



# WT24-2B420S22

W24

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type          | part no. |
|---------------|----------|
| WT24-2B420S22 | 1029268  |

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>              | 300 mm ... 900 mm <sup>1)</sup>   |
| <b>Sensing range</b>                   | 300 mm ... 900 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   |
| <b>Special features</b>                | Partly covered front lens<br>With improved protection against vibration |

<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 <math>U_B</math></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 <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 <math>I_{max}</math></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>                     | Male connector M12, 4-pin   |
| <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>Special device</b>                      | ✓   |
| <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.

<sup>2)</sup> May not fall below or exceed  $U_y$  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 =  $V_S$  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.

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>                         | ✓ |

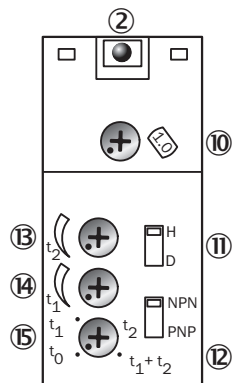
|   |   |
|---|---|
| Photobiological safety (DIN EN 62471) certificate | ✓ |
|---|---|

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

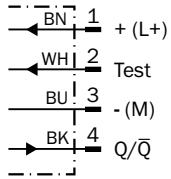


- ② LED signal strength indicator
- ⑩ Adjustment of sensing range
- ⑪ Light/dark selector
- ⑫ NPN/PNP changeover switch
- ⑬ time control  $t_2$  = OFF delay
- ⑭ time control  $t_1$  = ON delay
- ⑮ time delay selector switch

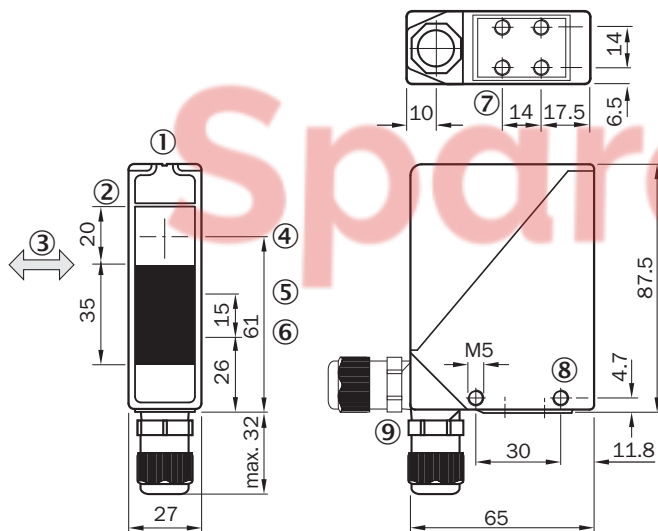
Connection type



Connection diagram Cd-117



Dimensional drawing









Dimensions in mm (inch)

- ① Alignment sight
- ② Receive 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 connection or male connector that can be rotated through 90°

### Recommended accessories

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

|   | Brief description  | Type               | part no. |
|---|--|--------------------|----------|
| <b>Mounting systems</b>   |  |                    |          |
|    | <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  |
|    | <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  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Plate N11N for universal clamp bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li> <li><b>Items supplied:</b> Universal clamp (5322627), mounting hardware</li> <li><b>Usable for:</b> DeltaPac, Glare, WTD20E</li> </ul>  | BEF-KHS-N11N       | 2071081  |
| <b>connectors and cables</b>  |  |                    |          |
|   | <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> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A14-050UB3XLEAX | 2095608  |
|  | <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, Uncontaminated zones</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 mm<sup>2</sup></li> </ul>   | STE-1204-G         | 6009932  |

## 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)

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