Online data sheet




# WT24-2B420S14

## W24-2

**PHOTOELECTRIC SENSORS**

SICK
Sensor Intelligence.



Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| WT24-2B420S14 | 1023363 |

Other models and accessories → www.sick.com/W24-2

## Detailed technical data

### Features

| | |
|---|---|
| **Sensor/ detection principle** | Photoelectric proximity sensor, 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 ... 3,000 mm [1] |
| **Sensing range** | 100 mm ... 3,000 mm [1] |
| **Type of light** | Infrared light |
| **Light source** | LED [2] |
| **Light spot size (distance)** | Ø 80 mm (2,500 mm) |
| **Adjustment** | PotentiometerPotentiometer |
| **Time type** | On delay<br>Off delay |
| **Delay time** | Adjustable via time delay selector switch, 0.6 s, 1.3 s |
| **Special features** | Sensing range preset: 2300 mm (90 % reflectance)<br>Front lense made of glass |

[1] Object with 90 % reflectance (referred to standard white, DIN 5033).
[2] Average service life: 100,000 h at $T_U$ = +25 °C.

### Communication interface

| | |
|---|---|
| **Communication interface** | - |

## Mechanics/electronics

| | |
|---|---|
| **Supply voltage** | 10 V DC ... 30 V DC [1] |
| **Ripple** | < 5 $V_{pp}$ [2] |
| **Power consumption** | ≤ 50 mA [3] |
| **Output type** | NPN<br>PNP |
| **Switching mode** | Light/dark switching |
| **Switching mode selector** | Selectable via PNP/NPN selector, selectable via light/dark selector |
| **Output current $I_{max.}$** | ≤ 100 mA |
| **Response time** | ≤ 500 µs [4] |
| **Switching frequency** | 1,000 Hz [5] |
| **Connection type** | Male connector M12, 4-pin |
| **Circuit protection** | A [6]<br>C [7]<br>D [8] |
| **Protection class** | II [9] |
| **Weight** | 350 g |
| **Special device** | ✓ |
| **Housing material** | Metal, Zinc diecast |
| **Optics material** | Glass, glass |
| **Enclosure rating** | IP67 |
| **Test input sender off** | TE to 0 V |
| **Ambient operating temperature** | –40 °C ... +60 °C |
| **Ambient storage temperature** | –40 °C ... +75 °C |

[1] Limit values when operated in short-circuit protected network: max. 8 A.
[2] May not exceed or fall below $U_V$ tolerances.
[3] Without load.
[4] Signal transit time with resistive load.
[5] With light/dark ratio 1:1.
[6] A = $V_S$ connections reverse-polarity protected.
[7] C = interference suppression.
[8] D = outputs overcurrent and short-circuit protected.
[9] Reference voltage: 50 V DC.

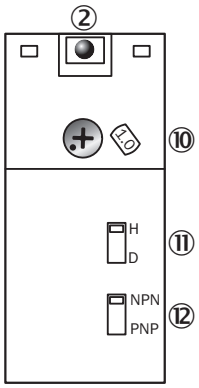
## Classifications

| | |
|---|---|
| **ECl@ss 5.0** | 27270904 |
| **ECl@ss 5.1.4** | 27270904 |
| **ECl@ss 6.0** | 27270904 |
| **ECl@ss 6.2** | 27270904 |
| **ECl@ss 7.0** | 27270904 |
| **ECl@ss 8.0** | 27270904 |
| **ECl@ss 8.1** | 27270904 |
| **ECl@ss 9.0** | 27270904 |
| **ETIM 5.0** | EC002719 |

| | |
|---|---|
| **ETIM 6.0** | EC002719 |
| **UNSPSC 16.0901** | 39121528 |

## Adjustments possible

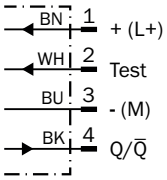
WT24-2, WL24-2, WS/WE24-2, DC




② LED signal strength indicator
⑩ Adjustment sensing range (WT) / sensitivity (WL, WS/WE)
⑪ Light/dark selector
⑫ NPN/PNP changeover switch

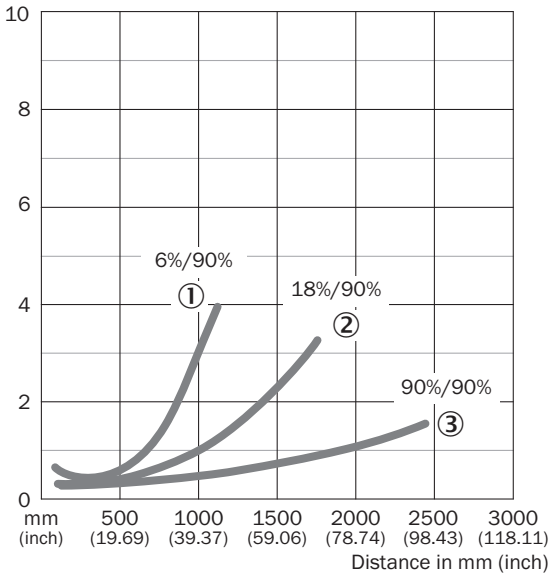
## Connection diagram

Cd-117



## Characteristic curve

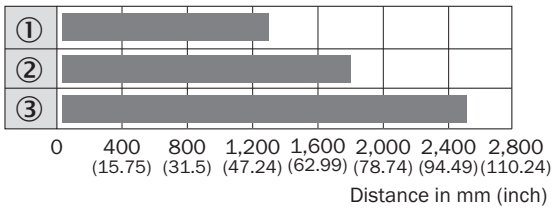
WT24-2, infrared light




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

## Sensing range diagram

WT24-2, infrared light

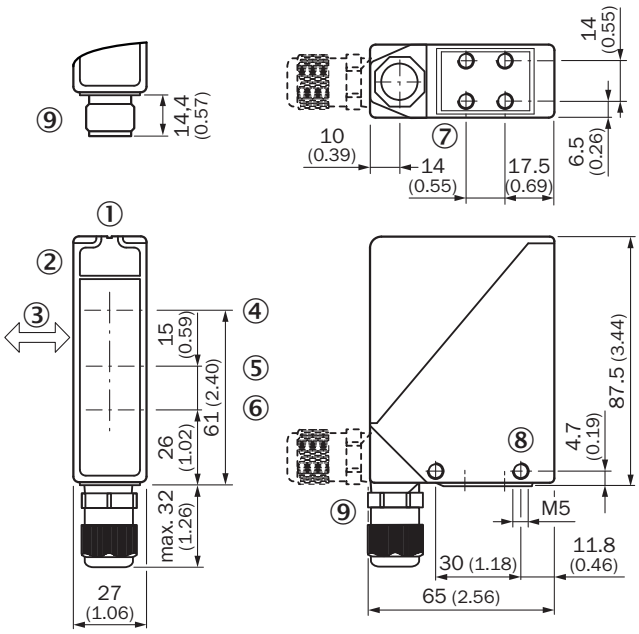



Sensing range

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

## 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/W24-2

| | Brief description | Type | Part no. |
|---|---|---|---|
| Universal bar clamp systems | | | |
|  | Universal bar clamp for mounting bars with 12 mm diameter, Zinc diecast, without mounting plate and screws | BEF-KHS-KH3 | 5322626 |
|  | Plate N04 for universal clamp, steel, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware | BEF-KHS-N04 | 2051610 |
| Device protection (mechanical) | | | |
|  | Water cooling plate | BEF-KP-W24 | 2015071 |
|  | Dust protection tube, air-purged, Aluminum (anodised), mounting hardware included | OBS-W24 | 2015069 |

| | Brief description | Type | Part no. |
|---|---|---|---|
|  | Weather hood for universal clamp bracket, steel, zinc coated, mounting hardware included | OBW-KHS-M01 | 2023240 |
|  | Weather hood, Aluminum (anodised), mounting hardware included | OBW-W24 | 2015070 |
|  | | WSG1-01 | 1018470 |
| Mounting brackets and plates | | | |
|  | Mounting bracket, small, Stainless steel, without mounting hardware | BEF-WK-W24 | 4027532 |
|  | Mounting bracket, Stainless steel (1.4301), mounting hardware included | BEF-WN-W24 | 2015248 |
| Alignment aids | | | |
|  | Adapter for alignment aid AR60 | Adapter AR60 for W24-2 | 4032976 |

# 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