E-931-S50RRLQ
50ft Large Reflective Beam Sensor
Manual

- Up to 50ft (15m) sensing range
- Weatherproof (IP55)
- Beam status LED

- 12~250 VAC/VDC Operation
- Form C relay rated 0.5A@120VAC
- N.C. Tamper switch rated 0.5A@30VDC
ENFORCER 50ft Large Reflective Beam Sensor

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Features:
- Reflective beam provides reliable perimeter security, minimizing false alarms from falling leaves, birds, etc.
- Lensed optics reinforces beam strength and provides excellent immunity to false alarms due to rain, snow, mist, etc.
- Weatherproof, sunlight-filtering case for indoor and outdoor use
- Large reflective beam sensor
- Long-range sensing: Up to 50ft (15m)
- NO/NC Alarm output
- Non-polarized power inputs, 12~250 VAC/VDC
- Response time adjustable for nearly all situations
- Includes hoods for sensor and reflector

Specifications:

<table>
<thead>
<tr>
<th>Type</th>
<th>50’ Large Reflective Beam Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensing range</td>
<td>50’ (15m)</td>
</tr>
<tr>
<td>Response time</td>
<td>50~700 ms (Programmable)*</td>
</tr>
<tr>
<td>Current draw</td>
<td>100mA</td>
</tr>
<tr>
<td>LEDs</td>
<td>Red</td>
</tr>
<tr>
<td></td>
<td>No beam signal, triggered</td>
</tr>
<tr>
<td></td>
<td>Yellow</td>
</tr>
<tr>
<td></td>
<td>Poor beam signal</td>
</tr>
<tr>
<td></td>
<td>Green</td>
</tr>
<tr>
<td></td>
<td>Connected to power</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>12~250 VAC/VDC</td>
</tr>
<tr>
<td>Alarm output</td>
<td>NO/NC Relay, 0.5A@120VAC, min. 1s</td>
</tr>
<tr>
<td>Tamper output</td>
<td>N.C. Switch, 0.5A@30VDC</td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP55</td>
</tr>
<tr>
<td>Alignment angle</td>
<td>Horizontal: ±90°, Vertical: ± 5°</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-13°~131° F (-25°~55° C)</td>
</tr>
<tr>
<td>Weight</td>
<td>Sensor</td>
</tr>
<tr>
<td></td>
<td>14.5-oz (410g) (with hood)</td>
</tr>
<tr>
<td></td>
<td>Reflector</td>
</tr>
<tr>
<td></td>
<td>8.8-oz (250g) (with hood)</td>
</tr>
<tr>
<td>Material</td>
<td>PC Resin</td>
</tr>
</tbody>
</table>

*Factory default is 50ms
ENFORCER 50ft Large Reflective Beam Sensor

Overview:

Parts List:

1x Sensor
1x Reflector
2x Hoods
2x Mounting plates
2x Mounting brackets
2x Pole mounting brackets
1x L-Shaped mounting bracket
4x Long screws
6x Short screws
1x Rubber gasket

Dimensions:

Sensor with hood

Reflector with hood

Overview:
Choosing a Location:
To prevent erratic operation and/or false alarms:

- Wind will not directly cause false alarms, but could cause leaves or similar objects to fly or wave into the beams. Therefore, do not mount near trees, bushes or other leafy vegetation.
- Do not mount where the sensor could be suddenly exposed to a bright light, such as a floodlight or a passing automobile's headlights. Over time, a strong light can affect the life of the sensor.
- Do not let sunlight or any direct beam of light enter the sensor. If needed, mount so the reflector, not the sensor, faces the sun.
- Do not mount where animals could break the beams.
- Do not mount where the sensor could be splashed by water or mud.

Wiring Diagram:

- Polarity does not matter for the power input
- Connect the N.C. tamper terminal to the tamper circuit of an alarm control panel
Installation:

Wall Mount (Sensor):
1. Loosen the cover screw at the bottom of the sensor and remove the cover (fig. 1).
2. Loosen the captive screw at the bottom of the sensor. Slide the mounting plate downwards and remove it from the unit.
3. Make a small hole in the rubber grommet.
4. Pull the wires from the wall or pole through the grommet and then through the opening above the terminals (fig. 2).
5. Connect the wires to the terminals. See Wiring Diagram on page 4.
6. Using the included mounting screws, secure the mounting plate to the wall or surface (fig. 3). Use optional anchors for brick or drywall (not included).
7. Slide the sensor into position on the mounting plate and secure it in place by tightening the captive screw.
8. Replace the cover and secure it by tightening the cover screw.

Wall Mount (Reflector):
1. Loosen the captive screw at the bottom of the reflector. Slide the mounting plate downwards and remove it from the unit.
2. Using the included mounting screws, secure the mounting plate to the wall or surface. Use optional anchors for brick or drywall (not included).
3. Slide the reflector into position on the mounting plate and secure it in place by tightening the captive screw.

Pole Mount (Sensor and Reflector):
1. Use a pole with a diameter of 1\(1/2\)" (38mm) to 1\(3/4\)" (45mm).
2. Fix mounting bracket to the pole with the pole bracket using the included long screws.
3. Remove the mounting plate from the back of the sensor and reflector units (fig. 4).
4. Secure the mounting plate of the unit to the mounting bracket using the included short screws.
5. Slide the sensor and reflector into position on the mounting plate and secure them in place by tightening the captive screw.

(Continued on next page.)
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**Installation (continued)**

**L-Shaped Mounting Bracket (Reflector):**
1. Loosen the captive screw at the bottom of the reflector. Slide the mounting plate downwards and remove it from the unit.
2. Using the included short screws, attach the L-shaped mounting bracket to the mounting plate (*fig. 5*). Secure the bracket to the wall or surface using the included mounting screws. Use optional anchors for brick or drywall (not included).
3. Slide the reflector into position on the mounting plate and secure them in place by tightening the captive screw.

![Fig. 5](image)

**Sample Installations:**

1. **Configuration 1:** Sensor and reflector are mounted facing each other.
2. **Configuration 2:** Sensor and reflector are mounted on perpendicular surfaces.
3. **Configuration 3:** Sensor and reflector are mounted on parallel surfaces, but the units are mounted perpendicular. The reflector is mounted with the L-shaped bracket.

![Sample Installations](image)
Adjusting the Response Time: (IMPORTANT)
The sensor’s response time can be adjusted by turning the response time adjustment knob.
Response time can be adjusted according to how quickly an object breaks the sensor beam.
NOTE: A faster response time increases the chance of a false alarm. A slower response time increases the chance of missing a broken beam.

IMPORTANT: Note that the response time is set at the factory to the shortest time (50ms). After installation is complete please adjust to best suit the site situation.

Adjusting the Alignment:
The sensor can be adjusted ± 5° vertically and ± 90° horizontally once the unit is mounted and power is connected.
1. Remove the sensor cover and look into one of the alignment viewfinders (located between the two lenses) at a 45° angle.
2. Adjust the horizontal and vertical angles of the lens until the reflector is clearly seen in the viewfinder.
3. Replace the sensor cover.

Fine-Tuning the Sensor:
Once the sensor is mounted and aligned, the sensor can be fine-tuned using the voltage output jack.
1. Set the range of a volt-ohm meter (VOM) to 1~10 VDC.
2. Insert the red (+) probe into the (+) terminal and the black (−) probe into the (−) terminal.
3. Measure the voltage (see table).
4. Adjust the horizontal and vertical angles until the VOM indicates the highest voltage.
NOTE: Do not interrupt the beam while adjusting alignment.
**Troubleshooting:**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor does not detect the object.</td>
<td>• Check the sensor’s alignment.</td>
</tr>
<tr>
<td></td>
<td>• Readjust the sensor’s response time.</td>
</tr>
<tr>
<td>Alarm LED will not turn ON when the beam is interrupted</td>
<td>• Clean the sensor and reflector with a damp (not wet) cloth.</td>
</tr>
<tr>
<td></td>
<td>• Adjust the reflector and/or sensor for proper alignment.</td>
</tr>
<tr>
<td>Alarm LED turns ON when object is detected, but there is no output</td>
<td>• Check wiring between the sensor and local alarm device.</td>
</tr>
<tr>
<td>Alarm LED is continuously ON</td>
<td>• Check the sensor’s alignment.</td>
</tr>
<tr>
<td></td>
<td>• Check for any objects between the sensor and reflector that may be causing false alarms.</td>
</tr>
<tr>
<td>Alarm output becomes erratic in bad weather</td>
<td>• Check the sensor’s alignment.</td>
</tr>
<tr>
<td></td>
<td>• Readjust the sensor’s response time.</td>
</tr>
<tr>
<td>Frequent false alarms from leaves, birds, or other objects</td>
<td>• Readjust the sensor’s response time.</td>
</tr>
<tr>
<td></td>
<td>• Change the sensor’s location.</td>
</tr>
</tbody>
</table>