



Photoelectric sensors
W24-2, Through-beam photoelectric sensor

WS/WE24-2S01



Model Name > [WS/WE24-2S01](#)
Part No. > [1023549](#)



Illustration may differ

At a glance

- Long sensing range with high operating reserve
- Metal housing that has been IP 69k tested
- Switch selectable PNP or NPN output
- Switch selectable Light or Dark operating mode
- Variants with DC voltage and universal AC/DC voltage with UL approval
- Optional test input, adjustable ON and OFF time delays, alarm output and front screen heating
- M12 or terminal chamber connection: 90° rotatable

Your benefits

- Metal housing that has been IP 69K tested provides reliability and a long service life
- High operating reserve at a long sensing range reduces downtime
- Alarm output signals marginal operation to provide an early warning
- Test input provides diagnostic feedback for example misalignment
- Selectable output type, operating mode, and adjustable time delays makes integration easier and reduce the number of devices needed
- Ensuring reliable operation in environments with temperatures fluctuation due to standard or high-power front lens heating (prevention and reduction of condensation water on the front lens)
- Variants with DC voltage and universal AC/DC voltage provide installation flexibility
- Red light provides easy alignment, which saves time



Features

| | |
|----------------------------------|--|
| Sensor/detection principle: | Through-beam photoelectric sensor |
| Dimensions (W x H x D): | 27 mm x 87.5 mm x 65 mm |
| Housing design (light emission): | Rectangular |
| Sensing range max.: | 0 m ... 60 m |
| Sensing range: | 0 m ... 50 m |
| Type of light: | Visible red light |
| Light source: | LED ¹⁾ |
| Alarm output: | ✓ |
| Angle of dispersion: | Ca. 1 ° |
| Special features: | Dynamic front lense heating, Front lense made of glass |
| Adjustment: | Potentiometer |
| Light spot size (distance): | Ø 700 mm (50 m) |

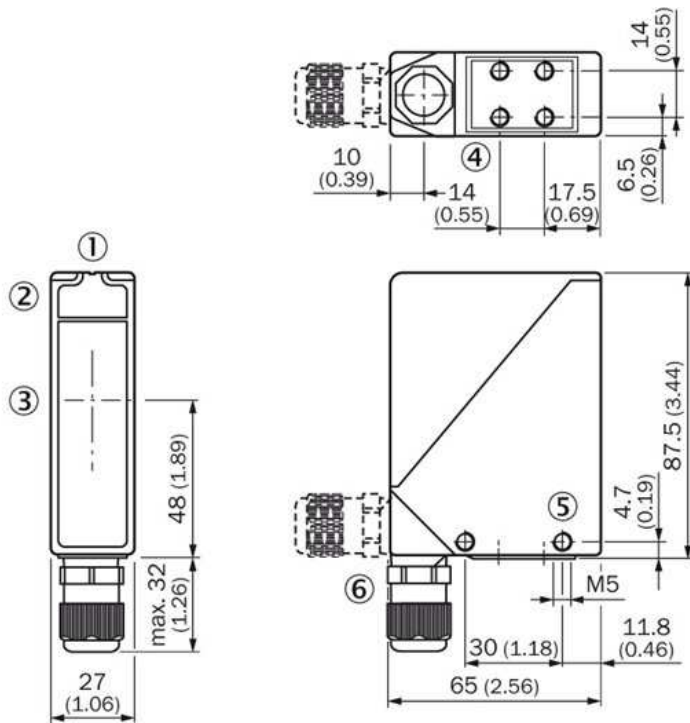
1) Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

| | |
|---------------------------------------|---|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Ripple: | < 5 Vpp ²⁾ |
| Power consumption, sender: | 150 mA ³⁾ |
| Power consumption, receiver: | 140 mA ⁴⁾ |
| Output type: | NPN, PNP |
| Switching mode: | Light/dark switching |
| Switching mode selector: | Selectable via light/dark selector, Selectable via NPN/PNP selector |
| Output current I _{max.} : | 100 mA |
| Response time: | ≤ 500 μs ⁵⁾ |
| Switching frequency: | ± 1,000 Hz ⁶⁾ |
| Angle of reception: | Ca. 2.5 ° |
| Connection type: | Connector M12, 5-pin ⁷⁾ |
| Circuit protection::: | A, C, D ^{8) 9) 10)} |
| Protection class: | II ¹¹⁾ |
| Weight: | 700 g |
| Front screen heating: | ✓ |
| Special device: | ✓ |
| Optics material: | Glass |
| Enclosure rating: | IP 67 |
| Test input sender off: | TE to 0 V |
| Ambient operating temperature: | -40 °C ... +60 °C |
| Ambient storage temperature: | -40 °C ... +75 °C |
| Part number of individual components: | Receiver, WE24-2V530S01, 2026926, Sender, WS24-2D530S01, 2026925 |
| Housing material: | Metal, Zinc diecast |

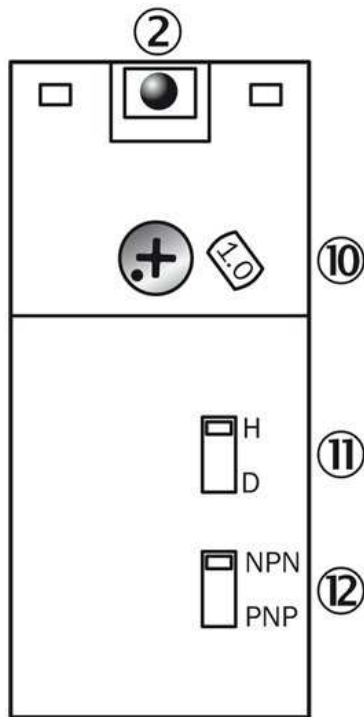
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ^{3) 4)} Without load ⁵⁾ Signal transit time with resistive load ⁶⁾ With light/dark ratio 1:1 ⁷⁾ Connection rotatable by 90° ⁸⁾ A = V_S connections reverse-polarity protected ⁹⁾ C = interference suppression ¹⁰⁾ D = outputs overcurrent and short-circuit protected ¹¹⁾ Reference voltage: 50 V DC

Dimensional drawing



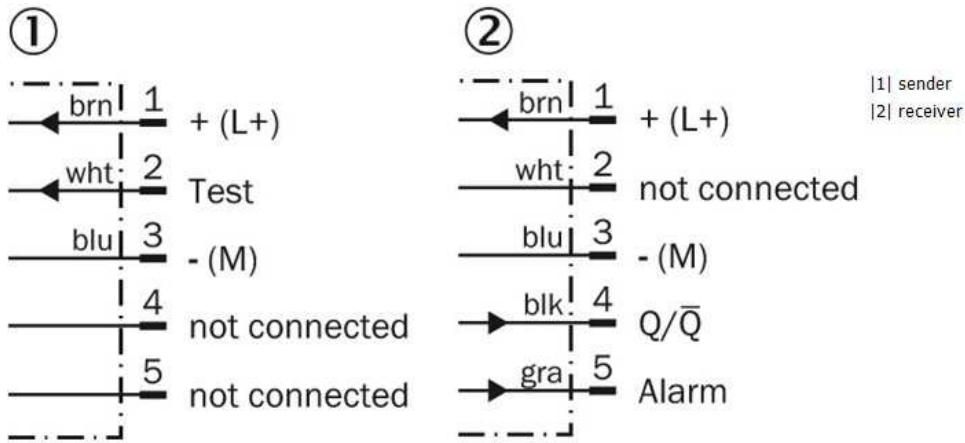
- |1| Alignment sight
- |2| LED signal strength indicator
- |3| Center of optical axis
- |4| M5 threaded mounting hole, 6 mm deep
- |5| M5 threaded mounting hole, through-hole
- |6| M16 screw fixing and plug rotatable by 90°

Adjustments possible

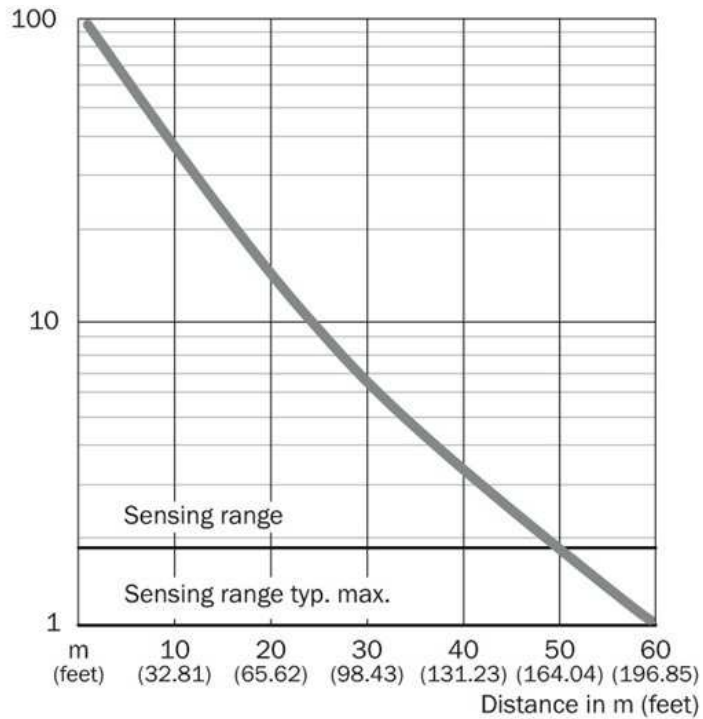


- |2| LED signal strength indicator
- |10| Adjustment sensing range
(WT) / sensitivity (WL, WS/WE)
- |11| Light/dark selector
- |12| NPN/ PNP selector

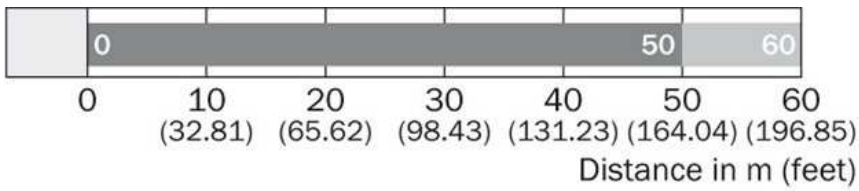
Connection diagram



Characteristic curve



Sensing range diagram



■ Sensing range ■ Sensing range typ. max.

Connection type



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