



RightSight DC model with short 18 mm base

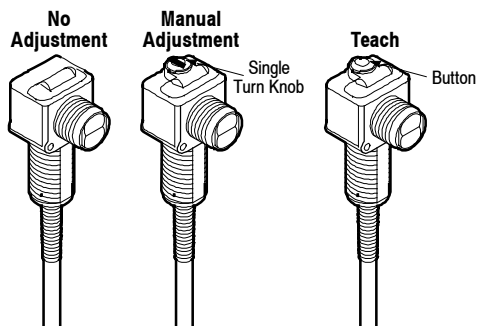
**Features**

- Compact right angle housing
- Flexible 18 mm mounting options
- 1200 psi washdown rating
- Non-adjustable, adjustable and teach versions
- 360° visible LED indicators
- Reverse polarity protection
- Short-circuit protected outputs
- Fast 1 ms response time (DC)
- False pulse protection
- Variety of output types
- Laser models available (see page 1-108)

**Specifications**

<b>Environmental</b>	
Certifications	UL Listed, CSA Certified and CE Marked for all applicable directives
Operating Environment	NEMA 4X, 6P, IP67 (IEC 529); 1200 psi (8270 kPa) washdown, IP69K
Operating Temperature [C (F)]	-25...+70° (-13...+158°) ≤ 132V AC/DC -25...+55° (-13...+131°) ≥ 132V AC/DC
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% (noncondensing)
Ambient Light Immunity	Incandescent light 5000 lux
<b>Optical</b>	
Sensing Modes	Retroreflective, polarized retroreflective, diffuse, background suppression, sharp cutoff, fixed focus, fiber optic, transmitted beam
Sensing Range	See Product Selection table on page 1-34
Field of View	See Product Selection table on 1-34
Light Source	Visible red LED (660 nm) or infrared LED (880 nm)
LED Indicators	See User Interface below
Adjustments	Sensitivity potentiometer, teach button, or fixed by cat. no.
<b>Electrical</b>	
Voltage	10.8...30V DC, 21.6...264V AC
Current Consumption	35 mA max (DC), 25 mA max (AC)
Sensor Protection	False pulse, reverse polarity, overload, short circuit
<b>Outputs</b>	
Response Time	1 ms (4 ms for transmitted beam) DC models 8.3 ms (16.6 ms for transmitted beam) AC models
Output Type	PNP or NPN by cat. no., PNP and NPN, N-MOSFET
Output Mode	Complementary light or dark operate, light or dark operate by cat. no.
Output Current	100 mA
Output Leakage Current	0.1 mA max (DC); 0.4 mA max (AC)
<b>Mechanical</b>	
Housing Material	Mindel
Lens Material	Acrylic
Cover Material	Udel
Connection Types	2 m cable, 4-pin DC micro (M12) QD, 4-pin pico (M8) QD
Supplied Accessories	18 mm fastening nuts
Optional Accessories	See mounting brackets, reflectors, and cordsets on page 1-39

**User Interface**



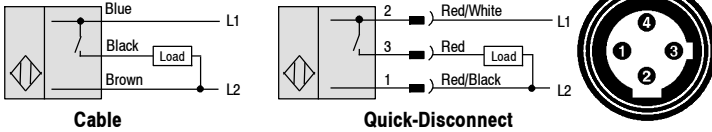
Color	State	Status—Nonteach Version	Status—Teach Version
Yellow	OFF	Output de-energized	Output de-energized
	ON	Output energized	Output energized
	Flashing	SCP active	NA
Orange	OFF	Margin < 2.5	Normal operation
	ON	Margin > 2.5	Teach mode active
	Flashing	Output SCP active (AC models only)	Teach mode active or output SCP active
Green	OFF	Sensor not powered, SCP active, output active	Sensor not powered
	ON	Sensor powered	Sensor powered
	Flashing	NA	Unstable margin condition or output SCP active

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

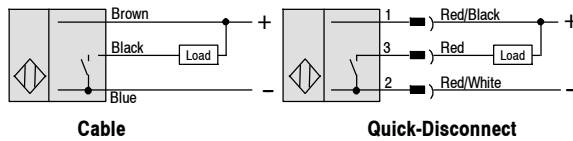
Wiring Diagrams ①②

21.6...264V AC/DC Sensors

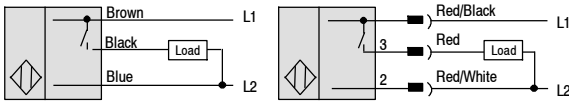
AC Wiring for 42EF- C - Models



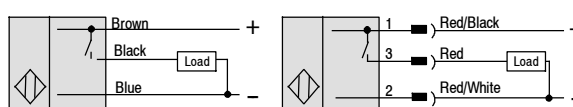
DC Wiring for 42EF- C - Models



AC Wiring for 42EF- F - Models

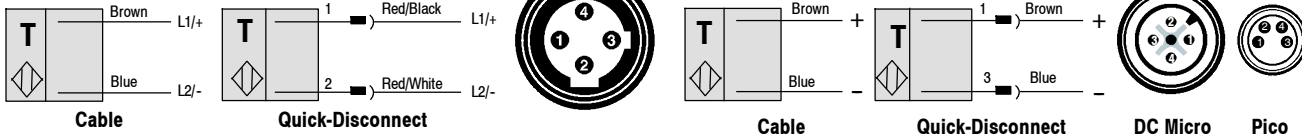


DC Wiring for 42EF- F - Models



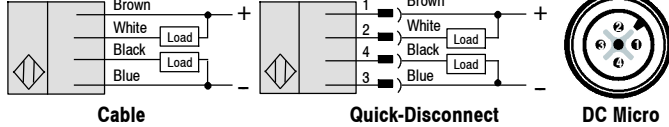
Transmitted Beam Source

21.6...264V AC/DC

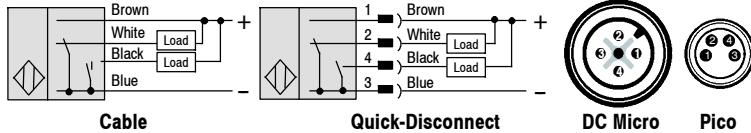


10.8...30V DC Sensors

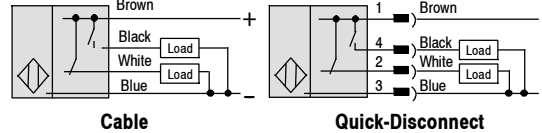
Models with Dual NPN and PNP Outputs



Models with Complementary NPN Outputs



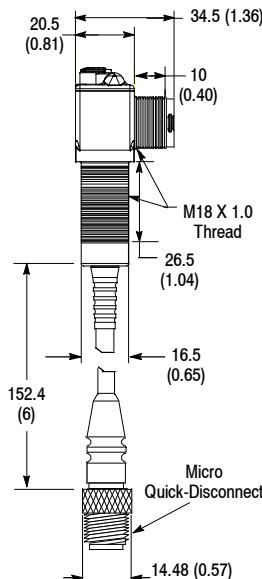
Models with Complementary PNP Outputs



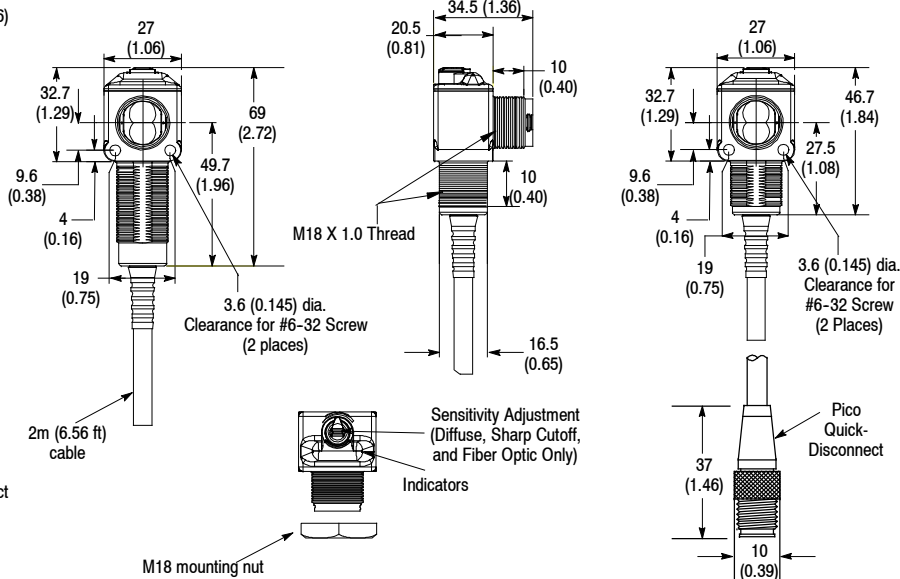
- ① For Rockwell Automation programmable controller compatible interface, refer to publication 42-2.0.
- ② All wire colors on quick-disconnect models refer to Rockwell Automation cordsets.

Approximate Dimensions [mm (in.)]

AC/DC and DeviceNet Models



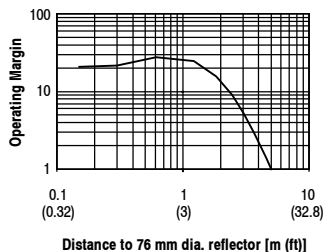
DC Models



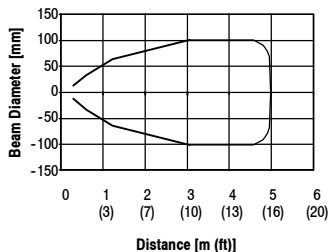
Note: All sensors supplied with one M18 mounting nut (Cat. No. 75012-097-01) except fiber optic models which come with two M18 mounting nuts (Cat. No. 75012-025-01).

Typical Response Curve

Retroreflective

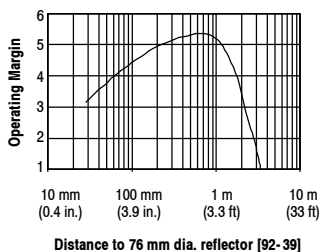


Beam Pattern

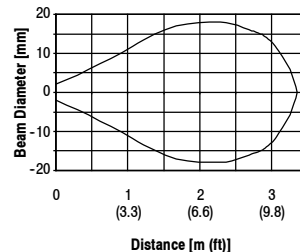


Typical Response Curve

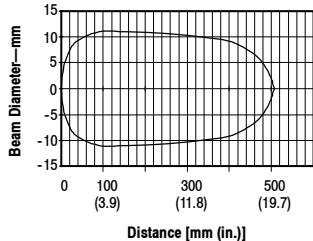
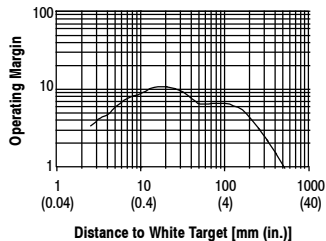
Polarized Retroreflective



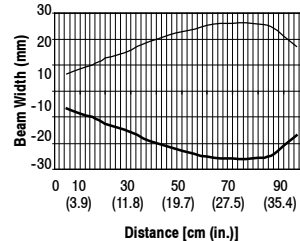
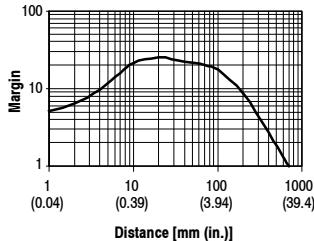
Beam Pattern



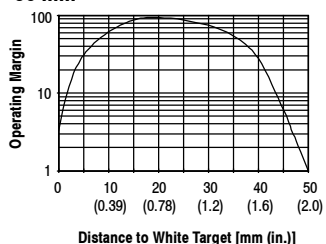
Standard Diffuse—Nonteach



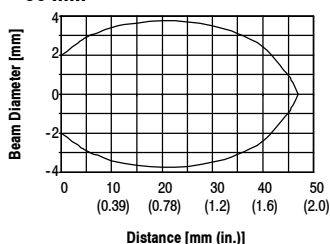
Standard Diffuse—Teach



Background Suppression 50 mm



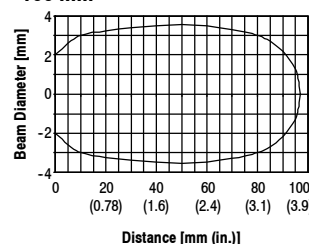
50 mm



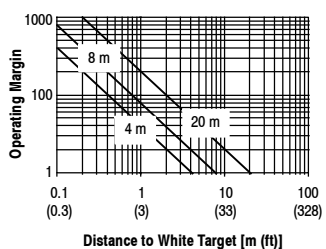
Background Suppression 100 mm



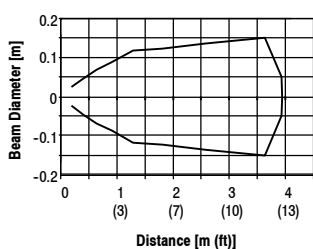
100 mm



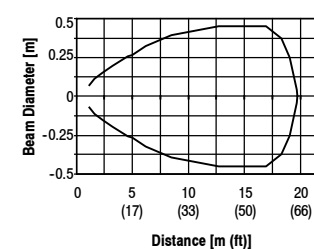
Transmitted Beam



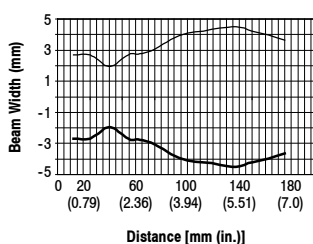
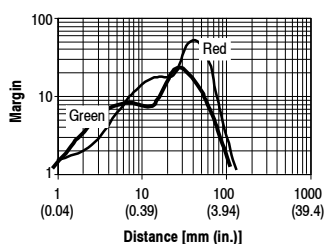
4 m Receiver Models



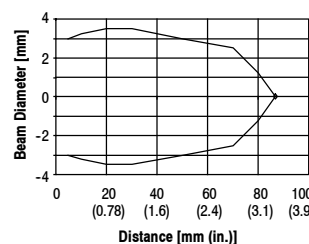
Transmitted Beam 20 m Receiver Models



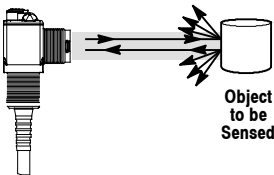
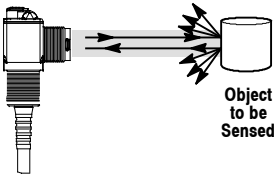
Fixed Focus



Sharp Cutoff Diffuse



Product Selection (continued)

Sensing Mode	Current @ Voltage	Sensing Distance	Adjustment Type	Output Energized	Output Type/ Capacity Response Time	Connection Type	Cat. No.	
 <p>Standard Diffuse Field of View: 5° Emitter LED: Infrared 880 nm</p>	35 mA @ 10.8...30V DC	3...500 mm (0.12...20 in.)	Single-Turn Knob	Dark Operate	NPN and PNP 100 mA 1 ms	2 m 300V cable	42EF-D1KBAK-A2	
				Light Operate		4-pin DC micro	42EF-D1KBAK-F4	
	30 mA @ 10.8...30V DC	3...700 mm (0.12...27.6 in.)	Teach Button	Light Operate	NPN and PNP 100 mA 1 ms	2 m 300V cable	42EF-D1JBCK-A2	
				Dark Operate		4-pin DC micro	42EF-D1JBCK-F4	
	35 mA @ 10.8...30V DC	3...500 mm (0.12...20 in.)	Single-Turn Knob	Complementary Light and Dark Operate	NPN 100 mA 1 ms	2 m 300V cable	42EF-D1MNAK-A2	
						4-pin DC micro	42EF-D1MNAK-F4	
	15 mA @ 21.6...264V AC/DC				PNP 100 mA 1 ms	4-pin pico QD	42EF-D1MNAK-Y4	
						2 m 300V cable	<b>42EF-D1MPAK-A2</b>	
					N-MOSFET* 100 mA 8.3 ms	4-pin DC micro	<b>42EF-D1MPAK-F4</b>	
						4-pin pico QD	42EF-D1MPAK-Y4	
					Light Operate	2 m 300V cable	<b>42EF-D1RCAK-A2</b>	
						4-pin AC micro	<b>42EF-D1RCAK-G4</b>	
				Dark Operate	2 m 300V cable	42EF-D1SCAK-A2		
					4-pin AC micro	42EF-D1SCAK-G4		
 <p>Sharp Cutoff Diffuse Field of View: 7° Emitter LED: Infrared 880 nm</p>	25 mA @ 10.8...30V DC	3...130 mm (0.12...5 in.)	Single-Turn Knob	Dark Operate	NPN and PNP 100 mA 1 ms	2 m 300V cable	42EF-S1KBA-A2	
				Light Operate		4-pin DC micro	42EF-S1KBA-F4	
				Complementary Light and Dark Operate		PNP 100 mA 1 ms	2 m 300V cable	42EF-S1JBA-A2
							4-pin DC micro	42EF-S1JBA-F4
	NPN 100 mA 1 ms	2 m 300V cable	4-pin DC micro	42EF-S1MPA-A2				
			4-pin pico QD	<b>42EF-S1MPA-F4</b>				
	N-MOSFET 100 mA 8.3 ms	2 m 300V cable	4-pin DC micro	42EF-S1MNA-A2				
			4-pin pico QD	42EF-S1MNA-F4				
	Light Operate	2 m 300V cable	4-pin DC micro	42EF-S1MNA-Y4				
			4-pin AC micro	42EF-S1MNA-A2				
	Dark Operate	2 m 300V cable	4-pin DC micro	42EF-S1MNA-F4				
			4-pin AC micro	42EF-S1MNA-Y4				
Light Operate	2 m 300V cable	4-pin AC micro	42EF-S1MNA-A2					
		4-pin AC micro	42EF-S1MNA-F4					
Dark Operate	2 m 300V cable	4-pin AC micro	42EF-S1MNA-Y4					
		4-pin AC micro	42EF-S1MNA-A2					

\* P-MOSFET models are available. Refer to [www.ab.com/sensors](http://www.ab.com/sensors).

ATTENTION



P-MOSFET models have a lower in-rush current threshold for short-circuit protection than N-MOSFET. Therefore, they may be susceptible to false trigger of short-circuit protection due to induced noise.

Refer to page 1-39 for cordsets and accessories.