



Photoelectric sensors
W45, Through-beam photoelectric sensor

WS/WE45-N250S02



Model Name > [WS/WE45-N250S02](#)
Part No. > [1016799](#)



Illustration may differ

At a glance

- Long sensing range
- Rugged metal housing
- Optional: Powerful front lens heating
- Optional test input, time delays and alarm output
- Variants for 10 - 60 V DC or 24 - 240 V DC / 24 - 240 V AC voltage supply

Your benefits

- Very long sensing range with a high operating reserve at 100 m provides reliable continuous operation
- Rugged metal housing ensures a long service life in harsh industrial environments
- Front lens heating prevents condensation and frost for reliable operation in outdoor applications
- Scope alignment aid ensures easier alignment to long sensing ranges
- Multiple functions for simpler integration of individual systems
- Variants DC voltage and universal AC/DC voltage provides installation flexibility due to same housing



Features

Sensor/detection principle:	Through-beam photoelectric sensor
Dimensions (W x H x D):	60 mm x 105 mm x 105 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0 m ... 350 m
Sensing range:	0 m ... 300 m
Type of light:	Infrared light
Light source:	LED ¹⁾
Time type:	Off delay, ON and OFF delay, On delay
Delay time:	0.015 ... 0.3 s, Adjustable via time delay selector switch: 0.5 ... 12 s
Angle of dispersion:	Ca. 0.9 °
Special features:	With permanent front lense heating
Adjustment:	Potentiometer
Light spot size (distance):	Ø 4.5 m (300 m)

¹⁾ Average service life of 100,000 h at T_A = +25 °C

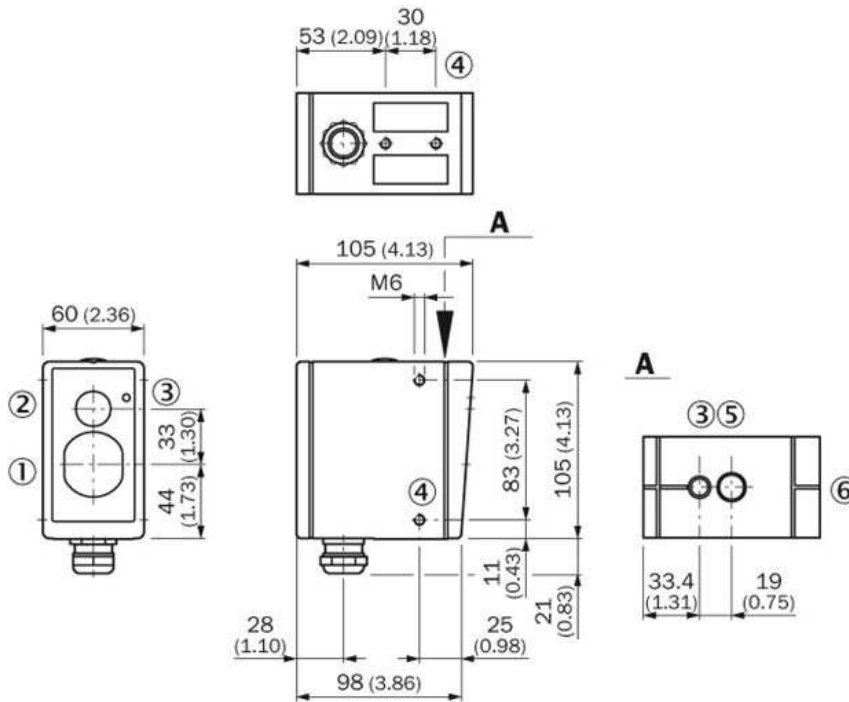
Mechanics/electronics

Supply voltage: 10 V DC ... 60 V DC ¹⁾

Ripple:	$\leq 5 V_{pp}$ ²⁾
Power consumption, sender:	250 mA ³⁾
Power consumption, receiver:	250 mA ⁴⁾
Output type:	NPN
Output function:	Complementary
Switching mode:	Light/dark switching
Output current I _{max.} :	200 mA
Response time:	$\leq 500 \mu s$ ⁵⁾
Switching frequency:	1,000 Hz ⁶⁾
Connection type:	Terminal connection with PG13,5, 6-pin
Circuit protection:::	A, C, D ^{7) 8) 9)}
Protection class:	I ¹⁰⁾
Weight:	1,600 g
Front screen heating:	✓
Alarm output:	100 mA, open collector ¹¹⁾
Special device:	✓
Housing material:	Metal
Enclosure rating:	IP 67
Test input sender off:	TE to VS
Ambient operating temperature:	-25 °C ... 55 °C ¹²⁾
Ambient storage temperature:	-40 °C ... 70 °C

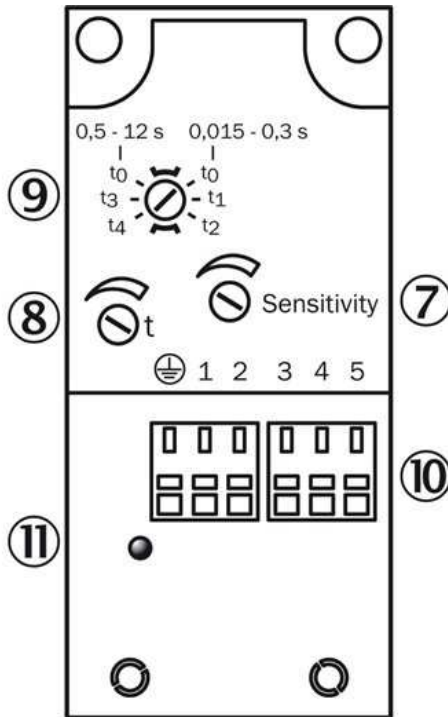
¹⁾ Limit values ²⁾ May not exceed or fall short of V_S tolerances ^{3) 4)} Without load ⁵⁾ Signal transit time with resistive load ⁶⁾ With light/dark ratio 1:1 ⁷⁾ $A = V_S$
connections reverse-polarity protected ⁸⁾ C = interference suppression ⁹⁾ D = outputs overcurrent and short-circuit protected ¹⁰⁾ Reference voltage 50 V DC ¹¹⁾
Flashes at approx. 5 Hz, switch to VS ¹²⁾ Up to 140 °C with cooling plates (see accessories)

Dimensional drawing



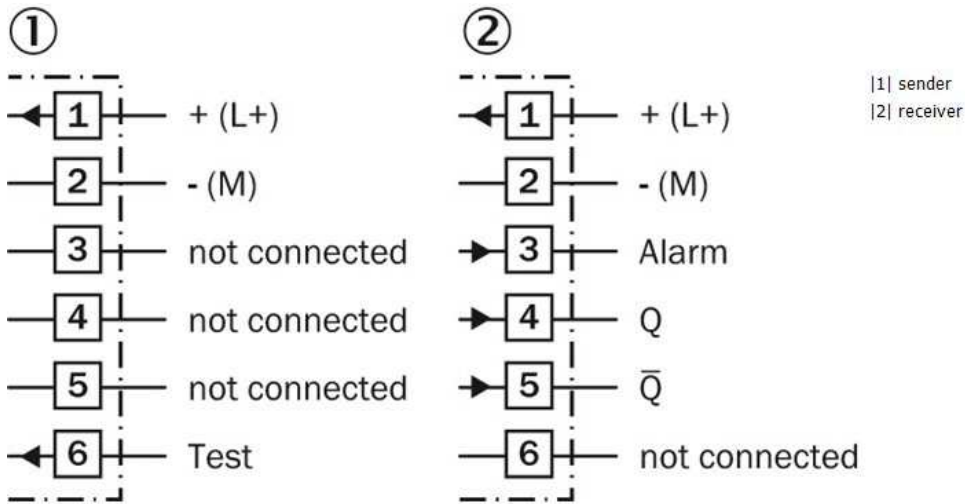
- |1| Center of optical axis, sender (WS), Center of optical axis, receiver (WE)
- |2| View finder lens
- |3| LED signal strength indicator
- |4| M6 threaded mounting hole, 8 mm deep
- |5| Eyepiece for alignment aid
- |6| Alignment sight

Adjustments possible

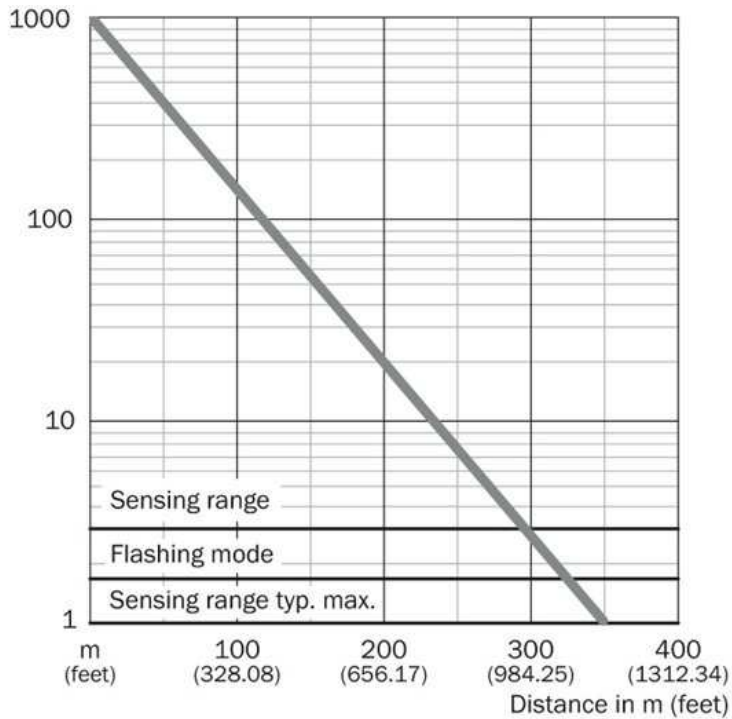


- |7| Sensitivity adjustment
- |8| Time control
- |9| time delay selector switch
- |10| terminal strip
- |11| Status indicator

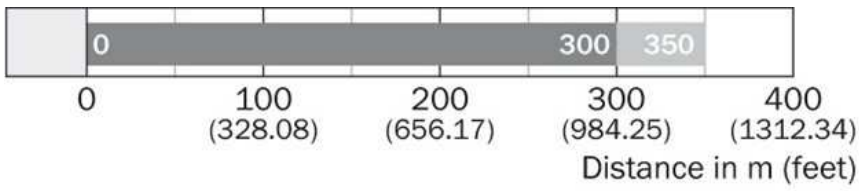
Connection diagram



Characteristic curve

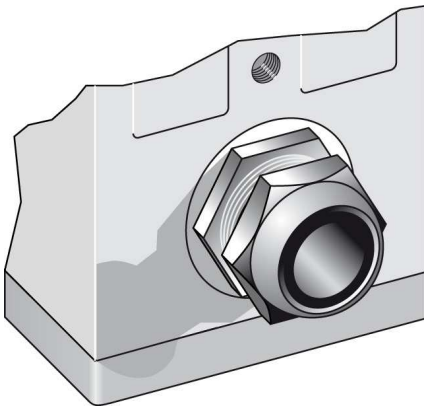


Sensing range diagram



■ Sensing range ■ Sensing range typ. max.

Connection type



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