



# VL12-2P430

V12

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type       | part no. |
|------------|----------|
| VL12-2P430 | 6026220  |

Other models and accessories → [www.sick.com/V12](http://www.sick.com/V12)

Detailed technical data

Features

|                                 |                                       |
|---------------------------------|---------------------------------------|
| Functional principle            | Photoelectric retro-reflective sensor |
| Dimensions (W x H x D)          | 12 mm x 12 mm x 66 mm                 |
| Housing design (light emission) | Cylindrical                           |
| Housing length                  | 66 mm                                 |
| Thread diameter (housing)       | Round connector M12 x 1               |
| Sensing range max.              | 0.03 m ... 2.8 m <sup>1)</sup>        |
| Sensing range                   | 0.03 m ... 2.3 m <sup>1)</sup>        |
| Focus                           | Approx. 2.3°                          |
| Type of light                   | Visible red light                     |
| Light source                    | LED <sup>2)</sup>                     |
| Light spot size (distance)      | Ø 80 mm (2 m)                         |
| Angle of dispersion             | Approx. 2.3°                          |
| Wave length                     | 660 nm                                |
| Adjustment                      | 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 <math>U_B</math></b>     | 10 V DC ... 30 V DC <sup>1)</sup>                                        |
| <b>Ripple</b>                              | $\pm 10\%$ <sup>2)</sup>                                                 |
| <b>Current consumption</b>                 | 20 mA <sup>3)</sup>                                                      |
| <b>Switching output</b>                    | PNP                                                                      |
| <b>Switching mode</b>                      | Light/dark switching                                                     |
| <b>Switching mode selector</b>             | Selectable via L/D control cable                                         |
| <b>Output current <math>I_{max}</math></b> | $\leq 100$ mA <sup>3)</sup>                                              |
| <b>Response time</b>                       | $\leq 1.25$ ms <sup>4)</sup>                                             |
| <b>Switching frequency</b>                 | 400 Hz <sup>5)</sup>                                                     |
| <b>Connection type</b>                     | Male connector M12, 4-pin                                                |
| <b>Circuit protection</b>                  | A <sup>6)</sup><br>B <sup>7)</sup><br>C <sup>8)</sup><br>D <sup>9)</sup> |
| <b>Protection class</b>                    | III                                                                      |
| <b>Weight</b>                              | 18 g                                                                     |
| <b>Polarisation filter</b>                 | ✓                                                                        |
| <b>Housing material</b>                    | Metal, Nickel-plated brass/PA                                            |
| <b>Optics material</b>                     | Plastic, PMMA                                                            |
| <b>Enclosure rating</b>                    | IP67                                                                     |
| <b>Ambient operating temperature</b>       | -25 °C ... +70 °C                                                        |
| <b>Ambient temperature, storage</b>        | -25 °C ... +70 °C                                                        |
| <b>UL File No.</b>                         | NMFT2.E175606                                                            |

<sup>1)</sup> Limit values.

<sup>2)</sup> May not fall below or exceed  $U_V$  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 =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

## Safety-related parameters

|                         |             |
|-------------------------|-------------|
| <b>MTTF<sub>D</sub></b> | 1,139 years |
| <b>DC<sub>avg</sub></b> | 0 %         |

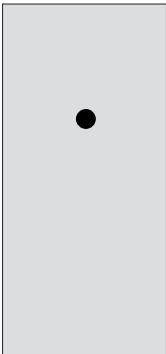
## Certificates

|                                           |   |
|-------------------------------------------|---|
| <b>EU declaration of conformity</b>       | ✓ |
| <b>UK declaration of conformity</b>       | ✓ |
| <b>ACMA declaration of conformity</b>     | ✓ |
| <b>Moroccan declaration of conformity</b> | ✓ |
| <b>China-RoHS</b>                         | ✓ |
| <b>cRUus certificate</b>                  | ✓ |

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 |

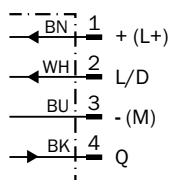
Adjustments



Connection type

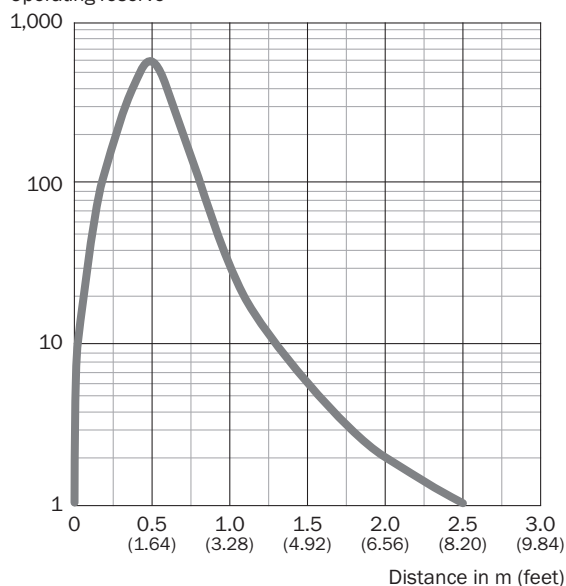


## Connection diagram Cd-087

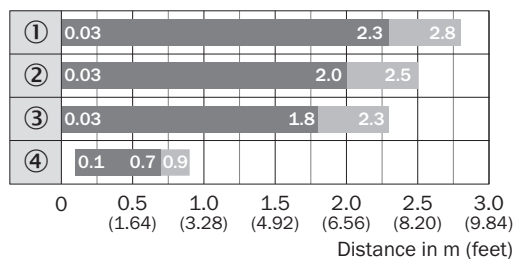


## Characteristic curve

Operating reserve



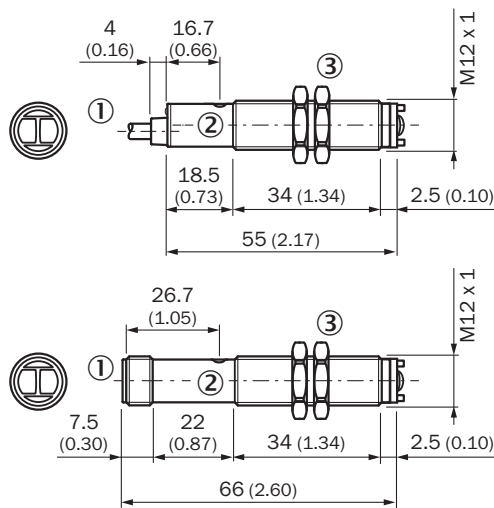
## Sensing range diagram



■ Sensing range      ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector C110
- ③ Reflector PL50A, PL40A, P250
- ④ Reflective tape Diamond Grade

## Dimensional drawing



Dimensions in mm (inch)

- ① Cable or connector M12, 4-pin
- ② Yellow LED indicator:
- ② - lights continuously:
- ② reception signal > reserve factor 2
- ② - blinks: Reception signal < reserve factor 2 but > switching threshold 1
- ③ Fastening nuts (2x); width across 17, metal

## Recommended accessories

Other models and accessories → [www.sick.com/V12](http://www.sick.com/V12)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                              | Type        | part no. |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                |             |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for M12 sensors</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Without mounting hardware</li> </ul>                                                                                   | BEF-WN-M12  | 5308447  |
|  | <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  |
| reflectors and optics                                                               |                                                                                                                                                                                                                                                                                                                                |             |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Rectangular, screw connection</li> <li><b>Dimensions:</b> 51 mm 61 mm</li> <li><b>Ambient operating temperature:</b> -30 °C ... +65 °C</li> </ul>                                                                                                                   | P250        | 5304812  |

|                                                                                   | 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, 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 mm<sup>2</sup></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)