

RSB1-0409B137137PZ4DZZZZZZ

Roller Sensor Bar

MULTITASK PHOTOELECTRIC SENSORS



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MULTITASK PHOTOELECTRIC SENSORS



Ordering information

Туре	Part no.
RSB1-0409B137137PZ4DZZZZZZ	1142529

Other models and accessories → www.sick.com/Roller_Sensor_Bar









Detailed technical data

Features

Functional principle detail Functional principle detail Sensing range Sensing range Sensing range min. Sensing range min. Reference object Recommended sensing range for the best performance Emitted beam Light source Type of light Shape of light spot Light spot size (distance) Light spot size (distance) Aaximum dispersion of the emitted beam around the standardized transmission asks (squint angle) LED risk group marking Wave length Average service light Quoyoon hat T _a = +25 °C Number of beams Sensing range for the best performance Program LED risk group marking Average service light Average service light Average service light Shame of lught spot leading edge of housing (including end cap) Smallest detectable object (MDO) typ. LED green None Rollistance None LED green Sperating indicator Light spot in a sperating light and lig		
Sensing range Sensing range max Sensing range max Reference object Recommended sensing range for the best performance Emitted beam Light source Type of light Shape of light spot Light spotsize (distance) Adjustment LED risk group marking None Shape of leght Shape of light spot Shape o	Functional principle	Photoelectric proximity sensor
Sensing range min. Sensing range max. Reference object Recommended sensing range for the best performance Emitted beam Light source Type of light Shape of light spot size (distance) Adjustment LED risk group marking Average service life None Indication LED green Operating indicator Sensing range min. Sensing range min. Sensing range for the best performance Light source Type of light Infrared light Point-shaped 27 mm x 29 mm (45 mm) **	Functional principle detail	Energetic
Sensing range max. Reference object Recommended sensing range for the best per formance Emitted beam Light source Type of light Shape of light spot is/ (squint angle) Key LED figures LED risk group marking Average service life Average service life formance Nome Platance from 1st beam to leading edge of housing (including end cap) Smallest detectable object (MDO) typ. Adjustment None Poperating indicator (complies with standard white according to DIN 5033) A firm (Dependent on distance between beams) A poperating indicator (somplies with standard white according to DIN 5033) A firm (Dependent on distance between beams)	Sensing range	
Reference object Recommended sensing range for the best per- formance Emitted beam Light source Type of light spot Light spot size (distance) Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle) Key LED figures LED risk group marking Mave length Average service life toologing (including end cap) Smallest detectable object (MDO) typ. Adjustment None LED green Object with 90% remission factor (complies with standard white according to DIN 5033) 2 mm 45 mm LED LED LED LED LED LED LED L	Sensing range min.	2 mm
Recommended sensing range for the best per- formance Emitted beam Light source Type of light Shape of light spot Light spot size (distance) Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle) Key LED figures LED risk group marking Wave length Average service life 100,000 h at T ₀ = +25 °C Number of beams Beam separation Distance from 1st beam to leading edge of housing (including end cap) Smallest detectable object (MDO) typ. Adjustment None Indication LED green Operating indicator Static on: power on	Sensing range max.	300 mm
Finited beam Light source Type of light Shape of light spot 2	Reference object	Object with 90% remission factor (complies with standard white according to DIN 5033)
Light source Type of light Shape of light spot Light spot size (distance) Light spot size (distance) Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle) Key LED figures LED risk group marking Wave length Average service life 100,000 h at T _B = +25 °C Number of beams Beam separation Distance from 1st beam to leading edge of housing (including end cap) Smallest detectable object (MDO) typ. Adjustment None LED green Operating indicator Static on: power on LED green Operating indicator Static on: power on		2 mm 45 mm
Type of light Shape of light spot Light spot size (distance) Adjustment None LED green Number of beams Beam separation Distance from 1st beam to leading edge of housing (including end cap) Smallest detectable object (MDO) typ. LED green LED green LED green Operating indicator static on: power on	Emitted beam	
Shape of light spot Light spot size (distance) Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle) Key LED figures LED risk group marking Wave length Average service life 100,000 h at T _a = +25 °C Number of beams 2 Beam separation 137 mm Distance from 1st beam to leading edge of housing (including end cap) Smallest detectable object (MDO) typ. Adjustment None - LED green Operating indicator Static on: power on	Light source	LED
Light spot size (distance) Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle) Key LED figures LED risk group marking Wave length 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 - Indication Certain State of the emitted beam around the standardized representation and the emitted beam around the emitted beam around the emitted beam around the emitted beam around the standardized representation around the standardized re	Type of light	Infrared light
Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle) Key LED figures LED risk group marking Wave length Average service life 100,000 h at Ta = +25 °C Number of beams Beam separation 137 mm Distance from 1st beam to leading edge of housing (including end cap) Smallest detectable object (MDO) typ. Adjustment None LED green 0 137 mm (Dependent on distance between beams) Adjustment None Coperating indicator Static on: power on	Shape of light spot	Point-shaped
around the standardized transmission axis (squint angle) Key LED figures LED risk group marking Wave length 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) Smallest detectable object (MDO) typ. Adjustment None None LED green Operating indicator Static on: power on static and some power on static and s	Light spot size (distance)	27 mm x 29 mm (45 mm)
LED risk group marking Wave length 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) Smallest detectable object (MDO) typ. 137 mm (Dependent on distance between beams) Adjustment None LED green Operating indicator Static on: power on	around the standardized transmission axis	< +/- 4° (at Ta = +23 °C)
Wave length Average service life 850 nm 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 - Indication Operating indicator Static on: power on	Key LED figures	
Number of beams 2 Beam separation Distance from 1st beam to leading edge of housing (including end cap) Smallest detectable object (MDO) typ. 137 mm (Dependent on distance between beams) Adjustment None Indication LED green Operating indicator Static on: power on	LED risk group marking	Free group
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 - Indication Operating indicator Static on: power on	Wave length	850 nm
Beam separation Distance from 1st beam to leading edge of housing (including end cap) Smallest detectable object (MDO) typ. Adjustment None LED green Degrating indicator Static on: power on	Average service life	100,000 h at $T_a = +25 ^{\circ}\text{C}$
Distance from 1st beam to leading edge of housing (including end cap) Smallest detectable object (MDO) typ. 137 mm (Dependent on distance between beams) Adjustment None LED green Operating indicator Static on: power on	Number of beams	2
housing (including end cap) Smallest detectable object (MDO) typ. 137 mm (Dependent on distance between beams) Adjustment None Indication LED green Operating indicator Static on: power on	Beam separation	137 mm
Adjustment None Indication LED green Operating indicator Static on: power on		137 mm
Adjustment None - Indication LED green Operating indicator Static on: power on	Smallest detectable object (MDO) typ.	
None – Indication LED green Operating indicator Static on: power on		137 mm (Dependent on distance between beams)
Indication LED green Operating indicator Static on: power on	Adjustment	
LED green Operating indicator Static on: power on	None	-
Static on: power on	Indication	
	LED green	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	8 mA, without load. At $U_B = 24 \text{ V}$
Protection class	III
Digital output	
Number	1
Туре	PNP
Switching mode	Light switching
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	
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

 $^{^{1)}}$ Signal transit time with resistive load.

Mechanics

Dimensions (W x H x D)	409 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	

 $^{^{1)}}$ W = length of Roller Sensor Bar (in the installed state).

²⁾ With light/dark ratio 1:1.

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

Housing	Metal, Aluminum (anodised)
Front screen	Plastic, PMMA
Cable	Plastic, PVC
Male connector	Plastic, PVC
Weight	Approx. 148.6 g
Mounting system type	None

 $^{^{1)}}$ W = length of Roller Sensor Bar (in the installed state).

Ambient data

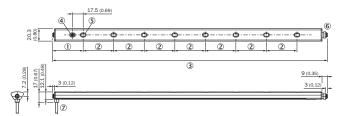
Enclosure rating	IP67 (EN 60529)
Ambient operating temperature	-40 °C +60 °C
Ambient temperature, storage	-40 °C +75 °C
Shock resistance	30 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
Vibration resistance	10 Hz 55 Hz (Amplitude 1 mm, 3 x 30 min (EN60068-2-6))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

Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

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

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)
- ⑤ Spring loaded end cap (for further information see the installation note)
- 7 Connection

Adjustments

Display and adjustment elements



- ① LED green
- ② LED yellow

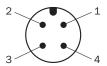
Installation note



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

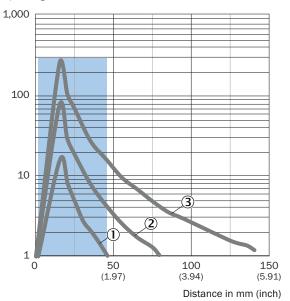
Connection type

M12 male connector, 4-pin



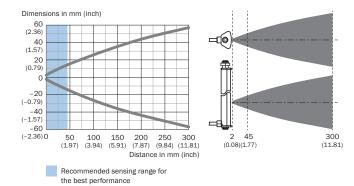
Characteristic curve



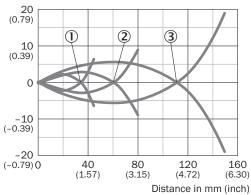


- Recommended sensing range for the best performance
- ① Black object, 6% remission factor
- ② Gray object, 18% remission factor
- 3 White object, 90% remission factor

Light spot size







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

Recommended accessories

Other models and accessories → www.sick.com/Roller_Sensor_Bar

	Brief description	Туре	Part no.
Mounting brackets and plates			
	8 mm round adapter bracket with adhesive back	BEF-AP-RSBADHA	2127765
00	Adapter bracket with adhesive back	BEF-AP-RSBADHB	2127766
# #	Adapter bracket to snap between hex sections	BEF-AP-RSBCON	2127768
	Hex adapter bracket	BEF-AP-RSBHEX	2127767
## ## ## ## ## ## ## ## ## ## ## ## ##	BEF-AP-RSBADHA, BEF-AP-RSBADHB, BEF-AP-RSBCON, BEF-AP-RSBHEX	BEF-AP-RSBKIT	2127759
Others			
	 Connection type head A: Male connector, M12, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932
	 Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14- 050VB3XLEAX	2096235

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."

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