



RightSight DC model
with short 18mm base



Specifications

	DC	AC/DC
Unit Protection	False pulse, reverse polarity, overload, short circuit ❶	
Supply Voltage	10.8 to 30V	21.6 to 264V
Current Consumption	35mA max.	25mA max
Output Type	Dual NPN and PNP Complementary NPN or PNP	MOSFET
Output Mode	Light/dark operate	Light/dark operate (by model)
Output Rating	100mA @ 30V	100mA @ 264V
Max Leakage Current	0.1mA	21.6–132V: 0.01mA 21.6–264V: 0.4mA
Response Time	1ms (4ms for Transmitted Beam) (16.6ms for Transmitted Beam)	8.3ms (16.6ms for T.B.)
Housing Material	Mindel	
Lens Material	Acrylic	
Cover Material	Udel	
Connection Types	4-pin DC micro QD; 4-pin AC micro QD; 4-pin DC pico QD 2m (6.5ft) 22AWG 300V PVC cable	
Supplied Accessories	18mm mounting nut	
Optional Accessories	Cordsets, mounting brackets, reflectors—see page R1-34	
Operating Environment	NEMA 4X, 6P, IP67 (IEC529); 1200psi (8270kPa) washdown	
Vibration	10–55Hz, 1mm amplitude, Meets or exceeds IEC 60947-5-2	
Shock	30G with 1ms pulse duration, Meets or exceeds IEC 60947-5-2	
Operating Temperature	-25°C to +55°C (-13°F to +131°F) ≥ 132V AC/DC -25°C to +70°C (-13°F to +158°F) ≤ 132V AC/DC;	
Relative Humidity	5% to 95% (noncondensing)	
Approvals	UL listed, CSA certified, and CE marked for all applicable directives	

❶ P-MOSFET models have a lower in-rush current threshold than N-MOSFET models, therefore they may be susceptible to induce outside energy.

Features

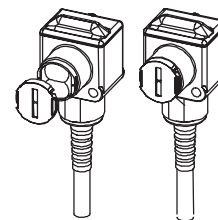
- Compact right angle housing
- Flexible 18mm mounting options
- 1200psi washdown rating
- No user adjustments
- 360° visible LED indicators
- Reverse polarity protection
- Short-circuit protected outputs
- Fast 1ms response time (DC)
- False pulse protection
- Variety of output types

User Interface

Label	Color	State	Status
Output	Yellow	OFF	Output de-energized
		ON	Output energized
		Flashing	SCP active
Margin	Orange	OFF	Margin < 2.5
		ON	Margin > 2.5
		Flashing	Output SCP active (AC models only)
Status	Green	OFF	Sensor not powered, SCP active, output active
		ON	Sensor powered

Note: For DC models output and margin LEDs alternate flashing when SCP active.

Apertures



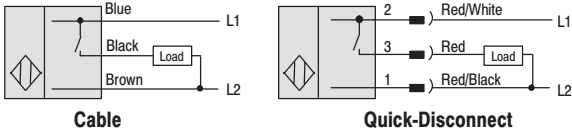
Note: 18mm nut must be installed prior to installing aperture if threads on optics snout are to be used.

- 1mm Qty. 20 #60-2660
- 2mm Qty. 20 #60-2661
- 4mm Qty. 20 #60-2662
- Aperture Set (4 each) #60-2659

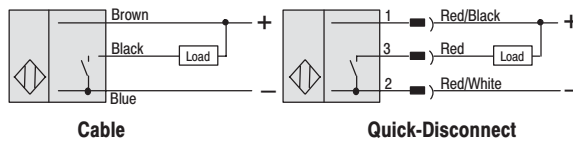
Wiring Diagrams

21.6–264V AC/DC Sensors

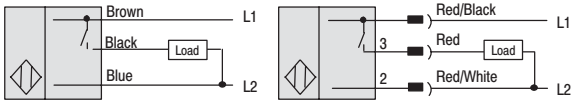
AC Wiring for 42EF- C - Models



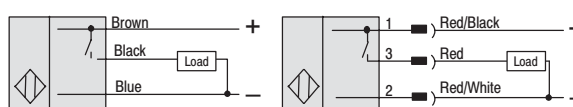
DC Wiring for 42EF- C - Models



AC Wiring for 42EF- F - Models

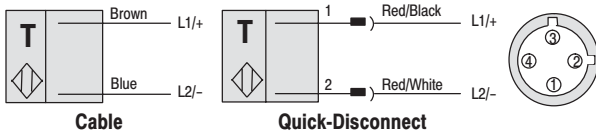


DC Wiring for 42EF- F - Models

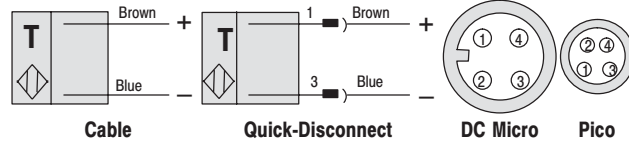


Transmitted Beam Source

21.6–264V AC/DC

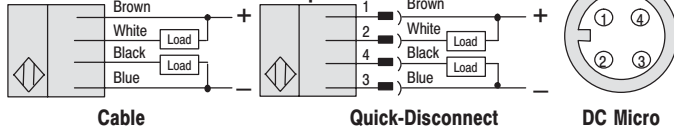


All Models

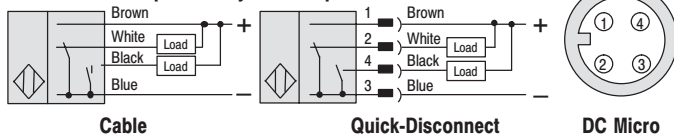


10.8–30V DC Sensors

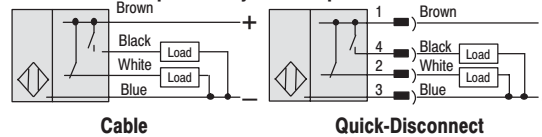
Models with Dual NPN and PNP Outputs



Models with Complementary NPN Outputs



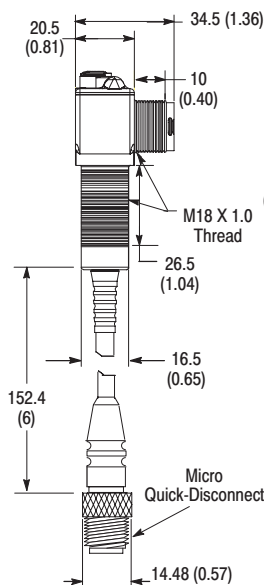
Models with Complementary PNP Outputs



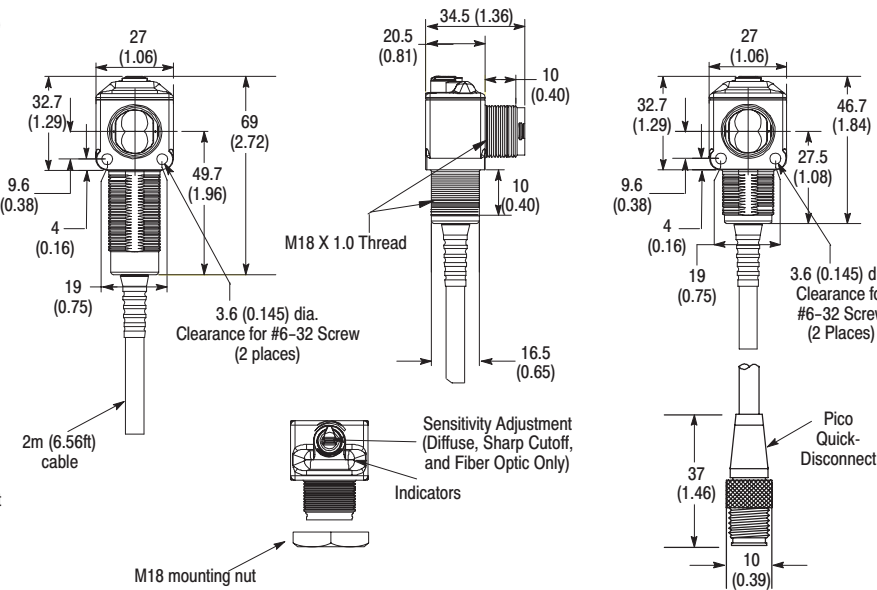
- 1 For Allen-Bradley programmable controller compatible interface, refer to publication 42–2.0.
- 2 All wire colors on quick-disconnect models refer to Allen-Bradley 889D cordsets.

Dimensions—mm (inches)

AC/DC and DeviceNet Models



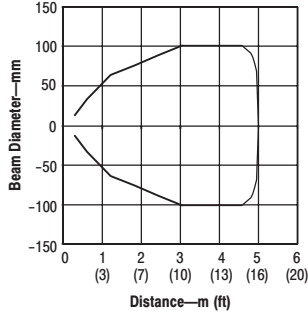
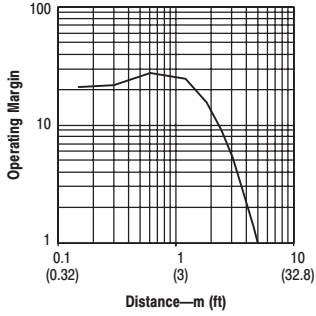
DC Models



Note: All sensors supplied with one M18 mounting nut (catalog number 75012–097–01) except fiber optic models which come with two M18 mounting nuts (catalog number 75012–025–01).

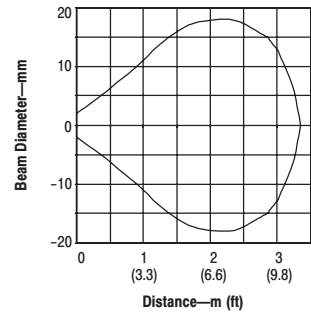
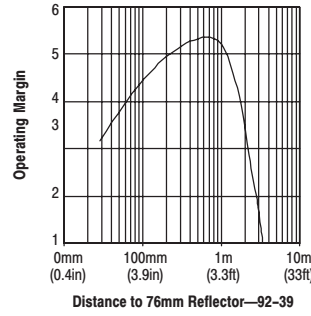
Typical Response Curve Beam Pattern

Retroreflective

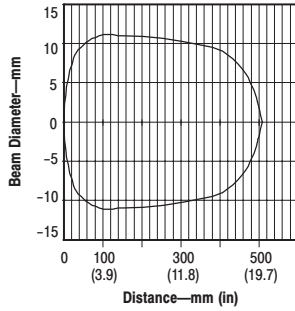
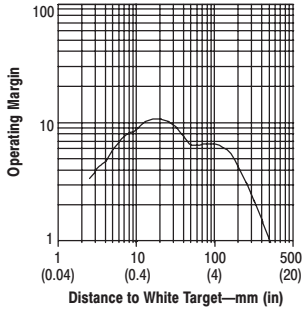


Typical Response Curve Beam Pattern

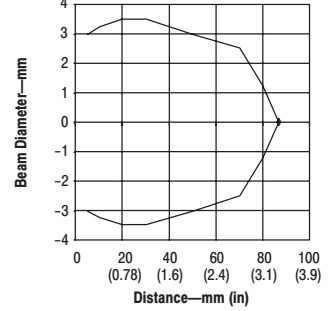
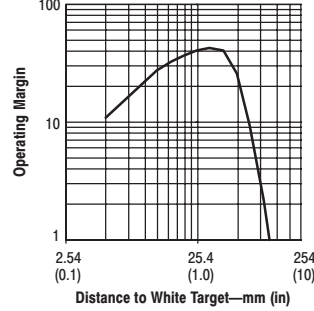
Polarized Retroreflective



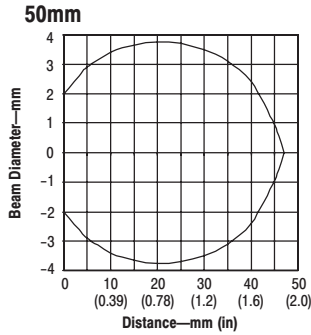
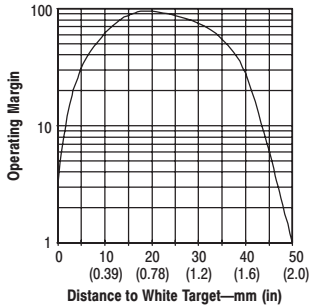
Standard Diffuse



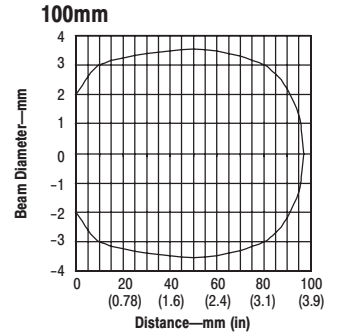
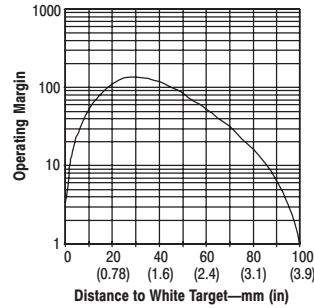
Sharp Cutoff Diffuse



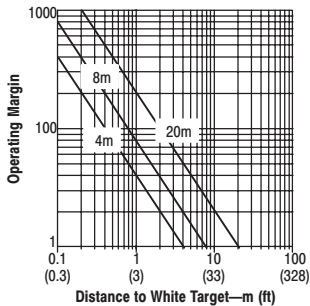
Background Suppression 50mm



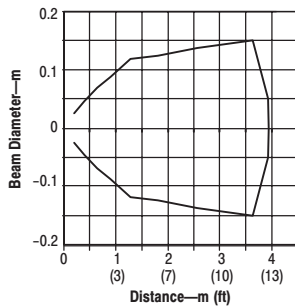
Background Suppression 100mm



Transmitted Beam

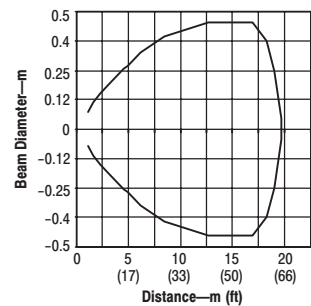


4m Receiver Models

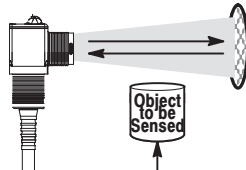
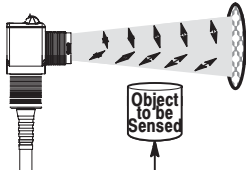


Transmitted Beam

20m Receiver Models

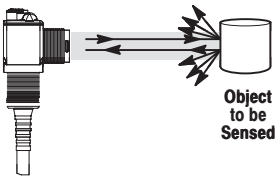
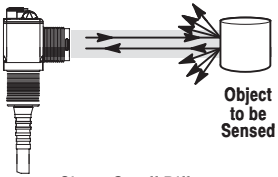


Product Selection

Sensing Mode	Operating Voltage/Current	Sensing Distance	Output Energized	Output Type/Capacity/Response Time	Connection Type	Catalog Number		
 <p><i>Retroreflective</i></p> <p>Field of View: 2.5° Emitter LED: Visible red 660nm</p>	10.8–30V DC 35mA	25mm (1in) to 4.5m (14.7ft)	Dark Operate	NPN and PNP 100mA 1ms	2m 300V cable	42EF-U2KBB-A2		
			Light Operate		4-pin DC micro	42EF-U2KBB-F4		
					2m 300V cable	42EF-U2JBB-A2		
			Light Operate		4-pin DC micro	42EF-U2JBB-F4		
	21.6–132V AC/DC 15mA			Dark Operate	P-MOSFET 100mA 8.3ms	2m 300V cable	42EF-U2SFB-A2	
			Light Operate	4-pin AC micro		42EF-U2SFB-G4		
				2m 300V cable		42EF-U2RFB-A2		
			Light Operate	4-pin AC micro		42EF-U2RFB-G4		
				21.6–264V AC/DC 15mA		Dark Operate	N-MOSFET 100mA 8.3ms	2m 300V cable
			Light Operate			4-pin AC micro		42EF-U2SCB-G4
	2m 300V cable				42EF-U2RCB-A2			
	4-pin AC micro		42EF-U2RCB-G4					
 <p><i>Polarized Retroreflective</i></p> <p>Field of View: 1.5° Emitter LED: Visible red 660nm</p>	10.8–30V DC 35mA	25mm (1in) to 3m (9.8ft)	Dark Operate	NPN and PNP 100mA 1ms	2m 300V cable	42EF-P2KBB-A2		
			Light Operate		4-pin DC micro	42EF-P2KBB-F4		
					Light Operate	2m 300V cable	42EF-P2JBB-A2	
			Light Operate			4-pin DC micro	42EF-P2JBB-F4	
				Complementary Light and Dark Operate	NPN/100mA 1ms	2m 300V cable	42EF-P2MNB-A2	
			4-pin DC micro			42EF-P2MNB-F4		
			4-pin pico QD			42EF-P2MNB-Y4		
			PNP/100mA 1ms		2m 300V cable	42EF-P2MPB-A2		
					4-pin DC micro	42EF-P2MPB-F4		
					4-pin pico QD	42EF-P2MPB-Y4		
			21.6–132V AC/DC 15mA	Dark Operate	P-MOSFET/100mA 8.3ms	2m 300V cable	42EF-P2SFB-A2	
						4-pin AC micro	42EF-P2SFB-G4	
	Light Operate			2m 300V cable		42EF-P2RFB-A2		
				4-pin AC micro		42EF-P2RFB-G4		
	21.6–264V AC/DC 15mA			Dark Operate		N-MOSFET/100mA 8.3ms	2m 300V cable	42EF-P2SCB-A2
							4-pin AC micro	42EF-P2SCB-G4
			Light Operate	2m 300V cable	42EF-P2RCB-A2			
				4-pin AC micro	42EF-P2RCB-G4			

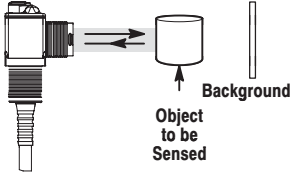
Refer to page R1–34 for cordsets and accessories.

Product Selection

Sensing Mode	Operating Voltage/ Current	Sensing Distance	Output Energized	Output Type/ Capacity Response Time	Connection Type	Catalog Number
 <p><i>Standard Diffuse</i></p> <p>Field of View: 5° Emitter LED: Infrared 880nm</p>	10.8-30V DC 35mA	3mm (0.12in) to 500mm (20in)	Dark Operate	NPN and PNP 100mA 1ms	2m 300V cable	42EF-D1KBAK-A2
			Light Operate		4-pin DC micro	42EF-D1KBAK-F4
			Complementary Light and Dark Operate	NPN/100mA 1ms	2m 300V cable	42EF-D1JBAK-A2
					4-pin DC micro	42EF-D1JBAK-F4
			PNP/100mA 1ms	4-pin DC micro	42EF-D1MNAK-A2	
				4-pin pico QD	42EF-D1MNAK-F4	
	21.6-132V AC/DC 15mA	P-MOSFET/100mA 8.3ms	2m 300V cable	42EF-D1MPAK-A2		
			4-pin DC micro	42EF-D1MPAK-F4		
		Light Operate	N-MOSFET/100mA 8.3ms	2m 300V cable	42EF-D1RFAK-A2	
				4-pin AC micro	42EF-D1RFAK-G4	
		Dark Operate	N-MOSFET/100mA 8.3ms	2m 300V cable	42EF-D1SFAK-A2	
				4-pin AC micro	42EF-D1SFAK-G4	
21.6-264V AC/DC 15mA	P-MOSFET/100mA 8.3ms	2m 300V cable	42EF-D1RCAK-A2			
		4-pin AC micro	42EF-D1RCAK-G4			
	Light Operate	N-MOSFET/100mA 8.3ms	2m 300V cable	42EF-D1SCAK-A2		
			4-pin AC micro	42EF-D1SCAK-G4		
	Dark Operate	N-MOSFET/100mA 8.3ms	2m 300V cable	42EF-D1SCAK-A2		
			4-pin AC micro	42EF-D1SCAK-G4		
 <p><i>Sharp Cutoff Diffuse</i></p> <p>Field of View: 7° Emitter LED: Infrared 880nm</p>	10.8-30V DC 25mA	3mm (0.12in) to 130mm (5in)	Dark Operate	NPN and PNP 100mA 1ms	2m 300V cable	42EF-S1KBA-A2
			Light Operate		4-pin DC micro	42EF-S1KBA-F4
			Complementary Light and Dark Operate	PNP/100mA 1ms	2m 300V cable	42EF-S1JBA-A2
					4-pin DC micro	42EF-S1JBA-F4
			NPN/100mA 1ms	2m 300V cable	42EF-S1MPA-A2	
				4-pin DC micro	42EF-S1MPA-F4	
	P-MOSFET/100mA 8.3ms	4-pin DC micro	42EF-S1MNA-A2			
		4-pin pico QD	42EF-S1MNA-F4			
	21.6-132V AC/DC 15mA	P-MOSFET/100mA 8.3ms	2m 300V cable	42EF-S1RFA-A2		
			4-pin AC micro	42EF-S1RFA-G4		
		Light Operate	N-MOSFET/100mA 8.3ms	2m 300V cable	42EF-S1SFA-A2	
				4-pin AC micro	42EF-S1SFA-G4	
		Dark Operate	N-MOSFET/100mA 8.3ms	2m 300V cable	42EF-S1RCA-A2	
				4-pin AC micro	42EF-S1RCA-G4	
	Light Operate	N-MOSFET/100mA 8.3ms	2m 300V cable	42EF-S1SCA-A2		
			4-pin AC micro	42EF-S1SCA-G4		
	Dark Operate	N-MOSFET/100mA 8.3ms	2m 300V cable	42EF-S1SCA-A2		
			4-pin AC micro	42EF-S1SCA-G4		

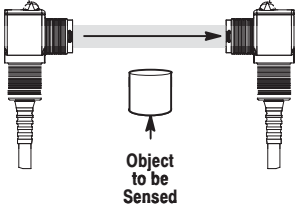
Refer to page R1-34 for cordsets and accessories.

Product Selection

Sensing Mode	Operating Voltage/ Current	Sensing Distance	Output Energized	Output Type/ Capacity Response Time	Connection Type	Catalog Number	
 <p>Background Suppression</p> <p>Field of View: 50mm (2in): 20° 100mm (3.9in): 8°</p> <p>Emitter LED: Infrared 880nm</p>	10.8–30V DC 35mA	50mm (1.97in)	Dark Operate	NPN and PNP 100mA 1ms	2m 300V cable	42EF-B1KBBC-A2	
			Light Operate		4-pin DC micro	42EF-B1KBBC-F4	
		100mm (3.94in)	Dark Operate		2m 300V cable	42EF-B1JBBC-A2	
			Light Operate		4-pin DC micro	42EF-B1JBBC-F4	
		3mm (0.12in) to 50mm (2in)	Complementary Light and Dark Operate		NPN 100mA 1ms	2m 300V cable	42EF-B1MNBC-A2
						4-pin DC micro	42EF-B1MNBC-F4
		PNP 100mA 1ms		4-pin pico QD	42EF-B1MNBC-Y4		
				2m 300V cable	42EF-B1MPBC-A2		
		4-pin DC micro		42EF-B1MPBC-F4			
		4-pin pico QD		42EF-B1MPBC-Y4			
		3mm (0.12in) to 100mm (3.9in)	NPN 100mA 1ms	2m 300V cable	42EF-B1MNBE-A2		
				4-pin DC micro	42EF-B1MNBE-F4		
	PNP 100mA 1ms		4-pin pico QD	42EF-B1MNBE-Y4			
			2m 300V cable	42EF-B1MPBE-A2			
	4-pin DC micro		42EF-B1MPBE-F4				
	4-pin pico QD		42EF-B1MPBE-Y4				
	21.6–132V AC/DC 15mA	3mm (0.12in) to 50mm (2in)	Light Operate	PNP-FET/100mA 8.3ms	2m 300V cable	42EF-B1RFBC-A2	
			Dark Operate		4-pin AC micro	42EF-B1RFBC-G4	
			3mm (0.12in) to 100mm (3.9in)		Light Operate	2m 300V cable	42EF-B1SFBC-A2
					Dark Operate	4-pin AC micro	42EF-B1SFBC-G4
		3mm (0.12in) to 100mm (3.9in)	Light Operate	2m 300V cable	42EF-B1RFBE-A2		
			Dark Operate	4-pin AC micro	42EF-B1RFBE-G4		
			2m 300V cable	42EF-B1SFBE-A2			
			4-pin AC micro	42EF-B1SFBE-G4			
21.6–264V AC/DC 15mA	3mm (0.12in) to 50mm (2in)	Light Operate	N-MOSFET 100mA 8.3ms	2m 300V cable	42EF-B1RCBC-A2		
		Dark Operate		4-pin AC micro	42EF-B1RCBC-G4		
		3mm (0.12in) to 100mm (3.9in)		Light Operate	2m 300V cable	42EF-B1SCBC-A2	
				Dark Operate	4-pin AC micro	42EF-B1SCBC-G4	
	3mm (0.12in) to 100mm (3.9in)	Light Operate	2m 300V cable	42EF-B1RCBE-A2			
		Dark Operate	4-pin AC micro	42EF-B1RCBE-G4			
		2m 300V cable	42EF-B1SCBE-A2				
		4-pin AC micro	42EF-B1SCBE-G4				

Refer to page R1–34 for cordsets and accessories.

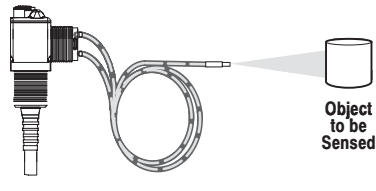
Product Selection for Receivers

Sensing Mode	Operating Voltage/ Current	Operating Distance	Output Energized	Output Type/ Capacity Response Time	Connection Type	Catalog Number	
Transmitted Beam Light Sources	10.8–30V DC 25mA	Depends on Receiver			2m 300V cable	42EF-E1EZB-A2	
					4-pin DC micro	42EF-E1EZB-F4	
	4-pin pico QD				42EF-E1EZB-Y4		
	2m 300V cable				42EF-E1QZB-A2		
	21.6–264V AC/DC 15mA				4-pin AC micro	42EF-E1QZB-G4	
 <p>Object to be Sensed</p> <p>Transmitted Beam</p> <p>Field of View: 7°</p> <p>Emitter LED: Infrared 880nm</p>	10.8–30V DC 25mA	20m (65.6ft)	Dark Operate	NPN and PNP 100mA 4ms	2m 300V cable	42EF-R9KBB-A2	
			Light Operate		4-pin DC micro	42EF-R9KBB-F4	
		4m (13.1ft)	Dark Operate		2m 300V cable	42EF-R9JBB-A2	
			Light Operate		4-pin DC micro	42EF-R9JBB-F4	
		8m (26.25ft)	Dark Operate		2m 300V cable	42EF-R9KBBV-A2	
			Light Operate		4-pin DC micro	42EF-R9KBBV-F4	
		4m (13ft)	Dark Operate		2m 300V cable	42EF-R9JBBV-A2	
			Light Operate		4-pin DC micro	42EF-R9JBBV-F4	
		8m (26.25ft)	Dark Operate		2m 300V cable	42EF-R9KBBT-A2	
			Light Operate		4-pin DC micro	42EF-R9KBBT-F4	
		Complementary Light and Dark Operate	4m (13ft)		NPN/100mA 4ms	2m 300V cable	42EF-R9MNBV-A2
						4-pin DC micro	42EF-R9MNBV-F4
	8m (26.25ft)		PNP/100mA 4ms	4-pin DC pico	42EF-R9MNBV-Y4		
				2m 300V cable	42EF-R9MPBV-A2		
	20m (65.6ft)		NPN/100mA 4ms	4-pin DC micro	42EF-R9MPBV-F4		
				4-pin DC pico	42EF-R9MPBV-Y4		
	21.6–132V AC/DC 15mA	4m (13ft)	NPN/100mA 4ms	2m 300V cable	42EF-R9MNB-A2		
				4-pin DC micro	42EF-R9MNB-F4		
		8m (26.25ft)	PNP/100mA 4ms	4-pin DC pico	42EF-R9MNB-Y4		
				2m 300V cable	42EF-R9MPBT-A2		
		20m (65.6ft)	NPN/100mA 4ms	4-pin DC micro	42EF-R9MPBT-F4		
				4-pin DC pico	42EF-R9MPBT-Y4		
	21.6–264V AC/DC 15mA	4m (13ft)	P-MOSFET/100mA 8.3ms 16.6ms	2m 300V cable	42EF-R9SFBV-A2		
				4-pin AC micro	42EF-R9SFBV-G4		
N-MOSFET/100mA 16.6ms			2m 300V cable	42EF-R9RFBV-A2			
			4-pin AC micro	42EF-R9RFBV-G4			
8m (26.25ft)		N-MOSFET/100mA 16.6ms	2m 300V cable	42EF-R9SCBV-A2			
			4-pin AC micro	42EF-R9SCBV-G4			
		N-MOSFET/100mA 16.6ms	2m 300V cable	42EF-R9RCBV-A2			
			4-pin AC micro	42EF-R9RCBV-G4			
20m (65.6ft)		N-MOSFET/100mA 16.6ms	2m 300V cable	42EF-R9SCBT-A2			
			4-pin AC micro	42EF-R9SCBT-G4			
		N-MOSFET/100mA 16.6ms	2m 300V cable	42EF-R9RCBT-A2			
			4-pin AC micro	42EF-R9RCBT-G4			
Dark Operate	N-MOSFET/100mA 16.6ms	2m 300V cable	42EF-R9SCB-A2				
		4-pin AC micro	42EF-R9SCB-G4				
	N-MOSFET/100mA 16.6ms	2m 300V cable	42EF-R9RCB-A2				
		4-pin AC micro	42EF-R9RCB-G4				

Note: For maximum performance, transmitted beam sources should be combined with matched operating voltage receivers, i.e., AC/DC source with AC/DC receiver or DC source with DC receiver. Reduced operating distance and margin will result from mixed operating voltage pairs.

Refer to page R1–34 for cordsets and accessories.

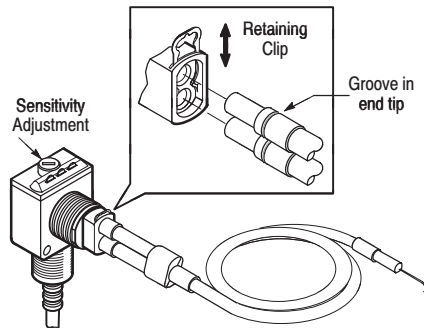
Product Selection

Sensing Mode	Operating Voltage/Current	Sensing Distance	Output Energized	Output Type/ Capacity Response Time	Connection Type	Catalog Number
 <p><i>Infrared Glass Fiber Optic</i></p> <p>Field of View: Depends on Glass Fiber Optic cable selected</p> <p>Emitter LED: Infrared 880nm</p>	10.8–30V DC 35mA	Depends on Glass Fiber Optic cable selected	Dark Operate	NPN and PNP 100mA 1ms	2m 300V cable	42EF-G1KBA-A2
			Light Operate		4-pin DC micro	42EF-G1KBA-F4
					2m 300V cable	42EF-G1JBA-A2
			Complementary Light and Dark Operate	4-pin DC micro	42EF-G1JBA-F4	
				NPN/100mA 1ms	2m 300V cable	42EF-G1MNA-A2
					4-pin DC micro	42EF-G1MNA-F4
	4-pin pico		42EF-G1MNA-Y4			
	21.6–132V AC/DC 15mA		P-MOSFET/100mA 8.3ms	Light Operate	2m 300V cable	42EF-G1RFA-A2
				4-pin AC micro		42EF-G1RFA-G4
				Dark Operate	2m 300V cable	42EF-G1SFA-A2
			N-MOSFET/100mA 8.3ms	4-pin AC micro	42EF-G1SFA-G4	
				Light Operate	2m 300V cable	42EF-G1RCA-A2
4-pin AC micro		42EF-G1RCA-G4				
21.6–264V AC/DC 15mA	N-MOSFET/100mA 8.3ms	Dark Operate	2m 300V cable	42EF-G1SCA-A2		
		4-pin AC micro	42EF-G1SCA-G4			
	Light Operate	2m 300V cable	42EF-G1SCA-A2			
4-pin AC micro	42EF-G1SCA-G4					

Cordsets and Accessories

Description	Catalog Number	Description	Catalog Number	Description	Catalog Number
DC Micro QD Cordset, Straight, 4-pin, 2m	889D-F4AC-2	76mm (3in) Diameter Reflector	92-39	Apertures, 1mm Slot	60-2660
AC Micro QD Cordset, Straight, 4-pin, 2m	889R-F4AEA-2	32mm (1.25in) Diameter Reflector	92-47	Apertures, 2mm Slot	60-2661
Pico QD Cordset, Straight, 4-pin, 2m	889P-F4AB-2	Mounting Bracket Swivel/Tilt	60-2649	Apertures, 4mm Slot	60-2662
				Aperture Set	60-2659
Bifurcated Fiber Optic Cable—38mm (1.5in) typical range	43GR-TBB25SL	Individual Fiber Optic Cable—457mm (18in) typical range	43GT-FAS25SL		
Bifurcated Fiber Optic Cable—21mm (0.8in) typical range	43GR-TFS10ML	Individual Fiber Optic Cable—152mm (6in) typical range	43GT-TFS10ML		

Glass Fiber Optic Cables—mm (inches)



Sensing Mode	Typical Range	Fiber Model
Diffuse (Bifurcated Fiber)	38 (1.5)	43GR-TBB25SL
	21 (0.8)	43GR-TFS10ML
Transmitted Beam (Individual Fiber)	457 (18)	43GT-FAS25SL
	152 (6)	43GT-TFS10ML