

# RSB1-0462D115059PP1GZZZZZZ

Roller Sensor Bar



**MULTITASK PHOTOELECTRIC SENSORS** 

**Ordering information** 

Туре

RSB1-0462D115059PP1GZZZZZZ

Other models and accessories -> www.sick.com/Roller\_Sensor\_Bar

MULTITASK PHOTOELECTRIC SENSORS





### 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-<br>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 $T_a = +25 \text{ °C}$   |  |  |
| Number of beams   | 4   |  |  |
| Beam separation   | 115 mm  |  |  |
| Distance from 1st beam to leading edge of housing (including end cap)                           | 59 mm   |  |  |
| Smallest detectable object (MDO) typ.   |   |  |  |
|   | 115 mm (Dependent on distance between beams)  |  |  |
| Adjustment  |   |  |  |
| None  | -   |  |  |
| Indication  |   |  |  |
| LED green   | Operating indicator   |  |  |

Part no.

1135249

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| LED yellow       Status of received light beam         Status of received light beam       Static on: object present         Static off: object not present       Static off: object not present         Special applications       Detecting flat objects, Detecting perforated objects, Detecting objects with position tolerances, Detecting uneven, shiny objects  |                                  | Static on: power on  |  |  |
|--|----------------------------------|--|--|--|
| Static one object present<br>Static off: object not present<br>Static off: o |                                  |  |  |  |
| Detecting uneven, shiny objects           Electronics           Supply voltage Ug         0 VD C 30 V DC           Ripple         0 VD C 30 V DC           Usage category         0 C-12 (According to EN 60947-5-2)<br>Cr13 (According to EN 60947-5-2)<br>Cr13 (According to EN 60947-5-2)           Current consumption         0 T mA, without load. At Ug = 24 V           Protection class         II           Digital output         1           Verture         Vumber           Signal voltage PNP HIGH/DW         ApproxUg-2.5 V / 0 V           Current protected<br>Signal voltage PNP HIGH/DW         400 MA           Reverse polarity protected<br>Signal voltage PNP HIGH/DW         Reverse polarity protected<br>Signal voltage PNP HIGH/DW           Reverse polarity protected<br>Signal voltage PNP HIGH/DW         Reverse polarity protected<br>Signal voltage PNP HIGH/DW           Reverse polarity protected<br>Signal voltage PNP HIGH/DW         Reverse polarity protected<br>Signal voltage PNP HIGH/DW           Reverse polarity protected<br>Signal voltage PNP HIGH/DW         Reverse polarity protected<br>Signal voltage PNP HIGH/DW           Representing         1 ms<br>Signal voltage PNP HIGH/DW           Representing         1 ms<br>Signal voltage PNP HIGH/DW           Pir/Wire assignment         - (1+)<br>Qu           MI         - (2+)<br>Qu           MI         - (2+)<br>Qu  | LED yellow                       | Static on: object present  |  |  |
| Supply voltage UgIOV DC 30 V DCRippleSol SypUsage categoryCl.12 (According to EN 60947-52)<br>C.13 (According to EN 60947-52)<br>C.13 (According to EN 60947-52)Current consumptionIT mA without load. At Ug = 24 VProtection classIIDigital outputIINumber1Signal voltage PNP HIG H/CUIX PNPCurcuit protection outputAll Signal voltage PNP HIG H/CUCurcuit protection outputSevera polarity protected<br>Soler voltage reprotected<br>Soler voltage reprotected <b< th=""><th>Special applications</th><th colspan="2"></th></b<>  | Special applications             |  |  |  |
| Riple≤ δγpUsage categoryCl2 (According to EN 60947-52)<br>Cl3 (According to EN 60947-52)<br>Cl3 (According to EN 60947-52)<br>Cl3 (According to EN 60947-52)Curent consumptionTo Maxito Ido Ad Ug = 24 VProtection classIProtection classIDigital outputINume1Signal voltage PNP HGI MDIOutput current MDICircuit protection outputAlon AlCircuit protection outputSevera protected<br>short-circuit protected<br><th>Electronics</th> <th></th>   | Electronics                      |  |  |  |
| Vage categoryCategoryUsage categoryCateconding to EN 60947-5.2)<br>Cit (according to EN 60947-5.2)<br>Cit (according to EN 60947-5.2)<br>Cit (according to EN 60947-5.2)Current consumptionTo Awithou (according to EN 60947-5.2)Protection classImage: ConsumptionProtection classImage: ConsumptionNumberImage: ConsumptionNumberSignal outputSignal output consumptionImage: ConsumptionCircuit protection consumptionConsumptionNumberConsumptionCircuit protected consumptionSignal output consumptionNumberSignal output consumptionCircuit protected consumptionConsumptionNumberSignal output consumptionNumberSignal output consumptionNumber<   | Supply voltage U <sub>B</sub>    | 10 V DC 30 V DC  |  |  |
| DC-13 (According to EN 60947-5-2)Current consumption17 mA, without load. At Ug = 24 VProtection classIIIDigital outputIIINumber1PNPSwitching modSwitching modLight switchingOutput current ImageRepros. Ug = 2.5 V / 0 VCircuit protection outputReverse polarity protected Short-circuit protected Short-Circ   | Ripple                           | ≤ 5 V <sub>pp</sub>  |  |  |
| Protection classIDigital outputNumor1NumorNumorVNumorSwitching modeNumorSignal voltage PNP HGH LOWAirschaftSignal voltage PNP HGH LOW300 AIChrour burger bu   | Usage category                   |  |  |  |
| Digital outputHereinsteinDigital output1Number1VPPNPSwitching modeigit switchingSignal voltage PNP HIGH/D00Aprox Ug-2.5 V / O VOutput current mode Sere polarity protected<br>overcurrent protected<br>overcurrent protected<br>short-circuit protected<br>Soften Sere polarity polarity polarity polarity polarity polarity polarit   | Current consumption              | 17 mA, without load. At $U_B$ = 24 V   |  |  |
| Number1VPSidendiaJeixeticitieSigend votage PNP HGH LowAporx Lg-2.5 V / 0 VOutput current Jac300 ACircuit protectionSevere polarity protected<br>vorurent protected<br>vorurent protected<br>vorurent protected<br>vorurent protected<br>vorurent protectedResponse time1 mBarbarbarbarbarbarbarbarbarbarbarbarbarba  | Protection class                 | ш  |  |  |
| Image: Properties of the section of   | Digital output                   |  |  |  |
| Switching modeLight switchingSignal voltage PNP HIGH JODAprox Jug-2.5 V/O VOutput current Jug5 100 mACircuit protection outputRevse polarity protected<br>varcurrent   | Number                           | ber 1  |  |  |
| Signal voltage PNP HIGH/L00       Aprox.Ug-2.5 V/O V         Output current Imax       5 100 mA         Circuit protection output       Reverse polarity protected<br>overcurrent protected<br>obnt-circuit protected<br>short-circuit protected<br>bott-circuit protected         Response time       1 ms <sup>1</sup> Switching frequeue       300 Hz <sup>2</sup> Pin/Wire assignment       1 + 1         BN       1 + 1         Image: Pin/Wire assignment       1 + 1         Image: Pin/Wire assignment       92         Image: Pin/Wire assignment       - (M)   | Туре                             | pe PNP   |  |  |
| Output current Imm≤ 100 mACircuit protection outputReverse polarity protected<br>overcurrent protected<br>overcurrent protected<br>overcurrent protected<br>overcurrent protected<br>overcurrent protectedRepeatability (response time)≤ 1 ms <sup>1</sup> Repeatability (response time)1 msSwitching freque300 Hz <sup>2</sup> Pin/Wire assignment-L-QQL-L  | Switching mode                   | Light switching  |  |  |
| Fine Wire assignment       Response time of the second secon   | Signal voltage PNP HIGH/LOW      | V Approx. U <sub>B</sub> -2.5 V / 0 V  |  |  |
| Overcurrent protected         Response time       \$1 ms^1         Repeatability (response time)       1 ms         Switching frequence       \$00 Hz^2         PIn/Wire assignment          BN       \$(L+)         Q2       (M)  | Output current I <sub>max.</sub> | _ ≤ 100 mA   |  |  |
| Repeatability (response time)     1 ms       Switching frequence     500 Hz <sup>2</sup> )       Pin/Wire assignment     + (L+)       WH     Q2       BU     - (M)   | Circuit protection outputs       | Overcurrent protected  |  |  |
| Switching frequence     500 Hz <sup>2</sup> )       Pin/Wire assignment        BN     +(L+)       Q2     BU       BU     -(M)  | Response time                    | ≤ 1 ms <sup>1)</sup>   |  |  |
| Pin/Wire assignment         BN         + (L+)           WH         Q2         BU         - (M)   | Repeatability (response time)    | 1 ms   |  |  |
| BN       + (L+)         WH       Q2         BU       - (M)   | Switching frequency              | y 500 Hz <sup>2)</sup>   |  |  |
| WH Q <sub>2</sub><br>BU - (M)  | Pin/Wire assignment              |  |  |  |
| BU - (M)   | BN                               | + (L+)   |  |  |
|  | WH                               | Q <sub>2</sub>   |  |  |
| BK Q1  | BU                               | U - (M)  |  |  |
|  | ВК                               | κ Q <sub>1</sub>   |  |  |
| Function of pin 4/black (BK) Digital output, light switching, object present → output HIGH   | Function of pin 4/black (BK)     | S) Digital output, light switching, object present $\rightarrow$ output HIGH |  |  |
| Function of pin 2/white (WH) Digital output, light switching, object present → output HIGH   | Function of pin 2/white (WH)     | Digital output, light switching, object present $\rightarrow$ output HIGH    |  |  |

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

<sup>2)</sup> With light/dark ratio 1:1.

#### Mechanics

| Dimensions (W x H x D) | 462 mm x 20.3 mm x 17 mm <sup>1)</sup> |
|------------------------|--|
| Connection             | Cable, 4-wire <sup>2)</sup>            |
| Connection detail      |  |
| Deep-freeze property   | Do not bend below 0 °C                 |
| Conductor size         | 0.13 mm <sup>2</sup>                   |
| Cable diameter         | Ø 3.6 mm                               |
| Length of cable (L)    | 2,000 mm <sup>2)</sup>                 |

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

<sup>2)</sup> Due to the manufacturing process, the cable can be a little longer.

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| Material             |                            |
|----------------------|----------------------------|
| Housing              | Metal, Aluminum (anodised) |
| Front screen         | Plastic, PMMA              |
| Cable                | Plastic, PVC               |
| Weight               | Approx. 167.8 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

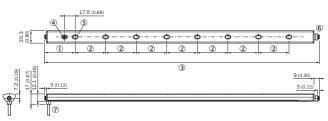
| Enclosure rating                    | IP67 (EN 60529)   |
|-------------------------------------|---|
| Ambient operating temperature       | -40 °C +60 °C   |
| Ambient temperature, storage        | -40 °C +75 °C   |
| Shock resistance                    | 30 g, 11 ms (3 positive and 3 negative shocks 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**

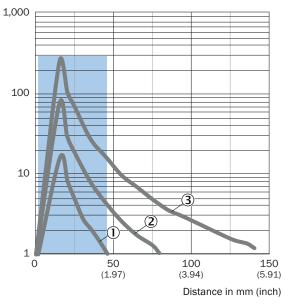
Cable, 4-wire



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#### Characteristic curve

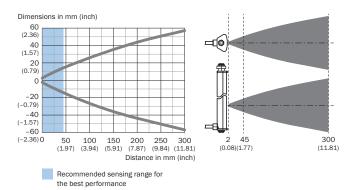




Recommended sensing range for the best performance

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

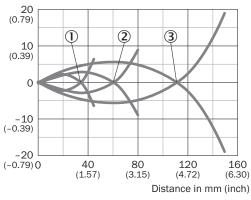
#### Light spot size



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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  |  |
| 8                            | Adapter bracket to snap between hex sections  | BEF-AP-RSBCON  | 2127768  |  |
| ۲                            | Hex adapter bracket   | BEF-AP-RSBHEX  | 2127767  |  |
|                              | BEF-AP-RSBADHA, BEF-AP-RSBADHB, BEF-AP-RSBCON, BEF-AP-RSBHEX  | BEF-AP-RSBKIT  | 2127759  |  |
| Others                       |   |                |          |  |
| ٠.                           | <ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, A-coded</li> <li>Description: Unshielded</li> <li>Connection systems: Screw-type terminals</li> <li>Permitted cross-section: &lt; 0.75 mm<sup>2</sup></li> </ul> | STE-1204-G     | 6009932  |  |

## 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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