



Photoelectric sensors
W27-3 Ex, Photoelectric proximity sensor,
Background suppression

WTB27X-3P1811



Model Name > [WTB27X-3P1811](#)
Part No. > [1027988](#)



Illustration may differ

At a glance

- Classification: EX II 3G EX nA op is IIB T4 Gc X, EX II 3D EX tc IIB 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 + protective housing (stainless steel 1.4301)
- Long sensing distances with IR LED
- Precise background suppression with no scanning distance drift
- Resistant to ambient light, optical reflections, and crosstalk from other photoelectric devices

Your benefits

- Ready-to-install sensors including metal housing conform with the 3G/3D category for explosive zones (ATEX)
- Very precise detection with resistance to vibrations
- Less downtime due to ASIC (application-specific integrated circuit) chip technology by SICK
- Resistant to ambient light, optical reflections, and immune to crosstalk from other photoelectric devices, reducing false detection



Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
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.:	30 mm ... 1,600 mm ¹⁾
Sensing range:	100 mm ... 1,600 mm
Type of light:	Infrared light
Light source:	LED ²⁾
Wave length:	880 nm
Adjustment:	Potentiometer
Light spot size (distance):	Ø 25 mm (800 mm)

¹⁾ Object with 90 % reflectance (referred to standard white, DIN 5033) ²⁾ Average service life of 100,000 h at T_A = +25 °C

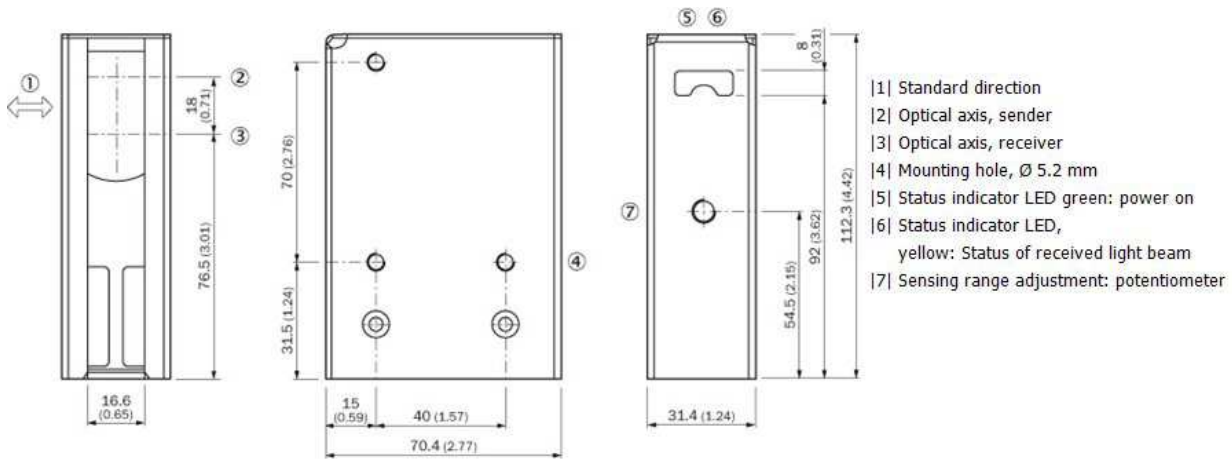
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	≤ 5 Vpp ²⁾

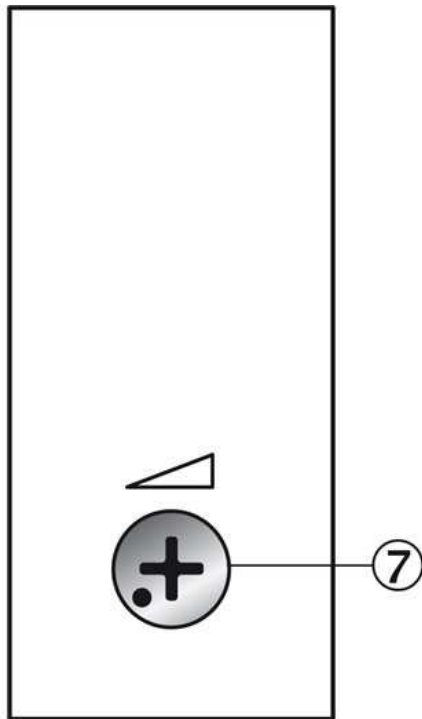
Power consumption:	$\leq 40 \text{ mA}$ ³⁾
Output type:	PNP
Output function:	Complementary
Switching mode:	Light/dark switching
Output current I _{max.} :	$\leq 100 \text{ mA}$
Response time:	$\leq 1.5 \text{ ms}$ ⁴⁾
Switching frequency:	350 Hz ⁵⁾
Connection type:	Cable, 4-wire, 10 m ⁶⁾
Cable material:	PVC
Circuit protection:::	A, B, C ^{7) 8) 9)}
Protection class:	II ¹⁰⁾
Weight:	750 g
Housing material:	ABS, Stainless steel V2A (1.4301), Plastic, Metal
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

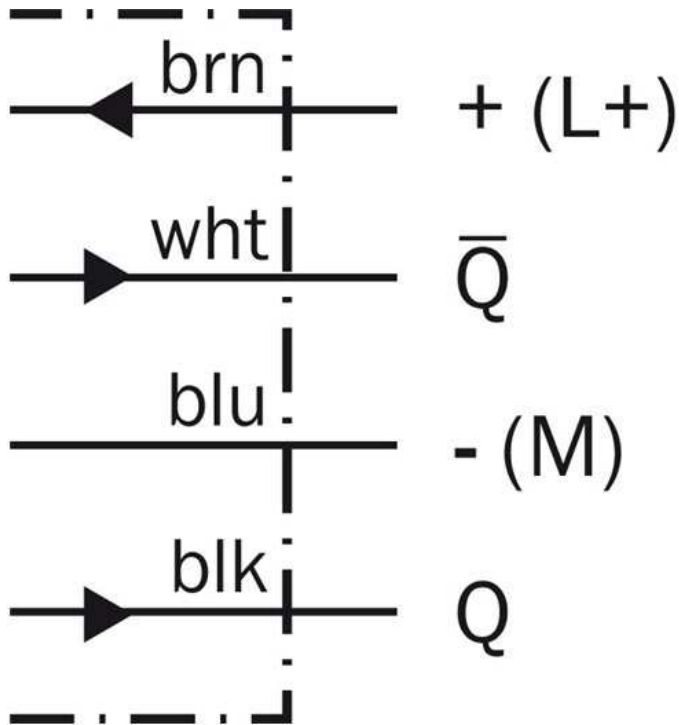


Adjustments possible

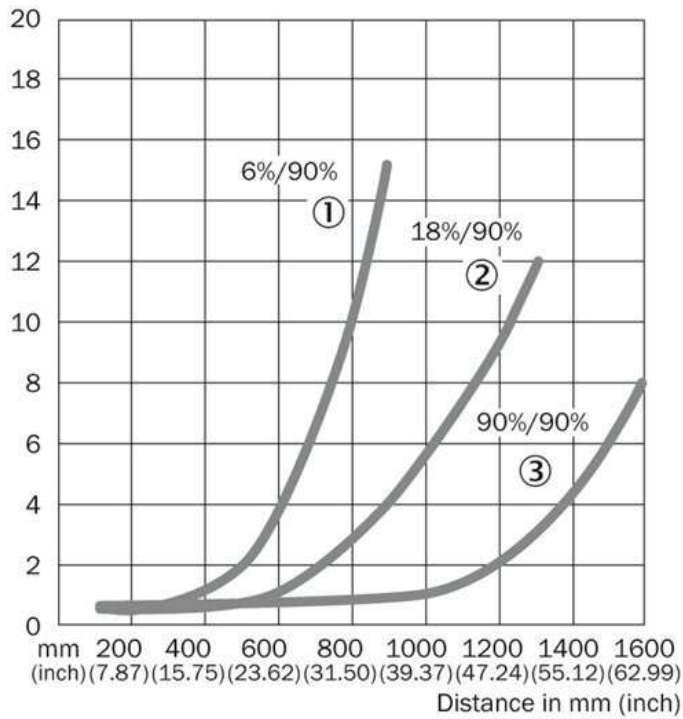


|7| Sensing range adjustment: potentiometer

Connection diagram



Characteristic curve



- [1] Sensing range on black, 6 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on white, 90 % remission

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