



# GTB10-R9821

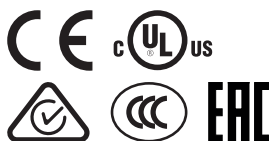
G10

**SMALL PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
GTB10-R9821	1084214

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>	Background suppression
<b>Dimensions (W x H x D)</b>	20 mm x 50 mm x 51.5 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	20 mm ... 1,200 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 22 mm (700 mm)
<b>Wave length</b>	850 nm
<b>Adjustment</b>	Potentiometer, 5 turns

<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</b>	24 V AC/DC ... 240 V AC/DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Power consumption</b>	≤ 2.5 VA

<sup>1)</sup> +- 10 %.

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

<sup>3)</sup> Provide suitable spark suppression for inductive or capacitive loads.

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

<sup>5)</sup> Do not bend below 0 °C.

<sup>6)</sup> C = interference suppression.

<sup>7)</sup> Reference voltage: 250 V AC.

<sup>8)</sup> In the case of a DC supply (ref. to EN 61000-6-3) the length of cable between the supply source and the sensor must be < 30 m.

<sup>9)</sup> UL: 0 °C ... +50 °C.

<b>Switching output</b>	Relay, SPDT, electrically isolated <sup>3)</sup>
<b>Switching load max. (current/voltage)</b>	0.11 A (250 V DC) 3 A (30 V DC) 3 A (250 V AC)
<b>Response time</b>	≤ 10 ms
<b>Switching frequency</b>	20 Hz <sup>4)</sup>
<b>Connection type</b>	Cable, 5-wire, 5 m <sup>5)</sup>
<b>Cable material</b>	PVC
<b>Conductor cross section</b>	0.25 mm <sup>2</sup>
<b>Circuit protection</b>	C <sup>6)</sup>
<b>Protection class</b>	II <sup>7)</sup>
<b>Weight</b>	115 g
<b>Interference emission</b>	EN 61000-6-3 (2011-09) <sup>8)</sup>
<b>Housing material</b>	Plastic, ABS/PMMA
<b>Enclosure rating</b>	IP67
<b>Relay switching cycles min.</b>	100.000 cycles (3 A)
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2 EN 61000-6-3 (2011-09)
<b>Ambient operating temperature</b>	-30 °C ... +60 °C <sup>9)</sup>
<b>Ambient temperature, storage</b>	-40 °C ... +70 °C
<b>UL File No.</b>	NRKH.E348498 & NRKH7.E348498

1) ± 10 %.

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

3) Provide suitable spark suppression for inductive or capacitive loads.

4) With light/dark ratio 1:1.

5) Do not bend below 0 °C.

6) C = interference suppression.

7) Reference voltage: 250 V AC.

8) In the case of a DC supply (ref. to EN 61000-6-3) the length of cable between the supply source and the sensor must be < 30 m.

9) UL: 0 °C ... +50 °C.

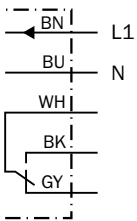
## Classifications

<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>eCl@ss 10.0</b>	27270904
<b>eCl@ss 11.0</b>	27270904
<b>eCl@ss 12.0</b>	27270903
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719

<b>ETIM 7.0</b>	EC002719
<b>ETIM 8.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

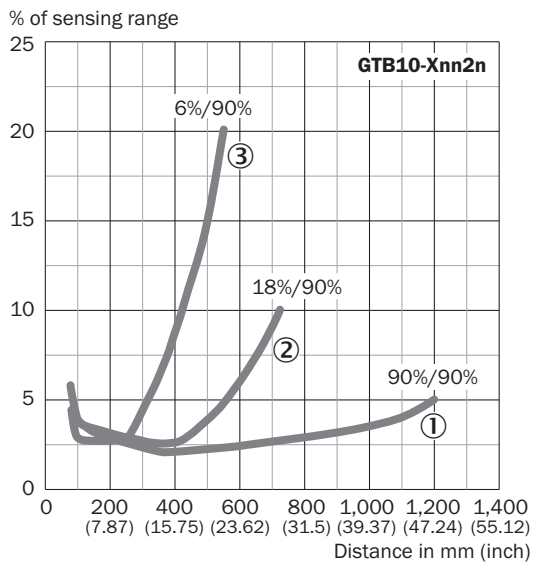
### Connection diagram

Cd-163



### Characteristic curve

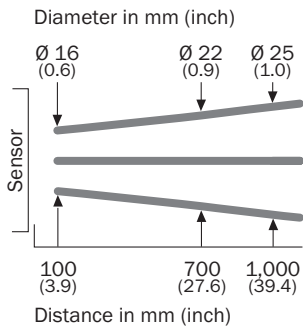
Scanning range



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

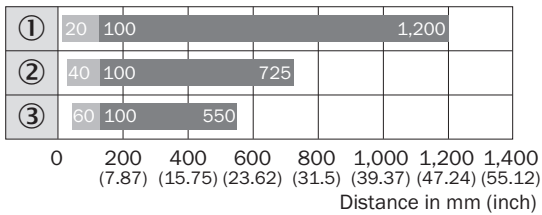
## Light spot size

Light spot size



## Sensing range diagram

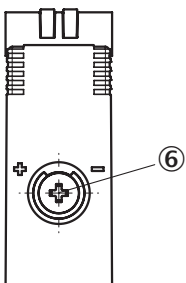
Scanning range



■ Sensing range    ■ Sensing range max.

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

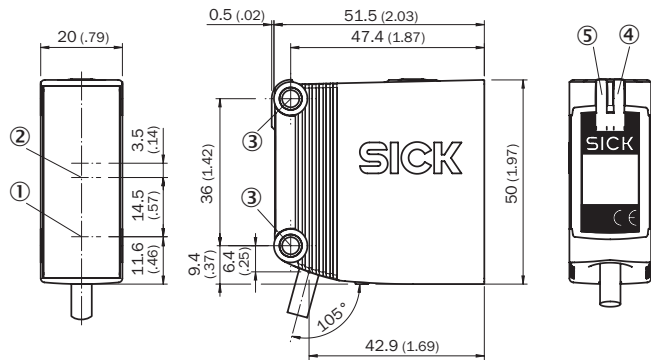
## Adjustments



⑥ Adjustment of sensing range

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



GTB10, AC/DC, cable



- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Mounting hole,  $\varnothing$  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			
	Q-Lock, bar clamp system for G10 and reflector P250, Die-cast zinc, steel, zinc coated	BEF-KHSQ12R01	2071260
Plug connectors and cables			
	Head A: male connector, M12, 5-pin, straight Cable: unshielded For field bus technology	STE-1205-G	6022083

## 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)