





**DC - 3 WIRE  
MINI METAL HOUSING  
Cylindrical, 10-30V DC, 200mA  
LED for Output Energized**

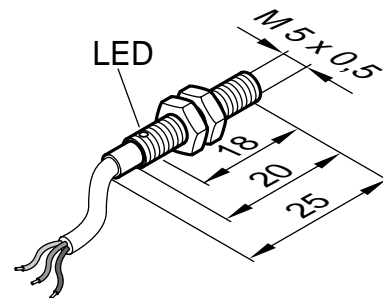
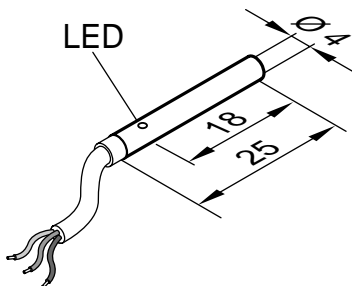
- 4mm, 5mm, and 6.5mm diameter
- Economically Priced
- Non-connector models feature polyurethane (PUR) cables
- Carries  $\text{C}\epsilon$  mark

- IEC(529) IP67 (NEMA 1, 3, 4, 6, 12, 13) Protection
- Short Circuit Protection
- Overload Protection
- Reverse Polarity Protection
- Wire Break Resistance
- Temperature Range: -25 to 70°C (-13 to 158°F)

Sensing Distance	Ø 4 Flush Mount		M5 Flush Mount	
	0.8mm (0.03 in.)		0.8mm (0.03 in.)	
Cable or Connector Style Cat. No.	Cable	64	Cable	64
<b>PNP</b> Normally Open 	9980-1010	9980-1064	9980-2010	9980-2064
	Normally Closed 			
<b>NPN</b> Normally Open 	9980-1110	9980-1164	9980-2110	9980-2164
	Normally Closed 			
Ripple Voltage	≤10%	≤10%	≤10%	≤10%
Voltage Range	10V-30V	10V - 30V	10V - 30V	10V - 30V
Supply Current	≤10 mA	≤10 mA	≤10 mA	≤10 mA
Max. Load Current	200 mA	200 mA	200 mA	200 mA
Voltage Drop Across Sensor	≤2V	≤2V	≤2V	≤2V
Max. Leakage Current	≤100 µA	≤100 µA	≤100 µA	≤100 µA
Switching Frequency	5000 Hz	5000 Hz	5000 Hz	5000 Hz
Hysteresis	Typ. 5%	Typ. 5%	Typ. 5%	Typ. 5%
Temperature Drift	≤10%	≤10%	≤10%	≤10%
Repeatability	.04mm (.003 in.)	.04mm (.003 in.)	.04mm (.003 in.)	.04mm (.003 in.)
Front Cap Material	PBTP	PBTP	PBTP	PBTP
Housing Material	Nickel Plated Brass	Nickel Plated Brass	Nickel Plated Brass	Nickel Plated Brass

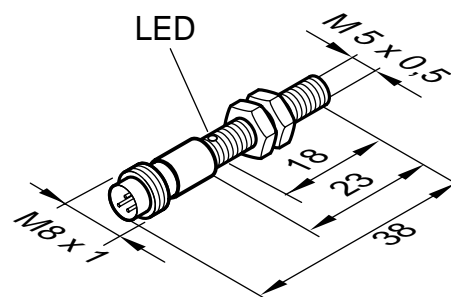
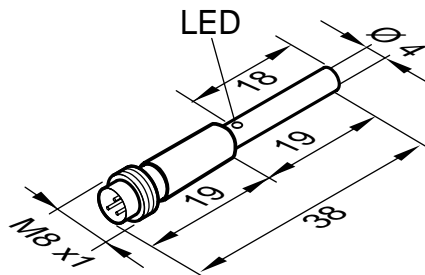
**Fixed Cable**

PUR 2m (6 ft. 6 in.). Supplied with Brass, Nickel Plated (BN) locknuts for M5 model.



**64 Style Connector**

4-pin, Micro style, 12mm (.47 in.) supplied with Brass, Nickel Plated (BN) locknuts for M5 model.



### Metric/In. Conversion Table

.5 mm = .019 in.	19.0 mm = .74 in.
1.0 mm = .04 in.	20.0 mm = .78 in.
3.5 mm = .13 in.	23.0 mm = .90 in.
4.0 mm = .15 in.	25.0 mm = .94 in.
5.0 mm = .19 in.	35.0 mm = 1.37 in.
6.5 mm = .25 in.	40.0 mm = 1.57 in.
8.0 mm = .31 in.	43.0 mm = 1.69 in.

This table converts millimeters to inches in reference to the illustrations included in this catalog

### Accessories

#### 2 meter (6 ft. 6 in.) DC Cable Assemblies for Quick Disconnect Sensors

64 Connector	8000-5220	PVC, Straight
64 Connector	8000-5230	PVC, Right Angle, 2LED, PNP
64 Connector	8000-5240	PVC, Right Angle, 2LED, NPN

Change last digit of connector number to 5 for 5 meter cable

Refer to pages 116-121 for more cable information

Mounting Brackets – see Pages 114-115

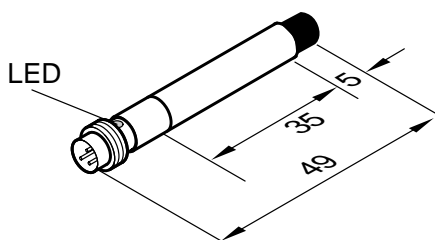
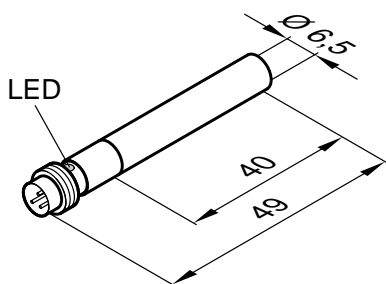
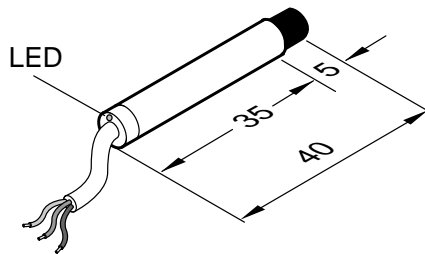
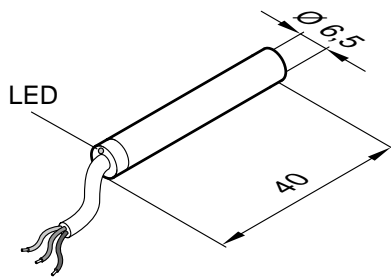
### Ø 6.5 Flush Mount 1.5mm (0.06 in.)

Cable	65
9961-1200	9961-1264
≤10%	≤10%
10V - 30V	10V - 30V
≤8 mA	≤8 mA
200 mA	200 mA
≤2.4V	≤2.4V
≤10 µA	≤10 µA
2000 Hz	2000 Hz
≤15%	≤15%
≤10%	≤10%
.15mm (.006in.)	.15mm (.006in.)
PBTB	PBTB
Stainless Steel	Stainless Steel

### Ø 6.5 Non-Flush Mount 3.0mm (0.11 in.)

Cable	65
9961-1300	9961-1364
≤10%	≤10%
10V - 30V	10V - 30V
≤8 mA	≤8 mA
200 mA	200 mA
≤2.4V	≤2.4V
≤10 µA	≤10 µA
2000 Hz	2000 Hz
≤15%	≤15%
≤10%	≤10%
.15mm (.006in.)	.15mm (.006in.)
PBTB	PBTB
Stainless Steel	Stainless Steel

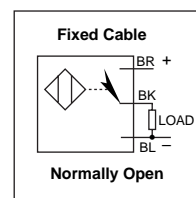
Note: Sensor dimensions in mm.



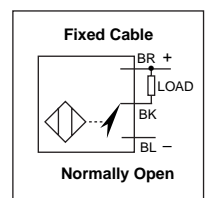
### Wiring Diagrams

Note: Wire colors are applicable to cable purchased from Altech

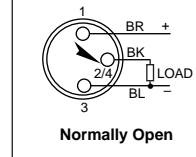
#### PNP



#### NPN



#### 64 Connector



#### 64 Connector

