WL280-2P2431

W280-2

COMPACT PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

WL280-2P2431 | W280-2
COMPACT PHOTOELECTRIC SENSORS

Illustration may differ

Ordering information

Type	Part no.
WL280-2P2431	6044736

Included in delivery: P250 (1), BEF-W280 (1)

Other models and accessories ➜ www.sick.com/W280-2

Detailed technical data

Features

Sensor/ detection principle	Photoelectric retro-reflective sensor, Dual lens
Dimensions (W x H x D)	23.5 mm x 74.5 mm x 63 mm
Housing design (light emission)	Rectangular
Sensing range max.	0.01 m ... 15 m [1] 0.01 m ... 12 m [2]
Sensing range	0.01 m ... 13 m [1] 0.01 m ... 11 m [2]
Type of light	Visible red light
Light source	LED [3]
Light spot size (distance)	Ø 260 mm (8 m)
Adjustment	Potentiometer

[1] Reflector PL80A.

[2] Reflector P250.

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

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC [1]

[1] Limit values when operated in short-circuit protected network: max. 8 A.

[2] May not exceed or fall below U_v tolerances.

[3] Without load.

[4] Signal transit time with resistive load.

[5] With light/dark ratio 1:1.

[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] The AC/DC devices (-2Rxxxx only) comply with the Radio Safety Requirements for the industrial sector (Radio Safety Class A). They may cause radio interference if used in a residential area.

Ripple	≤ 5 V_{pp} [2]
Power consumption	20 mA [3]
Switching output	PNP
Switching mode	Light/dark switching
Switching mode selector	Selectable via light/dark rotary switch
Output current I$_{max.}$	100 mA
Response time	≤ 0.5 ms [4]
Switching frequency	1,000 Hz [5]
Connection type	Male connector M12, 4-pin
Circuit protection	A [6] B [7] C [8] D [9]
Protection class	III
Weight	+ 150 g
Polarisation filter	✓
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67
Items supplied	Mounting bracket BEF-W280, Reflector P250
EMC	EN 60947-5-2 [10]
Ambient operating temperature	–25 °C ... +55 °C
Ambient storage temperature	–40 °C ... +70 °C
UL File No.	NRKH2.E300503 & NRKH8.E300503

[1] Limit values when operated in short-circuit protected network: max. 8 A.

[2] May not exceed or fall below U_v tolerances.

[3] Without load.

[4] Signal transit time with resistive load.

[5] With light/dark ratio 1:1.

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Safety-related parameters

MTTF$_D$	1,671 years
DC$_{avg}$	0%

Classifications

ECl@ss 5.0	27270902
ECl@ss 5.1.4	27270902
ECl@ss 6.0	27270902
ECl@ss 6.2	27270902

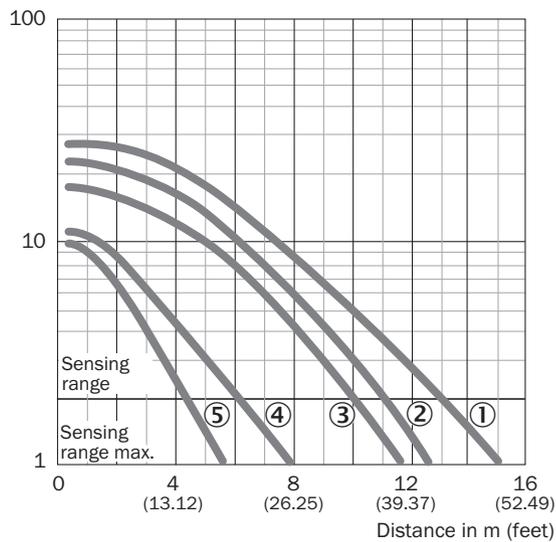|	
ECI@ss 7.0	27270902
ECI@ss 8.0	27270902
ECI@ss 8.1	27270902
ECI@ss 9.0	27270902
ECI@ss 10.0	27270902
ECI@ss 11.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
UNSPSC 16.0901	39121528

Connection diagram

Cd-068

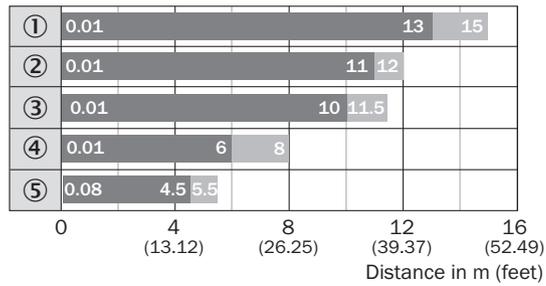| 1	+ (L+)
2	not connected
3	- (M)
4	Q
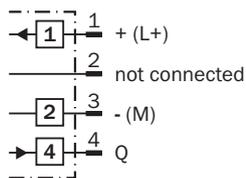
Characteristic curve

WL250-2

Function reserve

Distance in m (feet)

① Reflector PL80A, C110A
② Reflector P250
③ Reflector PL50A, PL40A, PL30A, PL31A
④ Reflector PL20A
⑤ Diamond Grade reflective tape, 100 mm x 100 mm

Sensing range diagram

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①	0.01		13	15
②	0.01		11	12
③	0.01		10	11.5
④	0.01	6	8	
⑤	0.08	4.5	5.5	

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0        4          8          12          16
     (13.12)    (26.25)    (39.37)    (52.49)
                Distance in m (feet)
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■ Sensing range   ■ Sensing range max.

① Reflector PL80A, C110A
② Reflector P250
③ Reflector PL50A, PL40A, PL30A, PL31A
④ Reflector PL20A
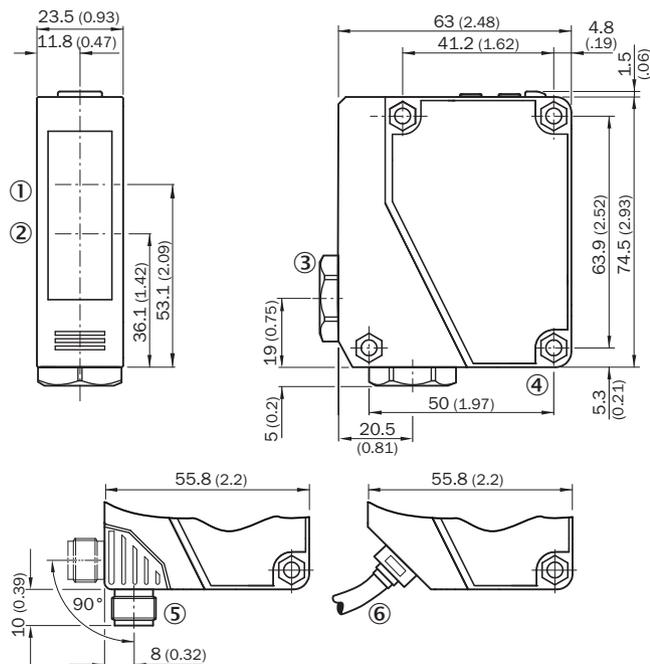⑤ Diamond Grade reflective tape, 100 mm x 100 mm

Adjustments possible

WTE280-2P/-2N, DC
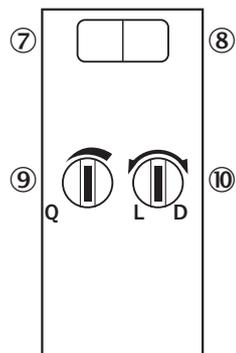
⑦ LED indicator green: Stability indicator
⑧ LED indicator yellow: Status of received light beam
⑨ Sensing range adjustment: potentiometer
⑩ Light/dark selector

Dimensional drawing (Dimensions in mm (inch))

WTE280-2, WL280-2, DC

① Center of optical axis, receiver
② Center of optical axis, sender
③ Cable entry gland 3/8" for cable diameter 6 to 8 mm
④ Mounting hole, Ø 4.3 mm
⑤ M12 male connector, 4-pin, can be rotated through 90°, can be locked with slider
⑥ Cable, 2 m, 3-wire, Ø 3,8 mm

Recommended accessories

Other models and accessories ➜ www.sick.com/W280-2

	Brief description	Type	Part no.
Mounting brackets and plates			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932
Reflectors			
	Rectangular, screw connection, 47 mm x 47 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250	5304812

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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.

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