



MULTITASK PHOTOELECTRIC SENSORS

MULTITASK PHOTOELECTRIC SENSORS



Ordering information

Туре	Part no.
RSB1-0450H050050NE5GZZZZZ	1129398

Other models and accessories -> 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 per- formance	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	50 mm	
Distance from 1st beam to leading edge of housing (including end cap)	50 mm	
Smallest detectable object (MDO) typ.		
	50 mm (Dependent on distance between beams)	
Adjustment		
None	-	
Indication		
LED green	Operating indicator Static on: power on	
LED yellow	Status of received light beam	

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Special applications Static off: object not present Detecting flat objects, Detecting perforated objects, Detecting objects with position tolerances, Detecting uneven, shiny objects		Chartie and a blight many and	
Detecting uneven, shiny objects Electronics Suppy voltage Ug 0.VDC30 VDC Ripple 5 V _p o Usage category 0.12 (According to EN 60947-5-2) 0C-13 (According to EN 60947-5-2) Current consumption 8 MA. without load. At Ug = 24 V Protection class III Digital output 1 Numbri 1 Signal voltage NPN HIGH LOW NPN Subject Signal voltage NPN HIGH LOW Approx.Ug < 2.5 V Curcuit protection duag 100 mA Curcuit protection duag Reverse polarity protected Short-circuit protected Sho		Static on: object present Static off: object not present	
Supply voltage Ug04VDC30 VDCRippe05VDC30 VDCRippe05VDC30 VDCUsage category05-12 (According to EN 60947-5-2) Ch 13 (According to EN 60947-5-2) Ch 13 (According to EN 60947-5-2)Current consumption8mA, without load. At Ug = 24 VProtection class0Digital output1Vinume1Nummer1Signal voltage NPN HIG VD0Signal voltage NPN HIG VD400 vACurrent protection output Current protected november640 vAResponse time1Switching main Current protected november1Bit in Signal voltage NPN Current protected for Current protected november1Current protection output Switching main Switching for Um 300 vA1Pip/Wire assignment MEN	Special applications		
Ripole<5 Vpp	Electronics		
Usage categoryDC12 (According to EN 60947-5-2) DC13 (According to EN 60947-5-2) DC13 (According to EN 60947-5-2) DC13 (According to EN 60947-5-2)Current consumption38 mA, without load. At Ug = 24 VProtection classIIDigital outputIINumber1Signal voltage NPN HIGHLODKiphora (Advassithing mod Approx. Ug / < 2.5 V	Supply voltage U _B	10 V DC 30 V DC	
Current consumptionDC-13 (According to EN 60947-5-2)Current consumption38 mA, without load. At Ug = 24 VProtection classIIDigital outputINumber1Number1Switching moteUght/dark switchingSignal voltage NPN HIGH/L00Approx. Ug / < 2.5 V	Ripple	\leq 5 V _{pp}	
Protection classIIDigital outputNumber1NumberNPStotching modeInd/dat switchingStotching to totubut current lawAprox.Us_2.5.VOutput current law4.10 mACircuit protection outputSevere periodicultation current lawResponse mes.1ms. ¹ Stotching freque3.0mAResponse mes.1ms. ¹ But an unit subtracted lawSoutcated lawStotching freque3.0maStotching freque3.0maBut an unit subtracted lawSoutcated lawStotching freque1.0maBut an unit subtracted lawSoutcated lawBut an unit subtracted law1.0maStotching freque1.0maBut an unit subtracted law1.0maStotching freque1.0maStotching freque1.0maStotching freque3.0maStotching freque1.0maStotching freque1.0maStotching freque3.0maStotching freque3.0maStotching freque1.0maStotching freque3.0maStotching freque3.0maStotching for subtracted law1.0maStotching for subtracted law1.0maStotching for subtracted law3.0maStotching for subtracted law3.0ma<	Usage category		
Digital outputINumer1TypeNNSwitching momerIdyl/drak switchingSignal voltage NPN HIGH/DUAprox Ug < 2.5 VOutput current ug4100 mACircuit protection outputReverse polarity protected agricult and voltage intervent protected	Current consumption	38 mA, without load. At U_B = 24 V	
Number1NumberNPSwitching modeIght/draswitchingSwitching NPN HIGH/L00Aprox.Ug./SQ./SQ./SQ./SQ./SQ./SQ./SQ./SQ./SQ./SQ	Protection class	III	
ImplementationImplementationNPSinterSinterSinterSinterSinterOutput current partSinterCircuit protection outputSinterResponsemSinter <t< th=""><th>Digital output</th><th></th></t<>	Digital output		
Switching modeJei/AdvanceSignal voltage NPN HIGH/D0Aprox Ug_0 < 2.5 VOutput current mag< 00 mACircuit protection magSverse polarity protected Sverurent protecte	Number	1	
Signal voltage NPN HIGH/LODApprox Ug / < 2.5 V	Туре	NPN	
Output current mark≤ 100 mACircuit protectedReves polarity protectedSeverurent protectedSeverurent protectedRepeatability (response)≤ 1 ms ¹ Switching fraque1 ms - 1Boltz 2Soltz 2Pir/Wire assignment- 1Sub 2- 1Sub 32Sub 32	Switching mode	Light/dark switching	
Circuit protection outputReverse polarity protected overcurrent protected overcurrent protectedResponse time= 1 ms ¹ Repeatability (response time)1 msSwitching freque= 00 Hz ² PIN/Wire assignment= (1+)M1= (1+)WH 22	Signal voltage NPN HIGH/LOW	Approx. $U_B / < 2.5 V$	
Vercurrent protected Short-circuit protectedResponse time\$1 ms^1Repeatability (response time)1msSwitching frequee $300 Hz^2$ PIn/Wire assignment+ (++)BN 1 2_2	Output current I _{max.}	≤ 100 mA	
Repeatability(response time) 1ms Switching freque 500 Hz ⁻² PIn/Wire assignment + (++) BN 1 + (++) WH 2 Q2	Circuit protection outputs	Overcurrent protected	
Switching frequency 500 Hz ²) Pin/Wire assignment + (L+) WH 2 Q2	Response time	\leq 1 ms ¹⁾	
Pin/Wire assignment BN 1 + (L+) WH 2 Q2	Repeatability (response time)	1 ms	
BN 1 + (L+) WH 2 Q ₂	Switching frequency	500 Hz ²⁾	
WH 2 Q2	Pin/Wire assignment		
	BN 1	+ (L+)	
BU 3 - (M)	WH 2	Q ₂	
	BU 3	- (M)	
ВК 4 Q1	ВК 4	Q ₁	
Function of pin 4/black (BK) Digital output, light switching, object present → output LOW	Function of pin 4/black (BK)	Digital output, light switching, object present \rightarrow output LOW	
Function of pin 2/white (WH) Digital output, dark switching, object present → output HIGH	Function of pin 2/white (WH)	Digital output, dark switching, object present \rightarrow output HIGH	

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

²⁾ With light/dark ratio 1:1.

Mechanics

Dimensions (W x H x D)	450 mm x 20.3 mm x 17 mm ¹⁾
Connection	Cable with male connector M8, 4-pin, snap 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)	2,000 mm ²⁾
Material	

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

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

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Housing	Metal, Aluminum (anodised)
Front screen	Plastic, PMMA
Cable	Plastic, PVC
Male connector	Plastic, PVC
Weight	Approx. 163.5 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

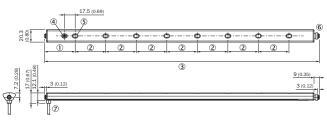
Enclosure rating	IP67 (EN 60529)
Ambient operating temperature	-40 °C +60 °C
Ambient temperature, storage	-40 °C +75 °C
Shock resistance	30 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
Vibration resistance	10 Hz 55 Hz (Amplitude 1 mm, 3 x 30 min (EN60068-2-6))
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

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

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

Adjustments

Display and adjustment elements



LED yellow

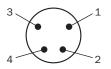
Installation note



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

Connection type

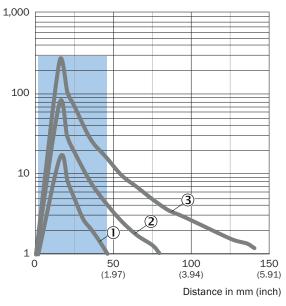
Male connector M8, 4-pin



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Characteristic curve

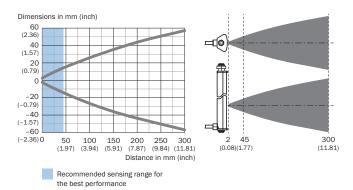




Recommended sensing range for the best performance

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

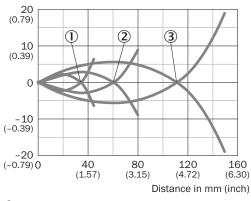
Light spot size



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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			
0	8 mm round adapter bracket with adhesive back	BEF-AP-RSBADHA	2127765
	Adapter bracket with adhesive back	BEF-AP-RSBADHB	2127766
	Adapter bracket to snap between hex sections	BEF-AP-RSBCON	2127768
SolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolutionSolution<l< td=""><td>Hex adapter bracket</td><td>BEF-AP-RSBHEX</td><td>2127767</td></l<>	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, M8, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: 0.14 mm² 0.5 mm² 	STE-0804-G	6037323
•	 Connection type head A: Female connector, M8, 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 	YF8U14- 050VA3XLEAX	2095889

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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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