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DATA SHEET

# GLD6SP-34A1217EZZZ

G6
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

## PHOTOELECTRIC SENSORS

# GLD6SP-34A1217EZZZ

### ORDERING INFORMATION

| Type | part no. |
|---|---|
| GLD6SP-34A1217EZZZ | 1135405 |

Further device versions and accessories at 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 filter | 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 indicator<br>Static on: power on |
| LED yellow | Status of received light beam<br>Static on: object not present<br>Static off: object present |

## SAFETY-RELATED PARAMETERS

| | |
|---|---|
| $MTTF_D$ | 4,112 years |
| $DC_{avg}$ | 0% |
| $T_M$ (mission time) | 20 years |

## 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)<br>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/dark 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<br>Overcurrent protected<br>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<br>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 | Cable with plug, M12, 4-pin, 348 mm |
| Connection detail | |
| Deep-freeze property | Do not bend below 0 °C |
| Conductor size | 0.14 mm² |
| Cable diameter | Ø 3.4 mm |
| Length of cable (L) | 300 mm |
| Material | |
| Housing | Plastic, ABS |
| Front screen | Plastic, PMMA |
| Cable | Plastic, PVC |
| Male connector | Metal, copper alloy (C3604 CUZN39PB3) |
| Weight | Approx. 23 g |
| Maximum tightening torque of the fixing screws | 0.4 Nm |

## AMBIENT DATA

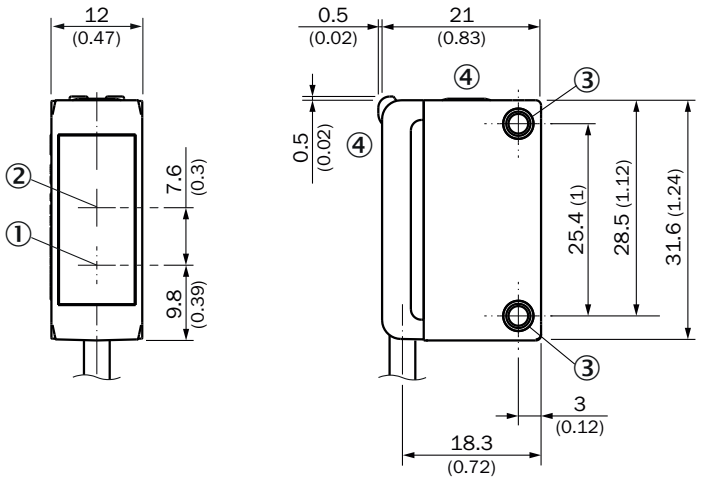
| | |
|---|---|
| Enclosure rating | IP67 (EN 60529) |
| Ambient operating temperature | –30 °C ... +55 °C |

| | |
|---|---|
| Ambient temperature, storage | –40 °C ... +70 °C |
| Typ. Ambient light immunity | Sunlight: ≤ 30,000 lx |
| Shock resistance | 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 |

## CERTIFICATES

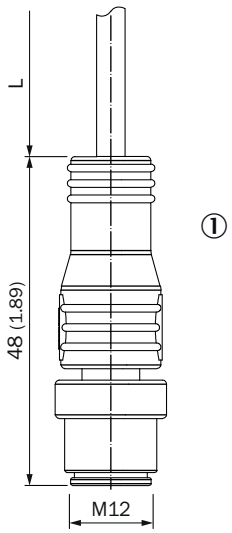
| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| China Compulsory Product Certification (CCC) exempt | ✓ |
| cULus certificate | ✓ |
| Photobiological safety (IEC EN 62471) | ✓ |

## DIMENSIONAL DRAWING



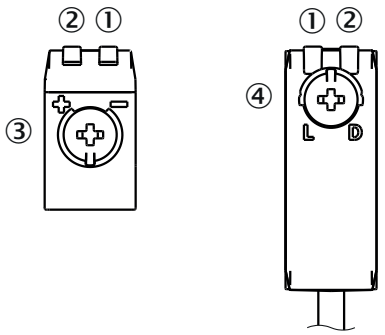

Dimensions in mm (inch)
① Center of optical axis, sender
② Center of optical axis, receiver
③ Mounting holes M3
④ display and adjustment elements

## DIMENSIONAL DRAWING, CONNECTION



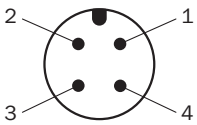

Dimensions in mm (inch)
For length of cable (L), see technical data
① Cable with M12 male connector

## DISPLAY AND ADJUSTMENT ELEMENTS

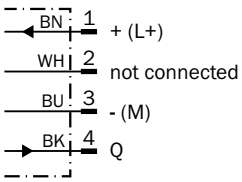



① LED green
② LED yellow
③ Potentiometer
④ operating mode switch

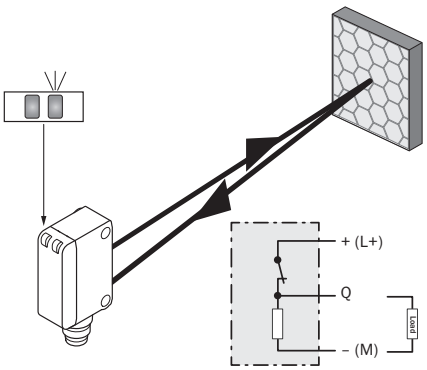
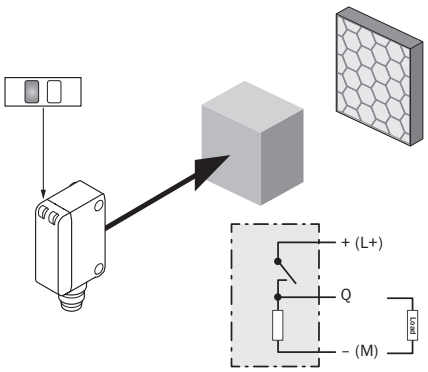
## CONNECTION TYPE M12 MALE CONNECTOR, 4-PIN



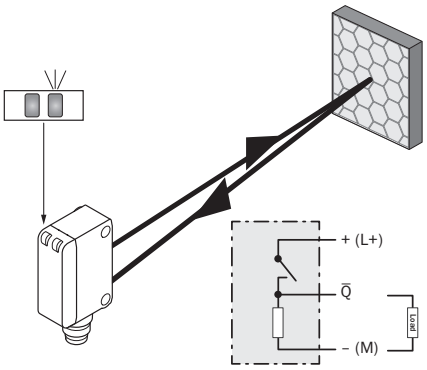
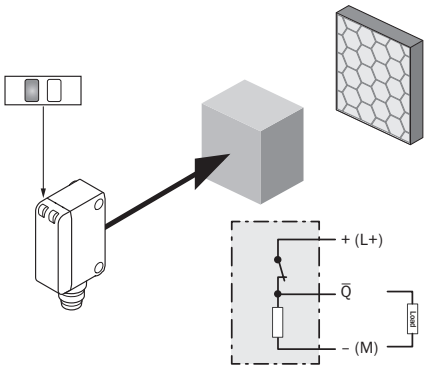

## CONNECTION DIAGRAM CD-066



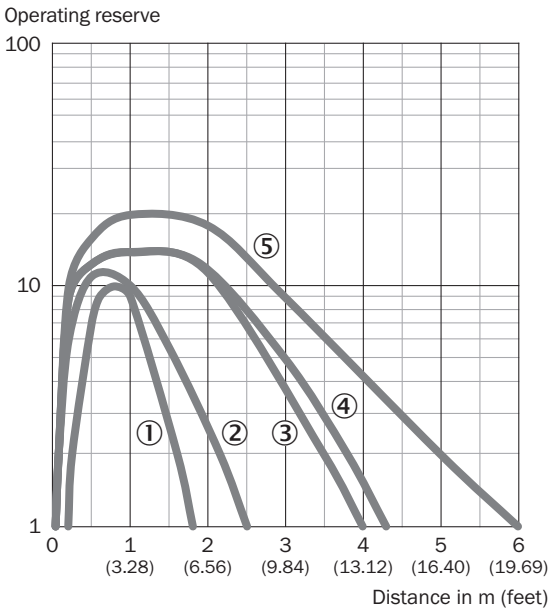
### TRUTH TABLE PNP - LIGHT SWITCHING Q

| | 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 $\bar{Q}$

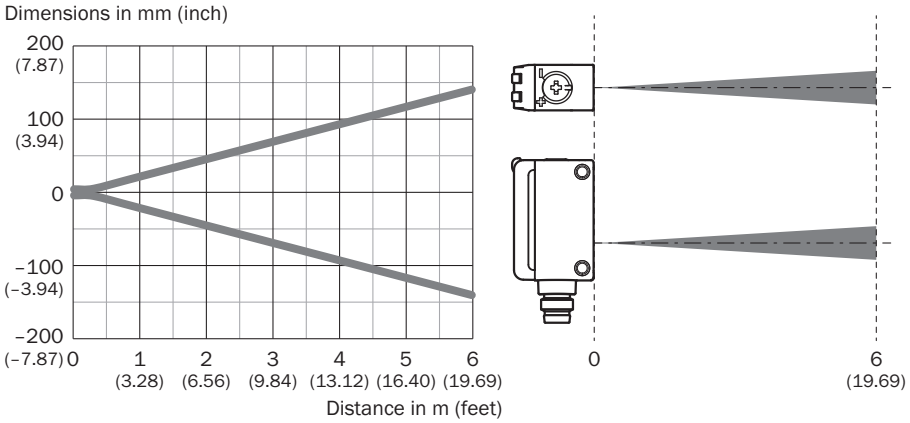
| | Dark switching $\bar{Q}$ (normally open) | |
|---|---|---|
| | Object not present ➜ Output LOW | Object present ➜ Output HIGH |
| Light receive | ✓ | ✗ |
| Light receive indicator | ☀ | ✗ |
| Load resistance | ✗ | ⚡ |
| |  |  |

## CHARACTERISTIC CURVE

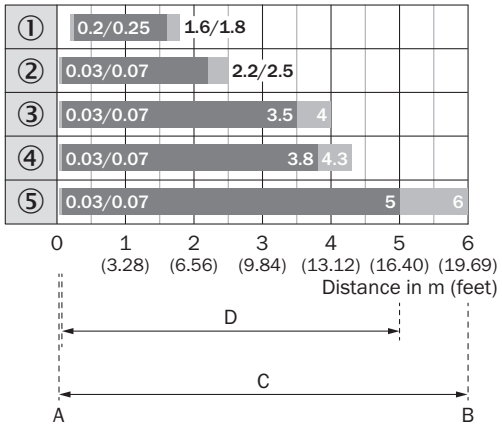



① Reflective tape REF-IRF-56
② Reflector PL20A
③ Reflector P250
④ Reflector PL40A
⑤ Reflector PL80A

## 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) |

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/1135405

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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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