



Specifications

Environmental

Certifications	cULus and CE Marked for all applicable directives
Operating Environment	IP67
Operating Temperature [C (F)]	-25...+70° (-13...+158°)
Vibration	10...55 Hz, 1 mm amplitude, meets or exceeds IEC 60068-2-6
Shock	30 g with 1 ms pulse duration, meets or exceeds IEC 60068-2-27
Relative Humidity	5...95%
Ambient Light Immunity	Incandescent light 3000 lux

Optical

Sensing Modes	Retroreflective, polarized retroreflective, diffuse, background suppression, transmitted beam
Sensing Range	See Product Selection table on page 1-60
Field of View	See Product Selection table on page 1-60
Light Source	Visible red LED (660 nm) or infrared LED (880 nm)
LED Indicators	Yellow LED for output indication
Adjustments	Sensitivity potentiometer (diffuse models only)

Electrical

Voltage	10...30V DC
Current Consumption	30 mA max
Sensor Protection	Reverse polarity, overload, short circuit

Outputs

Response Time	2 ms (0.5 ms for background suppression)
Output Type	PNP or NPN by cat. no.
Output Mode	Complementary light operate or dark operate, selectable light operate or dark operate for background suppression models
Output Current	100 mA
Output Leakage Current	10 µA max

Mechanical

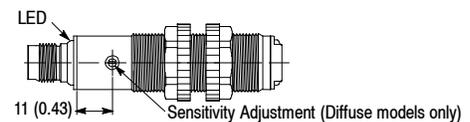
Housing Material	Nickel-plated brass
Lens Material	PMMA/PC
Connection Types	2 m cable, 4-pin DC micro (M12) QD
Supplied Accessories	18 mm fastening nuts
Optional Accessories	See mounting brackets, reflectors, and cordsets on page 1-61

Features

- 18 mm industry standard package
- Wide selection of sensing modes
- 30V DC operation
- NPN or PNP outputs
- Fast response time
- Variety of connection types
- Laser models available (see page 1-115)

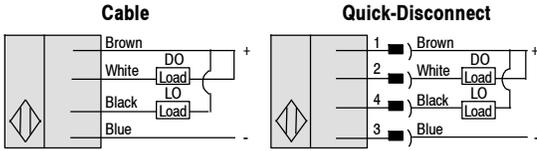
User Interface Panel

Label	Color	State	Status
Output	Yellow	OFF	Sensor output de-activated
		ON	Sensor output activated

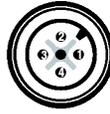


Wiring Diagrams

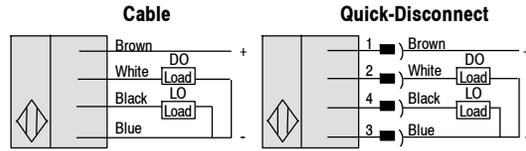
Diffuse
NPN Output



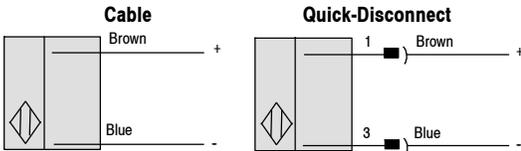
Face View Male
Receptacle (Sensor)
DC Micro



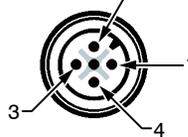
PNP Output



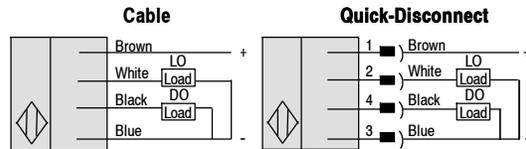
Transmitted Beam, Retroreflective, Polarized Retroreflective



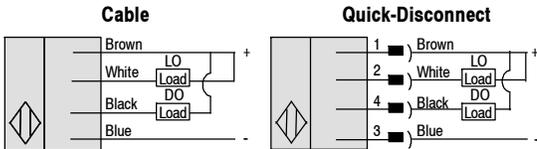
Face View Male
Receptacle (Sensor)
DC Micro



PNP Output

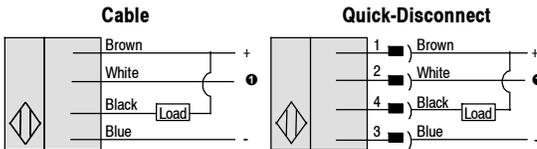


NPN Output

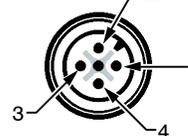


Background Suppression

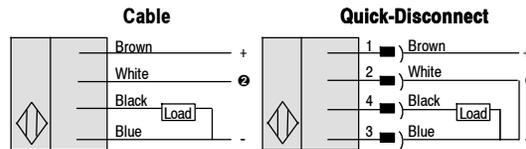
NPN Output



Face View Male
Receptacle (Sensor)
DC Micro

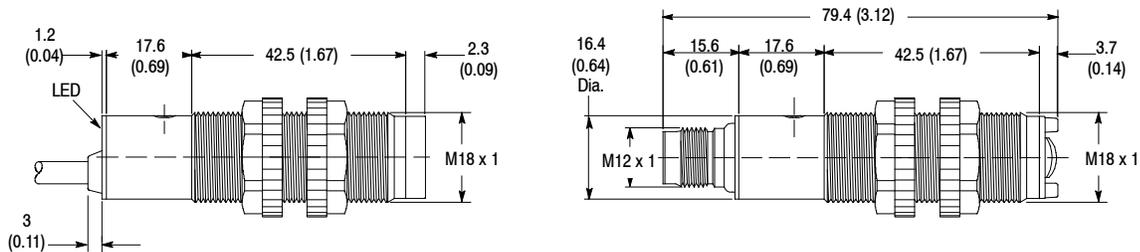


PNP Output



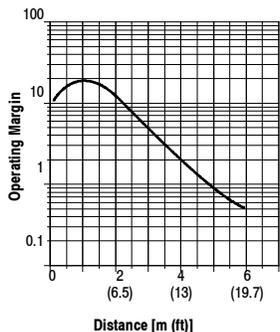
- ❶ Open circuit or tie white (2) and brown (1) conductors together for L.O. Tie white (2) and blue (3) conductors together for D.O.
- ❷ Tie white (2) and brown (1) conductors together for L.O. or tie white (2) and blue (3) conductors together for D.O.

Approximate Dimensions [mm (in.)]

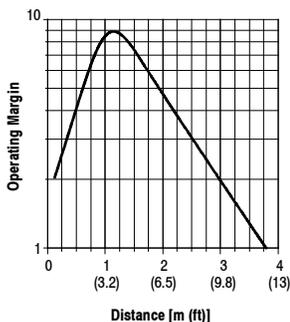


Typical Response Curve

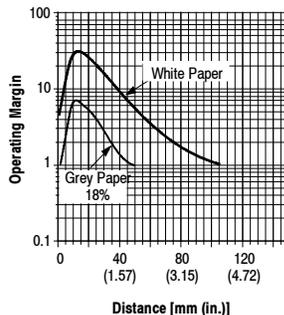
Retroreflective



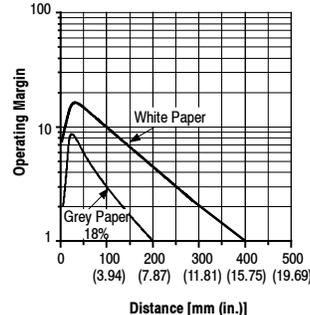
Polarized Retroreflective



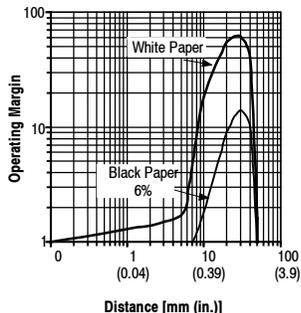
Standard Diffuse 100 mm



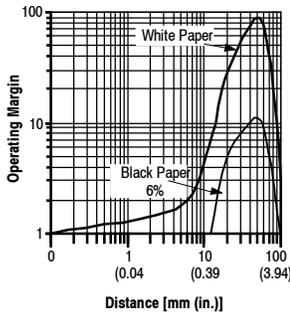
Standard Diffuse 400 mm



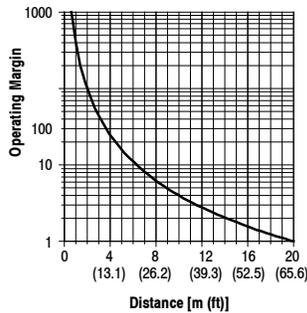
Background Suppression 50 mm



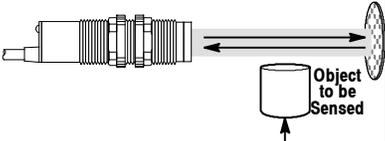
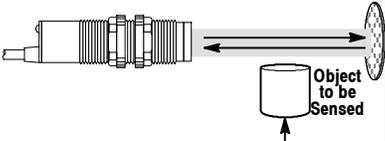
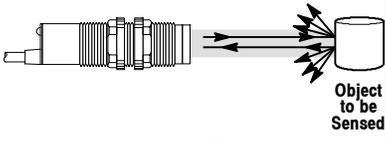
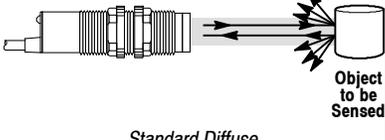
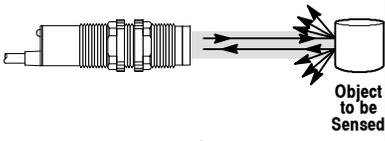
Background Suppression 100 mm



Transmitted Beam

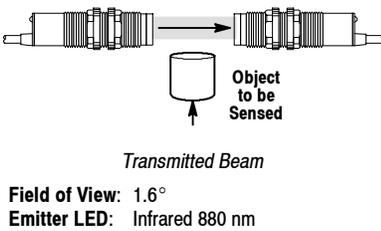


Product Selection

Sensing Mode	Operating Voltage Supply Current	Sensing Distance @ 1X Margin	Output Energized	Output Type Capacity Response Time	Connection Type	Cat. No.
 <p><i>Retroreflective</i></p> <p>Field of View: 1.9° Emitter LED: Infrared 880 nm</p>	10...30V DC 30 mA	3 mm...4 m (0.12 in... 13.2 ft)	LO/DO Complementary	NPN 100 mA 4 ms	2 m 300V cable	42CM-U1MNB-A2
					4-pin DC micro	42CM-U1MNB-D4
				PNP 100 mA 4 ms	2 m 300V cable	42CM-U1MPB-A2
					4-pin DC micro	42CM-U1MPB-D4
 <p><i>Polarized Retroreflective</i></p> <p>Field of View: 1.8° Emitter LED: Visible red 660 nm</p>	10...30V DC 30 mA	3 mm...3 m (0.12 in...9.9 ft)	LO/DO Complementary	NPN 100 mA 4 ms	2 m 300V cable	42CM-P2MNB-A2
					4-pin DC micro	42CM-P2MNB-D4
				PNP 100 mA 4 ms	2 m 300V cable	42CM-P2MPB-A2
					4-pin DC micro	42CM-P2MPB-D4
 <p><i>Standard Diffuse</i></p> <p>Field of View: 6.6° Emitter LED: Visible Red 660 nm</p>	10...30V DC 30 mA	100 mm (3.9 in.) (Adjustable)	LO/DO Complementary	NPN 100 mA 2 ms	2 m 300V cable	42CM-D2MNAE-A2
					4-pin DC micro	42CM-D2MNAE-D4
				PNP 100 mA 2 ms	2 m 300V cable	42CM-D2MPAE-A2
					4-pin DC micro	42CM-D2MPAE-D4
 <p><i>Standard Diffuse</i></p> <p>Field of View: 6.6° Emitter LED: Infrared 880 nm</p>	10...30V DC 30 mA	400 mm (13.6 in.) (Adjustable)	LO/DO Complementary	NPN 100 mA 2 ms	2 m 300V cable	42CM-D1MNAL-A2
					4-pin DC micro	42CM-D1MNAL-D4
				PNP 100 mA 2 ms	2 m 300V cable	42CM-D1MPAL-A2
					4-pin DC micro	42CM-D1MPAL-D4
 <p><i>Background Suppression</i></p> <p>Field of View: 50 mm = 5.7° 100 mm = 3.4° Emitter LED: Visible red 660 nm</p>	10...30V DC 30 mA	50 mm (1.97 in.)	L.O./D.O. Selectable	NPN 100 mA 0.5 ms	2 m 300V cable	42CM-B2LNBC-A2
					4-pin DC micro	42CM-B2LNBC-D4
				PNP 100 mA 0.5 ms	2 m 300V cable	42CM-B2LPBC-A2
					4-pin DC micro	42CM-B2LPBC-D4
		100 mm (3.9 in.)		NPN 100 mA 0.5 ms	2 m 300V cable	42CM-B2LNBE-A2
					4-pin DC micro	42CM-B2LNBE-D4
				PNP 100 mA 0.5 ms	2 m 300V cable	42CM-B2LPBE-A2
					4-pin DC micro	42CM-B2LPBE-D4

Refer to page 1-61 for cordsets and accessories.

Product Selection (continued)

Sensing Mode	Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Capacity Response Time	Connection Type	Cat. No.
	10...30V DC 25 mA	3 mm...20 m (0.12 in... 65.6 ft)	NA Light Source		2 m 300V cable	42CM-E1EZB-A2
					4-pin DC micro	42CM-E1EZB-D4
			L.O./D.O. Complementary	NPN 100 mA 2 ms	2 m 300V cable	42CM-R1MNB-A2
					4-pin DC micro	42CM-R1MNB-D4
				PNP 100 mA 2 ms	2 m 300V cable	42CM-R1MPB-A2
					4-pin DC micro	42CM-R1MPB-D4

Cordsets and Accessories

Cordset		Accessories			
Description	Cat. No.	Description	Cat. No.	Description	Cat. No.
DC Micro QD Cordset, 4-pin, 2 m	889D-F4AC-2	Mounting Brackets	60-2657	Reflectors	92-39
DC Micro QD Cordset, 4-pin, 2 m	889D-F4AC-2	Mounting Brackets	60-2649	Mounting Brackets	60-2664
		Snap-Clamp Mounting Brackets	871A-SCBP18		