



DATA SHEET

GTB2S-P1451

G2
Photoelectric sensors

SICK

Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

GTB2S-P1451

ORDERING INFORMATION

Type	part no.
GTB2S-P1451	1060205

Further device versions and accessories at www.sick.com/G2



DETAILED TECHNICAL DATA

FEATURES

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

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

²⁾ Object with 6 % remission.

³⁾ 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 ³⁾
Switching output	PNP
Switching mode	Light switching
Output current I_{max}	≤ 50 mA
Response time	< 0.6 ms ⁴⁾
Switching frequency	800 Hz ⁵⁾
Connection type	Cable, 3-wire, 2 m ⁶⁾
Cable material	Plastic, PVC
Cable diameter	Ø 3 mm
Circuit protection	A ⁷⁾ C ⁸⁾ D ⁹⁾
Weight	34.2 g
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
Ambient operating temperature	-25 °C ... +50 °C
Ambient temperature, storage	-40 °C ... +75 °C
UL File No.	NRKH.E181493

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

²⁾ May not fall below or exceed U_V tolerances.

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ Do not bend below 0 °C.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ C = interference suppression.

⁹⁾ D = outputs overcurrent and short-circuit protected.

SAFETY-RELATED PARAMETERS

MTTF _D	3,138 years
DC _{avg}	0 %

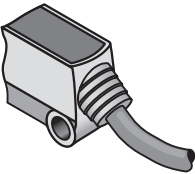
CERTIFICATES

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	✓

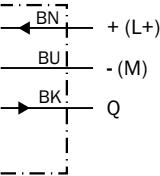
Photobiological safety (DIN EN 62471) certificate

✓

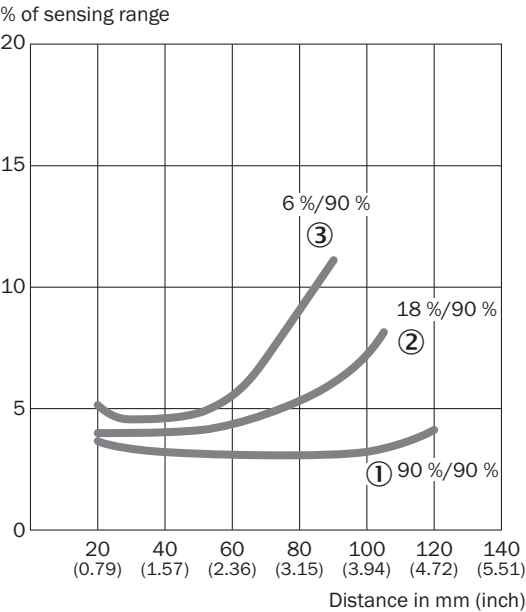
CONNECTION TYPE



CONNECTION DIAGRAM CD-043

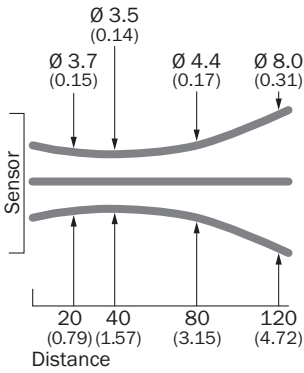


CHARACTERISTIC CURVE GTB2S, 120 MM

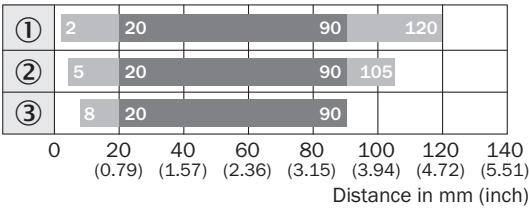


- ① Sensing range on white, 90% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on black, 6% remission factor

LIGHT SPOT SIZE GTB2S, 120 MM

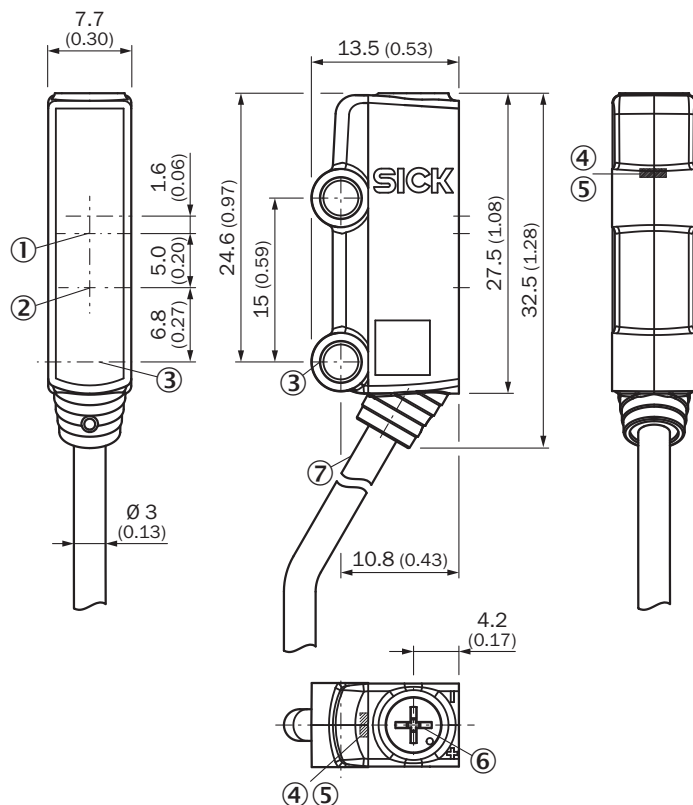


SENSING RANGE DIAGRAM GTB2S, 120 MM



- Sensing range ■ Sensing range max.
- ① Sensing range on white, 90% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on black, 6% 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 Potentiometer
- ⑦ Connection

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/1060205



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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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