



General Specifications

Light Source	Infrared LED (880nm), visible red for polarized model
Unit Protection	False pulse protection
Supply Voltage	24V DC, 120V AC, 220V AC (see Product Selection)
Current Consumption	See Product Selection table
Output Type	EM-relay, TRIAC, FET, NPN/PNP (see Product Selection)
Output Mode	Light/dark operate selectable
Output Rating	Determined by plug-in module (see Product Selection)
Max Leakage Current	2mA, 10 μ A, 1 μ A
Response Time	Determined by plug-in module (see Product Selection)
Housing Material	Noryl
Lens Material	Acrylic (glass for polarized version)
LED Indicators	See User Interface below
Connection Types	Screw terminal, nickle-plated
Supplied Accessories	#8-670 DPDT relay module
Optional Accessories	Mounting brackets, reflectors, cordsets—see page R1-207
Operating Environment	NEMA 3, 4, 12, 13 (IP66)
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	-40°C to +57°C (-40°F to +135°F)
Relative Humidity	5...90% maximum
Approvals	UL listed, CSA approved

Features

- Harsh duty package
- Screw terminal connections
- Long-range sensing modes
- Plug-in logic and output modules
- Both DC and AC/DC operation
- Selectable light/dark operation

User Interface Panel

Label	Color	State	Status
Power	Yellow	OFF	Sensor not powered
		ON	Sensor powered

Optional Timing and Logic Modules

These plug-in modules can be added to any series 4000B Photoelectric sensor.

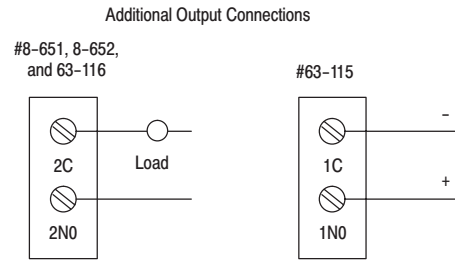
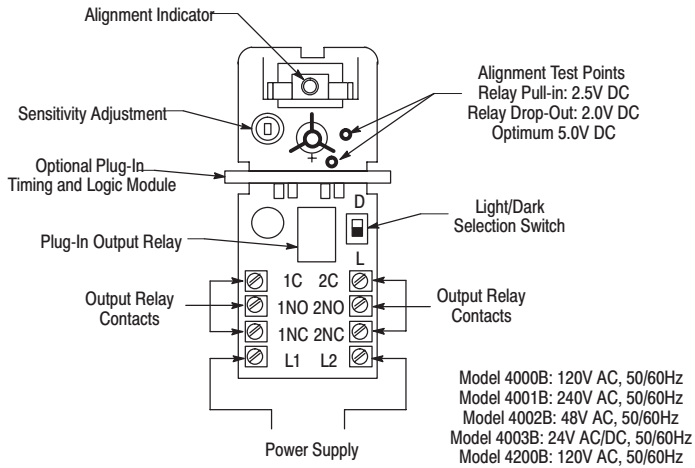
Function	Adjustable Time Delay(s)		Adjustable Dwell (s)	Catalog Number
	On	Off		
One-shot	—	—	0.040-0.250	60-1612-1
			0.5-15	60-1612-2
On and/or Off Delay	0.05-1.0	0.05-1.5	—	60-1613
	0.5-10	0.5-15		60-1614
Delayed One-shot	0.10-1.5	—	0.040-0.250	60-1625
	1.0-15		0.040-0.250	60-1626
Motion Detector	—	0.05-1.5	—	60-1660
		0.5-15		60-1661
Preset Counter	2-999 Counts		0.040-0.250	60-1716

PHOTOSWITCH® Photoelectric Sensors

Series 4000B

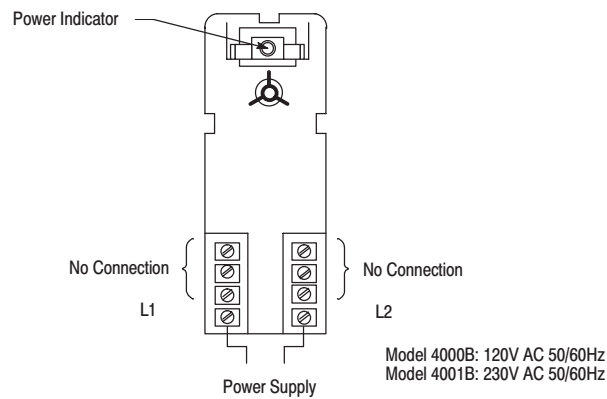
Wiring Diagrams

All Sensing Modes Except Transmitted Beam Light Source

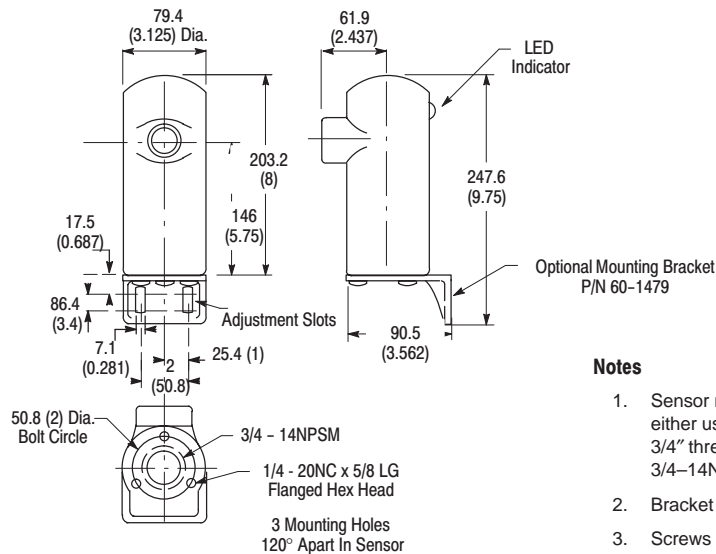


Note: Details regarding connection of Allen-Bradley Series 4000B sensors to Allen-Bradley Programmable Controllers can be found in publication 42-2.0.

Transmitted Beam Light Source



Dimensions— mm (inches)



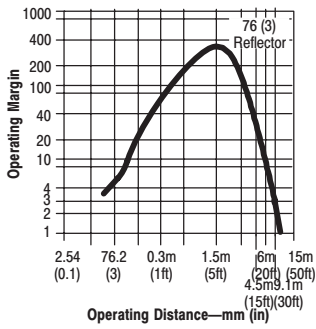
Notes

1. Sensor may be mounted without bracket, either using 3, 1/4-20NC mtg. holes or on a 3/4" threaded pipe, thread pitch 3/4-14NPSM.
2. Bracket allows 360-degree adjustment.
3. Screws included with mounting bracket.

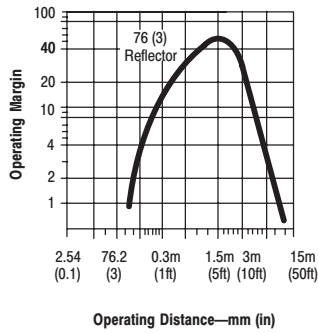
Note: Do not use lockwashers with supplied whiz-lock mounting screws.

Typical Response Curve

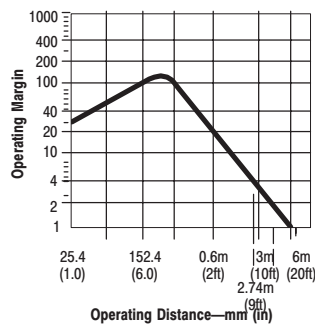
Retroreflective



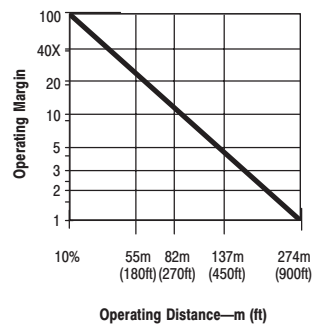
Polarized Retroreflective



Standard Diffuse

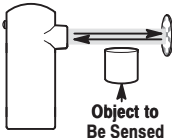
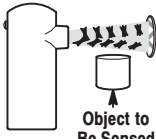
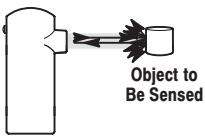
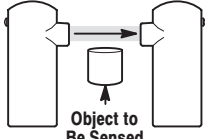


Transmitted Beam



Product Selection

1. Select sensor.

Sensing Mode	Operating Voltage/ Power Consumption	Sensing Range	Output Energized	Sensor Response Time Ⓢ	Catalog Number
 <p>Object to Be Sensed</p> <p><i>Retroreflective</i></p> <p>Field of View: 1.5° Emitter LED: Infrared 940nm</p>	102-132V AC/ 2VA	50.8mm (2in) to 10.6m (35ft)	Light/Dark Selectable	5ms	42RLU-4000B
	195-253V AC/ 2VA				42RLU-4001B
	40-58V AC/ 2VA				42RLU-4002B
	18-28V AC/DC/2VA 20-32V DC				42RLU-4003B
 <p>Object to Be Sensed</p> <p><i>Series 4000B Polarized Retroreflective</i></p> <p>Field of View: 2° Emitter LED: Visible Red 660nm</p>	102-132V AC/ 2A	50.8 (2in) to 7m (23ft)	Light/Dark Selectable	5ms	42RLU-4200B
 <p>Object to Be Sensed</p> <p><i>Standard Diffuse</i></p> <p>Field of View: 4° Emitter LED: Infrared 940nm</p>	102-132V AC/ 2VA	50.8 (2in) to 3.6m (12ft)	Light/Dark Selectable	5ms	42RLP-4000B
	195-253V AC/ 2VA				42RLP-4001B
	40-58V AC/ 2VA				42RLP-4002B
	18-28V AC/DC/2VA 20-32V DC				42RLP-4003B
 <p>Object to Be Sensed</p> <p><i>Transmitted Beam</i></p> <p>Field of View: 3° Emitter LED: Infrared 940nm</p> <p>Light sources and receivers must be ordered separately. Any light source is compatible with any receiver.</p>	102-132V AC, 50/60Hz/ 2VA	50.8 (2in) to 274m (900ft)	Light/Dark Selectable	5ms	42RLR-4000B
	195-253V AC, 50/60Hz/ 2VA				42RLR-4001B

PHOTOSWITCH® Photoelectric Sensors
Series 4000B

Product Selection (continued)

2. Select optional plug-in timing and logic module, page R1–165.

3. Select optional plug-in output module.

Sensing Mode	Type	Max Load Current	Output Response Time ^①	Catalog Number
Retroreflective	DPDT EM-Relay (included)	5A, 120V AC 2.5A, 240V AC	10ms On 15ms Off	8-670^②
	SP-N.O. AC TRIAC	1A, 265V AC, 20mA min	8ms	8-651
	SP-N.O. AC/DC FET	30mA, 0-120V AC/DC	1ms	8-652
	Open Collector NPN	250mA, 30V DC	1ms	63-115
	DC Voltage Output Adaptor	30mA, 17V DC		63-116
Polarized Retroreflective	DPDT EM-Relay (included)	5A, 120V AC 2.5A, 240V AC	10ms On 15ms Off	8-670^②
	SP-N.O. AC TRIAC	1A, 265V AC, (20mA min)	8ms	8-651
	SP-N.O. AC/DC FET	30mA, 0-120V AC/DC	1ms	8-652
	Open Collector NPN	250mA, 30V DC	1ms	63-115
	DC Voltage Output Adaptor	30mA, 17V DC		63-116
Standard Diffuse	DPDT EM-Relay (included)	5A, 120V AC 2.5A, 240V AC	10ms On 15ms Off	8-670^②
	SP-N.O. AC TRIAC	1A, 265V AC, 20mA min	8ms	8-651
	SP-N.O. AC/DC FET	30mA, 0-120V AC/DC	1ms	8-652
	Open Collector NPN	250mA, 30V DC	1ms	63-115
	DC Voltage Output Adaptor	30mA, 17V DC		63-116
Transmitted Beam	DPDT EM-Relay (included)	5A, 120V AC 2.5A, 240V AC	10ms On 15ms Off	8-670^②
	SP-N.O. AC TRIAC	1A, 265V AC, 20mA min	8ms	8-651
	SP-N.O. AC/DC FET	30mA, 0-120V AC/DC	1ms	8-652
	Open Collector NPN	250mA, 30V DC	1ms	63-115
	DC Voltage Output Adaptor	30mA, 17V DC		63-116

① Add for total response time.

② 8-670 relay output module supplied with sensor.