WL27X-3P1831S01
W27

COMPACT PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

WL27X-3P1831S01 | W27
COMPACT PHOTOELECTRIC SENSORS

Ordering information

Type	Part no.
WL27X-3P1831S01	1129915

Other models and accessories ➜ www.sick.com/W27

Illustration may differ

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Dimensions (W x H x D)	31.4 mm x 112.3 mm x 70.4 mm
Housing design (light emission)	Rectangular
Sensing range max.	0.1 m ... 15 m [1]
Sensing range	0.1 m ... 11 m [1]
Focus	Approx. 1.5 °
Type of light	Visible red light
Light source	LED [2]
Light spot size (distance)	Ø 220 mm (10 m)
Angle of dispersion	Approx. 1.5 °
Wave length	660 nm
Adjustment	Potentiometer
Special applications	Explosive areas

[1] Reflector PL80A.
[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} [2]
Current consumption	30 mA [3]
Switching output	PNP
Output function	Complementary
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	Approx. V_S – 2.5 V / 0 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 500 µs [4]
Switching frequency	1,000 Hz [5]
Connection type	Cable, 4-wire, 10 m [6]
Cable material	PVC
Circuit protection	A [7] B [8] C [9]
Protection class	II [10]
Weight	750 g
Polarisation filter	✓
Housing material	Stainless steel, plastic, Stainless steel V2A (1.4301)
Optics material	Plastic, PMMA
Enclosure rating	IP64
Certificate (CCC)	SiTiiAS 2023322315005303
Certificate (IECEx)	IECEx TUR 20.0064X
Ex marking (IECEx)	Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135 °C Dc
ATEX marking	EX II 3G EX ec nC op is IIB T4 Gc X EX II 3D EX op is tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU
Ex area category	3D, 3G
Ambient operating temperature	–20 °C … +50 °C
Ambient temperature, storage	–40 °C … +75 °C

[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] 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] Reference voltage: 50 V DC.

Safety-related parameters

$MTTF_D$	1,471 years
DC_{avg}	0 %

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

Adjustments
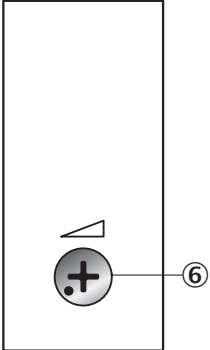
⑥ Sensitivity control: potentiometer

Connection type
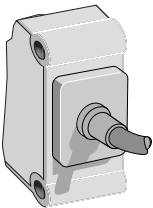
Connection diagram

Cd-094

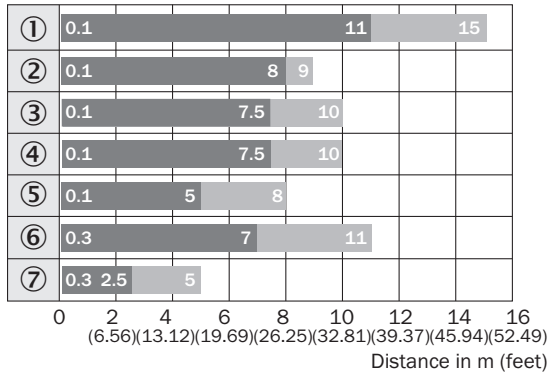| BN | + (L+) |
WH	$\overline{Q}$
BU	- (M)
BK	Q
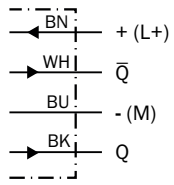
Characteristic curve

WL27-3 EX

Distance in m (feet)
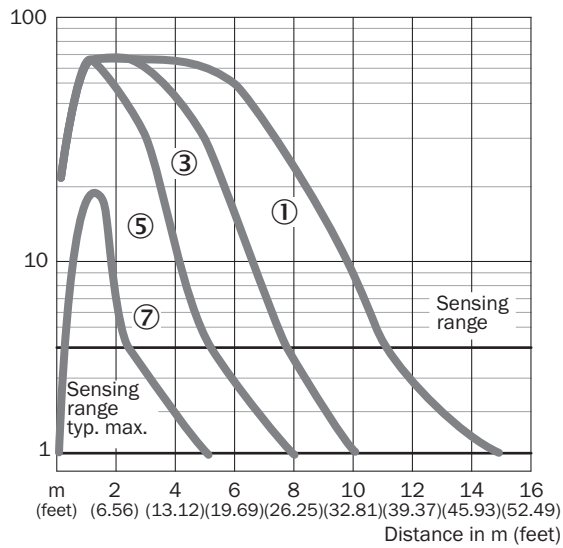
① Reflector PL80A
③ Reflector PL40A
⑤ Reflector PL20A
⑦ Reflective tape Diamond Grade

Sensing range diagram

WL27-3 EX

①	0.1	11	15	
②	0.1	8 9		
③	0.1	7.5	10	
④	0.1	7.5	10	
⑤	0.1	5	8	
⑥	0.3	7	11	
⑦	0.3 2.5	5		

```
0    2    4    6    8    10   12   14   16
  (6.56)(13.12)(19.69)(26.25)(32.81)(39.37)(45.94)(52.49)
                    Distance in m (feet)
```
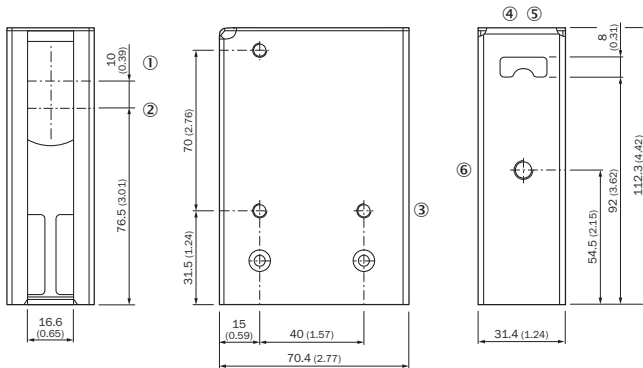
■ Sensing range   ■ Sensing range max.

① Reflector PL80A
② Reflector PL50A
③ Reflector PL40A
④ Reflector PL30A
⑤ Reflector PL20A
⑥ Reflector C110A
⑦ Reflective tape Diamond Grade

Dimensional drawing (Dimensions in mm (inch))

WL27-3 EX

① Optical axis, sender
② Optical axis, receiver
③ Mounting hole, Ø 5.2 mm
④ Sensitivity control
⑤ LED indicator yellow: Status of received light beam

Recommended accessories

Other models and accessories ➜ www.sick.com/W27

	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			
	• **Connection type head A:** Male connector, M12, 4-pin, straight • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	STE-1204-G	6009932
Reflectors			
	Rectangular, screw connection, 84 mm x 84 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL80A	1003865

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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