



# WT24-2B220

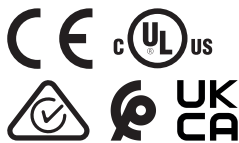
## W24

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type       | part no. |
|------------|----------|
| WT24-2B220 | 1017882  |

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

Detailed technical data

Features

|                                 |                                   |
|---------------------------------|-----------------------------------|
| Functional principle            | Photoelectric proximity sensor    |
| Functional principle detail     | Background suppression            |
| Dimensions (W x H x D)          | 27 mm x 87.5 mm x 65 mm           |
| Housing design (light emission) | Rectangular                       |
| Sensing range max.              | 100 mm ... 2,500 mm <sup>1)</sup> |
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| Type of light                   | Infrared light                    |
| Light source                    | LED <sup>2)</sup>                 |
| Light spot size (distance)      | Ø 80 mm (2,500 mm)                |
| Adjustment                      | 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>U</sub> = +25 °C.

Mechanics/electronics

|                               |                                   |
|-------------------------------|-----------------------------------|
| Supply voltage U <sub>B</sub> | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple                        | < 5 V <sub>pp</sub> <sup>2)</sup> |

<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<sub>V</sub> 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<sub>S</sub> 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> Static, low heat output, use in +5 °C ... +15 °C.

|                                        |                                                                     |
|----------------------------------------|---------------------------------------------------------------------|
| <b>Current consumption</b>             | 50 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 I<sub>max.</sub></b> | ≤ 100 mA                                                            |
| <b>Response time</b>                   | ≤ 500 μs <sup>4)</sup>                                              |
| <b>Switching frequency</b>             | 1,000 Hz <sup>5)</sup>                                              |
| <b>Time functions</b>                  | Switch-on delay<br>Off delay                                        |
| <b>Delay time</b>                      | Adjustable via time delay selector switch, 0.5 s ... 10 s           |
| <b>Connection type</b>                 | Terminal connection with M16 gland                                  |
| <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>                          | 330 g                                                               |
| <b>Front screen heating</b>            | ✓ <sup>10)</sup>                                                    |
| <b>Housing material</b>                | Metal, zinc diecast                                                 |
| <b>Optics material</b>                 | Plastic, PMMA                                                       |
| <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                                                   |

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

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<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<sub>S</sub> connections reverse-polarity protected.

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<sup>10)</sup> Static, low heat output, use in +5 °C ... +15 °C.

## Safety-related parameters

|                         |           |
|-------------------------|-----------|
| <b>MTTF<sub>D</sub></b> | 550 years |
| <b>DC<sub>avg</sub></b> | 0 %       |

## Certificates

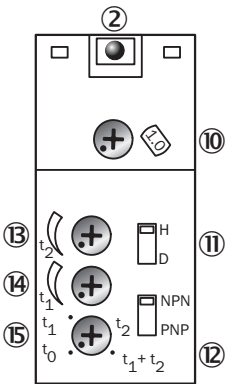
|                                           |   |
|-------------------------------------------|---|
| <b>EU declaration of conformity</b>       | ✓ |
| <b>UK declaration of conformity</b>       | ✓ |
| <b>ACMA declaration of conformity</b>     | ✓ |
| <b>Moroccan declaration of conformity</b> | ✓ |
| <b>China-RoHS</b>                         | ✓ |
| <b>cULus certificate</b>                  | ✓ |

|                                                   |   |
|---------------------------------------------------|---|
| Photobiological safety (DIN EN 62471) certificate | ✓ |
|---------------------------------------------------|---|

Classifications

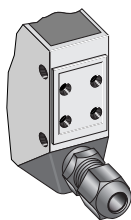
|                |          |
|----------------|----------|
| ECLASS 5.0     | 27270904 |
| ECLASS 5.1.4   | 27270904 |
| ECLASS 6.0     | 27270904 |
| ECLASS 6.2     | 27270904 |
| ECLASS 7.0     | 27270904 |
| ECLASS 8.0     | 27270904 |
| ECLASS 8.1     | 27270904 |
| ECLASS 9.0     | 27270904 |
| ECLASS 10.0    | 27270904 |
| ECLASS 11.0    | 27270904 |
| ECLASS 12.0    | 27270904 |
| ETIM 5.0       | EC002719 |
| ETIM 6.0       | EC002719 |
| ETIM 7.0       | EC002719 |
| ETIM 8.0       | EC002719 |
| UNSPSC 16.0901 | 39121528 |

Adjustments

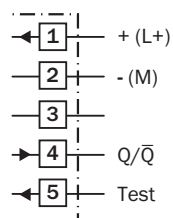


- ② LED signal strength indicator
- ⑩ Adjustment of sensing range
- ⑪ Light/dark selector
- ⑫ NPN/PNP changeover switch
- ⑬ time control  $t_2$  = OFF delay
- ⑭ time control  $t_1$  = ON delay
- ⑮ time delay selector switch

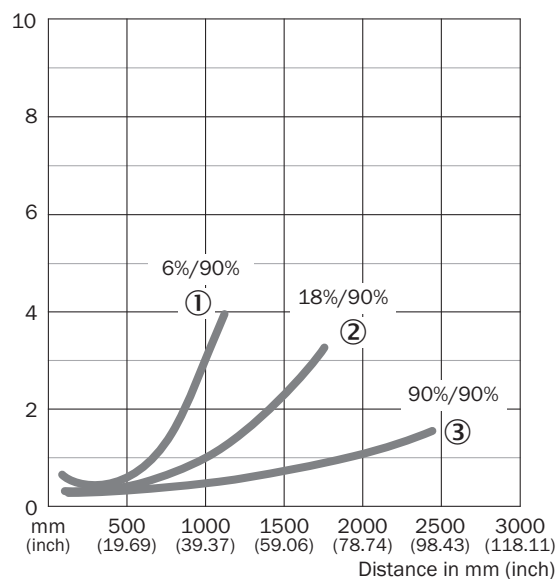
## Connection type



## Connection diagram Cd-120



## Characteristic curve WT24-2, infrared light



- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

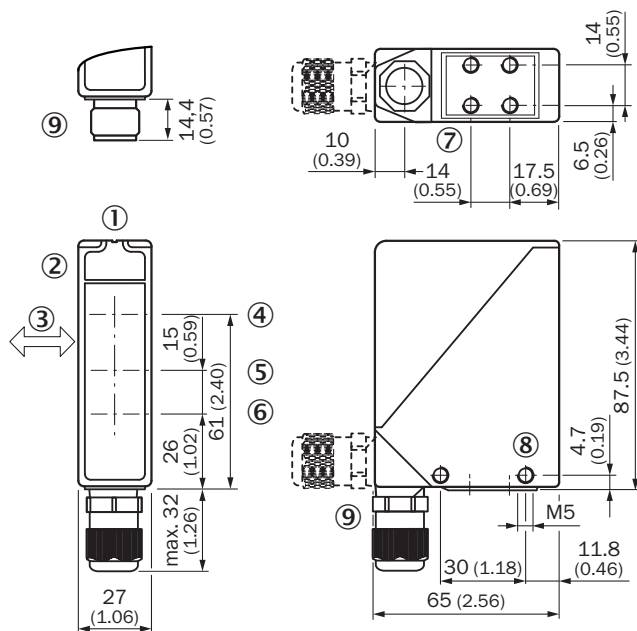
## Sensing range diagram WT24-2, infrared light



■ Schaltabstand

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- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

## Dimensional drawing WT24-2



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 M5 threaded mounting hole, 6 mm deep
- ⑧ M5 threaded mounting hole, through-hole
- ⑨ 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. |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|
| 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)