



## WS/WE24-2S01 W24

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
WS/WE24-2S01	1023549

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

Illustration may differ



## Detailed technical data

### Features

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

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

## Mechanics/electronics

<b>Supply voltage <math>U_B</math></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	$< 5 \text{ V}_{\text{pp}}$ <sup>2)</sup>
<b>Power consumption, sender</b>	$\leq 150 \text{ mA}$ <sup>3)</sup>
<b>Power consumption, receiver</b>	$\leq 140 \text{ mA}$ <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_{\text{max.}}</math></b>	$\leq 100 \text{ mA}$
<b>Response time</b>	$\leq 500 \mu\text{s}$ <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> C <sup>7)</sup> 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  $U_y$  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

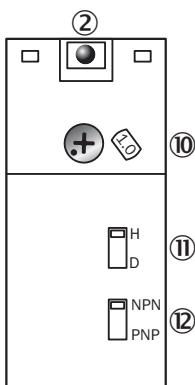
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓

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



② LED signal strength indicator

⑩ Adjustment sensing range (WT) / sensitivity (WL, WS/WE)

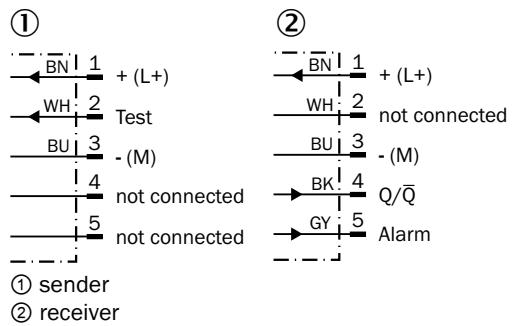
⑪ Light/dark selector

⑫ NPN/PNP changeover switch

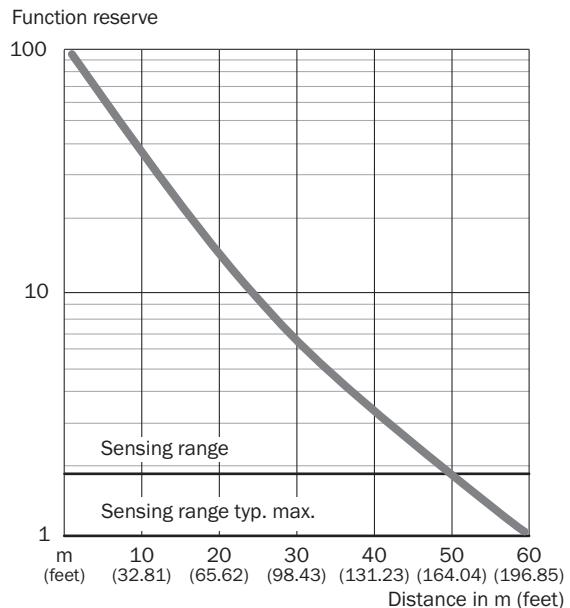
## Connection type



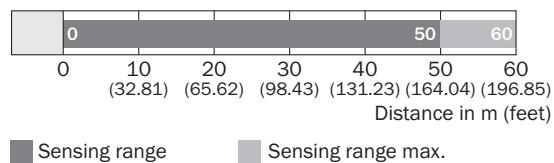
Connection diagram Cd-119



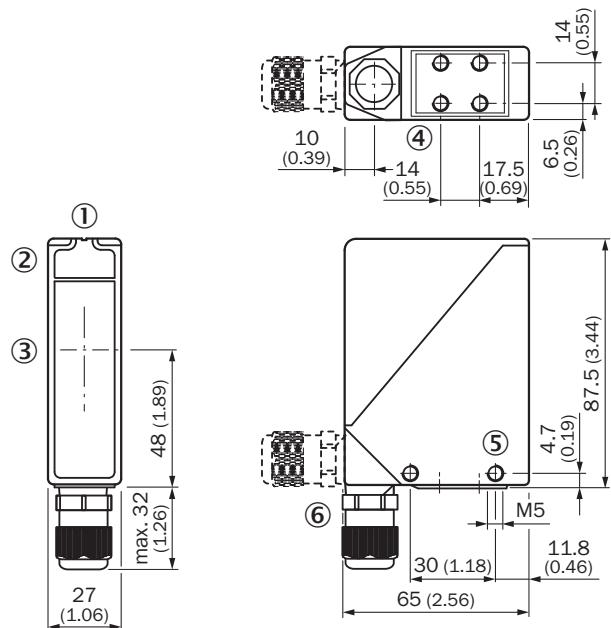
## Characteristic curve WS/WE24-2



Sensing range diagram WS/WE24-2



Dimensional drawing WS/WE24-2



Dimensions in mm (inch)

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)

	<b>Brief description</b>	<b>Type</b>	<b>part no.</b>
	<p>connectors and cables</p> <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)