



# WL24-2X230

## W24

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type       | Part no. |
|------------|----------|
| WL24-2X230 | 1026036  |

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

### Detailed technical data

#### Features

|  |                                       |
|--|---------------------------------------|
| <b>Functional principle</b>            | Photoelectric retro-reflective sensor |
| <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>              | 0 m ... 22 m <sup>1)</sup>            |
| <b>Sensing range</b>                   | 0 m ... 15 m <sup>1)</sup>            |
| <b>Type of light</b>                   | Visible red light                     |
| <b>Light source</b>                    | LED <sup>2)</sup>                     |
| <b>Light spot size (distance)</b>      | Ø 250 mm (15 m)                       |
| <b>Adjustment</b>                      | Potentiometer                         |
| <b>Special applications</b>            | Explosive areas                       |

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

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

#### Mechanics/electronics

|                                     |                                     |
|-------------------------------------|-------------------------------------|
| <b>Supply voltage U<sub>B</sub></b> | 5 V DC ... 15.5 V DC <sup>1)</sup>  |
| <b>Ripple</b>                       | < 0.4 V <sub>pp</sub> <sup>2)</sup> |
| <b>Switching output</b>             | NAMUR                               |

<sup>1)</sup> Limit values, supply with switching amplifier EN2Ex (internal resistor approx. 1 kOhm).

<sup>2)</sup> May not exceed or fall below U<sub>V</sub> tolerances.

<sup>3)</sup> Signal transit time with resistive load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>6)</sup> C = interference suppression.

<sup>7)</sup> Reference voltage: 50 V DC.

<sup>8)</sup> For connection to a separately certified intrinsically safe circuit only.

|  |  |
|--|--|
| <b>Switching mode</b>                          | Light switching  |
| <b>Response time</b>                           | ≤ 10 ms <sup>3)</sup>  |
| <b>Switching frequency</b>                     | 50 Hz <sup>4)</sup>  |
| <b>Connection type</b>                         | Terminal connection with M16 gland                               |
| <b>Circuit protection</b>                      | A <sup>5)</sup><br>C <sup>6)</sup>                               |
| <b>Protection class</b>                        | II <sup>7)</sup>   |
| <b>Weight</b>                                  | 330 g  |
| <b>Polarisation filter</b>                     | ✓  |
| <b>Housing material</b>                        | Metal, zinc diecast  |
| <b>Optics material</b>                         | Glass, glass   |
| <b>Enclosure rating</b>                        | IP67   |
| <b>Type approval certificate</b>               | PTB 08 ATEX 2029   |
| <b>Certificate (IECEX)</b>                     | IECEX PTB 14.0031  |
| <b>ATEX marking</b>                            | Ex II 2G Ex ia op is IIC T4 Gb according to directive 2014/34/EU |
| <b>Ex area category</b>                        | 2G   |
| <b>Input voltage U<sub>i</sub> max.</b>        | ≤ 15.5 V <sup>8)</sup>   |
| <b>Input power P<sub>i</sub> max.</b>          | ≤ 100 mW <sup>8)</sup>   |
| <b>Input current I<sub>i</sub> max.</b>        | ≤ 53 mA <sup>8)</sup>  |
| <b>Internal capacitance C<sub>i</sub> max.</b> | 80 nF <sup>8)</sup>  |
| <b>Internal inductance L<sub>i</sub> max.</b>  | 0 μH <sup>8)</sup>   |
| <b>Ambient operating temperature</b>           | -20 °C ... +60 °C  |
| <b>Ambient temperature, storage</b>            | -25 °C ... +70 °C  |

<sup>1)</sup> Limit values, supply with switching amplifier EN2Ex (internal resistor approx. 1 kOhm).

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Signal transit time with resistive load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>6)</sup> C = interference suppression.

<sup>7)</sup> Reference voltage: 50 V DC.

<sup>8)</sup> For connection to a separately certified intrinsically safe circuit only.

### Safety-related parameters

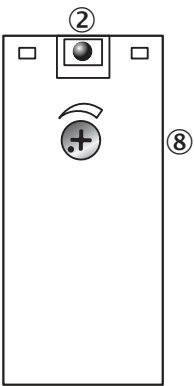
|                         |           |
|-------------------------|-----------|
| <b>MTTF<sub>D</sub></b> | 258 years |
| <b>DC<sub>avg</sub></b> | 0 %       |

### Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270902 |
| <b>ECLASS 5.1.4</b> | 27270902 |
| <b>ECLASS 6.0</b>   | 27270902 |
| <b>ECLASS 6.2</b>   | 27270902 |
| <b>ECLASS 7.0</b>   | 27270902 |
| <b>ECLASS 8.0</b>   | 27270902 |
| <b>ECLASS 8.1</b>   | 27270902 |

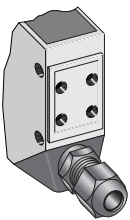
|                       |          |
|-----------------------|----------|
| <b>ECLASS 9.0</b>     | 27270902 |
| <b>ECLASS 10.0</b>    | 27270902 |
| <b>ECLASS 11.0</b>    | 27270902 |
| <b>ECLASS 12.0</b>    | 27270902 |
| <b>ETIM 5.0</b>       | EC002717 |
| <b>ETIM 6.0</b>       | EC002717 |
| <b>ETIM 7.0</b>       | EC002717 |
| <b>ETIM 8.0</b>       | EC002717 |
| <b>UNSPSC 16.0901</b> | 39121528 |

### Adjustments



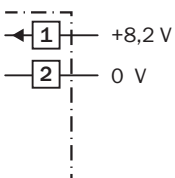
- ② LED signal strength indicator
- ⑧ Sensitivity control

### Connection type

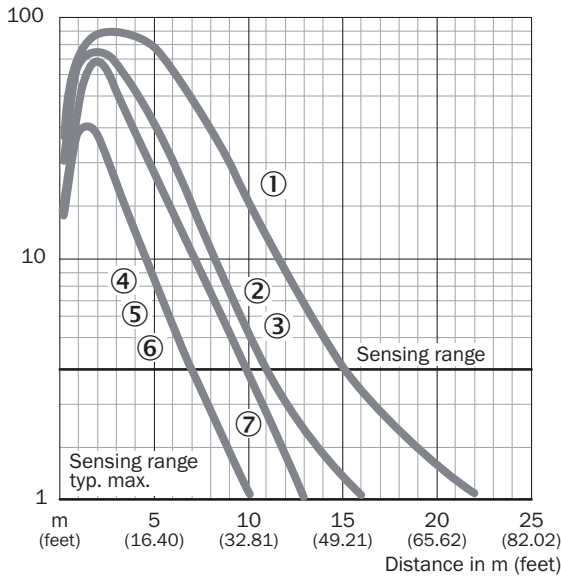


### Connection diagram

Cd-050

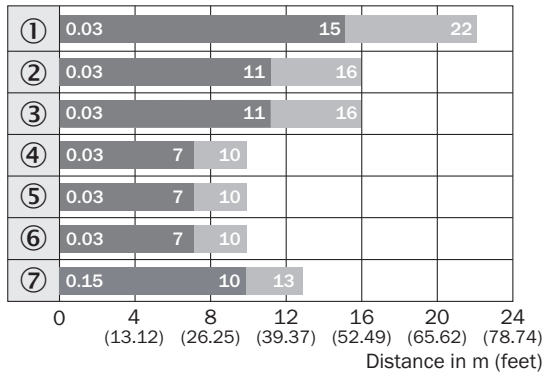


Characteristic curve



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

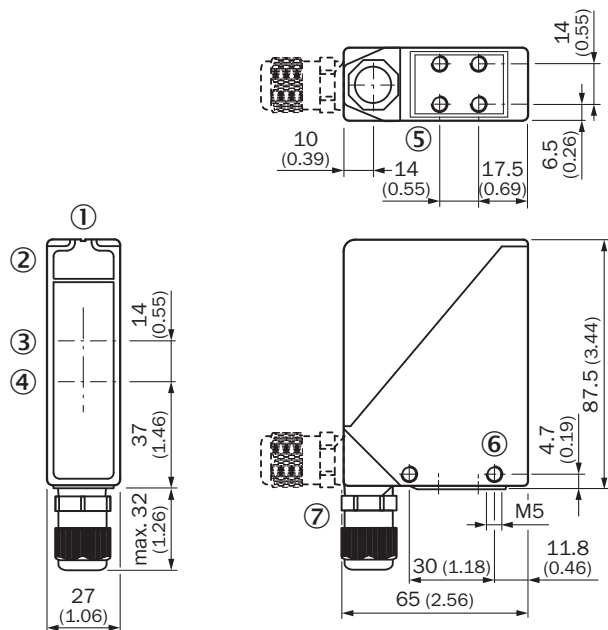
Sensing range diagram



■ 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 (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 rotatable by 90°

Recommended accessories

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

|   | Brief description  | Type        | Part no. |
|---|--|-------------|----------|
| <b>Mounting brackets and plates</b>   |  |             |          |
|  | Mounting bracket, large, stainless steel, without mounting hardware for the sensor | BEF-WG-W24  | 4026324  |
|  | Universal mounting bracket for reflectors, steel, zinc coated                      | BEF-WN-REFX | 2064574  |
| <b>Reflectors</b>   |  |             |          |
|  | Rectangular, screw connection, 84 mm x 84 mm, PMMA/ABS, Screw-on, 2 hole mounting  | PL80A       | 1003865  |

## 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)