



# WT24-2R220

W24

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type       | Part no. |
|------------|----------|
| WT24-2R220 | 1016854  |

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

### 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 87.5 mm x 65 mm           |
| <b>Housing design (light emission)</b> | Rectangular                       |
| <b>Sensing range max.</b>              | 100 mm ... 2,500 mm <sup>1)</sup> |
| <b>Sensing range</b>                   | 100 mm ... 2,500 mm <sup>1)</sup> |
| <b>Type of light</b>                   | Infrared light                    |
| <b>Light source</b>                    | LED <sup>2)</sup>                 |
| <b>Light spot size (distance)</b>      | Ø 80 mm (2,500 mm)                |
| <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> | 20 V AC/DC ... 250 V AC/DC                 |
| <b>Power consumption</b>            | < 3 VA                                     |
| <b>Switching output</b>             | Relay, electrically isolated <sup>1)</sup> |
| <b>Output function</b>              | Change-over contacts                       |
| <b>Switching mode</b>               | Light/dark switching <sup>1)</sup>         |

<sup>1)</sup> Provide suitable spark suppression for inductive or capacitive loads.

<sup>2)</sup> With light/dark ratio 1:1.

<sup>3)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>4)</sup> C = interference suppression.

<sup>5)</sup> Rated voltage: 250 V AC/DC.

<sup>6)</sup> Static, low heat output, use in +5° C ... +15° C.

|  |   |
|--|---|
| <b>Switching mode selector</b>               | Selectable via light/dark selector  |
| <b>Switching current (switching voltage)</b> | 4 A @ 250 V AC, 4 A @ 24 V DC, 0.125 A @ 250 V DC<br>UL: 4 A @ 250 V AC, general use / 4 A @ 250 V AC, resistive (NO) / 3 A @ 250 V AC, resistive (NC) / 4 A @ 24 V DC, NO, general use / 3 A @ 24 V DC, NC, general use / R300 / B300 (NO contacts only) |
| <b>Response time</b>                         | ≤ 10 ms   |
| <b>Switching frequency</b>                   | 10 Hz <sup>2)</sup>   |
| <b>Time functions</b>                        | On delay/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>3)</sup><br>C <sup>4)</sup>  |
| <b>Protection class</b>                      | II <sup>5)</sup>  |
| <b>Weight</b>                                | 330 g   |
| <b>Front screen heating</b>                  | ✓ <sup>6)</sup>   |
| <b>Housing material</b>                      | Metal, zinc diecast   |
| <b>Optics material</b>                       | Plastic, PMMA   |
| <b>Enclosure rating</b>                      | IP67  |
| <b>Ambient operating temperature</b>         | -40 °C ... +60 °C   |
| <b>Ambient temperature, storage</b>          | -40 °C ... +75 °C   |

<sup>1)</sup> Provide suitable spark suppression for inductive or capacitive loads.

<sup>2)</sup> With light/dark ratio 1:1.

<sup>3)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>4)</sup> C = interference suppression.

<sup>5)</sup> Rated voltage: 250 V AC/DC.

<sup>6)</sup> Static, low heat output, use in +5 °C ... +15 °C.

## Safety-related parameters

|                         |           |
|-------------------------|-----------|
| <b>MTTF<sub>D</sub></b> | 535 years |
| <b>DC<sub>avg</sub></b> | 0 %       |

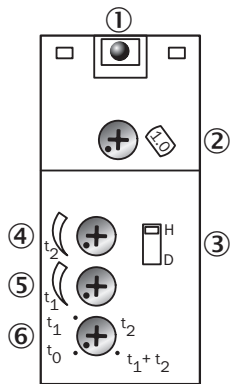
## Classifications

|                     |          |
|---------------------|----------|
| <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>  | 27270904 |
| <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 |

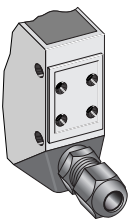
### Adjustments

WT24-2, WL24-2, WS/WE24-2, AC/DC, with time functions



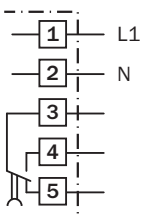
- ① Receive indicator
- ② Adjustment sensing range (WT) / sensitivity (WL, WS/WE)
- ③ Light/dark selector
- ④ Time control  $t_2$  = OFF delay
- ⑤ Time control  $t_1$  = ON delay
- ⑥ Time delay selector switch

### Connection type



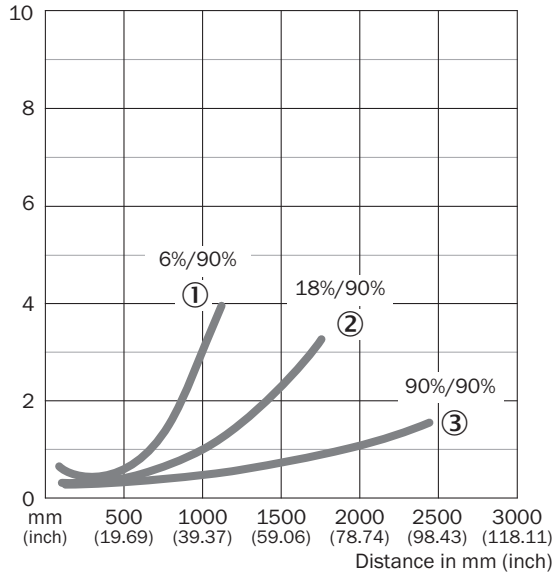
### Connection diagram

Cd-167



### Characteristic curve

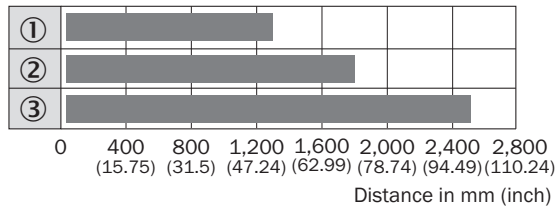
WT24-2, infrared light



- 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

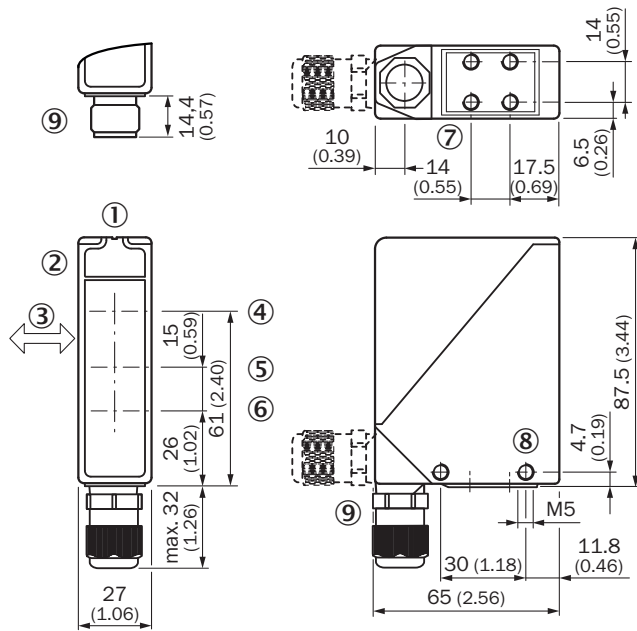
WT24-2, infrared light



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

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


WT24-2



- 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 brackets and plates  |  |            |          |
|  | Mounting bracket, large, stainless steel, without mounting hardware for the sensor | 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)