



# WS/WE24-2S01

## W24

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type         | part no. |
|--------------|----------|
| WS/WE24-2S01 | 1023549  |

Other models and accessories → [www.sick.com/W24](http://www.sick.com/W24)

Detailed technical data

Features

|                                 |  |
|---------------------------------|--|
| Functional principle            | Through-beam photoelectric sensor                        |
| Dimensions (W x H x D)          | 27 mm x 87.5 mm x 65 mm                                  |
| Housing design (light emission) | Rectangular  |
| Sensing range max.              | 0 m ... 60 m   |
| Sensing range                   | 0 m ... 50 m   |
| Focus                           | Approx. 1°   |
| Type of light                   | Visible red light  |
| Light source                    | LED <sup>1)</sup>  |
| Light spot size (distance)      | Ø 700 mm (50 m)  |
| Angle of dispersion             | Approx. 1°   |
| Adjustment                      | Potentiometer  |
| Alarm output                    | ✓  |
| Special features                | Dynamic front lense heating<br>Front lense made of glass |

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

## Mechanics/electronics

|   |   |
|---|---|
| <b>Supply voltage <math>U_B</math></b>      | 10 V DC ... 30 V DC <sup>1)</sup>                                   |
| <b>Ripple</b>                               | < 5 V <sub>pp</sub> <sup>2)</sup>                                   |
| <b>Power consumption, sender</b>            | ≤ 150 mA <sup>3)</sup>  |
| <b>Power consumption, receiver</b>          | ≤ 140 mA <sup>3)</sup>  |
| <b>Switching output</b>                     | NPN, PNP  |
| <b>Switching mode</b>                       | Light/dark switching  |
| <b>Switching mode selector</b>              | Selectable via PNP/NPN selector, selectable via light/dark selector |
| <b>Output current <math>I_{max}</math></b>  | ≤ 100 mA  |
| <b>Response time</b>                        | ≤ 500 μs <sup>4)</sup>  |
| <b>Switching frequency</b>                  | 1,000 Hz <sup>5)</sup>  |
| <b>Angle of reception</b>                   | Approx. 2.5°  |
| <b>Connection type</b>                      | Plug, M12, 5-pin  |
| <b>Circuit protection</b>                   | A <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup>               |
| <b>Protection class</b>                     | II <sup>9)</sup>  |
| <b>Weight</b>                               | 700 g   |
| <b>Front screen heating</b>                 | ✓ <sup>10)</sup>  |
| <b>Housing material</b>                     | Metal, zinc diecast   |
| <b>Optics material</b>                      | Glass, glass  |
| <b>Enclosure rating</b>                     | IP67  |
| <b>Test input sender off</b>                | TE to 0 V   |
| <b>Ambient operating temperature</b>        | -40 °C ... +60 °C   |
| <b>Ambient temperature, storage</b>         | -40 °C ... +75 °C   |
| <b>Part number of individual components</b> | 2026925 WS24-2D530S01 2026926 WE24-2V530S01                         |

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

<sup>2)</sup> May not fall below or exceed  $U_V$  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 =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

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

<sup>9)</sup> Reference voltage: 50 V DC.

<sup>10)</sup> Dynamic, high heat output, application for quickly changing temperatures between -5° C ... +10° C, Front screen material: Glass.

## Safety-related parameters

|                         |           |
|-------------------------|-----------|
| <b>MTTF<sub>D</sub></b> | 423 years |
| <b>DC<sub>avg</sub></b> | 0 %       |

## Certificates

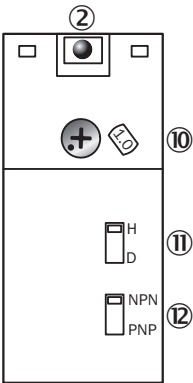
|                                     |   |
|-------------------------------------|---|
| <b>EU declaration of conformity</b> | ✓ |
| <b>UK declaration of conformity</b> | ✓ |

|   |   |
|---|---|
| ACMA declaration of conformity                    | ✓ |
| Moroccan declaration of conformity                | ✓ |
| China-RoHS  | ✓ |
| Photobiological safety (DIN EN 62471) certificate | ✓ |

Classifications

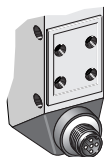
|                |          |
|----------------|----------|
| ECLASS 5.0     | 27270901 |
| ECLASS 5.1.4   | 27270901 |
| ECLASS 6.0     | 27270901 |
| ECLASS 6.2     | 27270901 |
| ECLASS 7.0     | 27270901 |
| ECLASS 8.0     | 27270901 |
| ECLASS 8.1     | 27270901 |
| ECLASS 9.0     | 27270901 |
| ECLASS 10.0    | 27270901 |
| ECLASS 11.0    | 27270901 |
| ECLASS 12.0    | 27270901 |
| ETIM 5.0       | EC002716 |
| ETIM 6.0       | EC002716 |
| ETIM 7.0       | EC002716 |
| ETIM 8.0       | EC002716 |
| UNSPSC 16.0901 | 39121528 |

Adjustments WT24-2, WL24-2, WS/WE24-2, DC

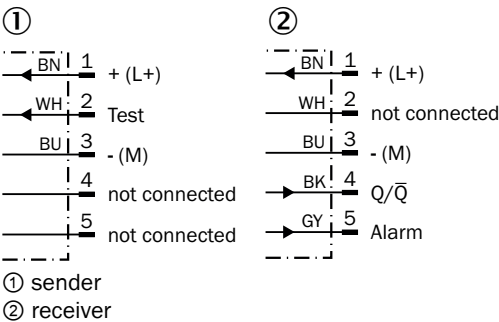


- ② LED signal strength indicator
- ⑩ Adjustment sensing range (WT) / sensitivity (WL, WS/WE)
- ⑪ Light/dark selector
- ⑫ NPN/PNP changeover switch

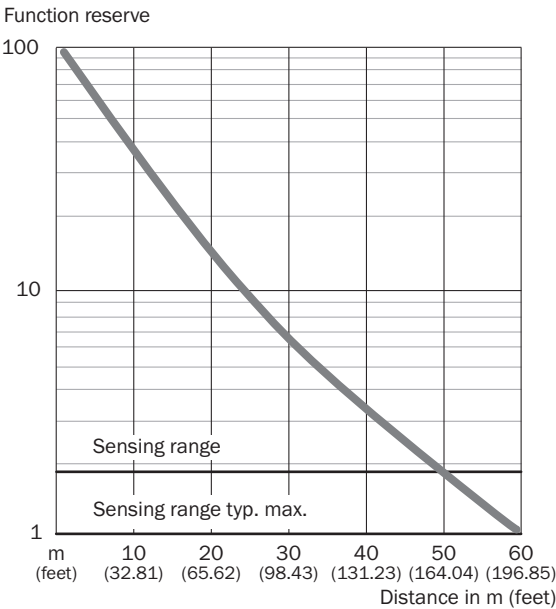
Connection type



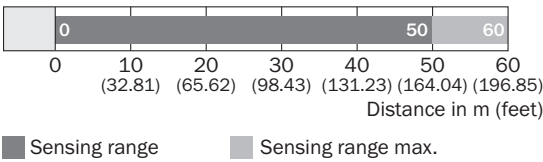
Connection diagram Cd-119



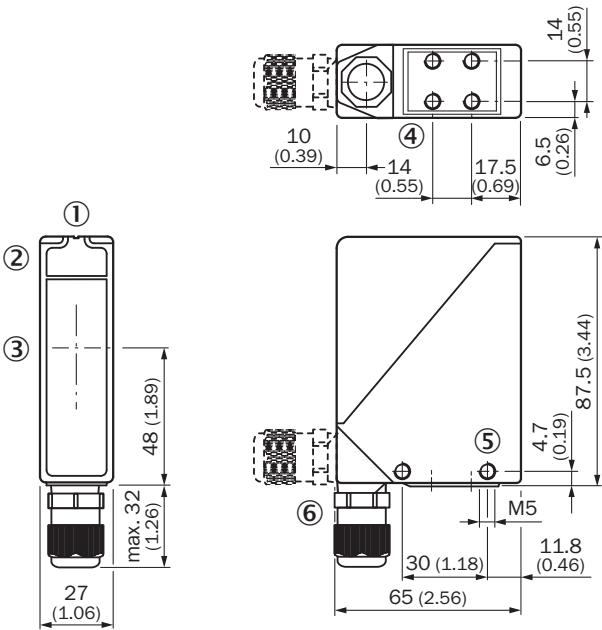
Characteristic curve WS/WE24-2



Sensing range diagram WS/WE24-2



Dimensional drawing WS/WE24-2





Dimensions in mm (inch)

- ① Alignment sight
- ② LED signal strength indicator
- ③ Center of optical axis
- ④ M5 threaded mounting hole, 6 mm deep
- ⑤ M5 threaded mounting hole, through-hole
- ⑥ M16 screw fixing and plug rotatable by 90°

Recommended accessories

Other models and accessories → [www.sick.com/W24](http://www.sick.com/W24)

|   | Brief description  | Type               | part no. |
|---|--|--------------------|----------|
| connectors and cables   |  |                    |          |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 5-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, 5-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul> | YF2A15-050VB5XLEAX | 2096240  |

|   | Brief description   | Type       | part no. |
|---|---|------------|----------|
| Mounting systems  |   |            |          |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Mounting bracket, large</li><li>• <b>Material:</b> Stainless steel</li><li>• <b>Details:</b> Stainless steel</li><li>• <b>Items supplied:</b> Without mounting hardware for the sensor</li><li>• <b>Suitable for:</b> W24-2</li></ul> | BEF-WG-W24 | 4026324  |

## 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)