



# WSE8-N2231

W8

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type       | part no. |
|------------|----------|
| WSE8-N2231 | 6035580  |

**Included in delivery:** BEF-W100-A (1)

Other models and accessories → [www.sick.com/W8](http://www.sick.com/W8)

## Detailed technical data

### Features

|                                        |                                            |
|----------------------------------------|--------------------------------------------|
| <b>Functional principle</b>            | Through-beam photoelectric sensor          |
| <b>Dimensions (W x H x D)</b>          | 11 mm x 31 mm x 20 mm                      |
| <b>Housing design (light emission)</b> | Rectangular                                |
| <b>Sensing range max.</b>              | 0 m ... 10 m                               |
| <b>Sensing range</b>                   | 0 m ... 8 m                                |
| <b>Type of light</b>                   | Visible red light                          |
| <b>Light source</b>                    | LED <sup>1)</sup>                          |
| <b>Light spot size (distance)</b>      | Ø 30 mm (1 m)                              |
| <b>Wave length</b>                     | 650 nm                                     |
| <b>Adjustment</b>                      | Potentiometer, 270°                        |
| <b>Special applications</b>            | Detection of objects moving at high speeds |

<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> | 10 V DC ... 30 V DC <sup>1)</sup> |
| <b>Ripple</b>                       | ± 10 % <sup>2)</sup>              |
| <b>Current consumption</b>          | 30 mA <sup>3)</sup>               |

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall below or exceed U<sub>V</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> connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

|                                              |                                                             |
|----------------------------------------------|-------------------------------------------------------------|
| <b>Switching output</b>                      | NPN                                                         |
| <b>Switching mode</b>                        | Light/dark switching                                        |
| <b>Switching mode selector</b>               | Selectable via light/dark rotary switch                     |
| <b>Signal voltage NPN HIGH/LOW</b>           | Approx. $V_S / < 1.8 \text{ V}$                             |
| <b>Output current <math>I_{\max.}</math></b> | $\leq 100 \text{ mA}$                                       |
| <b>Response time</b>                         | $\leq 0.25 \text{ ms}^{4)}$                                 |
| <b>Switching frequency</b>                   | $2,000 \text{ Hz}^{5)}$                                     |
| <b>Connection type</b>                       | Male connector M8, 4-pin                                    |
| <b>Circuit protection</b>                    | A <sup>6)</sup><br>B <sup>7)</sup><br>D <sup>8)</sup>       |
| <b>Weight</b>                                | 10 g                                                        |
| <b>Housing material</b>                      | Plastic, ABS                                                |
| <b>Optics material</b>                       | Plastic, PMMA                                               |
| <b>Enclosure rating</b>                      | IP67                                                        |
| <b>Items supplied</b>                        | 2 Stainless steel mounting brackets (1.4301/304) BEF-W100-A |
| <b>Ambient operating temperature</b>         | $-25 \text{ °C} \dots +55 \text{ °C}$                       |
| <b>Ambient temperature, storage</b>          | $-40 \text{ °C} \dots +70 \text{ °C}$                       |

1) Limit values when operated in short-circuit protected network: max. 8 A.

2) May not fall below or exceed  $U_y$  tolerances.

3) Without load.

4) Signal transit time with resistive load.

5) With light/dark ratio 1:1.

6) A =  $V_S$  connections reverse-polarity protected.

7) B = inputs and output reverse-polarity protected.

8) D = outputs overcurrent and short-circuit protected.

### Safety-related parameters

|                         |             |
|-------------------------|-------------|
| <b>MTTF<sub>D</sub></b> | 739.3 years |
| <b>DC<sub>avg</sub></b> | 0 %         |

### Certificates

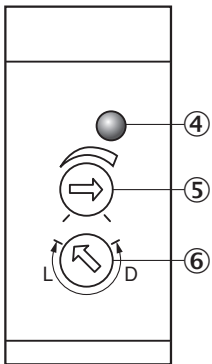
|                                                          |   |
|----------------------------------------------------------|---|
| <b>EU declaration of conformity</b>                      | ✓ |
| <b>UK declaration of conformity</b>                      | ✓ |
| <b>ACMA declaration of conformity</b>                    | ✓ |
| <b>Moroccan declaration of conformity</b>                | ✓ |
| <b>China-RoHS</b>                                        | ✓ |
| <b>Photobiological safety (DIN EN 62471) certificate</b> | ✓ |

### 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 |

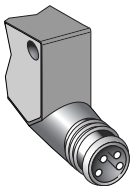
|                       |          |
|-----------------------|----------|
| <b>ECLASS 8.0</b>     | 27270901 |
| <b>ECLASS 8.1</b>     | 27270901 |
| <b>ECLASS 9.0</b>     | 27270901 |
| <b>ECLASS 10.0</b>    | 27270901 |
| <b>ECLASS 11.0</b>    | 27270901 |
| <b>ECLASS 12.0</b>    | 27270901 |
| <b>ETIM 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 |

## Adjustments

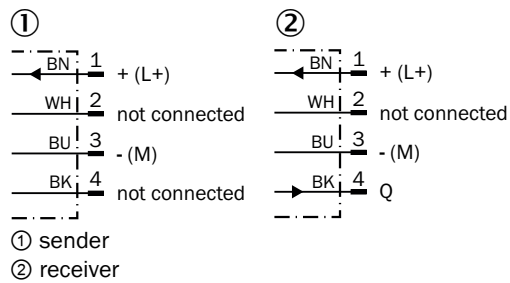


- ④ Orange LED indicator : switching output active
- ⑤ sensitivity control
- ⑥ Light/ dark rotary switch: L = light switching, D = dark switching

## Connection type

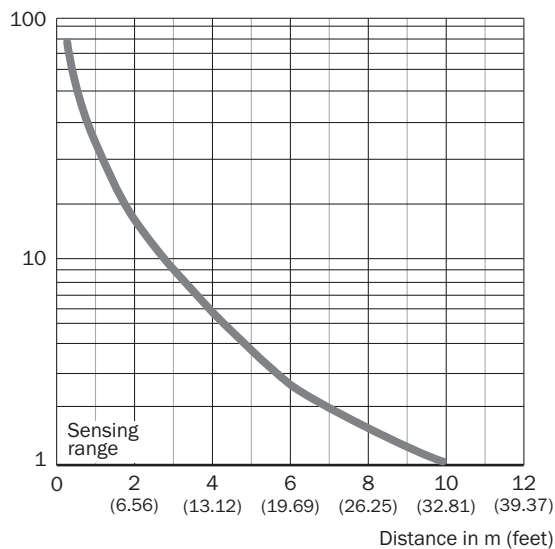


## Connection diagram Cd-057

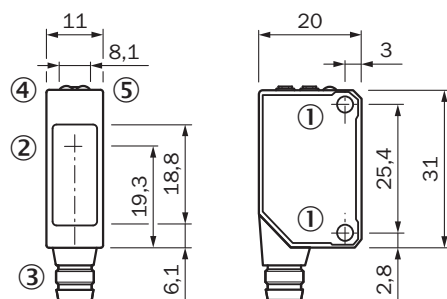


## Operating reserve

Operating reserve



## Dimensional drawing WL8



Dimensions in mm (inch)

- ① Threaded mounting hole M3, max. tightening torque: 0.6 Nm
- ② Center of optical axis
- ③ Connection
- ④ Orange LED indicator : switching output active
- ⑤ LED indicator green: stability indicator

Recommended accessories

Other models and accessories → [www.sick.com/W8](http://www.sick.com/W8)

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                           | Type               | part no. |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |          |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M8, 4-pin, straight, A-coded</li><li>• <b>Description:</b> Unshielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> 0.14 mm² ... 0.5 mm²</li></ul>                                                                                                                             | STE-0804-G         | 6037323  |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 5 m, 4-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul> | YF8U14-050VA3XLEAX | 2095889  |

## 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)