



# GTB2S-N5451

G2S

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type        | Part no. |
|-------------|----------|
| GTB2S-N5451 | 1064343  |

Other models and accessories → [www.sick.com/G2S](http://www.sick.com/G2S)

### Detailed technical data

#### Features

|                                        |                                                        |
|----------------------------------------|--------------------------------------------------------|
| <b>Sensor/ detection principle</b>     | Photoelectric proximity sensor, Background suppression |
| <b>Dimensions (W x H x D)</b>          | 7.7 mm x 27.5 mm x 13.5 mm                             |
| <b>Housing design (light emission)</b> | Rectangular                                            |
| <b>Sensing range max.</b>              | 2 mm ... 120 mm <sup>1)</sup>                          |
| <b>Sensing range</b>                   | 25 mm ... 90 mm <sup>2)</sup>                          |
| <b>Type of light</b>                   | Visible red light                                      |
| <b>Light source</b>                    | PinPoint LED <sup>3)</sup>                             |
| <b>Light spot size (distance)</b>      | Ø 3.5 mm (50 mm)                                       |
| <b>Wave length</b>                     | 640 nm                                                 |
| <b>Adjustment</b>                      | Potentiometer, 3 turns                                 |

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

<sup>2)</sup> Object with 6 % remission.

<sup>3)</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> |

<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> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

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

<sup>8)</sup> C = interference suppression.

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

|                                       |                                                       |
|---------------------------------------|-------------------------------------------------------|
| <b>Current consumption</b>            | 20 mA <sup>3)</sup>                                   |
| <b>Switching output</b>               | NPN                                                   |
| <b>Switching mode</b>                 | Light switching                                       |
| <b>Output current I<sub>max</sub></b> | < 50 mA                                               |
| <b>Response time</b>                  | < 0.6 ms <sup>4)</sup>                                |
| <b>Switching frequency</b>            | 800 Hz <sup>5)</sup>                                  |
| <b>Connection type</b>                | Cable with connector M8, 3-pin, 200 mm <sup>6)</sup>  |
| <b>Cable material</b>                 | PVC                                                   |
| <b>Cable diameter</b>                 | Ø 3 mm                                                |
| <b>Circuit protection</b>             | A <sup>7)</sup><br>C <sup>8)</sup><br>D <sup>9)</sup> |
| <b>Weight</b>                         | 17.9 g                                                |
| <b>Housing material</b>               | Plastic, ABS                                          |
| <b>Optics material</b>                | Plastic, PMMA                                         |
| <b>Enclosure rating</b>               | IP67                                                  |
| <b>Ambient operating temperature</b>  | -25 °C ... +50 °C                                     |
| <b>Ambient storage temperature</b>    | -40 °C ... +75 °C                                     |
| <b>UL File No.</b>                    | NRKH.E181493                                          |

<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>y</sub> tolerances.

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

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

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

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## Safety-related parameters

|                         |             |
|-------------------------|-------------|
| <b>MTTF<sub>D</sub></b> | 3,378 years |
| <b>DC<sub>avg</sub></b> | 0%          |

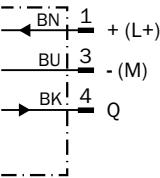
## Classifications

|                     |          |
|---------------------|----------|
| <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>ECI@ss 10.0</b>  | 27270904 |
| <b>ECI@ss 11.0</b>  | 27270904 |
| <b>ETIM 5.0</b>     | EC002719 |

|                |          |
|----------------|----------|
| ETIM 6.0       | EC002719 |
| ETIM 7.0       | EC002719 |
| UNSPSC 16.0901 | 39121528 |

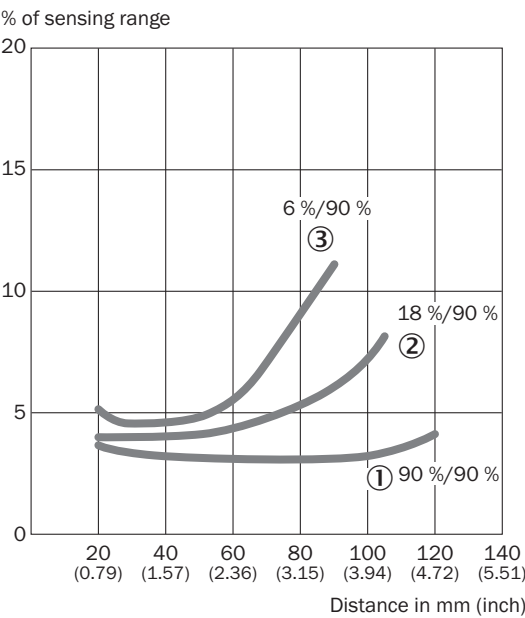
Connection diagram

Cd-045



Characteristic curve

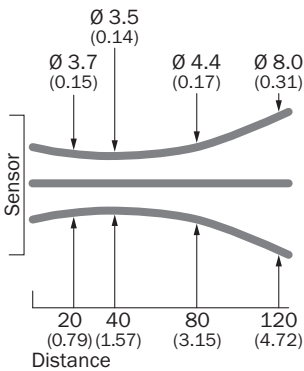
GTB2S, 120 mm



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

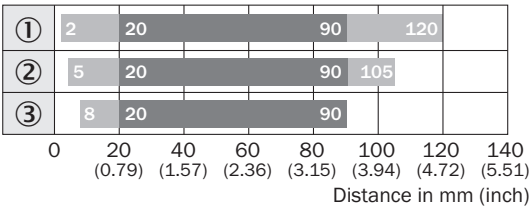
Light spot size

GTB2S, 120 mm



Sensing range diagram

GTB2S, 120 mm

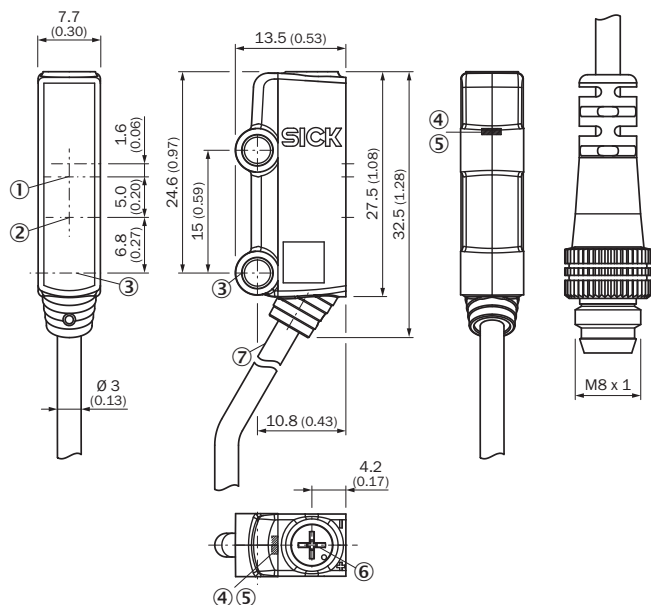


■ Sensing range      ■ Sensing range max.

- ① Sensing range on white, 90% remission
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## Dimensional drawing (Dimensions in mm (inch))

GTB2S, 120 mm



- ① Optical axis, receiver
- ② Optical axis, sender
- ③ Mounting hole, Ø 3.2 mm
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Potentiometer
- ⑦ Connection

## Recommended accessories

Other models and accessories → [www.sick.com/G2S](http://www.sick.com/G2S)

|                                                                                     | Brief description                                                                                                                    | Type               | Part no. |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Plug connectors and cables                                                          |                                                                                                                                      |                    |          |
|  | Head A: female connector, M8, 3-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF8U13-050VA1XLEAX | 2095884  |
|  | 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)