



GTB6-P4212

G6

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|------------|----------|
| GTB6-P4212 | 1052442 |

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

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

Detailed technical data

Features

| | |
|------------------------------------|--|
| Functional principle | Photoelectric proximity sensor |
| Functional principle detail | Background suppression |
| Sensing range max. | 5 mm ... 250 mm ¹⁾ |
| Sensing range | 35 mm ... 140 mm |
| Polarisation filters | No |
| Emitted beam | |
| Light source | PinPoint LED ²⁾ |
| Type of light | Visible red light |
| Light spot size (distance) | Ø 6 mm (100 mm) |
| Key LED figures | |
| Wave length | 650 nm |
| Adjustment | Mechanical spindle, 5 turns |
| Items supplied | Stainless steel mounting bracket (1.4301/304) BEF-W100-A |

¹⁾ Object with 90% remission (based on standard white, DIN 5033).

²⁾ Average service life: 100,000 h at T_U = +25 °C.

Safety-related parameters

| | |
|-------------------------|-------------|
| MTTF_D | 1,886 years |
| DC_{avg} | 0 % |

Electrical data

| | |
|--|--|
| Supply voltage U_B | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | $\pm 10\%$ ²⁾ |
| Current consumption | 30 mA ³⁾ |
| Protection class | III |
| Digital output | |
| Type | PNP |
| Signal voltage PNP HIGH/LOW | $V_S - (\leq 3\text{ V}) / \text{approx. } 0\text{ V}$ |
| Output current I_{max} | $\leq 100\text{ mA}$ ⁴⁾ |
| Response time | $< 625\ \mu\text{s}$ ⁵⁾ |
| Switching frequency | 1,000 Hz ⁶⁾ |
| Switching mode | Light/dark switching |
| Switching mode selector | Selectable via light/dark selector |
| Circuit protection | A ⁷⁾ B ⁸⁾ D ⁹⁾ |

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below U_V tolerances.

³⁾ Without load.

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

⁵⁾ Signal transit time with resistive load.

⁶⁾ With light/dark ratio 1:1.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

⁹⁾ D = outputs overcurrent and short-circuit protected.

Mechanical data

| | |
|-------------------------------|--------------------------|
| 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/PC |
| Front screen | Plastic, PMMA |
| Weight | 20 g |

Ambient data

| | |
|--------------------------------------|---|
| Enclosure rating | IP67 |
| Ambient operating temperature | $-25\text{ }^\circ\text{C} \dots +55\text{ }^\circ\text{C}$ ¹⁾ |
| Ambient temperature, storage | $-40\text{ }^\circ\text{C} \dots +70\text{ }^\circ\text{C}$ |
| UL File No. | NRKH.E348498 & NRKH7.E348498 |

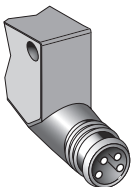
¹⁾ Temperature stability following adjustment $\pm 10\text{ }^\circ\text{C}$.

Classifications

| | |
|---------------------|----------|
| eCl@ss 5.0 | 27270904 |
| eCl@ss 5.1.4 | 27270904 |

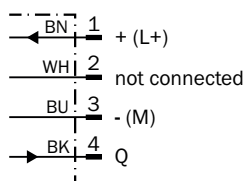
| | |
|-----------------------|----------|
| eCl@ss 6.0 | 27270904 |
| eCl@ss 6.2 | 27270904 |
| eCl@ss 7.0 | 27270904 |
| eCl@ss 8.0 | 27270904 |
| eCl@ss 8.1 | 27270904 |
| eCl@ss 9.0 | 27270904 |
| eCl@ss 10.0 | 27270904 |
| eCl@ss 11.0 | 27270904 |
| eCl@ss 12.0 | 27270903 |
| ETIM 5.0 | EC002719 |
| ETIM 6.0 | EC002719 |
| ETIM 7.0 | EC002719 |
| ETIM 8.0 | EC002719 |
| UNSPSC 16.0901 | 39121528 |

Connection type



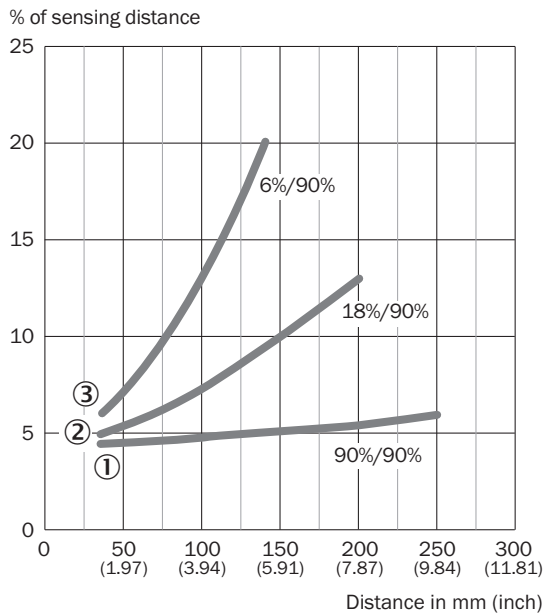
Connection diagram

Cd-066



Characteristic curve

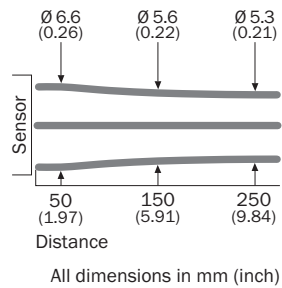
GTB6



- ① Object with 90% remission (based on standard white, DIN 5033)
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on black, 6% remission

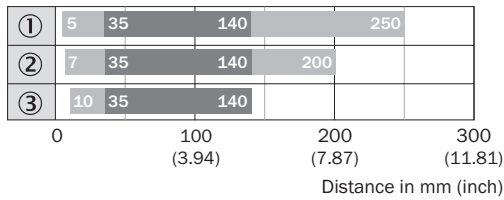
Light spot size

GTB6



Sensing range diagram

GTB6

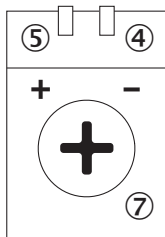


■ Sensing range max. ■ Sensing range

- ① Object with 90% remission (based on standard white, DIN 5033)
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on black, 6% remission

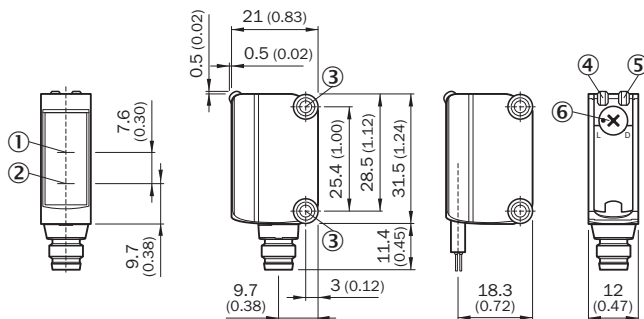
Adjustments

Adjustment possibility



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





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

Recommended accessories

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

| | Brief description | Type | Part no. |
|---|--|--------------------|----------|
| Universal bar clamp systems | | | |
|  | Clamp bar to fix G6 sensors on rods of 12 mm, clamp-on design up to 4 mm wall thickness, aluminum (clamp bar), stainless steel (bracket), clamp bar mounting and clamp function, mounting bracket, mounting hardware | BEF-KHS-IS12G6 | 2086865 |
| Mounting brackets and plates | | | |
|  | Stainless steel (1.4301) | BEF-WN-G6 | 2062909 |
| Plug connectors and cables | | | |
|  | Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF8U14-050VA3XLEAX | 2095889 |
|  | Head A: male connector, M8, 4-pin, straight Cable: unshielded | STE-0804-G | 6037323 |

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