

# GTB10-F7431S14 G10

**PHOTOELECTRIC SENSORS** 

**SICK**Sensor Intelligence.



### **Ordering information**

Туре	part no.
GTB10-F7431S14	1107223

Other models and accessories → www.sick.com/G10

Illustration may differ



#### Detailed technical data

### **Features**

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Dimensions (W x H x D)	20 mm x 50 mm x 39 mm
Housing design (light emission)	Rectangular
Sensing range max.	20 mm 1,600 mm <sup>1)</sup>
Type of light	Visible red light
Light source	PinPoint LED <sup>2)</sup>
Light spot size (distance)	Ø 8 mm (700 mm)
Wave length	625 nm
Adjustment	Potentiometer, 5 turns

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

### Mechanics/electronics

Supply voltage U <sub>B</sub>	10 V DC 30 V DC <sup>1)</sup>
Ripple	< 5 V <sub>pp</sub> <sup>2)</sup>

 $<sup>^{1)}</sup>$  Limit values when operated in short-circuit protected network: max. 8 A.

 $<sup>^{2)}</sup>$  Average service life: 100,000 h at  $T_{U}$  = +25 °C.

 $<sup>^{2)}\,\</sup>mbox{May}$  not fall below or exceed  $\mbox{U}_{\mbox{\scriptsize V}}$  tolerances.

<sup>&</sup>lt;sup>3)</sup> Signal transit time with resistive load.

<sup>4)</sup> With light/dark ratio 1:1.

 $<sup>^{5)}</sup>$  Do not bend below 0  $^{\circ}\text{C}.$ 

 $<sup>^{6)}</sup>$  A = V<sub>S</sub> connections reverse-polarity protected.

 $<sup>^{7)}</sup>$  B = inputs and output reverse-polarity protected.

 $<sup>^{8)}</sup>$  C = interference suppression.

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

 $<sup>^{10)}</sup>$  Complies with the UL325 standard when used with sturdy protection hood (e.g. BEF-G10WSG, 2071960).

Current consumption	20 mA
Switching output	PNP
Output function	Complementary
Switching mode	Light switching
Output current I <sub>max.</sub>	≤ 100 mA
Response time	≤ 2,500 µs <sup>3)</sup>
Switching frequency	200 Hz <sup>4)</sup>
Connection type	Cable with M12 male connector, 4-pin, 300 mm <sup>5)</sup>
Cable material	Plastic, PVC
Circuit protection	A <sup>6)</sup> B <sup>7)</sup> C <sup>8)</sup> D <sup>9)</sup>
Protection class	III
Weight	35 g
Housing material	Plastic, ABS/PMMA
Enclosure rating	IP67
Electromagnetic compatibility (EMC)	EN 60947-5-2
Ambient operating temperature	-30 °C +60 °C
Ambient temperature, storage	-40 °C +70 °C
UL File No.	NRKH.E348498 & NRKH7.E348498
More standards	UL325 <sup>10)</sup>

 $<sup>^{1)}</sup>$  Limit values when operated in short-circuit protected network: max. 8 A.

### Certificates

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

### Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904

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<sup>&</sup>lt;sup>5)</sup> Do not bend below 0 °C.

 $<sup>^{6)}</sup>$  A = V<sub>S</sub> connections reverse-polarity protected.

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<sup>8)</sup> C = interference suppression.

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

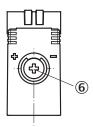
 $<sup>^{10)}</sup>$  Complies with the UL325 standard when used with sturdy protection hood (e.g. BEF-G10WSG, 2071960).

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### PHOTOELECTRIC SENSORS

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

### Adjustments

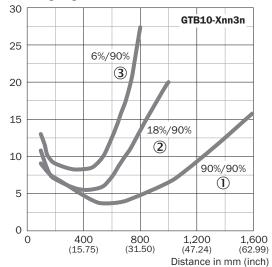


**6** Adjustment of sensing range

### Connection diagram Cd-084

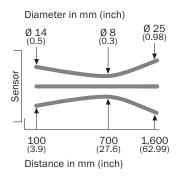
### Characteristic curve

#### % of sensing range

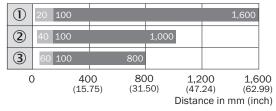


- ① Sensing range on white, 90% remission factor
- ② Sensing range on gray, 18% remission factor
- 3 Sensing range on black, 6% remission factor

### Light spot size

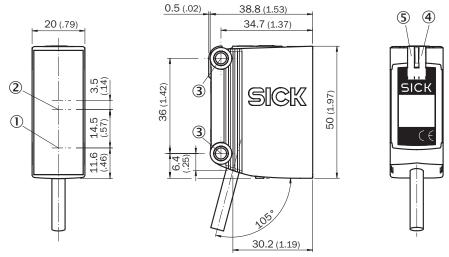


### Sensing range diagram



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

### Dimensional drawing GTB10, DC, cable



Dimensions in mm (inch)

- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- 3 Mounting hole, Ø 4.2 mm
- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: power on

#### Recommended accessories

Other models and accessories → www.sick.com/G10

	Brief description	Туре	part no.
Mounting systems			
	<ul> <li>Description: Q-Lock, bar clamp system for G10 and reflector P250</li> <li>Material: Zinc diecast, steel</li> <li>Details: Die-cast zinc, steel, zinc coated</li> <li>Suitable for: G10 and reflector P250</li> </ul>	BEF-KHSQ12R01	2071260
	<ul> <li>Description: Mounting bracket with articulated arm</li> <li>Material: Steel</li> <li>Details: Steel, zinc coated</li> <li>Items supplied: Mounting hardware included</li> <li>Suitable for: W16, W26, W11, W12, W23, W27, Dx50, W280, G10</li> </ul>	BEF-WN-MULTI2	2093945
connectors and cables			
	<ul> <li>Connection type head A: Male connector, M8, 3-pin, straight, A-coded</li> <li>Description: Unshielded</li> <li>Connection systems: Screw-type terminals</li> <li>Permitted cross-section: 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."

# **WORLDWIDE PRESENCE:**

Contacts and other locations -www.sick.com

