RAY10-PZ3CBL

RAY10 Reflex Array

MULTITASK PHOTOELECTRIC SENSORS

RAY10-PZ3CBL | RAY10 Reflex Array

MULTITASK PHOTOELECTRIC SENSORS

Ordering information

Type	Part no.
RAY10-PZ3CBL	1102078

Other models and accessories ➔ www.sick.com/RAY10_Reflex_Array

Illustration may differ

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	PNP
Switching mode	Light 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 [3]
Switching frequency	1,000 Hz [4]
Connection type	Cable with M8 male connector, 4-pin, 300 mm [5]
Cable material	Plastic, PVC
Conductor cross section	0.13 mm²
Cable diameter	Ø 3.6 mm
Circuit protection	A [6] B [7] C [8] D [9]
Protection class	III
Weight	130 g
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
Ambient operating temperature	–40 °C ... +60 °C [10]
Ambient temperature, storage	–40 °C ... +70 °C
UL File No.	NRKH.E189383 & NRKH7.E189383

[1] Limit values.

[2] Without load.

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

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

[5] Do not bend below 0 °C.

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

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

[8] C = interference suppression.

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

[10] 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

Classifications

ECLASS 5.0	27270902

ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Connection diagram

Cd-253

Wire	Pin	Signal
BN	1	+ (L+)
BK	4	Q_{L0}
WH	2	not connected
BU	3	- (M)

Light spot size

mm (inch)

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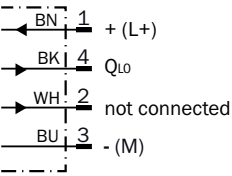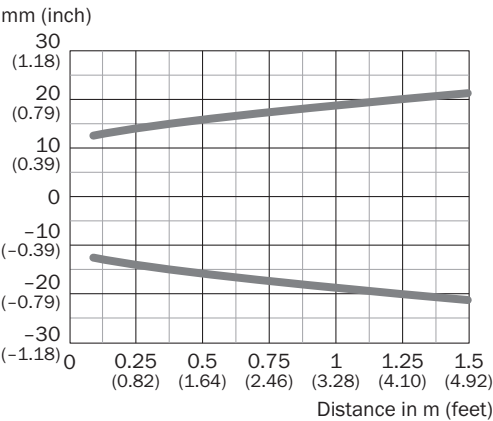
Dimensional drawing (Dimensions in mm (inch))
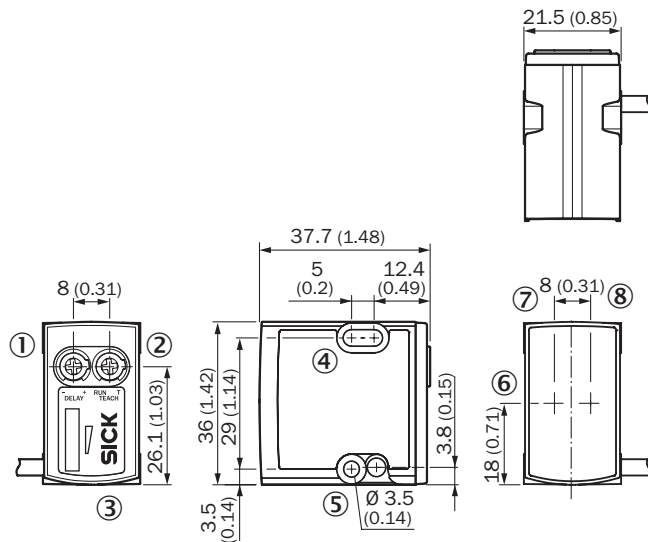
① Potentiometer / LED indicator green
② Potentiometer / LED indicator orange
③ BluePilot blue: signal strength light bar during teach process / AutoAdapt indicator during run
④ Mounting hole M3 (Ø 3.1 mm)
⑤ Mounting hole M3 (Ø 3.1 mm)
⑥ Optical axis
⑦ Optical axis
⑧ Optical axis

Recommended accessories

Other models and accessories ➜ www.sick.com/RAY10_Reflex_Array

	Brief description	Type	Part no.
Others			
	• **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
	• **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
	• **Description:** Fine triple reflector, screw connection, suitable for laser sensors • **Dimensions:** 52 mm 62 mm • **Ambient operating temperature:** –30 °C ... +65 °C	P250F	5308843
	• **Product family:** Brackets • **Description:** Plate N08 for universal clamp bracket • **Material:** Steel, zinc diecast • **Details:** Zinc plated steel (sheet), Zinc die cast (clamping bracket) • **Items supplied:** Universal clamp (5322626), mounting hardware • **Usable for:** W100, W150, W4S, W4F, W8, W9-3, W8G, W8 Laser, W8 Inox, G6, W100 Laser, W100-2, W10, G6 Inox, RAY10, W4SLG-3, W9, GR18, MultiPulse, Reflex Array, MultiLine, LUT3, KT5, KT8, KT10, CS8	BEF-KHS-N08	2051607

	Brief description	Type	Part no.
	• **Product family:** Brackets • **Description:** Universal mounting bracket for reflectors • **Dimensions (W x H x L):** 85 mm x 90 mm x 35 mm • **Material:** Steel • **Details:** Steel, zinc coated • **Suitable for:** C110A, P250, PL20, PL30A, PL40A, PL80A	BEF-WN-REFX	2064574

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