




July 2005

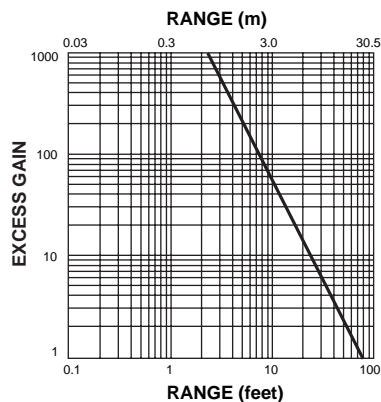
Model Selection — 18 mm Diameter Sensors (Connection Type: 3-Meter Cable)

	Input Voltage	Sensing Range	Maximum Load Current	Maximum Inrush	Thru-Beam Component	Output	Catalog Number	
							Dark Operate	Light Operate
3-Wire Sensors								
Thru-Beam ② 	20 – 264V AC, 50 – 60 Hz; or 15 – 30V DC	80 feet (24m)	300 mA	2.0A	Emitter	—	E58CAL18A2E2	
							10 – 30V DC	80 feet (24m)
	250 mA	—	Receiver	NPN	E58CAL18T110C2	E58CBL18T110C2		
					100 mA	—	—	PNP
Reflex 	20 – 264V AC, 50 – 60 Hz; or 15 – 30V DC	25 feet (7.6m) ①	300 mA	2.0A	—	—	E58CAL18A2R2	E58CBL18A2R2
	10 – 30V DC	25 feet (7.6m) ①	250 mA	—	—	NPN	E58CAL18T110R2	E58CBL18T110R2
			100 mA	—	—	PNP	E58CAL18T111R2	E58CBL18T111R2
Diffuse Reflective 	20 – 264V AC, 50 – 60 Hz; or 15 – 30V DC	8 inches (200 mm) ③	300 mA	2.0A	—	—	E58CBL18A2D2	E58CAL18A2D2
	10 – 30V DC	8 inches (200 mm) ③	250 mA	—	—	NPN	E58CBL18T110D2	E58CAL18T110D2
			100 mA	—	—	PNP	E58CBL18T111D2	E58CAL18T111D2

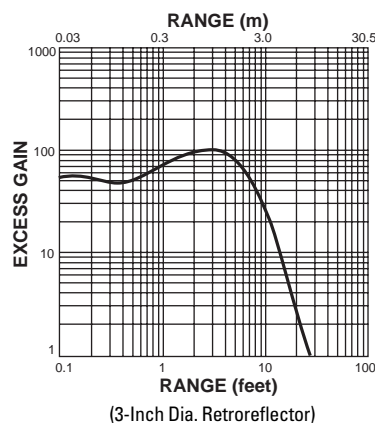
- ① Range is based on 3-inch retroreflector.
- ② For replacement parts, order one complete pair including (1) emitter and (1) receiver otherwise the system will not function properly.
- ③ Sensor will detect a 90% reflectance white card at this range.

Excess Gain

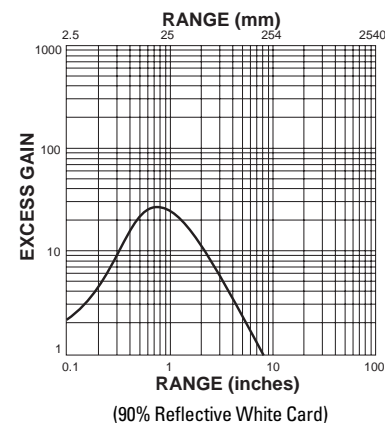
Thru-Beam



Reflex


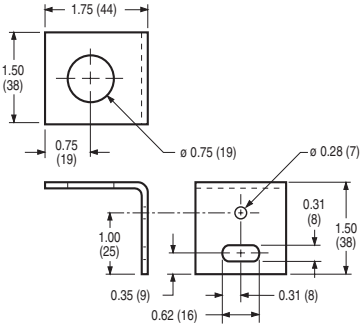

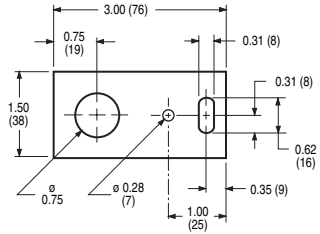


Diffuse Reflective



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Model Selection — Accessories (Continued)

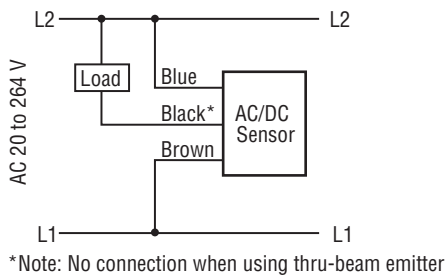
	Description	Catalog Number	Approximate Dimensions in Inches (mm)
 <p>L-Shaped Bracket</p>	<p>Two per package. Allows a minimum adjustment range. Sensor mounts with two jam nuts and washers (included with sensor). Aluminum with a Chromate finish</p>	6161A-6501	
 <p>Flat Bracket</p>	<p>Allows a minimum adjustment range. Sensor mounts with two jam nuts and washers (included with sensor). Aluminum with a Chromate finish</p>	6161AS295	
Accessories	Replacement mounting nuts and other accessories	See Section 8	
Connector Cables	A variety of cables, connector blocks and accessories	See Section 10	
Mounting Brackets	Additional mounting brackets for tubular sensors	See Section 8	
Reflectors	A variety of retroreflectors and reflective tape	See Section 8	

PHOTOELECTRIC SENSORS

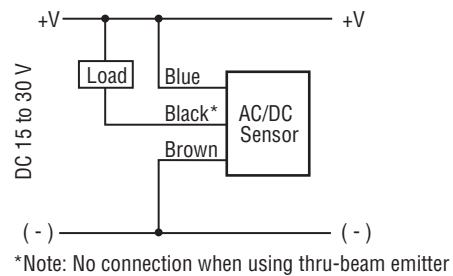
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Wiring Diagrams

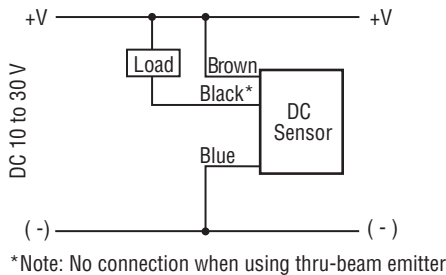
AC/DC Models (AC Connection)



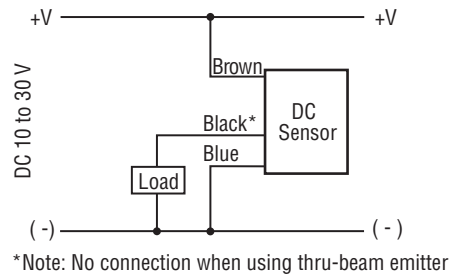
AC/DC Models (DC Connection)



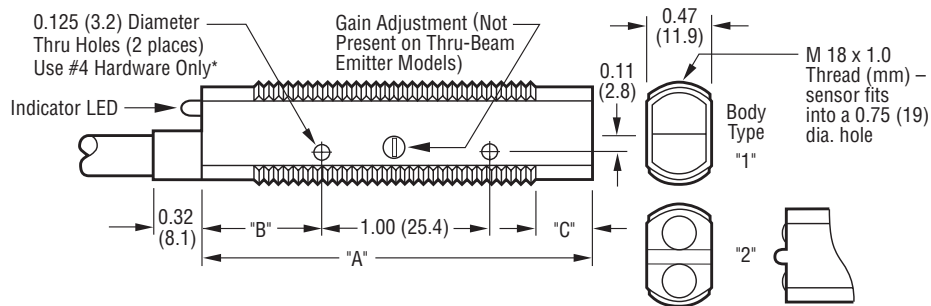
DC Models (NPN Output)



DC Models (PNP Output)



Approximate Dimensions in Inches (mm)



Style	Dimensions in Inches (mm)			Gain Adjustments	Body Type
	A	B	C		
Thru-Beam	2.75 (70)	0.65 (17)	1.10 (28)	Yes ①	1
Diffuse	2.20 (56)	0.65 (17)	0.25 (6)	Yes	2
Reflex	2.60 (66)	0.60 (15)	0.29 (7)	Yes	1

① Gain adjustment on thru-beam receiver models only.

Specifications

	AC/DC Models (AC Operation)	AC/DC Models (DC Operation)	DC-Only Models
Input Voltage	20 to 264V AC, 50/60 Hz	15 to 30V DC (15 to 24V DC above 131°F/55°C)	10 to 30V DC, (10 to 24V DC above 131°F/55°C)
Power Dissipation	1.5W maximum	1.5W maximum	1W maximum
Output Type	VMOS (bi-directional)	NPN (sink)	NPN and PNP (dual outputs)
Current Switching	300 mA maximum	300 mA maximum	PNP: 100 mA maximum; NPN: 250 mA maximum (NPN: 120 mA maximum above 131°F/55°C)
Voltage Switching	375V peak maximum	375V peak maximum	30V DC maximum
Off-State Leakage	250 μ A typical; 500 μ A maximum	250 μ A typical; 500 μ A maximum	10 μ A maximum
Surge Current	2A maximum	2A maximum	1A maximum
On-State Voltage Drop	—	1.8V at 10 mA; 3.5V at 300 mA	NPN: 400 mV at 10 mA, 1.5V at 250 mA; PNP: 2.4V at 100 mA
Response Time	10 mS		1 mS; 3.5 mS (thru-beam)
Short Circuit Protection	Sensor will turn off immediately when short or overload is detected (indicator LED flashes). Sensor will reset when short is removed.		
Temperature Range	Thru-Beam Emitter: -4° to +158°F (-20° to +70°C); All others: -40° to +158°F (-40° to +70°C)		
Light/Dark Operation	Specified by Catalog Number		
Enclosure Material	Lens: polycarbonate; Cable jacket: PVC; Body: structural polyurethane foam (do not expose to concentrated acids, alcohols or ketones)		
Cable/Connector	Cable versions: 6-foot cable; Connector versions: male mini and micro connectors (refer to wiring diagrams for number of pins per model) on nominal 8" pigtailed		
Vibration and Shock	Vibration: 30g over 10 Hz to 2 kHz; Shock: 100g for 3 mS 1/2 sine wave pulse		
Indicator LED	Lights steady when output is ON; flashes when short circuit protection is in latch condition (except 2-wire models)		
Sunlight Immunity	Perfect Prox: 5,000 foot-candles; All others: 10,000 foot-candles		
Enclosure Ratings	NEMA 1, 2, 3, 4, 4X, 6, 12 and 13 ① NEMA CP Models Available — Contact Factory		
Approvals	UL and C-UL Recognized (all models), CE Compliant (except 2-wire DC models)		

① NOTE: These products conform to NEMA tests as indicated, however, some severe washdown applications can exceed these NEMA test specifications. For questions about a specific application, contact Eaton's Cutler-Hammer Sensor Applications Department at 1-800-426-9184.