

Enhanced 50 Series™ Photoelectric Sensors

Contents

| | |
|---|------|
| Overview | 5-8 |
| Model Selection, Sensors | 5-9 |
| Model Selection, Compatible Connector Cables | 5-14 |
| Model Selection, Fiber Optic Cables | 5-15 |
| Model Selection, Accessories ... | 5-19 |
| Wiring Diagrams | 5-20 |
| Specifications | 5-20 |
| Dimensions | 5-21 |

The new Enhanced versions of the Cutler-Hammer® 50 Series™ Photoelectric Sensors from Eaton's electrical business offer flexibility, durability and high optical performance in a cost-effective self-contained package. Choose from three output types, four time delay functions, six sensing modes and four connection styles to tailor the sensor to exactly meet your needs.

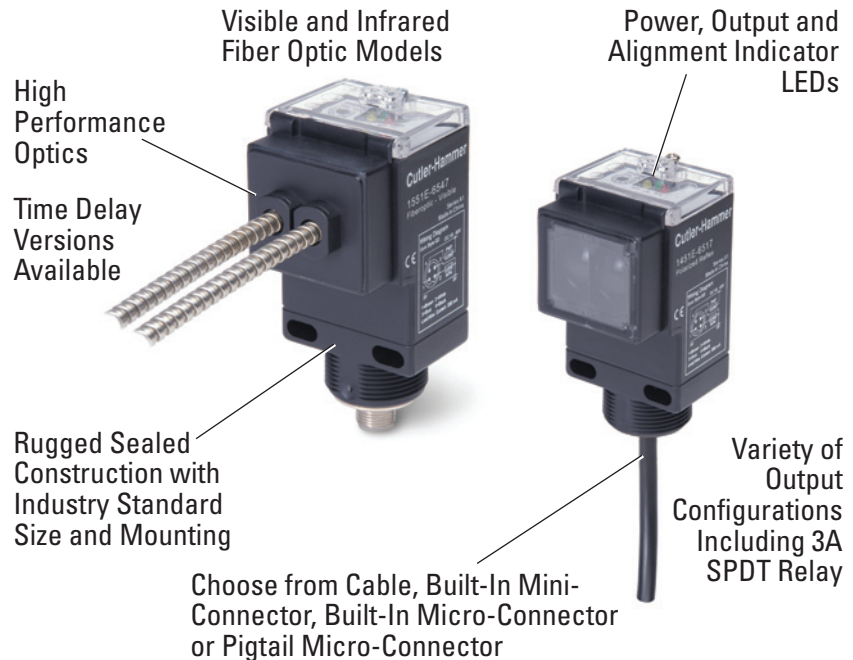
Sensors are available in thru-beam, reflex, polarized reflex, diffuse reflective, clear object, and fiber optic sensing modes. Brackets are available for easy mounting and to allow precise adjustment of sensor alignment.

Approvals

- CSA Approved
- Certified to UL Standard, UL 508



High Performance Sensors for Demanding Applications



Product Features

- High optical performance models including a 500-foot (152m) Thru-Beam and a 10-foot (3m) Diffuse Reflective unit
- Output options include a 3 Amp SPDT relay
- All units offer light/dark selection
- Logic options include ON-delay, OFF-delay and One-Shot delay
- Fiber optic sensors operate in thru-beam or diffuse reflective mode depending on the fiber optic cable selected
- Fully potted construction for use in areas subject to washdown, high shock and/or vibration
- Choice of pre-wired power cable, built-in mini-connector, built-in micro-connector and pigtail micro-connector versions. Standard pre-wired cable length is 6 feet (1.8m)
- Variety of brackets available including ball swivel

Connection Options



Model Selection — Sensors (Continued)

| | Voltage Range | Sensing Range | Optimum Range | Sensing Beam | Thru-Beam Component | Output Type | Time Delay | Connection Type | Catalog Number | |
|---|---|----------------|----------------------------|--------------|---------------------|----------------|---|--|---------------------------------|--------------|
| <p>Thru-Beam Extended Range ①</p>  <p>Field of View: 2.4°</p> <p>For a complete system, order one Sensor and one Detector</p> | 10 – 40V DC | 500 ft. (152m) | 0.1 – 250 ft. (0.03 – 77m) | Infrared | Source | N/A | N/A | 6-foot Cable | 1151E-6517 | |
| | | | | | Detector | NPN/PNP 250 mA | no | | 1251E-6517 | |
| | | | | | | | yes | | 1251E-8517 | |
| | | | | | Source | N/A | N/A | 4-pin Euro (Micro) Connector | 1151E-6547 ☉ | |
| | | | | | Detector | NPN/PNP 250 mA | no | | 1251E-6547 ☉ | |
| | | | | | | | yes | | 1251E-8547 ☉ | |
| | | | | | Source | N/A | N/A | 4-pin Euro (Micro) Connector (pigtail) | 1151E-6537 ☉ | |
| | | | | | Detector | NPN/PNP 250 mA | no | | 1251E-6537 ☉ | |
| | | | | | | | yes | | 1251E-8537 ☉ | |
| | | | | | Source | N/A | N/A | 4-pin Mini-Connector | 1151E-6507 ☉ | |
| | | | | | Detector | NPN/PNP 250 mA | no | | 1251E-6507 ☉ | |
| | | | | | | | yes | | 1251E-8507 ☉ | |
| | 12 – 240V DC 24 – 240V AC | | | | | Source | N/A | N/A | 6-foot Cable | 1151E-6513 |
| | | | | | | Detector | Isolated Output Solid-State Relay 300 mA @ 240V AC/DC | no | | 1251E-6513 |
| | | | | | | | | yes | | 1251E-8513 |
| | | | | | | | | SPDT EM Relay 3A @ 120V AC | no | 1251E-6514 |
| | | | | | | | | | yes | 1251E-8514 |
| | | | | | | Source | N/A | N/A | 4-pin Micro Connector | 1151E-6543 ☉ |
| | | | | | | Detector | Isolated Output Solid-State Relay 300 mA @ 240V AC/DC | no | | 1251E-6543 ☉ |
| | | | | | | | | yes | | 1251E-8543 ☉ |
| | | | | | | | Non-isolated Output Solid-State Relay 300 mA @ 240V AC/DC | no | 1251E-6545 ☉ | |
| | | | | | | | | yes | 1251E-8545 ☉ | |
| | | | | | | Source | N/A | N/A | 4-pin Micro Connector (pigtail) | 1151E-6534 ☉ |
| | | | | | | Detector | Isolated Output Solid-State Relay 300 mA @ 240V AC/DC | no | | 1251E-6533 ☉ |
| yes | 1251E-8533 ☉ | | | | | | | | | |
| | SPDT EM Relay 3A @ 120V AC | no | 1251E-6534 ☉ | | | | | | | |
| | | yes | 1251E-8534 ☉ | | | | | | | |
| Source | N/A | N/A | 4-pin Mini-Connector | 1151E-6504 ☉ | | | | | | |
| Detector | Isolated Output Solid-State Relay 300 mA @ 240V AC/DC | no | | 1251E-6503 ☉ | | | | | | |
| | | yes | | 1251E-8503 ☉ | | | | | | |
| | SPDT EM Relay 3A @ 120V AC | no | 1251E-6504 ☉ | | | | | | | |
| | | yes | 1251E-8504 ☉ | | | | | | | |

① For brackets compatible with these sensors, see Accessories on Page 5-19.

☉☉ See listing of compatible connector cables on Page 5-14.

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

☑ Stocked product, typical order quantities guaranteed in stock.

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

| Operating Voltage | Models | Cable Models | Mini-Connector Models (Face View Male Shown) | Micro-Connector Models (Face View Male Shown) |
|------------------------------|---|--------------|---|--|
| 10 – 40V DC | Thru-Beam Source | | | |
| | All others | | | |
| 12 – 240V DC or 24 – 240V AC | Thru-Beam Source | | | |
| | All others with Isolated AC/DC Output | | | |
| | All others with Non-isolated AC/DC Output | | | |
| 12 – 240V DC or 24 – 240V AC | Thru-Beam Source | | | |
| | All others | | | |

- ① Connect load to appropriate output for either sinking or sourcing operation.
- ② Connecting the Test input to 0V DC allows you to switch the light source off for troubleshooting while leaving the sensor under power.
- ③ Over current protection is to be provided in the field. Conductor size for 20 AWG: 5 amp; 22 AWG: 3 amp; 24 AWG: 2 amp.

Specifications

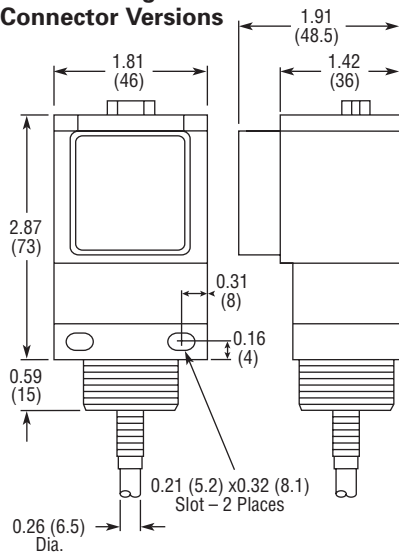
| | AC/DC EM Relay Models | AC/DC Solid-State Relay Models | DC Only Standard Range Models | DC Only Extended Range Models |
|-----------------------|---------------------------------------|--------------------------------|-------------------------------|-------------------------------|
| Input Voltage | 12 – 240V DC 24 – 240V AC | | | 10 – 40V DC |
| Light/Dark Operation | Switch selectable | | | |
| Operating Temperature | -13 – 131°F (-25 – 55°C) | | | |
| Humidity | 95% Relative humidity, non-condensing | | | |
| Case Material | Fiberglass reinforced plastic | | | |
| Lens Material | Acrylic | | | |

Specifications (Continued)

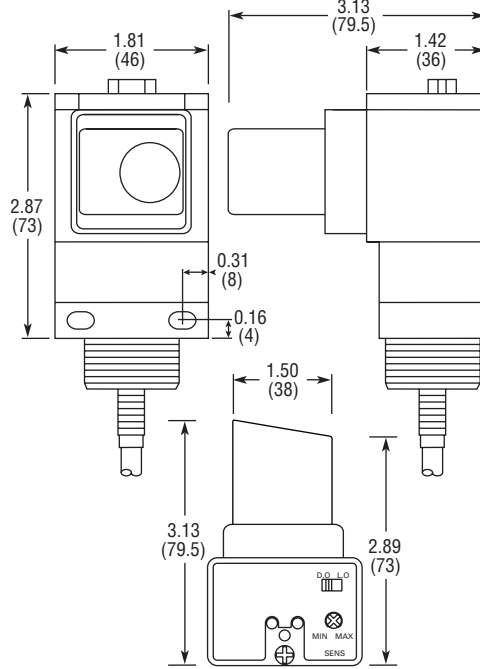
| | AC/DC EM Relay Models | AC/DC Solid-State Relay Models | DC Only Standard Range Models | DC Only Extended Range Models |
|------------------------|---|--------------------------------------|-------------------------------------|-------------------------------------|
| Vibration | IEC 60947-5-2 part 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 | | | |
| Output Load | 3A @ 120V AC 3A @ 240V AC 3A @ 28V AC | 300 mA @ 240V AC/ DC | 250 mA @ 40V DC | |
| Response Time | 15 mS | 2 mS | | |
| Timer Timing Response | 0 – 15 sec. | | | |
| No Load Current | <30 mA | | | |
| Leakage Current (max.) | — | 1 mA @ 240V AC | <10 μA | |
| Indicator LEDs | Green: Output; Yellow: Power; Red: Alignment | | | |
| Emitter LED | Diffuse, Infrared Fiber Optic, Thru-Beam Models: Infrared 880 nm Reflex, Polarized Reflex, Clear Object, Visible Fiber Optic Units: Visible Red 660 nm | | | |

Approximate Dimensions in Inches (mm)

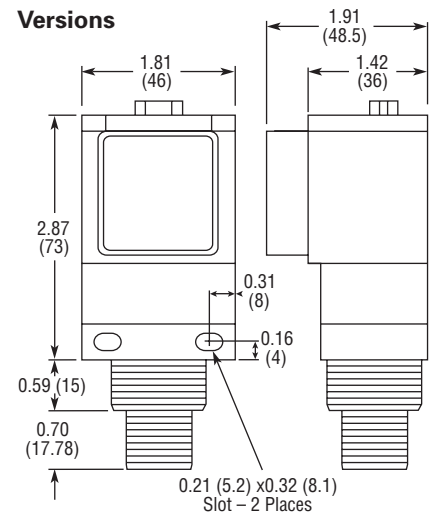
Cable and Pigtail
Connector Versions



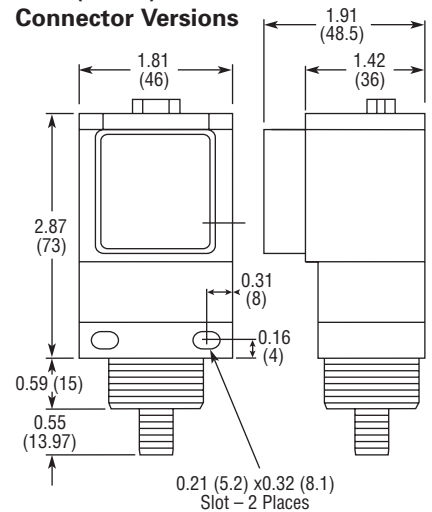
Clear Object Versions



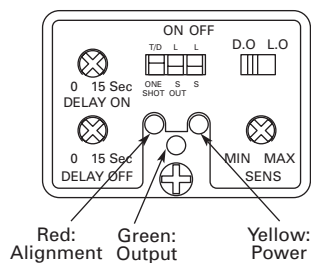
Mini-Connector
Versions



AC/DC Micro or
Euro (Micro)
Connector Versions



Top View with Timing



Top View without Timing

