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DATA SHEET

RSB1-0700H085055FP4BZZZZZZ

Roller Sensor Bar
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

RSB1-0700H085055FP4BZZZZZ

ORDERING INFORMATION

Type	part no.
RSB1-0700H085055FP4BZZZZZZ	1150489

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 T_a = +25 °C
Number of beams	8
Beam separation	85 mm
Distance from 1st beam to leading edge of housing (including end cap)	55 mm
Smallest detectable object (MDO) typ.	85 mm, Dependent on distance between beams
Adjustment	
None	–
Display	
LED green	Operating indicator Static on: power on
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	≤ 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	1
Type	PNP
Signal voltage PNP HIGH/LOW	Approx. U_B-2.5 V / 0 V
Output current $I_{max.}$	≤ 100 mA
Circuit protection outputs	Reverse polarity protected Overcurrent protected Short-circuit protected
Response time	≤ 1 ms [1]
Repeatability (response time)	1 ms
Switching frequency	500 Hz [2]
Pin/Wire assignment	
Function of pin 4/black (BK)	Digital output, dark switching, object present → output LOW
Function of pin 2/white (WH)	Digital output, light switching, object present → output HIGH

[1] Signal transit time with resistive load.

[2] With light/dark ratio 1:1.

MECHANICS

Dimensions (W x H x D)	700 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 mm²
Cable diameter	Ø 3.6 mm
Length of cable (L)	150 mm [2]
Material	
Housing	Metal, Aluminum (anodised)
Front screen	Plastic, PMMA
Cable	Plastic, PVC
Male connector	Plastic, PVC
Weight	Approx. 254.1 g
Adapter mount	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

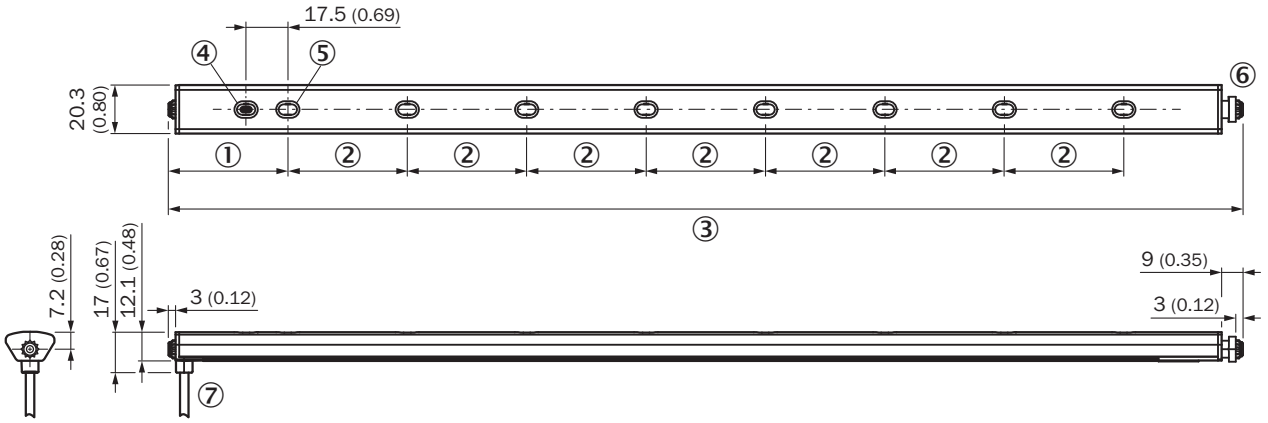
Enclosure rating	IP67 (EN 60529)
Ambient operating temperature	–40 °C ... +60 °C
Ambient temperature, storage	–40 °C ... +75 °C
Shock resistance	11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
Vibration resistance	10 Hz ... 55 Hz (Amplitude 1 mm, 3 x 30 min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

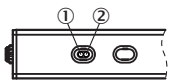
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓

DIMENSIONAL DRAWING



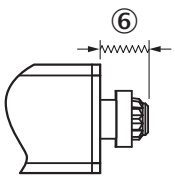
Dimensions in mm (inch)
① Distance from 1st beam to leading edge of housing (including end cap)
② Beam separation
③ length of Roller Sensor Bar (in the installed state)
④ display and adjustment elements
⑤ First beam (number of beams varies depending on the variant)
⑥ Spring loaded end cap (for further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

DISPLAY AND ADJUSTMENT ELEMENTS



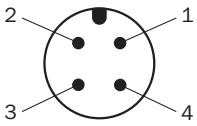
① LED green
② LED yellow

INSTALLATION NOTE

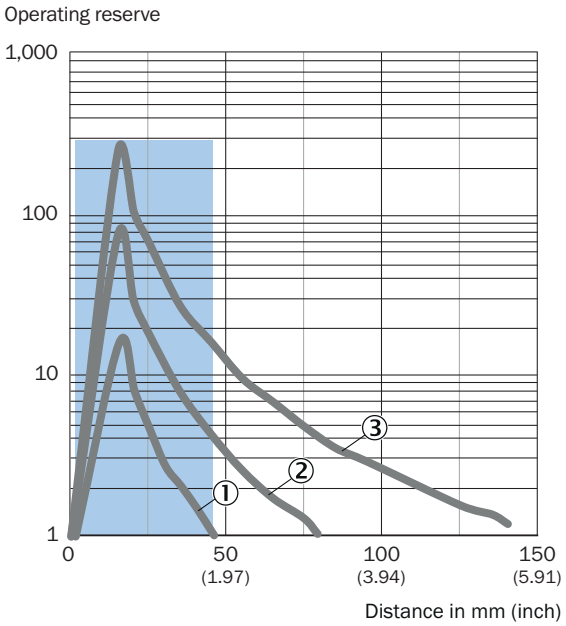


⑥ Range of motion of the spring loaded end cap (up to 5 mm of compression in uninstalled state)

CONNECTION TYPE M12 MALE CONNECTOR, 4-PIN

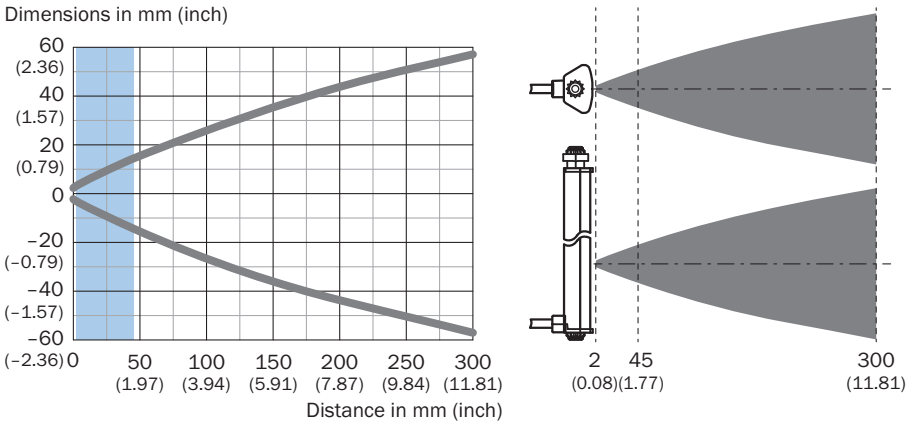


CHARACTERISTIC CURVE

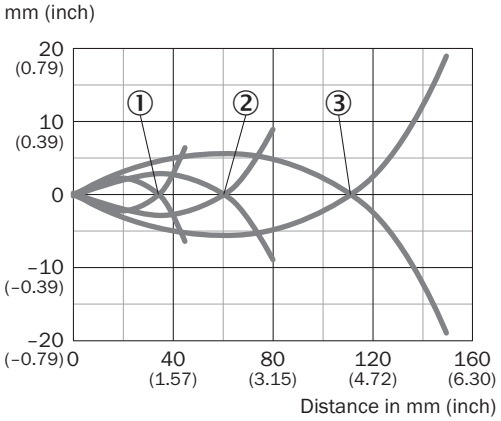


① Black object, 6% remission factor
② Gray object, 18% remission factor
③ White object, 90% remission factor

LIGHT SPOT SIZE



LIGHT SPOT SIZE



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/1150489

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SICK AT A GLANCE

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