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DATA SHEET

RSB1-0842H095095AB4DZZZZZZ

Roller Sensor Bar
Photoelectric sensors

SICK Sensor Intelligence

PHOTOELECTRIC SENSORS

RSB1-0842H095095AB4

ORDERING INFORMATION

Type	part no.
RSB1-0842H095095AB4DZZZZZZ	1142557

Further device versions and accessories at 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	8	
Beam separation	95 mm	
Distance from 1st beam to leading edge of housing (including end cap)	95 mm	
Smallest detectable object (MDO) typ.	95 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	38 mA, without load. At $U_b = 24 V$	
Protection class	III	
Digital output	Number	2 (Complementary)
	Type	Push-pull: PNP/NPN
	Switching mode	Light/dark switching
	Signal voltage PNP HIGH/LOW	Approx. $U_b - 2.5 V / 0 V$
	Signal voltage NPN HIGH/LOW	Approx. $U_b / < 2.5 V$
	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 ²⁾
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
	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)	842 mm x 20.3 mm x 17 mm ¹⁾	
Connection	Cable with connector M12, 4-pin, with knurled nut ²⁾	
Connection detail	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)	500 mm ²⁾
Material	Housing	Metal, Aluminum (anodised)
	Front screen	Plastic, PMMA
	Cable	Plastic, PVC

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

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

Male connector	Plastic, PVC
Weight	Approx. 305.5 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.

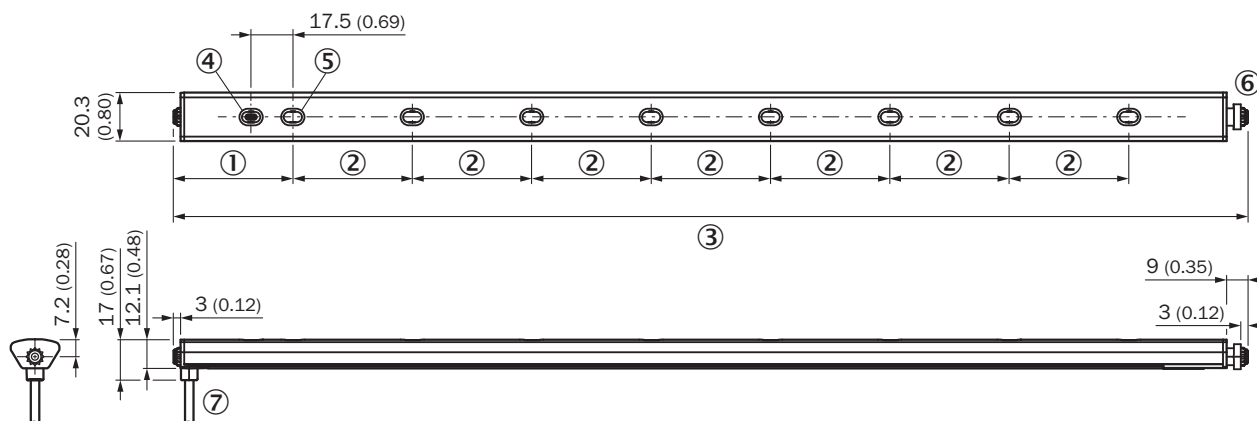
AMBIENT DATA

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

CERTIFICATES

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

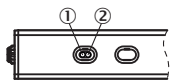
DIMENSIONAL DRAWING



Dimensions in mm (inch)

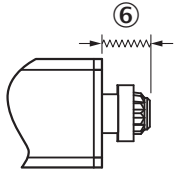
- ① Distance from 1st beam to leading edge of housing (including end cap)
- ② Beam separation
- ③ length of Roller Sensor Bar (in the installed state)
- ④ display and adjustment elements
- ⑤ First beam (number of beams varies depending on the variant)
- ⑥ Spring loaded end cap (for further information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

DISPLAY AND ADJUSTMENT ELEMENTS



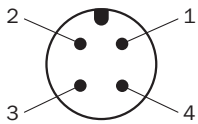
- ① LED green
- ② LED yellow

INSTALLATION NOTE



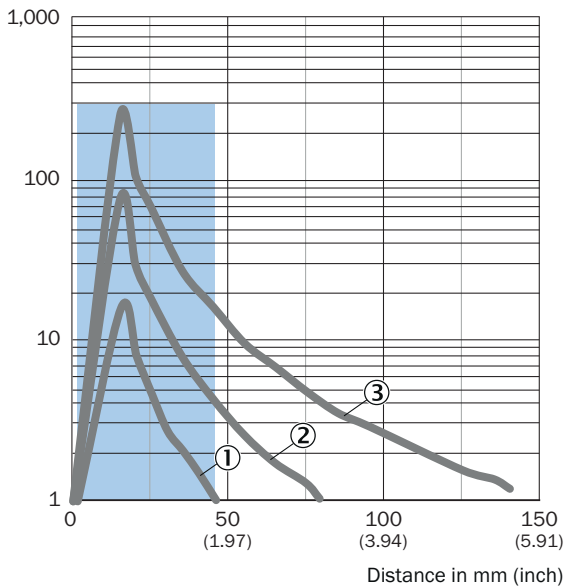
⑥ Range of motion of the spring loaded end cap (up to 5 mm of compression in uninstalled state)

CONNECTION TYPE M12 MALE CONNECTOR, 4-PIN



CHARACTERISTIC CURVE

Operating reserve

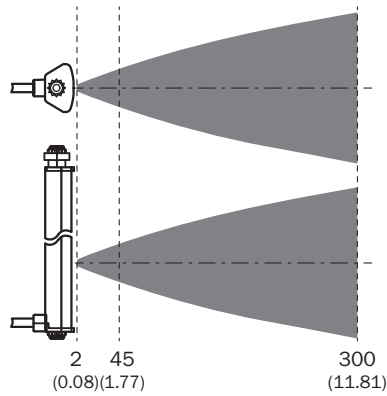
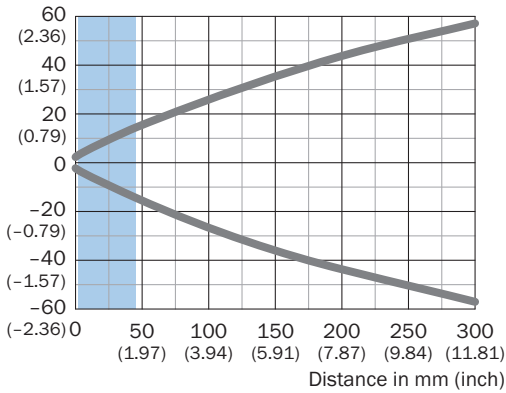


Recommended sensing range for the best performance

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

LIGHT SPOT SIZE

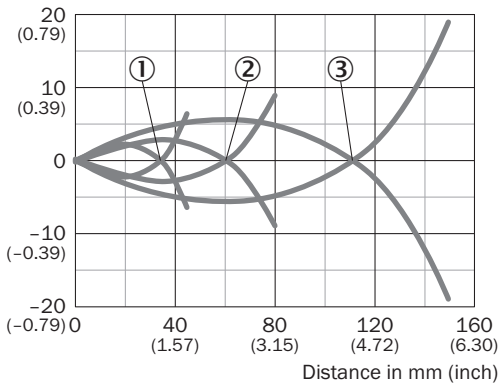
Dimensions in mm (inch)



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/1142557



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SICK AT A GLANCE

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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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