



# WSE250-2R1631

W250-2

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WSE250-2R1631	6044708

**Included in delivery:** BEF-W250 (1)

Other models and accessories → [www.sick.com/W250-2](http://www.sick.com/W250-2)

### Detailed technical data

#### Features

<b>Functional principle</b>	Through-beam photoelectric sensor
<b>Dimensions (W x H x D)</b>	20 mm x 60 mm x 43.9 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	0 m ... 50 m
<b>Sensing range</b>	0 m ... 40 m
<b>Focus</b>	Approx. 2°
<b>Type of light</b>	Visible red light
<b>Light source</b>	LED <sup>1)</sup>
<b>Light spot size (distance)</b>	Ø 0.6 m (20 m)
<b>Angle of dispersion</b>	Approx. 2°
<b>Adjustment</b>	Potentiometer, 2 turns <sup>2)</sup>

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

<sup>2)</sup> With position indicator.

#### Mechanics/electronics

<b>Supply voltage U<sub>B</sub></b>	24 V DC ... 240 V DC <sup>1)</sup> 24 V AC/DC ... 240 V AC/DC <sup>1)</sup>
<b>Power consumption, sender</b>	≤ 3.5 VA
<b>Power consumption, receiver</b>	≤ 3.5 VA

<sup>1)</sup> +/- 10%.

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

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

<sup>4)</sup> Do not bend below 0 °C.

<sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>6)</sup> C = interference suppression.

<sup>7)</sup> Reference voltage: 250 V AC.

<sup>8)</sup> The AC/DC devices comply with the Radio Safety Requirements for the industrial sector (Radio Safety Class A). They may cause radio interference if used in a residential area.

<b>Switching output</b>	Relay, electrically isolated <sup>2)</sup>
<b>Output function</b>	Change-over contacts
<b>Switching mode</b>	Light switching <sup>2)</sup>
<b>Switching current (switching voltage)</b>	3 A (240 V AC) 3 A (30 V DC)
<b>Response time</b>	≤ 15 ms
<b>Switching frequency</b>	33 Hz <sup>3)</sup>
<b>Angle of reception</b>	20°
<b>Connection type</b>	Cable, 5-wire, 5 m <sup>4)</sup>
<b>Cable material</b>	PVC
<b>Conductor cross section</b>	0.76 mm <sup>2</sup>
<b>Cable diameter</b>	Ø 6.4 mm
<b>Circuit protection</b>	A <sup>5)</sup> C <sup>6)</sup>
<b>Protection class</b>	II <sup>7)</sup>
<b>Overvoltage category</b>	2
<b>Weight</b>	660 g
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67
<b>Items supplied</b>	BEF-W250 mounting bracket
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2 <sup>8)</sup>
<b>Ambient operating temperature</b>	-25 °C ... +55 °C
<b>Ambient temperature, storage</b>	-40 °C ... +70 °C
<b>UL File No.</b>	NRKH2.E300503 & NRKH8.E300503

<sup>1)</sup> +- 10%.

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

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

<sup>4)</sup> Do not bend below 0 °C.

<sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>6)</sup> C = interference suppression.

<sup>7)</sup> Reference voltage: 250 V AC.

<sup>8)</sup> The AC/DC devices comply with the Radio Safety Requirements for the industrial sector (Radio Safety Class A). They may cause radio interference if used in a residential area.

### Safety-related parameters

<b>MTTF<sub>D</sub></b>	445 years
<b>DC<sub>avg</sub></b>	0 %
<b>B<sub>10d</sub></b>	68,000 Switching cycles <sup>1)</sup>

<sup>1)</sup> Only for devices containing electro-mechanical components. In this case, the MTTF<sub>D</sub> value of the entire device must be calculated from the given B<sub>10D</sub> value, the number of switching cycles and the given MTTF<sub>D</sub> value.

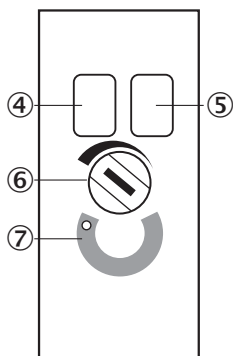
### Classifications

<b>eCl@ss 5.0</b>	27270901
<b>eCl@ss 5.1.4</b>	27270901

<b>eCl@ss 6.0</b>	27270901
<b>eCl@ss 6.2</b>	27270901
<b>eCl@ss 7.0</b>	27270901
<b>eCl@ss 8.0</b>	27270901
<b>eCl@ss 8.1</b>	27270901
<b>eCl@ss 9.0</b>	27270901
<b>eCl@ss 10.0</b>	27270901
<b>eCl@ss 11.0</b>	27270901
<b>eCl@ss 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

## Adjustments

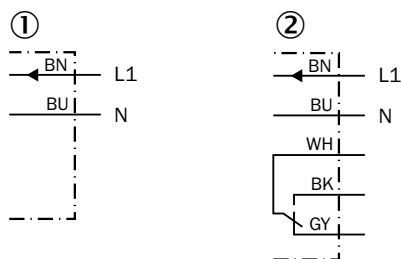
WSE250-2, sender



- ④ LED indicator green: Stability indicator
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Sensitivity control: potentiometer
- ⑦ Position indicator for sensitivity setting (270°)

## Connection diagram

Cd-228

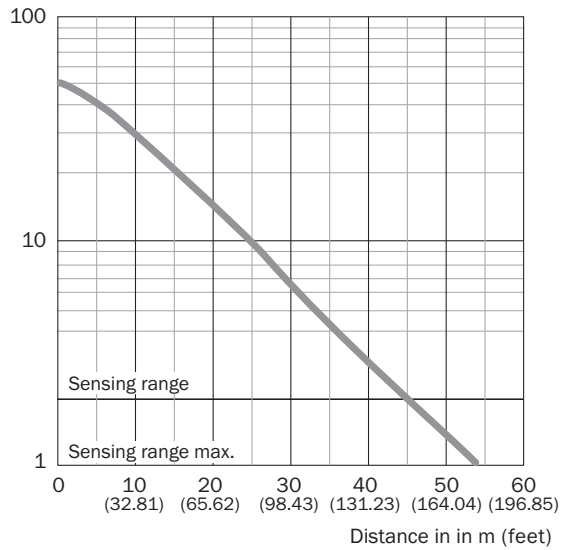


- ① Sender
- ② Receiver

### Characteristic curve

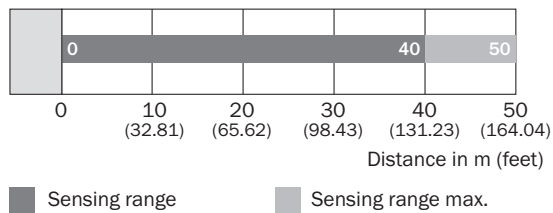
WSE250-2

Operating reserve



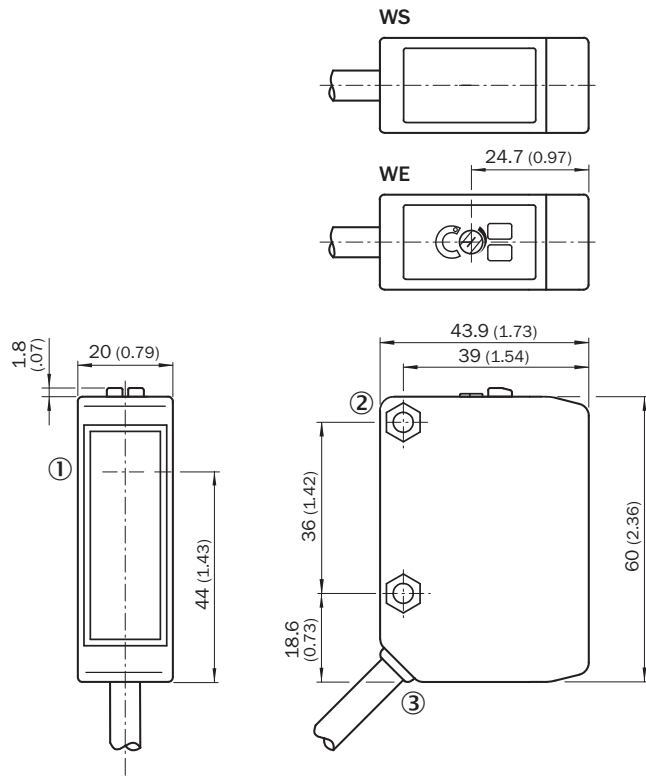
### Sensing range diagram

WSE250-2



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


WSE250-2, AC/DC, cable



- ① Center of the optical axis, sender (WS 250), receiver (WE 250)
- ② Mounting hole  $\varnothing$  4.2 mm, for M4 hexagon nuts on both sides
- ③ Connection cable

**Recommended accessories**

Other models and accessories → [www.sick.com/W250-2](http://www.sick.com/W250-2)

	<b>Brief description</b>	<b>Type</b>	<b>Part no.</b>
<b>Plug connectors and cables</b>			
	Head A: male connector, M12, 5-pin, straight Cable: unshielded For field bus technology	STE-1205-G	6022083

## 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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)