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DATA SHEET

# GTB6-P4231

G6  
Photoelectric sensors

**SICK** Sensor Intelligence

## PHOTOELECTRIC SENSORS

## GTB6-P4231

## ORDERING INFORMATION

Type	part no.
GTB6-P4231	1079712

Further device versions and accessories at [www.sick.com/G6](http://www.sick.com/G6)



Illustration may differ



## DETAILED TECHNICAL DATA

## FEATURES

Functional principle	Photoelectric proximity sensor	
Functional principle detail	Background suppression	
Sensing range max.	5 mm ... 400 mm <sup>1)</sup>	
Sensing range	50 mm ... 220 mm	
Emitted beam	Light source	PinPoint LED <sup>2)</sup>
	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

<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.

## SAFETY-RELATED PARAMETERS

MTTF <sub>D</sub>	1,772 years
DC <sub>avg</sub>	0 %

**ELECTRONICS**

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

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

<sup>2)</sup> May not fall below or exceed  $U_V$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> At  $U_V > 24\text{ V}$ ,  $I_A$  max. = 50 mA.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<sup>7)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> 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	Male connector M8, 4-pin
Material	<p>Housing Plastic, ABS/PC</p> <p>Front screen Plastic, PMMA</p>
Weight	60 g

**AMBIENT DATA**

Enclosure rating	IP67
Ambient operating temperature	$-25\text{ °C} \dots +55\text{ °C}$ <sup>1)</sup>
Ambient temperature, storage	$-40\text{ °C} \dots +70\text{ °C}$
UL File No.	NRKH.E348498 & NRKH7.E348498

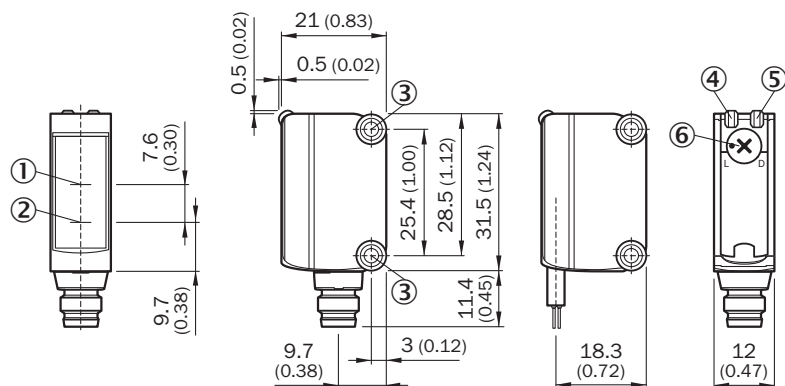
<sup>1)</sup> Temperature stability following adjustment  $\pm 10\text{ °C}$ .

**CERTIFICATES**

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓

Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

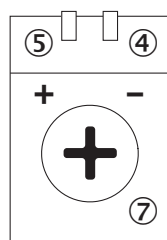
**DIMENSIONAL DRAWING**



Dimensions in mm (inch)

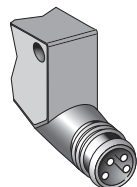
- ① Optical axis, receiver
- ② Optical axis, sender
- ③ Mounting holes M3
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Light/ dark rotary switch: L = light switching, D = dark switching

**ADJUSTMENTS ADJUSTMENT POSSIBILITY**

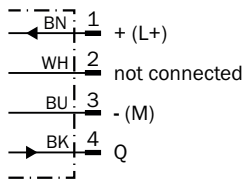


- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑦ Sensitivity control: potentiometer

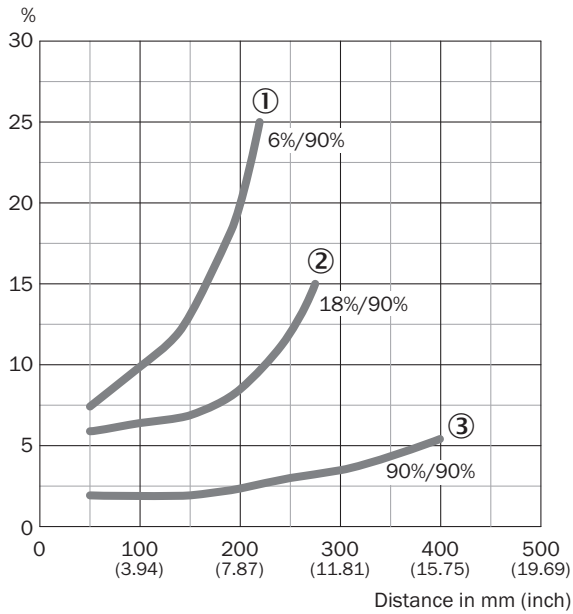
**CONNECTION TYPE**



**CONNECTION DIAGRAM CD-066**

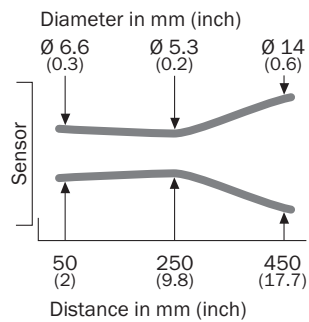


**CHARACTERISTIC CURVE**

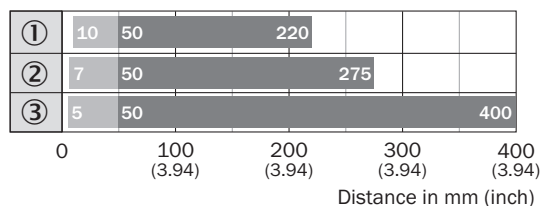


- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ object with 90% remission (based on standard white, DIN 5033)

**LIGHT SPOT SIZE**



**SENSING RANGE DIAGRAM**



■ Sensing range      ■ Sensing range max. typ.

- 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 dimensional models, operating instructions and software can be found at [www.sick.com/1079712](http://www.sick.com/1079712)



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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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