



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 3G EX nA op is IIB T4 Gc X, EX II 3D EX tc IIIB T135°C Dc IP67 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 -20 °C - +50 °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 ¹⁾
Sensing range:	0.1 m ... 11 m ²⁾
Type of light:	Visible red light
Light source:	LED ³⁾
Wave length:	660 nm
Angle of dispersion:	Ca. 1.5 °
Adjustment:	Potentiometer
Light spot size (distance):	Ø 220 mm (10 m)

^{1) 2)} PL80A ³⁾ Average service life of 100,000 h at T_A = +25 °C

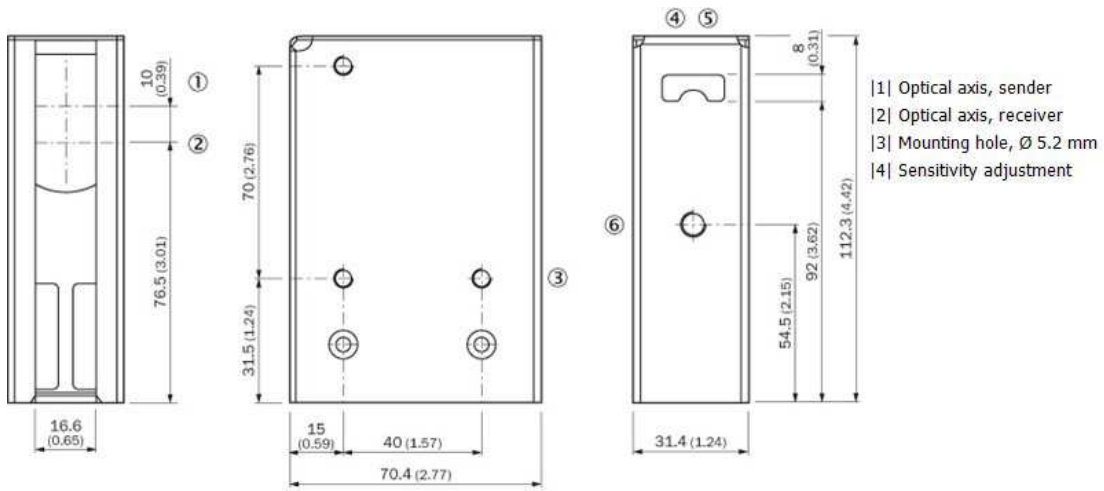
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	≤ 5 Vpp ²⁾
Power consumption:	≤ 30 mA ³⁾

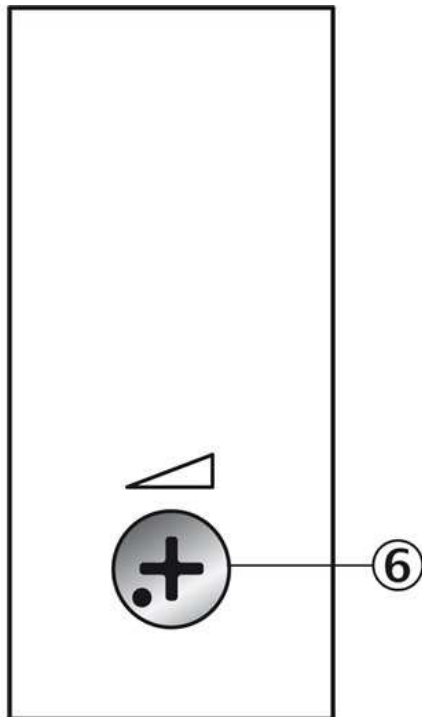
Output type:	PNP
Output function:	Complementary
Switching mode:	Light/dark switching
Output current I _{max} :	≤ 100 mA
Response time:	≤ 500 μs ⁴⁾
Switching frequency:	1,000 Hz ⁵⁾
Connection type:	Cable, 4-wire, 10 m ⁶⁾
Cable material:	PVC
Circuit protection:::	A, B, C ^{7) 8) 9)}
Protection class:	II ¹⁰⁾
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 3G EX nA op is IIB T4 Gc X EX II 3D EX tc IIIB T135°C Dc
Hazardous area category:	3D, 3G
Ambient operating temperature:	-20 °C ... 50 °C
Ambient storage temperature:	-40 °C ... 75 °C
Signal voltage PNP HIGH/LOW:	Approx. VS - 2.5 V / 0 V

¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S 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

Dimensional drawing

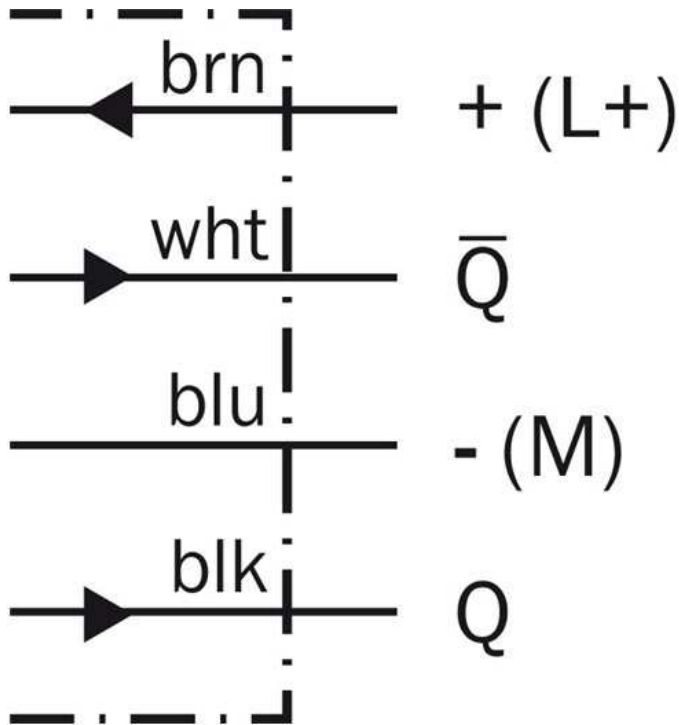


Adjustments possible

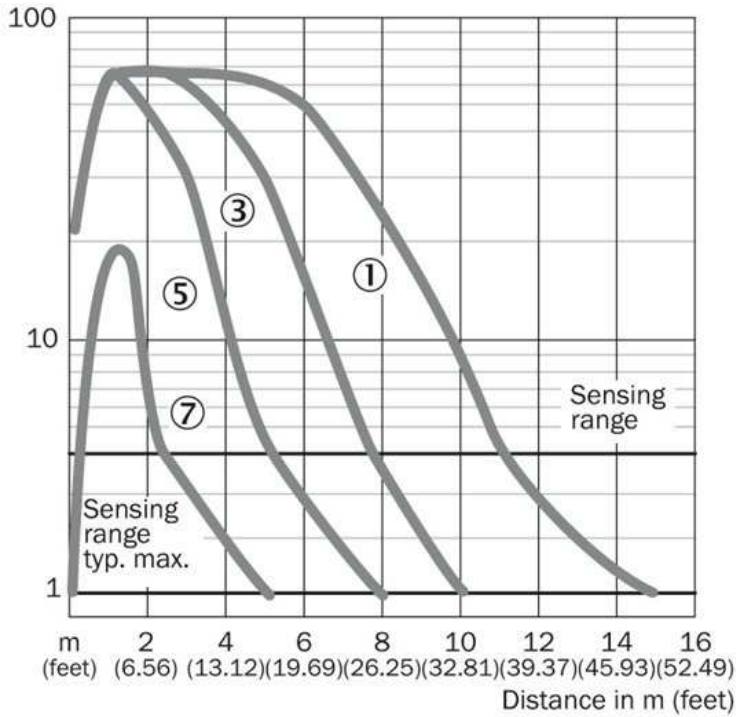


⑥ Sensitivity adjustment: poti

Connection diagram

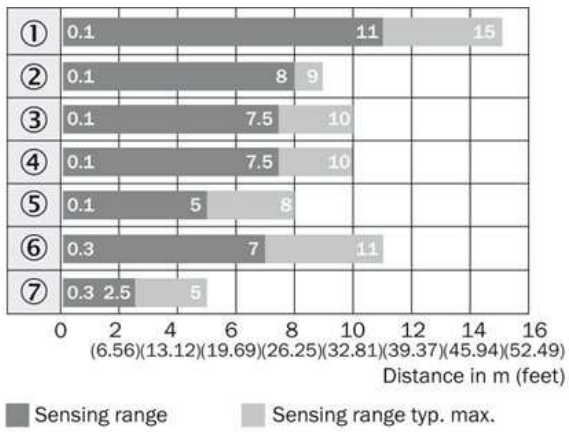


Characteristic curve



- [1] PL80A
- [3] PL40A
- [5] PL20A
- [7] Reflective tape Diamond Grade

Sensing range diagram

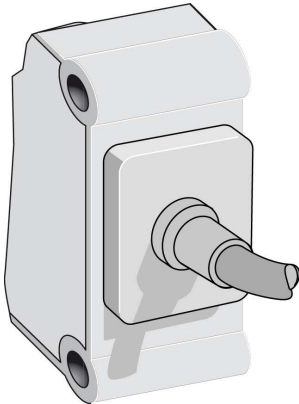


- |1| PL80A
- |2| PL50A
- |3| PL40A
- |4| PL30A
- |5| PL20A
- |6| C110A
- |7| Reflective tape Diamond Grade

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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