



**RSB1-0540C170100FZ0BS06ZZZ**

Roller Sensor Bar

**PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
RSB1-0540C170100FZ0BS06ZZZ	1145742

Other models and accessories → [www.sick.com/Roller\\_Sensor\\_Bar](http://www.sick.com/Roller_Sensor_Bar)

Detailed technical data

Features

<b>Functional principle</b>		Photoelectric proximity sensor
<b>Functional principle detail</b>		Energetic
<b>Sensing range</b>		
	Sensing range min.	2 mm
	Sensing range max.	300 mm
	Reference object	Object with 90% remission factor (complies with standard white according to DIN 5033)
	Recommended sensing range for the best performance	2 mm ... 45 mm
<b>Emitted beam</b>		
	Light source	LED
	Type of light	Infrared light
	Shape of light spot	Point-shaped
	Light spot size (distance)	27 mm x 29 mm (45 mm)
	Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle)	< +/- 4° (at Ta = +23 °C)
<b>Key LED figures</b>		
	LED risk group marking	Free group
	Wave length	850 nm
	Average service life	100,000 h at Ta = +25 °C
<b>Number of beams</b>		3
<b>Beam separation</b>		170 mm
<b>Distance from 1st beam to leading edge of housing (including end cap)</b>		100 mm
<b>Smallest detectable object (MDO) typ.</b>		
		170 mm (Dependent on distance between beams)
<b>Adjustment</b>		
	None	–

<b>Display</b>	LED green	Operating indicatorStatic on: power onFlashing: IO-Link mode
	LED yellow	Status of received light beamStatic on: object presentStatic off: object not present
<b>Special features</b>	Connection type with external diameter: 7.85 mm +0.1 mm / -0.2 mm and min. IP54	
<b>Special applications</b>	Detecting flat objects, Detecting perforated objects, Detecting objects with position tolerances, Detecting uneven, shiny objects	

## Electronics

Supply voltage U <sub>B</sub>	10 V DC ... 30 V DC
Ripple	≤ 5 V <sub>pp</sub>
Usage category	DC-12 (According to EN 60947-5-2) DC-13 (According to EN 60947-5-2)
Current consumption	15 mA, without load. At U <sub>B</sub> = 24 V
Protection class	III
Digital output	
Number	1
Type	PNP
Signal voltage PNP HIGH/LOW	Approx. U <sub>B</sub> -2.5 V / 0 V
Output current I <sub>max</sub> .	≤ 100 mA
Circuit protection outputs	Reverse polarity protected
	Overcurrent protected
	Short-circuit protected
Response time	≤ 1 ms <sup>1)</sup>
Repeatability (response time)	1 ms
Switching frequency	500 Hz <sup>2)</sup>
Pin/Wire assignment	
BN 1	+ (L+)
WH 2	Not connected
BU 3	- (M)
BK 4	Q
Function of pin 4/black (BK)	Digital output, dark switching, object present → output LOW

<sup>1)</sup> Signal transit time with resistive load.

<sup>2)</sup> With light/dark ratio 1:1.

## Mechanics

Dimensions (W x H x D)		540 mm x 20.3 mm x 17 mm <sup>1)</sup>
Connection		Cable with special plug, M8, 4-pin, 137 mm <sup>2)</sup>
Connection detail		
	Deep-freeze property	Do not bend below 0 °C
	Conductor size	0.14 mm²
	Cable diameter	Ø 3.6 mm
	Length of cable (L)	100 mm <sup>2)</sup>

<sup>1)</sup> W = length of Roller Sensor Bar (in the installed state).

<sup>2)</sup> Due to the manufacturing process, the cable can be a little longer.

<b>Material</b>	Housing	Metal, Aluminum (anodised)
	Front screen	Plastic, PMMA
	Cable	Plastic, PVC
	Male connector	Plastic, PVC
<b>Weight</b>	Approx. 196.1 g	
<b>Mounting system type</b>	None	

- <sup>1)</sup> W = length of Roller Sensor Bar (in the installed state).  
<sup>2)</sup> Due to the manufacturing process, the cable can be a little longer.

Ambient data

<b>Enclosure rating</b>	IP67 (EN 60529)
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>Shock resistance</b>	30 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
<b>Vibration resistance</b>	10 Hz ... 55 Hz (Amplitude 1 mm, 3 x 30 min (EN60068-2-6))
<b>Air humidity</b>	15 % ... 95 %, relative humidity (no condensation), as per IEC 60947-5-2
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2
<b>UL File No.</b>	NRKH.E189383 & NRKH7.E189383

Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>cULus certificate</b>	✓

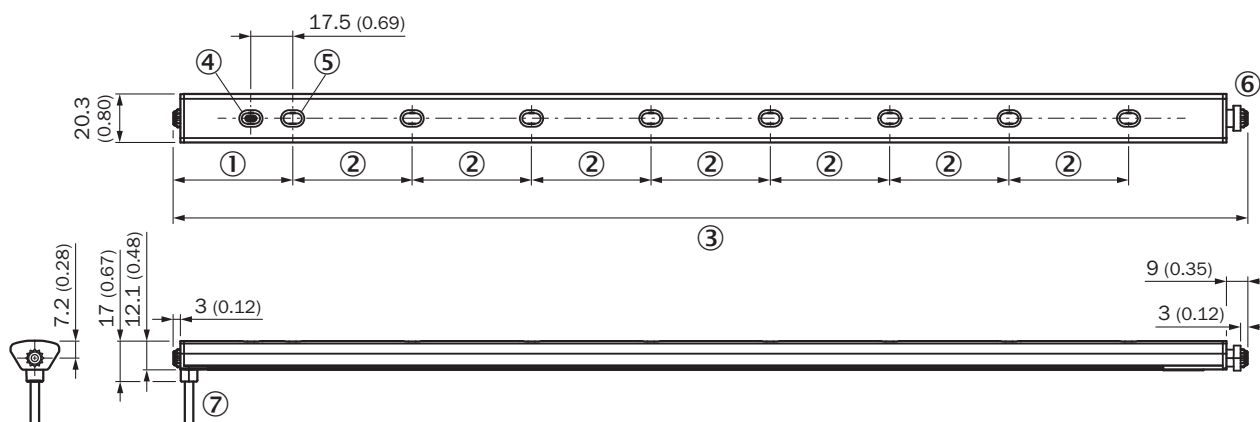
Classifications

<b>ECLASS 5.0</b>	27270904
<b>ECLASS 5.1.4</b>	27270904
<b>ECLASS 6.0</b>	27270904
<b>ECLASS 6.2</b>	27270904
<b>ECLASS 7.0</b>	27270904
<b>ECLASS 8.0</b>	27270904
<b>ECLASS 8.1</b>	27270904
<b>ECLASS 9.0</b>	27270904
<b>ECLASS 10.0</b>	27270904
<b>ECLASS 11.0</b>	27270904
<b>ECLASS 12.0</b>	27270903
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>ETIM 7.0</b>	EC002719
<b>ETIM 8.0</b>	EC002719

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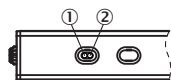
## Dimensional drawing



Dimensions in mm (inch)

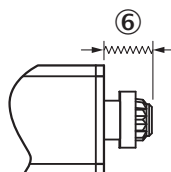
- ① Distance from 1st beam to leading edge of housing (including end cap)
- ② Beam separation
- ③ length of Roller Sensor Bar (in the installed state)
- ④ display and adjustment elements
- ⑤ First beam (number of beams varies depending on the variant)
- ⑥ Spring loaded end cap (for further information see the installation note)
- ⑦ Connection

## display and adjustment elements



- ① LED green
- ② LED yellow

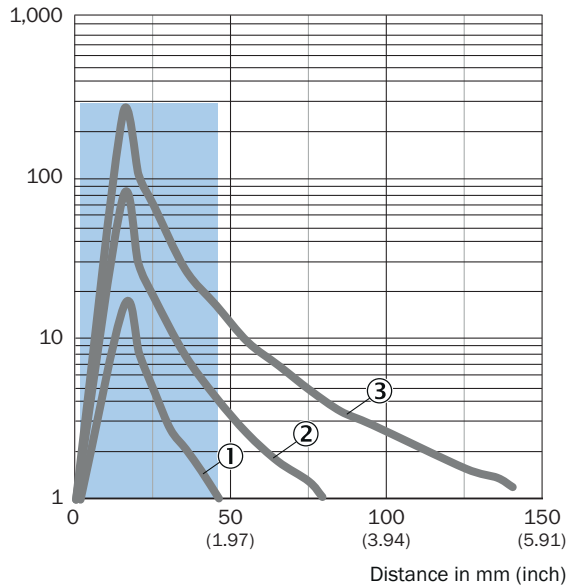
## Installation note



- ⑥ Range of motion of the spring loaded end cap (up to 5 mm of compression in uninstalled state)

### Characteristic curve

Operating reserve

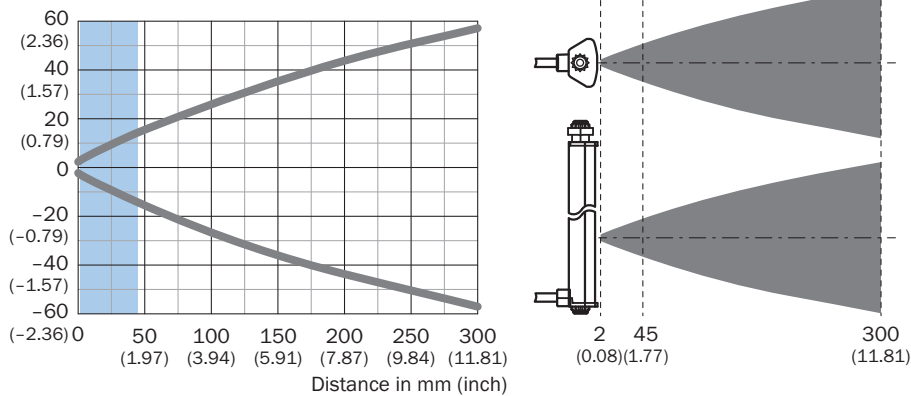


Recommended sensing range for the best performance

- ① Black object, 6% remission factor
- ② Gray object, 18% remission factor
- ③ White object, 90% remission factor

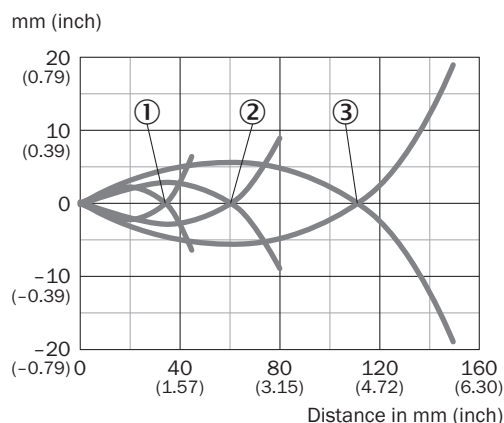
### Light spot size

Dimensions in mm (inch)



Recommended sensing range for the best performance






## Light spot size



- ① Black object, 6% remission factor
- ② Gray object, 18% remission factor
- ③ White object, 90% remission factor

## Recommended accessories

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	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> 8 mm round adapter bracket with adhesive back</li> </ul>	BEF-AP-RSBADHA	2127765
	<ul style="list-style-type: none"> <li><b>Description:</b> Adapter bracket with adhesive back</li> </ul>	BEF-AP-RSBADHB	2127766
	<ul style="list-style-type: none"> <li><b>Description:</b> Adapter bracket to snap between hex sections</li> </ul>	BEF-AP-RSBCON	2127768
	<ul style="list-style-type: none"> <li><b>Description:</b> Hex adapter bracket</li> </ul>	BEF-AP-RSBHEX	2127767
	<ul style="list-style-type: none"> <li><b>Description:</b> Adapter kit: BEF-AP-RSBADHA, BEF-AP-RSBADHB, BEF-AP-RSBCON, BEF-AP-RSBHEX</li> <li><b>Items supplied:</b> BEF-AP-RSBADHA, BEF-AP-RSBADHB, BEF-AP-RSBCON, BEF-AP-RSBHEX</li> </ul>	BEF-AP-RSBKIT	2127759

## 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)