



Cutler-Hammer

Enhanced 50 Series Photoelectric Sensors Selection Guide

Overview

The Enhanced 50 family of high performance photoelectric sensors offers outstanding features, flexibility and durability at an incredible price. Choose from a wide selection of Through-beam, Polarized Reflex, Diffuse and even Clear Object models all designed in a rugged, industry standard, rectangular package. Each model comes with a variety of input options for maximum flexibility across many voltage ratings.

Cabling choices include built-in mini-connector, micro-connector, pigtail micro-connector or a 6 ft. integrated cable. Other convenient features included are Dark-on/Light-on selectability and Gain adjustment, available on all models. Use the Selection Guide below to find the sensor model that best suits your requirements.



Enhanced 50 Photoelectric Sensors Specifications by Model Type

Specifications	Through-Beam	Diffuse	Polarized Reflex	Clear Object Detector
Voltage Range	10–40 VDC 12–240 VDC 24–240 VAC	10–40 VDC 12–240 VDC 24–240 VAC	10–40 VDC 12–240 VDC 24–240 VAC	10–40 VDC 12–240 VDC 24–240 VAC
Sensing Range	500ft [152m]	10ft [3m]	16ft [4.9m]	45in [1.2m]
Optimum Power	0.1 to 250ft [0.03 to 77m]	1 to 60in [25 to 1520mm]	0.5 to 8ft [0.2 to 2.5m]	1 to 24in [25 to 610mm]
Sensing Beam	Infrared	Infrared	Visible Red	Visible Red
Output Types	NPN/PNP 250 mA, Solid-state relay 300 mA @ 240 VAC/VDC, SPDT EM relay 3A @ 120 VAC	NPN/PNP 250 mA, Solid-state relay 300 mA @ 240 VAC/VDC, SPDT EM relay 3A @ 120 VAC	NPN/PNP 250 mA, Solid-state relay 300 mA @ 240 VAC/VDC, SPDT EM relay 3A @ 120 VAC	NPN/PNP 250 mA, Solid-state relay 300 mA @ 240 VAC/VDC, SPDT EM relay 3A @ 120 VAC

Enhanced 50 Photoelectric Sensors Specifications by Input Type

Specifications	AC/DC EM Relay Models	AC/DC Solid-State Relay Models	DC Only Models
Input Voltage	12–240 VDC 24–240 VAC	12–240 VDC 24–240 VAC	10–40 VDC
Light/Dark Operation	Switch selectable		
Operating Temperature	-13 to +131 °F [-25 to +55 °C]		
Humidity	95% relative humidity, non-condensing		
Case Material	Fiberglass reinforced plastic		
Lens Material	Acrylic		
Vibration	IEC 60947-5-2 part 7.4.2		
Shock	IEC 60947-5-2 part 7.4.1		
Protection	Output short circuit and overcurrent protection, reverse polarity protection		
Enclosure Ratings	IP67		
Agency Approvals	IEC IP67, cCSAus, UL508 (CSA File 224447)		
Output Load	3A @ 120 VAC 3A @ 28 VAC 3A @ 240 VAC	300 mA @ 240 VAC/VDC	250 mA
Response Time	15 ms	2 ms	
No Load Current Draw	<30 mA		
Leakage Current (max.)	—	1 mA @ 240 VAC	<10 µA
Indicator LEDs	Through-Beam Source..... All Others: Red: Power..... Green: Output Yellow: Power Red: Alignment		



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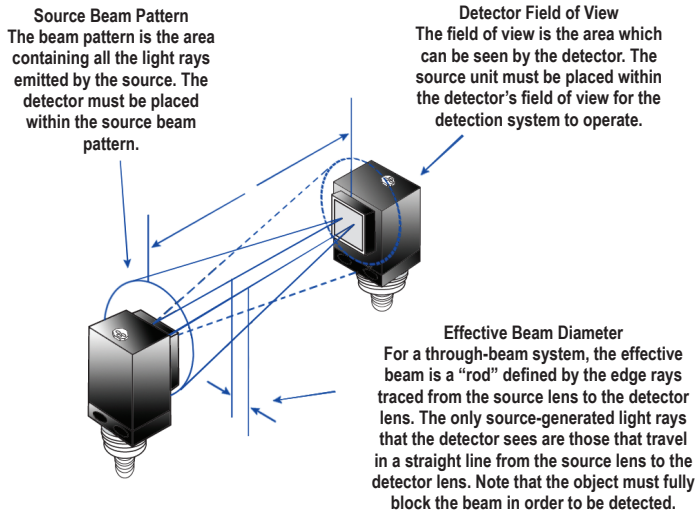
Sensors

Application Guide

The Enhanced 50 Series Photoelectric Sensors are a great fit for applications such as material handling, packaging, wrapping and sortation. This family of sensors, with its four basic models (Through-beam, Polarized Reflex, Diffuse and Clear Object), meets the needs for almost any sensing requirement, including harsh environments with excessive dust or high temperature. Follow the application guide below to choose the best sensor model for your application.

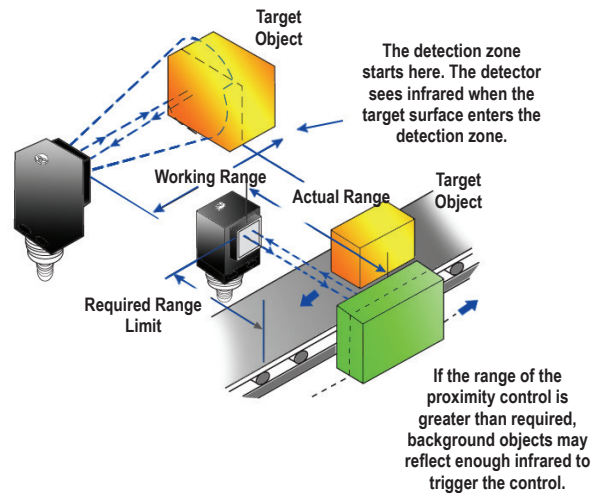
Through-Beam

- Most accurate
- Longest sensing range
- Most reliable
- Must be installed in two points on system: emitter and receiver
- More costly



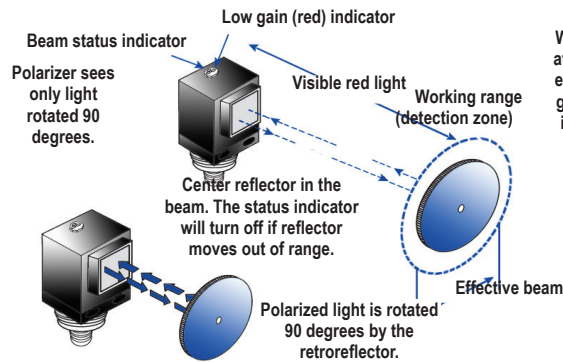
Diffuse

- Lower cost
- Install at one point
- Less accurate than Through-Beam or Polarized Reflex
- More setup time involved



Polarized Reflex

- Lower cost than Through-Beam
- Longer sensing range than Diffuse
- Very reliable
- Must be installed in two points on system: sensor and reflector



Clear Object Detector

- Most reliable for sensing transparent objects
- Must be installed in two points on system: sensor and reflector.
- Short sensing distance: 45 inches max.

