Data sheet



GE6L-P4211S01

G6

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	part no.
GE6L-P4211S01	2134031

Other models and accessories ➜ 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 filters	No
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)))
Adjustment	
Potentiometer	For setting the sensing range
Operating mode switch	For inverting the switching function (light/dark switching)
Display	
LED green	Operating indicatorStatic on: power on
LED yellow	Status of received light beamStatic on: object presentStatic off: object not present
Special features	**Receiver only. For use with GS6L-D4311S01 #2134030**

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}

[1] Limit values.
[2] At U_B > 24 V, I max. = 50 mA.
[3] With light/dark ratio 1:1.

Usage category	DC-13 (According to EN 60947-5-2)
Current consumption	≤ 20 mA, without load. At U_B = 24 V
Protection class	III
Digital output	
Number	2
Type	PNP
Switching mode	Light/dark switching
Signal voltage NPN HIGH/LOW	Approx. U_B / ≤ 3 V
Output current $I_{max.}$	≤ 100 mA [2]
Circuit protection outputs	Reverse polarity protected
	Overcurrent protected
	Short-circuit protected
Response time	≤ 625 µs
Switching frequency	1,000 Hz [3]
Pin/Wire assignment	
Function of pin 4/black (BK)	Digital output, light switching, object present → output Q HIGH
Function of pin 4/black (BK) – detail	The pin 4 function of the sensor can be switched
	Additional possible settings via operating mode switch
Special feature	Receiver

[1] Limit values.
[2] At U_B > 24 V, I max. = 50 mA.
[3] With light/dark ratio 1:1.

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. 28 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))

[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_u = –20 °C, a warm-up time of 3 seconds is required.

Air humidity	35 % ... 95 %, relative humidity (no condensation)
Electromagnetic compatibility (EMC)	EN 60947-5-2
UL File No.	NRKH.E348498 & NRKH7.E348498

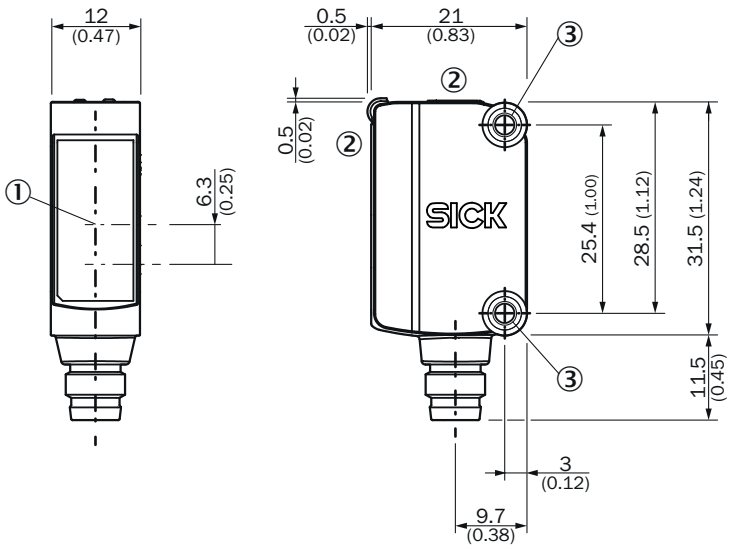
[1] As of T_a => 45 °C, a max. supply voltage U_B = 24 V and a max. load current $I_{max.}$ = 50 mA is permitted.

[2] Below T_u = –20 °C, a warm-up time of 3 seconds is required.

Classifications

ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

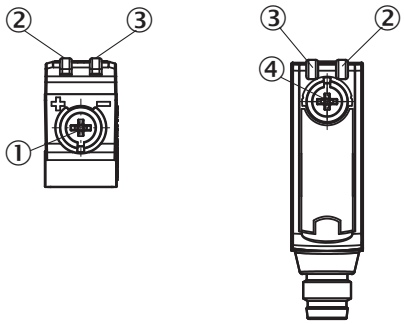
Dimensional drawing



Dimensions in mm (inch)
① Center of optical axis, receiver
② display and adjustment elements

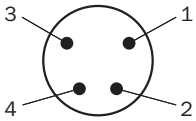
③ Mounting holes M3

display and adjustment elements

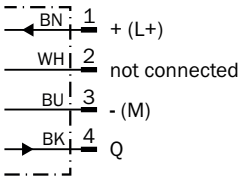


① Potentiometer
② LED yellow
③ LED green
④ operating mode switch

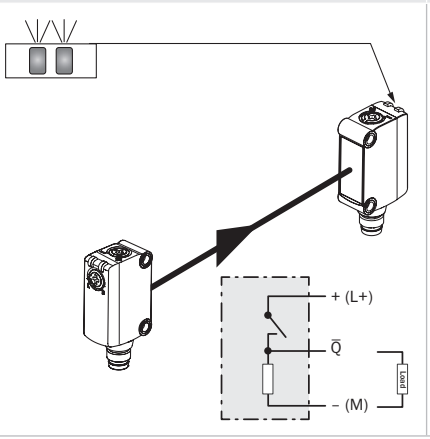
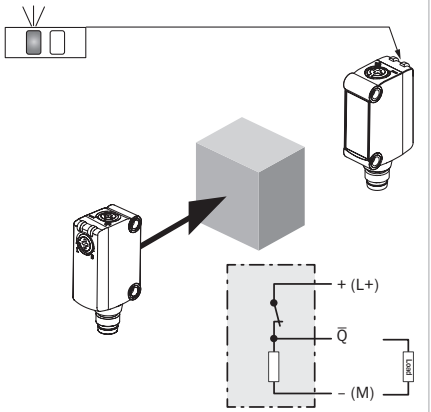
Connection type Male connector M8, 4-pin



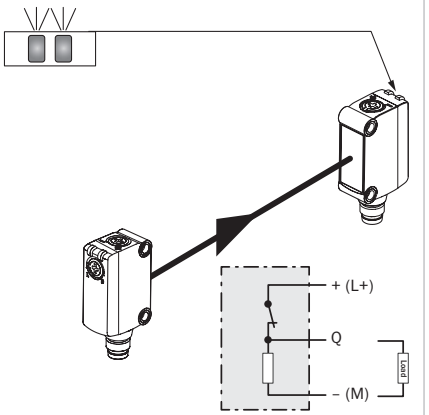
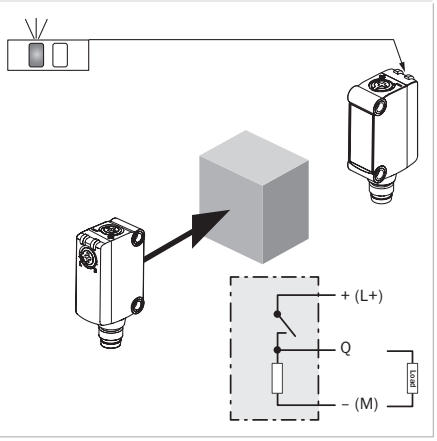
Connection diagram Cd-067



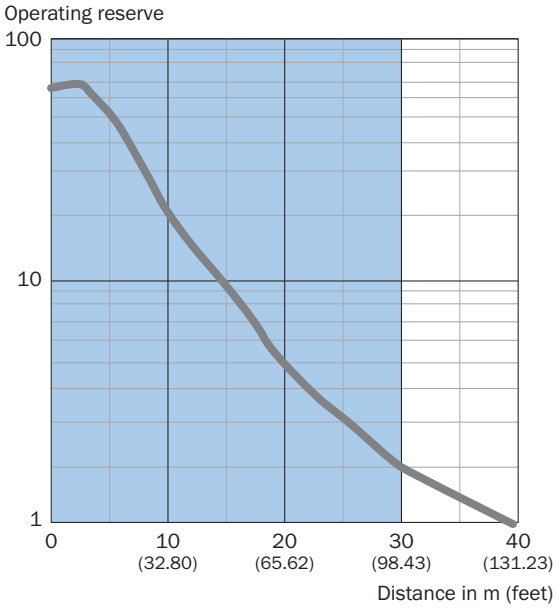
Truth table PNP - dark switching

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

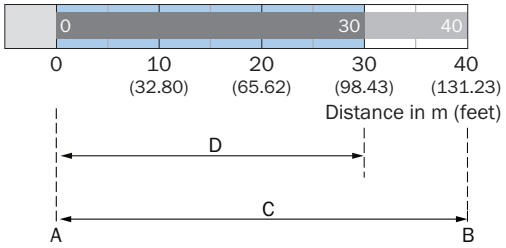
Truth table PNP - light switching

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

Characteristic curve



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

Recommended accessories

Other models and accessories ➜ www.sick.com/G6

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Clamp bar to fix G6 sensors on rods of 12 mm, clamp-on design up to 4 mm wall thickness • **Material:** Steel • **Details:** Aluminum (clamp bar), stainless steel (bracket) • **Items supplied:** Clamp bar mounting and clamp function, mounting bracket, mounting hardware	BEF-KHS-IS12G6	2086865
	• **Material:** Stainless steel • **Details:** Stainless steel (1.4301) • **Suitable for:** W4S	BEF-WN-G6	2062909

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com