



# WS/WE45-R250

W45

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WS/WE45-R250	1010994

Other models and accessories → [www.sick.com/W45](http://www.sick.com/W45)

### Detailed technical data

#### Features

<b>Functional principle</b>	Through-beam photoelectric sensor
<b>Dimensions (W x H x D)</b>	60 mm x 105 mm x 105 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	0 m ... 350 m
<b>Sensing range</b>	0 m ... 300 m
<b>Focus</b>	Approx. 0.9°
<b>Type of light</b>	Infrared light
<b>Light source</b>	LED <sup>1)</sup>
<b>Light spot size (distance)</b>	Ø 4.5 m (300 m)
<b>Angle of dispersion</b>	Approx. 0.9°
<b>Adjustment</b>	Potentiometer
<b>Special features</b>	Dark switching (pre-setting)

<sup>1)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

#### Mechanics/electronics

<b>Supply voltage U<sub>B</sub></b>	20 V AC/DC ... 250 V AC/DC <sup>1)</sup>
<b>Power consumption, sender</b>	≤ 6 VA
<b>Power consumption, receiver</b>	≤ 6 VA
<b>Switching output</b>	Relay, electrically isolated <sup>2)</sup>
<b>Output function</b>	Change-over contacts

<sup>1)</sup> Limit values, cross-section: 0,14 mm<sup>2</sup> ... 2,5 mm<sup>2</sup>, max. 16 A.

<sup>2)</sup> Provide suitable spark suppression for inductive or capacitive loads.

<sup>3)</sup> With light/dark ratio 1:1.

<sup>4)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>5)</sup> C = interference suppression.

<sup>6)</sup> Up to 140 °C with cooling plates (see accessories).

<b>Switching mode</b>	Light/dark switching <sup>2)</sup>
<b>Switching mode selector</b>	Selectable via time delay selector switch
<b>Switching current (switching voltage)</b>	4 A @ 250 V AC, 4 A @ 24 V DC, 0.125 A @ 120 V DC
<b>Response time</b>	≤ 10 ms
<b>Switching frequency</b>	10 Hz <sup>3)</sup>
<b>Time functions</b>	On delay/off delay/ON and OFF delay
<b>Delay time</b>	Adjustable via time delay selector switch, 0.5 s ... 12 s
<b>Connection type</b>	Terminal connection with PG13,5, 6-pin
<b>Circuit protection</b>	A <sup>4)</sup> C <sup>5)</sup>
<b>Protection class</b>	I
<b>Weight</b>	1,600 g
<b>Front screen heating</b>	✓
<b>Housing material</b>	Metal
<b>Enclosure rating</b>	IP67
<b>Ambient operating temperature</b>	-25 °C ... +55 °C <sup>6)</sup>
<b>Ambient temperature, storage</b>	-40 °C ... +70 °C
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493
<b>Part number of individual components</b>	1009721 WE45-R250 1009730 WS45-U250

1) Limit values, cross-section: 0,14 mm<sup>2</sup> ... 2,5 mm<sup>2</sup>, max. 16 A.

2) Provide suitable spark suppression for inductive or capacitive loads.

3) With light/dark ratio 1:1.

4) A = V<sub>S</sub> connections reverse-polarity protected.

5) C = interference suppression.

6) Up to 140 °C with cooling plates (see accessories).

### Safety-related parameters

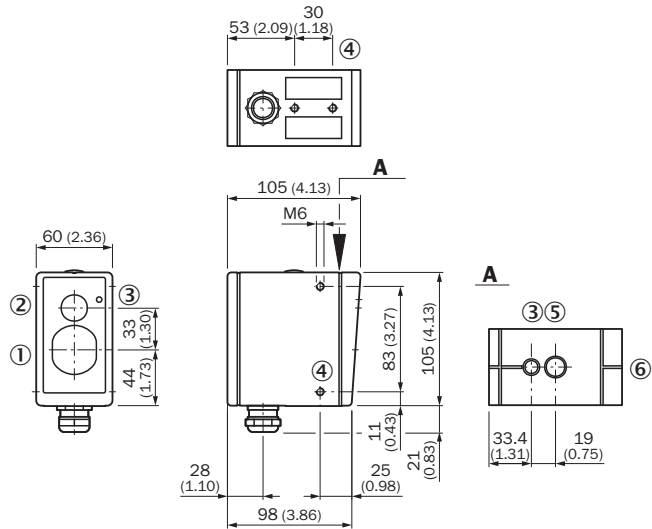
<b>MTTF<sub>D</sub></b>	328 years
<b>DC<sub>avg</sub></b>	0 %

### Classifications

<b>ECLASS 5.0</b>	27270901
<b>ECLASS 5.1.4</b>	27270901
<b>ECLASS 6.0</b>	27270901
<b>ECLASS 6.2</b>	27270901
<b>ECLASS 7.0</b>	27270901
<b>ECLASS 8.0</b>	27270901
<b>ECLASS 8.1</b>	27270901
<b>ECLASS 9.0</b>	27270901
<b>ECLASS 10.0</b>	27270901
<b>ECLASS 11.0</b>	27270901
<b>ECLASS 12.0</b>	27270901
<b>ETIM 5.0</b>	EC002716
<b>ETIM 6.0</b>	EC002716

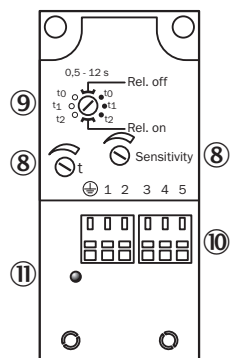
<b>ETIM 7.0</b>	EC002716
<b>ETIM 8.0</b>	EC002716
<b>UNSPSC 16.0901</b>	39121528

**Dimensional drawing** (Dimensions in mm (inch))



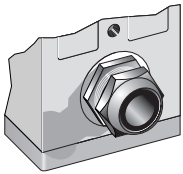
- ① Center of optical axis, sender (WS), Center of optical axis, receiver (WE)
- ② View finder lens
- ③ LED signal strength indicator
- ④ M6 threaded mounting hole, 8 mm deep
- ⑤ Eyepiece for alignment aid
- ⑥ Alignment sight

**Adjustments**



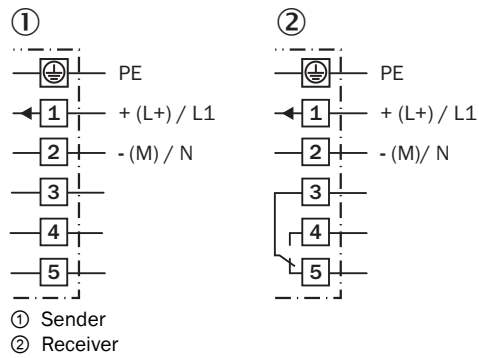
- ⑦ Sensitivity control
- ⑧ Time control
- ⑨ Time delay selector switch
- ⑩ Terminal strip
- ⑪ Status indicator

### Connection type

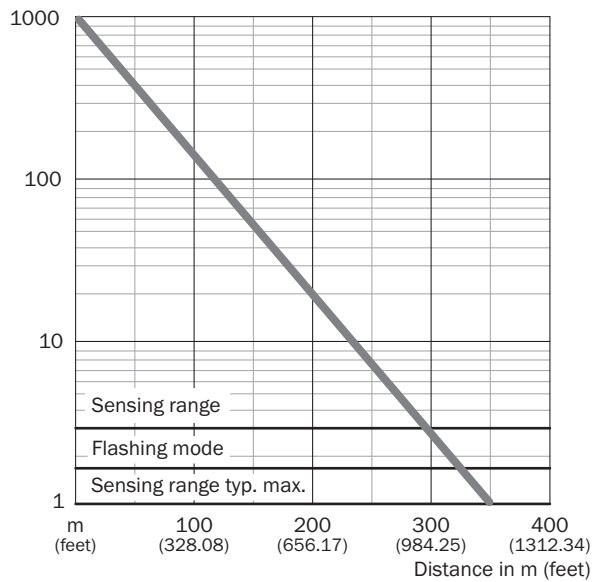


### Connection diagram

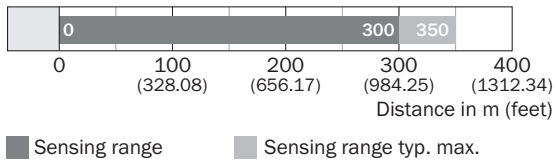
Cd-168



### Characteristic curve



Sensing range diagram



## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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