

# Installation Instructions

## Series 4000 Photoelectric Sensors

All Sensors		Retroreflective	Polarized Retroreflective	Standard Diffuse	Transmitted Beam	
					Source	Receiver
1	Connection	Wire Terminals				
2	Sensing Distance	—			274m (900ft)	
	76mm (3in) Reflector White Paper	10.6m (35ft)	7m (23ft)	3.6m (12ft)	—	
3	Transmitting LED	Infrared 940nm	Visible Red 660nm	Infrared 940nm		—
4	Indicators	Red: Output			Red: Power	Red: Output
5	Field of View	1.5°	2°	4°	3°	
6	Sensitivity Adjustment	Yes				
7	Operating Temperature	-40°C to +57°C (-40°F to +135°F)				
8	Relative Humidity	5%-90%				
9	Housing/Lens Material	Noryl®/Acrylic				
10	Operating Environment	NEMA 3, 4, 12, 13, IP66				
11	Approvals	UL listed, CSA certified, and CE marked for all applicable directives				
12	Protection	False Pulse				
13	Vibration	10-55Hz, 1mm amplitude, meets or exceeds IEC 947-5-2				
14	Shock	30G, meets and exceeds IEC 947-5-2				

15 Select Sensors						
16	Operating Voltage					
	102-132V AC, 50/60 Hz	42RLU-4000B	42RLU-4200B	42RLP-4000B	42RLL-4000B	42RLR-4000B
	195-253V AC, 50/60 Hz	42RLU-4001B	—	42RLP-4001B	42RLL-4001B	42RLR-4001B
	40-58V AC, 50/60 Hz 18-28V AC/DC, 50/60 Hz 20-32V DC	42RLU-4002B 42RLU-4003B	— —	42RLP-4002B 42RLP-4003B	— —	— —
17	Power Consumption	2VA				
18	Output	Light/Dark Selectable				

19 Select Optional Plug-In Output Module							
20	Catalog Number	Control Only	8-670	8-651	8-652	63-115	63-116
21	Type	—	DPDT EM-Relay (Included)	SPNO AC TRIAC	SPNO AC/DC FET	Open Collector NPN	DC Voltage Output Adaptor
22	Load Current	—	5A @ 120V AC, 2.5A @ 240V AC	1A @ 24-240V AC	30mA @ 0-120V AC	250mA @ 30V DC	30mA @ 17V DC
23	Leakage Current	—	—	2mA	1.0µA		—
24	Response Time	5ms	10ms On, 15ms Off	8ms	1ms		

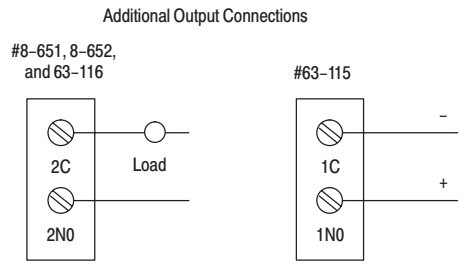
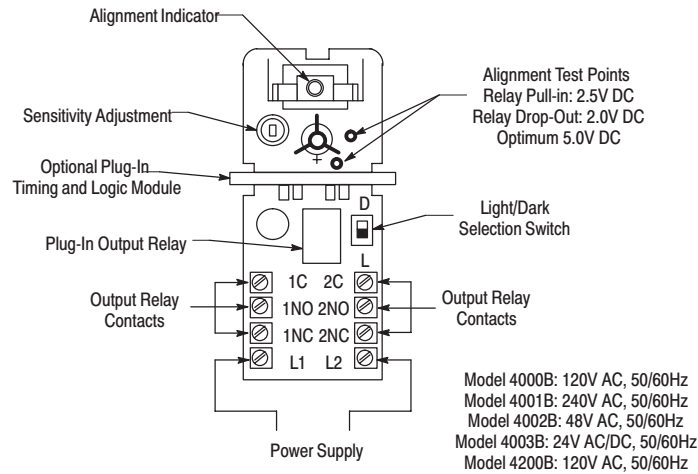
25 Select Optional Plug-In Control Module										
20	Catalog Number	60-1612-1	60-1612-2	60-1613	60-1614	60-1625	60-1626	60-1660	60-1661	60-1716
26	Function	ONE SHOT		ON and/or OFF DELAY		DELAYED ONE SHOT		MOTION DETECTOR		PRESENT COUNTER
27	Adjustable Time Delay									
	ON	—	0.05-1.0	0.5-1.5	0.10-1.5	1.0-1.5	—		2-999 Counts	
	OFF	—	0.05-10	0.5-15	—		0.05-1.5	0.5-15	2-999 Counts	
28	Adjustable Dwell	0.040-0.25	0.5-1.5	—		0.04-0.250		—		0.040-0.250

English	Español	English	Español
<b>Operating Distance Selection</b> The maximum operating distance is based on installing the sensor in a relatively clean environment. Normal industrial environments actually range from moderately dusty to extremely dirty. Greater operating margin may be required which can be obtained by reducing the operating distance of the control.	<b>Selección de Distancia de Operación</b> La distancia máxima de operación se basa en la instalación del sensor en un ambiente relativamente limpio. Los ambientes industriales normales fluctúan entre moderadamente polvorosos a extremadamente sucios. Es posible que se requiera un margen de operación mayor, el cual puede obtenerse reduciendo la distancia operativa del control.	<b>Indicators</b> Red <i>on</i> indicates output for all sensors except Transmitted Beam Source. Red <i>on</i> indicates power on for Transmitted Beam Light Source.	<b>Indicadores</b> El rojo <i>encendido</i> indica la salida en todos los sensores, excepto en las Fuentes de Haz Transmitido. El rojo <i>encendido</i> indica alimentación presente en las Fuentes del Luz de Haz Transmitido.
Wire Terminals		Open Collector NPN	
Infrared	Infrarrojo	DC Voltage Output Adaptor	
Visible Red	Rojo Visible	One Shot	
Red	Rojo	On and/or Off Delay	
Output	Salida	Delayed One Shot	
Power	Alimentacion	Motion Detector	
False Pulse	Pulsos en Falso	Present Counter	
10-55Hz, 1mm amplitude, meets or exceeds IEC 947-5-2	10-55Hz, 1mm de amplitud, satisface o supera IEC947-5-2	Counts	
30G, meets or exceeds IEC 947-5-2	30G, satisface o supera IEC 947-5-2	Retroreflective	Retrorreflectivo
Light/Dark Selectable	Seleccionable Luz/Oscuridad	Polarized Retroreflective	Retrorreflectivo polarizado
Control Only		Standard Diffuse	Difusa Normal
DPDT EM-Relay (included)		Transmitted Beam Source	Fuentes de rayos transmitidos
SPNO AC TRIAC		Transmitted Beam Receiver	Receptor de rayos transmitidos
SPNO AC/DC FET			

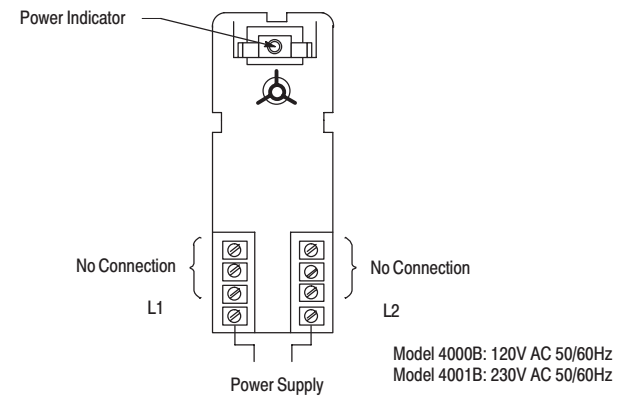
	English	Español		English	Español
1	Connection	Conexión	15	Select Sensors	Elija Sensores
2	Sensing Distance	Dispositivo Sensor	16	Operating Voltage	Tensión de Operación
	Reflector	Reflector	17	Power Consumption	Consumo de Alimentación eléctrica
3	White Paper	Papel Blanco	18	Output	Salida
	Transmitting (LED)	LED de Transmisión	19	Select Optional Plug-In Output Module	
4	Indicators	Indicadores	20	Catalog Number	Número de Catálogo
5	Field of View	Campo de Visión	21	Type	Tipo
6	Sensitivity Adjustment	Ajuste de Sensibilidad	22	Load Current	Corriente de Carga
7	Operating Temperature	Temperatura de Operación	23	Leakage Current	Corriente de Fuga
8	Relative Humidity	Humedad Relativa	24	Response Time	Tiempo de Respuesta
9	Housing/Lens Material	Material del Alojamiento/de la Cubierta/del Lente	25	Select Optional Plug-In Control Module	
10	Operating Environment	Ambiente de Operación	26	Function	Funcion
11	Approvals	Aprobaciones	27	Adjustable Time Delay	
12	Protections	Protecciones		On	Encendido
13	Vibration	Vibración	Off	Apagado	
14	Shock	Impacto	28	Adjustable Dwell	

# Wiring Diagrams

## All Sensing Modes Except Transmitted Beam Light Source



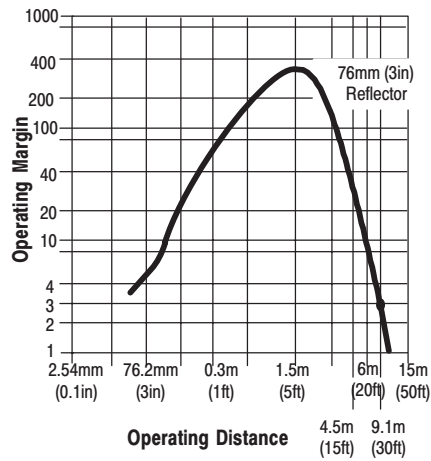
## Transmitted Beam Light Source



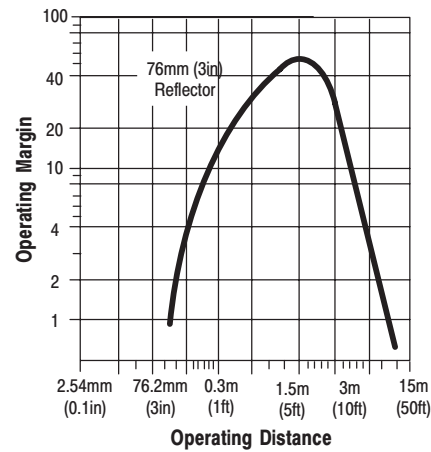
**Note:** Details regarding connection of Allen-Bradley Series 4000B sensors to Allen-Bradley Programmable Controllers can be found in publication 42 MR-4.0.

# Typical Response Curves

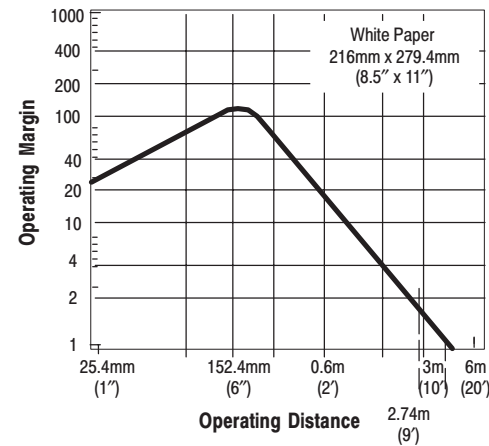
## Retroreflective



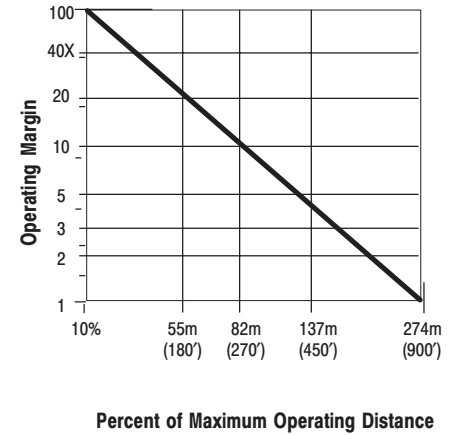
## Polarized Retroreflective



## Standard Diffuse

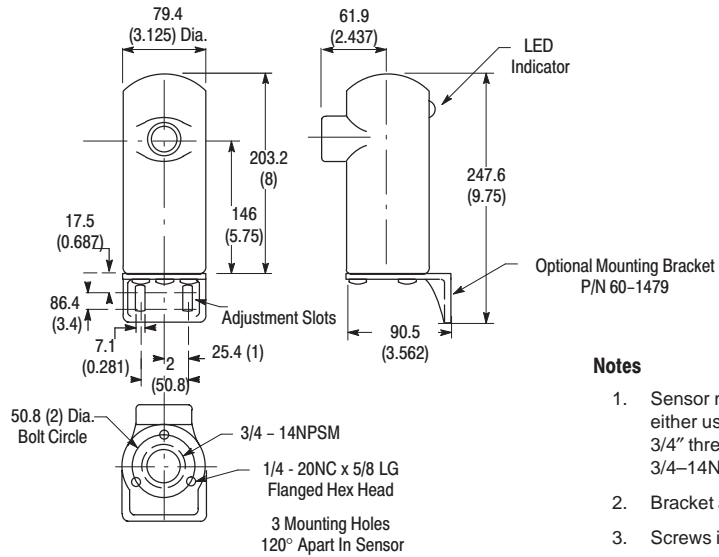


## Transmitted Beam



AB Parts

## Dimensions—mm (inches)

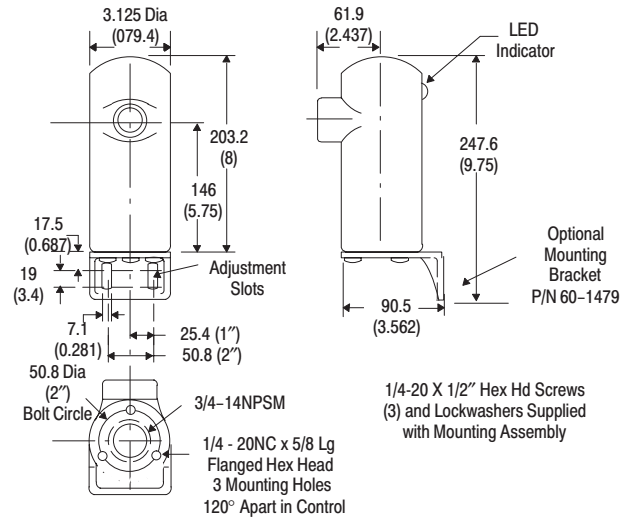


### Notes

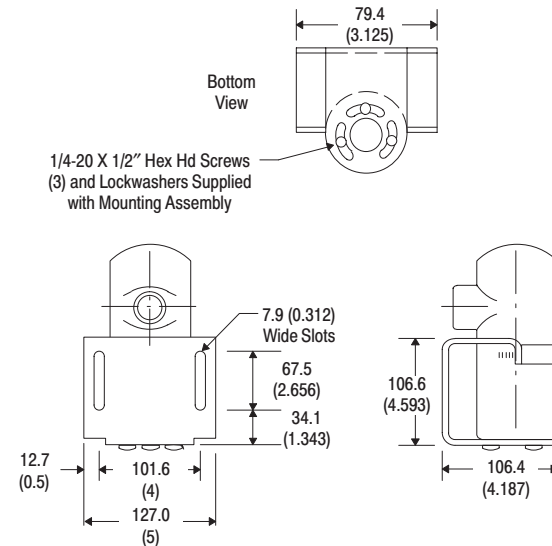
1. Sensor may be mounted without bracket, either using 3, 1/4–20NC mtg. holes or on a 3/4" threaded pipe, thread pitch 3/4–14NPSM.
2. Bracket allows 360-degree adjustment.
3. Screws included with mounting bracket.

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

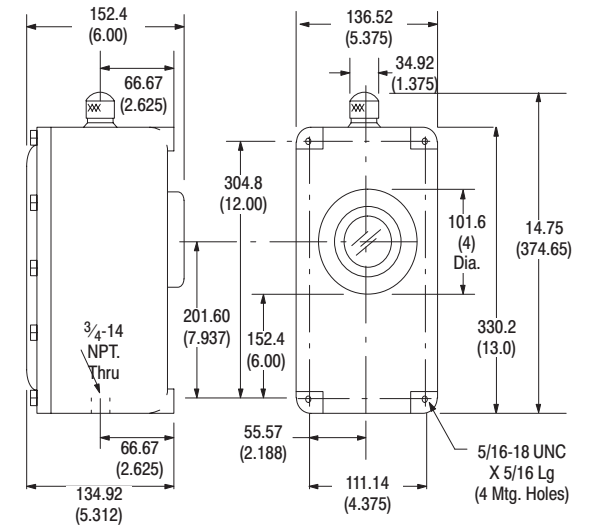
### General Purpose Mounting Assembly #60-1479



### Heavy Duty Mounting Assembly #60-1665



### NEMA 7 and 9 Hazardous Locations Enclosure #61-4921



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