



# GL6-N1212S42

G6

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

| Type         | part no. |
|--------------|----------|
| GL6-N1212S42 | 1068477  |

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

Other models and accessories → [www.sick.com/G6](http://www.sick.com/G6)

### Detailed technical data

#### Features

|                                    |                                                                          |
|------------------------------------|--------------------------------------------------------------------------|
| <b>Functional principle</b>        | Photoelectric retro-reflective sensor                                    |
| <b>Functional principle detail</b> | With minimum distance to reflector (dual lens system)                    |
| <b>Sensing range max.</b>          | 0.03 m ... 6 m <sup>1)</sup>                                             |
| <b>Sensing range</b>               | 0.07 m ... 5 m <sup>1)</sup>                                             |
| <b>Polarisation filter</b>         | Yes                                                                      |
| <b>Emitted beam</b>                |                                                                          |
| Light source                       | PinPoint LED <sup>2)</sup>                                               |
| Type of light                      | Visible red light                                                        |
| Light spot size (distance)         | Ø 8 mm (350 mm)                                                          |
| <b>Key LED figures</b>             |                                                                          |
| Wave length                        | 650 nm                                                                   |
| <b>Adjustment</b>                  | Potentiometer, 270 °                                                     |
| <b>Special features</b>            | Customer-specific action table logic                                     |
| <b>Items supplied</b>              | Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250 |

<sup>1)</sup> Reflector PL80A.

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

#### Electronics

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| <b>Supply voltage U<sub>B</sub></b> | 10 V DC ... 30 V DC <sup>1)</sup> |
| <b>Ripple</b>                       | ± 10 % <sup>2)</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<sub>V</sub> tolerances.

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

<sup>4)</sup> At U<sub>V</sub> > 24 V, I<sub>A</sub> 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<sub>S</sub> connections reverse-polarity protected.

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

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

|                                 |                                                       |
|---------------------------------|-------------------------------------------------------|
| <b>Current consumption</b>      | 30 mA <sup>3)</sup>                                   |
| <b>Protection class</b>         | III                                                   |
| <b>Digital output</b>           |                                                       |
| Type                            | NPN                                                   |
| Switching mode                  | Light/dark switching                                  |
| Switching mode selector         | Selectable via light/dark selector                    |
| Signal voltage NPN HIGH/LOW     | Approx. $V_S / \leq 3 \text{ V}$                      |
| Output current $I_{\text{max}}$ | $\leq 100 \text{ mA}$ <sup>4)</sup>                   |
| Response time                   | $< 625 \mu\text{s}$ <sup>5)</sup>                     |
| Switching frequency             | 1,000 Hz <sup>6)</sup>                                |
| <b>Circuit protection</b>       | A <sup>7)</sup><br>B <sup>8)</sup><br>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  $U_Y$  tolerances.

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

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

<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

|                               |                                  |
|-------------------------------|----------------------------------|
| <b>Housing</b>                | Rectangular                      |
| <b>Dimensions (W x H x D)</b> | 12 mm x 31.5 mm x 21 mm          |
| <b>Connection</b>             | Cable, 3-wire, 2 m <sup>1)</sup> |
| <b>Connection detail</b>      |                                  |
| Length of cable (L)           | 2 m <sup>1)</sup>                |
| <b>Material</b>               |                                  |
| Housing                       | Plastic, ABS/PC                  |
| Front screen                  | Plastic, PMMA                    |
| Cable                         | Plastic, PVC                     |
| <b>Weight</b>                 | 60 g                             |

<sup>1)</sup> Do not bend below 0 °C.

## Ambient data

|                                      |                                 |
|--------------------------------------|---------------------------------|
| <b>Enclosure rating</b>              | IP67                            |
| <b>Ambient operating temperature</b> | -25 °C ... +55 °C <sup>1)</sup> |
| <b>Ambient temperature, storage</b>  | -40 °C ... +70 °C               |
| <b>UL File No.</b>                   | NRKH.E348498 & NRKH7.E348498    |

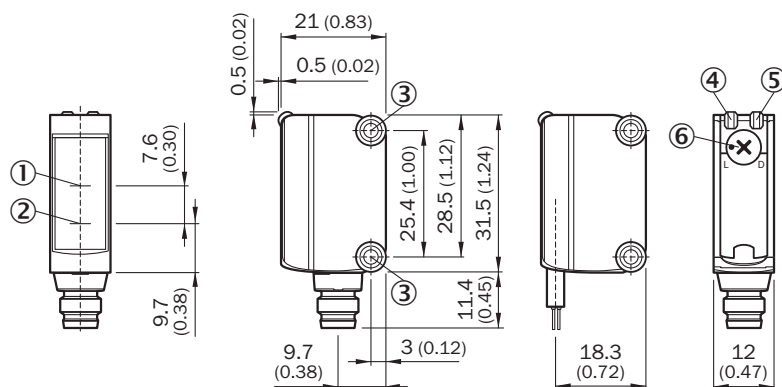
<sup>1)</sup> Temperature stability following adjustment +/-10 °C.

## Classifications

|                   |          |
|-------------------|----------|
| <b>ECLASS 5.0</b> | 27270902 |
|-------------------|----------|

|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.1.4</b>   | 27270902 |
| <b>ECLASS 6.0</b>     | 27270902 |
| <b>ECLASS 6.2</b>     | 27270902 |
| <b>ECLASS 7.0</b>     | 27270902 |
| <b>ECLASS 8.0</b>     | 27270902 |
| <b>ECLASS 8.1</b>     | 27270902 |
| <b>ECLASS 9.0</b>     | 27270902 |
| <b>ECLASS 10.0</b>    | 27270902 |
| <b>ECLASS 11.0</b>    | 27270902 |
| <b>ECLASS 12.0</b>    | 27270902 |
| <b>ETIM 5.0</b>       | EC002717 |
| <b>ETIM 6.0</b>       | EC002717 |
| <b>ETIM 7.0</b>       | EC002717 |
| <b>ETIM 8.0</b>       | EC002717 |
| <b>UNSPSC 16.0901</b> | 39121528 |

## Dimensional drawing



Dimensions in mm (inch)

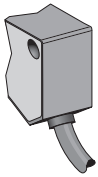
- ① Optical axis, receiver
- ② Optical axis, sender
- ③ Mounting holes M3
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Light/ dark rotary switch: L = light switching, D = dark switching

## Adjustments Adjustment possibility

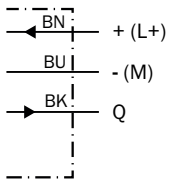


- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑦ Sensitivity control: potentiometer

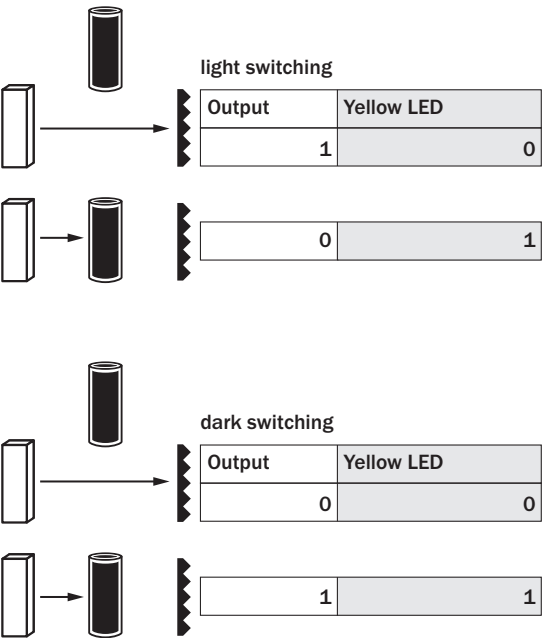
## Connection type



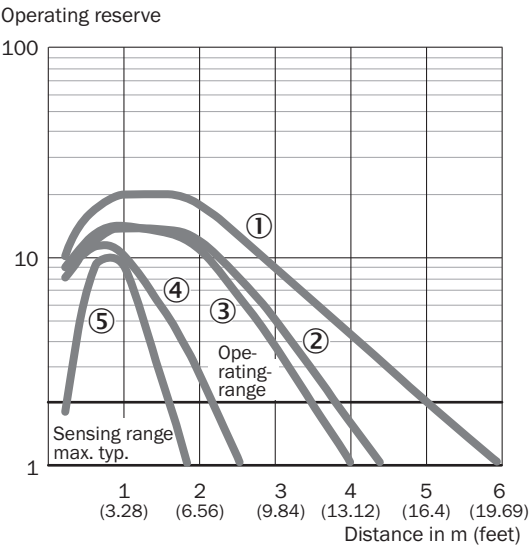
## Connection diagram Cd-043



Truth table

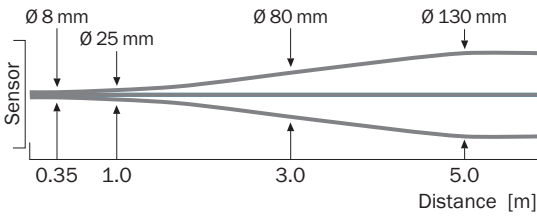


Characteristic curve GL6

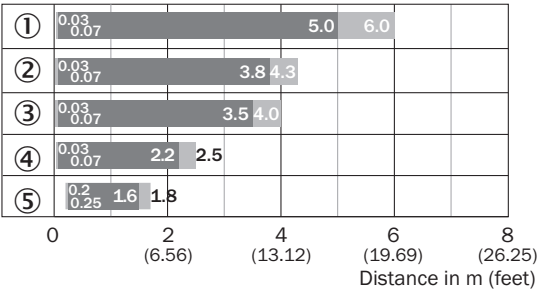


- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector P250
- ④ Reflector PL20A
- ⑤ Reflective tape REF-IRF-56

Light spot size GL6, GL6G



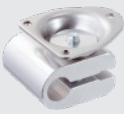
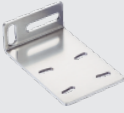
Sensing range diagram GL6, GL6G



- Sensing range      ■ Sensing range max.
- ① Reflector PL80A  
② Reflector PL40A  
③ Reflector P250  
④ Reflector PL20A  
⑤ Reflective tape REF-IRF-56

## Recommended accessories

Other models and accessories → [www.sick.com/G6](http://www.sick.com/G6)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                     | Type           | part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                       |                |          |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Clamp bar to fix G6 sensors on rods of 12 mm, clamp-on design up to 4 mm wall thickness</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Aluminum (clamp bar), stainless steel (bracket)</li> <li><b>Items supplied:</b> Clamp bar mounting and clamp function, mounting bracket, mounting hardware</li> </ul>     | BEF-KHS-IS12G6 | 2086865  |
|    | <ul style="list-style-type: none"> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel (1.4301)</li> <li><b>Suitable for:</b> W4S, W4S</li> </ul>                                                                                                                                                                                                           | BEF-WN-G6      | 2062909  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for wall mounting</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W8, W8G, W8 Laser, W8 Inox, G6, G6 Inox, W100 Laser, W100-2, KTM Core, KTM Prime, CSM, LUTM, W4S</li> </ul> | BEF-W100-A     | 5311520  |
|   | <ul style="list-style-type: none"> <li><b>Description:</b> Universal mounting bracket for reflectors</li> <li><b>Dimensions (W x H x L):</b> 85 mm x 90 mm x 35 mm</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Suitable for:</b> C110A, P250, PL20, PL30A, PL40A, PL80A</li> </ul>                                                        | BEF-WN-REFX    | 2064574  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Plate N11N for universal clamp bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li> <li><b>Items supplied:</b> Universal clamp (5322627), mounting hardware</li> <li><b>Usable for:</b> DeltaPac, Glare, WTD20E</li> </ul>       | BEF-KHS-N11N   | 2071081  |
| reflectors and optics                                                               |                                                                                                                                                                                                                                                                                                                                                                                       |                |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Rectangular, screw connection</li> <li><b>Dimensions:</b> 51 mm 61 mm</li> <li><b>Ambient operating temperature:</b> -30 °C ... +65 °C</li> </ul>                                                                                                                                                                          | P250           | 5304812  |
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                       |                |          |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M8, 3-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> 0.14 mm² ... 0.5 mm²</li> </ul>                                                                                          | STE-0803-G     | 6037322  |

## 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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