



# WT34-B450

## W34

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type      | Part no. |
|-----------|----------|
| WT34-B450 | 1019234  |

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

Detailed technical data

Features

|                                        |                                   |
|----------------------------------------|-----------------------------------|
| <b>Functional principle</b>            | Photoelectric proximity sensor    |
| <b>Functional principle detail</b>     | Background suppression            |
| <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>              | 100 mm ... 1,200 mm <sup>1)</sup> |
| <b>Sensing range</b>                   | 100 mm ... 1,200 mm               |
| <b>Type of light</b>                   | Visible red light                 |
| <b>Light source</b>                    | LED <sup>2)</sup>                 |
| <b>Light spot size (distance)</b>      | Ø 40 mm (1,200 mm)                |
| <b>Wave length</b>                     | 660 nm                            |
| <b>Adjustment</b>                      | Potentiometer                     |

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</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> |
| <b>Current consumption</b>          | 50 mA                             |
| <b>Switching output</b>             | NPN, PNP                          |

<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>Switching mode</b>                       | Light switching, Dark switching                           |
| <b>Switching mode selector</b>              | Selectable via PNP/NPN selector                           |
| <b>Output current <math>I_{\max}</math></b> | $\leq 100 \text{ mA}$                                     |
| <b>Response time</b>                        | $\leq 500 \mu\text{s}$ <sup>3)</sup>                      |
| <b>Switching frequency</b>                  | 1,000 Hz <sup>4)</sup>                                    |
| <b>Time functions</b>                       | On delay/off 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><br>C <sup>6)</sup><br>D <sup>7)</sup>     |
| <b>Protection class</b>                     | II <sup>8)</sup>                                          |
| <b>Weight</b>                               | 140 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                              |

<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

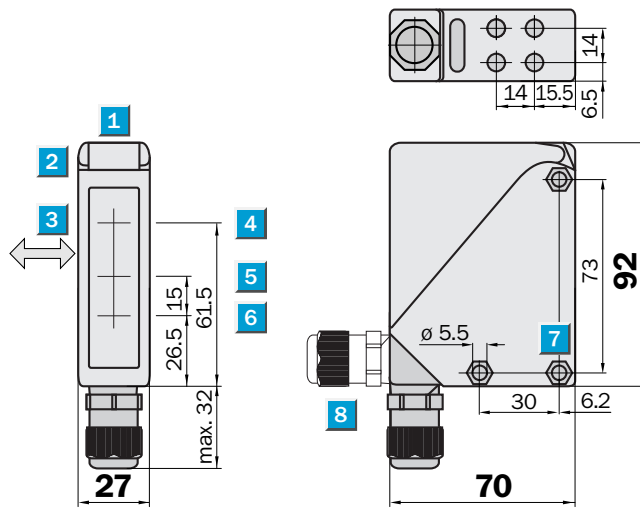
|                                     |           |
|-------------------------------------|-----------|
| <b>MTTF<sub>D</sub></b>             | 564 years |
| <b>DC<sub>avg</sub></b>             | 0 %       |
| <b>T<sub>M</sub> (mission time)</b> | 20 years  |

## Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270904 |
| <b>ECLASS 5.1.4</b> | 27270904 |
| <b>ECLASS 6.0</b>   | 27270904 |
| <b>ECLASS 6.2</b>   | 27270904 |
| <b>ECLASS 7.0</b>   | 27270904 |
| <b>ECLASS 8.0</b>   | 27270904 |
| <b>ECLASS 8.1</b>   | 27270904 |
| <b>ECLASS 9.0</b>   | 27270904 |
| <b>ECLASS 10.0</b>  | 27270904 |
| <b>ECLASS 11.0</b>  | 27270904 |

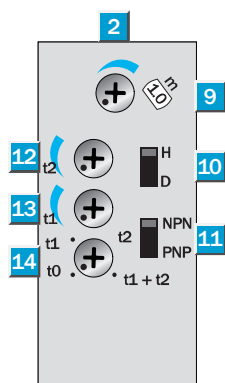
|                       |          |
|-----------------------|----------|
| <b>ECLASS 12.0</b>    | 27270903 |
| <b>ETIM 5.0</b>       | EC002719 |
| <b>ETIM 6.0</b>       | EC002719 |
| <b>ETIM 7.0</b>       | EC002719 |
| <b>ETIM 8.0</b>       | EC002719 |
| <b>UNSPSC 16.0901</b> | 39121528 |

### Dimensional drawing (Dimensions in mm (inch))



- ① Alignment sight
- ② LED signal strength indicator
- ③ Standard direction of the material being detected
- ④ Center of optical axis, sender
- ⑤ Center of optical axis, receiver (close range)
- ⑥ Center of optical axis, receiver (far range)
- ⑦ Mounting hole  $\varnothing 5.5$  mm, for M5 hexagon nuts on both sides

## Adjustments



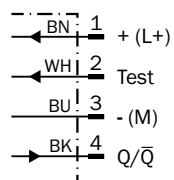
- ② LED signal strength indicator
- ⑨ Adjustment of sensing range
- ⑩ Light/dark selector
- ⑪ NPN/PNP changeover switch
- ⑫ Time control  $t_2$  = OFF delay
- ⑬ Time control  $t_1$  = ON delay
- ⑭ Time delay selector switch

## Connection type

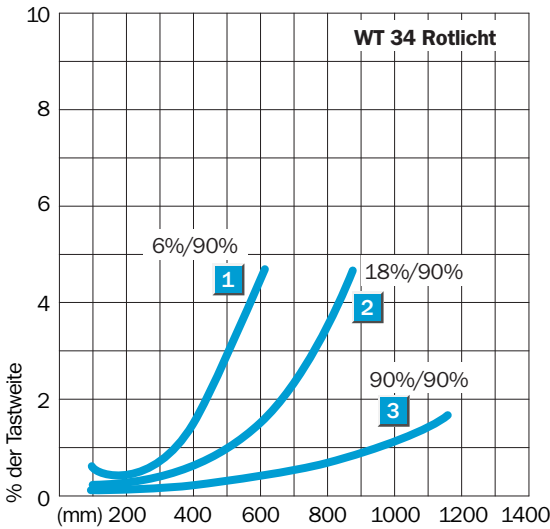


## Connection diagram

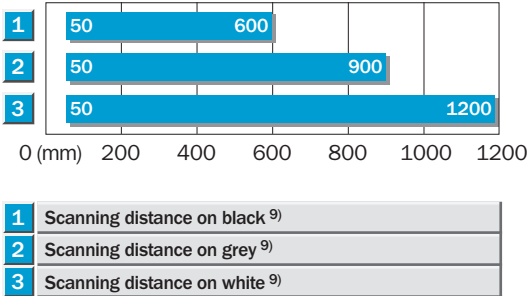
Cd-117



Characteristic curve



Sensing range diagram



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  |
| Plug connectors and cables                                                          |                                                                                                                                                                                                                                                                                          |            |          |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight</li><li>• <b>Description:</b> Unshielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li></ul> | STE-1204-G | 6009932  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                      | Type               | Part no. |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Others                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                        |                    |          |
|  | <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> Zones with chemicals</li></ul> | YF2A14-050VB3XLEAX | 2096235  |

## 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)