

The MR382 series Fiber Optic U-Beam Sensor is an innovative photo interruption/slot sensor solution that can be deployed in challenging environments, including medical, mines, oil & gas, refining, electromagnetic and high voltage. The U-Beam sensor is a turn-key optical solution for implementing a gear tooth speed sensor, an edge detector or proximity sensor. The optical sensor operates over a duplex multimode 62.5/125 optical link up to 1250 meters.



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

### Features

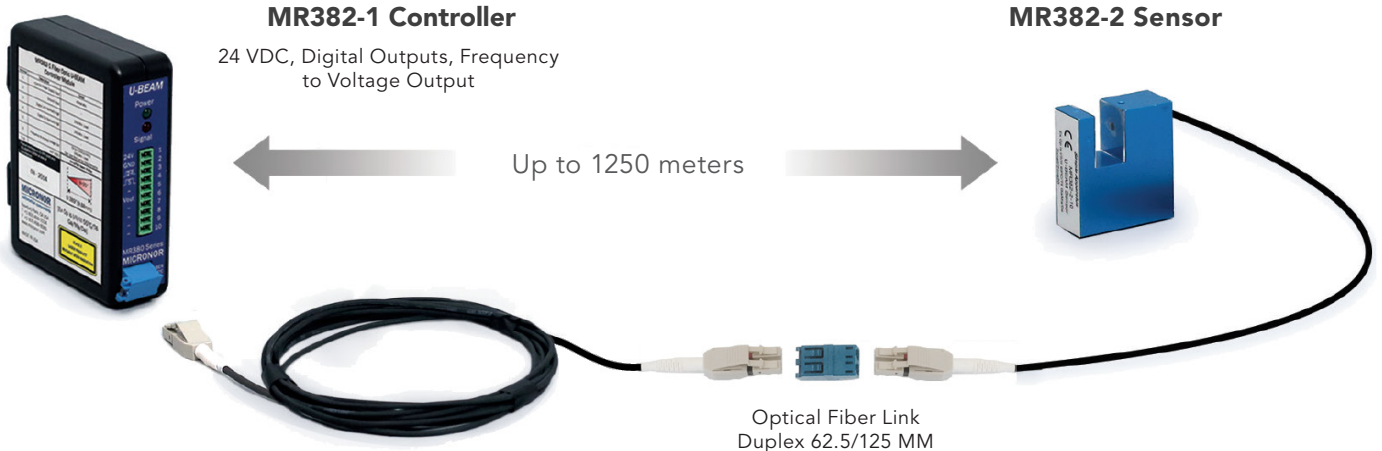
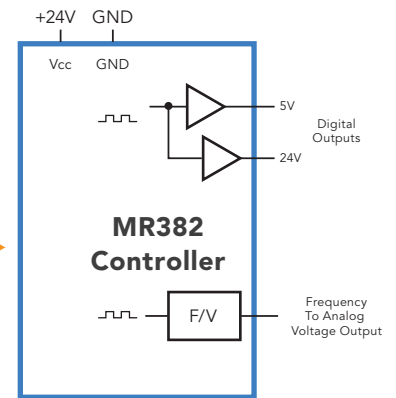
- DIN rail mountable module
- EX rated Inherently Safe Optical Radiation
- Controller is installed outside the hazardous area
- Interference free transmission up to 1250 meters
- Supports 62.5/125 multimode fiber link

### Interfaces

- Digital outputs, 5V and 24V
- Frequency to Analog Voltage Output
- Digital outputs implement known default failure state



Fiber Optic Link



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	
Normal (Beam not interrupted)	Digital 5V and 24V Outputs=HI
Activated (Beam interrupted) Broken Fiber, Loss of Optical Signal or Controller Failure	Digital 5V and 24V Outputs=LOW
Digital Outputs	
5V Logic	5 VDC/2k $\Omega$ Load
24V Logic	24 VDC/2k $\Omega$ Load
Bandwidth	30 kHz
Analog Output	
Frequency to Voltage Converter	0V to 10V DC / 2k $\Omega$ Load 1 kHz/Volt Conversion (Contact Micronor Sales for Special Requirements) 40-60% Duty Cycle Requirement (See Section 8 of Manual for more information) < 2% Linearity (if Duty Cycle parameter satisfied)
Optical	
Operating Wavelength	850nm, Class I Eye Safe
System Loss Budget	15 dB
Maximum Distance	Up to 1250 meters
Interfaces	
<b>NOTE: Electrical connections shall not exceed 3 meters</b>	
Electrical	10-pin Screw Terminal, 30-14 AWG (Phoenix Mating Plug 1803659)
Optical	LC Duplex, 62.5/125 $\mu$ m Graded Index Fiber, 0.275NA, Type OM1
Power Supply	+24 VDC, <80 mA input
Functional Safety	
ISO 13849-1 Classification	Category 2
MTTFd	6.48 E+05 hours (74.0 years)
Performance Level (PL)	PL=c
Safety Integrity Level (SIL)	SIL=1
Explosive Atmospheres	
Inherently Safe Optical Radiation	
EX Classification	Controller shall be installed in non-hazardous location only Power supply to Controller shall be current limited to 200mA IECEX Test Report GB/CML/IECEXTR 16.0105.00/00
ATEX	<b>CE</b> EPL Mb/Gb/Gc/Db/Dc
IEC Ex	EPL Mb/Gb/Gc/Db/Dc
NEC	Exempt
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 2 - 1 - 1**

**Product**

1 U-BEAM Controller

**Wavelength**

1 850nm

**Quick Ship Configurations:**

**MR382-1-1** Controller

**MR382-2-03** U-Beam Sensor with 3m Pigtail. Consult separate MR382-2 data sheet. for additional information.

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