



GTB6-F4431V

G6

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

ECOLAB



Ordering information

| Type | Part no. |
|-------------|----------|
| GTB6-F4431V | 1086172 |

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 ... 400 mm ¹⁾ |
| Sensing range | 50 mm ... 220 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 |
| Special applications | Hygienic and washdown zones |

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

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

Electrical data

| | |
|-------------------------------------|-----------------------------------|
| Supply voltage U_B | 10 V DC ... 30 V DC ¹⁾ |
|-------------------------------------|-----------------------------------|

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 V, I_A max. = 50 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.

| | |
|---------------------------------|--|
| Ripple | $\pm 10\%$ ²⁾ |
| Current consumption | 32 mA ³⁾ |
| Protection class | III |
| Digital output | |
| Type | PNP |
| Switching mode | Light/dark switching |
| 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 | $< 1.25\text{ ms}$ ⁵⁾ |
| Switching frequency | 500 Hz ⁶⁾ |
| Output function | Complementary switching output |
| Circuit protection | A ⁷⁾ B ⁸⁾ D ⁹⁾ |

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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.

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

Mechanical data

| | |
|-------------------------------|---|
| Housing | Rectangular |
| Dimensions (W x H x D) | 15 mm x 44 mm x 22 mm |
| Connection | Male connector M8, 4-pin |
| Material | |
| Housing | Stainless steel, Stainless steel V4A (1.4404, 316L) |
| Front screen | Plastic, PMMA |
| Weight | 40 g |

Ambient data

| | |
|--------------------------------------|---|
| Enclosure rating | IP67 IP69K ¹⁾ |
| Ambient operating temperature | $-25\text{ }^\circ\text{C} \dots +55\text{ }^\circ\text{C}$ ²⁾ |
| Ambient temperature, storage | $-30\text{ }^\circ\text{C} \dots +75\text{ }^\circ\text{C}$ |
| UL File No. | NRKH.E348498 & NRKH7.E348498 |

¹⁾ According to ISO 20653:2013-03.

²⁾ Temperature stability following adjustment $\pm 10\text{ }^\circ\text{C}$.

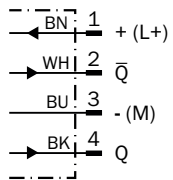
Classifications

| | |
|---------------------|----------|
| ECLASS 5.0 | 27270904 |
| ECLASS 5.1.4 | 27270904 |
| ECLASS 6.0 | 27270904 |

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

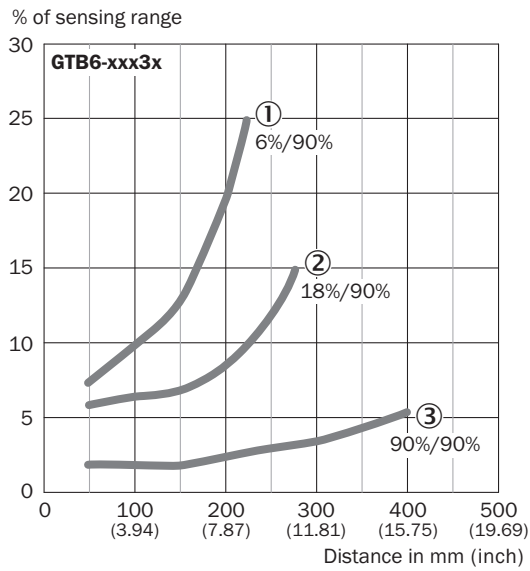
Connection diagram

Cd-084



Characteristic curve

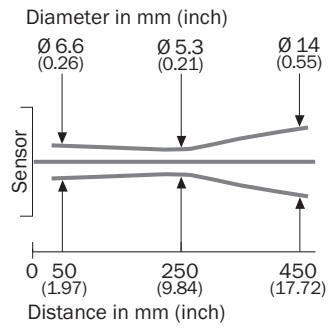
GTB6 Inox, Red, LongRange



- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

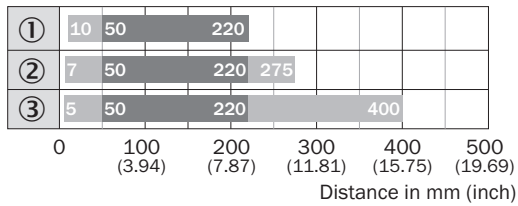
Light spot size

GTB6 Inox, Red, LongRange



Sensing range diagram

GTB6 Inox, Red, LongRange

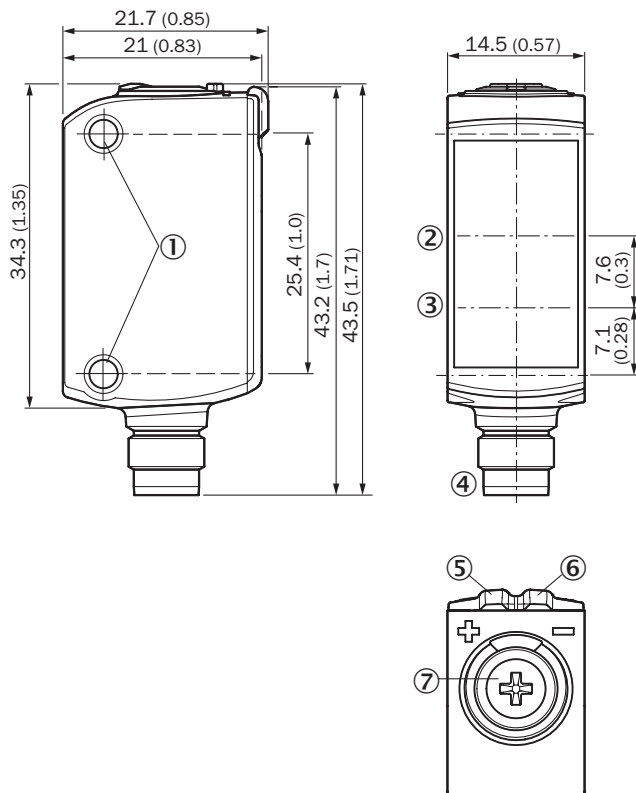


■ Sensing range ■ Sensing range max.

- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

Dimensional drawing (Dimensions in mm (inch))





GTB6, GTE6, GL6, GSE6 Inox, male connector



- ① M3 mounting hole
- ② Optical axis, receiver
- ③ Optical axis, sender
- ④ Connection
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ LED indicator green: Supply voltage active
- ⑦ Potentiometer

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 | | | |
|  | Mounting bracket for wall mounting, stainless steel, mounting hardware included | BEF-W100-A | 5311520 |
| Plug connectors and cables | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M8, 4-pin, straight • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: 0.14 mm² ... 0.5 mm² | STE-0804-G | 6037323 |
| Others | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M8, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals | YF8U14-050VA3XLEAX | 2095889 |

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:

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