Photoelectric sensors
W23-2, Photoelectric retro-reflective sensor, Standard optics
## Photoelectric sensors

**W23-2, Photoelectric retro-reflective sensor, Standard optics**

### Model Name
> WL23-2P2430

### Part No.
> 1027785

### At a glance
- Two variants available: without sensitivity adjustment or with teach button
- Polarizing filter ensures reliable detection, even with shiny targets
- Model with PinPoint for intense, consistent red light spot
- 360° visibility of indicating LEDs

### Your benefits
- Adjustability removed to prevent operator tampering and to reduce downtime
- Model with teach-in pushbutton enables quick setup
- Durable housing with reinforced mounting holes withstands harsh conditions
- 360° LEDs provide device status indication from multiple angles
- Polarizing filter ensures reliable detection, even with shiny targets
- Less downtime due to ASIC chip technology by SICK
- High level of mechanical and electronic reliability in industrial environments

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## Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sensor/detection principle:</strong></td>
<td>Photoelectric retro-reflective sensor, Standard optics</td>
</tr>
<tr>
<td>Dimensions (W x H x D):</td>
<td>24.6 mm x 80.6 mm x 54 mm</td>
</tr>
<tr>
<td>Housing design (light emission):</td>
<td>Rectangular</td>
</tr>
<tr>
<td>Sensing range max.:</td>
<td>0.1 m ... 10 m ¹)</td>
</tr>
<tr>
<td>Sensing range:</td>
<td>0.3 m ... 7 m ²)</td>
</tr>
<tr>
<td>Type of light:</td>
<td>Visible red light</td>
</tr>
<tr>
<td>Light source:</td>
<td>LED ³)</td>
</tr>
<tr>
<td>Wave length:</td>
<td>660 nm</td>
</tr>
<tr>
<td>Angle of dispersion:</td>
<td>1.5 °</td>
</tr>
<tr>
<td>Light spot size (distance):</td>
<td>Ø 45 mm (2.7 m)</td>
</tr>
</tbody>
</table>

¹) ²) PL80A ³) Average service life of 100,000 h at T_A = +25 °C

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## Mechanics/electronics

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage:</td>
<td>10 V DC ¹), 30 V DC ²)</td>
</tr>
<tr>
<td>Power consumption:</td>
<td>≤ 35 mA ²)</td>
</tr>
<tr>
<td>Output type:</td>
<td>PNP</td>
</tr>
<tr>
<td>Output function:</td>
<td>Complementary</td>
</tr>
<tr>
<td>Switching mode:</td>
<td>Light/dark-switching</td>
</tr>
<tr>
<td>Signal voltage PNP HIGH/LOW:</td>
<td>Approx. VS - 2.5 V / 0 V</td>
</tr>
<tr>
<td>Output current Imax.:</td>
<td>≤ 100 mA</td>
</tr>
</tbody>
</table>
Response time: $\leq 2.5$ ms $^3$  
Switching frequency: $200$ Hz $^4$  
Connection type: Connector M12, 4-pin  
Circuit protection: $\ A, C, D$ $^5) 6) 7)$  
Protection class: II $^8)$  
Weight: $100$ g  
Polarisation filter: ✓  
Special device: -  
Housing material: ABS, Plastic  
Optics material: PMMA  
Enclosure rating: IP 67  
Ambient operating temperature: $-25$ °C ... $60$ °C  
Ambient storage temperature: $-40$ °C ... $70$ °C  
UL File No.: NRKH.E181493 & NRKH7.E181493

1) Limit values, operation in short-circuit protected network max. 8 A  
2) Without load  
3) Signal transit time with resistive load  
4) With light/dark ratio 1:1  
5) $A = V_S$  
6) $C =$ interference suppression  
7) $D =$ outputs overcurrent and short-circuit protected  
8) Reference voltage 50 V DC

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**Dimensional drawing**

[Diagram of the device with dimensions and labels]

[Digital Footprint]

[1] Optical axis, sender  
[2] Optical axis, receiver  
[3] Mounting hole ø 5.2 mm  
[4] Status indicator LED green: power on  
[5] Status indicator LED, yellow: Status of received light beam
Connection diagram

Characteristic curve

Operating range

Scanning range, typ. max.

Distance in m (feet)

Operating reserve

[1] PL80A
[2] PL40A
[3] C118A
[4] PL20A
Sensing range diagram

[Diagram showing sensing range for different reflector types]

Distance in m (feet):
0 2 4 6 8 10 12

- Operating range
- Scanning range typ. max.

1. Reflector type PL80A
2. Reflector type PL40A
3. Reflector type C110
4. Reflector type PL20A

Connection type

[Diagram showing connection type]
Australia
Phone +61 3 9457 0600
E-Mail sales@sick.com.au

Belgium/Luxembourg
Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil
Phone +55 11 3215-4900
E-Mail sac@sick.com.br

Canada
Phone +1 905 771 14 44
E-Mail information@sick.com

Ceska Republika
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