Data sheet

GLD6SP-21A1217EZZZ

G6

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
GLD6SP-21A1217EZZZ	1151604

Included in delivery: P250 (1), BEF-W100-A (1)

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

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	With minimum distance to reflector (dual lens system)
Sensing range	
Sensing range min.	0.03 m
Sensing range max.	6 m
Maximum distance range from reflector to sensor (operating reserve 1)	0.03 m ... 6 m
Recommended distance range from reflector to sensor (operating reserve 2)	0.07 m ... 5 m
Reference reflector	Reflector PL80A
Recommended sensing range for the best performance	0.25 m ... 1.6 m
Polarisation filters	Yes
Emitted beam	
Light source	PinPoint LED
Type of light	Visible red light
Shape of light spot	Point-shaped
Light spot size (distance)	Ø 11.5 mm (350 mm)
Key LED figures	
Normative reference	EN 62471:2008-09 | IEC 62471:2006, modified
LED risk group marking	Free group
Wave length	640 nm
Average service life	100,000 h at T_a = +25 °C
Adjustment	
Potentiometer	For setting the sensing range, 270°

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 not presentStatic off: object present
Items supplied	Mounting bracket BEF-W100-A, Reflector P250

Electronics

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	≤ 5 V_{pp}
Usage category	DC-12 (According to EN 60947-5-2) 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	1
Type	PNP
Switching mode	Light switching
Signal voltage PNP HIGH/LOW	Approx. U_B-3 V / 0 V
Output current $I_{max.}$	≤ 100 mA [2]
Circuit protection outputs	Reverse polarity protected
	Overcurrent protected
	Short-circuit protected
Response time	≤ 625 µs [3]
Switching frequency	1,000 Hz [4]
Pin/Wire assignment	
Function of pin 4/black (BK)	Digital output, light switching, object present → output Q LOW
Function of pin 4/black (BK) – detail	The pin 4 function of the sensor can be switched
	Additional possible settings via operating mode switch

[1] Limit values.
[2] At U_B > 24 V, I max. = 50 mA.
[3] Signal transit time with resistive load.
[4] With light/dark ratio 1:1.

Mechanics

Housing	Rectangular
Dimensions (W x H x D)	12 mm x 31.6 mm x 21 mm
Connection	Connector M8, 3-pin
Material	
Housing	Plastic, ABS
Front screen	Plastic, PMMA
Male connector	Metal, copper alloy (C3604 CUZN39PB3)
Weight	Approx. 10 g
Maximum tightening torque of the fixing screws	0.4 Nm

Ambient data

Enclosure rating	IP67 (EN 60529)
Ambient operating temperature	–30 °C ... +55 °C
Ambient temperature, storage	–40 °C ... +70 °C
Typ. Ambient light immunity	Sunlight: ≤ 30,000 lx
Shock resistance	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

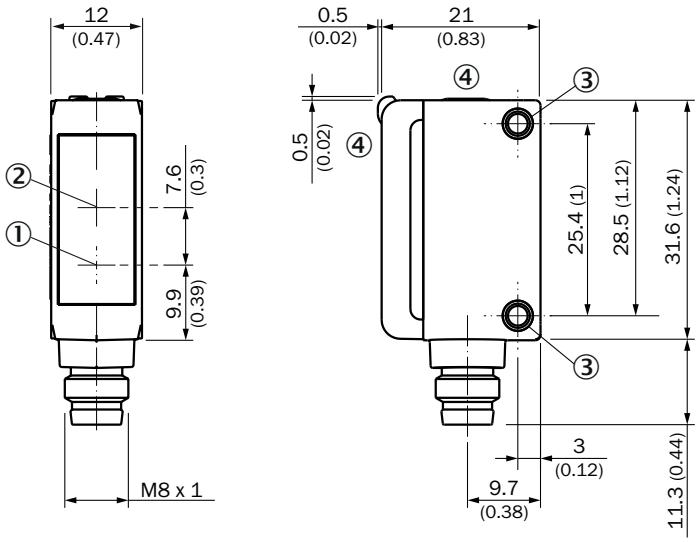
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓

Classifications

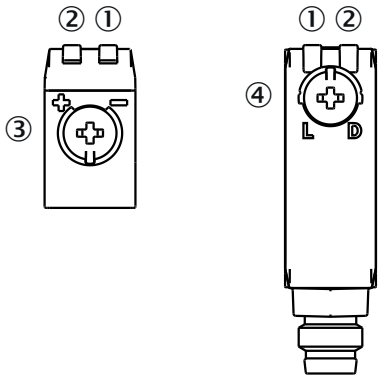
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Dimensional drawing



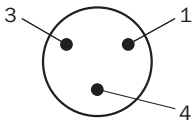
Dimensions in mm (inch)
① Center of optical axis, sender
② Center of optical axis, receiver
③ Mounting holes M3
④ display and adjustment elements

display and adjustment elements

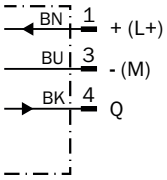


① LED green
② LED yellow
③ Potentiometer
④ operating mode switch

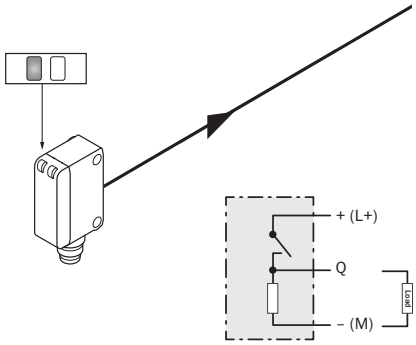
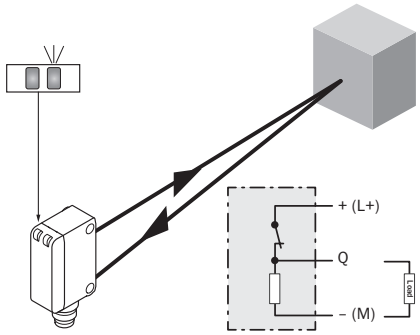
Connection type Connector M8, 3-pin



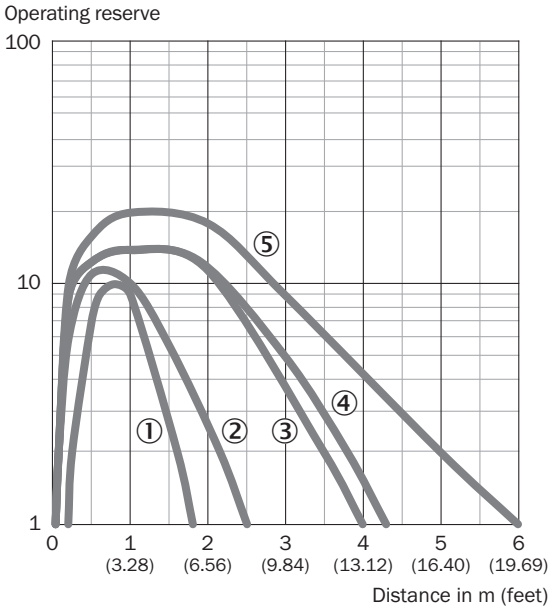
Connection diagram Cd-045



Truth table PNP - light switching Q

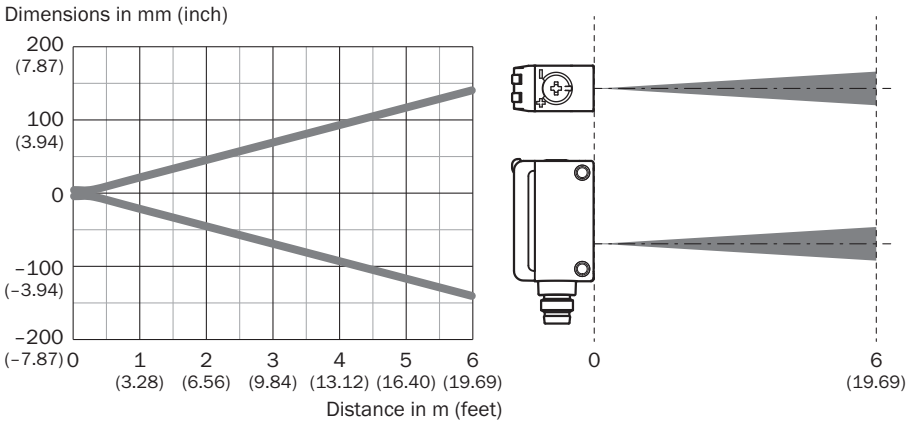
	Light switching Q (normally open)	
	Object not present ➜ Output LOW	Object present ➜ Output HIGH
Light receive	⊗	✓
Light receive indicator	⊗	●
Load resistance	⊗	⚠
		

Characteristic curve

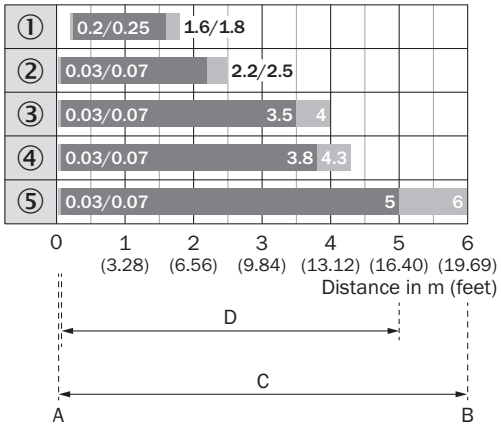


① Reflective tape REF-IRF-56
② Reflector PL20A
③ Reflector P250
④ Reflector PL40A
⑤ Reflector PL80A

Light spot size



Sensing range diagram



1	Reflective tape REF-IRF-56
2	Reflector PL20A
3	Reflector P250
4	Reflector PL40A
5	Reflector PL80A
A	Sensing range min. in m
B	Sensing range max. in m
C	Maximum distance range from reflector to sensor (operating reserve 1)
D	Recommended distance range from reflector to sensor (operating reserve 2)

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
	• **Description:** Universal mounting bracket for reflectors • **Dimensions (W x H x L):** 85 mm x 90 mm x 35 mm • **Material:** Steel • **Details:** Steel, zinc coated • **Suitable for:** C110A, P250, PL20, PL30A, PL40A, PL80A	BEF-WN-REFX	2064574

	Brief description	Type	part no.
reflectors and optics			
	• **Description:** Rectangular, screw connection • **Dimensions:** 84 mm 84 mm • **Ambient operating temperature:** –30 °C ... +65 °C	PL80A	1003865

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.”

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