



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

WTB250-2R1551



Type > [WTB250-2R1551](#)
Part No. > [6044693](#)



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) |

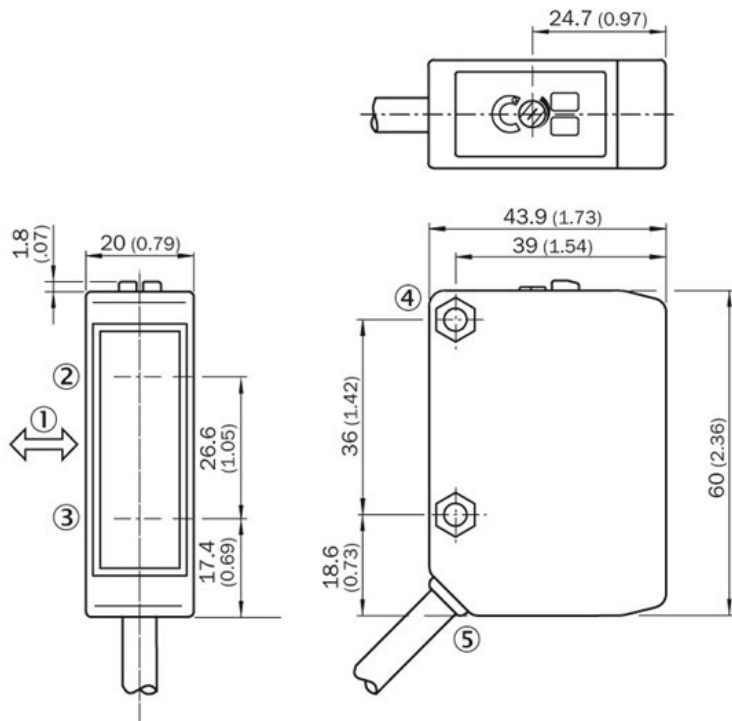
^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C ⁴⁾ With position indicator

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, 2 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: | 160 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 |

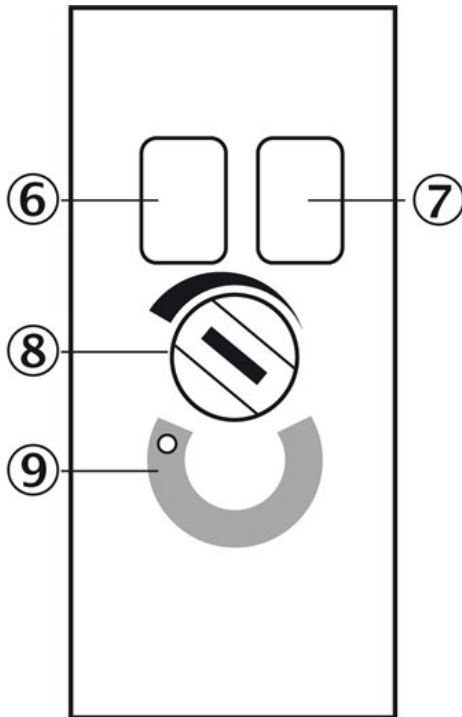
1) 2) ±10 % 3) 4) Provide suitable spark suppression for inductive or capacitive loads ⁵⁾ With light/dark ratio 1:1 ⁶⁾ Do not bend below 0 °C ⁷⁾ A = V_S connections reverse-polarity protected ⁸⁾ C = interference suppression ⁹⁾ Reference voltage: 250 V AC ¹⁰⁾ The AC/DC devices meet the interference suppression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

Dimensional drawing



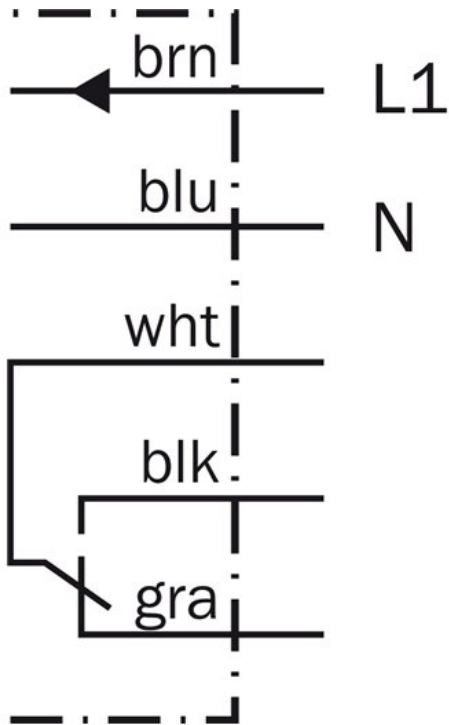
- |1| Standard direction of the material being detected
- |2| Axis of sender
- |3| axis of receiver
- |4| Mounting hole \varnothing 4.2 mm,
for M4 hexagon nut on both sides
- |5| Connection cable

Adjustments possible

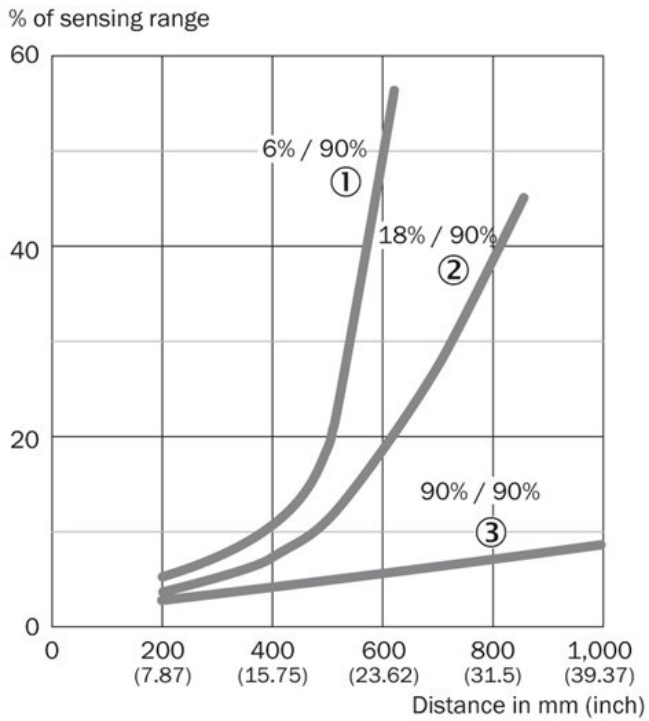


- |6| LED indicator green: Stability indicator
- |7| Status indicator LED,
yellow: Status of received light beam
- |8| Sensing range adjustment: potentiometer
- |9| Position indicator for sensitivity setting (270°)

Connection diagram

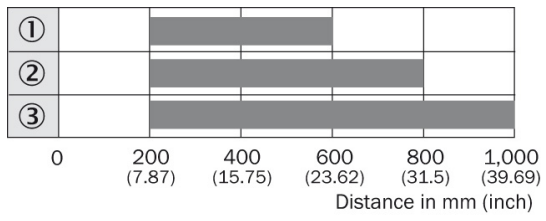


Characteristic curve



- [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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