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DATA SHEET

# WL24-2R230

W24  
Photoelectric sensors

# SICK

Sensor Intelligence



Illustration may differ

# PHOTOELECTRIC SENSORS

## WL24-2R230

### ORDERING INFORMATION

| Type       | part no. |
|------------|----------|
| WL24-2R230 | 1017857  |

Further device versions and accessories at [www.sick.com/W24](http://www.sick.com/W24)



### DETAILED TECHNICAL DATA

#### FEATURES

|                                 |                                                       |
|---------------------------------|-------------------------------------------------------|
| Functional principle            | Photoelectric retro-reflective sensor                 |
| Functional principle detail     | With minimum distance to reflector (dual lens system) |
| 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 ... 22 m <sup>1)</sup>                            |
| Sensing range                   | 0 m ... 15 m <sup>1)</sup>                            |
| Type of light                   | Visible red light                                     |
| Light source                    | LED <sup>2)</sup>                                     |
| Light spot size (distance)      | Ø 250 mm (15 m)                                       |
| Adjustment                      | Potentiometer                                         |

<sup>1)</sup> Reflector PL80A.

<sup>2)</sup> Average service life: 100,000 h at T<sub>u</sub> = +25 °C.

**MECHANICS/ELECTRONICS**

|                                       |                                                                                                                                                                                                                                                           |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Supply voltage $U_s$                  | 20 V AC/DC ... 250 V AC/DC                                                                                                                                                                                                                                |
| Power consumption                     | < 2 VA                                                                                                                                                                                                                                                    |
| Switching output                      | Relay, electrically isolated <sup>1)</sup>                                                                                                                                                                                                                |
| Output function                       | Change-over contacts                                                                                                                                                                                                                                      |
| Switching mode                        | Light/dark switching <sup>1)</sup>                                                                                                                                                                                                                        |
| Switching mode selector               | Selectable via light/dark selector                                                                                                                                                                                                                        |
| Switching current (switching voltage) | 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) |
| Response time                         | ≤ 10 ms                                                                                                                                                                                                                                                   |
| Switching frequency                   | 10 Hz <sup>2)</sup>                                                                                                                                                                                                                                       |
| Connection type                       | Terminal connection with M16 gland                                                                                                                                                                                                                        |
| Circuit protection                    | A <sup>3)</sup><br>C <sup>4)</sup>                                                                                                                                                                                                                        |
| Protection class                      | II <sup>5)</sup>                                                                                                                                                                                                                                          |
| Weight                                | 330 g                                                                                                                                                                                                                                                     |
| Polarisation filter                   | ✓                                                                                                                                                                                                                                                         |
| Housing material                      | Metal, zinc diecast                                                                                                                                                                                                                                       |
| Optics material                       | Plastic, PMMA                                                                                                                                                                                                                                             |
| Enclosure rating                      | IP67                                                                                                                                                                                                                                                      |
| Usage category                        | AC-15, DC-13<br>According to EN 60947-1                                                                                                                                                                                                                   |
| Ambient operating temperature         | -40 °C ... +60 °C                                                                                                                                                                                                                                         |
| Ambient temperature, storage          | -40 °C ... +75 °C                                                                                                                                                                                                                                         |
| UL File No.                           | NRKH.E181493 & NRKH7.E181493                                                                                                                                                                                                                              |

<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 =  $V_s$  connections reverse-polarity protected.

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

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

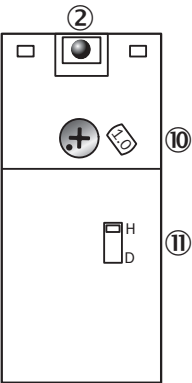
**SAFETY-RELATED PARAMETERS**

|                               |           |
|-------------------------------|-----------|
| MTTF <sub>D</sub>             | 478 years |
| DC <sub>avg</sub>             | 0 %       |
| T <sub>M</sub> (mission time) | 20 years  |

**CERTIFICATES**

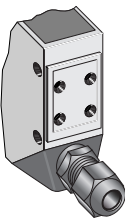
|                                                   |   |
|---------------------------------------------------|---|
| EU declaration of conformity                      | ✓ |
| UK declaration of conformity                      | ✓ |
| ACMA declaration of conformity                    | ✓ |
| Moroccan declaration of conformity                | ✓ |
| China RoHS                                        | ✓ |
| CCC certificate                                   | ✓ |
| cULus certificate                                 | ✓ |
| Photobiological safety (DIN EN 62471) certificate | ✓ |

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

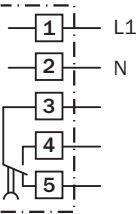


- ② LED signal strength indicator
- ⑩ Adjustment sensing range (WT) / sensitivity (WL, WS/WE)
- ⑪ Light/dark selector

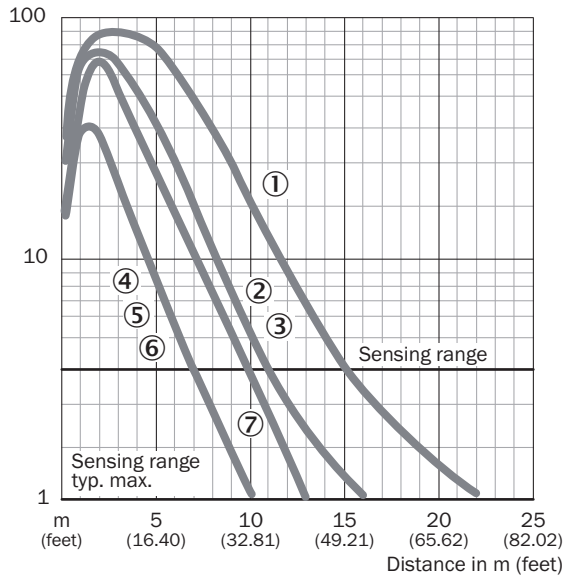
CONNECTION TYPE



CONNECTION DIAGRAM CD-167

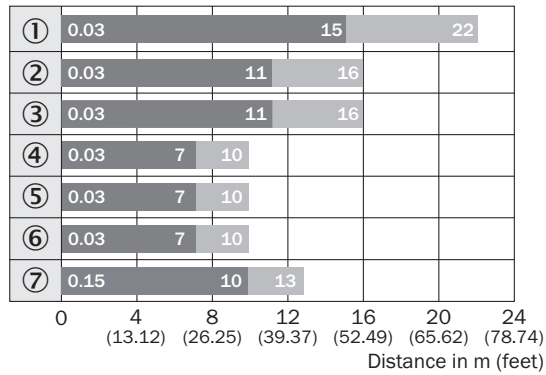


# CHARACTERISTIC CURVE



- ① Reflector PL80A
- ② Reflector PL50A
- ③ Reflector PL40A
- ④ Reflector PL30A
- ⑤ Reflector PL20A
- ⑥ Reflective tape Diamond Grade
- ⑦ Reflector C110A

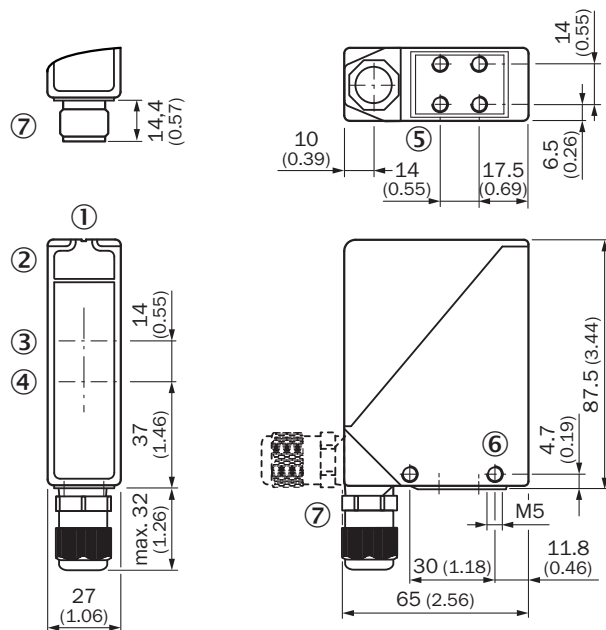
# SENSING RANGE DIAGRAM



■ Sensing range      ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector PL50A
- ③ Reflector PL40A
- ④ Reflector PL30A
- ⑤ Reflector PL20A
- ⑥ Reflective tape Diamond Grade
- ⑦ Reflector C110A

**DIMENSIONAL DRAWING WL24-2**



Dimensions in mm (inch)

- ① Alignment sight
- ② LED signal strength indicator
- ③ Center of optical axis, sender
- ④ Center of optical axis, receiver
- ⑤ M5 threaded mounting hole, 6 mm deep
- ⑥ M5 threaded mounting hole, through-hole
- ⑦ M16 screw fixing and plug rotatable by 90°

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at [www.sick.com/1017857](http://www.sick.com/1017857)



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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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