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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# GTB6-P4211

G6

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type       | Part no. |
|------------|----------|
| GTB6-P4211 | 1052438  |

Other models and accessories → [www.sick.com/G6](http://www.sick.com/G6)

### Detailed technical data

#### Features

|  |  |
|--|--|
| <b>Sensor/ detection principle</b>     | Photoelectric proximity sensor, Background suppression |
| <b>Dimensions (W x H x D)</b>          | 12 mm x 31.5 mm x 21 mm                                |
| <b>Housing design (light emission)</b> | Rectangular  |
| <b>Sensing range max.</b>              | 5 mm ... 250 mm <sup>1)</sup>                          |
| <b>Sensing range</b>                   | 35 mm ... 140 mm                                       |
| <b>Type of light</b>                   | Visible red light                                      |
| <b>Light source</b>                    | PinPoint LED <sup>2)</sup>                             |
| <b>Light spot size (distance)</b>      | Ø 6 mm (100 mm)  |
| <b>Wave length</b>                     | 650 nm   |
| <b>Adjustment</b>                      | Mechanical spindle, 5 turns                            |

<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>         | ± 10 % <sup>2)</sup>              |

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

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

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

<sup>4)</sup> At U<sub>v</sub> > 24 V, I<sub>A</sub> max. = 50 mA.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

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

<sup>10)</sup> Temperature stability following adjustment +/-10 °C.



|  |   |
|--|---|
| <b>Power consumption</b>               | ≤ 30 mA <sup>3)</sup>                                 |
| <b>Switching output</b>                | PNP   |
| <b>Switching mode</b>                  | Light/dark switching                                  |
| <b>Switching mode selector</b>         | Selectable via light/dark selector                    |
| <b>Signal voltage PNP HIGH/LOW</b>     | V <sub>S</sub> - (≤ 3 V) / approx. 0 V                |
| <b>Output current I<sub>max.</sub></b> | ≤ 100 mA <sup>4)</sup>                                |
| <b>Response time</b>                   | < 625 μs <sup>5)</sup>                                |
| <b>Switching frequency</b>             | 1,000 Hz <sup>6)</sup>                                |
| <b>Connection type</b>                 | Connector M8, 4-pin                                   |
| <b>Circuit protection</b>              | A <sup>7)</sup><br>B <sup>8)</sup><br>D <sup>9)</sup> |
| <b>Protection class</b>                | III   |
| <b>Weight</b>                          | 20 g  |
| <b>Housing material</b>                | Plastic, ABS/PC                                       |
| <b>Optics material</b>                 | Plastic, PMMA   |
| <b>Enclosure rating</b>                | IP67  |
| <b>Ambient operating temperature</b>   | -25 °C ... +55 °C <sup>10)</sup>                      |
| <b>Ambient storage temperature</b>     | -40 °C ... +70 °C                                     |
| <b>UL File No.</b>                     | NRKH.E348498 & NRKH7.E348498                          |

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

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

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

<sup>4)</sup> At U<sub>v</sub> > 24 V, I<sub>A</sub> max. = 50 mA.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

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

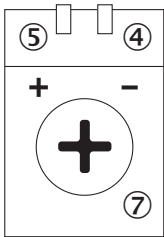
<sup>10)</sup> Temperature stability following adjustment +/-10 °C.

## Classifications

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

**Adjustments possible**

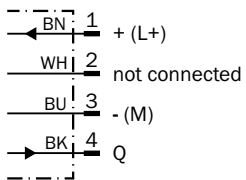
Adjustment possibility



- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑦ Sensitivity control: potentiometer

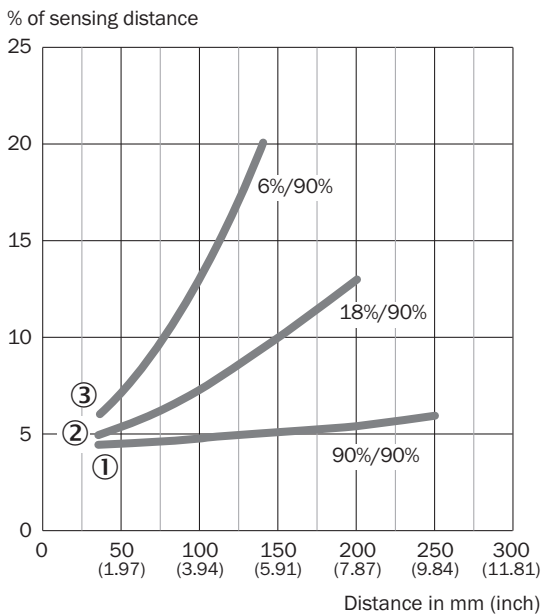
**Connection diagram**

Cd-066



**Characteristic curve**

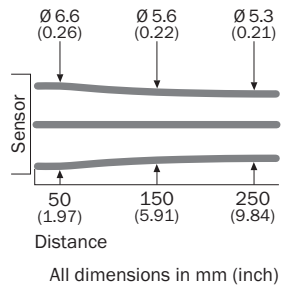
GTB6



- ① Object with 90% remission (based on standard white DIN 5033)
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on black, 6% remission

## Light spot size

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## Sensing range diagram

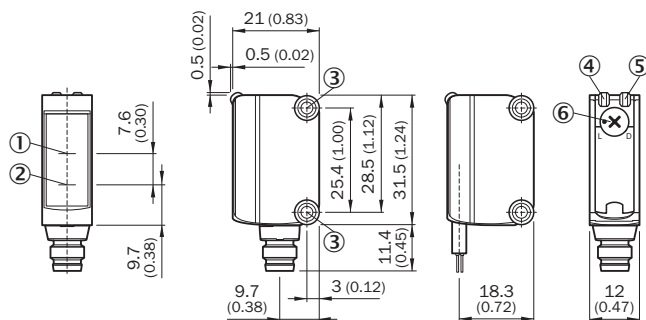
GTB6



■ Sensing range max.    ■ Sensing range

- ① Object with 90% remission (based on standard white DIN 5033)
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on black, 6% remission

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



- ① Optical axis, receiver
- ② Optical axis, sender
- ③ Mounting holes M3
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Light/ dark rotary switch: L = light switching, D = dark switching

Recommended accessories

Other models and accessories → [www.sick.com/G6](http://www.sick.com/G6)

|   | Brief description  | Type               | Part no. |
|---|--|--------------------|----------|
| <b>Universal bar clamp systems</b>  |  |                    |          |
|    | Clamp bar to fix G6 sensors on rods of 10 mm, clamp-on design up to 4 mm wall thickness, aluminum (clamp bar), stainless steel (bracket), clamp bar for 10 mm rod mounting and clamp function, mounting bracket, mounting hardware | BEF-KHS-ISG6       | 2075080  |
| <b>Device protection (mechanical)</b>   |  |                    |          |
|   | Stainless steel 1.4301 (SVS 304), 3 mm thick protective sleeve for G6, stainless steel 1.4301, mounting hardware included  | BEF-SG-G6          | 2069044  |
| <b>Mounting brackets and plates</b>   |  |                    |          |
|    |  | BEF-WN-G6          | 2062909  |
| <b>Plug connectors and cables</b>   |  |                    |          |
|    | Head A: female connector, M8, 4-pin, straight, A-coded<br>Head B: open cable ends<br>Cable: Sensor/actuator cable, PVC, unshielded, 2 m  | YF8U14-020VA3XLEAX | 2095888  |
|   | Head A: female connector, M8, 4-pin, straight, A-coded<br>Head B: open cable ends<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m  | YF8U14-050VA3XLEAX | 2095889  |
|   | Head A: female connector, M8, 4-pin, angled, A-coded<br>Head B: open cable ends<br>Cable: Sensor/actuator cable, PVC, unshielded, 2 m  | YG8U14-020VA3XLEAX | 2095962  |
|   | Head A: female connector, M8, 4-pin, angled, A-coded<br>Head B: open cable ends<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m  | YG8U14-050VA3XLEAX | 2095963  |
|  | Head A: female connector, M8, 4-pin, straight<br>Head B: -<br>Cable: unshielded  | DOS-0804-G         | 6009974  |
|  | Head A: female connector, M8, 4-pin, angled<br>Head B: -<br>Cable: unshielded  | DOS-0804-W         | 6009975  |
| <b>Masks</b>  |  |                    |          |
|  | Slit mask, vertical slots, slot width: 1.0 mm, 2 pieces, black, Aluminum, Slit mask (2 pieces)   | BEF-SLIT MASK-G6   | 2075254  |

## 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)