



WS/WE24-2V230

W24

COMPACT PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|---------------|----------|
| WS/WE24-2V230 | 1017876 |

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

Detailed technical data

Features

| | |
|--|-----------------------------------|
| Functional principle | Through-beam photoelectric sensor |
| Dimensions (W x H x D) | 27 mm x 87.5 mm x 65 mm |
| Housing design (light emission) | Rectangular |
| Sensing range max. | 0 m ... 60 m |
| Sensing range | 0 m ... 50 m |
| Focus | Approx. 1° |
| Type of light | Visible red light |
| Light source | LED ¹⁾ |
| Light spot size (distance) | Ø 700 mm (50 m) |
| Angle of dispersion | Approx. 1° |
| Adjustment | Potentiometer |
| Alarm output | ✓ |

¹⁾ 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⁾ |
| Power consumption, sender | 50 mA ³⁾ |

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.

| | |
|---|---|
| Power consumption, receiver | 40 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⁾ |
| Angle of reception | Approx. 2.5° |
| Connection type | Terminal connection with M16 gland |
| Circuit protection | A ⁶⁾ C ⁷⁾ D ⁸⁾ |
| Protection class | II ⁹⁾ |
| Weight | 660 g |
| Housing material | Metal, zinc diecast |
| Optics material | Plastic, PMMA |
| 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 |
| UL File No. | NRKH.E181493 & NRKH7.E181493 |
| Part number of individual components | 2021156 WS24-2D230 2021419 WE24-2V230 |

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 | 378 years |
| DC_{avg} | 0 % |
| T_M (mission time) | 20 years |

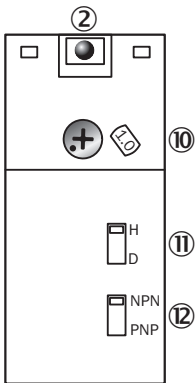
Classifications

| | |
|---------------------|----------|
| ECLASS 5.0 | 27270901 |
| ECLASS 5.1.4 | 27270901 |
| ECLASS 6.0 | 27270901 |
| ECLASS 6.2 | 27270901 |
| ECLASS 7.0 | 27270901 |
| ECLASS 8.0 | 27270901 |
| ECLASS 8.1 | 27270901 |

| | |
|-----------------------|----------|
| ECLASS 9.0 | 27270901 |
| ECLASS 10.0 | 27270901 |
| ECLASS 11.0 | 27270901 |
| ECLASS 12.0 | 27270901 |
| ETIM 5.0 | EC002716 |
| ETIM 6.0 | EC002716 |
| ETIM 7.0 | EC002716 |
| ETIM 8.0 | EC002716 |
| UNSPSC 16.0901 | 39121528 |

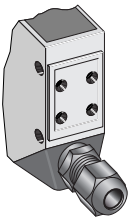
Adjustments

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



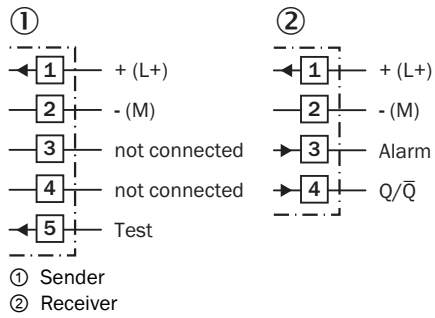
- ② LED signal strength indicator
- ⑩ Adjustment sensing range (WT) / sensitivity (WL, WS/WE)
- ⑪ Light/dark selector
- ⑫ NPN/PNP changeover switch

Connection type



Connection diagram

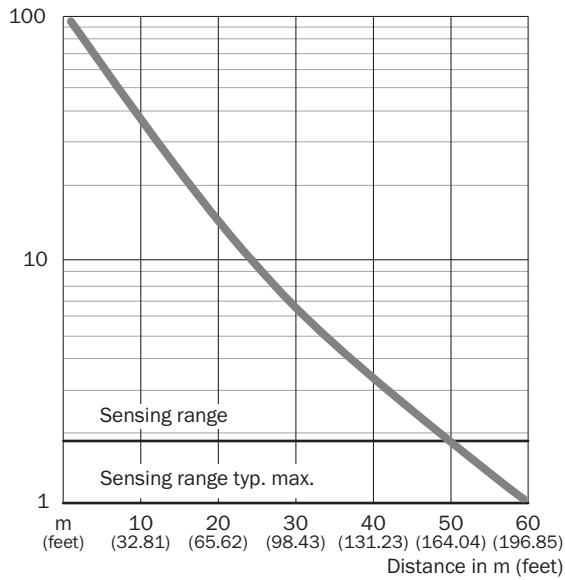
Cd-160



Characteristic curve

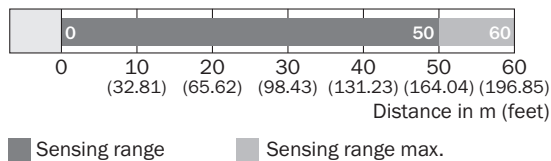
WS/WE24-2

Function reserve



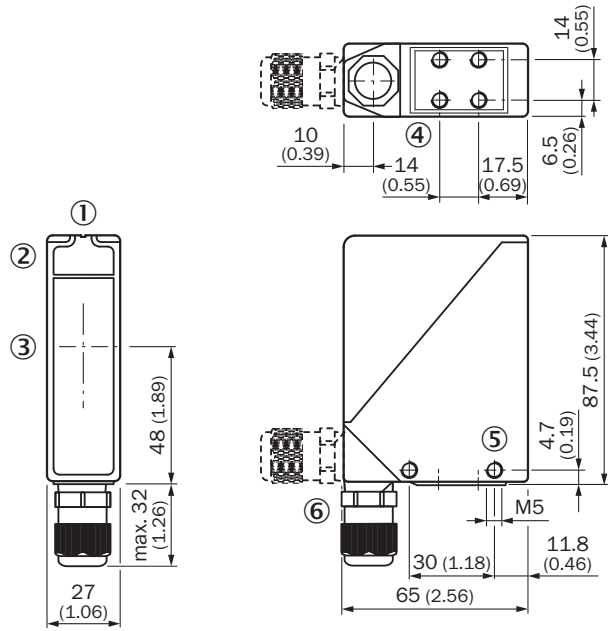
Sensing range diagram

WS/WE24-2



Dimensional drawing (Dimensions in mm (inch))


WS/WE24-2



- ① Alignment sight
- ② LED signal strength indicator
- ③ Center of optical axis
- ④ M5 threaded mounting hole, 6 mm deep
- ⑤ M5 threaded mounting hole, through-hole
- ⑥ 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 |

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.”

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