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Product data sheet



WTB250-2R1531

W250-2

COMPACT PHOTOELECTRIC SENSORS

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Sensor Intelligence.

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WTB250-2R1531 | W250-2

COMPACT PHOTOELECTRIC SENSORS



Illustration may differ

Ordering information

Type	Part no.
WTB250-2R1531	6044676

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 60 mm x 43.9 mm
Housing design (light emission)	Rectangular
Sensing range max.	100 mm ... 300 mm [1]
Sensing range	100 mm ... 300 mm [1]
Focus	Approx. 3 °
Type of light	Visible red light
Light source	LED [2]
Light spot size (distance)	Ø 30 mm (300 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.

Mechanics/electronics

Supply voltage U_B	24 V DC ... 240 V DC [1] 24 V AC/DC ... 240 V AC/DC [1]

[1] +- 10%.

[2] Provide suitable spark suppression for inductive or capacitive loads.

[3] With light/dark ratio 1:1.

[4] Do not bend below 0 °C.

[5] A = V_S connections reverse-polarity protected.

[6] C = interference suppression.

[7] Reference voltage: 250 V AC.

[8] 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.

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Power consumption	≤ 5 VA
Switching output	Relay, electrically isolated [2]
Output function	Change-over contacts
Switching mode	Light switching [2]
Switching current (switching voltage)	3 A (240 V AC) 3 A (30 V DC)
Response time	≤ 15 ms
Switching frequency	33 Hz [3]
Connection type	Cable, 5-wire, 2 m [4]
Cable material	PVC
Conductor cross section	0.76 mm²
Cable diameter	Ø 6.4 mm
Circuit protection	A [5] C [6]
Protection class	II [7]
Overvoltage category	2
Weight	160 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 [8]
Ambient operating temperature	–25 °C ... +55 °C
Ambient temperature, storage	–40 °C ... +70 °C
UL File No.	NRKH2.E300503 & NRKH8.E300503

[1] +- 10%.
[2] Provide suitable spark suppression for inductive or capacitive loads.
[3] With light/dark ratio 1:1.
[4] Do not bend below 0 °C.
[5] A = V_S connections reverse-polarity protected.
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[7] Reference voltage: 250 V AC.
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Classifications

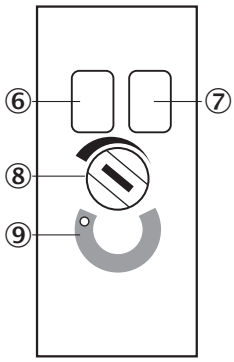
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eCl@ss 6.2	27270904
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eCl@ss 8.1	27270904
eCl@ss 9.0	27270904

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eCl@ss 10.0	27270904
eCl@ss 11.0	27270904
eCl@ss 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
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UNSPSC 16.0901	39121528

Adjustments

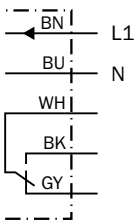
WTB250-2



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

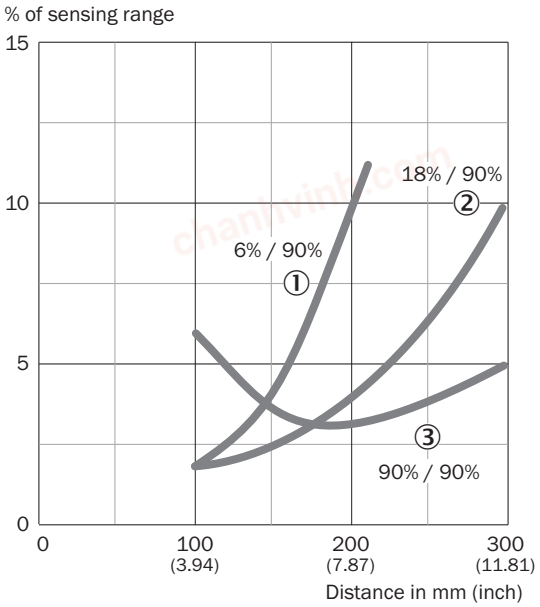
Cd-163



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Characteristic curve

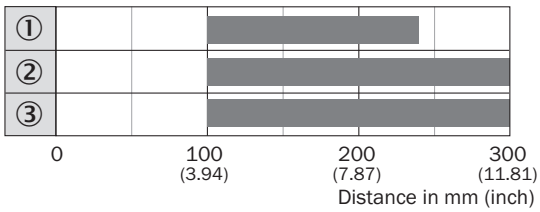
WTB250-2, 300 mm



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, 300 mm



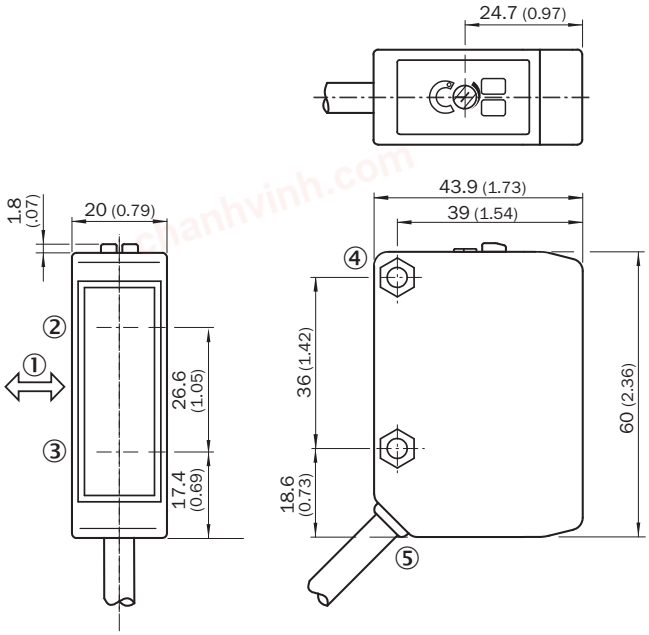
Sensing range

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, AC/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, 5-pin, straight Cable: unshielded For field bus technology	STE-1205-G	6022083

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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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