**Diffuse laser sensors**

**Series 10**

- Diffuse laser contrast sensor
- Accurate detection of printing marks, object edges etc.
- Digital switching and analog current output
- Adjustable sensitivity
- Visible red light for alignment aid

### Technical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensing distance adjustable</td>
<td>Tw (Kodak white)</td>
</tr>
<tr>
<td></td>
<td>20...40 mm</td>
</tr>
<tr>
<td>Max. supply current, average value</td>
<td>100 mA</td>
</tr>
<tr>
<td>Max. supply current, peak value</td>
<td>100 mA</td>
</tr>
<tr>
<td>Voltage drop</td>
<td>≤ 1.8 VDC</td>
</tr>
<tr>
<td>Sensitivity adjustment (digital output)</td>
<td>≤ 0.05 ms</td>
</tr>
<tr>
<td>Short circuit protection</td>
<td>yes</td>
</tr>
<tr>
<td>Reverse polarity protection</td>
<td>yes</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-10...+50 °C</td>
</tr>
<tr>
<td>Housing material</td>
<td>Acrylnitiril/Styrol/Acrylester (ASA)</td>
</tr>
</tbody>
</table>

**Connection Diagram**

- **Light Operate**
  - PNP: LED ️ PNP = HIGH
  - NPN: LED ️ NPN = LOW

- **Dark Operate**
  - PNP: LED ️ PNP = LOW NPN = HIGH
  - NPN: LED ️ PNP = HIGH

**Beam Diameter Chart**

**Relative Receiving Signal**

**Connectors**

- ESW 31AH0200 | 4 pin | 2 m PUR halogen-free
- ESG 32AH0200 | 4 pin | 2 m PUR halogen-free

**Accessories**

- Mounting bracket (cable type) | 114501
- Mounting bracket (connector type) | 133792

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*Cable types:*

- PUR halogen-free

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**Caution**

- Laser radiation
- Do not stare into beam
- LASER Diode

Wavelength: 630 - 680 nm
Max. Output: < 1 mW

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**Series 10**

- Diffuse contrast sensor
- Visible red light
- Tw adjustable up to 250 mm
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<tr>
<th>PNP</th>
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<tr>
<td>light operate</td>
<td>light operate</td>
</tr>
<tr>
<td>dark operate</td>
<td>dark operate</td>
</tr>
<tr>
<td>light/dash operate</td>
<td>light/dash operate</td>
</tr>
</tbody>
</table>

### Cable and Connector Options

- **Cable**
  - OZDK 10P5101
  - OZDK 10P5101/S35A

- **Connector**
  - OZDK 10N5101
  - OZDK 10N5101/S35A

### Optimum Operating Range
- Tw adjustable up to 250 mm

### sensing distance adjustable Tw (Kodak white)
- 20...40 mm
- 3...250 mm

### Beam Focal Point
- 40 mm
- 40 mm

### Repeatability
- < 0.2 mm at focal point
- < 0.2 mm at focal point

### Min. Detectable Contrast
- 6% diffuse reflection (grey)

### Output Indicator
- yellow LED
- green LED

### Laser Class
- PNP = LOW
- NPN = HIGHPNP = LOW

### Power Indicator
- yellow LED
- green LED

### Light Source
- PNP
- NPN

### Wave Length
- 675 nm

### Voltage Supply Range
- 10 - 30 VDC

### Max. Output Current
- 40 mA / 50 mA
- 200 mA

### Max. Switching Current
- ≤ 1.8 VDC

### Voltage Drop
- ≤ 0.5 mA

### Response Time / Release Time
- 5 turn pot

### Short Circuit Protection
- yes

### Reverse Polarity Protection
- yes

### Housing Material
- Acrylnitiril/Styrol/Acrylester (ASA)

### Protection Class
- IP 67

### Sensing Distance (mm)
- 0 mm
- 10 mm
- 20 mm
- 30 mm
- 40 mm
- 50 mm
- 60 mm
- 80 mm
- 100 mm
- 120 mm
- 140 mm
- 160 mm
- 180 mm
- 200 mm
- 250 mm

### Relative Receiving Signal OZDK 10

**Connectors**
- ESW 31AH0200 4 pin 2 m PUR halogen-free
- ESG 32AH0200 4 pin 2 m PUR halogen-free

**Accessories (Included)**
- Mounting Bracket (cable type) 114501
- Mounting Bracket (connector type) 133792

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* emitter axis