Rugged Sensors for Clear Object Detection


- Robust IP69K-rated **FDA-grade stainless steel** housing resists high-pressure, high-temperature washdown and chemical clean-in-place processes.
- “Point, Teach and Go” setup and operation with intuitive interface and angled, easy-to-read four-digit display
- No reflector needed
- Highly visible, very small, bright red laser spot for alignment
Point, Teach and Go.

1. Align sensor to a stable reference surface.
2. Press and hold TEACH for longer than two seconds.
3. Press TEACH to teach the reference surface.
4. Manually adjust the sensor sensitivity using the + or - buttons, if desired.

Superior Performance
Reliably identifies the position and reflectivity of the reference background.

Q4X Laser Clear Object Detection Sensor

Ideal for leading edge detection, counting, presence/absence of:

<table>
<thead>
<tr>
<th>Clear Objects</th>
<th>Challenging Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass bottles</td>
<td>Shiny, clear objects</td>
</tr>
<tr>
<td>Plastic bottles</td>
<td>Thin walled bottles</td>
</tr>
<tr>
<td>Plastic containers/trays</td>
<td>Tinted bottles</td>
</tr>
<tr>
<td>Web/film</td>
<td>Low profile trays</td>
</tr>
<tr>
<td>IV liquid bags</td>
<td>Irregular shaped bottles/trays</td>
</tr>
<tr>
<td>Pharmaceutical vials</td>
<td></td>
</tr>
</tbody>
</table>
The Q4XCOD laser sensor provides greater precision and more reliable bottle detection than LED-based sensor solutions. When triggering shrink sleeve labels, increased line speeds and greater throughput are possible.

Class 1 Laser

IP67, IP68, IP69K Environmental Rating

With an environmental rating of IP67, IP68 and IP69K, the Q4XCOD withstands high-pressure, high-temperature washdown often found in food, beverage, and pharmaceutical environments.

FDA Grade Stainless Steel

FDA-grade stainless steel housings are resistant to aggressive cleaning chemicals, making the Q4XCOD ideal for wet and hygienic processes in the food and pharmaceutical industries.

Best in Class Clear Object Detection

A single Q4XCOD sensor is capable of detecting a wide range of transparent and translucent objects without reteaching the sensor, allowing faster line changeovers and keeping operator intervention to a minimum. No reflector is needed.
**Q4X Laser Clear Object Detection Sensor**

**Mounting Considerations**

- **Reference surface**: 10° or more
- **Separate as far as possible**: 50 to 300 mm
- **Move as close as possible**: 10° or more
- **Can also be tilted left or right**: Tilt the beam axis downward

**Sensing Range** 25 to 300 mm

**Laser Characteristics**

- **Beam Spot Size**: 2.0 mm x 0.8 mm @ 300 mm
- **Response Speed**: 1.5 to 50 ms
- **Output**: Bipolar (1PNP and 1 NPN)
- **Input**: Active low

**Operating Temperature** -10 to 50 °C

**Environmental Rating**

- **IP67, IP68, IP69K**
- **Housing**: 316L stainless steel
- **Lens cover**: PMMA acrylic
- **Indicator & Display Window**: Polysulfone

**Construction**

- **Housing**: 316L stainless steel
- **Lens cover**: PMMA acrylic
- **Indicator & Display Window**: Polysulfone

**Certifications**

- **UL Listed**

**Accessories**

**MQDC-WDSS-0506**

- **2 m (6.5')**

**MQDC-WDSS-0515**

- **5 m (15')**

**MQDC-WDSS-0530**

- **9 m (30')**

**IP67**

- **5-Pin M12/ Euro-Style Cordsets**
- **Straight connector models listed**
- **For right-angle, add RA to the end of the model number (example: MQDC1-506RA)**

**IP69K**

- **5-Pin M12/ Euro-Style Washdown Cordset**
- **Straight connector models only**
- **PVC cable jacket and 316 stainless coupling nut**

**MQDC1-506**

- **2 m (6.5')**

**MQDC1-515**

- **5 m (15')**

**MQDC1-530**

- **9 m (30')**

**MQDC-WDSS-0506**

- **2 m (6.5')**

**MQDC-WDSS-0515**

- **5 m (15')**

**MQDC-WDSS-0530**

- **9 m (30')**

**SMBAMS18P**

- **12-ga. cold-rolled steel**

**SMBAMS18RA**

- **12-ga. cold-rolled steel**

**SMB18A**

- **12-ga. stainless steel**

**SMBQ4XFA**

- **3/8” bolt for mounting**

**SMBQ4XFAM10**

- **10 mm bolt for mounting**

**SMBQ4XFAM12**

- **Clamps directly onto industry standard bracket systems of 1/2” or 12 mm rods**
Miniature self-contained photoelectric sensors in universal housing
• Bright, visible red (640 nm) light source
• Standard models available with 4-wire 2 m (6.5 ft) or 9 m (30 ft) cable or 3 or 4-wire 150 mm (6 in) pigtail with Pico-style M8 threaded connector
• Solid-state, bipolar outputs: one current sourcing (PNP) and one current sinking (NPN) standard on 4-wire models
• Single output solid-state PNP or NPN standard on Q3 models
• Light Operate (L.O.) or Dark Operate (D.O.), depending on model
• Models available with PFA chemical-resistant jacket (1200 psi washdown rated) for use in harsh environments (see Chemical-Resistant Models on page 1).
• Compact 8 mm (0.31 in) housing mounts almost anywhere
• Crosstalk avoidance circuitry for applications with multiple sensors
• LED status indicators for Power ON, Output Overload, Signal Received, and Marginal Signal
• Models with black housing are available

WARNING: Not To Be Used for Personnel Protection
Never use this device as a sensing device for personnel protection. Doing so could lead to serious injury or death. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition.

Chemical-Resistant Models

<table>
<thead>
<tr>
<th>Sensing Mode</th>
<th>Range</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opposed</td>
<td>1.5 m (4.9 ft)</td>
<td>N/A</td>
</tr>
<tr>
<td>Fixed-Field</td>
<td>8 mm (0.3 in) focus</td>
<td>Bipolar LO</td>
</tr>
<tr>
<td></td>
<td>13 mm (0.5 in) cutoff; 8 mm (0.3 in) focus</td>
<td>Bipolar LO</td>
</tr>
<tr>
<td></td>
<td>28 mm (1.1 in) cutoff; 14 mm (0.6 in) focus</td>
<td>Bipolar LO</td>
</tr>
<tr>
<td></td>
<td>48 mm (1.9 in) cutoff; 14 mm (0.6 in) focus</td>
<td>Bipolar LO</td>
</tr>
</tbody>
</table>

1 Only standard 2 m (6.5 ft) cables are available for chemical-resistant models.
2 For black housing, add prefix D to the model number, for example, DQ12AB6FF15CR.