Photoelectric sensors
W8G, Photoelectric retro-reflective sensor, autocollimation

WL8G-P2231
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W8G, Photoelectric retro-reflective sensor, autocollimation

Model Name > WL8G-P2231
Part No. > 6033188

At a glance
• Autocollimation
• Standard miniature housing with M3 threaded mounting holes
• Light/dark switching selectable via rotary switch
• Adjustable sensing range
• All necessary accessories (BEF-W100-A and P250) are included with delivery

Your benefits
• Reliable object detection of transparent objects even at the shortest distances (no blind spot) or through narrow gaps
• Highly visible light spot makes alignment quick and easy
• Reliable detection of all materials, including small and/or transparent objects, min. attenuation 15 %
• All necessary accessories (bracket and reflector) are included with delivery, reducing installation and procurement costs
• M3 mounting hole provides quick installation

Features
Sensor/detection principle: Photoelectric retro-reflective sensor, autocollimation
Dimensions (W x H x D): 11 mm x 31 mm x 20 mm
Housing design (light emission): Rectangular, Slim
Sensing range max.: 0 m ... 3 m 1)
Sensing range: 0 ... 1.7 m 2)
Type of light: Visible red light
Light source: LED 3)
Wave length: 650 nm
Alarm output: -
Focus adjustable: -
Adjustment: Potentiometer, 270°
Light spot size (distance): Ø 70 mm (2 m)
### Mechanics/electronics

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage:</td>
<td>10 V DC ... 30 V DC 1)</td>
</tr>
<tr>
<td>Ripple:</td>
<td>± 10 % 2)</td>
</tr>
<tr>
<td>Power consumption:</td>
<td>≤ 30 mA 3)</td>
</tr>
<tr>
<td>Switching output:</td>
<td>PNP</td>
</tr>
<tr>
<td>Switching output:</td>
<td>Light/dark-switching</td>
</tr>
<tr>
<td>Output characteristic:</td>
<td>Open collector</td>
</tr>
<tr>
<td>Switching mode selector:</td>
<td>Manually selectable</td>
</tr>
<tr>
<td>Signal voltage PNP HIGH/LOW:</td>
<td>Approx. VS - 1.8 V / 0 V</td>
</tr>
<tr>
<td>Output current I,max.:</td>
<td>100</td>
</tr>
<tr>
<td>Response time:</td>
<td>≤ 0.5 ms 4)</td>
</tr>
<tr>
<td>Switching frequency:</td>
<td>1,000 5)</td>
</tr>
<tr>
<td>Attenuation along light beam:</td>
<td>≤ 20 %</td>
</tr>
<tr>
<td>Connection type:</td>
<td>Connector M8, 4-pin</td>
</tr>
<tr>
<td>Circuit protection:::</td>
<td>A, B, D 6) 7) 8)</td>
</tr>
<tr>
<td>Weight:</td>
<td>10 g</td>
</tr>
<tr>
<td>Polarisation filter:</td>
<td>✔</td>
</tr>
<tr>
<td>Front screen heating:</td>
<td>-</td>
</tr>
<tr>
<td>AS-Interface-Chip:</td>
<td>-</td>
</tr>
<tr>
<td>Housing material:</td>
<td>ABS, Plastic</td>
</tr>
<tr>
<td>Optics material:</td>
<td>PMMA</td>
</tr>
<tr>
<td>Enclosure rating:</td>
<td>IP 67</td>
</tr>
<tr>
<td>Items supplied:</td>
<td>Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250F</td>
</tr>
<tr>
<td>Special feature:</td>
<td>For transparent objects</td>
</tr>
<tr>
<td>Ambient operating temperature:</td>
<td>-25 °C ... 55 °C</td>
</tr>
<tr>
<td>Ambient storage temperature:</td>
<td>-40 °C ... 70 °C</td>
</tr>
</tbody>
</table>

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Dimensional drawing

Adjustments possible

1. Threaded mounting hole M3
2. Center of optical axis
3. Connection
4. Orange LED indicator: switching output active
5. Sensitivity adjustment
6. Light/dark rotary switch L = light switching, D = dark switching
Connection diagram

brn 1 + (L+)
whi 2 not connected
blu 3 - (M)
blk 4 Q

Characteristic curve

Distance in m (feet)

Sensing range typ. max.
Sensing range

100 PL80A: low performance area
10
1

m (feet) 1.0 (3.28) 2.0 (6.56) 3.0 (9.84)
Sensing range diagram

<table>
<thead>
<tr>
<th></th>
<th>Sensing range</th>
<th>Sensing range typ. max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>1.7</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>1.9</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>1.3</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Distance in m (feet)

0 1.0 2.0 3.0
(3.28) (6.56) (9.84)

Reflector type

① PL80A
② P250F
③ PL20A
④ PL10F

Connection type
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1 800-325-7425 – tollfree
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