

WSE27X-3P1830

W27

PHOTOELECTRIC SENSORS





Ordering information

Туре	part no.
WSE27X-3P1830	1027991

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

Illustration may differ



Detailed technical data

Features

Functional principle	Through-beam photoelectric 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 m 35 m
Sensing range	0 m 25 m
Focus	Approx. 1.5°
Type of light	Visible red light
Light source	LED ¹⁾
Light spot size (distance)	Ø 600 mm (25 m)
Angle of dispersion	Approx. 1.5°
Wave length	645 nm
Adjustment	None
Special applications	Explosive areas

 $^{^{1)}}$ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voitage Ug 10 V DC 30 V DC 13 Ripple < 5 V _{pp} 23 Power consumption, sender 35 mA 33 Power consumption, receiver 20 mA 33 Switching output PNP Output function Complementary Switching mode Light/dark switching Signal voitage PNP HIGH/LOW Approx. Vs - 2.5 V / 0 V Output current Imax, \$ 100 mA Response time \$ 500 µs 41 Switching frequency 1,000 Hz 51 Angle of reception Approx. 3° Connection type Cable, 4-wire, 10 m 61 Cable material Plastic, PVC Circuit protection In 100 Weight 1,500 g Housing material Male, Stainless steel V2A (1.4301) presting a Male Financial Optics material Plastic, ABS Optics material Plastic, IS MMA Enclosure rating ATEX II 3G Ex rA op is IIB T4 GC X ATEX II 3D Ex te IIIB T135 ° CD cX III and a contract of Dc X III	Ripple Power consumption, sender Power consumption, receiver Switching output Output function Switching mode Signal voltage PNP HIGH/LOW	10 V DC 30 V DC ¹⁾
Power consumption, sender 35 m A ³¹ Power consumption, receiver 20 m A ³¹ Switching output PNP Output function Complementary Switching mode Light/dark switching Signal voitage PNP HIGH/LOW Approx. V _S = 2.5 V / 0 V Output current I _{max.} ≤ 100 mA Response time ≤ 500 μs ⁴¹ Switching frequency 1,000 Hz ⁵¹ Angle of reception Approx. 3° Connection type Cable, 4-wire, 10 m ⁶¹ Cable material Plastic, PVC Circuit protection A ⁷¹ B ⁸ C ⁹ Protection class II ¹⁰¹ Weight 1,500 g Housing material Metal, Stainless steel V2A (1.4301) Plastic, ABS Optics material Optics material Plastic, PMMA Enclosure rating IP67 ATEX II 30 Ex to IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 30, 3G	Power consumption, sender Power consumption, receiver Switching output Output function Switching mode Signal voltage PNP HIGH/LOW	
Power consumption, receiver 20 mA 3) Switching output PNP Output function Complementary Switching mode Light/dark switching Signal voitage 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) Angle of reception Approx. 3° Connection type Cable, 4-wire, 10 m 6) Cable material Plastic, PVC Circuit protection B 8) C 9) B 8) C 9) Protection class Weight 1,500 g Housing material Metal, Stainless steel V2A (1.4301) Plastic, ABS Optics material Enclosure rating Ple7 ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex to IIB T135 ° C Dc X In accordance with directive 2014/34 / EU Ex area category 30, 3G	Power consumption, receiver Switching output Output function Switching mode Signal voltage PNP HIGH/LOW	< 5 V _{pp} ²)
Switching output PNP Output function Complementary Switching mode Light/dark switching Signal voltage PNP HIGH/LOW Approx. Vs - 2.5 V / 0 V Output current I _{max.} ≤ 100 mA Response time ≤ 500 µs 4¹ Switching frequency 1,000 Hz 5¹ Angle of reception Approx. 3° Connection type Cable, 4-wire, 10 m 6¹ Cable material Plastic, PVC Circuit protection A 7¹ µ B 8⟩ C 9² Protection class II 10¹ Weight 1,500 g Housing material Metal, Stainless steel V2A (1.4301) Plastic, ABS Optics material Plastic, ABS Optics material Plastic, ABS Optics material Plastic, ABS ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex te IIIB T135°C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G	Switching output Output function Switching mode Signal voltage PNP HIGH/LOW	35 mA ³⁾
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) Angle of reception Approx. 3° 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 1,500 g Housing material Metal, Stainless steel V2A (1.4301) Plastic, ABS Optics material Plastic, ABS Optics material Plastic, PMMA Enclosure rating ATEX II 3G Ex nA op is IIB T4 Gc X ATEX III 3G Ex to IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G	Output function Switching mode Signal voltage PNP HIGH/LOW	20 mA ³⁾
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) Angle of reception Approx. 3 ° Connection type Cable, 4-wire, 10 m ⁶) Cable material Plastic, PVC Circuit protection A ⁷	Switching mode Signal voltage PNP HIGH/LOW	PNP
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⁾ Angle of reception Approx. 3 ° Connection type Cable, 4-wire, 10 m ⁶⁾ Cable material Plastic, PVC Circuit protection A ⁷⁾	Signal voltage PNP HIGH/LOW	Complementary
Output current I _{max.} Response time \$ 500 µs 4) Switching frequency \$1,000 Hz 5) Angle of reception Approx. 3° 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 Housing material Metal, Stainless steel V2A (1.4301) Plastic, ABS Optics material Plastic, PMMA Enclosure rating ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX III 3D Ex tc IIIB T135°C Dc X In accordance with directive 2014/34 / EU Ex area category \$ 1,000 Hz 5) \$ 4,000 Hz 5) \$ 500 µs 6) \$ 500 µs 6) \$ 6,000 Hz 6) \$ 6,000 Hz 6) \$ 7,000 Hz 6) \$ 7,000 Hz 6) \$ 8,000 Hz 6) \$ 9,000 Hz 6) \$ 9,000 Hz 6) \$ 9,000 Hz 6) \$ 1,000 Hz 6		Light/dark switching
Response time ≤ 500 µs ⁴¹) Switching frequency 1,000 Hz ⁵¹) Angle of reception Approx. 3 ° Connection type Cable, 4-wire, 10 m ⁶¹ Cable material Plastic, PVC Circuit protection A ⁻¹⟩	Output current I _{max.}	Approx. $V_S - 2.5 V / 0 V$
Switching frequency Angle of reception Approx. 3° 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 Housing material Metal, Stainless steel V2A (1.4301) Plastic, ABS Optics material Plastic, PMMA Enclosure rating 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 ADDITIONAL III		≤ 100 mA
Approx. 3° Connection type Cable, 4-wire, 10 m 6) Cable material Plastic, PVC Circuit protection A 7	Response time	≤ 500 μs ⁴⁾
Cable, 4-wire, 10 m 6) Cable material Plastic, PVC Circuit protection A 7) B 8) C 9) Protection class II 10) Weight Housing material Metal, Stainless steel V2A (1.4301) Plastic, ABS Optics material Plastic, PMMA Enclosure rating 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 Cable, 4-wire, 10 m 6) ATEX II 3D Ex tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category ATEX II 3D Ex tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU	Switching frequency	1,000 Hz ⁵⁾
Cable material Plastic, PVC Circuit protection A 7 B 8 8 C 9 P Protection class II 100 Weight L,500 g Metal, Stainless steel V2A (1.4301) Plastic, ABS Optics material Plastic, PMMA Enclosure rating 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 Plastic, PVC Protection A**To N area category Plastic, PVC 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	Angle of reception	Approx. 3°
Circuit protection A 7) B 8) C 9) Protection class II 10) Weight Housing material Optics material Plastic, ABS Optics material Plastic, PMMA Enclosure rating 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 ATEX II 3D SA SD, 3G	Connection type	Cable, 4-wire, 10 m ⁶⁾
B 8 8 C 9) Protection class II 10) Weight 1,500 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	Cable material	Plastic, PVC
Weight 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 1,500 g Metal, Stainless steel V2A (1.4301) Plastic, ABS Plastic, ABS ATEX II 3D 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	Circuit protection	B ⁸⁾
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 Metal, Stainless steel V2A (1.4301) Plastic, ABS Plastic, PMMA IP67 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	Protection class	II ¹⁰⁾
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	Weight	1,500 g
Enclosure rating 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 IP67 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	Housing material	
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	Optics material	Plastic, PMMA
ATEX II 3D Ex to IIIB T135 °C Do X In accordance with directive 2014/34 / EU Ex area category 3D, 3G	Enclosure rating	IP67
	ATEX marking	ATEX II 3D Ex tc IIIB T135°C Dc X
Ambient operating temperature $-20 ^{\circ}\text{C} \dots +50 ^{\circ}\text{C}$	Ex area category	in accordance with directive 2014/34 / EU
	Ambient operating temperature	
Ambient temperature, storage $-40 ^{\circ}$ C +75 $^{\circ}$ C	Ambient temperature, storage	3D, 3G
Part number of individual components 2033627 WE27X-3P1830 2033628 WS27X-3D1830	Part number of individual components	3D, 3G -20 °C +50 °C

 $^{^{1)}\,\}mathrm{Limit}$ values when operated in short-circuit protected network: max. 8 A.

Safety-related parameters

MTTF _D	996 years
DC _{avg}	0 %

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.

WSE27X-3P1830 | W27

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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	✓

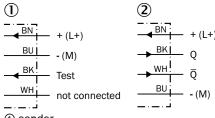
Classifications

ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

Connection type



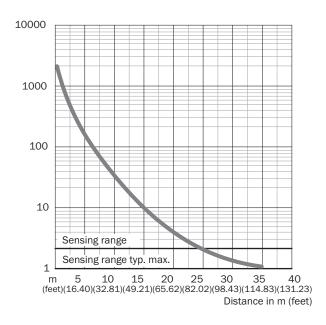
Connection diagram Cd-088



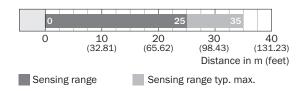
① sender

2 receiver

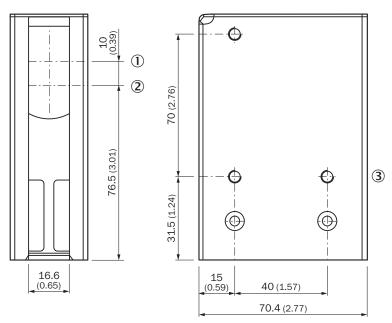
Characteristic curve WSE27-3 EX

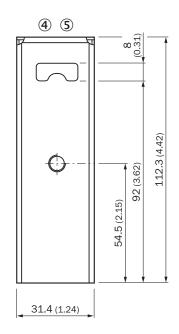


Sensing range diagram



Dimensional drawing WSE27-3 EX





Dimensions in mm (inch)

- ① Optical axis, sender
- 2 Optical axis, receiver
- 3 Mounting hole ø 5.2 mm
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam

Recommended accessories

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

	Brief description	Туре	part no.
Mounting syst	tems		
	 Description: Mounting bracket with hinged arm Material: Steel Details: Steel, zinc coated Items supplied: Mounting hardware included Suitable for: W23-2, W27-3, Reflex Array 	BEF-WN-W27	2009122
connectors and cables			
	 Connection type head A: Male connector, M12, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932

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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