



DATA SHEET

GTB6-P1231

G6
Photoelectric sensors

SICK

Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

GTB6-P1231

ORDERING INFORMATION

Type	part no.
GTB6-P1231	1074135

Further device versions and accessories at www.sick.com/G6



DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Sensing range max.	5 mm ... 400 mm ¹⁾
Sensing range	50 mm ... 220 mm
Emitted beam	
Light source	PinPoint LED ²⁾
Type of light	Visible red light
Light spot size (distance)	Ø 6 mm (100 mm)
Key LED figures	
Wave length	625 nm
Adjustment	Mechanical spindle, 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.

SAFETY-RELATED PARAMETERS

MTTF _D	1,772 years
DC _{avg}	0%
T _M (mission time)	20 years

ELECTRONICS

Supply voltage U_s	10 V DC ... 30 V DC ¹⁾
Ripple	$\pm 10\%$ ²⁾
Current consumption	32 mA ³⁾
Protection class	III
Digital output	Type PNP Switching mode Light/dark switching Switching mode selector Selectable via light/dark selector Signal voltage NPN HIGH/LOW Approx. $V_s / \leq 3\text{ V}$ Output current I_{max} $\leq 100\text{ mA}$ ⁴⁾ Response time $< 1.25\text{ ms}$ ⁵⁾ Switching frequency 500 Hz ⁶⁾
Circuit protection	A ⁷⁾ B ⁸⁾ D ⁹⁾

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

²⁾ May not fall below or exceed U_s tolerances.

³⁾ Without load.

⁴⁾ At $U_s > 24\text{ V}$, I_A max. = 50 mA.

⁵⁾ Signal transit time with resistive load.

⁶⁾ With light/dark ratio 1:1.

⁷⁾ A = V_s connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

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

MECHANICS

Housing	Rectangular
Dimensions (W x H x D)	12 mm x 31.5 mm x 21 mm
Connection	Cable, 3-wire, 2 m ¹⁾
Connection detail	Conductor size 0.14 mm² Length of cable (L) 2 m ¹⁾
Material	Housing Plastic, ABS/PC Front screen Plastic, PMMA Cable Plastic, PVC
Weight	60 g

¹⁾ Do not bend below 0 °C.

AMBIENT DATA

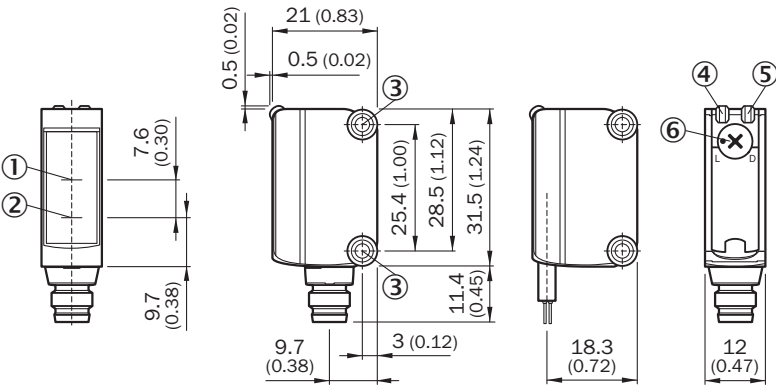
Enclosure rating	IP67
Ambient operating temperature	-25 °C ... +55 °C ¹⁾
Ambient temperature, storage	-40 °C ... +70 °C
UL File No.	NRKH.E348498 & NRKH7.E348498

¹⁾ Temperature stability following adjustment +/-10 °C.

CERTIFICATES

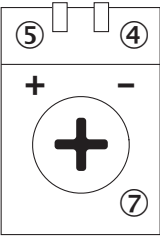
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) ex-empt	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

DIMENSIONAL DRAWING



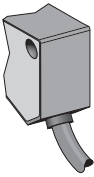
- Dimensions in mm (inch)
- ① Optical axis, receiver
 - ② Optical axis, sender
 - ③ Mounting holes M3
 - ④ LED indicator green: Supply voltage active
 - ⑤ LED indicator yellow: Status of received light beam
 - ⑥ Light/ dark rotary switch: L = light switching, D = dark switching

ADJUSTMENTS ADJUSTMENT POSSIBILITY

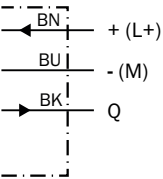


- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑦ Sensitivity control: potentiometer

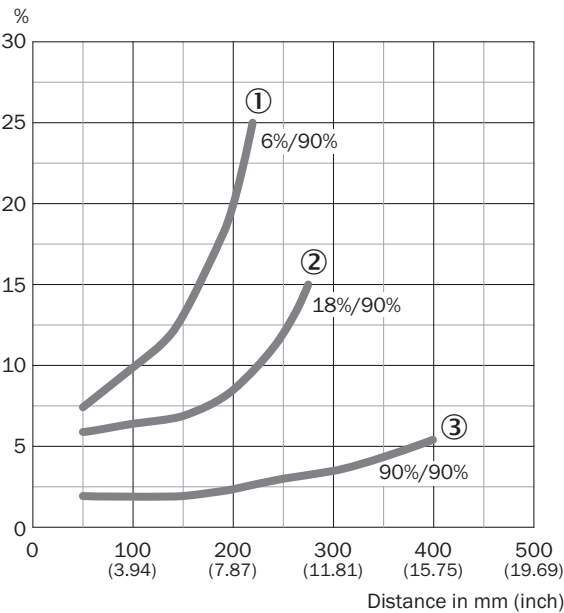
CONNECTION TYPE



CONNECTION DIAGRAM CD-043

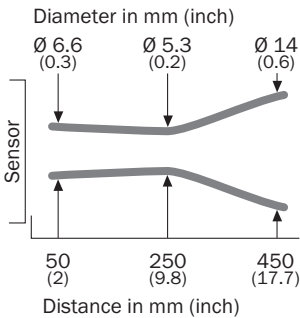


CHARACTERISTIC CURVE

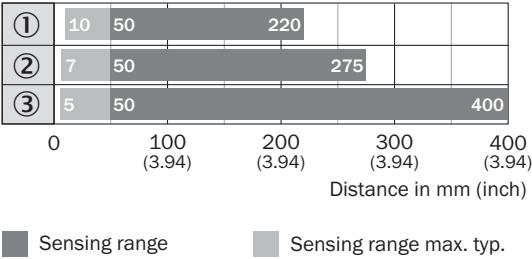


- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ object with 90% remission (based on standard white, DIN 5033)

LIGHT SPOT SIZE



SENSING RANGE DIAGRAM



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

Further information as well as suitable accessories, example applications and downloads such as CAD di-
mensional models, operating instructions and software can be found at www.sick.com/1074135



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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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