



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

WL45-R250



**Model Name** > [WL45-R250](#)  
**Part No.** > [1008841](#)



*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:	Time delay off, ON and OFF delay, Switch on delay
Delay time:	Adjustable via time delay selector switch: 0.5 ... 12 s
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

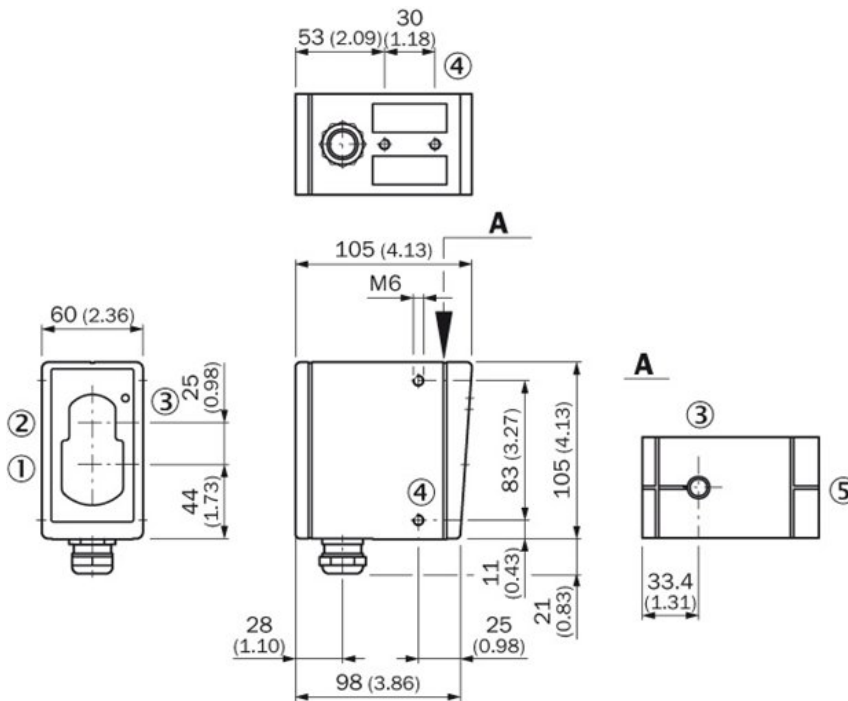
**Mechanics/electronics**

Supply voltage:	24 V AC/DC ... 240 V AC/DC <sup>1)</sup>
Power consumption:	≤ 6 VA
Output type:	Relay <sup>2)</sup>

Output function:	Change-over contacts
Switching mode:	Light/dark-switching <sup>3)</sup>
Output characteristic:	Electrically isolated
Switching mode selector:	Light-/dark-switching selectable via time delay selector switch
Switching current (switching voltage):	4 A (24 V DC), 4 A (240 V AC)
Response time:	≤ 20 ms
Switching frequency:	10 Hz <sup>4)</sup>
Connection type:	Terminal connection with PG13,5, 6-pin
Circuit protection::	A, C <sup>5) 6)</sup>
Protection class:	I
Weight:	800 g
Polarisation filter:	✓
Front screen heating:	✓
Housing material:	Metal
Enclosure rating:	IP 67
Usage category:	AC-15, DC-13, According to EN 60947-1
Ambient operating temperature:	-25 °C ... 55 °C <sup>7)</sup>
Ambient storage temperature:	-40 °C ... 70 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493

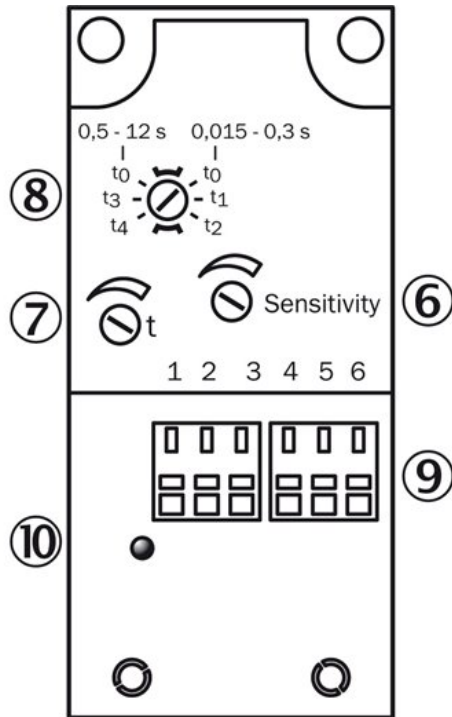
1) +10 %, -25% 2) 3) Provide suitable spark suppression for inductive or capacitive loads <sup>4)</sup> With light/dark ratio 1:1 <sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>6)</sup>  
C = interference suppression <sup>7)</sup> Up to 140 °C with cooling plates (see accessories)

### Dimensional drawing



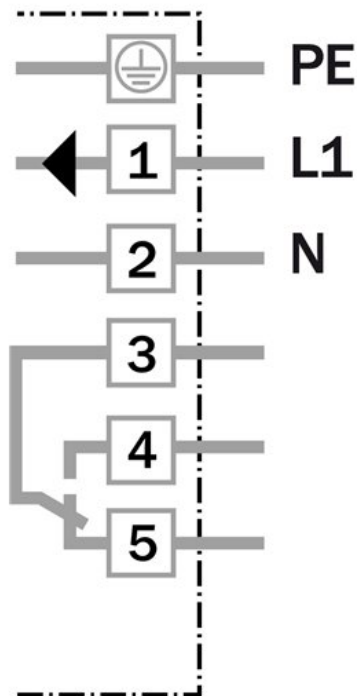
- [1] Center of optical axis, sender
- [2] Center of optical axis, receiver
- [3] LED signal strength indicator
- [4] M6 threaded mounting hole, 8 mm deep
- [5] Alignment sight

**Adjustments possible**

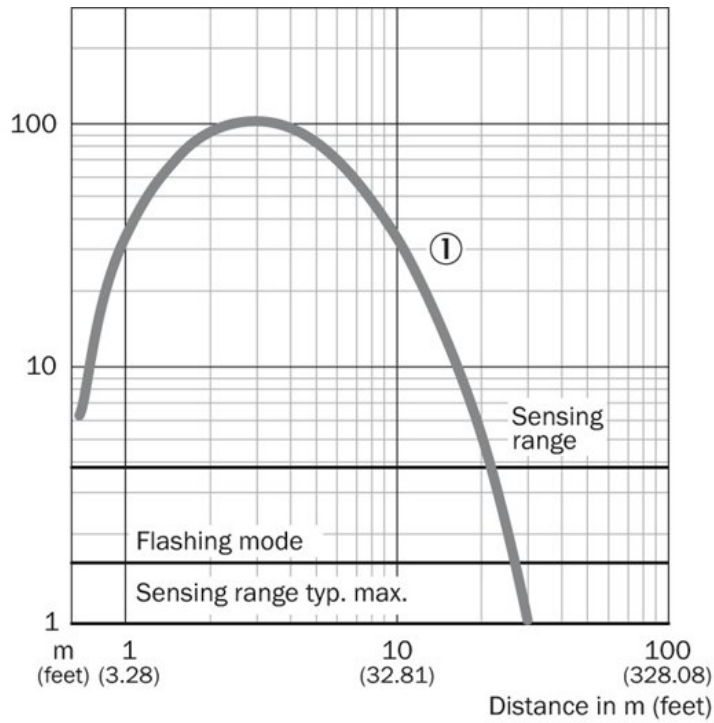


- |6| Sensitivity adjustment
- |7| Time control
- |8| time delay selector switch
- |9| terminal strip
- |10| Status indicator

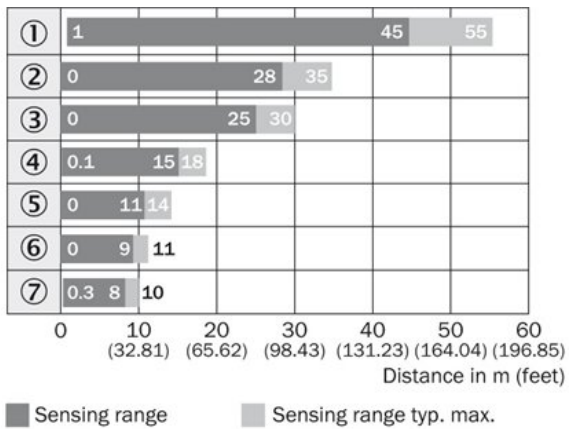
**Connection diagram**



## Characteristic curve



## Sensing range diagram

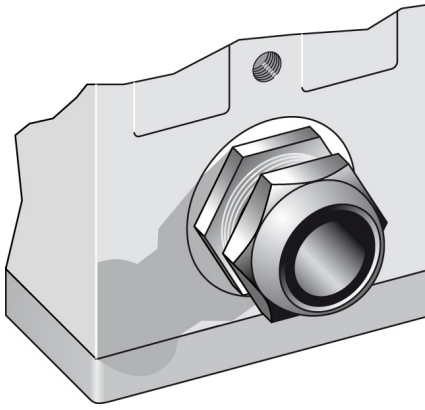


### Reflector type

- 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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