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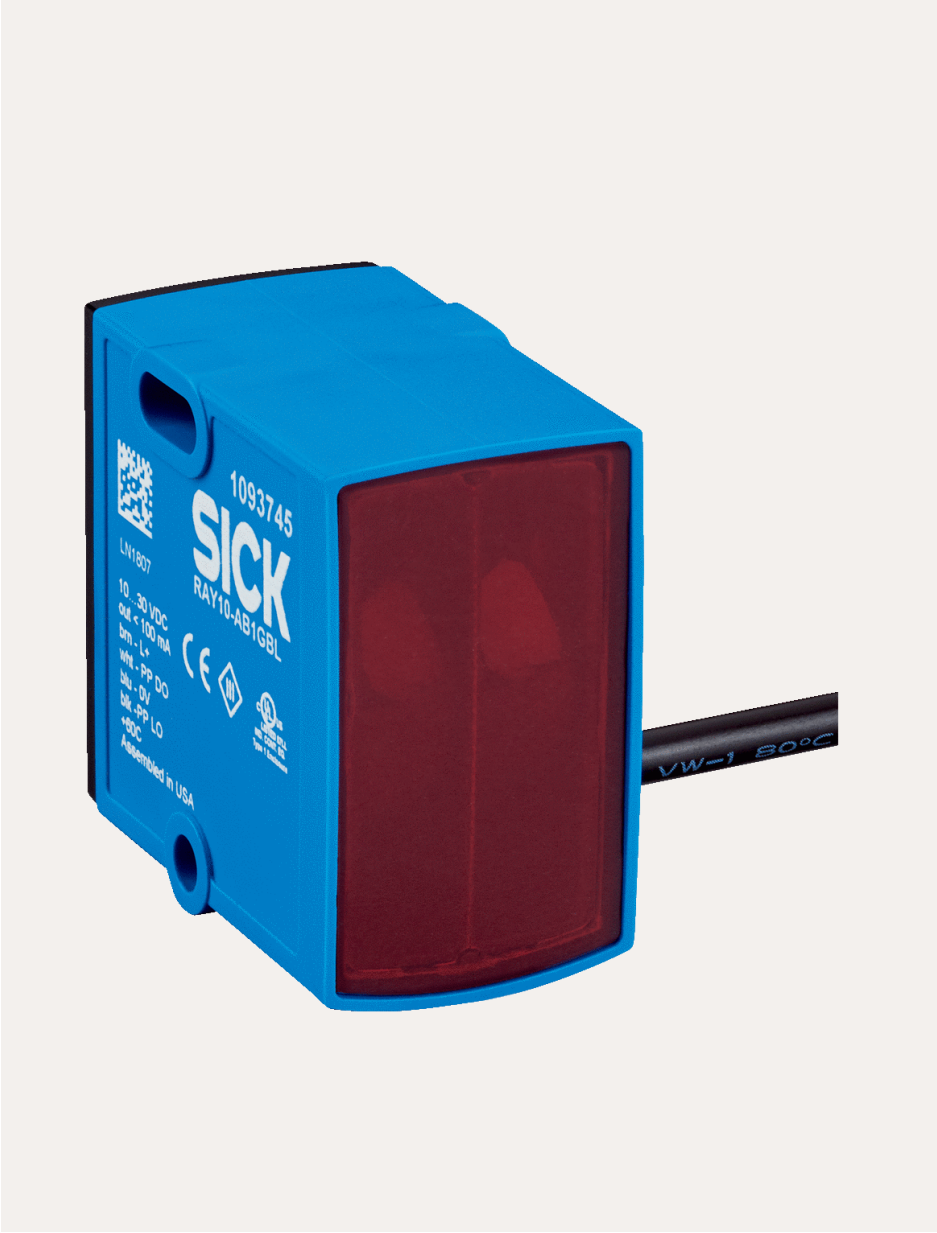


DATA SHEET

RAY10-AB4CBL

RAY10 Reflex Array
Photoelectric sensors

SICK Sensor Intelligence

Illustration may differ

PHOTOELECTRIC SENSORS

RAY10-AB4CBL

ORDERING INFORMATION

Type	part no.
RAY10-AB4CBL	1091724

Further device versions and accessories at www.sick.com/RAY10_Reflex_Array

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	With minimum distance to reflector (dual lens system), Reflex Array
Dimensions (W x H x D)	21.5 mm x 36 mm x 37.7 mm
Housing design (light emission)	Rectangular
Minimum object size	5 mm, position-independent detection within the light array
Detection height	25 mm
Sensing range max.	0 m ... 1.5 m [1]
Distance of the sensor to reflector	0.3 m ... 1.5 m [1]
Type of light	Visible red light
Light source	PinPoint LED [2]
Light spot size (distance)	37 mm x 12 mm (1 m)
Wave length	635 nm
Adjustment	Potentiometer
Special applications	Detecting transparent objects, Detecting perforated objects, Detecting uneven, shiny objects, Detecting objects with position tolerances, Detecting flat objects

[1] Reflector P250F.

[2] Average service life: 100,000 h at T_U = +25 °C.

MECHANICS/ELECTRONICS

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp}
Current consumption	30 mA [2]
Switching output	Push-pull: PNP/NPN [3]
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	Approx. V_S – 2.5 V / 0 V
Signal voltage NPN HIGH/LOW	Approx. VS / < 2.5 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 0.5 ms [4]
Switching frequency	1,000 Hz [5]
Connection type	Cable with M12 male connector, 4-pin, 300 mm [6]
Cable material	Plastic, PVC
Conductor cross section	0.13 mm²
Cable diameter	Ø 3.6 mm
Circuit protection	A [7] B [8] C [9] D [10]
Protection class	III
Weight	130 g
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
Ambient operating temperature	–40 °C ... +60 °C [11]
Ambient temperature, storage	–40 °C ... +70 °C
UL File No.	NRKH.E189383 & NRKH7.E189383

[1] Limit values.

[2] Without load.

[3] Pin 4 and pin 2: This switching output must not be connected to another output.

[4] Signal transit time with resistive load in switching mode. Different values possible in COM2 mode.

[5] With light/dark ratio 1:1 in switching mode. Different values possible in IO-Link mode.

[6] Do not bend below 0 °C.

[7] A = V_S connections reverse-polarity protected.

[8] B = inputs and output reverse-polarity protected.

[9] C = interference suppression.

[10] D = outputs overcurrent and short-circuit protected.

[11] Avoid condensation on the front screen of the sensor and on the reflector.

SAFETY-RELATED PARAMETERS

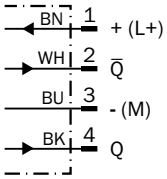
$MTTF_D$	634 years
DC_{avg}	0%
T_M (mission time)	20 years

CERTIFICATES

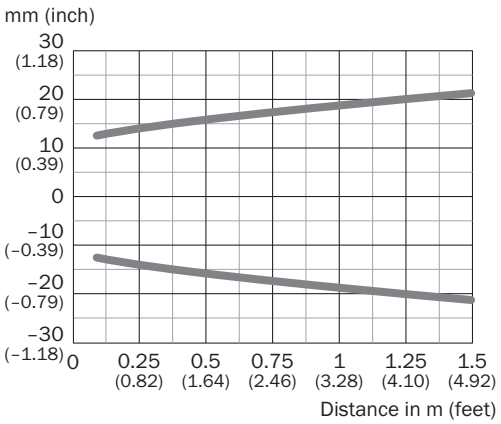
EU declaration of conformity	✓

ACMA declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓

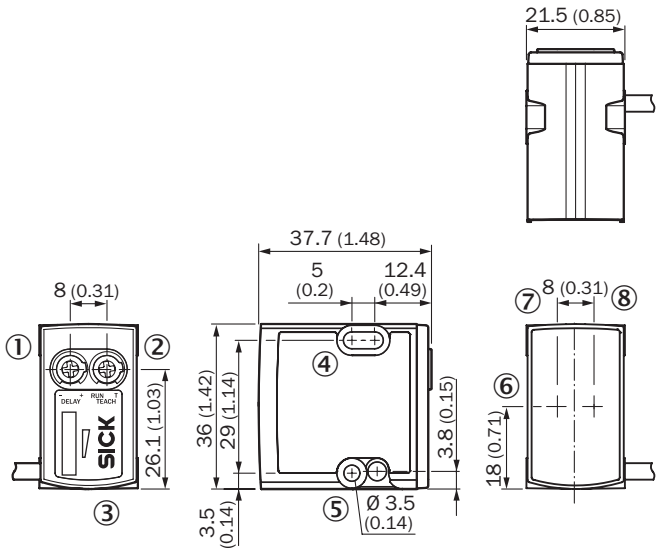
CONNECTION DIAGRAM CD-083



LIGHT SPOT SIZE



DIMENSIONAL DRAWING



Dimensions in mm (inch)
① Potentiometer / LED indicator green
② Potentiometer / LED indicator orange
③ BluePilot blue: signal strength light bar during teach process / AutoAdapt indicator during run
④ Mounting hole M3 (Ø 3.1 mm)
⑤ Mounting hole M3 (Ø 3.1 mm)
⑥ Optical axis
⑦ Optical axis
⑧ Optical axis

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/1091724

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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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