chanhvinh.com

Product data sheet




# WT24-2V540S10

## W24

**COMPACT PHOTOELECTRIC SENSORS**

SICK
Sensor Intelligence.

chanhvinh.com

# WT24-2V540S10 | W24

COMPACT PHOTOELECTRIC SENSORS



Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| WT24-2V540S10 | 1018945 |

Other models and accessories → 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 ... 1,200 mm [1] |
| **Sensing range** | 100 mm ... 1,200 mm [1] |
| **Type of light** | Visible red light |
| **Light source** | LED [2] |
| **Light spot size (distance)** | Ø 40 mm (1,200 mm) |
| **Adjustment** | Potentiometer |
| **Alarm output** | ✓ |
| **Special features** | Front lense made of glass |

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

### Mechanics/electronics

| | |
|---|---|
| **Supply voltage $U_B$** | 10 V DC ... 30 V DC [1] |
| **Ripple** | < 5 $V_{pp}$ [2] |

[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.

chanhvinh.com



| | |
|---|---|
| **Current consumption** | 50 mA [3] |
| **Switching output** | NPN, 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, 5-pin |
| **Circuit protection** | A [6]<br>C [7]<br>D [8] |
| **Protection class** | II [9] |
| **Weight** | 350 g |
| **Special device** | ✓ |
| **Housing material** | PTFE coating, 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 temperature, storage** | –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.

## Safety-related parameters

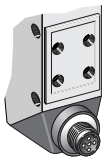
| | |
|---|---|
| **$MTTF_D$** | 796 years |
| **$DC_{avg}$** | 0 % |

## 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 |

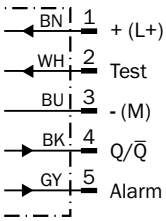
| | |
|---|---|
| **ECLASS 12.0** | 27270904 |
| **ETIM 5.0** | EC002719 |
| **ETIM 6.0** | EC002719 |
| **ETIM 7.0** | EC002719 |
| **ETIM 8.0** | EC002719 |
| **UNSPSC 16.0901** | 39121528 |

## Connection type



## Connection diagram

Cd-150

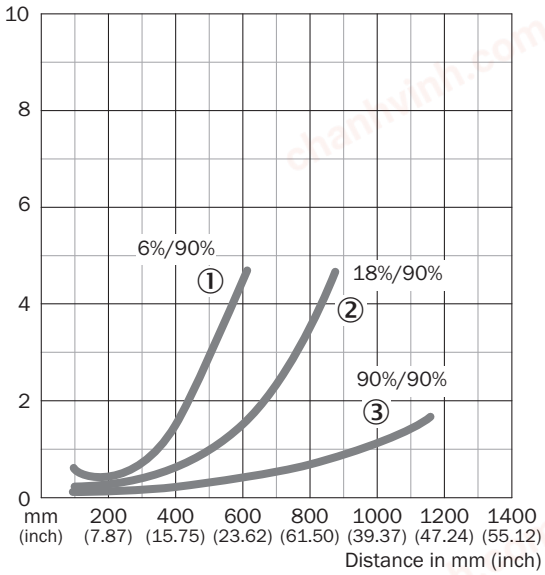


chanhvinh.com



## Characteristic curve

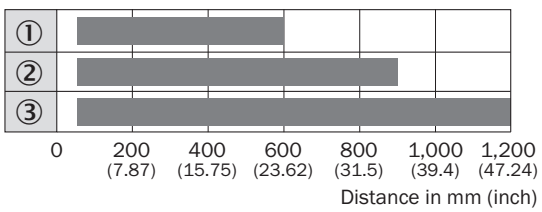
WT24-2, red light




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, red light




Sensing range

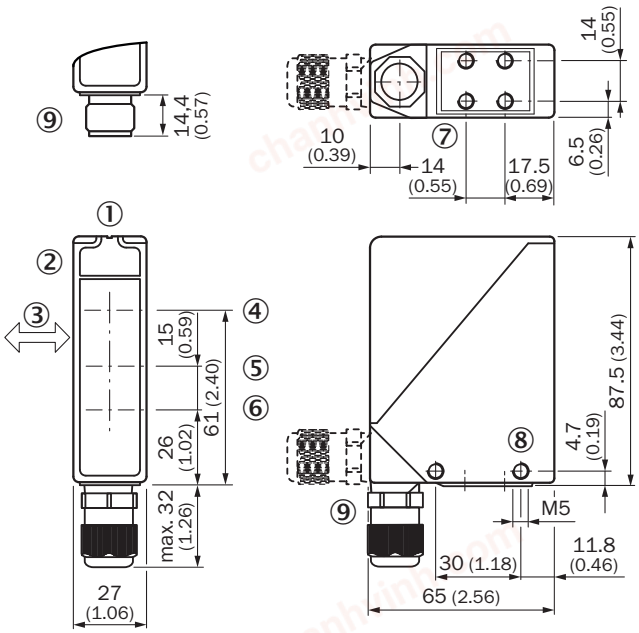
① Sensing range on black, 6% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on white, 90% remission factor

# WT24-2V540S10 | W24

COMPACT PHOTOELECTRIC SENSORS

## 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

| | Brief description | Type | Part no. |
|---|---|---|---|
| Mounting brackets and plates | | | |
|  | Mounting bracket, large, stainless steel, without mounting hardware for the sensor | BEF-WG-W24 | 4026324 |
| Plug connectors and cables | | | |
|  | • **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals | YF2A14-050VB3XLEAX | 2096235 |

chanhvinh.com



# 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



SICK
Sensor Intelligence.