SICK.COM



DATA SHEET

# GTB10-P4221

G10
Photoelectric sensors

SICK
Sensor Intelligence



Illustration may differ

# PHOTOELECTRIC SENSORS

# GTB10-P4221

## ORDERING INFORMATION

| Type | part no. |
|---|---|
| GTB10-P4221 | 1081296 |

Further device versions and accessories at www.sick.com/G10

## DETAILED TECHNICAL DATA

### FEATURES

| | |
|---|---|
| Functional principle | Photoelectric proximity sensor |
| Functional principle detail | Background suppression |
| Dimensions (W x H x D) | 20 mm x 50 mm x 39 mm |
| Housing design (light emission) | Rectangular |
| Sensing range max. | 20 mm ... 1,200 mm [1] |
| Type of light | Infrared light |
| Light source | LED [2] |
| Light spot size (distance) | Ø 22 mm (700 mm) |
| Wave length | 850 nm |
| Adjustment | Potentiometer, 5 turns |

[1] Object with 90% remission (based on standard white, DIN 5033).

[2] Average service life: 100,000 h at $T_u$ = +25 °C.

## MECHANICS/ELECTRONICS

| | |
|---|---|
| Supply voltage $U_B$ | 10 V DC ... 30 V DC [1] |
| Ripple | < 5 $V_{pp}$ [2] |
| Current consumption | 20 mA |
| Switching output | PNP |
| Switching mode | Light/dark switching |
| Switching mode selector | Selectable via light/dark selector |
| Output current $I_{max.}$ | ≤ 100 mA |
| Response time | ≤ 500 µs [3] |
| Switching frequency | 1,000 Hz [4] |
| Connection type | Male connector M12, 4-pin |
| Circuit protection | A [5]<br>B [6]<br>C [7]<br>D [8] |
| Protection class | III |
| Weight | 35 g |
| Housing material | Plastic, ABS/PMMA |
| Enclosure rating | IP67 |
| Electromagnetic compatibility (EMC) | EN 60947-5-2 |
| Ambient operating temperature | –30 °C ... +60 °C |
| Ambient temperature, storage | –40 °C ... +70 °C |
| UL File No. | NRKH.E348498 & NRKH7.E348498 |
| More standards | UL325 [9] |

[1] Limit values when operated in short-circuit protected network: max. 8 A.

[2] May not fall below or exceed $U_V$ tolerances.

[3] Signal transit time with resistive load.

[4] With light/dark ratio 1:1.

[5] A = $V_S$ connections reverse-polarity protected.

[6] B = inputs and output reverse-polarity protected.

[7] C = interference suppression.

[8] D = outputs overcurrent and short-circuit protected.

[9] Complies with the UL325 standard when used with sturdy protection hood (e.g. BEF-G10WSG, 2071960).

## SAFETY-RELATED PARAMETERS

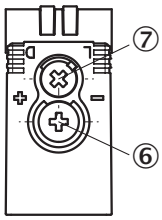
| | |
|---|---|
| $MTTF_D$ | 1,649 years |

## CERTIFICATES

| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| China Compulsory Product Certification (CCC) exempt | ✓ |
| cULus certificate | ✓ |

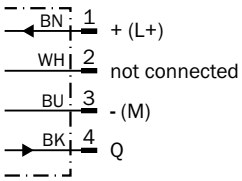
| | |
|---|---|
| Photobiological safety (DIN EN 62471) certificate | ✓ |

## ADJUSTMENTS

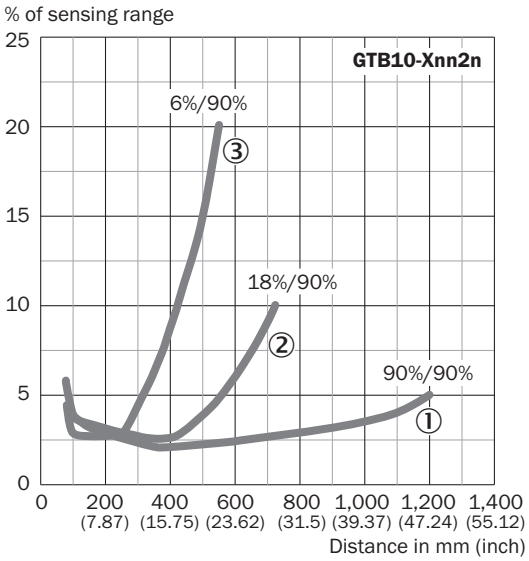



⑥ Adjustment of sensing range
⑦ Light/dark selector

## CONNECTION DIAGRAM CD-066

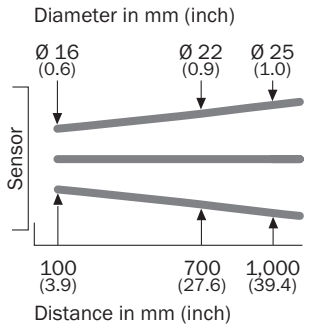



## SCANNING RANGE

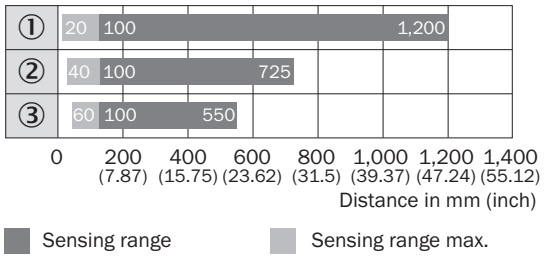



① Sensing range on white, 90% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on black, 6% remission factor

### LIGHT SPOT SIZE

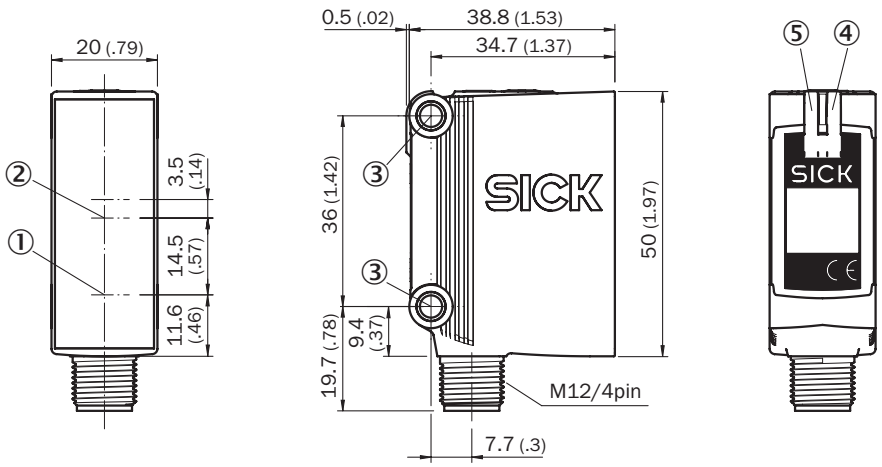



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### DIMENSIONAL DRAWING GTB10, DC, CONNECTOR




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

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1081296

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# SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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