



# ZT1-P4215

Z-Sensor

CYLINDRICAL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type      | Part no. |
|-----------|----------|
| ZT1-P4215 | 1045567  |

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

## Detailed technical data

### Features

|                                        |                                           |
|----------------------------------------|-------------------------------------------|
| <b>Sensor/ detection principle</b>     | Photoelectric proximity sensor, Energetic |
| <b>Dimensions (W x H x D)</b>          | 13.6 mm x 34.8 mm x 23 mm                 |
| <b>Housing design (light emission)</b> | Hybrid                                    |
| <b>Thread diameter (housing)</b>       | M18 x 1                                   |
| <b>Sensing range max.</b>              | 1 mm ... 100 mm <sup>1)</sup>             |
| <b>Sensing range</b>                   | 1 mm ... 100 mm                           |
| <b>Type of light</b>                   | Infrared light                            |
| <b>Light source</b>                    | LED <sup>2)</sup>                         |
| <b>Light spot size (distance)</b>      | Ø 20 mm (100 mm)                          |
| <b>Wave length</b>                     | 880 nm                                    |
| <b>Adjustment</b>                      | None                                      |

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033).

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</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>Power 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> Do not bend below 0 °C.

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

<sup>7)</sup> D = outputs overcurrent and short-circuit protected.

<sup>8)</sup> Reference voltage: 50 V DC.

|                                             |                                             |
|---------------------------------------------|---------------------------------------------|
| <b>Switching mode</b>                       | Light switching                             |
| <b>Output current <math>I_{\max}</math></b> | 50 mA                                       |
| <b>Switching frequency</b>                  | 200 Hz <sup>4)</sup>                        |
| <b>Connection type</b>                      | Cable, 3-wire, 2 m <sup>5)</sup>            |
| <b>Cable material</b>                       | PVC                                         |
| <b>Conductor cross-section</b>              | 0.23 mm <sup>2</sup>                        |
| <b>Circuit protection</b>                   | A <sup>6)</sup><br>D <sup>7)</sup>          |
| <b>Protection class</b>                     | III <sup>8)</sup>                           |
| <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 storage temperature</b>          | -40 °C ... +70 °C                           |
| <b>UL File No.</b>                          | NRKH.E189383 & NRKH7.E189383                |

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

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

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<sup>5)</sup> Do not bend below 0 °C.

<sup>6)</sup> A =  $V_S$  connections reverse-polarity protected.

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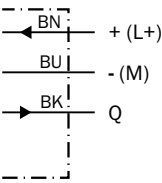
<sup>8)</sup> Reference voltage: 50 V DC.

## Classifications

|                       |          |
|-----------------------|----------|
| <b>ECI@ss 5.0</b>     | 27270904 |
| <b>ECI@ss 5.1.4</b>   | 27270904 |
| <b>ECI@ss 6.0</b>     | 27270904 |
| <b>ECI@ss 6.2</b>     | 27270904 |
| <b>ECI@ss 7.0</b>     | 27270904 |
| <b>ECI@ss 8.0</b>     | 27270904 |
| <b>ECI@ss 8.1</b>     | 27270904 |
| <b>ECI@ss 9.0</b>     | 27270904 |
| <b>ETIM 5.0</b>       | EC002719 |
| <b>ETIM 6.0</b>       | EC002719 |
| <b>UNSPSC 16.0901</b> | 39121528 |

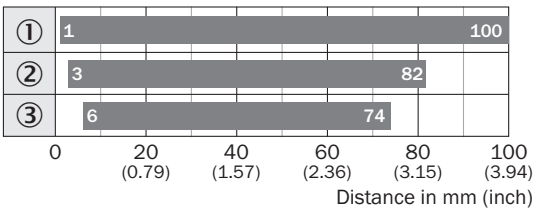
Connection diagram

Cd-043



Sensing range diagram

ZT1, 100 mm

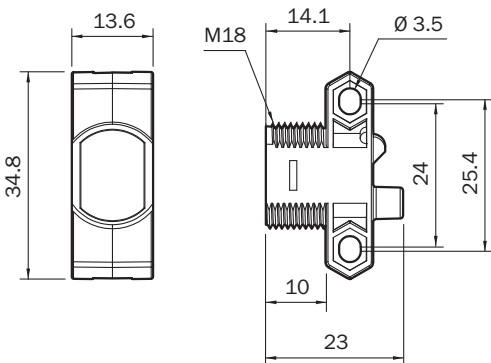


■ Sensing range    ■ Sensing range max.

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

Dimensional drawing (Dimensions in mm (inch))

ZT1, ZL1



## Recommended accessories

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

|                                                                                   | Brief description                                                             | Type       | Part no. |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------|----------|
| Plug connectors and cables                                                        |                                                                               |            |          |
|  | Head A: male connector, M8, 3-pin, straight<br>Head B: -<br>Cable: unshielded | STE-0803-G | 6037322  |

## 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)