

## CQ

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type              | Part no. |
|-------------------|----------|
| CQ28-10NNP-KW1S03 | 6049010  |

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

## Detailed technical data

### Features

|                                            |                                                             |
|--------------------------------------------|-------------------------------------------------------------|
| <b>Housing</b>                             | Rectangular                                                 |
| <b>Dimensions (W x H x D)</b>              | 28 mm x 46 mm x 5.5 mm                                      |
| <b>Sensing range <math>S_n</math></b>      | 1 mm ... 10 mm                                              |
| <b>Safe sensing range <math>S_a</math></b> | 7.2 mm                                                      |
| <b>Installation type</b>                   | Non-flush                                                   |
| <b>Switching frequency</b>                 | Approx. 10 Hz                                               |
| <b>Connection type</b>                     | Cable with M8 male connector, 4-pin, 0.2 m <sup>1)</sup>    |
| <b>Switching output</b>                    | NPN                                                         |
| <b>Output function</b>                     | NC or NO                                                    |
| <b>Electrical wiring</b>                   | DC 4-wire                                                   |
| <b>Adjustment</b>                          | Single teach-in button (Sensitivity)<br>Cable (Sensitivity) |
| <b>Enclosure rating</b>                    | IP68 <sup>2)</sup>                                          |

<sup>1)</sup> Do not bend below 0 °C.

<sup>2)</sup> According to EN 60529.

### Mechanics/electronics

|                                       |                          |
|---------------------------------------|--------------------------|
| <b>Supply voltage</b>                 | 10 V DC ... 30 V DC      |
| <b>Ripple</b>                         | ≤ 10 %                   |
| <b>Voltage drop</b>                   | ≤ 2.5 V DC <sup>1)</sup> |
| <b>Current consumption</b>            | ≤ 12 mA <sup>2)</sup>    |
| <b>Time delay before availability</b> | ≤ 300 ms                 |

<sup>1)</sup> At  $I_a$  max.

<sup>2)</sup> Without load.

<sup>3)</sup> Of  $S_r$ .

<sup>4)</sup>  $U_b$  and  $T_a$  constant.

<sup>5)</sup> In EMC critical applications, conducted interference levels may lie within the frequency range of the oscillator. This can cause changes to the output signal. (See operating instructions.).

|                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>Reproducibility</b>                      | ≤ 5 % <sup>3) 4)</sup>                  |
| <b>Temperature drift (of S<sub>r</sub>)</b> | ± 10 %                                  |
| <b>EMC</b>                                  | According to EN 60947-5-2 <sup>5)</sup> |
| <b>Continuous current I<sub>a</sub></b>     | ≤ 200 mA                                |
| <b>Cable material</b>                       | PVC                                     |
| <b>Conductor size</b>                       | 0.14 mm <sup>2</sup>                    |
| <b>Short-circuit protection</b>             | ✓                                       |
| <b>Reverse polarity protection</b>          | ✓                                       |
| <b>Shock and vibration resistance</b>       | 30 g, 11 ms / 10 ... 55 Hz, 1 mm        |
| <b>Ambient operating temperature</b>        | -20 °C ... +85 °C                       |
| <b>Ambient storage temperature</b>          | -40 °C ... +85 °C                       |
| <b>Housing material</b>                     | Plastic, PBT                            |
| <b>Sensing face material</b>                | Plastic                                 |

1) At I<sub>a</sub> max.

2) Without load.

3) Of S<sub>r</sub>.

4) U<sub>b</sub> and T<sub>a</sub> constant.

5) In EMC critical applications, conducted interference levels may lie within the frequency range of the oscillator. This can cause changes to the output signal. (See operating instructions.).

## Reduction factors

|                 |                                                |
|-----------------|------------------------------------------------|
| <b>Note</b>     | The values are reference values which may vary |
| <b>Metal</b>    | 1                                              |
| <b>Water</b>    | 1                                              |
| <b>PVC</b>      | Approx. 0.4                                    |
| <b>Oil</b>      | Approx. 0.25                                   |
| <b>Glass</b>    | 0.6                                            |
| <b>Ceramics</b> | 0.5                                            |
| <b>Alcohol</b>  | 0.7                                            |
| <b>Wood</b>     | 0.2 ... 0.7                                    |

## Installation note

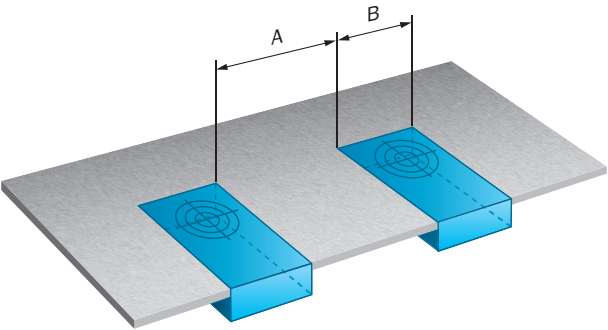
|               |                                       |
|---------------|---------------------------------------|
| <b>Remark</b> | Associated graphic see "Installation" |
| <b>A</b>      | 27.6 mm                               |
| <b>B</b>      | 27.6 mm                               |

## Classifications

|                     |          |
|---------------------|----------|
| <b>ECI@ss 5.0</b>   | 27270102 |
| <b>ECI@ss 5.1.4</b> | 27270102 |
| <b>ECI@ss 6.0</b>   | 27270102 |
| <b>ECI@ss 6.2</b>   | 27270102 |
| <b>ECI@ss 7.0</b>   | 27270102 |
| <b>ECI@ss 8.0</b>   | 27270102 |
| <b>ECI@ss 8.1</b>   | 27270102 |
| <b>ECI@ss 9.0</b>   | 27270102 |

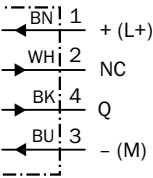
|                |          |
|----------------|----------|
| ETIM 5.0       | EC002715 |
| ETIM 6.0       | EC002715 |
| UNSPSC 16.0901 | 39122230 |

Installation note

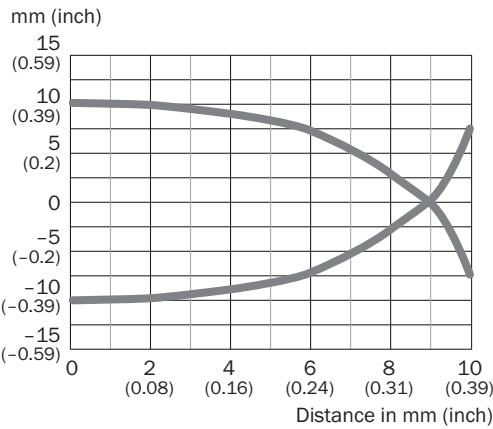


Connection diagram

cd-040

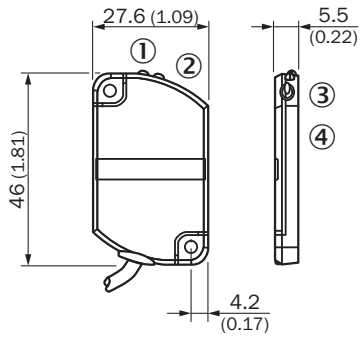


Characteristic curve



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

CQ28, cable



- ① LED indicator green
- ② LED indicator yellow
- ③ Teach-in button
- ④ Sensing face

## 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)