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Product data sheet



WTB250-2P1141

W250-2

COMPACT PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

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WTB250-2P1141 | W250-2

COMPACT PHOTOELECTRIC SENSORS



Illustration may differ

Ordering information

Type	Part no.
WTB250-2P1141	6044680

Included in delivery: BEF-W250 (1)

Other models and accessories ➜ www.sick.com/W250-2

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Dimensions (W x H x D)	20 mm x 65 mm x 43.9 mm
Housing design (light emission)	Rectangular
Sensing range max.	150 mm ... 500 mm [1]
Sensing range	150 mm ... 500 mm [1]
Focus	Approx. 3 °
Type of light	Visible red light
Light source	LED [2]
Light spot size (distance)	Ø 30 mm (500 mm)
Angle of dispersion	Approx. 3 °
Adjustment	Potentiometer, 2 turns [3] Potentiometer, 2 rotations

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

[2] Average service life: 100,000 h at T_U = +25 °C.

[3] With position indicator.

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Mechanics/electronics

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	35 mA [3]
Switching output	PNP
Switching mode	Light/dark switching
Switching mode selector	Selectable via L/D control cable
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 3 ms [4]
Switching frequency	160 Hz [5]
Connection type	Cable, 4-wire, 2 m [6]
Cable material	PVC
Conductor cross section	0.18 mm²
Cable diameter	Ø 3.8 mm
Circuit protection	A [7] B [8] C [9] D [10]
Protection class	III
Weight	150 g
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	BEF-W250 mounting bracket
Electromagnetic compatibility (EMC)	EN 60947-5-2 [11]
Ambient operating temperature	–25 °C ... +55 °C
Ambient temperature, storage	–40 °C ... +70 °C
UL File No.	NRKH2.E300503 & NRKH8.E300503

[1] Limit values when operated in short-circuit protected network: max. 8 A.
[2] May not exceed or fall below 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] D = outputs overcurrent and short-circuit protected.
[11] The AC/DC devices comply with the Radio Safety Requirements for the industrial sector (Radio Safety Class A). They may cause radio interference if used in a residential area.

Safety-related parameters

$MTTF_D$	516 years
DC_{avg}	0 %

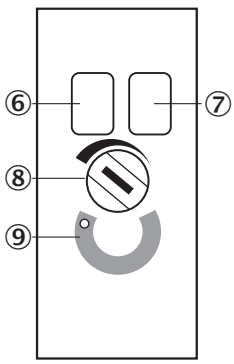
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Classifications

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

Adjustments

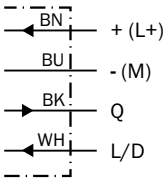
WTB250-2



⑥ LED indicator green: Stability indicator
⑦ LED indicator yellow: Status of received light beam
⑧ Sensing range adjustment: potentiometer
⑨ Position indicator for sensitivity setting (270°)

Connection diagram

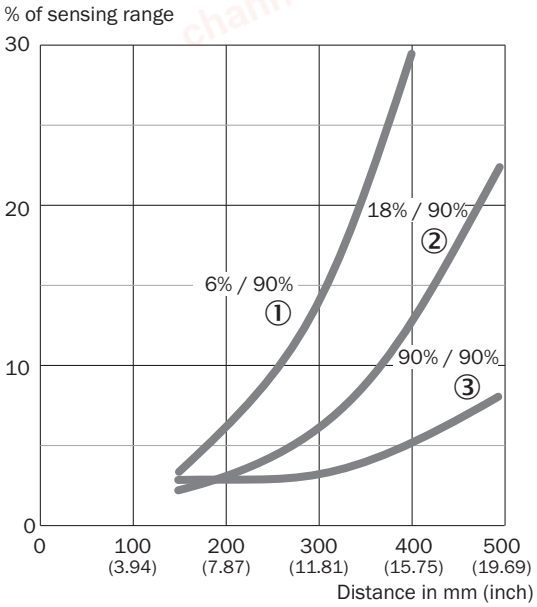
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Characteristic curve

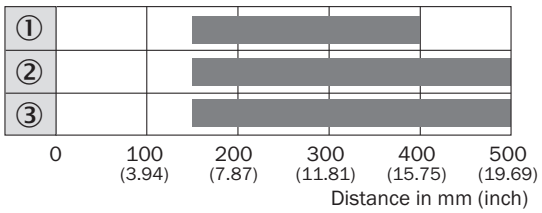
WTB250-2, 500 mm



① Sensing range on black, white background
② Sensing range on gray, white background
③ Sensing range on white, white background

Sensing range diagram

WTB250-2, 500 mm



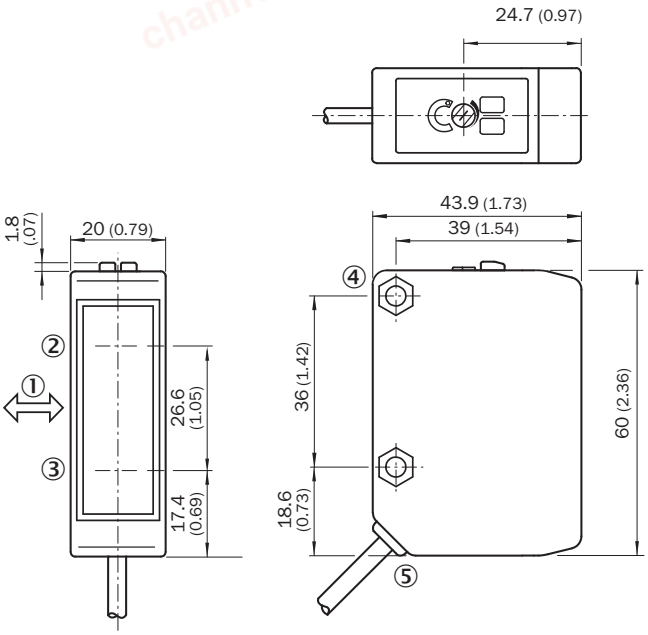
Sensing range

① Sensing range on black, white background
② Sensing range on gray, white background
③ Sensing range on white, white background

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Dimensional drawing (Dimensions in mm (inch))

WTB250-2, DC, cable



① Standard direction of the material being detected
② Axis of sender
③ Axis of receiver
④ Mounting hole ø 4.2 mm, for M4 hexagon nuts on both sides
⑤ Connection cable

Recommended accessories

Other models and accessories ➜ www.sick.com/W250-2

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: male connector, M12, 4-pin, straight Cable: unshielded	STE-1204-G	6009932

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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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