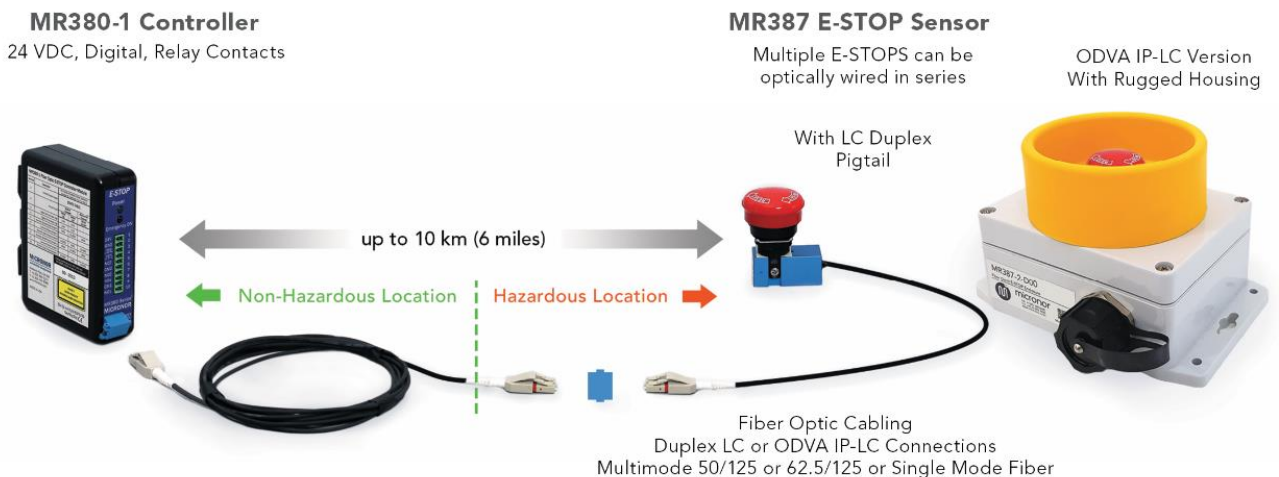
The entire fiber optic sensor system offers a generous loss budget, allowing for long distances, complex routing, and daisy chaining of multiple switches.

The MR380 Controller is the active optical and electrical interface for the MR380 E-Stop, E-Actuator and other Signaling Sensor products. ZapFREE® software is used for data acquisition.

Applications

- Medical MRI environment
- High voltage applications
- Lond Distances

- Transformer power tap
- Oil, gas, and mines
- Valve position

- Process monitoring
- Hazardous environments
- Aerospace actuator

System Planning

MR380-1 Controller
24 VDC, Digital, Relay Contacts

MR387 E-STOP Sensor
Multiple E-STOPS can be optically wired in series

ODVA IP-LC Version With Rugged Housing

With LC Duplex Pigtail

up to 10 km (6 miles)

Non-Hazardous Location | Hazardous Location

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

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

Subject to errors and changes Date: 21.04.2023
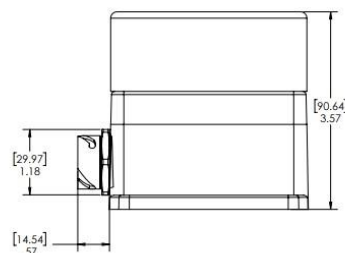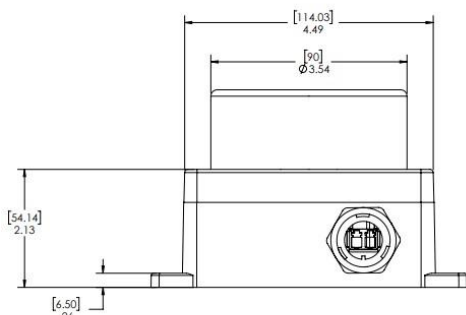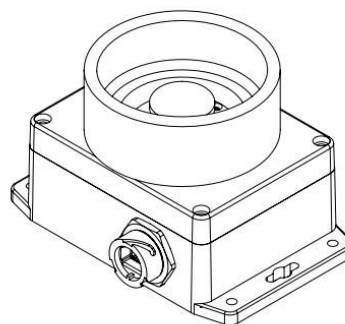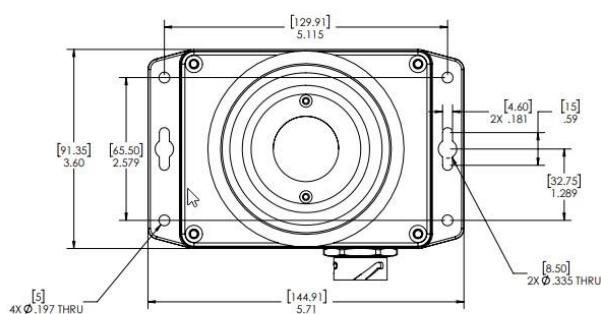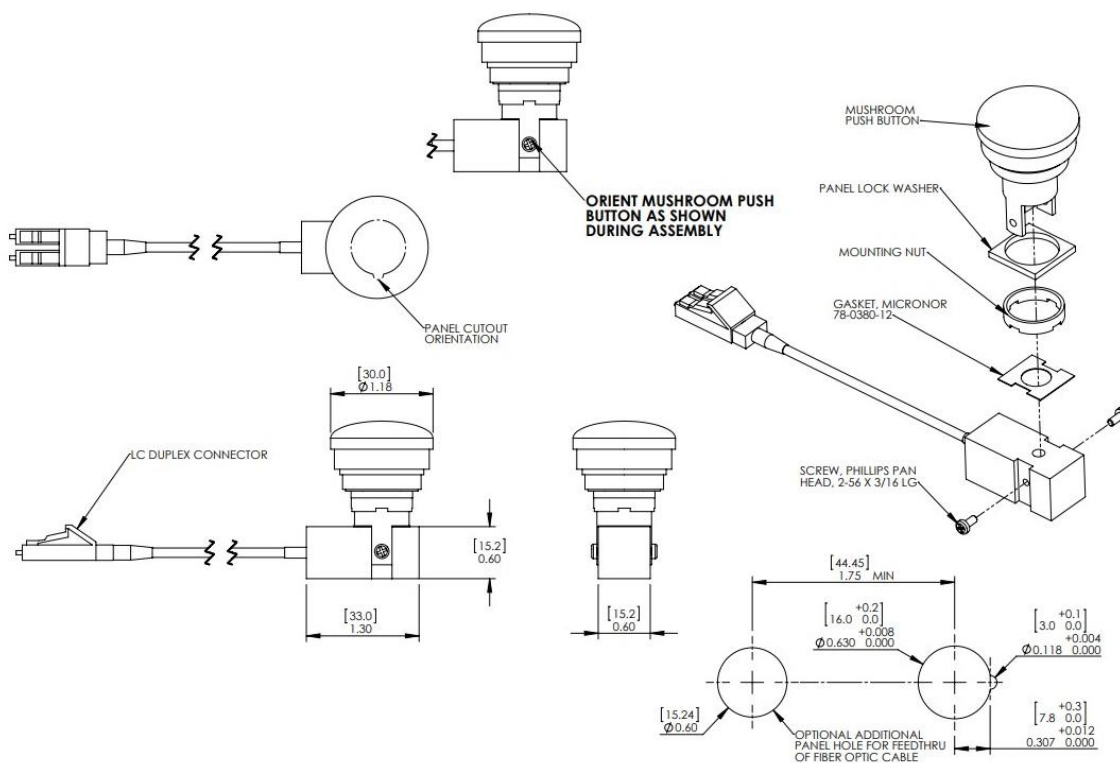
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Specifications

Functionality	
ISO 13850	ISO 13850 defines the characteristics and requirements for a traditional electromechanical E-STOP switch. The MR380 Sensor/Controller integrates the definition of purpose and functionality only
Functional States	**MR380-1 Series DIN Rail Mount Controller Output States**
Normal RESET (Up Position)	Red LED is OFF Digital 5V and 24V Outputs=HI Relay NC contacts=Closed, Relay NO contacts=Open
ACTIVATED (Down Position)	Red LED is ON
Broken Fiber, Loss of Optical Signal	Digital 5V and 24V Outputs=LOW
Controller Failure	Relay NC contacts=Open, Relay NO contacts=Closed
Optical Interface	
Interface	Duplex LC for pigtailed sensors ODVA IP-LC connector receptacle
Insertion Loss	For calculating System Loss Budget:
	IL=2.5dB max (2dB typical), 62.5/125 OM1 MM Fiber IL=5.0dB max (3dB typical), 9/125 OS1 SM Fiber IL=3.5dB max (3dB typical), 50/125 OM2/OM3 MM Fiber Consult Appl. Note AN118 for determining system loss budget and max. distance
Environmental	
Temperature/Humidity	-40°C to +65°C (-40°F to +150°F), 0-95% RH, Non-Condensing
Ingress Protection	Pigtail Version=IP61, Panel Mount Housing=IP65
Mechanical	
Housing	Aluminum body, anodized finish
Durability	100,000 operations min.
Physical	
Housing Dimension / Mounting	Consult Mechanical Reference Drawing
Unit Weight	Sensor with 5-meter pigtail, 240 g (8.5 oz)

Drawing Inch [mm]

ORIENT MUSHROOM PUSH BUTTON AS SHOWN DURING ASSEMBLY

MUSHROOM PUSH BUTTON

PANEL LOCK WASHER

MOUNTING NUT

GASKET, MICRONOR 78-0380-12

SCREW, PHILLIPS PAN HEAD, 2-56 X 3/16 LG

PANEL CUTOUT ORIENTATION

LC DUPLEX CONNECTOR

[30.0] Ø1.18

[15.2] 0.60

[33.0] 1.30

[15.2] 0.60

[44.45] 1.75 MIN

[16.0 +0.2/0.0] Ø0.630 +0.008/0.000

[3.0 +0.1/0.0] Ø0.118 +0.004/0.000

[15.24] Ø0.60

[7.8 +0.3/0.0] 0.307 +0.012/0.000

OPTIONAL ADDITIONAL PANEL HOLE FOR FEEDTHRU OF FIBER OPTIC CABLE

[129.91] 5.115

[91.35] 3.60

[65.50] 2.579

[4.60] 2X .181

[15] .59

[32.75] 1.289

[8.50] 2X Ø.335 THRU

[5] 4X Ø.197 THRU

[144.91] 5.71

[114.03] 4.49

[90] Ø3.54

[54.14] 2.13

[6.50] .26

[90.64] 3.57

[29.97] 1.18

[14.54] .57

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Order Code

9800.32.700	Emergency Stop, Ø30mm Mushroom, 62.5/125 MMF, pigtail 1.5m
9800.32.701	Emergency Stop, Ø30mm Mushroom, 62.5/125 MMF, pigtail 3m
9800.32.702	Emergency Stop, Ø30mm Mushroom, 62.5/125 MMF, pigtail 5m
9800.32.703	Emergency Stop, Ø30mm Mushroom, 62.5/125 MMF, pigtail 10m
9800.32.704	Emergency Stop, Ø30mm Mushroom, 62.5/125 MMF, ODVA IP LC Interface
9800.32.705	Emergency Stop, Ø30mm knob, 9/125 SMF, pigtail 1.5m
9800.32.706	Emergency Stop, Ø30mm knob, 9/125 SMF, pigtail 3m
9800.32.707	Emergency Stop, Ø30mm knob, 9/125 SMF, pigtail 5m
9800.32.708	Emergency Stop, Ø30mm knob, 9/125 SMF, pigtail 10m
9800.32.709	Emergency Stop, in panel mount housing, Ø30mm knob, 9/125 SMF, ODVA IP-LC interface

Related Products

MR380-0-UNI	OEM Controller for Fiber Optic Signaling Products Series MR380
MR380-1	DIN Rail Mount Controller for Fiber Optic Signaling Products Series MR380
MR386	Fiberoptic Microswitch
973X.XX.XXX	Fiberoptic Extension Cable
974X.XX.XXX	Fiberoptic Extension Cable