## **Cutler-Hammer**

# Photoelectric Sensors SM Series

July 2005

F-T-N

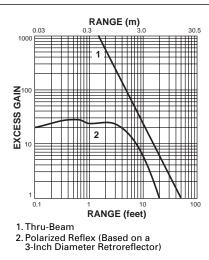
### Model Selection — Compatible Connector Cables ①

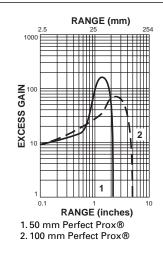
	Voltage Number		Gauge I	Length	Catalog Number			Pin Configuration/Wire Colors
Style		of Pins			PVC Jacket	PUR Jacket	IRR PUR Jacket	(Face View Female Shown)
Standard Cables — Micro Style								
Micro Style Straight Female	AC	4-pin 4-wire	22 AWG	6.0 feet (2m)	CSAS4F4CY2202	CSAS4F4RY2202	CSAS4F4I02202	1-Red/Black 2-Red/White 3-Red 4-Green
	DC	4-pin 4-wire	22 AWG	6.0 feet (2m)	CSDS4A4CY2202	CSDS4A4RY2202	CSDS4A4102202	(1) (2) (4) (3) 1-Brown 2-White 3-Blue 4-Black

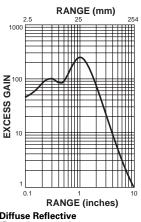
① For a full selection of connector cables, see Section 10.

Fast turn product with typical one day lead-time to shipment.

#### **Excess Gain**







Diffuse Reflective (Based on a 90% Reflectance White Card)

#### **Model Selection — Accessories**

Description	Reference
Retroreflectors and Retroreflective Tape	See Section 8
Mounting Brackets	See Section 8
Replacement Mounting Nuts and Other Accessories	See Section 8
Connector Cables	See Section 10

#### Wiring Diagrams (Pin numbers are for reference only, rely on pin location when wiring)

Operating Voltage	Mode	Cable Models	Micro-Connector Models (Face View Male Shown)	
3-Wire Sensor	5			
18 – 264V AC, 50/60 Hz or 18 – 50V DC	All Sensors	BN WH No BK Connection BU L2 or +V	L2 or +V Load 3(1) or (-) No Connection	
4-Wire Sensor	5	•	•	
10 – 30V DC	Thru-Beam Source	BN +V BU (-)	(-) (2) (1) +V (3) (4) +V	
	All Others	BN +V WH Load BK Load BU (-)		

**PHOTOELECTRIC** 

SENSORS

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# 6-26 Photoelectric Sensors SM Series

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### **Specifications**

	AC/DC Models		DC Models			
	AC Operation	AC Operation DC Operation				
Input Voltage	18 – 264V AC, 50/60 Hz	18 – 50V DC	10 – 30V DC			
Power Dissipation	4 VA maximum	4 VA maximum	2W maximum			
Output Type	VMOS (bi-directional)	NPN (sink)	NPN and PNP (dual outputs)			
Current Switching	200 mA maximum	200 mA maximum	100 mA maximum			
Voltage Switching	264V AC	50V DC	30V DC maximum			
OFF-State Leakage	500 µA maximum	500 μA maximum	10 μA maximum			
Surge Current	2A maximum	2A maximum	1A maximum			
ON-State Voltage Drop	3.5V maximum	3.5V maximum	2.5V maximum			
Response Time	16 mS	1 mS	1 mS			
Protection	Reverse	Short circuit and overload protection (Output Indicator LED will flash). Reverse polarity protection (Sensor will reset automatically once fault is removed). IMPORTANT: During installation, correct power connections must be made first to ensure fail-safe short circuit protection of the outputs				
Light/Dark Operation		By model				
Temperature Range	Ор	Operating: -13° to 131°F (-25° to 55°C); Storage: -13° to 158°F (-25° to 70°C)				
Material of Construction		Lens: Polycarbonate; Cable Jacket: PVC; Body: Cycoloy				
Cable/Connector	Connector M	Cable Models: 6.5 foot (2m) 4-wire cable; Connector Models: 4-pin, micro-connector (AC-key on AC/DC models; DC-key on DC models)				
Vibration and Shock	Vibi	Vibration: 30g over 10 Hz to 2 kHz; Shock: 50g for 10 mS 1/2 sinewave pulse				
Indicator LEDs		Green LED: Power; Red LED: Output; Orange LED: TargetLock™				
Source Light		Visible Red, 660 nm				
Gain Adjustment	3/4-turn pot, 10	3/4-turn pot, 10:1 adjustment of gain (provided on thru-beam and diffuse reflective sensors only)				
Sunlight Immunity		Perfect Prox®: 5,000 foot-candles; All others: 10,000 foot-candles				
Enclosure Ratings		NEMA 1, 3, 4, 4X, 6, 6P, 12 and 13; IP68 <sup>①</sup>				

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ONOTE: Our products conform to NEMA tests as indicated, however, some severe washdown applications can exceed these NEMA test specifications. If you have questions about a specific application, contact our Applications Department.

### **Approximate Dimensions in Inches (mm)**

