

Retroreflectors

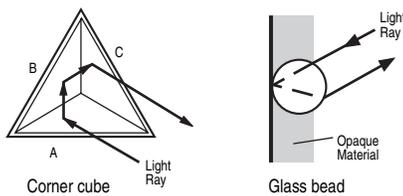
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Cutler-Hammer® Retroreflectors from Eaton's electrical business are used with reflex-type sensors. Two types of retroreflective target material are available: corner cube and embedded glass bead.

Corner Cube Retroreflectors

This type provides the highest signal return to the sensor, typically 2000 to 3000 times the reflectivity of white paper. Three adjoining sides are arranged at right angles to each other. When a ray of light strikes one of these sides (A), it is reflected to the second (B), then the third (C), and then back to the source parallel to its original course. Thousands of these cube shapes are molded into a rugged plastic reflector or vinyl tape material. Corner cube retroreflectors are suitable for use with both standard reflex and polarized reflex sensors.



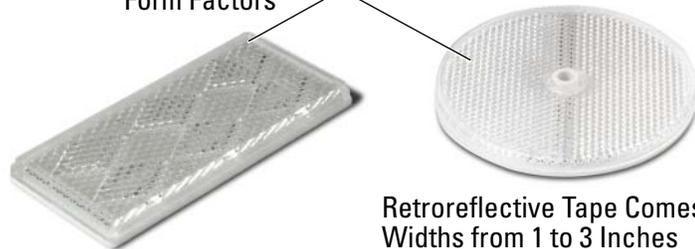
Glass Bead Retroreflectors

Glass bead retroreflectors are available in tape form with an adhesive backing. The bead style surface is typically rated at 200 to 900 times the reflectivity of white paper — much lower than corner cube reflectors. Glass bead retroreflectors are not suitable for use with polarized reflex sensors.

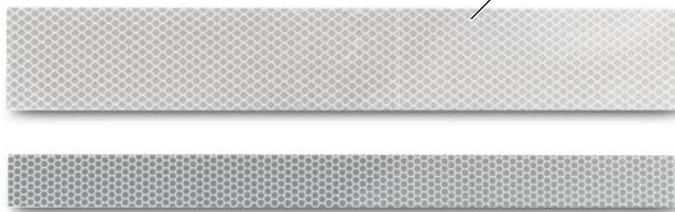
For the most current information on this product, visit our web site: www.EatonElectrical.com

High Quality Retroreflectors and Retroreflective Tape in a Wide Variety of Sizes to Meet Your Needs

Retroreflectors Available in Both Rectangular and Round Form Factors



Retroreflective Tape Comes in Widths from 1 to 3 Inches



Retroreflector Size

The size of the retroreflective target has a significant effect on the excess gain and range of a reflex sensor. In general, we recommend you use the largest possible reflector in every reflex sensing application to maximize performance of the sensor and simplify alignment. To provide an even larger reflective area, multiple retroreflectors can be grouped together as shown.



Using Retroreflectors with Polarized Reflex Sensors

Only corner cube retroreflective material can be used with polarized reflex sensors. When polarized light from the sensor's light source strikes a corner cube retroreflector, it is returned to the sensor in a depolarized state. This allows some of the light to pass through the detector's polarizer, which is positioned at 90° to the source polarizer, to allow the sensor to operate.

Glass bead retroreflectors do not depolarize light and will not work with polarized reflex sensors.

Molded plastic corner cube retroreflectors are always recommended as they provide the highest signal return to the sensor.

Corner cube tape works with polarized reflex sensors but returns less light to the sensor. In all cases, Eaton recommends testing sensor and tape prior to final installation.

For Customer Service in the U.S. call **1-800-356-1243**,
in Canada call **1-800-268-3578**.
For Application Assistance in the U.S. and Canada
call **1-800-426-9184**.

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Model Selection — Retroreflectors

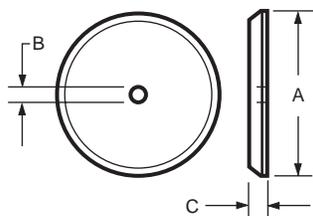
	Description	Catalog Number
Retroreflector		
	1.5 x 3.25 inch, adhesive backed, one per package	6200A-6507
	3 inch diameter, with mounting hole, two per package	6200A-6501
	Bulk packaged version of above (ordered quantity will be bulk packaged)	6200AS6501
	3 inch diameter, with mounting hole, one per package	E51KR84
	3 inch diameter, metal backed, with mounting hole, one per package	6200A-6506
	2.18 inch diameter, with mounting hole, one per package	6200A-6505
	2.18 inch diameter, adhesive backed, one per package	6200A-6502
	1.25 inch diameter, adhesive backed, one per package	6200A-6504
	Bulk packaged version of above (ordered quantity will be sent bulk packaged)	6200AS6504
	1.25 inch diameter, no adhesive, one per package	E51KR32

Retroreflective Tape

	Corner Cube Style ①	
	2 inch wide, 1 piece, quantity is length in feet	6201A-XXXX
	3 inch wide, 1 piece, quantity is length in feet	6203A-XXXX
	Glass Bead Style (Not for use with polarized reflex sensors)	
	1 inch wide, 1 piece, quantity is length in feet	6200A-XXXX
	2 inch wide, 1 piece, quantity is length in feet	6202A-XXXX

① Although corner cube tape works with polarized reflex sensors, we recommend testing sensor and tape prior to installation.

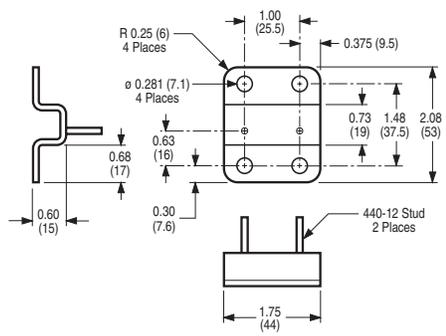
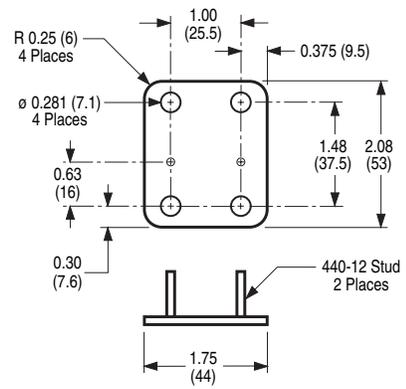
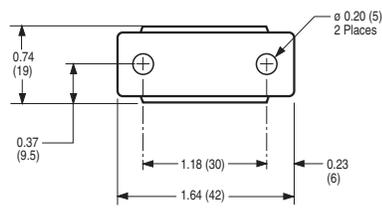
Approximate Dimensions in Inches (mm)



Round Retroreflectors

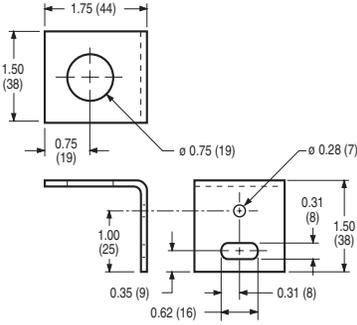
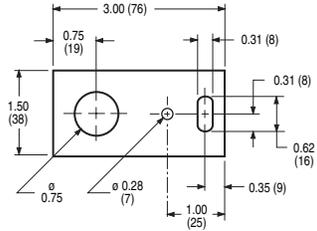
Catalog Number	Approximate Dimensions in Inches (mm)		
	A — Diameter	B — Hole Size	C — Thickness
6200A-6501	3.30 (84)	0.20 (5)	0.35 (9)
6200A-6502	2.40 (61)	None	0.30 (7.5)
6200A-6504	1.30 (33)	None	0.25 (6)
6200A-6505	2.40 (61)	0.25 (6)	0.30 (7.5)
6200A-6506	3.30 (84)	0.20 (5)	0.30 (7.5)
E51KR32	1.25 (32)	None	0.35 (9)
E51KR84	3.30 (84)	0.20 (5)	0.35 (9)

Model Selection — Accessories

	Description	Catalog Number	Approximate Dimensions in Inches (mm)
	Plastic mounting nuts (set of 2 for replacement only)	E57KNC18	
	Contoured design with no alignment adjustment. Sensor mounts on #4 studs. 304 Stainless Steel	6161AS5296	
	Same as above except without contour. 304 Stainless Steel	6161AS5297	
	Allows 360° rotation and 10° vertical tilt. Made of Noryl®	6181AS5200	

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Model Selection — Accessories (Continued)

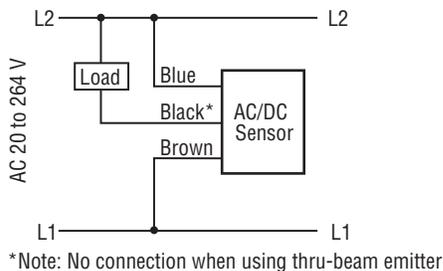
	Description	Catalog Number	Approximate Dimensions in Inches (mm)
 <p>L-Shaped Bracket</p>	<p>Two per package. Allows a minimum adjustment range. Sensor mounts with two jam nuts and washers (included with sensor). Aluminum with a Chromate finish</p>	6161A-6501	
 <p>Flat Bracket</p>	<p>Allows a minimum 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

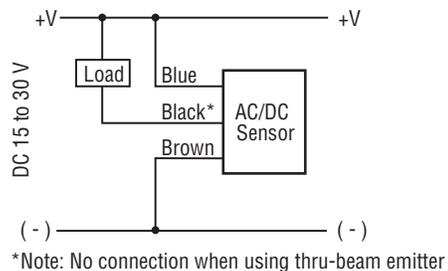
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Wiring Diagrams

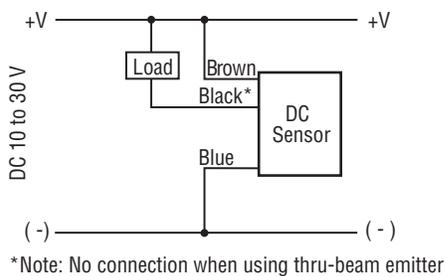
AC/DC Models (AC Connection)



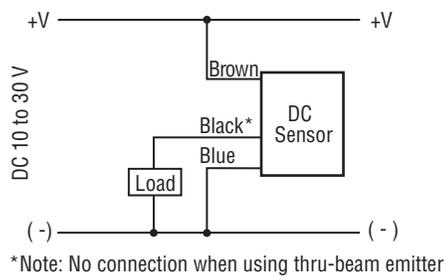
AC/DC Models (DC Connection)



DC Models (NPN Output)



DC Models (PNP Output)



Sensor Mounting Brackets

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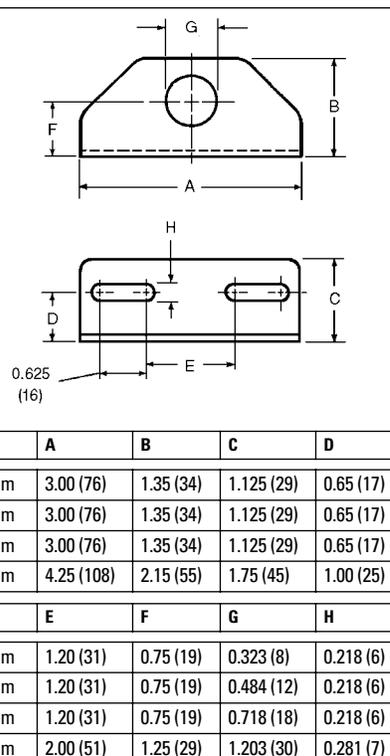
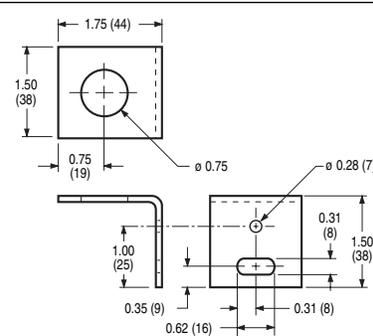
For the most current information on this product, visit our web site: www.EatonElectrical.com

The Cutler-Hammer® Mounting Brackets by Eaton’s electrical business found in this section are suited for use with 8 mm to 30 mm diameter tubular sensors only. Cutler-Hammer Mounting Brackets designed to specifically fit other types of sensors are found in the respective “Accessories” sections for those sensor families.

When choosing a bracket, consider:

- Adjustability — Do you need minimal alignment capability (mounting an inductive proximity sensor), or a high level of alignment precision (mounting a long range photoelectric thru-beam sensor)?
- Material of Construction — This can be dictated by the sensing environment or the type of sensor you are using.

Model Selection — Mounting Brackets for Tubular Sensors

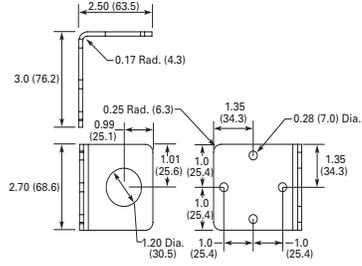
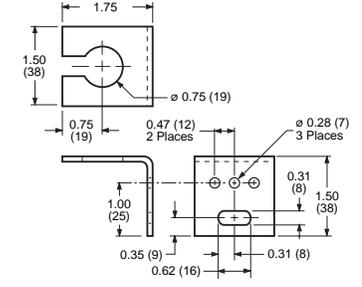
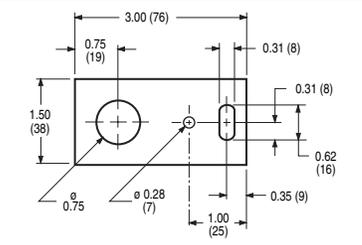
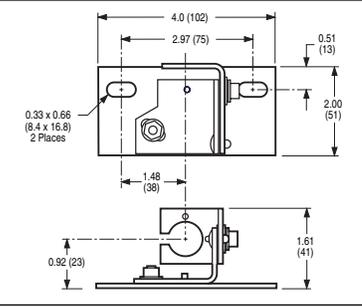
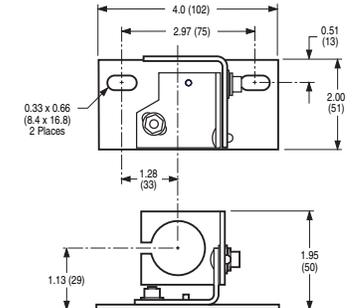
	Description	Size	Catalog Number	Approximate Dimensions in Inches (mm)
	Adjustability: Allows some adjustment in two axes Sensor Mounting: Sensor mounts with two jam nuts and washers (included with sensor) Material of Construction: Stainless steel Packaging: One per package	8 mm	E57KM8	
		12 mm	E57KM12	
		18 mm	E57KM18	
		30 mm	E57KM30	
	Adjustability: Allows some adjustment in one axis and allows for aiming of the sensor through a short arc Sensor Mounting: Sensor mounts with two jam nuts and washers (included with sensor) Material of Construction: Aluminum with chromate finish Packaging: Two per package	18 mm	6161A-6501	
		18 mm	6161AS6501	

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

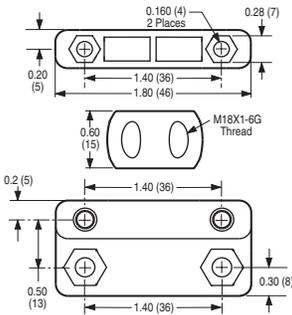
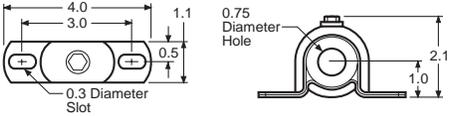
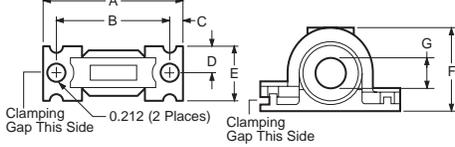
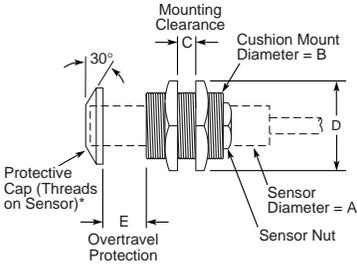
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Model Selection — Mounting Brackets for Tubular Sensors (Continued)

	Description	Size	Catalog Number	Approximate Dimensions in Inches (mm)
	<p>Allows a minimum range. Suitable for 30 mm sensors.</p> <p>Adjustability: Allows some adjustment in one axis</p> <p>Sensor Mounting: Sensor mounts with two jam nuts (included with sensor)</p> <p>Material of Construction: Zinc dichromate</p> <p>Packaging: One per package</p>	30 mm	6167A-6501	
	<p>Adjustability: Allows some adjustment in one axis and allows for aiming of the sensor through a short arc</p> <p>Sensor Mounting: Sensor mounts with two jam nuts and washers (included with sensor)</p> <p>Material of Construction: Aluminum with chromate finish</p> <p>Packaging: Bulk packaged (ordered quantity will be sent bulk packed)</p> <p>Note: Allows installation of sensor with jam nuts already in place on Sensor Body (Comet and Prism Sensors only).</p>	18 mm	6161AS7050	
	<p>Adjustability: Allows some adjustment in one axis and allows for aiming of the sensor through a short arc</p> <p>Sensor Mounting: Sensor mounts with two jam nuts and washers (included with sensor)</p> <p>Material of Construction: Aluminum with chromate finish</p> <p>Packaging: Bulk packaged (ordered quantity will be sent bulk packed)</p>	18 mm	6161AS5295	
	<p>Adjustability: Locking vertical and horizontal adjustments for independent adjustments in each axis</p> <p>Sensor Mounting: Sensor mounts with two jam nuts and washers (included with sensor)</p> <p>Material of Construction: 304 stainless steel</p> <p>Packaging: One per package</p> <p>Note: Sensor is electrically isolated from mounting surface.</p>	18 mm	E58KAM18	
	<p>Same as E58KAM18, except not electrically isolated from mounting surface.</p>	18 mm	E58KAM18U	
	<p>Adjustability: Locking vertical and horizontal adjustments for independent adjustment in each axis</p> <p>Sensor Mounting: Sensor mounts with two jam nuts (included with sensor)</p> <p>Material of Construction: 304 stainless steel</p> <p>Packaging: One per package</p> <p>Note: Sensor is electrically isolated from mounting surface.</p>	30 mm	E58KAM30	
	<p>Same as E58KAM30, except not electrically isolated from mounting surface.</p>	30 mm	E58KAM30U	

Model Selection — Mounting Brackets for Tubular Sensors (Continued)

	Description	Size	Catalog Number	Approximate Dimensions in Inches (mm) Except Where Noted																											
	<p>Adjustability: Allows 360° rotation and 10° vertical tilt</p> <p>Sensor Mounting: Mounts directly to any 18 mm threaded sensor</p> <p>Material of Construction: 5% glass filled Valox®</p> <p>Packaging: One per package</p>	18 mm	E58KAM18B																												
	<p>Adjustability: Allows 5.5° rotation with screw lock to fix final position</p> <p>Sensor Mounting: Mounts directly to any 18 mm tubular sensor</p> <p>Material of Construction: Extremely rugged, made from zinc plated steel/Celenex®</p> <p>Packaging: One per package</p> <p>Note: Electrically isolates the sensor to prevent noise pick-up caused by poor grounding.</p>	0.75 inch (18 mm)	6168A-6501	<p>Note: Dimensions in Inches</p> 																											
	<p>Adjustability: Allows 10° rotation on X and Y axes with a clamping action to hold adjustment</p> <p>Sensor Mounting: Mounts directly to any 8 mm tubular sensor</p> <p>Material of Construction: Noryl (avoid exposing to chlorinated halogenated or aromatic hydrocarbons). Operating temperature: -40° to 160°F.</p> <p>Packaging: One per package</p>	0.375 inch (8 mm)	6143A-6501																												
	<p>Same as 6143A-6501(above), except:</p> <p>Sensor Mounting: Mounts directly to any 18 mm tubular sensor</p>	0.75 inch (18 mm)	6142A-6501	<table border="1"> <thead> <tr> <th>Size</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>8 mm</td> <td>1.96 (49.8)</td> <td>1.56 (39.6)</td> <td>0.20 (5.1)</td> <td>0.40 (10.2)</td> </tr> <tr> <td>18 mm</td> <td>2.80 (71.1)</td> <td>2.25 (57.2)</td> <td>0.275 (7.0)</td> <td>0.50 (12.7)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Size</th> <th>E</th> <th>F</th> <th>G</th> </tr> </thead> <tbody> <tr> <td>8 mm</td> <td>0.80 (20.3)</td> <td>1.05 (26.7)</td> <td>0.375 (9.5)</td> </tr> <tr> <td>18 mm</td> <td>1.00 (25.4)</td> <td>1.64 (41.7)</td> <td>0.75 (19.1)</td> </tr> </tbody> </table>	Size	A	B	C	D	8 mm	1.96 (49.8)	1.56 (39.6)	0.20 (5.1)	0.40 (10.2)	18 mm	2.80 (71.1)	2.25 (57.2)	0.275 (7.0)	0.50 (12.7)	Size	E	F	G	8 mm	0.80 (20.3)	1.05 (26.7)	0.375 (9.5)	18 mm	1.00 (25.4)	1.64 (41.7)	0.75 (19.1)
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	<p>Precision machined, spring-loaded sleeves that hold tubular sensors to protect them from accidental impact due to overtravel of the target being sensed.</p> <p>Used for inductive proximity sensors only.</p>	<p>8 mm</p> <p>12 mm</p> <p>18 mm</p>	<p>E57KNZ8</p> <p>E57KNZ12</p> <p>E57KNZ18</p>	 <p>*NOTE: Sensing Range Will Be Reduced by Thickness of Cap's Wear Surface: 0.030 inch (0.76 mm) max.</p> <table border="1"> <thead> <tr> <th>Size</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>8 mm</td> <td>M8 x 1</td> <td>M16 x 1.5</td> <td>0.43 (11)</td> <td>0.94 (24)</td> <td>0.39 (10)</td> </tr> <tr> <td>12 mm</td> <td>M12 x 1</td> <td>M22 x 1.5</td> <td>0.43 (11)</td> <td>1.18 (30)</td> <td>0.39 (10)</td> </tr> <tr> <td>18 mm</td> <td>M18 x 1</td> <td>M30 x 1.5</td> <td>0.59 (59)</td> <td>1.73 (44)</td> <td>0.39 (10)</td> </tr> </tbody> </table>	Size	A	B	C	D	E	8 mm	M8 x 1	M16 x 1.5	0.43 (11)	0.94 (24)	0.39 (10)	12 mm	M12 x 1	M22 x 1.5	0.43 (11)	1.18 (30)	0.39 (10)	18 mm	M18 x 1	M30 x 1.5	0.59 (59)	1.73 (44)	0.39 (10)			
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