



DATA SHEET

# RSB1-0409B137137PZ4DZZZZZZZ

Roller Sensor Bar  
Photoelectric sensors

**SICK** Sensor Intelligence

## PHOTOELECTRIC SENSORS

# RSB1-0409B137137PZ4DZZZZZ

### ORDERING INFORMATION

Type	part no.
RSB1-0409B137137PZ4DZZZZZ	<a href="#">1142529</a>

Further device versions and accessories at [www.sick.com/Roller\\_Sensor\\_Bar](http://www.sick.com/Roller_Sensor_Bar)



Illustration may differ



### DETAILED TECHNICAL DATA

#### FEATURES

Functional principle	Photoelectric proximity sensor	
Functional principle detail	Energetic	
Sensing range	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
Emitted beam	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)
Key LED figures	LED risk group marking	Free group
	Wave length	850 nm
	Average service life	100,000 h at Ta = +25 °C
Number of beams	2	
Beam separation	137 mm	
Distance from 1st beam to leading edge of housing (including end cap)	137 mm	
Smallest detectable object (MDO) typ.	137 mm, Dependent on distance between beams	
Adjustment		

	None	-
Display	LED green	Operating indicator Static on: power on Flashing: IO-Link mode
	LED yellow	Status of received light beam Static on: object present Static off: object not present
Special applications	Detecting flat objects, Detecting perforated objects, Detecting objects with position tolerances, Detecting uneven, shiny objects	

**ELECTRONICS**

Supply voltage $U_b$	10 V DC ... 30 V DC	
Ripple	$\leq 5 V_{pp}$	
Usage category	DC-12 (According to EN 60947-5-2) DC-13 (According to EN 60947-5-2)	
Current consumption	8 mA, without load. At $U_b = 24 V$	
Protection class	III	
Digital output	Number	1
	Type	PNP
	Switching mode	Light switching
	Signal voltage PNP HIGH/LOW	Approx. $U_b - 2.5 V / 0 V$
	Output current $I_{max}$	$\leq 100 mA$
	Circuit protection outputs	Reverse polarity protected Overcurrent protected Short-circuit protected
	Response time	$\leq 1 ms^1$
	Repeatability (response time)	1 ms
	Switching frequency	500 Hz <sup>2)</sup>
Pin/Wire assignment	BN 1	+ (L+)
	WH 2	$Q_2$
	BU 3	- (M)
	BK 4	$Q_1$
	Function of pin 4/black (BK)	Digital output, light switching, object present → output HIGH

<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)	409 mm x 20.3 mm x 17 mm <sup>1)</sup>	
Connection	Cable with connector M12, 4-pin, with knurled nut <sup>2)</sup>	
Connection detail	Deep-freeze property	Do not bend below 0 °C
	Conductor size	0.13 mm <sup>2</sup>
	Cable diameter	Ø 3.6 mm
	Length of cable (L)	500 mm <sup>2)</sup>
Material	Housing	Metal, Aluminum (anodised)
	Front screen	Plastic, PMMA
	Cable	Plastic, PVC
	Male connector	Plastic, PVC
Weight	Approx. 148.6 g	

<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.

Mounting system type	None
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<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.

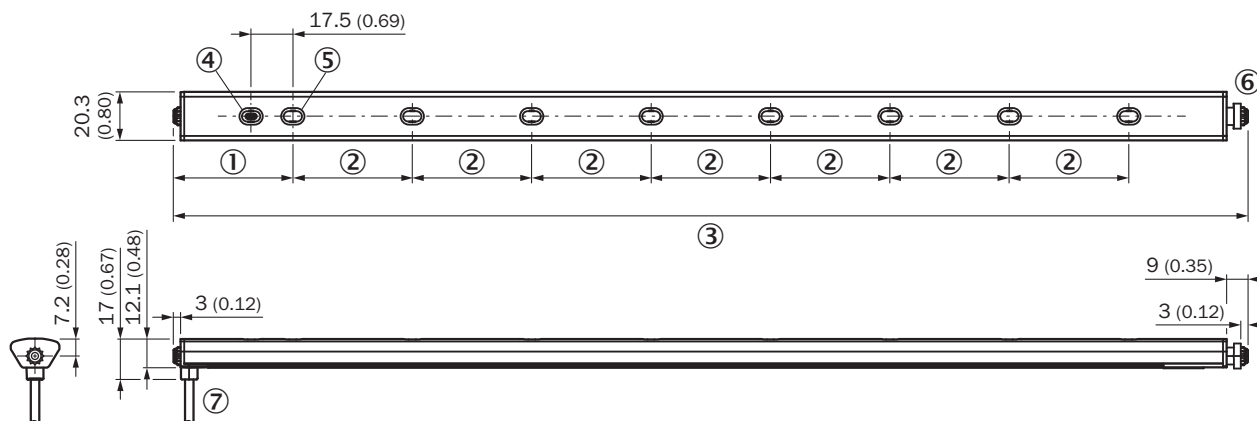
### AMBIENT DATA

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

### CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

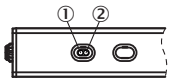
### DIMENSIONAL DRAWING



Dimensions in mm (inch)

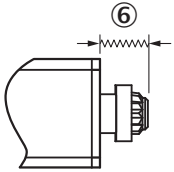
- ① Distance from 1st beam to leading edge of housing (including end cap)
- ② Beam separation
- ③ length of Roller Sensor Bar (in the installed state)
- ④ display and adjustment elements
- ⑤ First beam (number of beams varies depending on the variant)
- ⑥ Spring loaded end cap (for further information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

**DISPLAY AND ADJUSTMENT ELEMENTS**



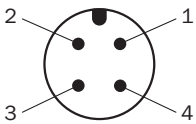
- ① LED green
- ② LED yellow

**INSTALLATION NOTE**



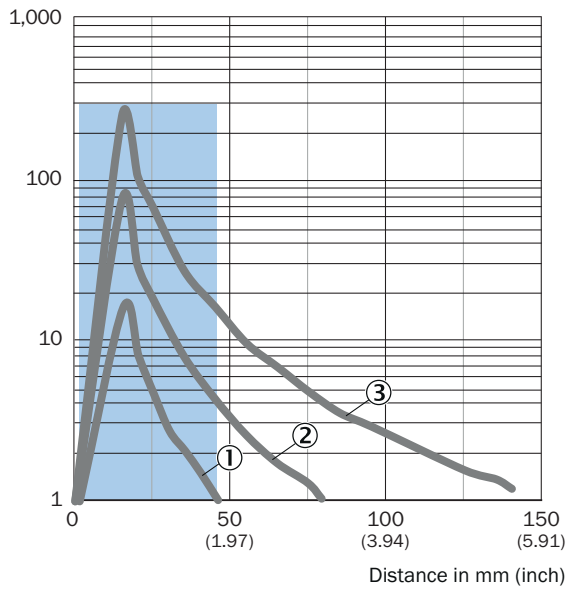
⑥ Range of motion of the spring loaded end cap (up to 5 mm of compression in uninstalled state)

**CONNECTION TYPE M12 MALE CONNECTOR, 4-PIN**



**CHARACTERISTIC CURVE**

Operating reserve

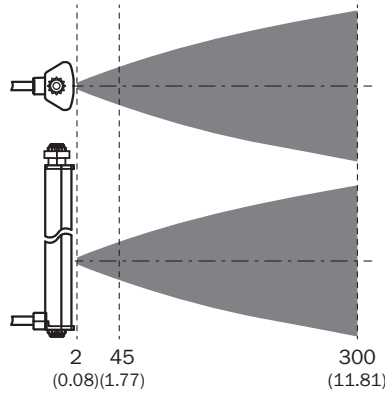
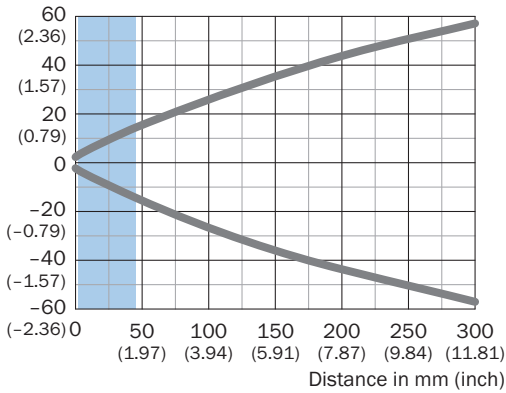


Recommended sensing range for the best performance

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

**LIGHT SPOT SIZE**

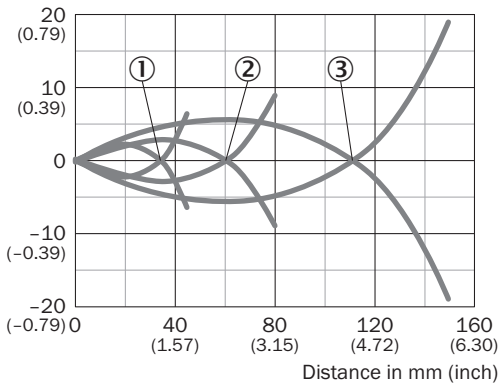
Dimensions in mm (inch)



Recommended sensing range for the best performance

**LIGHT SPOT SIZE**

mm (inch)



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

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at [www.sick.com/1142529](http://www.sick.com/1142529)



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# SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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