



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

WTB250-2R1651



Type > [WTB250-2R1651](#)
Part No. > [6044694](#)



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.:	200 mm ... 1,000 mm ¹⁾
Sensing range:	200 mm ... 1,000 mm ²⁾
Type of light:	Visible red light
Light source:	BrightLight LED ³⁾
Angle of dispersion:	Ca. 3 °
Adjustment:	Potentiometer, 2 turns
Light spot size (distance):	Ø 35 mm (1,000 mm)

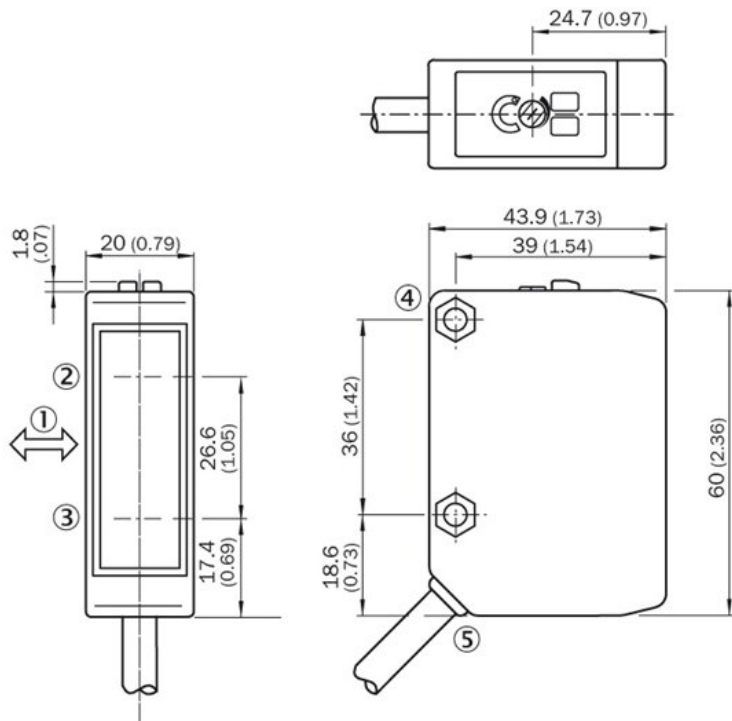
^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C ⁴⁾ With position indicator

Mechanics/electronics

Supply voltage::	24 V AC/DC ... 240 V AC/DC, 24 V DC ... 240 V DC ^{1) 2)}
Power consumption:	≤ 5 VA
Output type:	Relay, electrically isolated ³⁾
Output function:	Change-over contacts
Switching mode:	Light switching ⁴⁾
Switching current (switching voltage):	3 A (240 V AC), 3 A (30 V DC)
Response time:	≤ 15 ms
Switching frequency:	33 Hz ⁵⁾
Connection type:	Cable, 5-wire, 5 m ⁶⁾
Cable material:	PVC
Conductor cross-section:	0.76 mm ²
Cable diameter:	Ø 6.4 mm
Circuit protection::	A, C ^{7) 8)}
Protection class:	II ⁹⁾
Overvoltage category:	2
Weight:	330 g
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 ¹⁰⁾
Ambient operating temperature:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
UL File No.:	NRKH2.E300503 & NRKH8.E300503
Housing material:	ABS, Plastic

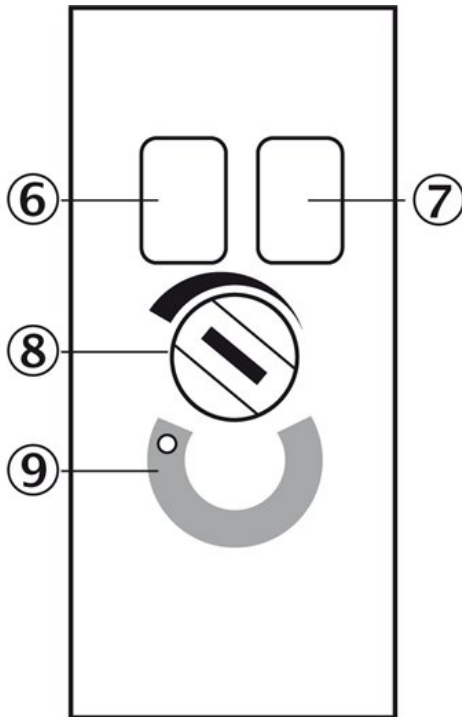
1) 2) ±10 % 3) 4) Provide suitable spark suppression for inductive or capacitive loads ⁵⁾ With light/dark ratio 1:1 ⁶⁾ Do not bend below 0 °C ⁷⁾ A = V_S connections reverse-polarity protected ⁸⁾ C = interference suppression ⁹⁾ Reference voltage: 250 V AC ¹⁰⁾ The AC/DC devices meet the interference suppression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

Dimensional drawing



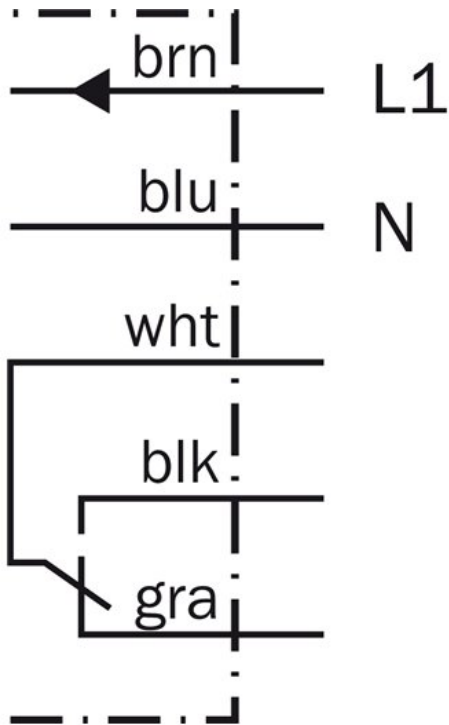
- |1| Standard direction of the material being detected
- |2| Axis of sender
- |3| axis of receiver
- |4| Mounting hole \varnothing 4.2 mm,
for M4 hexagon nut on both sides
- |5| Connection cable

Adjustments possible

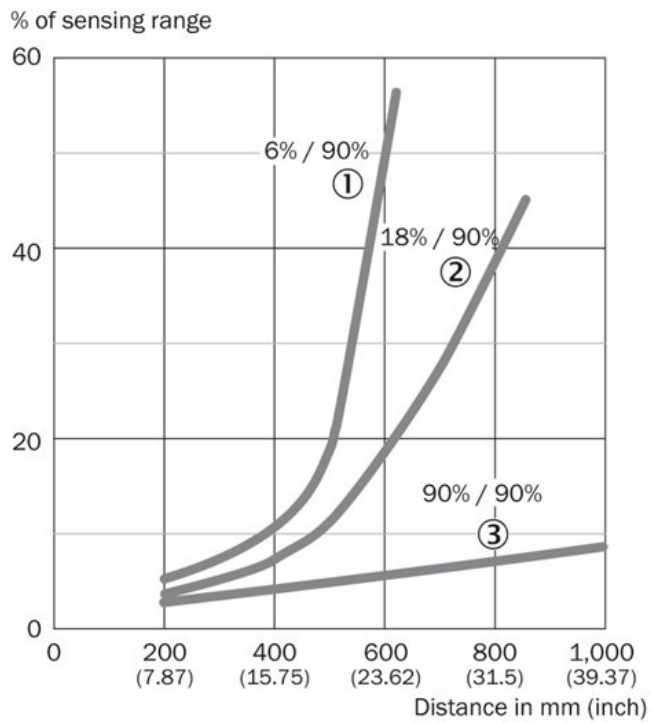


- |6| LED indicator green: Stability indicator
- |7| Status indicator LED,
yellow: Status of received light beam
- |8| Sensing range adjustment: potentiometer
- |9| Position indicator for sensitivity setting (270°)

Connection diagram

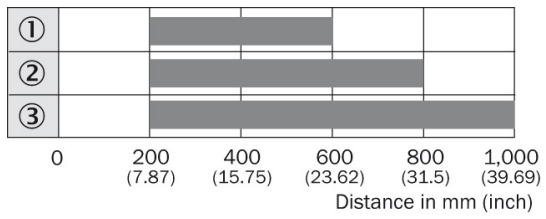


Characteristic curve



- [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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