micronor sensors

FIBER OPTIC SIGNALING

MR387 ZapFREE® Emergency Stop Switch Sensor

Questions?
Call 805.389.6600

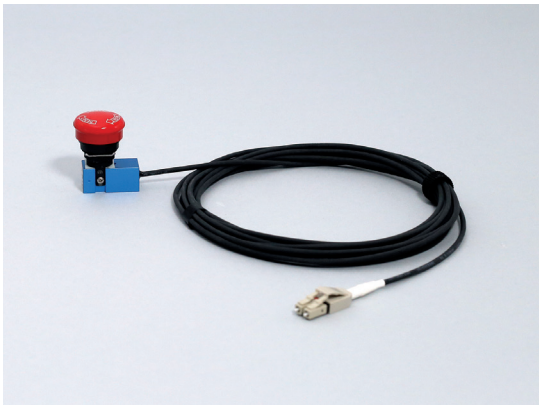
MR380 SERIES

The MR387 Series Emergency Stop Switch Systems is a new, innovative emergency signalling system that can be deployed where EMI immunity is required, in hazardous environments or over long distances - beyond the capabilities of conventional electromechanical solutions. The MR387 E-STOP system employs a photo interrupt scheme operating over either a duplex multimode or duplex single mode optical link.

The MR387 E-STOP is designed for applications where a system needs to be deactivated when the E-STOP switch sensor is depressed or any system malfunction occurs.

ZAP FREE®

Ex



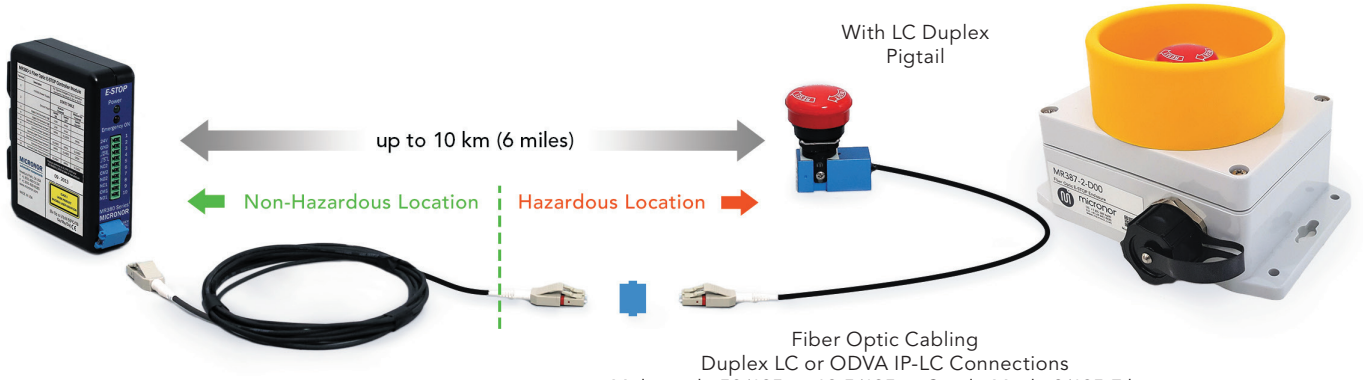
Inherently Safe, Simple Mechanical Device
EPL Mb/Gb/Gc/Db/Dc

MR380-1-3 Controller
24 VDC, Digital, Relay Contacts

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

Panel Mount Housing with ODVA IP-LC Receptacle, IP65

With LC Duplex Pigtail



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

Features

- Sensor is EX Classified "Inherently Safe, Simple Mechanical Device"
- Sensor can be operated in any hazardous or explosive environment - gas, dust, mines, etc.
- Immune to EMI, RFI, lightning, and ground loops
- Immune to high voltage lines
- Panel mountable sensor
- Multimode version is compatible with both OM2 62.5/125 and with OM2/OM3 50/125 fiber
- Single mode version is compatible with both OS1/OS2 fiberr
- Operates over short to long distances - up to 10 km
- Multiple E-STOP switches can be connected in series
- DIN rail mount and OEM controller available

Sensor 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	**MR380-1-3 Universal 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) Broken Fiber, Loss of Optical Signal, or Controller Failure	Red LED is ON Digital 5V and 24V Outputs=LOW Relay NC contacts=Open, Relay NO contacts=Closed
Functional Safety	**For MR387 E-Stop Sensor + MR380-1-3 Universal Controller**
ISO 13849	Category 2
$MTTF_d$	4.14 E+06 hours (473.1 years)
Performance Level	PL=c
Safety Integrity Level	SIL=1
Optical Interface	
Interface	Duplex LC for pigtailed sensors, MR387-XX-YY where YY is pigtail length in meters ODVA IP-LC connector receptacle, MR387-XX-D00 sensors in housing
Insertion Loss	For calculating System Loss Budget: MR387-2X-XX, IL=2.5dB max (2dB typical), 62.5/125 OM1 MM Fiber NOTE: Above also compatible with OM2/OM3 50/125 Multimode Fiber. Add 1dB to account for additional loss due to smaller fiber core and underfill launch. MR387-3X-XX, IL=5.0dB max (3dB typical), 9/125 OS1 SM Fiber Consult Application Note AN118 for guidance on determining system loss budget and maximum distance
Explosive Atmospheres	**Inherently Safe, Simple Mechanical Device**
EX Classification	Inherently safe, simple mechanical device when used with MR380 Controller IECEx Test Report GB/CML/ExTR 16.0105.00/00
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	Exempt, non-electrical
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	Consult Mechanical Reference Drawing
Mounting	Consult Mechanical Reference Drawing
Unit Weight	Sensor with 5 meter pigtail, 240 g (8.5 oz) Sensor in IP Housing,, 315 g (11 oz)

Specifications subject to change without notice

Ordering Info

M R 3 8 7 - [2] [S] - [1 R 5]

Fiber
2 62.5/125 MMF (OM1)
3 9/125 SMF (OS1)

Mushroom Button Size
S Ø30mm (Standard)

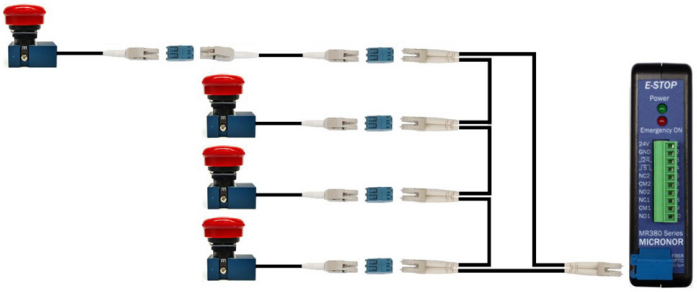
Optical Interface/Pigtail Length
1R5 LC Duplex Pigtail, 1.5m
03 LC Duplex Pigtail, 3 m
D00 E-Stop in Panel Mount IP Housing with Switch Guard and ODVA IP-LC Interface
NOTE: Other lengths upon request

Quick Ship Configurations:

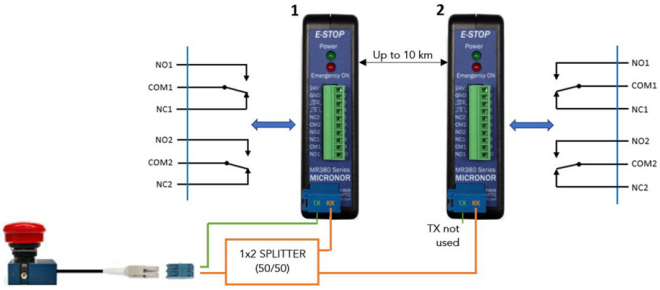
MR387-2S-1R5	E-STOP, Ø30mm Button, 62.5/125 MMF, Pigtail 1.5m
MR387-2S-D00	E-STOP in Panel Mount IP Housing, Ø30mm Button, 62.5/125 MMF, ODVA IP-LC Interface
MR387-3S-1R5	E-STOP, Ø30mm Button, SMF, Pigtail 1.5m
MR387-3S-D00	E-STOP in Panel Mount IP Housing, Ø30mm Button, SMF, ODVA IP-LC Interface
MR380-0-UNI	OEM Controller, Universal SIngle Model/Multimode, 1310nm
MR380-1-3	DIN Rail Mount Controller, Universal Single Mode/Multimode, 1310nm

Innovative Ways to Deploy Fiber Optic E-Stops

Connect Multiple E-Stops in Series:



Extend Dry Contacts to Multiple Areas:



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