

# WL14-2P430P04

W14

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

| Type          | part no. |
|---------------|----------|
| WL14-2P430P04 | 1041158  |

Other models and accessories → [www.sick.com/W14](http://www.sick.com/W14)

### Detailed technical data

#### Features

|                                        |                                       |
|----------------------------------------|---------------------------------------|
| <b>Functional principle</b>            | Photoelectric retro-reflective sensor |
| <b>Functional principle detail</b>     | Dual lens                             |
| <b>Dimensions (W x H x D)</b>          | 17.6 mm x 75.5 mm x 33.5 mm           |
| <b>Housing design (light emission)</b> | Rectangular                           |
| <b>Sensing range max.</b>              | 0.15 m ... 6 m <sup>1)</sup>          |
| <b>Sensing range</b>                   | 0.15 m ... 4 m <sup>1)</sup>          |
| <b>Focus</b>                           | Approx. 2°                            |
| <b>Type of light</b>                   | Visible red light                     |
| <b>Light source</b>                    | LED <sup>2)</sup>                     |
| <b>Light spot size (distance)</b>      | Ø 140 mm (4 m)                        |
| <b>Angle of dispersion</b>             | Approx. 2°                            |
| <b>Wave length</b>                     | 645 nm                                |
| <b>Adjustment</b>                      | None                                  |

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

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

#### Mechanics/electronics

|                            |                                   |
|----------------------------|-----------------------------------|
| <b>Supply voltage</b>      | 10 V DC ... 30 V DC <sup>1)</sup> |
| <b>Ripple</b>              | < 5 V <sub>pp</sub> <sup>2)</sup> |
| <b>Current consumption</b> | 35 mA <sup>3)</sup>               |

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

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

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

|                                             |                                                       |
|---------------------------------------------|-------------------------------------------------------|
| <b>Switching output</b>                     | PNP                                                   |
| <b>Output function</b>                      | Complementary                                         |
| <b>Switching mode</b>                       | Light/dark switching                                  |
| <b>Output current <math>I_{\max}</math></b> | $\leq 100 \text{ mA}$                                 |
| <b>Response time</b>                        | $\leq 2.5 \text{ ms}^{4)}$                            |
| <b>Switching frequency</b>                  | $200 \text{ Hz}^{5)}$                                 |
| <b>Connection type</b>                      | Male connector M12, 4-pin                             |
| <b>Circuit protection</b>                   | A <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup> |
| <b>Weight</b>                               | 40 g                                                  |
| <b>Polarisation filter</b>                  | ✓                                                     |
| <b>Special device</b>                       | ✓                                                     |
| <b>Housing material</b>                     | Plastic, ABS                                          |
| <b>Optics material</b>                      | Plastic, PMMA                                         |
| <b>Enclosure rating</b>                     | IP67                                                  |
| <b>Items supplied</b>                       | Mounting bracket BEF-KHP-C01, Sensor premounted       |
| <b>Ambient operating temperature</b>        | -25 °C ... +60 °C                                     |
| <b>Ambient temperature, storage</b>         | -40 °C ... +70 °C                                     |
| <b>UL File No.</b>                          | NRKH.E181493 & NRKH7.E181493                          |

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.

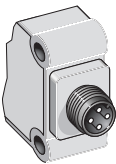
8) D = outputs overcurrent and short-circuit protected.

## Classifications

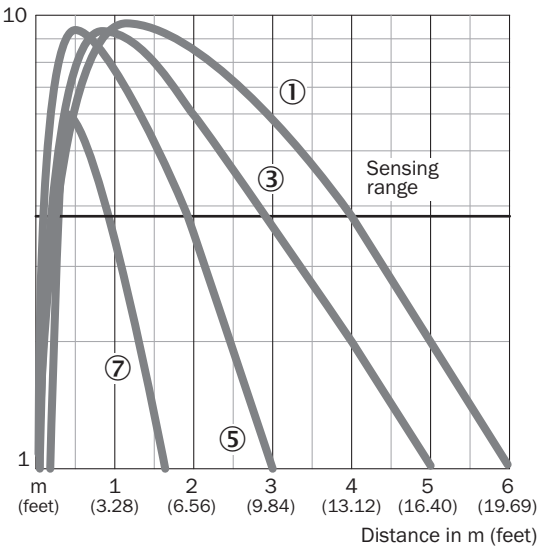
|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270902 |
| <b>ECLASS 5.1.4</b> | 27270902 |
| <b>ECLASS 6.0</b>   | 27270902 |
| <b>ECLASS 6.2</b>   | 27270902 |
| <b>ECLASS 7.0</b>   | 27270902 |
| <b>ECLASS 8.0</b>   | 27270902 |
| <b>ECLASS 8.1</b> 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

Connection type

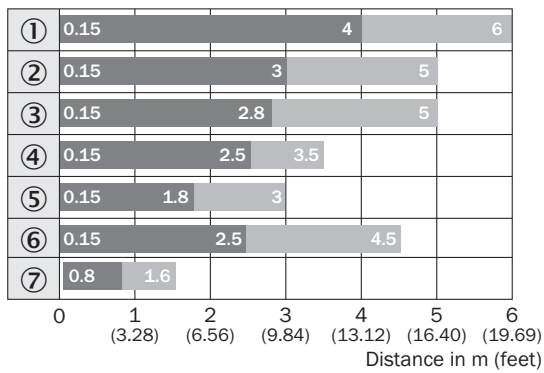


Characteristic curve WL14-2, 6 m



- ① Reflector PL80A
- ③ Reflector PL40A
- ⑤ Reflector PL20A
- ⑦ Reflective tape Diamond Grade

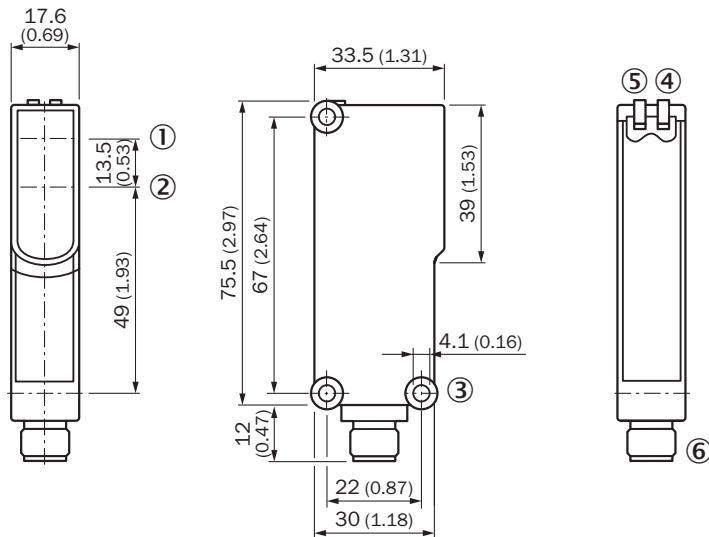
## Sensing range diagram WL14-2, 6 m



■ Sensing range    ■ Sensing range max.

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

## Dimensional drawing WL14-2



Dimensions in mm (inch)

- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Mounting hole  $\varnothing$  4.1 mm
- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: Supply voltage active
- ⑥ M12 male connector, 4-pin or 2 m cable

### Recommended accessories

Other models and accessories → [www.sick.com/W14](http://www.sick.com/W14)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                               | Type         | part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                 |              |          |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W14-2, W18-3</li> </ul>                                                                                                        | BEF-WN-W14   | 2019084  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket with hinged arm</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W14-2, W18-3</li> </ul>                                                                                        | BEF-WN-W18   | 2009317  |
|   | <ul style="list-style-type: none"> <li><b>Description:</b> Universal mounting bracket for reflectors</li> <li><b>Dimensions (W x H x L):</b> 85 mm x 90 mm x 35 mm</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Suitable for:</b> C110A, P250, PL20, PL30A, PL40A, PL80A</li> </ul>                                                  | BEF-WN-REFX  | 2064574  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Plate N11N for universal clamp bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li> <li><b>Items supplied:</b> Universal clamp (5322627), mounting hardware</li> <li><b>Usable for:</b> DeltaPac, Glare, WTD20E</li> </ul> | BEF-KHS-N11N | 2071081  |
| reflectors and optics                                                               |                                                                                                                                                                                                                                                                                                                                                                                 |              |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Rectangular, screw connection</li> <li><b>Dimensions:</b> 40 mm 60 mm</li> <li><b>Ambient operating temperature:</b> -30 °C ... +65 °C</li> </ul>                                                                                                                                                                    | PL40A        | 1012720  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Type               | part no. |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |          |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li></ul> | YF2A14-050UB3XLEAX | 2095608  |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 5 m, 4-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>                                                      | YF2A14-050VB3XLEAX | 2096235  |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li><li>• <b>Description:</b> Unshielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> ≤ 0.75 mm²</li></ul>                                                                                                                                                                                            | STE-1204-G         | 6009932  |

## 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)