



**ET3-P3228**  
ELF3

**CYLINDRICAL PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type      | Part no. |
|-----------|----------|
| ET3-P3228 | 1045211  |

Other models and accessories → [www.sick.com/ELF3](http://www.sick.com/ELF3)

## Detailed technical data

### Features

|                                        |                                |
|----------------------------------------|--------------------------------|
| <b>Functional principle</b>            | Photoelectric proximity sensor |
| <b>Functional principle detail</b>     | Background suppression         |
| <b>Dimensions (W x H x D)</b>          | 23.8 mm x 43.4 mm x 33.6 mm    |
| <b>Housing design (light emission)</b> | Hybrid                         |
| <b>Thread diameter (housing)</b>       | M18                            |
| <b>Sensing range max.</b>              | 0 mm ... 50 mm <sup>1)</sup>   |
| <b>Sensing range</b>                   | 0 mm ... 50 mm <sup>1)</sup>   |
| <b>Type of light</b>                   | Infrared light                 |
| <b>Light source</b>                    | LED <sup>2)</sup>              |
| <b>Light spot size (distance)</b>      | 10.5 mm x 10.5 mm (50 mm)      |
| <b>Wave length</b>                     | 880 nm                         |
| <b>Adjustment</b>                      | None                           |

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

<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> | 20 mA <sup>3)</sup>               |
| <b>Switching output</b>    | PNP                               |

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

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

<sup>3)</sup> Without 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> D = outputs overcurrent and short-circuit protected.

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

|                                             |                                             |
|---------------------------------------------|---------------------------------------------|
| <b>Switching mode</b>                       | Light switching                             |
| <b>Output current <math>I_{\max}</math></b> | $\leq 50 \text{ mA}$                        |
| <b>Switching frequency</b>                  | 200 Hz <sup>4)</sup>                        |
| <b>Connection type</b>                      | Male connector M12, 4-pin                   |
| <b>Circuit protection</b>                   | A <sup>5)</sup><br>D <sup>6)</sup>          |
| <b>Protection class</b>                     | III <sup>7)</sup>                           |
| <b>Weight</b>                               | + 0.014 kg, + 0.03 lbs                      |
| <b>Housing material</b>                     | Plastic, Glass fiber reinforced ABS plastic |
| <b>Enclosure rating</b>                     | IP67                                        |
| <b>Items supplied</b>                       | Mounting nut M18                            |
| <b>Ambient operating temperature</b>        | -25 °C ... +50 °C                           |
| <b>Ambient temperature, storage</b>         | -40 °C ... +70 °C                           |

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

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

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

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

<sup>5)</sup> A =  $V_S$  connections reverse-polarity protected.

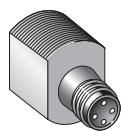
<sup>6)</sup> D = outputs overcurrent and short-circuit protected.

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

## Classifications

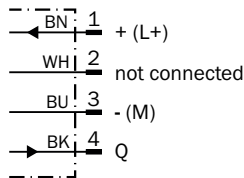
|                       |          |
|-----------------------|----------|
| <b>eCl@ss 5.0</b>     | 27270903 |
| <b>eCl@ss 5.1.4</b>   | 27270903 |
| <b>eCl@ss 6.0</b>     | 27270903 |
| <b>eCl@ss 6.2</b>     | 27270903 |
| <b>eCl@ss 7.0</b>     | 27270903 |
| <b>eCl@ss 8.0</b>     | 27270903 |
| <b>eCl@ss 8.1</b>     | 27270903 |
| <b>eCl@ss 9.0</b>     | 27270903 |
| <b>eCl@ss 10.0</b>    | 27270904 |
| <b>eCl@ss 11.0</b>    | 27270904 |
| <b>eCl@ss 12.0</b>    | 27270903 |
| <b>ETIM 5.0</b>       | EC001821 |
| <b>ETIM 6.0</b>       | EC001821 |
| <b>ETIM 7.0</b>       | EC002719 |
| <b>ETIM 8.0</b>       | EC002719 |
| <b>UNSPSC 16.0901</b> | 39121528 |

Connection type



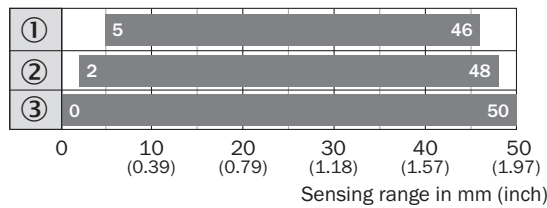
Connection diagram

Cd-066



Sensing range diagram

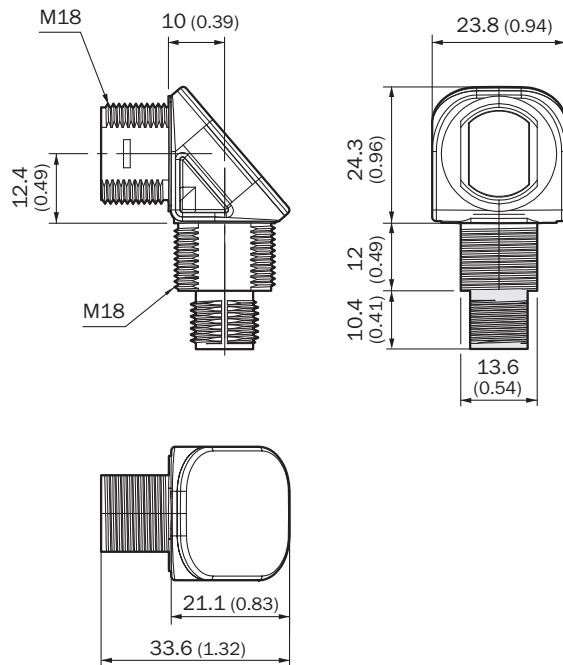
ET3, ET4, 50 mm



- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90% remission

## Dimensional drawing (Dimensions in mm (inch))

ET3, EL3, connector M12



## Recommended accessories

Other models and accessories → [www.sick.com/ELF3](http://www.sick.com/ELF3)

|                                                                                     | Brief description                                                                                                                     | Type               | Part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Mounting brackets and plates                                                        |                                                                                                                                       |                    |          |
|  | Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware                                                       | BEF-WN-M18         | 5308446  |
| Plug connectors and cables                                                          |                                                                                                                                       |                    |          |
|  | Head A: female connector, M12, 4-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF2A14-050VB3XLEAX | 2096235  |
|  | Head A: male connector, M12, 4-pin, straight<br>Cable: unshielded                                                                     | 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)