



Photoelectric sensors  
W45, Photoelectric proximity sensor, Background  
suppression

WT45-R250



**Model Name** > WT45-R250  
**Part No.** > 1009118



Illustration may differ

**At a glance**

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

**Your benefits**

- Very large sensing distance
- 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



**Features**

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	60 mm x 105 mm x 105 mm
Housing design (light emission):	Rectangular
Sensing range max.:	200 mm ... 2,000 mm <sup>1)</sup>
Sensing range:	200 mm ... 2,000 mm
Type of light:	Infrared light
Light source:	LED <sup>2)</sup>
Time type:	Off delay, ON and OFF delay, On delay
Delay time:	Adjustable via time delay selector switch: 0.5 ... 12 s
Adjustment:	Potentiometer
Light spot size (distance):	Ø 35 mm (2,000 mm)

<sup>1)</sup> Object with 90 % reflectance (referred to standard white DIN 5033) <sup>2)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

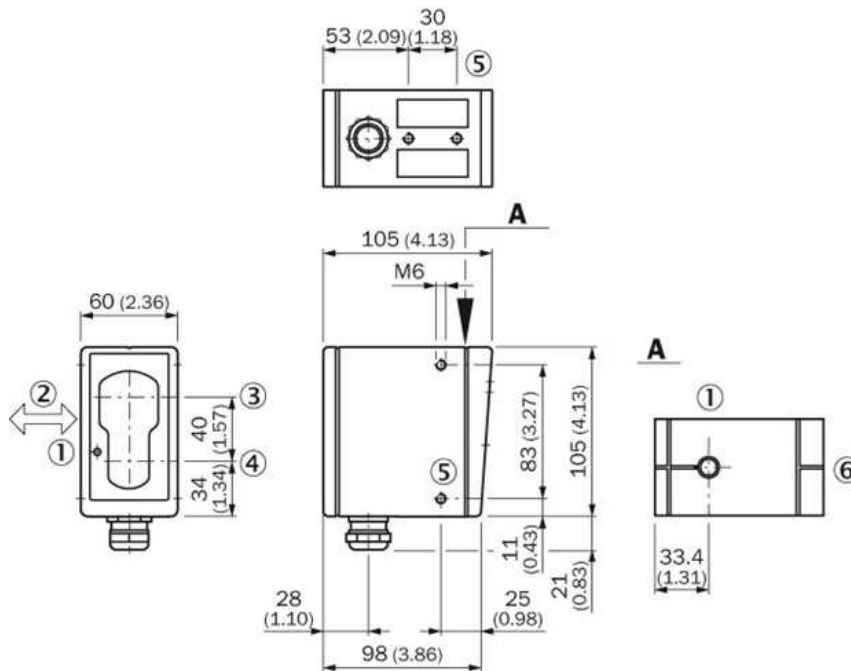
**Mechanics/electronics**

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
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

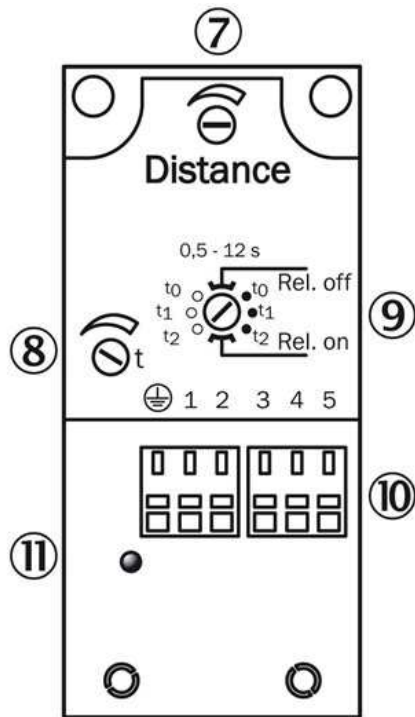
1) +10 %, -25% <sup>2) 3)</sup> Provide suitable spark suppression for inductive or capacitive loads <sup>4)</sup> With light/dark ratio 1:1 <sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>6)</sup>  
C = interference suppression <sup>7)</sup> Up to 140 °C with cooling plates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

## Dimensional drawing



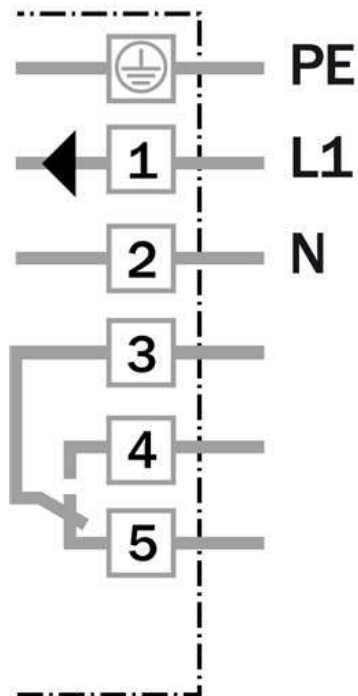
- [1] LED signal strength indicator
- [2] Standard direction of the material being scanned
- [3] Center of optical axis, receiver
- [4] Centre of transmitter's optical axis
- [5] M6 threaded mounting hole, 8 mm deep
- [6] Alignment sight

**Adjustments possible**

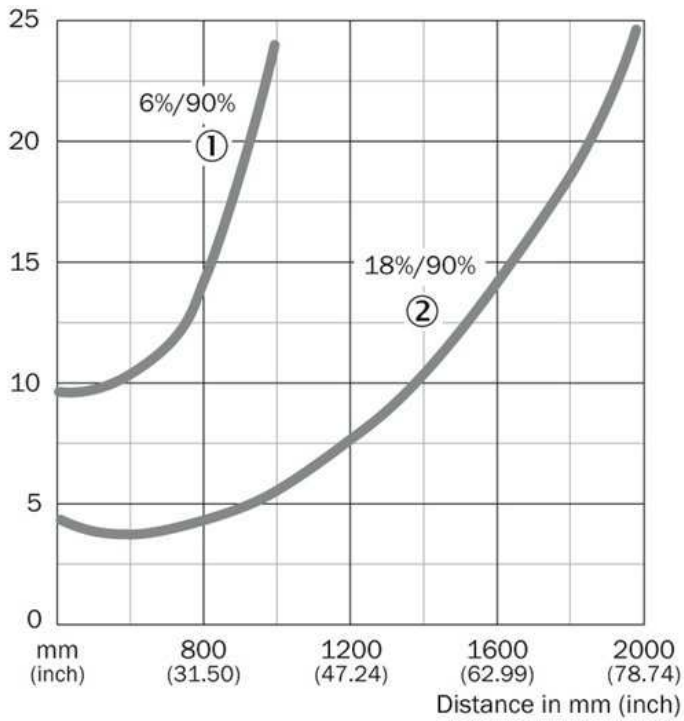


- |7| Sensing range adjustment
- |8| Time control
- |9| time delay selector switch
- |10| terminal strip
- |11| Status indicator

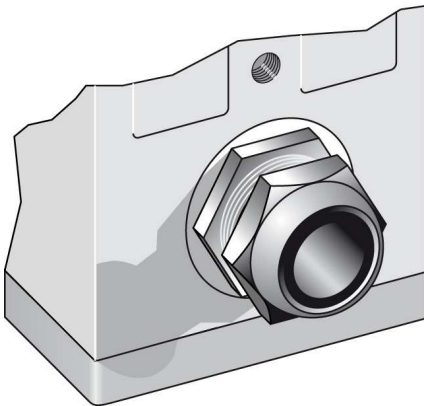
**Connection diagram**



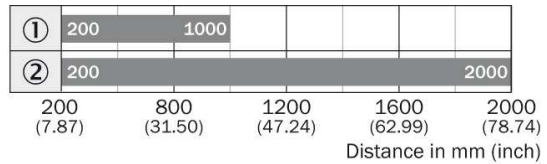
### Characteristic curve



### Connection type



### Sensing range diagram



■ Sensing range

- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission

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