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DATA SHEET

RAY26P-1H162330A00

RAY26 Reflex Array
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

RAY26P-1H162330A00

ORDERING INFORMATION

Type	part no.
RAY26P-1H162330A00	1221945

Further device versions and accessories at www.sick.com/RAY26_Reflex_Array

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Without reflector minimum distance (autocollimation/coaxial optics), Reflex Array
Dimensions (W x H x D)	24.6 mm x 82.5 mm x 53.3 mm
Housing design (light emission)	Rectangular
Minimum object size	3 mm, 5 mm, 10 mm, position-independent detection within the light array (factory setting), position-independent detection within the light array, position-independent detection within the light array, adjustable via IO-Link incl. adjustable conveyor belt suppression, adjustable via IO-Link incl. adjustable conveyor belt suppression, adjustable via IO-Link incl. adjustable conveyor belt suppression
Detection height	55 mm
Sensing range max.	0 m ... 2 m [1) 2)] 0 m ... 3 m [1) 3)] 0 m ... 4.5 m [1) 4)]
Distance of the sensor to reflector	≥ 0 m
Conveyor belt suppression	Manual, via IO-Link
Type of light	Visible red light
Light source	PinPoint LED [5)]
Light spot size (distance)	55 mm x 9 mm (1 m)
Wave length	635 nm
Adjustment	BluePilot: Teach-in, IO-Link
Pin 2 configuration	External Input (test), Teach-in, switching signal
AutoAdapt	✓

[1)] Reflector PL80A.

[2)] At minimum object size 3 mm.

[3)] At minimum object size 5 mm.

[4)] At minimum object size 10 mm.

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

Special applications	Detecting objects with position tolerances, Detecting perforated objects, Detecting uneven, shiny objects, Detecting transparent objects, Detecting flat objects

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[3] At minimum object size 5 mm.

[4] At minimum object size 10 mm.

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MECHANICS/ELECTRONICS

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp}
Current consumption	25 mA [2] 40 mA [3]
Switching output	Push-pull: PNP/NPN [4]
Output: Q_{L1} / C	Switching output or IO-Link mode
Output function	Factory setting: Pin 2 / white (MF): NPN normally closed (light switching), PNP normally open (dark switching), Pin 4 / black (QL1 / C): NPN normally open (dark switching), PNP normally closed (light switching), IO-Link
Switching mode	Light/dark switching
Switching mode selector	Via IO-Link
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	≤ 3 ms [5]
Switching frequency	170 Hz [6]
Connection type	Cable, 4-wire, 2 m [7]
Cable material	Plastic, PVC
Circuit protection	A [8] B [9] C [10] D [11]
Protection class	III
Weight	130 g
Housing material	Plastic, VISTAL®

[1] Limit values.

[2] 16 V DC ... 30 V DC, without load.

[3] 10 V DC ... 16 V DC, without load.

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

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

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

[7] Do not bend below 0 °C.

[8] A = V_s connections reverse-polarity protected.

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

[10] C = interference suppression.

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

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

[13] Allowed temperature change after Teach +/- 20 K.

Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67
Ambient operating temperature	–40 °C ... +60 °C [12) 13)]
Ambient temperature, storage	–40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

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SAFETY-RELATED PARAMETERS

$MTTF_D$	709 years
DC_{avg}	0 %

COMMUNICATION INTERFACE

IO-Link		✓ , IO-Link V1.1
	Data transmission rate	COM2 (38,4 kBaud)
	Cycle time	2.3 ms
	Process data length	16 Bit
	Process data structure	Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 ... 15 = empty
	VendorID	26
	DeviceID HEX	0x800217
	DeviceID DEC	8389143
	Compatible master port type	A
	SIO mode support	Yes

SMART TASK

Smart Task name	Base logics
Logic function	Direct AND OR Window Hysteresis
Timer function	Deactivated Switch-on delay Off delay

[1)] SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").

[2)] SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

[3)] IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

	ON and OFF delay Impulse (one shot)
Inverter	Yes
Switching frequency	SIO Direct: 170 Hz [1] SIO Logic: 170 Hz [2] IOL: 170 Hz [3]
Response time	SIO Direct: 3 ms [1] SIO Logic: 3 ms [2] IOL: 3 ms [3]
Repeatability	SIO Direct: 1,5 ms [1] SIO Logic: 1,5 ms [2] IOL: 1,5 ms [3]
Switching signal	
Switching signal Q_{L1}	Switching output
Switching signal Q_{L2}	Switching output

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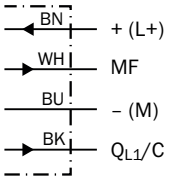
DIAGNOSIS

Device status	Yes
Quality of teach	Yes
Quality of run	Yes, Contamination display

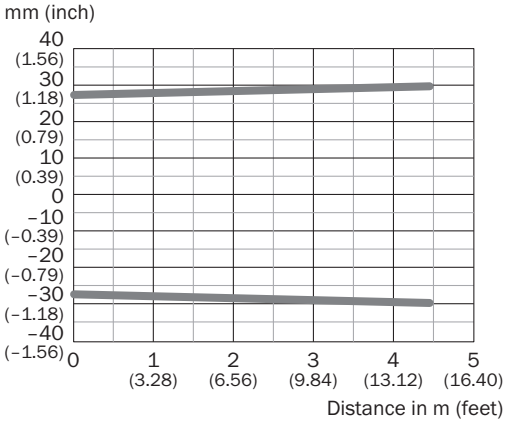
CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

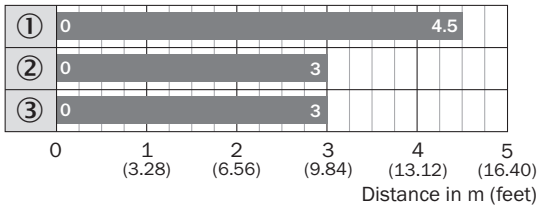
CONNECTION DIAGRAM CD-389



LIGHT SPOT SIZE

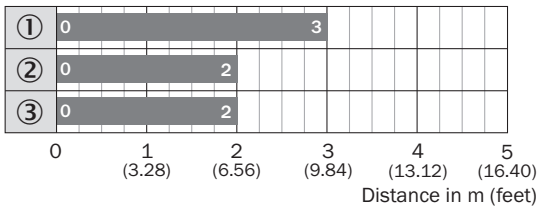


SENSING RANGE DIAGRAM SENSING RANGE DIAGRAM (MDO 10 MM)



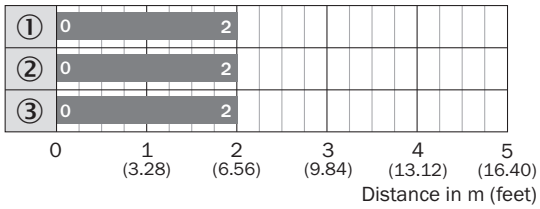
Sensing range
① Reflector PL80A
② Reflector PL81
③ Reflector PL100

SENSING RANGE DIAGRAM SENSING RANGE DIAGRAM (MDO 5 MM)



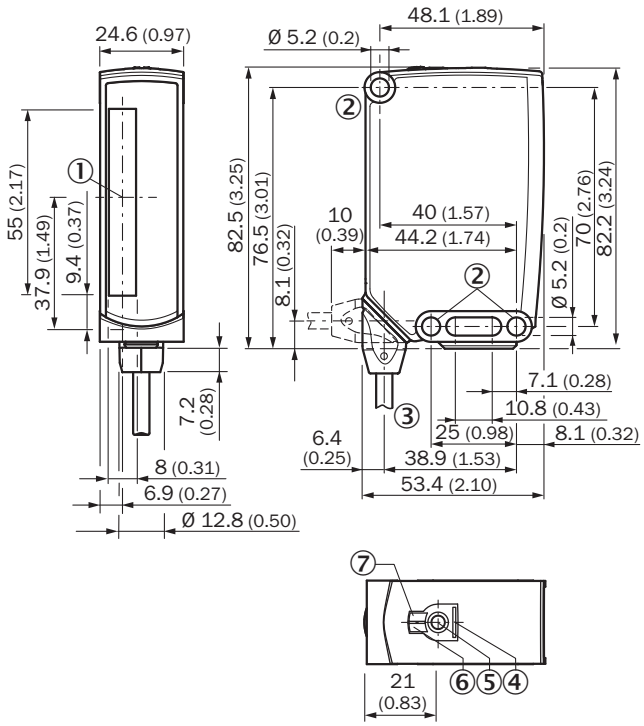
Sensing range
① Reflector PL80A
② Reflector PL81
③ Reflector PL100

SENSING RANGE DIAGRAM SENSING RANGE DIAGRAM (MDO 3 MM)



Sensing range
① Reflector PL80A
② Reflector PL81
③ Reflector PL100

DIMENSIONAL DRAWING



Dimensions in mm (inch)
① Center of optical axis
② Mounting hole, Ø 5.2 mm
③ Connection
④ BluePilot blue: AutoAdapt indicator during run mode
⑤ Teach-in button
⑥ LED indicator yellow: Status of received light beam
⑦ LED indicator green: Supply voltage active

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/1221945

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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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