



**WL4-3N1310S25**  
W4

**PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

| Type          | part no. |
|---------------|----------|
| WL4-3N1310S25 | 1029959  |

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

### Detailed technical data

#### Features

|                             |                                       |
|-----------------------------|---------------------------------------|
| <b>Functional principle</b> | Photoelectric retro-reflective sensor |
| <b>Sensing range max.</b>   | 0.4 m ... 3.5 m <sup>1)</sup>         |
| <b>Sensing range</b>        | 0.4 m ... 3.5 m <sup>1)</sup>         |
| <b>Emitted beam</b>         |                                       |
| Light source                | LED <sup>2)</sup>                     |
| Type of light               | Infrared light                        |
| Light spot size (distance)  | Ø 75 mm (1.5 m)                       |
| <b>Key LED figures</b>      |                                       |
| Wave length                 | 850 nm                                |
| <b>Adjustment</b>           | None                                  |

<sup>1)</sup> Reflector PL31A.

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

#### Safety-related parameters

|                         |             |
|-------------------------|-------------|
| <b>MTTF<sub>D</sub></b> | 1,404 years |
| <b>DC<sub>avg</sub></b> | 0 %         |

#### Electronics

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| <b>Supply voltage U<sub>B</sub></b> | 10 V DC ... 30 V DC <sup>1)</sup> |
| <b>Ripple</b>                       | < 5 V <sub>pp</sub> <sup>2)</sup> |
| <b>Current consumption</b>          | 20 mA <sup>3)</sup>               |

<sup>1)</sup> Limit values.

<sup>2)</sup> May not fall below or exceed U<sub>y</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> C = interference suppression.

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

|                           |                                                       |
|---------------------------|-------------------------------------------------------|
| <b>Protection class</b>   | III                                                   |
| <b>Digital output</b>     |                                                       |
| Type                      | NPN                                                   |
| Switching mode            | Light switching                                       |
| Output current $I_{\max}$ | $\leq 100 \text{ mA}$                                 |
| Response time             | $< 0.5 \text{ ms}^{4)}$                               |
| Switching frequency       | $1,000 \text{ Hz}^{5)}$                               |
| <b>Circuit protection</b> | A <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup> |

- 1) Limit values.  
2) May not fall below or exceed  $U_T$  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) C = interference suppression.  
8) D = outputs overcurrent and short-circuit protected.

## Mechanics

|                               |                             |
|-------------------------------|-----------------------------|
| <b>Housing</b>                | Rectangular                 |
| <b>Design detail</b>          | Flat                        |
| <b>Dimensions (W x H x D)</b> | 16 mm x 39.5 mm x 12 mm     |
| <b>Connection</b>             | Cable, 3-wire <sup>1)</sup> |
| <b>Material</b>               |                             |
| Housing                       | Plastic, ABS                |
| Front screen                  | Plastic, PMMA               |
| Cable                         | Plastic, PVC                |
| <b>Weight</b>                 | 30 g                        |

- 1) Do not bend below  $0^\circ \text{C}$ .

## Ambient data

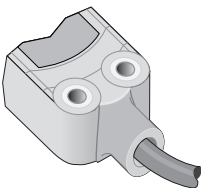
|                                      |                                               |
|--------------------------------------|-----------------------------------------------|
| <b>Enclosure rating</b>              | IP67<br>IP66                                  |
| <b>Ambient operating temperature</b> | $-40^\circ \text{C} \dots +60^\circ \text{C}$ |
| <b>Ambient temperature, storage</b>  | $-40^\circ \text{C} \dots +75^\circ \text{C}$ |
| <b>UL File No.</b>                   | NRKH.E181493 & NRKH7.E181493                  |

## Classifications

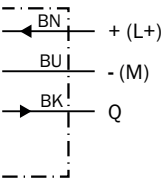
|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270902 |
| <b>ECLASS 5.1.4</b> | 27270902 |
| <b>ECLASS 6.0</b>   | 27270902 |
| <b>ECLASS 6.2</b>   | 27270902 |
| <b>ECLASS 7.0</b>   | 27270902 |
| <b>ECLASS 8.0</b>   | 27270902 |
| <b>ECLASS 8.1</b>   | 27270902 |

|                       |          |
|-----------------------|----------|
| <b>ECLASS 9.0</b>     | 27270902 |
| <b>ECLASS 10.0</b>    | 27270902 |
| <b>ECLASS 11.0</b>    | 27270902 |
| <b>ECLASS 12.0</b>    | 27270902 |
| <b>ETIM 5.0</b>       | EC002717 |
| <b>ETIM 6.0</b>       | EC002717 |
| <b>ETIM 7.0</b>       | EC002717 |
| <b>ETIM 8.0</b>       | EC002717 |
| <b>UNSPSC 16.0901</b> | 39121528 |

Connection type



Connection diagram Cd-043



## Recommended accessories

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Type         | part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |          |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Plate N08 for universal clamp bracket</li> <li><b>Material:</b> Steel, zinc diecast</li> <li><b>Details:</b> Zinc plated steel (sheet), Zinc die cast (clamping bracket)</li> <li><b>Items supplied:</b> Universal clamp (5322626), mounting hardware</li> <li><b>Usable for:</b> W100, W150, W4S, W4F, W8, W9-3, W8G, W8 Laser, W8 Inox, G6, W100 Laser, W100-2, W10, G6 Inox, RAY10, W4SLG-3, W9, GR18, MultiPulse, Reflex Array, MultiLine, LUT3, KT5, KT8, KT10, CS8</li> </ul> | BEF-KHS-N08  | 2051607  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for wall mounting</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W4S, W4F, W4S</li> </ul>                                                                                                                                                                                                                                      | BEF-W4-A     | 2051628  |
|   | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for floor mounting</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W4S, W4F, W4S</li> </ul>                                                                                                                                                                                                                                     | BEF-W4-B     | 2051630  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Plate N11N for universal clamp bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li> <li><b>Items supplied:</b> Universal clamp (5322627), mounting hardware</li> <li><b>Usable for:</b> DeltaPac, Glare, WTD20E</li> </ul>                                                                                                                                                                | BEF-KHS-N11N | 2071081  |
| reflectors and optics                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Rectangular, screw connection</li> <li><b>Dimensions:</b> 40 mm 60 mm</li> <li><b>Ambient operating temperature:</b> -30 °C ... +65 °C</li> </ul>                                                                                                                                                                                                                                                                                                                                   | PL40A        | 1012720  |
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |          |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M8, 3-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-0803-G   | 6037322  |

## 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)