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Except where the nature of the defect is such that it is appropriate, in Seller’s judgment, to effect repairs on site, Seller’s obligation hereunder to remedy defects shall be limited to repairing or replacing (at Seller’s option) FOB point of original shipment by Seller, any part returned to Seller at the risk and cost of Buyer. Defective parts replaced by Seller shall become the property of Seller.

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Seller is not responsible for incorrect choice of models or where products are used in excess of their rated and recommended capacities and design functions or under abnormal conditions. Seller assumes no liability for loss of time, damage or injuries to property or persons resulting from the use of Seller’s products. Buyer shall hold Seller harmless from all liability, claims, suits, and expenses in connection with loss or damage resulting from operation of products or utilization of services, respectively, of Seller and shall defend any suit or action which might arise there from in Buyer’s name - provided that Seller shall have the right to elect to defend any such suit or action for the account of Buyer. The foregoing shall be the exclusive remedies of the Buyer and all persons and entities claiming through the Buyer.
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Safety Information Responsibility
All owner, operator, and maintenance personnel must read and understand all manuals associated with this product before installation, operation, or maintenance.

The manual provides information on the recommended installation, operation, and maintenance of this product. Failure to read and follow the information provided could cause harm to yourself or others and/or cause product damage. No one should install, operate, or attempt maintenance of this product prior to familiarizing themselves with the information in this manual.

Safety Messages
Safety messages in this manual are preceded by the HAZARD SYMBOL and one of three words: CAUTION, DANGER, OR WARNING. These safety messages are intended to alert you to potential hazards that could cause harm to you or others and/or cause product damage.

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**CAUTION**

- The HAZARD SYMBOL used with the word CAUTION indicates unsafe actions or situations that have the potential to cause injury, and/or minor equipment or property damage.

---

**DANGER**

- The HAZARD SYMBOL used with the word DANGER describes immediate hazards that have the potential to cause severe personal injury or death.

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**WARNING**

- The HAZARD SYMBOL used with the word WARNING describes unsafe actions or situations that have the potential to cause severe injury, death, and/or major equipment or property damage.

---

**NOTE**

- The word NOTE is used to alert you to installation, operation, programming, or maintenance information that is important, but not hazard related.
SECTION 2 - OVERVIEW

General Product Overview
BridgeGuard Essential prevents crane to crane or crane to structure collision during operation, either from human error or from system malfunction.

Structure

**CAUTION**

- The original equipment manufacturer must assure that the system is properly configured. Safety is the ultimate responsibility of the user.

Overall features of BridgeGuard Essential can be seen below. See Figure 5-1 and Figure 5-2.

![Figure 5-1](image1)

![Figure 5-2](image2)

**Status Indicator Lights**
The sensor features status indicator LEDs that provide information on the supply voltage activity, signal strength, and output activity. See Table 5-1.

<table>
<thead>
<tr>
<th>Item</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Indicator LEDs</td>
<td>Green</td>
<td>Supply Voltage Active</td>
</tr>
<tr>
<td>Status Indicator LEDs</td>
<td>Red</td>
<td>Signal Strength</td>
</tr>
<tr>
<td>Status Indicator LEDs</td>
<td>Yellow</td>
<td>Output Active</td>
</tr>
</tbody>
</table>

Table 5-1 Description of Status Indicator LEDs
**SECTION 3 - INSTALLATION**

**Mechanical Installation**

**Reflector Mounting**

**NOTE**
- Reflector plate comes with 6 pre-drilled holes. See Figure 6-1.
- A minimum of 4 fasteners should be used to mount reflector to I-Beam web.

1. Mount reflector to the I-Beam using appropriate hardware. See Figure 6-1.

**NOTE**
- A spacer must be used between the I-Beam’s web and the reflector back plate.
- A lock washer must be used to prevent loosening.
- The plate can be mounted to other surfaces using the same holes, the beam is only an example.

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**Figure 6-1** Reflector Mounting

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**Sensor Mounting**

1. Mount sensor in desired location and make adjustments appropriate to your specific assembly. See Figure 6-2.

**WARNING**
- Maximum sensor trigger distance should be no more than 50 feet

**NOTE**
- The sensor can be mounted to the flange of the beam or other alternative surfaces.

---

**Figure 6-2** Sensor Mounting
SECTION 3 - INSTALLATION

Sensor to Bracket Assembly

Figure 7-1: Sensor to Bracket Assembly

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>WASHER 8 SCREW LK SST</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>WASHER 8 FLAT SST</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>SENSOR</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>SCREW 8-32 X 1-1/4 SST PHP</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>NUT HEX 8-32 NARROW SST</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>SENSOR MOUNTING SET</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 7-1
SECTION 3 - INSTALLATION

Sensor Targeting
Included below are general sensor target installations, your specific installation may vary. See Figure 8-1 and Figure 8-2.

1. Move the crane/vehicle to the predefined stopping position.
2. Align the sensor. Use provided bracket to align the sensor so that its light is either to the left or right edge of the reflector plate.
3. Slowly adjust sensor so that red sender beam hits center of reflector. When green indicator light turns on, your sensor is properly positioned.
4. Tighten nuts and bolts on mounting plate.
5. Move crane back and forth a few times to make sure that sensors switch on at the stopping point.

![Figure 8-1 General Sensor Target Installation](image)

![Figure 8-2](image)

**NOTE**
- Reflector plate must be centered and aligned with the sensor as shown in Figure 8-2.
SECTION 3 - INSTALLATION

Electrical Installation
Sensor Cable
Use the Sensor Cable Wiring Diagram for sensor cable installation. See Figure 9-1.

**Figure 9-1** Sensor Cable Wiring Diagram
SECTION 4 - MAINTENANCE

Mechanical Maintenance

Reflector
Ensure that the reflector is clean and clear of dirt and other debris at all times.

Sensor
Ensure the sensor is clean and clear of dirt and debris at all times.
Ensure sensor-target path is clear of obstructions.

Electrical Maintenance

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Equipment damage due to improper cleaning</td>
</tr>
<tr>
<td>• Never use cleaning agents containing abrasive substance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interval</th>
<th>Maintenance work</th>
<th>To be performed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning interval depends on ambient conditions and climate</td>
<td>Clean housing</td>
<td>Specialist</td>
</tr>
<tr>
<td>Every 3 months depending on the application conditions with regard to shock and vibration</td>
<td>Check the screw connections and plug connections.</td>
<td>Specialist</td>
</tr>
</tbody>
</table>

Table 10-1
### SECTION 5 - TROUBLESHOOTING

Potential issues and solutions are shown below. Contact the factory for additional support. See Table 11-1.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Potential Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of signals</td>
<td>Electrical Connections</td>
<td>Inspect the electrical connections to the sensors and to the control box.</td>
</tr>
<tr>
<td>Unable to read output signals</td>
<td>Electrical Connection</td>
<td>Inspect the connection to terminal blocks in control box and to the sensor.</td>
</tr>
<tr>
<td></td>
<td>Light is not on reflector plate</td>
<td>Realign sensor and reflector plate.</td>
</tr>
<tr>
<td>Sensor not working even when plugged in</td>
<td>Sensor-target misalignment</td>
<td>Check to see if sensor is working by holding the reflector close to the sensor.</td>
</tr>
<tr>
<td></td>
<td>Sensor-target misalignment</td>
<td>If the sensor is working, check sensor-target alignment and make adjustments.</td>
</tr>
</tbody>
</table>

Table 11-1
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