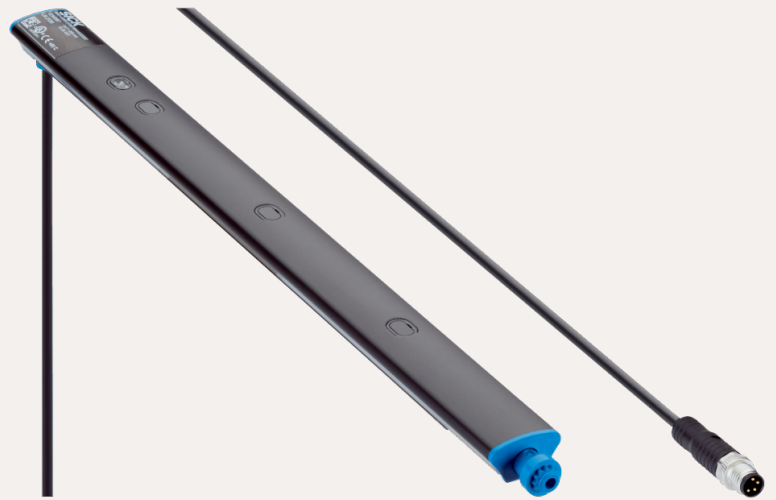




DATA SHEET

RSB1-0486C130113KK3FZZZP02

Roller Sensor Bar
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

RSB1-0486C130113KK3FZ

ORDERING INFORMATION

Type	part no.
RSB1-0486C130113KK3FZZP02	1126550

Further device versions and accessories at www.sick.com/Roller_Sensor_Bar

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		3
Beam separation		130 mm
Distance from 1st beam to leading edge of housing (including end cap)		113 mm
Smallest detectable object (MDO) typ.		130 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	$\leq 5 \text{ V}_{pp}$																		
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 $U_B = 24 \text{ V}$																		
Protection class	III																		
Digital output	<table> <tr> <td>Number</td><td>1</td></tr> <tr> <td>Type</td><td>PNP: open collector</td></tr> <tr> <td>Switching mode</td><td>Dark switching</td></tr> <tr> <td>Signal voltage PNP HIGH/LOW</td><td>Approx. $U_B - 2.5 \text{ V} / 0 \text{ V}$</td></tr> <tr> <td>Output current I_{max}</td><td>$\leq 100 \text{ mA}$</td></tr> <tr> <td>Circuit protection outputs</td><td>Reverse polarity protected Overcurrent protected Short-circuit protected</td></tr> <tr> <td>Response time</td><td>$\leq 1 \text{ ms}^{1)}$</td></tr> <tr> <td>Repeatability (response time)</td><td>1 ms</td></tr> <tr> <td>Switching frequency</td><td>500 Hz ²⁾</td></tr> </table>	Number	1	Type	PNP: open collector	Switching mode	Dark switching	Signal voltage PNP HIGH/LOW	Approx. $U_B - 2.5 \text{ V} / 0 \text{ V}$	Output current I_{max}	$\leq 100 \text{ mA}$	Circuit protection outputs	Reverse polarity protected Overcurrent protected Short-circuit protected	Response time	$\leq 1 \text{ ms}^{1)}$	Repeatability (response time)	1 ms	Switching frequency	500 Hz ²⁾
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Pin/Wire assignment	<table> <tr> <td>BN 1</td><td>+ (L+)</td></tr> <tr> <td>WH 2</td><td>Q_2</td></tr> <tr> <td>BU 3</td><td>- (M)</td></tr> <tr> <td>BK 4</td><td>Q_1</td></tr> <tr> <td>Function of pin 4/black (BK)</td><td>Digital output, dark switching, object present → output LOW</td></tr> <tr> <td>Function of pin 2/white (WH)</td><td>Digital output, dark switching, object present → output LOW</td></tr> </table>	BN 1	+ (L+)	WH 2	Q_2	BU 3	- (M)	BK 4	Q_1	Function of pin 4/black (BK)	Digital output, dark switching, object present → output LOW	Function of pin 2/white (WH)	Digital output, dark switching, object present → output LOW						
BN 1	+ (L+)																		
WH 2	Q_2																		
BU 3	- (M)																		
BK 4	Q_1																		
Function of pin 4/black (BK)	Digital output, dark switching, object present → output LOW																		
Function of pin 2/white (WH)	Digital output, dark switching, object present → output LOW																		

¹⁾ Signal transit time with resistive load.

²⁾ With light/dark ratio 1:1.

MECHANICS

Dimensions (W x H x D)	486 mm x 20.3 mm x 17 mm ¹⁾								
Connection	Cable with connector M8, 4-pin, with knurled nut ²⁾								
Connection detail	<table> <tr> <td>Deep-freeze property</td><td>Do not bend below 0 °C</td></tr> <tr> <td>Conductor size</td><td>0.13 mm²</td></tr> <tr> <td>Cable diameter</td><td>Ø 3.6 mm</td></tr> <tr> <td>Length of cable (L)</td><td>1.5 m ²⁾</td></tr> </table>	Deep-freeze property	Do not bend below 0 °C	Conductor size	0.13 mm ²	Cable diameter	Ø 3.6 mm	Length of cable (L)	1.5 m ²⁾
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Material	<table> <tr> <td>Housing</td><td>Metal, Aluminum (anodised)</td></tr> <tr> <td>Front screen</td><td>Plastic, PMMA</td></tr> <tr> <td>Cable</td><td>Plastic, PVC</td></tr> <tr> <td>Male connector</td><td>Plastic, PVC</td></tr> </table>	Housing	Metal, Aluminum (anodised)	Front screen	Plastic, PMMA	Cable	Plastic, PVC	Male connector	Plastic, PVC
Housing	Metal, Aluminum (anodised)								
Front screen	Plastic, PMMA								
Cable	Plastic, PVC								
Male connector	Plastic, PVC								
Weight	Approx. 176.5 g								
Mounting system type	None								

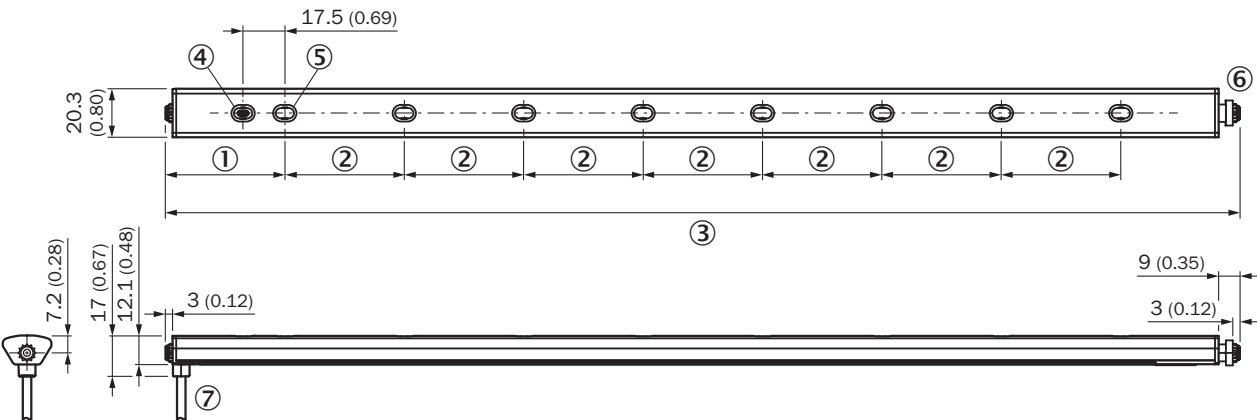
¹⁾ W = length of Roller Sensor Bar (in the installed state).

²⁾ Due to the manufacturing process, the cable can be a little longer.

AMBIENT DATA

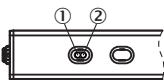
Enclosure rating	IP67 (EN 60529)
Ambient operating temperature	-40 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +75 °C
Shock resistance	30 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
Vibration resistance	10 Hz ... 55 Hz (Amplitude 1 mm, 3 x 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

DIMENSIONAL DRAWING



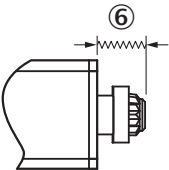
- Dimensions in mm (inch)
- ① Distance from 1st beam to leading edge of housing (including end cap)
 - ② Beam separation
 - ③ length of Roller Sensor Bar (in the installed state)
 - ④ display and adjustment elements
 - ⑤ First beam (number of beams varies depending on the variant)
 - ⑥ Spring loaded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

DISPLAY AND ADJUSTMENT ELEMENTS



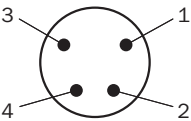
- ① LED green
- ② LED yellow

INSTALLATION NOTE



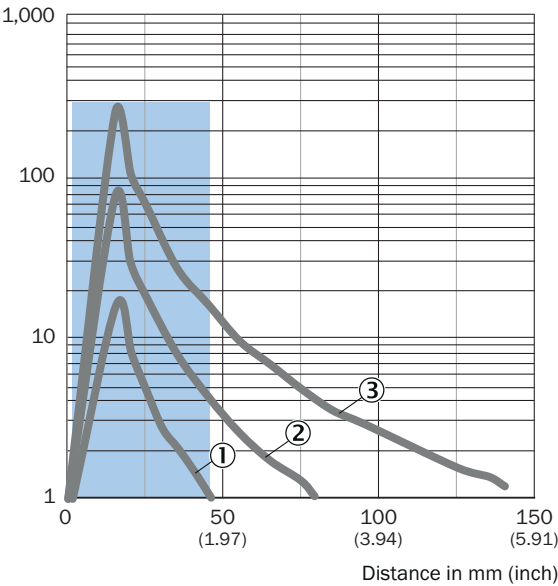
- ⑥ Range of motion of the spring loaded end cap (up to 5 mm of compression in uninstalled state)

CONNECTION TYPE MALE CONNECTOR M8, 4-PIN



CHARACTERISTIC CURVE

Operating reserve

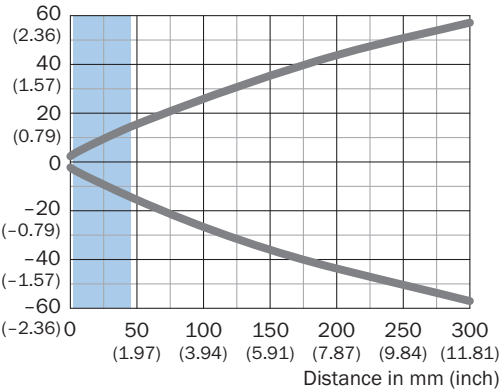


Recommended sensing range for the best performance

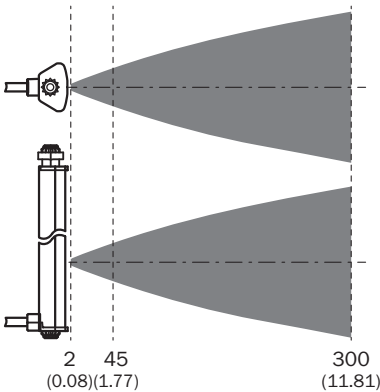
- ① Black object, 6% remission factor
- ② Gray object, 18% remission factor
- ③ White object, 90% remission factor

LIGHT SPOT SIZE

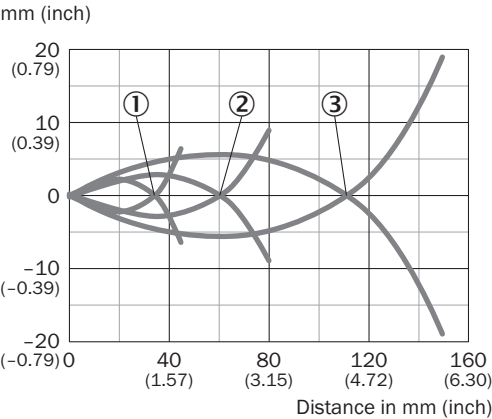
Dimensions in mm (inch)



Recommended sensing range for the best performance



LIGHT SPOT SIZE



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- 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/1126550



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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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