



Photoelectric sensors
W250, Photoelectric proximity sensor,
Background suppression

WT250-P165



SICK
Sensor Intelligence.

Model Name > **WT250-P165**
Part No. > **6010705**



Illustration may differ

At a glance

- Visible red light
- 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 12 - 240 V DC/ 24 – 240 V AC voltage supply in compact design
- UL recognized

Your benefits

- Visible red light 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

Note: This part is discontinued. Please see the replacement product under "Replacement Products" link. "



Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	20 mm x 65 mm x 43 mm
Housing design (light emission):	Rectangular
Sensing range max.:	150 mm ... 500 mm ¹⁾
Sensing range:	150 mm ... 500 mm
Type of light:	Visible red light
Light source:	LED ²⁾
Angle of dispersion:	3 °
Adjustment:	Potentiometer, 2-turn
Light spot size (distance):	35 mm (500 mm)

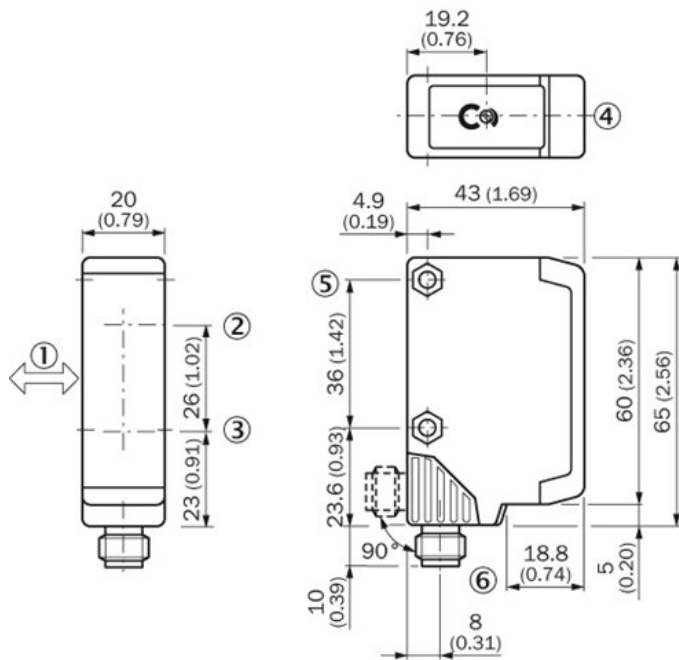
1) Object with 90 % reflectance (referred to standard white DIN 5033) 2) Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	$\leq 5\text{ Vpp}$ ²⁾
Power consumption:	$\leq 35\text{ mA}$ ³⁾
Output type:	PNP, open collector
Switching mode:	Light/dark-switching
Switching mode selector:	Selectable via L/D control wire
Output current $I_{max.}$:	100 mA
Response time:	$\leq 2\text{ ms}$ ⁴⁾
Switching frequency:	250 Hz ⁵⁾
Connection type:	Cable, 4-wire, 5 m ⁶⁾
Cable material:	PVC
Conductor cross-section:	0.18 mm ²
Cable diameter:	3.8 mm
Circuit protection::::	A, B, C, D ⁷⁾ 8) 9) 10)
Protection class:	II ¹¹⁾
Weight:	80 g
Housing material:	ABS, Plastic
Optics material:	PC
Enclosure rating:	IP 67
Items supplied:	BEF-W250 mounting bracket
Ambient operating temperature:	-25 °C ... 55 °C
Ambient storage temperature:	-40 °C ... 70 °C
UL File No.:	NRNT2.E128350 & NRNT8.E128350

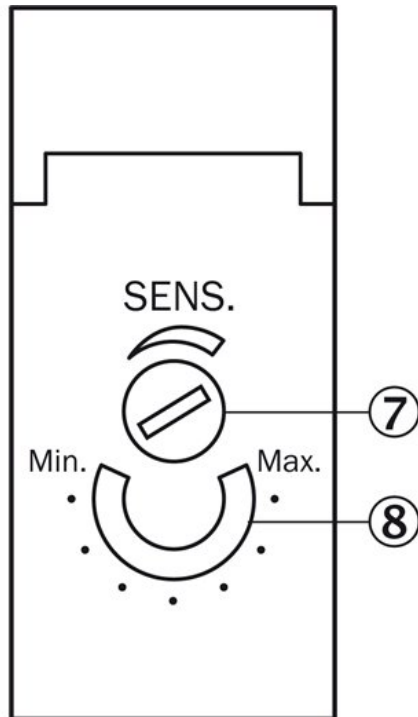
1) Limit values, operation in short-circuit protected network max. 8 A 2) May not exceed or fall short of V_S tolerances ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ Do not bend below 0 °C ⁷⁾ A = V_S connections reverse-polarity protected ⁸⁾ B = inputs and output reverse-polarity protected ⁹⁾ C = interference suppression ¹⁰⁾ D = outputs overcurrent and short-circuit protected ¹¹⁾ Reference voltage 50 V DC

Dimensional drawing



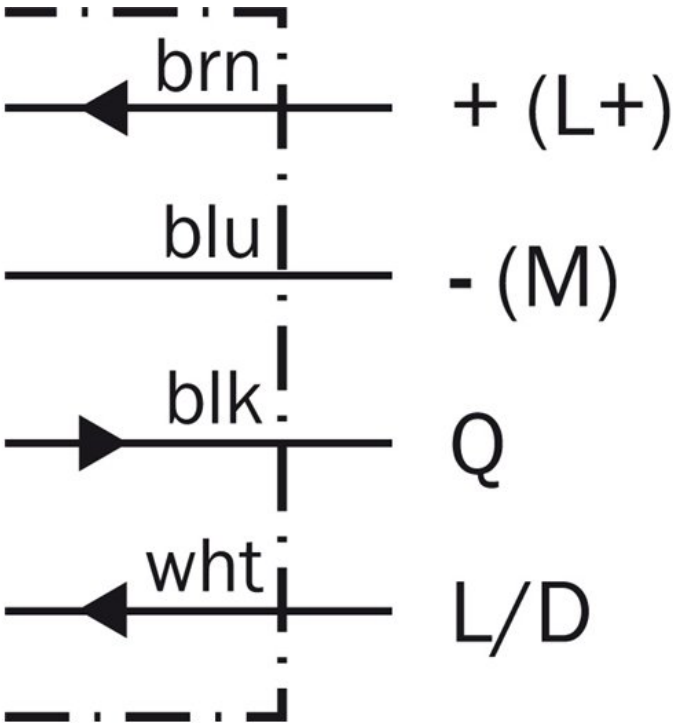
- [1] Standard direction of the material being scanned
- [2] Transmission axis
- [3] Reception axis
- [4] LED reception indicator, red
- [5] Mounting hole $\varnothing$ 4.2 mm, for M4 hexagon nut on both sides
- [6] Connection cable or M12 connector - 4-pin; connector position rotatable by 90° (V > H); V: Vertical final position; H: Horizontal final position, can be locked with

Adjustments possible

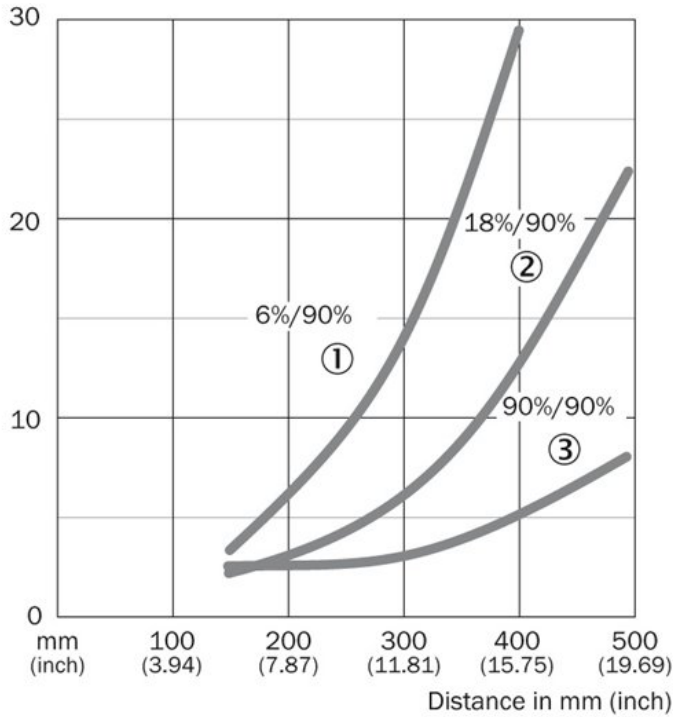


- [7] Sensing range adjustment: potentiometer, over-turn protection
- [8] Position indicator for sensitivity setting (270°)

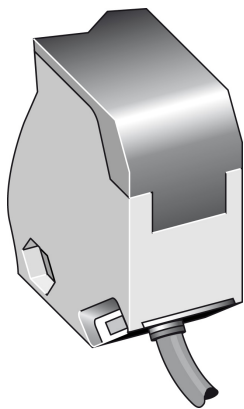
Connection diagram



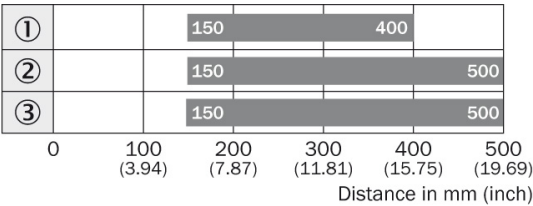
Characteristic curve



Connection type



Sensing range diagram



■ Sensing range

- ① Sensing range on black¹¹⁾, background white
- ② Sensing range on gray¹¹⁾, background white
- ③ Sensing range on white¹¹⁾, background white

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