

WTB4FP-213112A0ZZZ W4

MINIATURE PHOTOELECTRIC SENSORS





Ordering information

Туре	Part no.
WTB4FP-213112A0ZZZ	1125737

Other models and accessories → www.sick.com/W4

Illustration may differ





Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression, MultiPulse
Sensing range	
Sensing range min.	3 mm
Sensing range max.	25 mm
Reference object	Object with 90% remission factor (complies with standard white according to DIN 5033)
Minimum distance between set sensing range and background (black 6% / white 90%)	1 mm, at a distance of 25 mm
Emitted beam	
Light source	PinPoint LED
Type of light	Visible red light
Shape of light spot	Point-shaped
Light spot size (distance)	Ø 4.2 mm (130 mm)
Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle)	< +/- 1.5° (at Ta = +23 °C)
Key LED figures	
Normative reference	EN 62471:2008-09 IEC 62471:2006, modified
LED risk group marking	Free group
Wave length	635 nm
Average service life	100,000 h at $T_a = +25 ^{\circ}\text{C}$

Smallest detectable object (MDO) typ.	0.2 mm (At 130 mm distance (object with 90% remission (complies with standard white according to DIN 5033)))
Adjustment None	
Indication	
LED green	Operating indicator Static on: power on
LED yellow	Status of received light beam Oscillating: object present Static off: object not present
Special features	MultiPulse: sensor with self-monitoring Fixed sensing range 3 25 mm

Safety-related parameters

MTTF _D	663 years
DC _{avg}	0%
T _M (mission time)	20 years (EN ISO 13849, rate of use: 60 %)

Electrical data

Supply voltage U _B	10 V DC 30 V DC ¹⁾
Ripple	≤ 5 V _{pp}
Usage category	DC-12 (According to EN 60947-5-2) DC-13 (According to EN 60947-5-2)
Current consumption	\leq 25 mA, without load. At U _B = 24 V
Protection class	III
Digital output	
Number	1
Туре	Push-pull: PNP/NPN
Signal voltage PNP HIGH/LOW	Approx. U _B -2.5 V / 0 V
Signal voltage NPN HIGH/LOW	Approx. $U_B / < 2.5 V$
Output current I _{max.}	≤ 100 mA
Circuit protection outputs	Reverse polarity protected Overcurrent protected Short-circuit protected
Response time	$\leq 0.1 \mathrm{s}^{2)}$
Repeatability (response time)	150 μs
Switching frequency	10 Hz ³⁾
Pin/Wire assignment	
Function of pin 4/black (BK)	Digital output, object present \rightarrow output Q, HIGH/LOW oscillating 10 Hz $^{4)}$

¹⁾ Limit values

Mechanical data

Housing	Rectangular
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²⁾ Signal transit time with resistive load in switching mode.

³⁾ With light/dark ratio 1:1.

⁴⁾ This switching output must not be connected to another output.

Design detail	Flat
Dimensions (W x H x D)	16 mm x 40.1 mm x 12.1 mm
Connection	Connector M8, 3-pin
Material	
Housing	Plastic, VISTAL®
Front screen	Plastic, PMMA
Male connector	Plastic, VISTAL®
Weight	Approx. 30 g
Maximum tightening torque of the fixing screws	0.4 Nm

Ambient data

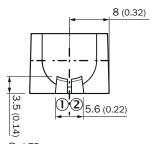
Enclosure rating	IP66 (EN 60529) IP67 (EN 60529)
Ambient operating temperature	-40 °C +60 °C
Ambient temperature, storage	-40 °C +75 °C
Typ. Ambient light immunity	Artificial light: $\leq 50,000 \text{ lx}$ Sunlight: $\leq 50,000 \text{ lx}$
Shock resistance	30 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
Vibration resistance	10 Hz 1,000 Hz (Amplitude 1 mm, 3 x 30 min (EN60068-2-6))
Air humidity	35 % 95 %, Relative humidity (no condensation)
Electromagnetic compatibility (EMC)	EN 60947-5-2
Resistance to cleaning agent	ECOLAB
UL File No.	NRKH.E181493 & NRKH7.E181493

Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Adjustments

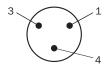
Display and adjustment elements



- ① LED green
- ② LED yellow

Connection type

Connector M8, 3-pin



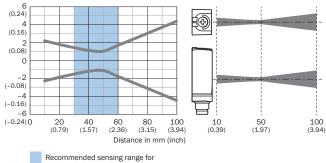
Connection diagram

Cd-522



Light spot size

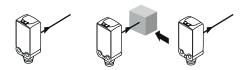
Dimensions in mm (inch)

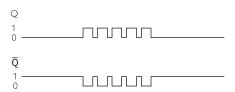


the best performance

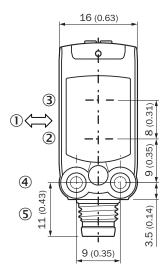
Functional principle

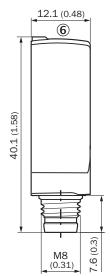
Functional principle: switching status





Dimensional drawing (Dimensions in mm (inch))





- ① Standard direction of the material being detected
- ② Center of optical axis, sender
- 3 Center of optical axis, receiver
- M3 mounting hole
- ⑤ Connection
- Display and adjustment elements

Recommended accessories

Other models and accessories → www.sick.com/W4

	Brief description	Туре	Part no.
Mounting bra	ckets and plates		
les de la constant de	Mounting bracket for wall mounting, Stainless steel 1.4571, mounting hardware included	BEF-W4-A	2051628

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