



# WS/WE34-B440

W34

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	part no.
WS/WE34-B440	1019255

Other models and accessories → [www.sick.com/W34](http://www.sick.com/W34)

## Detailed technical data

### Features

<b>Functional principle</b>	Through-beam photoelectric sensor
<b>Dimensions (W x H x D)</b>	27 mm x 92 mm x 70 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	0 m ... 60 m
<b>Sensing range</b>	0 m ... 60 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>Wave length</b>	660 nm
<b>Adjustment</b>	Potentiometer

<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>	< 5 V <sub>pp</sub> <sup>2)</sup>

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

<sup>2)</sup> May not fall below or exceed U<sub>y</sub> tolerances.

<sup>3)</sup> Signal transit time with resistive load.

<sup>4)</sup> With light/dark ratio 1:1.

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

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

<sup>7)</sup> D = outputs overcurrent and short-circuit protected.

<sup>8)</sup> Reference voltage: 50 V DC.

<b>Power consumption, sender</b>	50 mA
<b>Power consumption, receiver</b>	40 mA
<b>Switching output</b>	NPN, PNP
<b>Switching mode</b>	Light switching, 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>	$\leq 100$ mA
<b>Response time</b>	$\leq 500$ $\mu$ s <sup>3)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>4)</sup>
<b>Angle of reception</b>	Approx. 2.5°
<b>Time functions</b>	Off delay Switch-on delay Adjustable
<b>Delay time</b>	Adjustable via time delay selector switch, 0.5 s ... 10 s
<b>Connection type</b>	Male connector M12, 4-pin
<b>Circuit protection</b>	A <sup>5)</sup> C <sup>6)</sup> D <sup>7)</sup>
<b>Protection class</b>	II <sup>8)</sup>
<b>Weight</b>	280 g
<b>Housing material</b>	Plastic, ABS
<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>UL File No.</b>	NRKH.E181493 & NRKH7.E181493
<b>Part number of individual components</b>	2022812 WE34-B440 2022820 WS34-D440

1) Limit values.

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

3) Signal transit time with resistive load.

4) With light/dark ratio 1:1.

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

6) C = interference suppression.

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

8) Reference voltage: 50 V DC.

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	311 years
<b>DC<sub>avg</sub></b>	0 %
<b>T<sub>M</sub> (mission time)</b>	20 years

## Certificates

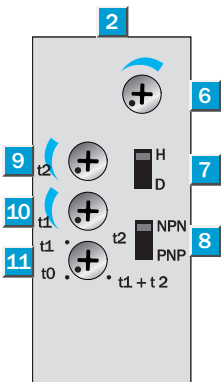
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓

China RoHS	✓
cULus certificate	✓
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

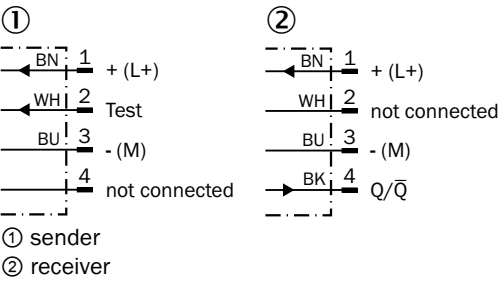


- ② LED signal strength indicator
- ⑥ sensitivity control
- ⑦ Light/dark selector
- ⑧ NPN/PNP changeover switch
- ⑨ time control  $t_2$ = OFF delay
- ⑩ time control  $t_1$ = ON delay
- ⑪ Status indicator

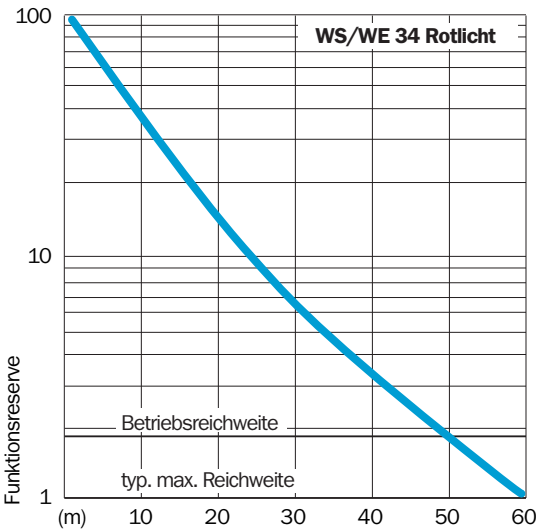
### Connection type



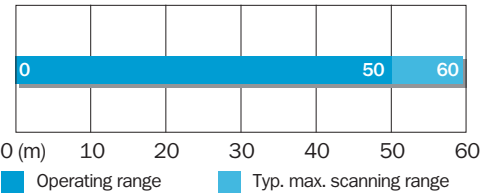
### Connection diagram Cd-118



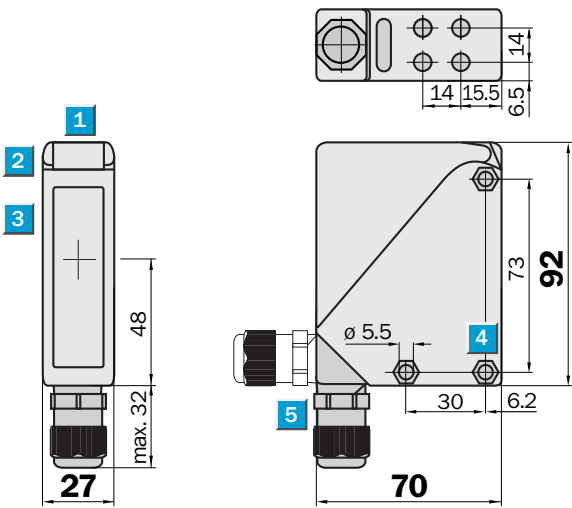
### Characteristic curve



### Sensing range diagram



Dimensional drawing







Dimensions in mm (inch)

- ① Alignment sight
- ② LED signal strength indicator
- ③ Center of optical axis
- ④ Mounting hole  $\varnothing$  5.5 mm, for M5 hexagon nuts on both sides
- ⑤ M16 screw fixing rotatable by 90°

Recommended accessories

Other models and accessories → [www.sick.com/W34](http://www.sick.com/W34)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Mounting bracket</li><li>• <b>Material:</b> Stainless steel</li><li>• <b>Details:</b> Stainless steel (1.4301)</li><li>• <b>Items supplied:</b> Mounting hardware included</li><li>• <b>Suitable for:</b> W24-2, W34</li></ul>	BEF-WN-W24	2015248

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 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> Uncontaminated zones, Zones with chemicals</li> </ul>	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 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> ≤ 0.75 mm²</li> </ul>	STE-1204-G	6009932
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 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, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-050UB3XLEAX	2095608

## 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)