



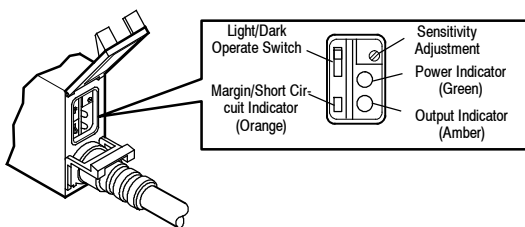
Specifications

Environmental	
Certifications	UL, CSA and CE Marked for all applicable directives
Operating Environment	NEMA 4X, 6P, IP67, 1200 psi (8270 kPa) washdown
Operating Temperature [C (F)]	-20...+70° (-4...+158°)
Vibration	10...55 Hz, 1 mm amplitude, meets or exceeds IEC 60947-5-2
Shock	30 g with 1 ms pulse duration, meets or exceeds IEC 60947-5-2
Relative Humidity	5...95%
Optical	
Sensing Modes	Retrotreflective, polarized retroreflective, diffuse, wide angle diffuse, fixed focus diffuse, transmitted beam, fiber optic
Sensing Range	See Product Selection table on page 1-45
Field of View	See Product Selection table on page 1-45
Light Source	Visible red LED (660 nm), infrared LED (880 nm)
LED Indicators	See User Interface below
Adjustments	Multi-turn potentiometer
Electrical	
Voltage	10.8...30V DC, 21.6...250V AC/DC
Current Consumption	30 mA max. (DC)
Sensor Protection	Overload, short circuit, reverse polarity, false pulse
Outputs	
Response Time	See Product Selection table on page 1-45
Output Type	PNP and NPN (DC), MOSFET (AC/DC)
Output Mode	Light operate or dark operate selectable
Output Current	100 mA @ 30V DC max
Output Leakage Current	0.1 mA max (DC), 1.7 mA (AC/DC)
Mechanical	
Housing Material	Noryl 190X
Lens Material	Acrylic
Connection Types	2 m cable (24 AWG), 4-pin DC micro (M12) QD, 3-pin AC micro (M12)
Supplied Accessories	75012-097-01 18 mm locknut
Optional Accessories	See mounting brackets, reflectors, and cordsets on page 1-47

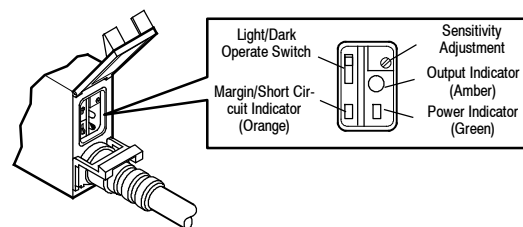
Features

- Compact rectangular size with standard 18 mm mounting nose
- Visible indicators for power, output, and 2.5X margin/short circuit
- Short circuit protection in all versions, including two-wire universal voltage versions
- False pulse protection
- Switch selectable light or dark operation
- Access to sensor adjustments through captive cover that does not require tools for access
- Eight sensing modes available
- Rated to withstand high temperature 1200 psi washdowns
- 300 μs high speed DC versions
- No tools are required to attach fiber optic cables to either glass or plastic fiber optic sensors

User Interface



NOTE: The power indicator will turn off when the output indicator is on. The cat. no. for the Rear Snap Cover is 60-2679.

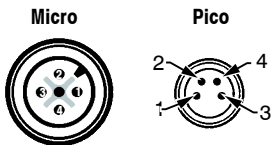
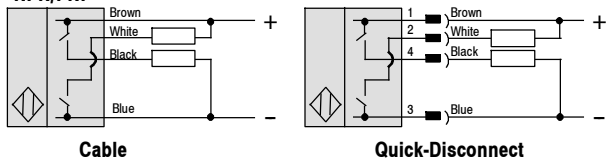


NOTE: The power indicator will turn off when the output indicator is on. The cat. no. for the Rear Snap Cover is 60-2679.

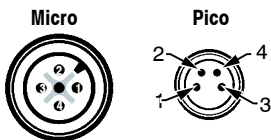
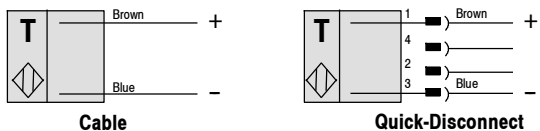
Wiring Diagrams ①②

11...30V DC Sensors

NPN/PNP

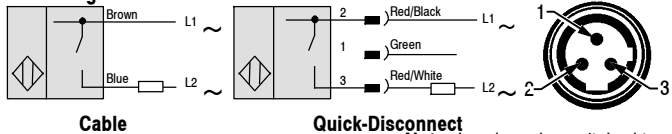


Transmitted Beam Source

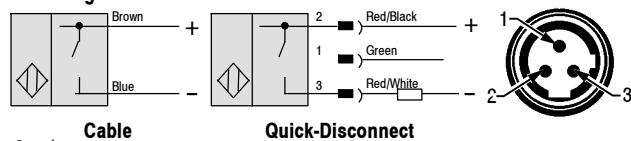


22...250V AC/DC Sensors

AC Wiring



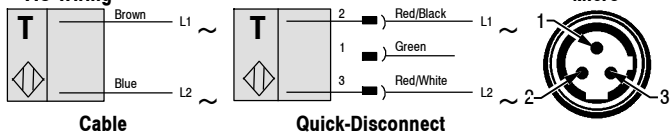
DC Wiring



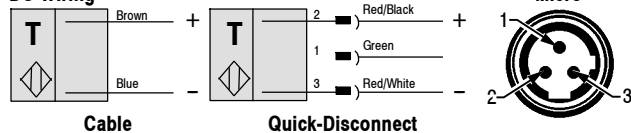
Note: Load can be switched to pin 2 or brown.

Transmitted Beam Source

AC Wiring



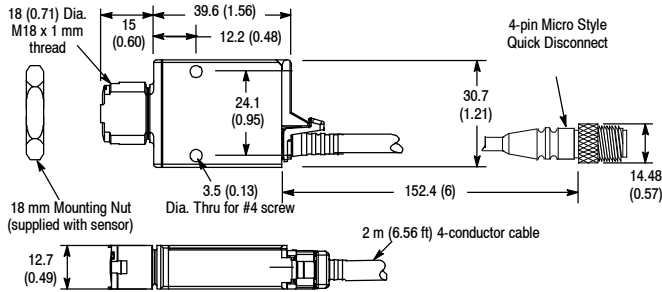
DC Wiring



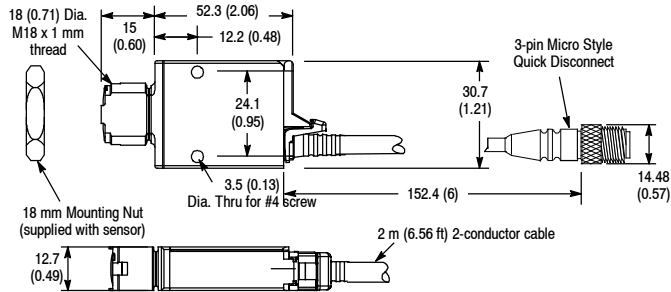
- ① For Rockwell Automation programmable controller compatible interface, refer to *PHOTOSWITCH® Photoelectric Sensors and Programmable Controller Interface Manual* at www.ab.com/literature.
- ② Quick-disconnect wiring codes shown are valid for Rockwell Automation cables only.

Approximate Dimensions [mm (in.)]

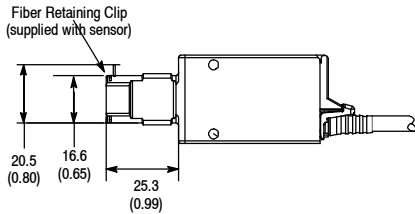
DC Sensors



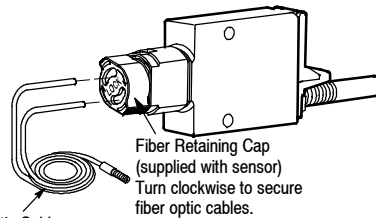
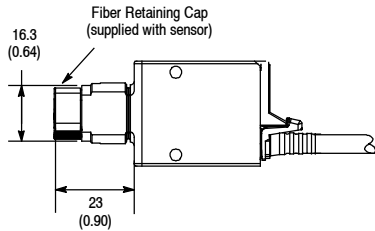
AC/DC Sensors



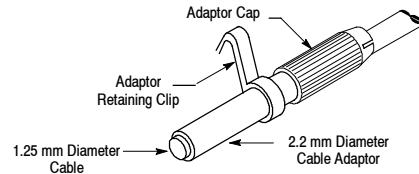
Infrared Glass Fiber Optic Sensors



Visible Red Plastic Fiber Optic Sensors



Plastic Fiber Optic Cable
2.2 mm (0.09 in.) jacket diameter on control end tip



Special Glass Fiber Optic cables are also available with 2.2 mm (0.09 in.) diameter control end tips.

NOTE: Cat. No. 61-6731 adaptors are required for smaller fiber optic cables with jacket diameters of 1.25 mm (0.05 in.).

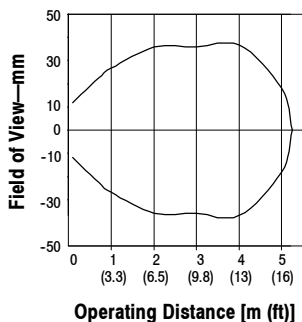
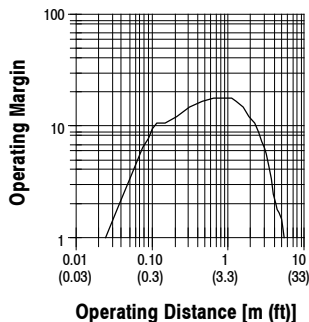
Typical Response Curve

Beam Pattern

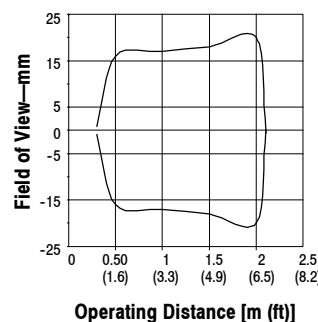
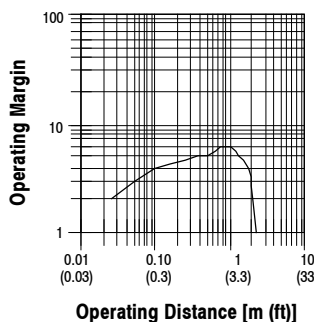
Typical Response Curve

Beam Pattern

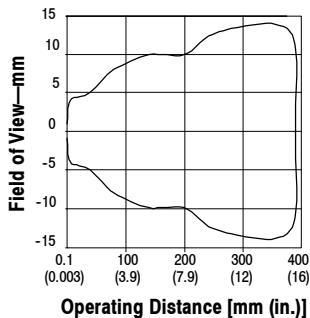
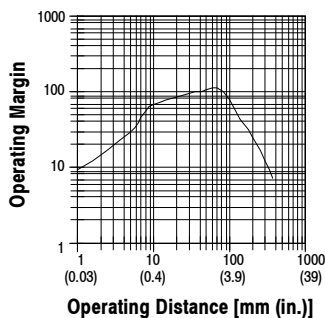
Retroreflective



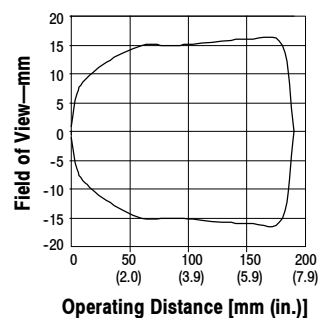
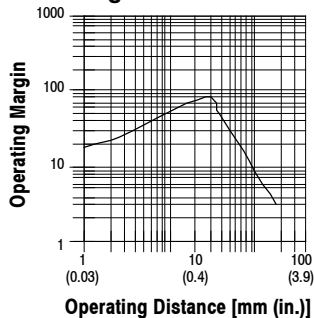
Polarized Retroreflective



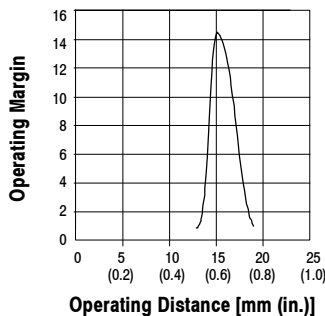
Standard Diffuse



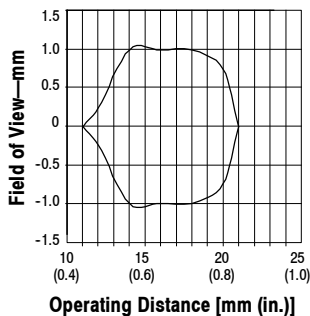
Wide Angle Diffuse



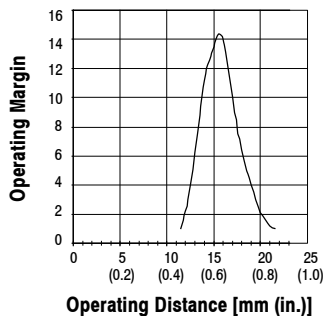
Fixed Focus Diffuse
16 mm Red LED



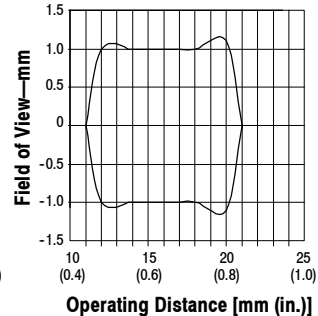
16 mm Red LED



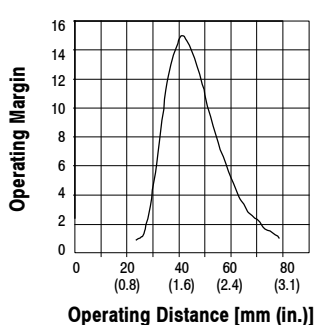
Fixed Focus Diffuse
16 mm Green LED



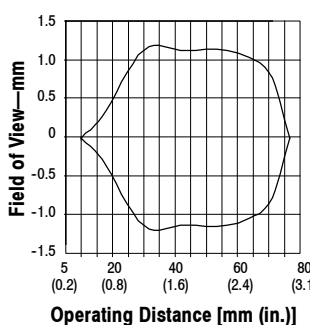
16 mm Green LED



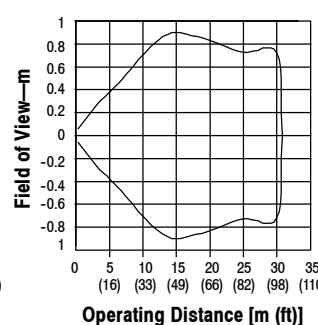
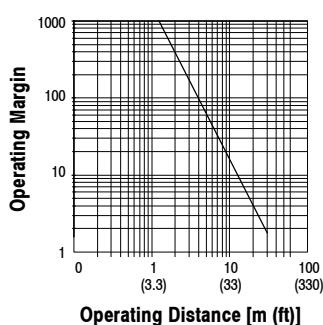
Fixed Focus Diffuse
43 mm Red LED



43 mm Red LED

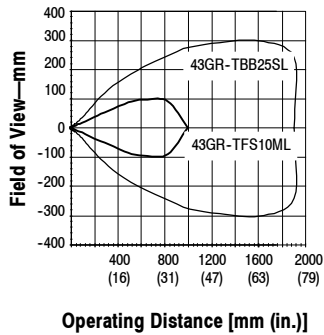
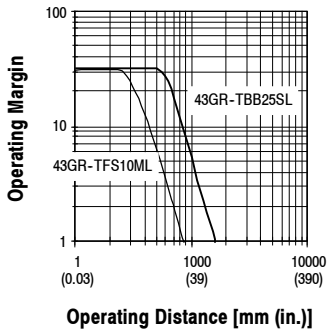


Transmitted Beam



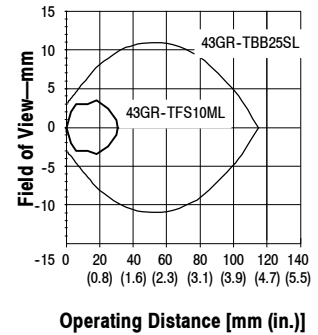
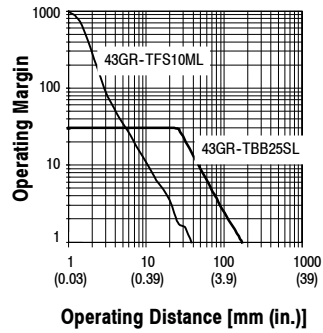
Typical Response Curve Beam Pattern

Large Aperture Fiber Optic
Retroreflective (using 3 in. dia. reflector)

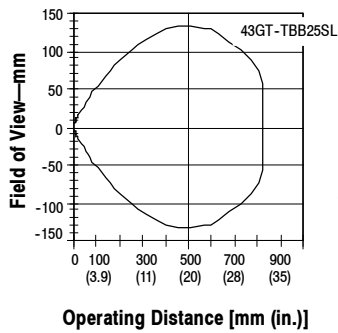
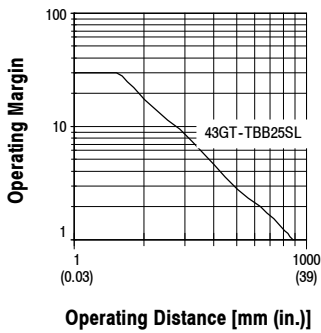


Typical Response Curve Beam Pattern

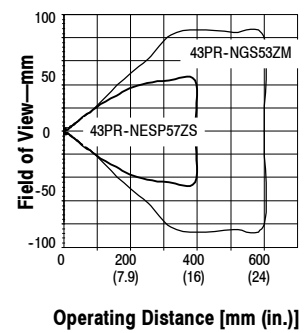
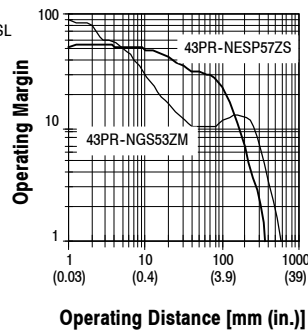
Large Aperture Fiber Optic
Diffuse



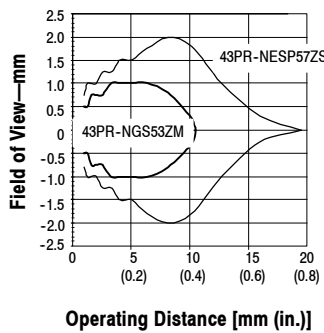
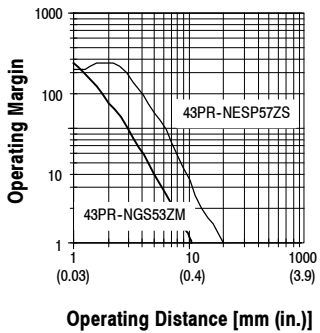
Large Aperture Fiber Optic
Transmitted Beam



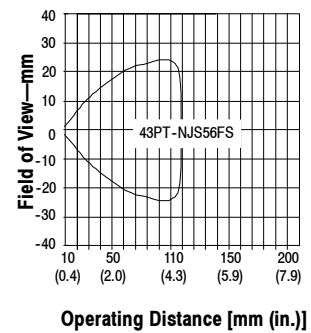
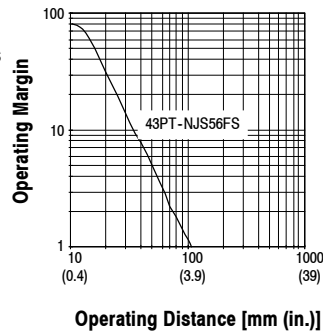
Small Aperture Fiber Optic
Retroreflective (using 3 in. dia. reflector)



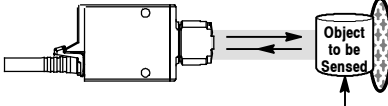
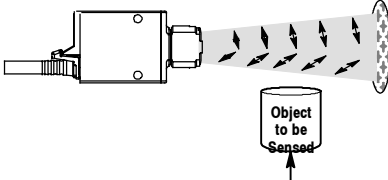
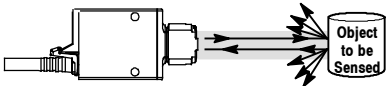
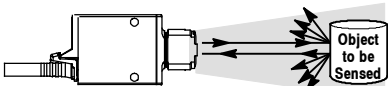
Small Aperture Fiber Optic
Diffuse



Small Aperture Fiber Optic
Transmitted Beam



Product Selection

Sensing Mode	Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Capacity Response Time	Connection Type	Cat. No.
 <p><i>Retroreflective</i></p> <p>Field of View: 1.5° Emitter LED: Visible red 660 nm</p>	10.8...30V DC 35 mA	25 mm...5 m (0.98 in...16.4 ft)	Light/Dark Selectable	NPN/PNP 100 mA 1 ms	2 m 300V cable	42KL-U2LB-A2
		21.6...250V AC/DC			25 mm...2.5 m (0.98 in...8.2 ft)	4-pin DC micro
	4-pin pico QD					42KL-U2LB-Y4
	Power MOSFET 2-wire 100 mA 8.3 ms			2 m 300V cable		42KL-U2LQ-A2
		4-pin DC micro		42KL-U2LQ-F4		
		4-pin pico QD		42KL-U2LQ-Y4		
 <p><i>Polarized Retroreflective</i></p> <p>Field of View: 1.5° Emitter LED: Visible red 660 nm</p>	10.8...30V DC 35 mA	25 mm...2 m (0.98 in...6.6 ft)	Light/Dark Selectable	NPN/PNP 100 mA 1 ms	2 m 300V cable	42KL-P2LB-A2
		21.6...250V AC/DC			25 mm...1 m (0.98 in...3.3 ft)	4-pin DC micro
	4-pin pico QD					42KL-P2LB-Y4
	Power MOSFET 2 wire 100 mA 8.3 ms			2 m 300V cable		42KL-P2LQ-A2
		4-pin DC micro		42KL-P2LQ-F4		
		4-pin pico QD		42KL-P2LQ-Y4		
 <p><i>Standard Diffuse</i></p> <p>Field of View: 5° Emitter LED: Infrared 880 nm</p>	10.8...30V DC 35 mA	1...380 mm (0.04...15 in.)	Light/Dark Selectable	NPN/PNP 100 mA 1 ms	2 m 300V cable	42KL-D1LB-A2
		21.6...250V AC/DC			1...190 mm (0.04...7.5 in.)	4-pin DC micro
	4-pin pico QD					42KL-D1LB-Y4
	Power MOSFET 2 wire 100 mA 8.3 ms			2 m 300V cable		42KL-D1LQ-A2
		4-pin DC micro		42KL-D1LQ-F4		
		4-pin pico QD		42KL-D1LQ-Y4		
 <p><i>Wide Angle Diffuse</i></p> <p>Field of View: 18° Emitter LED: Infrared 880 nm</p>	10.8...30V DC 35 mA	1...180 mm (0.04...7.0 in.)	Light/Dark Selectable	NPN/PNP 100 mA 1 ms	2 m 300V cable	42KL-W1LB-A2
		21.6...250V AC/DC			1...90 mm (0.04...3.5 in.)	4-pin DC micro
	4-pin pico QD					42KL-W1LB-Y4
	Power MOSFET 2 wire 100 mA 8.3 ms			2 m 300V cable		42KL-W1LQ-A2
		4-pin DC micro		42KL-W1LQ-F4		
		4-pin pico QD		42KL-W1LQ-Y4		
	21.6...250V AC/DC				2 m 300V cable	42KL-W1TC-A2
					3-pin AC micro	42KL-W1TC-G3

Refer to page 1-47 for cordsets and accessories.