



Photoelectric sensors  
W250-2, Photoelectric proximity sensor,  
Background suppression

WTB250-2R1531



**Model Name** > [WTB250-2R1531](#)  
**Part No.** > [6044676](#)



*Illustration may differ*

**At a glance**

- Visible red Bright Light LED
- Background suppression
- Potentiometer with an easy-to-read positioning indicator for adjusting the sensing range
- Cable or rotatable M12 connector
- Operating mode (light/dark) selectable via control wire
- Versions for 10 - 30 V DC or 24 - 240 V DC/ 24 – 240 V AC voltage supply in compact design

**Your benefits**

- Visible red light Bright Light LED simplifies alignment and easy-to-read positioning indicator for simple commissioning
- Reliable object detection in difficult ambient light conditions
- Cable or rotatable M12 connector provide installation flexibility
- Operating mode (light/dark) is selectable via a control cable to reduce the number of device variants
- Variants with DC voltage and universal AC/DC voltage in the same housing provide increased flexibility



**Features**

Sensor/detection principle:	Photoelectric proximity sensor, 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 <sup>1)</sup>
Sensing range:	100 mm ... 300 mm <sup>2)</sup>
Type of light:	Visible red light
Light source:	BrightLight LED <sup>3)</sup>
Adjustment:	Potentiometer, 2-turn
Light spot size (distance):	Ø 30 mm (300 mm)

<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

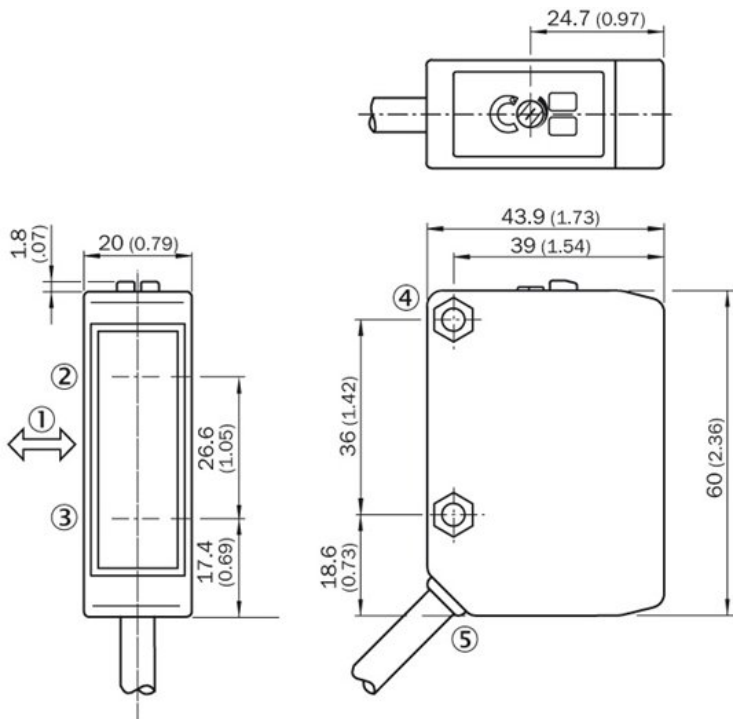
**Mechanics/electronics**

Supply voltage::	24 V AC/DC ... 240 V AC/DC, 24 V DC ... 240 V DC <sup>1) 2)</sup>
Power consumption:	≤ 5 VA <sup>3)</sup>
Output type:	Relay <sup>3)</sup>

Output function:	Change-over contacts
Switching mode:	Light switching <sup>4)</sup>
Output characteristic:	Electrically isolated
Output current I <sub>max.</sub> :	≤ 100 mA
Switching current (switching voltage):	3 A (240 V AC), 3 A (30 V DC)
Response time:	≤ 15 ms
Switching frequency:	33 Hz <sup>5)</sup>
Angle of dispersion:	Ca. 3 °
Connection type:	Cable, 5-wire, 2 m <sup>6)</sup>
Cable material:	PVC
Conductor cross-section:	0.76 mm <sup>2</sup>
Cable diameter:	Ø 6.4 mm
Circuit protection:	A, C <sup>7) 8)</sup>
Protection class:	II <sup>9)</sup>
Overvoltage category:	222
Weight:	160 g
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	BEF-W250 mounting bracket
Usage category:	AC-15, DC-13, According to EN 60947-1
EMC:	EN 60947-5-2 <sup>10)</sup>
Ambient operating temperature:	-25 °C ... 55 °C
Ambient storage temperature:	-40 °C ... 70 °C

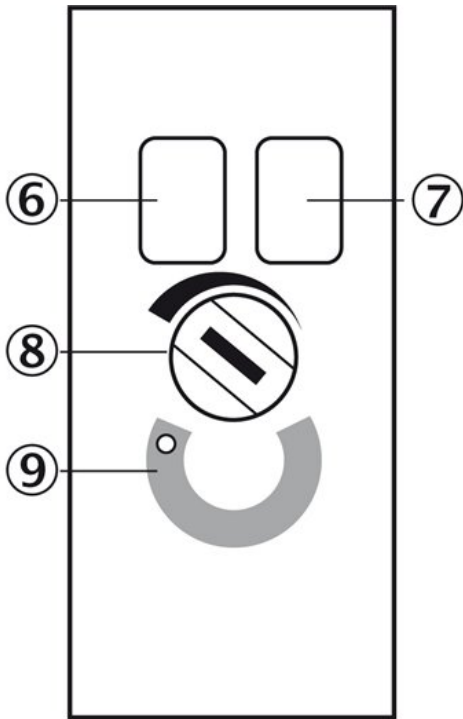
1) 2) ±10 % 3) 4) Provide suitable spark suppression for inductive or capacitive loads 5) With light/dark ratio 1:1 6) Do not bend below 0 °C 7) A = V<sub>S</sub> connections  
reverse-polarity protected 8) C = interference suppression 9) Reference voltage 250 V AC 10) The AC/DC devices meet the interference suppression requirements for  
industrial use (interference suppression class A). When used in residential areas it can cause interference.

**Dimensional drawing**



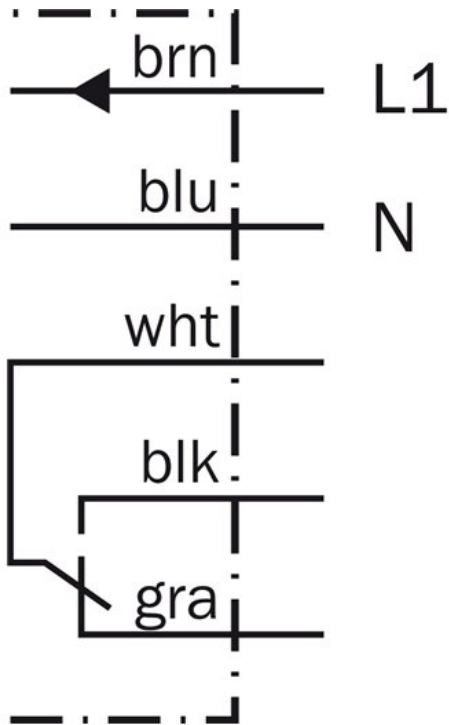
- |1| Standard direction of the material being scanned
- |2| Axis of sender
- |3| axis of receiver
- |4| Mounting hole  $\varnothing$  4.2 mm,  
for M4 hexagon nut on both sides
- |5| Connection cable

**Adjustments possible**

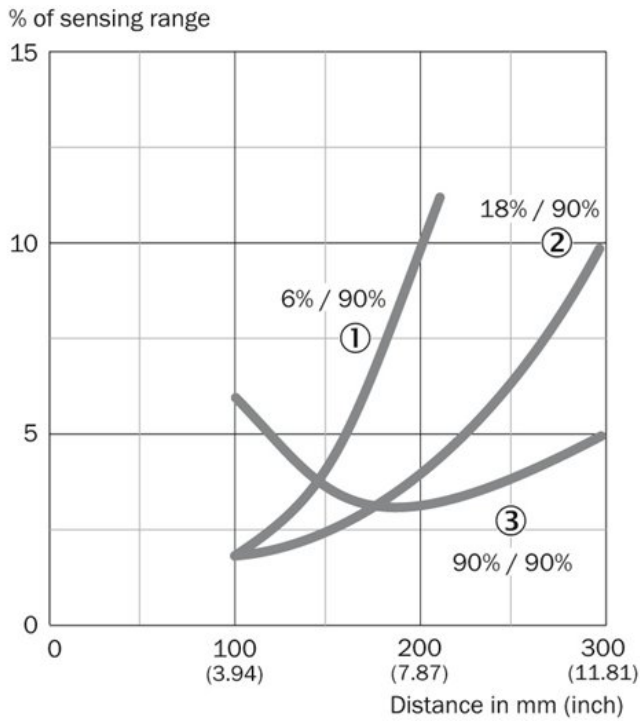


- |6| LED indicator green: Stability indicator
- |7| Status indicator LED,  
yellow: Status of received light beam
- |8| Sensing range adjustment: potentiometer
- |9| Position indicator for sensitivity setting (270°)

Connection diagram

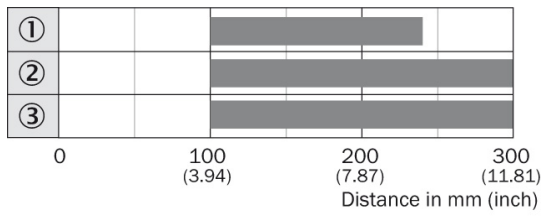


Characteristic curve



- [1] Sensing range on black, background white
- [2] Sensing range on gray, background white
- [3] Sensing range on white, background white

### Sensing range diagram



■ Sensing range

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