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DATA SHEET

WTB27X-3P1811

W27
Photoelectric sensors

SICK Sensor Intelligence

Illustration may differ

PHOTOELECTRIC SENSORS

WTB27X-3P1811

ORDERING INFORMATION

Type	part no.
WTB27X-3P1811	1027988

Further device versions and accessories at www.sick.com/W27

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric proximity sensor
Functional principle detail	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]
Light spot size (distance)	Ø 25 mm (800 mm)
Wave length	880 nm
Adjustment	Potentiometer
Special applications	Explosive areas

[1] Object with 90% remission (based on standard white, DIN 5033).

[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	40 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	≤ 1.5 ms [4]
Switching frequency	350 Hz [5]
Connection type	Cable, 4-wire, 10 m [6]
Cable material	Plastic, PVC
Circuit protection	A [7] B [8] C [9]
Protection class	II [10]
Weight	750 g
Housing material	Metal, Stainless steel V2A (1.4301) Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
ATEX marking	ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex 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 fall below or exceed 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

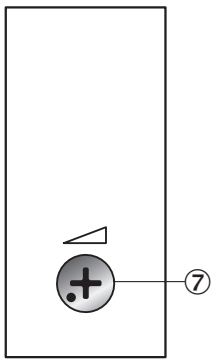
$MTTF_D$	754 years
DC_{avg}	0 %

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓

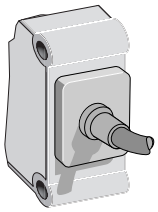
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

ADJUSTMENTS

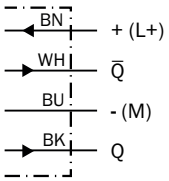


⑦ Sensing range adjustment: potentiometer

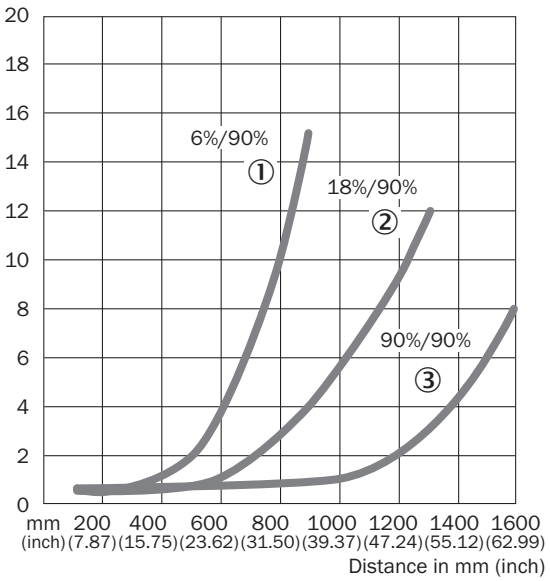
CONNECTION TYPE



CONNECTION DIAGRAM CD-094

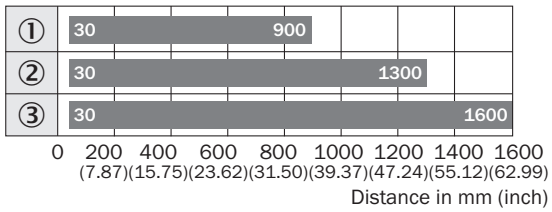


CHARACTERISTIC CURVE WTB27-3 EX



① Sensing range on black, 6% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on white, 90% remission factor

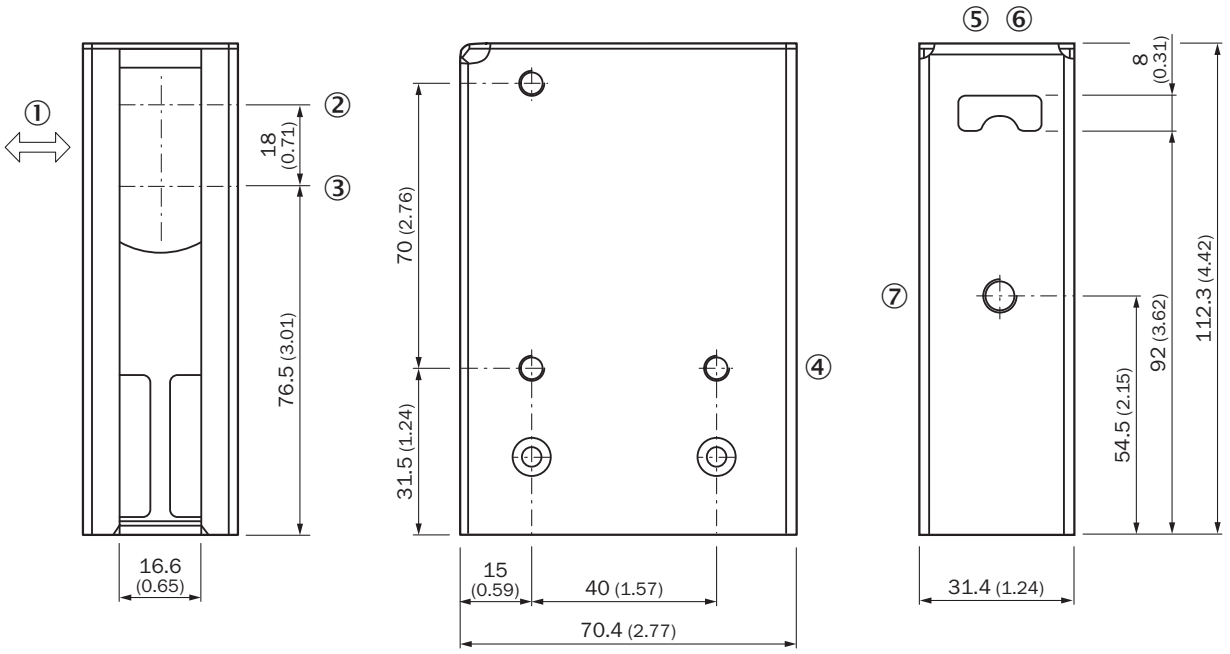
SENSING RANGE DIAGRAM WTB27-3 EX



Sensing range

① Sensing range on black, 6% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on white, 90% remission factor

DIMENSIONAL DRAWING WTB27-3 EX



Dimensions in mm (inch)
① Standard direction
② Optical axis, sender
③ Optical axis, receiver
④ Mounting hole, Ø 5.2 mm
⑤ LED indicator green: Supply voltage active
⑥ LED indicator yellow: Status of received light beam
⑦ Sensing range adjustment: potentiometer

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1027988

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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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