



# WS/WE34-V540

## W34

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type         | Part no. |
|--------------|----------|
| WS/WE34-V540 | 1019252  |

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                     |
| <b>Alarm output</b>                    | ✓                                 |

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

### Mechanics/electronics

|                                  |                                   |
|----------------------------------|-----------------------------------|
| <b>Supply voltage</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> | 50 mA                             |

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

<sup>2)</sup> May not exceed or fall below U<sub>V</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, receiver</b>          | 40 mA                                                               |
| <b>Switching output</b>                     | NPN<br>PNP                                                          |
| <b>Switching mode</b>                       | Light switching<br>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>                        | $\leq 500 \mu\text{s}$ <sup>3)</sup>                                |
| <b>Switching frequency</b>                  | 1,000 Hz <sup>4)</sup>                                              |
| <b>Angle of reception</b>                   | Approx. $2.5^\circ$                                                 |
| <b>Time functions</b>                       | Off delay<br>On delay<br>Adjustable                                 |
| <b>Delay time</b>                           | Adjustable via time delay selector switch, 0.5 s ... 10 s           |
| <b>Connection type</b>                      | Male connector M12, 5-pin                                           |
| <b>Circuit protection</b>                   | A <sup>5)</sup><br>C <sup>6)</sup><br>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>        | $-40^\circ\text{C} \dots +60^\circ\text{C}$                         |
| <b>Ambient temperature, storage</b>         | $-40^\circ\text{C} \dots +75^\circ\text{C}$                         |
| <b>UL File No.</b>                          | NRKH.E181493 & NRKH7.E181493                                        |
| <b>Part number of individual components</b> | 2022814 WE34-V540 2022822 WS34-D540                                 |

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

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

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

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

<sup>5)</sup> A =  $V_S$  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.

## Safety-related parameters

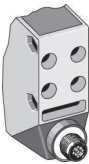
|                                     |           |
|-------------------------------------|-----------|
| <b>MTTF<sub>D</sub></b>             | 311 years |
| <b>DC<sub>avg</sub></b>             | 0 %       |
| <b>T<sub>M</sub> (mission time)</b> | 20 years  |

## Classifications

|                     |          |
|---------------------|----------|
| <b>eCl@ss 5.0</b>   | 27270901 |
| <b>eCl@ss 5.1.4</b> | 27270901 |
| <b>eCl@ss 6.0</b>   | 27270901 |
| <b>eCl@ss 6.2</b>   | 27270901 |

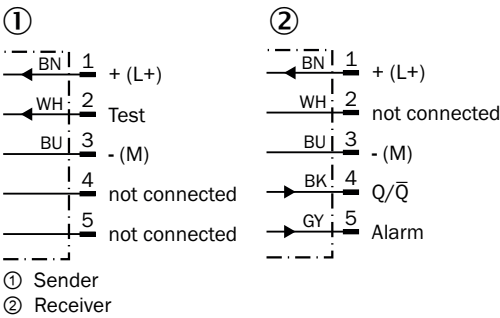
|                |          |
|----------------|----------|
| eCl@ss 7.0     | 27270901 |
| eCl@ss 8.0     | 27270901 |
| eCl@ss 8.1     | 27270901 |
| eCl@ss 9.0     | 27270901 |
| eCl@ss 10.0    | 27270901 |
| eCl@ss 11.0    | 27270901 |
| eCl@ss 12.0    | 27270901 |
| ETIM 5.0       | EC002716 |
| ETIM 6.0       | EC002716 |
| ETIM 7.0       | EC002716 |
| ETIM 8.0       | EC002716 |
| UNSPSC 16.0901 | 39121528 |

Connection type

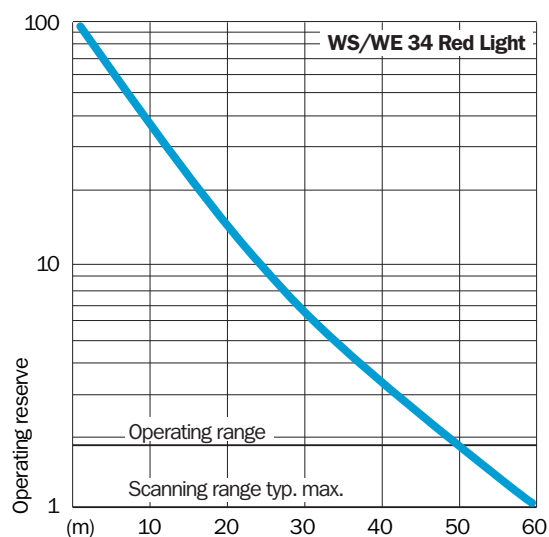


Connection diagram

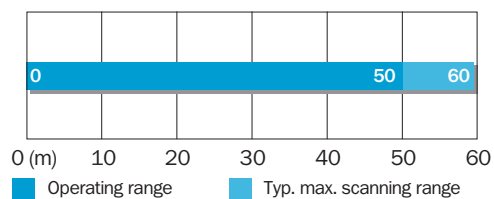
Cd-119



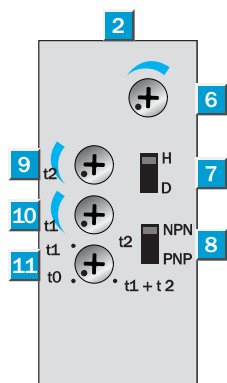
## Characteristic curve



## Sensing range diagram

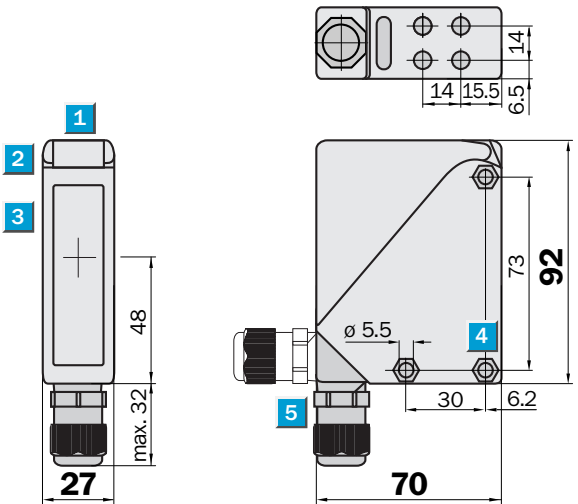


## Adjustments



- 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

Dimensional drawing (Dimensions in mm (inch))



Recommended accessories

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

|                                                                                     | Brief description                                                      | Type       | Part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------|----------|
| Mounting brackets and plates                                                        |                                                                        |            |          |
|  | Mounting bracket, Stainless steel (1.4301), mounting hardware included | BEF-WN-W24 | 2015248  |

## 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)