



# GTE10-F4221P14

G10

**SMALL PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type           | Part no. |
|----------------|----------|
| GTE10-F4221P14 | 1116285  |

**Included in delivery:** BEF-G10DC01 (50), GTE10-F4221 (50)

Other models and accessories → [www.sick.com/G10](http://www.sick.com/G10)

### Detailed technical data

#### Features

|                                        |                                  |
|----------------------------------------|----------------------------------|
| <b>Functional principle</b>            | Photoelectric proximity sensor   |
| <b>Functional principle detail</b>     | Energetic                        |
| <b>Dimensions (W x H x D)</b>          | 20 mm x 50 mm x 39 mm            |
| <b>Housing design (light emission)</b> | Rectangular                      |
| <b>Sensing range max.</b>              | 20 mm ... 2,000 mm <sup>1)</sup> |
| <b>Sensing range</b>                   | 40 mm ... 1,400 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>      | Ø 57 mm (1,500 mm)               |
| <b>Wave length</b>                     | 850 nm                           |
| <b>Adjustment</b>                      | Potentiometer, 270°              |

<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 U<sub>B</sub></b> | 10 V DC ... 30 V DC <sup>1)</sup> |
| <b>Ripple</b>                       | < 5 V <sub>pp</sub> <sup>2)</sup> |

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

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

<sup>3)</sup> Signal transit time with resistive 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> B = inputs and output reverse-polarity protected.

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

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

<sup>9)</sup> Complies with the UL325 standard when used with sturdy protection hood (e.g. BEF-G10WSG, 2071960).

|                                             |                                                                          |
|---------------------------------------------|--------------------------------------------------------------------------|
| <b>Current consumption</b>                  | 20 mA                                                                    |
| <b>Switching output</b>                     | PNP                                                                      |
| <b>Output function</b>                      | Complementary                                                            |
| <b>Switching mode</b>                       | Light/dark switching                                                     |
| <b>Switching mode selector</b>              | Selectable via light/dark selector                                       |
| <b>Output current <math>I_{\max}</math></b> | $\leq 100$ mA                                                            |
| <b>Response time</b>                        | $\leq 500$ $\mu$ s <sup>3)</sup>                                         |
| <b>Switching frequency</b>                  | 1,000 Hz <sup>4)</sup>                                                   |
| <b>Connection type</b>                      | Male connector M12, 4-pin                                                |
| <b>Circuit protection</b>                   | A <sup>5)</sup><br>B <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup> |
| <b>Protection class</b>                     | III                                                                      |
| <b>Weight</b>                               | 90 g                                                                     |
| <b>Special device</b>                       | ✓                                                                        |
| <b>Housing material</b>                     | Plastic, ABS/PMMA                                                        |
| <b>Enclosure rating</b>                     | IP67                                                                     |
| <b>Items supplied</b>                       | 50 x GTE10-F4221 (1102212), 50 x BEF-G10DC01 (2071258)                   |
| <b>Electromagnetic compatibility (EMC)</b>  | EN 60947-5-2                                                             |
| <b>Ambient operating temperature</b>        | -30 °C ... +60 °C                                                        |
| <b>Ambient temperature, storage</b>         | -40 °C ... +70 °C                                                        |
| <b>UL File No.</b>                          | NRKH.E348498 & NRKH7.E348498                                             |
| <b>More standards</b>                       | UL325 <sup>9)</sup>                                                      |

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

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

<sup>3)</sup> Signal transit time with resistive load.

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

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

<sup>6)</sup> B = inputs and output reverse-polarity protected.

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

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

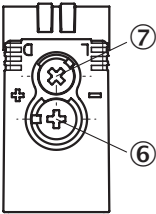
<sup>9)</sup> Complies with the UL325 standard when used with sturdy protection hood (e.g. BEF-G10WSG, 2071960).

## Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270903 |
| <b>ECLASS 5.1.4</b> | 27270903 |
| <b>ECLASS 6.0</b>   | 27270903 |
| <b>ECLASS 6.2</b>   | 27270903 |
| <b>ECLASS 7.0</b>   | 27270903 |
| <b>ECLASS 8.0</b>   | 27270903 |
| <b>ECLASS 8.1</b>   | 27270903 |
| <b>ECLASS 9.0</b>   | 27270903 |
| <b>ECLASS 10.0</b>  | 27270904 |

|                       |          |
|-----------------------|----------|
| <b>ECLASS 11.0</b>    | 27270904 |
| <b>ECLASS 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 |

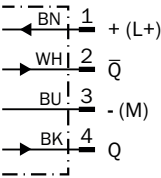
Adjustments



- ⑥ Adjustment of sensing range
- ⑦ Light/dark selector

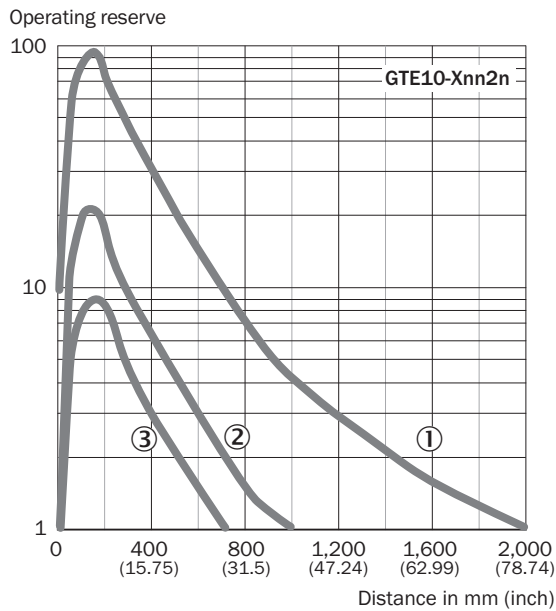
Connection diagram

Cd-084



## Characteristic curve

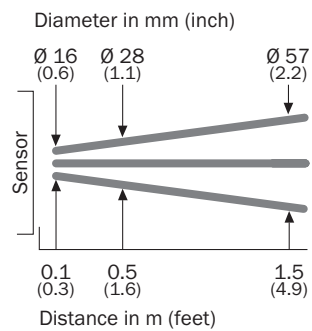
Operating reserve



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

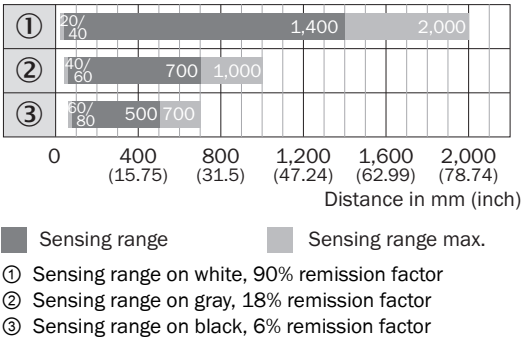
## Light spot size

Light spot size



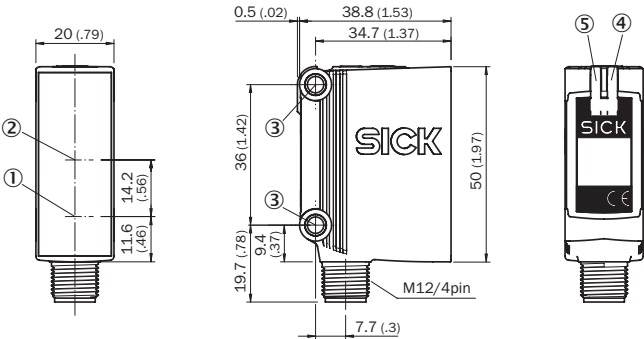
Sensing range diagram

Scanning range



Dimensional drawing (Dimensions in mm (inch))

GTE10, GL10, GL10G, DC, connector

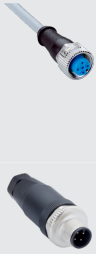


- ① Center of optical axis, sender  
② Center of optical axis, receiver  
③ Mounting hole, Ø 4.2 mm  
④ LED indicator yellow: Status of received light beam  
⑤ LED indicator green: power on

Recommended accessories

Other models and accessories → [www.sick.com/G10](http://www.sick.com/G10)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                          | Type          | Part no. |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|
| Universal bar clamp systems                                                         |                                                                                                                                                                                                                                                                                            |               |          |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Q-Lock, bar clamp system for G10 and reflector P250</li><li>• <b>Material:</b> Zinc diecast, steel</li><li>• <b>Details:</b> Die-cast zinc, steel, zinc coated</li><li>• <b>Suitable for:</b> G10 and reflector P250</li></ul> | BEF-KHSQ12R01 | 2071260  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                   | Type               | Part no. |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Others                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |          |
|  | <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)