



DATA SHEET

GS6L-D4311S01

G6
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

GS6L-D4311S01

ORDERING INFORMATION

Type	part no.
GS6L-D4311S01	2134030

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

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Through-beam photoelectric sensor	
Sensing range	Sensing range min.	0 m
	Sensing range max.	40 m
	Recommended sensing range for the best performance	0 m ... 30 m
Polarisation filter	No	
Emitted beam	Light source	Laser
	Type of light	Visible red light
	Shape of light spot	Point-shaped
	Light spot size (distance)	Ø 3.5 mm (1,000 mm)
	Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle)	< +/- 1.5° (at T _u = +23 °C)
Key laser figures	Normative reference	IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11
	Laser class	1 ¹⁾
	Wave length	680 nm
	Pulse duration	3 µs
	Maximum pulse power	≤ 7.8 mW
	Average service life	100,000 h at T _a = +25 °C
Smallest detectable object (MDO) typ.	3.5 mm, at 1 m distance (object with 90% remission factor (corresponds to standard white according to DIN 5033))	
Display	LED green	Operating indicator
		Static on: power on
Special features	Sender only. For use with GE6L-P4211S01 #2134031	

¹⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

SAFETY-RELATED PARAMETERS

MTTF _D	1,005 years
DC _{avg}	0 %
T _M (mission time)	10 years

ELECTRONICS

Supply voltage U _B	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp}
Usage category	DC-13 (According to EN 60947-5-2)
Current consumption	≤ 20 mA, without load. At U _B = 24 V
Protection class	III
Special feature	Sender

¹⁾ Limit values.

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	
Housing	Plastic, ABS
Front screen	Plastic, PMMA
Cable	Plastic, PVC
Male connector	Metal, copper alloy (C3604 CUZN39PB3)
Weight	Approx. 27 g

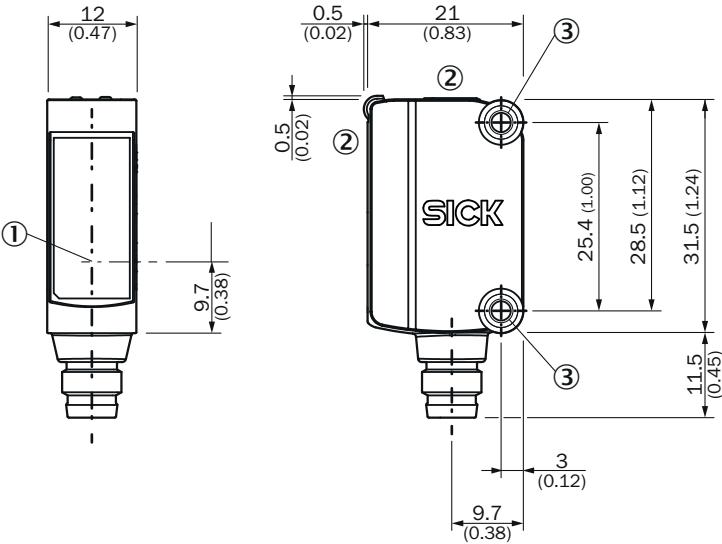
AMBIENT DATA

Enclosure rating	IP67 (EN 60529)
Ambient operating temperature	-20 °C ... +50 °C ^{1) 2)}
Ambient temperature, storage	-40 °C ... +70 °C
Typ. Ambient light immunity	Sunlight: ≤ 13,000 lx
Shock resistance	30 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
Vibration resistance	10 Hz ... 55 Hz (Amplitude 0.5 mm, 3 x 30 min (EN60068-2-6))
Air humidity	35 % ... 95 %, relative humidity (no condensation)
Electromagnetic compatibility (EMC)	EN 60947-5-2
UL File No.	NRKH.E348498 & NRKH7.E348498

¹⁾ As of T_a => 45 °C, a max. supply voltage U_B = 24 V and a max. load current I_{max} = 50 mA is permitted.

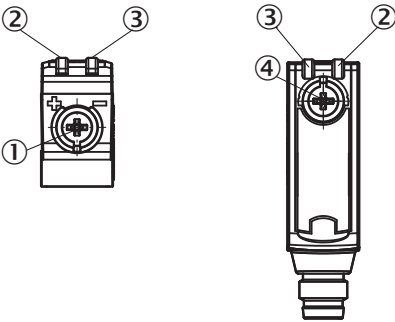
²⁾ Below T_a = -20 °C, a warm-up time of 3 seconds is required.

DIMENSIONAL DRAWING



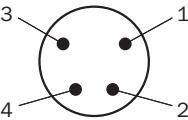
- Dimensions in mm (inch)
- ① Center of optical axis, sender
 - ② display and adjustment elements
 - ③ Mounting holes M3

DISPLAY AND ADJUSTMENT ELEMENTS

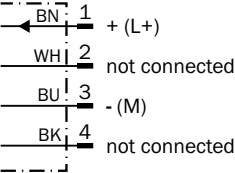


- ① Potentiometer
- ② LED yellow
- ③ LED green
- ④ operating mode switch

CONNECTION TYPE MALE CONNECTOR M8, 4-PIN



CONNECTION DIAGRAM CD-071



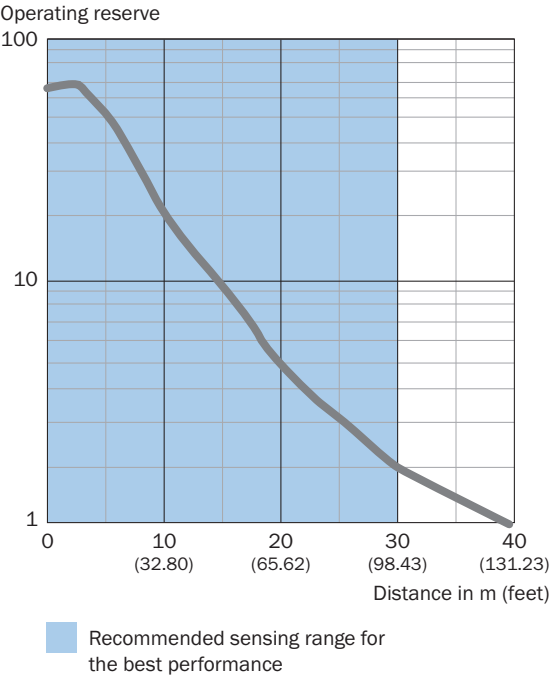
TRUTH TABLE PNP - LIGHT SWITCHING

	Light switching Q (normally closed)	
	Object not present → Output HIGH	Object present → Output LOW
Light receive	✓	✗
Light receive indicator	☀	✗
Load resistance	⚡	✗

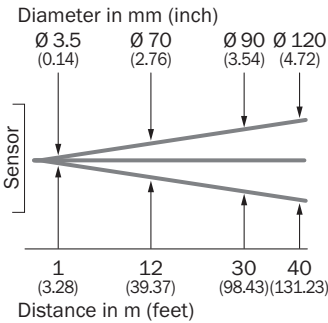
TRUTH TABLE PNP - DARK SWITCHING

	Dark switching $\bar{Q}$ (normally open)	
	Object not present → Output LOW	Object present → Output HIGH
Light receive	✓	✗
Light receive indicator	☀	✗
Load resistance	✗	⚡

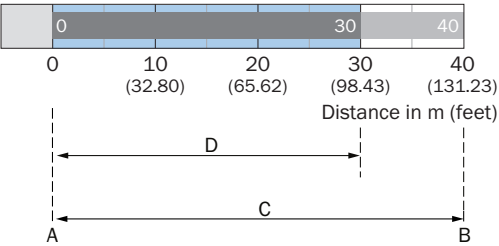
CHARACTERISTIC CURVE



LIGHT SPOT SIZE



SENSING RANGE DIAGRAM



- A = Sensing range min. in m
- B = Sensing range max. in m
- C = Viewing range
- D = Adjustable switching threshold

Recommended sensing range for the best performance

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/2134030



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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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