



Photoelectric sensors  
W45, Photoelectric retro-reflective sensor,  
Standard optics

WL45-N250



**Model Name** > [WL45-N250](#)  
**Part No.** > [1008839](#)



*Illustration may differ*

#### At a glance

- Long sensing range
- Rugged metal housing
- Optional: Powerful front lens heating
- Optional test input, time delays and alarm output
- Variants for 10 - 60 V DC or 24 - 240 V DC / 24 - 240 V AC voltage supply

#### Your benefits

- A long, 55 m sensing range with a high operating reserve ensures reliable continuous operation
- Rugged metal housing ensures a long service life in harsh industrial environments
- Front lens heating prevents condensation for reliable operation in outdoor applications
- Multiple functions for simpler integration of individual systems
- Variants DC voltage and universal AC/DC voltage provides installation flexibility due to same housing
- Easy alignment due to visible red light



#### Features

|                                  |                                                                          |
|----------------------------------|--------------------------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric retro-reflective sensor, Standard optics                   |
| Dimensions (W x H x D):          | 60 mm x 105 mm x 105 mm                                                  |
| Housing design (light emission): | Rectangular                                                              |
| Sensing range max.:              | 1 m ... 55 m <sup>1)</sup>                                               |
| Sensing range:                   | 1 m ... 45 m <sup>2)</sup>                                               |
| Type of light:                   | Visible red light                                                        |
| Light source:                    | LED <sup>3)</sup>                                                        |
| Time type:                       | Off delay, ON and OFF delay, On delay                                    |
| Delay time:                      | 0.015 ... 0.3 s, Adjustable via time delay selector switch: 0.5 ... 12 s |
| Special features:                | Dark switching (pre-setting)                                             |
| Adjustment:                      | Potentiometer                                                            |
| Light spot size (distance):      | Ø 230 mm (16 m)                                                          |

<sup>1) 2)</sup> OP60-00 <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

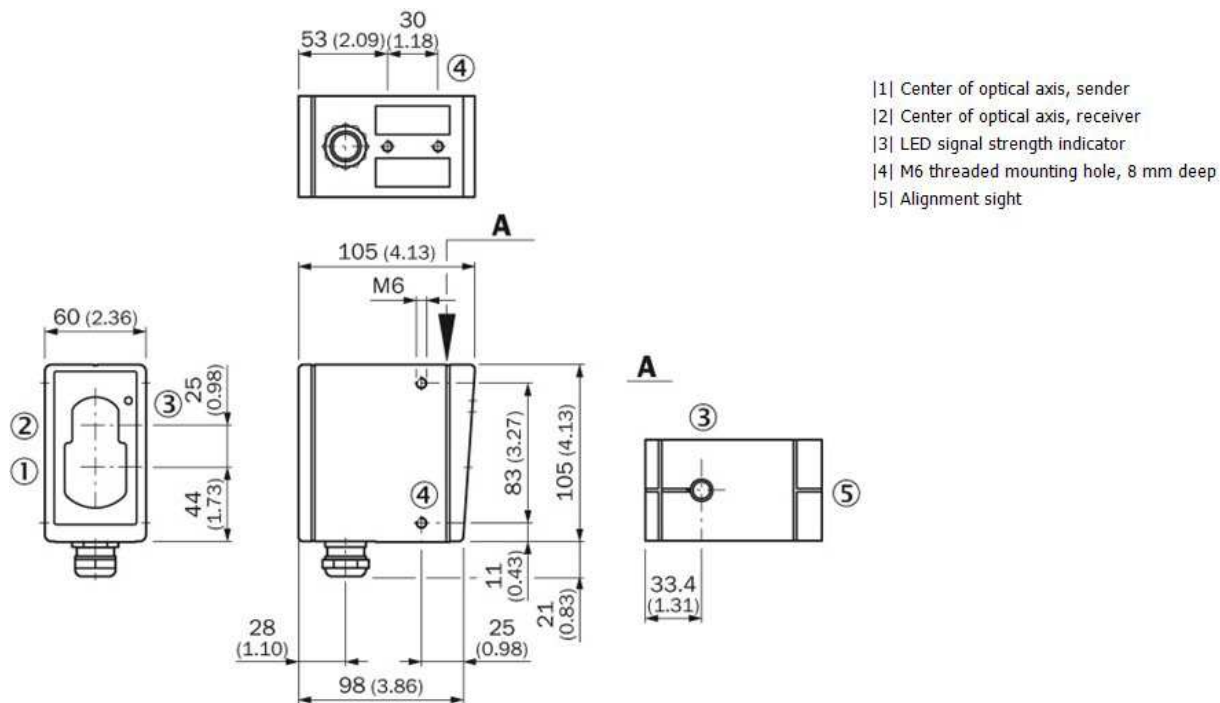
#### Mechanics/electronics

|                 |                                   |
|-----------------|-----------------------------------|
| Supply voltage: | 10 V DC ... 60 V DC <sup>1)</sup> |
| Ripple:         | ≤ 5 Vpp <sup>2)</sup>             |

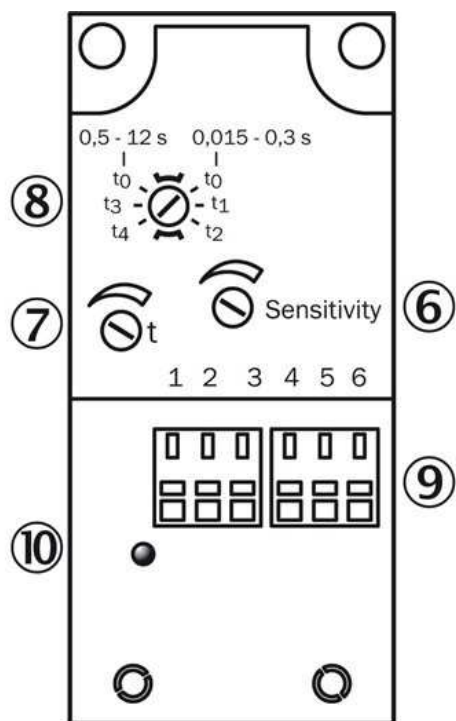
|                                   |                                        |
|-----------------------------------|----------------------------------------|
| Current consumption:              | $\leq 250 \text{ mA}$ <sup>3)</sup>    |
| Output type:                      | NPN                                    |
| Output function:                  | Complementary                          |
| Switching mode:                   | Light/dark switching                   |
| Output current I <sub>max</sub> : | 200 mA                                 |
| Response time:                    | $\leq 1.2 \text{ ms}$ <sup>4)</sup>    |
| Switching frequency:              | 400 Hz <sup>5)</sup>                   |
| Connection type:                  | Terminal connection with PG13,5, 6-pin |
| Circuit protection:::             | A, C, D <sup>6) 7) 8)</sup>            |
| Protection class:                 | I <sup>9)</sup>                        |
| Weight:                           | 800 g                                  |
| Polarisation filter:              | ✓                                      |
| Front screen heating:             | ✓                                      |
| Alarm output:                     | 100 mA, open collector <sup>10)</sup>  |
| Housing material:                 | Metal                                  |
| Enclosure rating:                 | IP 67                                  |
| Test input sender off:            | TE to VS                               |
| Ambient operating temperature:    | -25 °C ... 55 °C <sup>11)</sup>        |
| Ambient storage temperature:      | -40 °C ... 70 °C                       |

<sup>1)</sup> Limit values   <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances   <sup>3)</sup> Without load   <sup>4)</sup> Signal transit time with resistive load   <sup>5)</sup> With light/dark ratio 1:1   <sup>6)</sup> A = V<sub>S</sub> <sup>10)</sup>  
 connections reverse-polarity protected   <sup>7)</sup> C = interference suppression   <sup>8)</sup> D = outputs overcurrent and short-circuit protected   <sup>9)</sup> Reference voltage 50 V DC  
 Flashes at approx. 5 Hz, switch to VS <sup>11)</sup> Up to 140 °C with cooling plates (see accessories)

## Dimensional drawing

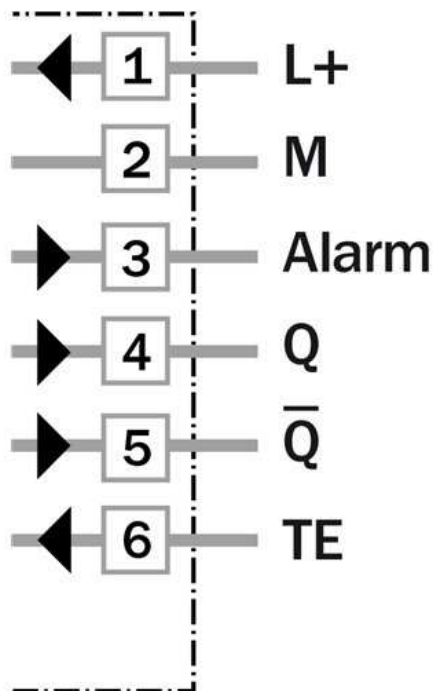


Adjustments possible

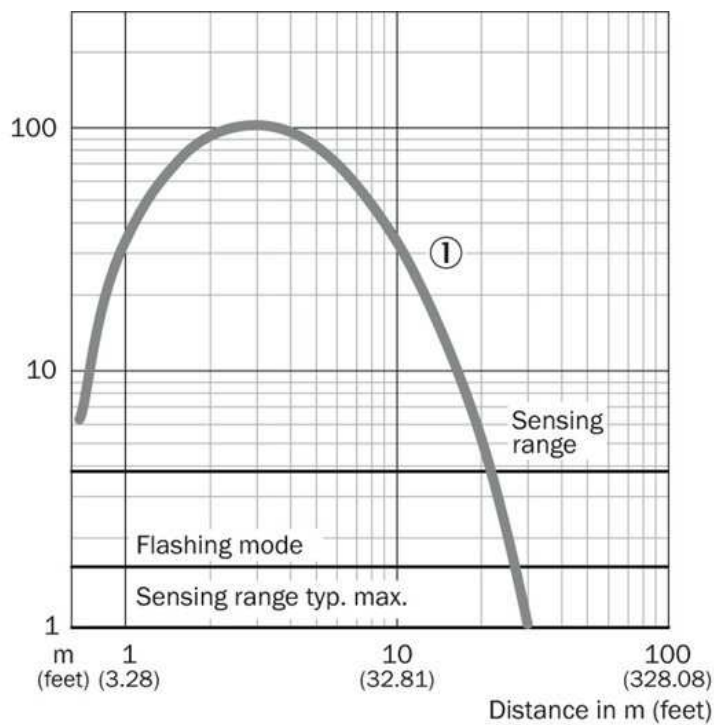


- |6| Sensitivity adjustment
- |7| Time control
- |8| time delay selector switch
- |9| terminal strip
- |10| Status indicator

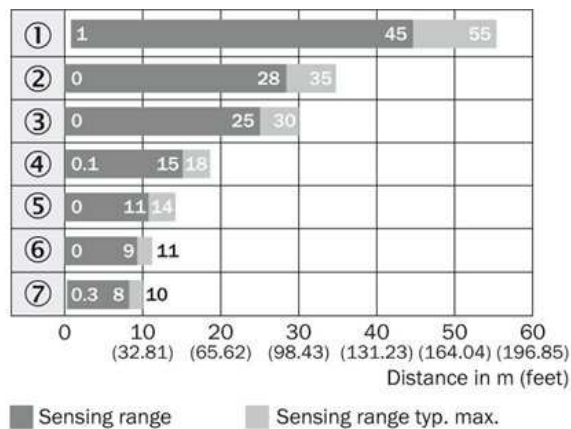
Connection diagram



Characteristic curve



Sensing range diagram

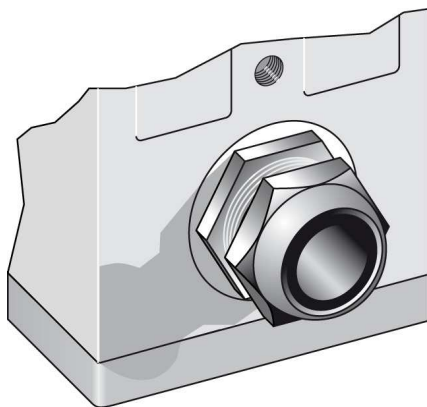


Reflector type

- ① OP60 ... ∞
- ② 4 x PL80
- ③ PL80A
- ④ C110
- ⑤ PL50
- ⑥ PL30
- ⑦ Reflective tape Diamond Grade

## Connection type

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