



Photoelectric sensors
G10, Photoelectric proximity sensor, Background
suppression

GTB10-R3812



Model Name > [GTB10-R3812](#)
Part No. > [1065862](#)



Illustration may differ

At a glance

- Long sensing ranges: up to 1,200 mm with background suppression
- PinPoint LED with bright and precise light spot or infrared LED
- Immunity to ambient light
- 10 V DC ... 30 V DC or 24 V AC/DC ... 240 V AC/DC power supply with PNP/NPN or relay output
- Small housing design
- Rugged sensor housing with metal-reinforced holes for assembly
- Q-Lock assembly system for mounting and aligning the sensor within a few seconds

Your benefits

- Long sensing ranges for maximum operating reserves
- Powerful background suppression ensures precise detection, regardless of reflective surfaces and objects
- Efficient installation: the GTB10 and the Q-Lock assembly system save valuable hours when mounting and commissioning multiple sensors
- Universal DC or AC/DC power supply for even greater application flexibility
- Highly reliable and durable despite optical interference and mechanical loads
- Wide range of accessories simplifies sensor integration: aids for assembly and connectors



Features

| | |
|----------------------------------|--|
| Sensor/detection principle: | Photoelectric proximity sensor, Background suppression |
| Dimensions (W x H x D): | 20 mm x 50 mm x 51.5 mm |
| Housing design (light emission): | Rectangular |
| Sensing range max.: | 20 mm ... 950 mm ¹⁾ |
| Type of light: | Visible red light |
| Light source: | PinPoint LED ²⁾ |
| Wave length: | 625 nm |
| Adjustment: | Potentiometer, 5 turns |
| Light spot size (distance): | Ø 8 mm (700 mm) |

¹⁾ Object with 90 % reflectance (referred to standard white, DIN 5033) ²⁾ Average service life: 100,000 h at T_U = +25 °C

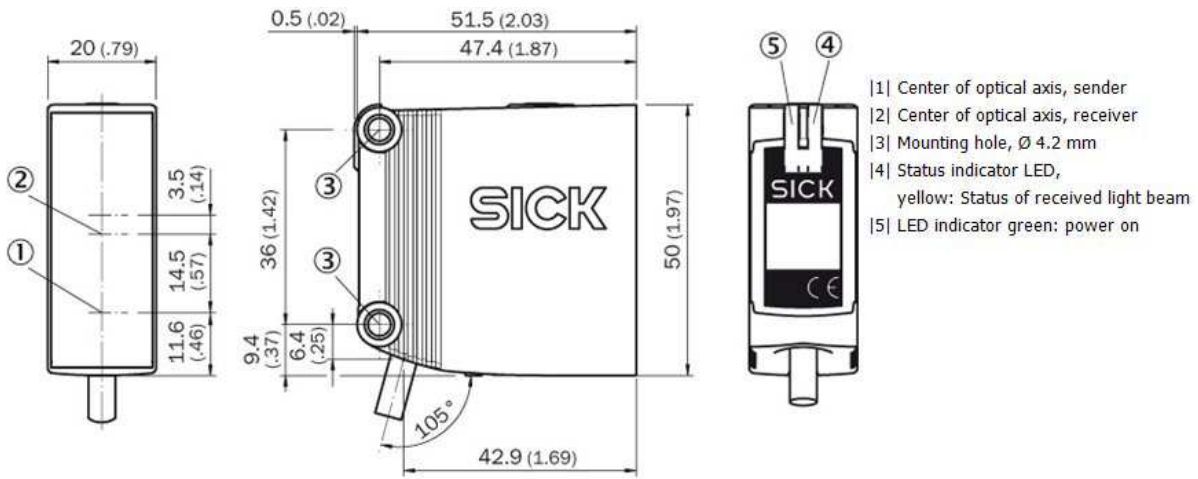
Mechanics/electronics

| | |
|-----------------|--|
| Supply voltage: | 24 V AC/DC ... 240 V AC/DC ¹⁾ |
| Ripple: | ± 5 Vpp ²⁾ |

| | |
|--|--|
| Power consumption: | ≤ 2.5 VA |
| Output type: | Relay, SPDT, electrically isolated ³⁾ |
| Response time: | ≤ 10 ms |
| Connection type: | Cable, 5-wire, 2 m ⁴⁾ |
| Cable material: | PVC |
| Conductor cross-section: | 0.25 mm ² |
| Circuit protection: | C ⁵⁾ |
| Protection class: | II ⁶⁾ |
| Weight: | 115 g |
| Polarisation filter: | - |
| Interference emission: | EN 61000-6-3 (2011-09) ⁷⁾ |
| Special device: | - |
| Enclosure rating: | IP 67 |
| Items supplied: | Mounting bracket BEF-G10UC01 |
| Usage category: | AC-15, DC-13, According to EN 60947-1 |
| EMC: | EN 60947-5-2 |
| Ambient temperature operation: | -30 °C ... +60 °C ⁸⁾ |
| Ambient storage temperature: | -40 °C ... +70 °C |
| UL File No.: | NRKH.E348498 & NRKH7.E348498 |
| Further standards: | UL325 ⁹⁾ |
| Switching frequency max.: | 20 Hz ¹⁰⁾ |
| Switching load max. (current/voltage): | 0.11 A (250 V DC), 3 A (250 V AC), 3 A (30 V DC) |
| Relay switching cycles min.: | 100.000 cycles (3 A) |
| Housing material: | PVC/PMMA, Plastic |

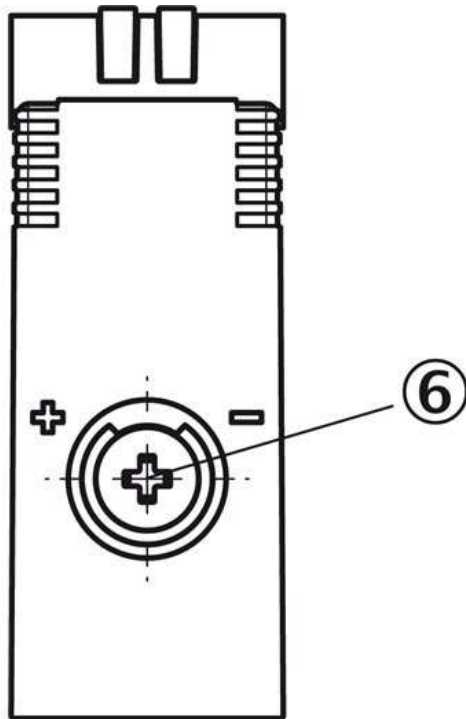
¹⁾ +/- 10 % ²⁾ May not exceed or fall below U_v tolerances ³⁾ Provide suitable spark suppression for inductive or capacitive loads ⁴⁾ Do not bend below 0 °C ⁵⁾ C = interference suppression ⁶⁾ Reference voltage: 250 V AC ⁷⁾ In the case of a DC supply (ref. to EN 61000-6-3) the length of cable between the supply source and the sensor must be < 30 m ⁸⁾ UL: 0 °C ... +60 °C ⁹⁾ Complies with the UL325 standard when used with sturdy protection hood (e.g. BEF-G10WSG, 2071960). ¹⁰⁾ With light/dark ratio 1:1

Dimensional drawing



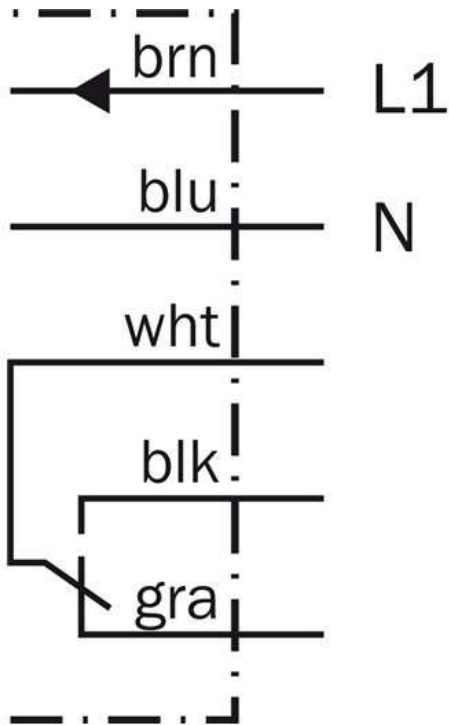
- |1| Center of optical axis, sender
- |2| Center of optical axis, receiver
- |3| Mounting hole, Ø 4.2 mm
- |4| Status indicator LED,
yellow: Status of received light beam
- |5| LED indicator green: power on

Adjustments possible

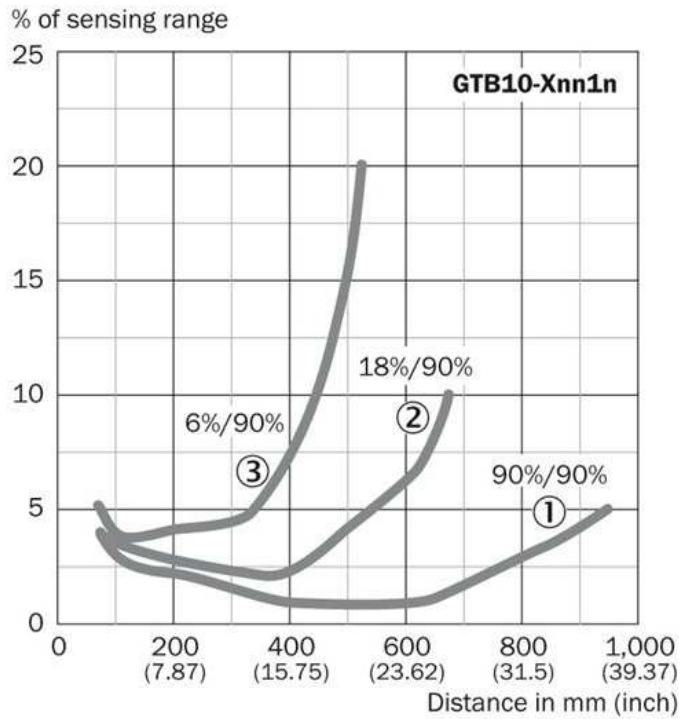


- |6| Sensing range adjustment

Connection diagram

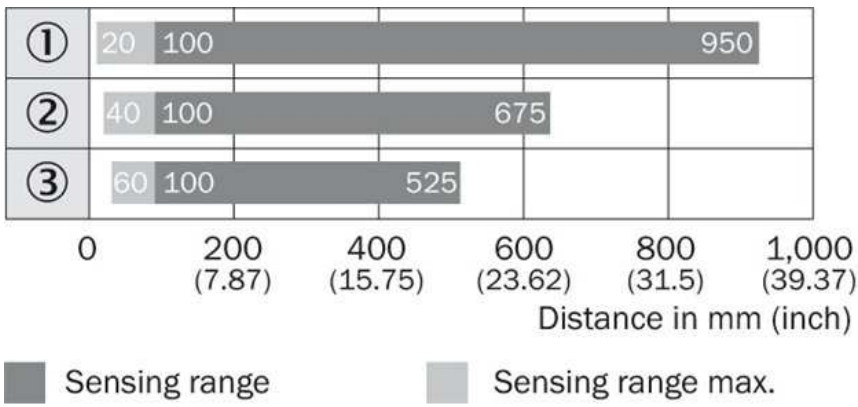


Characteristic curve



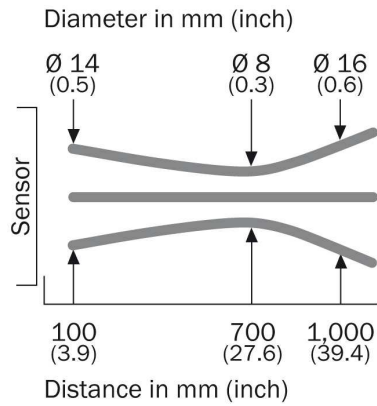
- [1] Sensing range on white, 90 % remission
- [2] Sensing range on gray, 18 % remission
- [3] Sensing range on black, 6 % remission

Sensing range diagram



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

Light spot size



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