



# GTB2S-P1301S13

## G2

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type           | part no. |
|----------------|----------|
| GTB2S-P1301S13 | 1112957  |

Other models and accessories → [www.sick.com/G2](http://www.sick.com/G2)

Detailed technical data

Features

|   |                                      |
|---|--------------------------------------|
| <b>Functional principle</b>             | Photoelectric proximity sensor       |
| <b>Functional principle detail</b>      | Background suppression               |
| <b>Dimensions (W x H x D)</b>           | 7.7 mm x 21.8 mm x 13.5 mm           |
| <b>Housing design (light emission)</b>  | Rectangular                          |
| <b>Sensing range max.</b>               | 5 mm ... 19 mm <sup>1)</sup>         |
| <b>Sensing range</b>                    | 5 mm ... 14 mm <sup>1)</sup>         |
| <b>Background suppression typ. from</b> | 20 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 2 mm (8 mm)                        |
| <b>Wave length</b>                      | 640 nm                               |
| <b>Adjustment</b>                       | None                                 |
| <b>Special applications</b>             | Detecting small objects              |
| <b>Special features</b>                 | Special optic for fiducial detection |

<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 <math>U_B</math></b>     | 10 V DC ... 30 V DC <sup>1)</sup>                     |
| <b>Ripple</b>                              | < 5 V <sub>pp</sub> <sup>2)</sup>                     |
| <b>Current consumption</b>                 | 20 mA <sup>3)</sup>                                   |
| <b>Switching output</b>                    | PNP   |
| <b>Switching mode</b>                      | Light switching                                       |
| <b>Output current <math>I_{max}</math></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, 3-wire, 2 m <sup>6)</sup>                      |
| <b>Cable material</b>                      | Plastic, 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>                              | 33.7 g  |
| <b>Special device</b>                      | ✓   |
| <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 temperature, storage</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 fall below or exceed  $U_y$  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 =  $V_S$  connections reverse-polarity protected.

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

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

## Safety-related parameters

|                         |             |
|-------------------------|-------------|
| <b>MTTF<sub>D</sub></b> | 3,487 years |
| <b>DC<sub>avg</sub></b> | 0 %         |

## Certificates

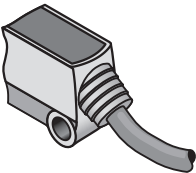
|   |   |
|---|---|
| <b>EU declaration of conformity</b>       | ✓ |
| <b>UK declaration of conformity</b>       | ✓ |
| <b>ACMA declaration of conformity</b>     | ✓ |
| <b>Moroccan declaration of conformity</b> | ✓ |
| <b>China-RoHS</b>                         | ✓ |
| <b>cULus certificate</b>                  | ✓ |

|   |   |
|---|---|
| Photobiological safety (DIN EN 62471) certificate | ✓ |
|---|---|

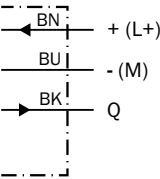
Classifications

|                |          |
|----------------|----------|
| ECLASS 5.0     | 27270904 |
| ECLASS 5.1.4   | 27270904 |
| ECLASS 6.0     | 27270904 |
| ECLASS 6.2     | 27270904 |
| ECLASS 7.0     | 27270904 |
| ECLASS 8.0     | 27270904 |
| ECLASS 8.1     | 27270904 |
| ECLASS 9.0     | 27270904 |
| ECLASS 10.0    | 27270904 |
| ECLASS 11.0    | 27270904 |
| ECLASS 12.0    | 27270903 |
| ETIM 5.0       | EC002719 |
| ETIM 6.0       | EC002719 |
| ETIM 7.0       | EC002719 |
| ETIM 8.0       | EC002719 |
| UNSPSC 16.0901 | 39121528 |

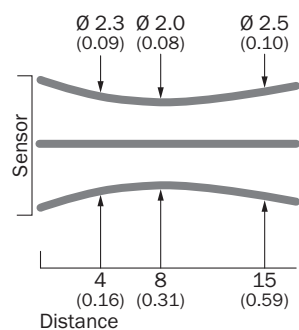
Connection type



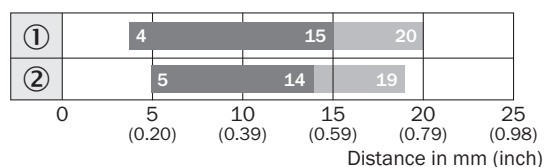
Connection diagram Cd-043



## Light spot size

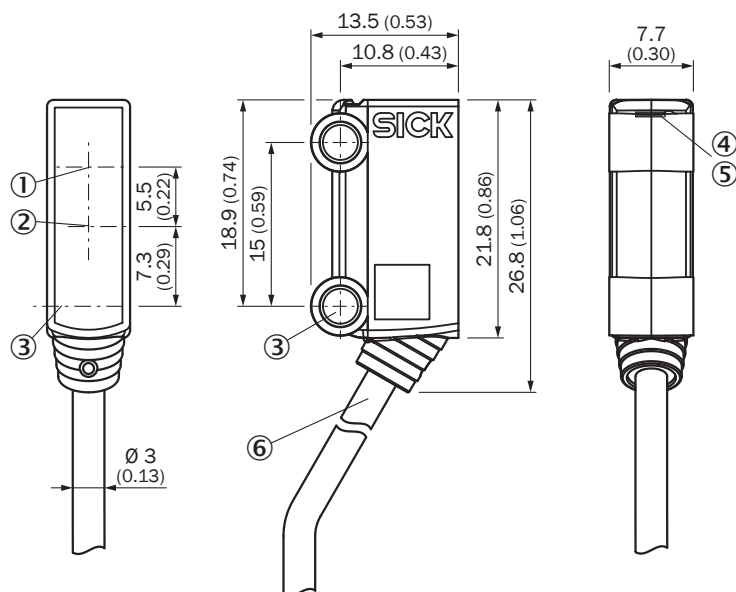


## Sensing range diagram



- Sensing range    ■ Sensing range max.
- ① sensing range on stainless steel  
② Sensing range on white, 90% remission factor

## Dimensional drawing




Dimensions in mm (inch)

- 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 Connection

Recommended accessories

Other models and accessories → [www.sick.com/G2](http://www.sick.com/G2)

|   | Brief description   | Type       | part no. |
|---|---|------------|----------|
| connectors and cables   |   |            |          |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M8, 3-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> 0.14 mm² ... 0.5 mm²</li></ul> | 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)