

The MR380-0-1 Controller is intended for the OEM user in support of the MR380 series ZapFREE® Fiber Optic Signaling products. Fiber optic sensors outperform electromechanical and electronics-based sensors, where:

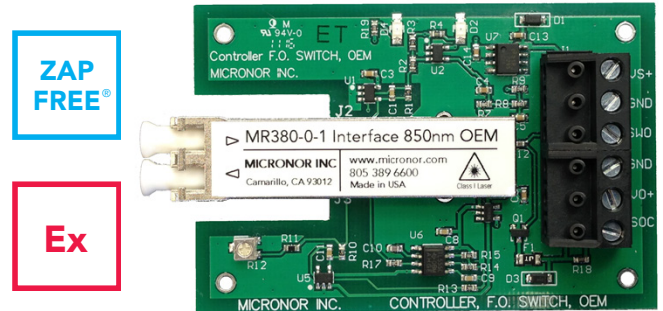
- Immunity to EMI, RFI and lightning is required
- High voltage isolation is needed
- Must operate interference-free over long distances
- Hazardous area mandates an inherently safe solution

Applications

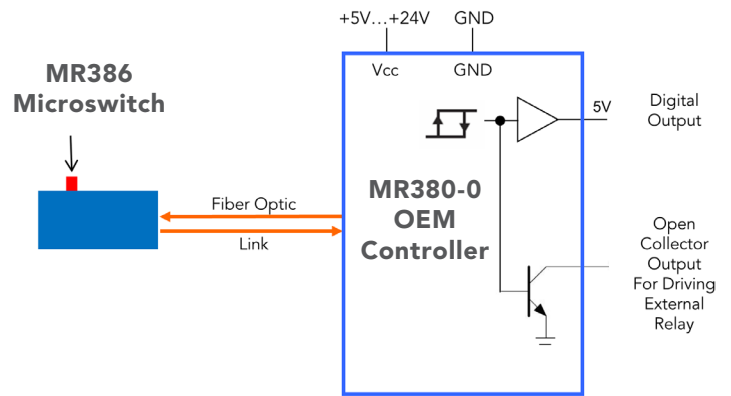
- Medical and MRI
- Transportation
- Oil, gas and mines
- Robotic systems
- Process industries and instrumentation
- Aerospace actuators

Interfaces

- For 50/125µm or 62.5/125µm multimode fiber
- Digital output
- Open-collector output for activating external relay
- Operates from +5V to +24V



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

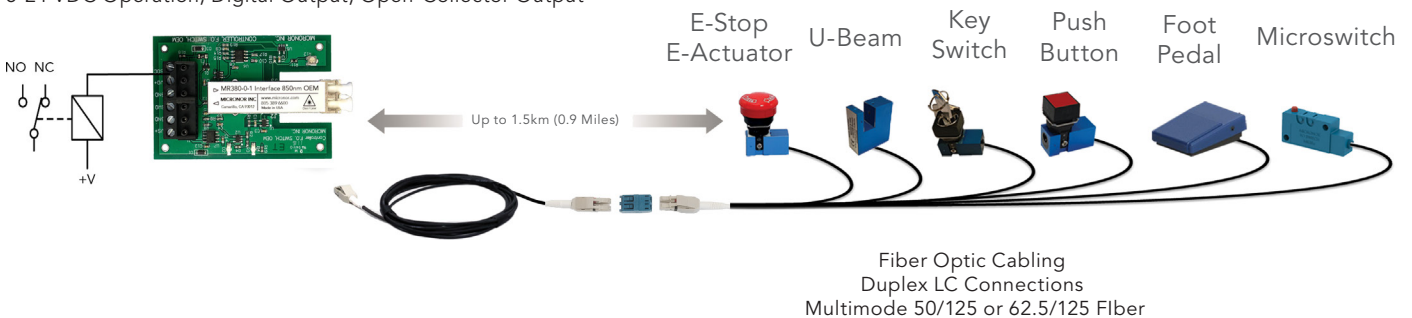


System Planning

MR380-0-1 OEM Controller
Inherently Safe, Optical Radiation

5-24 VDC Operation, Digital Output, Open-Collector Output

MR38X Sensors
Simple Mechanical Device



Fiber Optic Cabling
Duplex LC Connections
Multimode 50/125 or 62.5/125 Fiber

1. Select cabling and junction boxes compatible with the operating environment.
2. Verify that the optical link loss is within the 850nm Controller's two-way loss margin.
3. Consult Application Note AN118 for more information, examples and guidance.

Controller Specifications

Functional States		Example: MR386 Series Fiber Optic Microswitch
For Normally Open (NO) Sensors (Light interrupted)	Logic Output=LO, Logic Output=0V Open Collector Output =OFF	
For Normally Closed (NC) Sensors (Light throughput)	Logic Output=HI, Logic Output>4.5V Open Collector Output=ON	
Electrical Interface		NOTE: Electrical connections shall not exceed 3 meters.
Connector	CamdenBoss P/N CTB1301/6A (one included with Controller) 6C, Screw-Type Terminal Plug, 5mm contact spacing, 1.5mm ² cable entry	
Logic Output	High=4.5V min (2k Ω Load), Low=0.25V max	
Open Collector Output	Maximum Load Voltage=24 VDC Maximum Current 180mA, Protected by resettable fuse	
Power Supply	+5V to +24V DC maximum Current Consumption=8mA max at 5V DC, 12mA at +24V and R8 installed	
Optical Interface		
Connector	LC Duplex, PC Polish	
Fiber Types	62.5/125 μ m 0.275NA OM1 Multimode Fiber 50/125 μ m 0.22NA OM2/OM3 Multimode Fiber	
Optical Output Power	OM1=-9dBm (0.11mW) typical, OM3=-11dBm (0.080mW) typical	
Receiver Sensitivity	-25dBm	
Optical Dynamic Range	OM1=15dB, OM3=13dB	
Maximum Link Loss	Depends on the combined insertion loss of the sensor, fiber length(s), and all connectors and splices. Link lengths up to 1.5km are typically achievable.	
Operating Wavelength	850nm, VCSEL	
Laser Safety Classification	Class 1 per IEC 60825-1	
Explosive Atmospheres		Inherently safe, optical radiation
EX Classification	Controller shall be installed in non-hazardous location only NOTE: Power supply shall be limited to 200mA or less IECEX Test Report GB/CML/ExTR 16.0105.00/00	
ATEX	CE EPL Mb/Gb/Gc/Db/Dc	
IEC Ex	EPL Mb/Gb/Gc/Db/Dc	
NEC	Exempt	
Environmental Performance		
Temperature/Humidity	Standard: -10°C to +65°C (23°F to +131°F) Extended: -40°C to +70°C (-40°F to +158°F)	
Humidity	0%-85% RH, Non-Condensing	
Ingress Protection	IP00 (none)	
Vibration/Shock	Performance depends on mounting. Consult factory when designing for high shock and vibration environment.	
Physical Attributes		
Mounting	4x #2-56 or M2.5 screws, Mounting Pattern=1.60 x 2.60 inches	
Size	5.08 x 7.62 cm (2.00 x 3.00 inches)	
Weight	25 g (1 oz)	

Specifications subject to change without notice

Ordering Info

MR380 - 0 - 1

Product
0 PCB Controller

Temperature Range
Blank Standard, -10°C to +65°C
E Extended, -40°C to +70°C

Wavelength
1 Multimode 850nm, Short Haul

Quick Ship Configurations:

MR380-0-1 Standard OEM Controller, 850nm, For Short Haul Multimode links

Compatible Sensors:

MR381 E-ACTUATOR Sensor. Consult separate MR381 data sheet.
MR382 U-BEAM Slot Sensor. Consult separate MR382 data sheet.
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 General Purpose FIBER OPTIC MICROSWITCH. Contact Micronor for product information.
MR387 E-STOP Sensor. Consult separate MR387 data sheet.

Replacement Part:

50-CTB13016A/6A CamdenBoss Terminal Plug

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