



# GTB2F-P5111

G2

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
GTB2F-P5111	1093727

Other models and accessories → [www.sick.com/G2](http://www.sick.com/G2)

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Dimensions (W x H x D)	14 mm x 24 mm x 3.5 mm
Housing design (light emission)	Rectangular
Minimum detectable object (MDO)	0.1 mm <sup>1)</sup>
Sensing range max.	1 mm ... 18 mm
Sensing range	1 mm ... 15 mm <sup>2)</sup>
Type of light	Visible red light
Light source	PinPoint LED <sup>3)</sup>
Light spot size (distance)	Ø 2.5 mm (15 mm)
Wave length	660 nm
Adjustment	None

<sup>1)</sup> In 5 mm distance.  
<sup>2)</sup> Object with 90% remission (based on standard white, DIN 5033).  
<sup>3)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Mechanics/electronics

<b>Supply voltage <math>U_B</math></b>	10 V DC ... 30 V DC
<b>Ripple</b>	$< 5 V_{pp}^{1)}$
<b>Current consumption</b>	20 mA <sup>2)</sup>
<b>Switching output</b>	PNP
<b>Switching mode</b>	Light switching
<b>Output current <math>I_{max.}</math></b>	$\leq 50$ mA
<b>Response time</b>	$< 0.625$ ms <sup>3)</sup>
<b>Switching frequency</b>	800 Hz <sup>4)</sup>
<b>Connection type</b>	Cable with connector M8, 3-pin, 200 mm <sup>5)</sup>
<b>Cable material</b>	Plastic, PVC
<b>Cable diameter</b>	$\varnothing 2.3$ mm
<b>Circuit protection</b>	A <sup>6)</sup> C <sup>7)</sup> D <sup>8)</sup>
<b>Weight</b>	13 g
<b>Housing material</b>	Plastic, VISTAL®
<b>Optics material</b>	Plastic, MABS
<b>Enclosure rating</b>	IP67
<b>Ambient operating temperature</b>	$-20$ °C ... $+50$ °C
<b>Ambient temperature, storage</b>	$-40$ °C ... $+70$ °C
<b>UL File No.</b>	NRKH.E348498 & NRKH7.E348498
<b>Repeatability (<math>T_a</math> not constant)</b>	0.1 mm
<b>Hysteresis</b>	$< 0.5$ mm

<sup>1)</sup> May not fall below or exceed  $U_V$  tolerances.

<sup>2)</sup> Without load.

<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  $0$  °C.

<sup>6)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	2,261 years
<b>DC<sub>avg</sub></b>	0 %
<b>T<sub>M</sub> (mission time)</b>	20 years

## Certificates

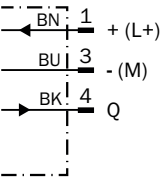
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China RoHS</b>	✓

cRUus certificate	✓
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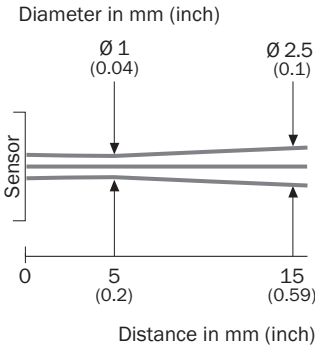
Classifications

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

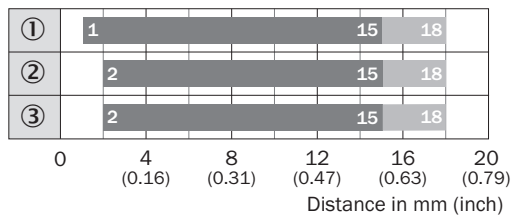
Connection diagram Cd-045



Light spot size GTB2 Flat, 15 mm



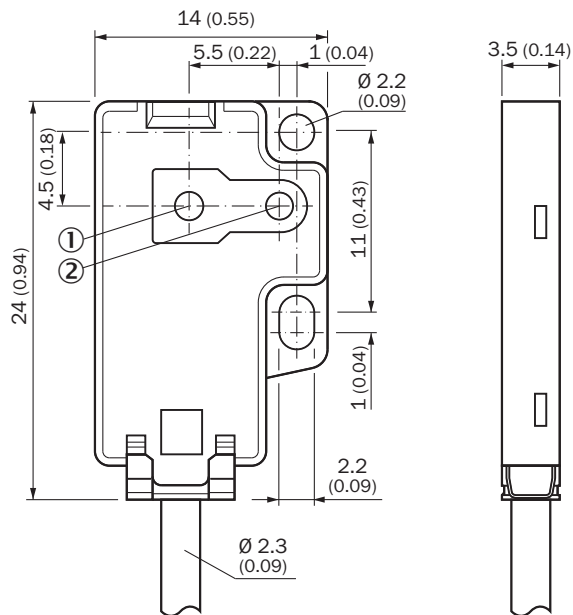
## Sensing range diagram GTB2 Flat, 15 mm



■ Sensing range      ■ Sensing range typ. 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







Dimensions in mm (inch)

- ① optical axis, receiver
- ② optical axis, sender

## Recommended accessories

Other models and accessories → [www.sick.com/G2](http://www.sick.com/G2)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting plate for direct mounting, from the rear, on wall or machine, not adjustable. 10 Piece ,Black ,Plastic, VISTAL®. Suitable for GTB2F and GSE2F</li> <li><b>Packing unit:</b> 10 pieces</li> </ul>	BEF-G2F-FLAT-SPACER-M2	2107263
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 3-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF8U13-050VA1XLEAX	2095884
	<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
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 3-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF8U13-050UA1XLEAX	2094788

## 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](http://www.sick.com)