



Photoelectric sensors  
W27-3 Ex, Photoelectric retro-reflective sensor

WL27X-3P1831



**Model Name** > [WL27X-3P1831](#)  
**Part No.** > [1027989](#)



Illustration may differ

**At a glance**

- Classification: EX II 3D IP67 T70°C, EX II 3G EEx nA II T4 X according to Directive 94/9/EC (ATEX)
- Corresponds to category 3D/3G
- Conform to standards and ready-to-install: Sensor and additional protective housing (stainless steel 1.4301)
- Long sensing range with a high operating reserve
- Red light for easy alignment
- Reliable operation in industrial environments, even when devices are mounted opposite one another

**Your benefits**

- Ready-to-install sensors conform to the 3G/3D category for explosive zones (ATEX)
- Less contamination due to high operating reserves, reducing downtime
- Resistant to vibrations, reducing downtime
- Withstands harsh environments, making it suitable for a wide range of applications with operating temperatures from -40 °C - +60 °C



**Features**

Sensor/detection 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 <sup>1)</sup>
Sensing range:	0.1 m ... 11 m <sup>2)</sup>
Type of light:	Visible red light
Light source:	LED <sup>3)</sup>
Wave length:	660 nm
Angle of dispersion:	Ca. 1.5 °
Adjustment:	Potentiometer
Light spot size (distance):	Ø 220 mm (10 m)

<sup>1) 2)</sup> PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

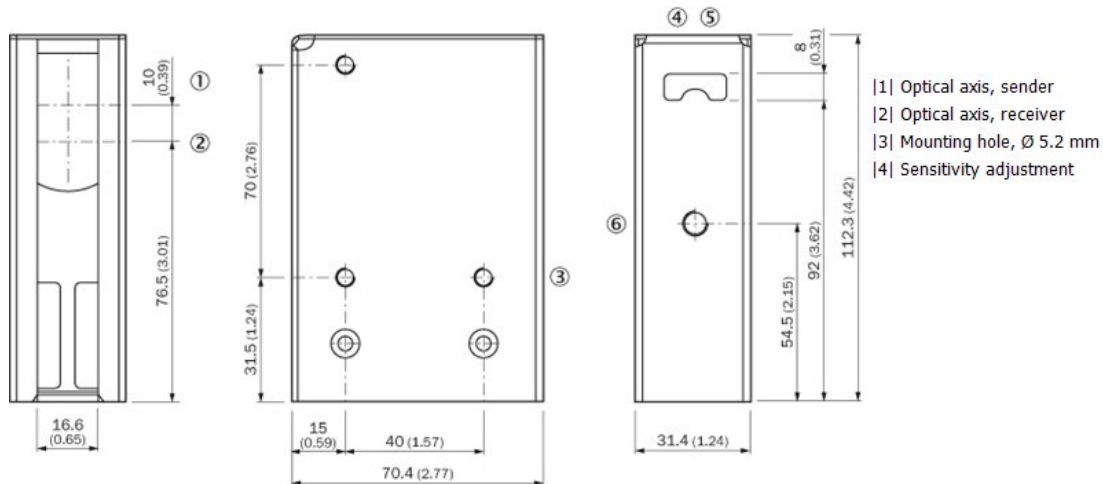
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Power consumption:	≤ 30 mA <sup>2)</sup>
Output type:	PNP

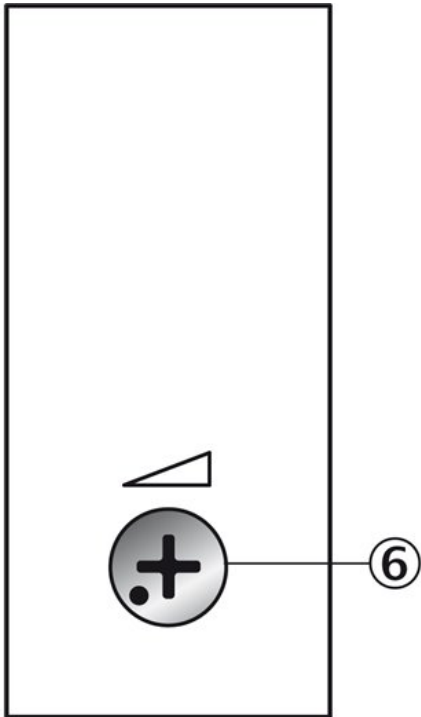
Output function:	Complementary
Switching mode:	Light/dark-switching
Signal voltage PNP HIGH/LOW:	Approx. $V_S - 2.5 \text{ V} / 0 \text{ V}$
Output current $I_{max}$ :	$\leq 100 \text{ mA}$
Response time:	$\leq 500 \mu\text{s}$ <sup>3)</sup>
Switching frequency:	1,000 Hz <sup>4)</sup>
Connection type:	Cable, 4-wire, 10 m <sup>5)</sup>
Cable material:	PVC
Circuit protection:::	A, B, C <sup>6) 7) 8)</sup>
Protection class:	II <sup>9)</sup>
Weight:	750 g
Polarisation filter:	✓
Housing material:	ABS, Stainless steel, Stainless steel V2A (1.4301), Plastic
Optics material:	PMMA
Enclosure rating:	IP 67
ATEX marking:	EX II 3D IP67 T70 °C Ex II 3G EEx nA II T4 X
Hazardous area category:	3D, 3G
Ambient operating temperature:	-20 °C ... 50 °C
Ambient storage temperature:	-40 °C ... 75 °C

1) Limit values, operation in short-circuit protected network max. 8 A 2) Without load 3) Signal transit time with resistive load 4) With light/dark ratio 1:1 5) Do not bend below 0 °C 6) A = V<sub>S</sub> connections reverse-polarity protected 7) B = inputs and output reverse-polarity protected 8) C = interference suppression 9) Reference voltage 50 V DC

## Dimensional drawing

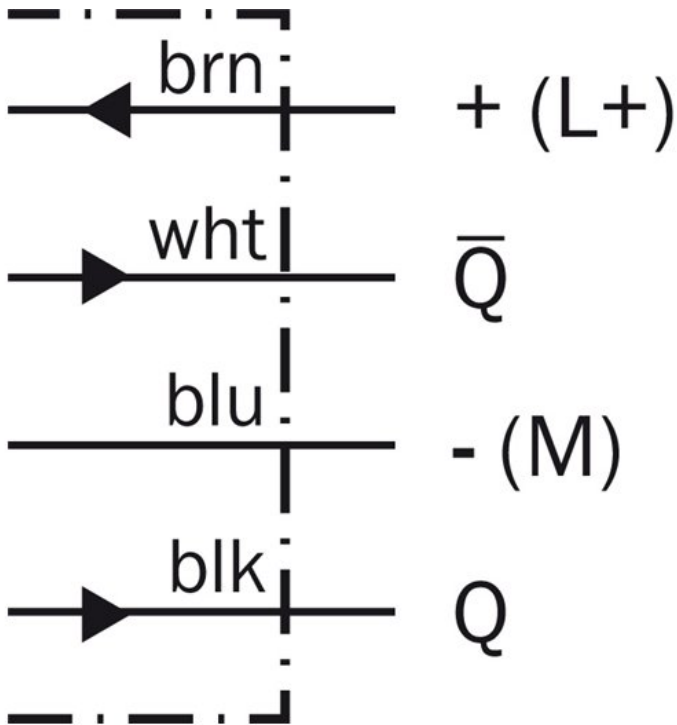


Adjustments possible

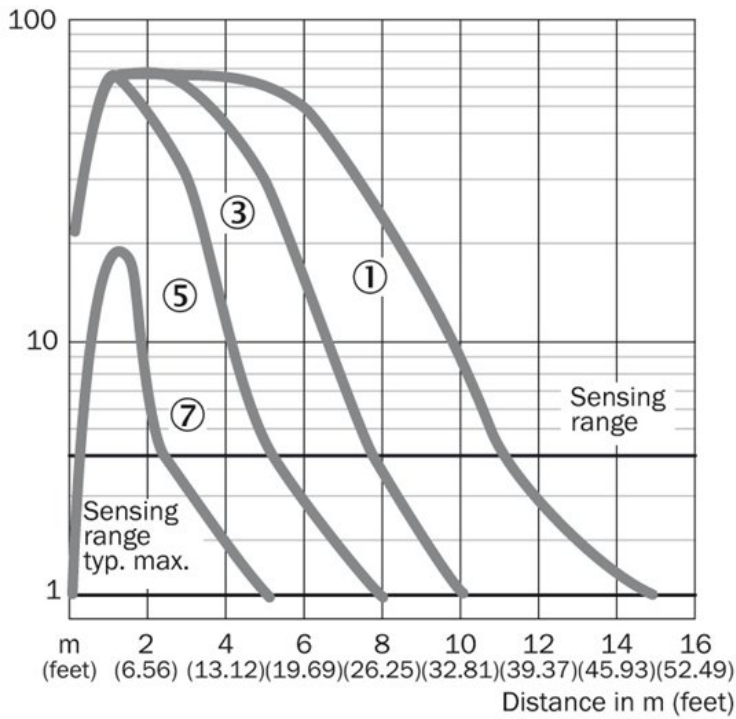


|6| Sensitivity adjustment: poti

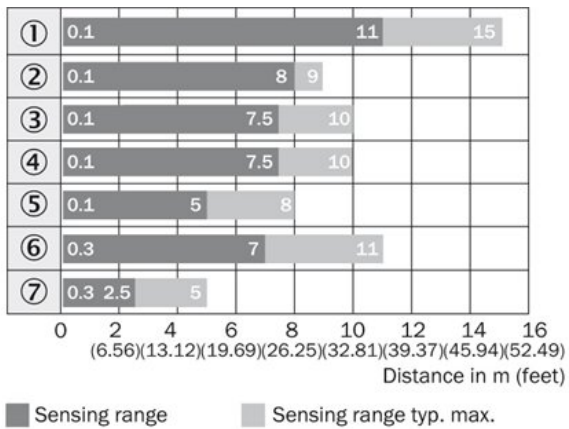
Connection diagram



## Characteristic curve



## Sensing range diagram

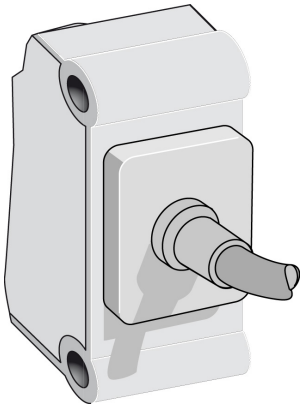


### Reflector type

- ① PL80A
- ② PL50A
- ③ PL40A
- ④ PL30A
- ⑤ PL20A
- ⑥ C110
- ⑦ Reflective tape  
Diamond Grade

Connection type

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**Australia**

Phone +61 3 9457 0600  
1800 334 802 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail sac@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Ceská Republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail kundenservice@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6801000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 3358 1341  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederlands**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail austefjord@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail admin@sicksgp.com.sg

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886-2-2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 8865 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 800-325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)