



Photoelectric sensors
W24-2, Photoelectric retro-reflective sensor,
Standard optics

WL24-2V540



Model Name > [WL24-2V540](#)
Part No. > [1018025](#)



Illustration may differ

At a glance

- 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: | Photoelectric retro-reflective sensor, Standard optics |
| 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 ... 22 m ¹⁾ |
| Sensing range: | 0 m ... 15 m ²⁾ |
| Type of light: | Visible red light |
| Light source: | LED ³⁾ |
| Time type: | On delay off delay |
| Delay time: | Adjustable via time delay selector switch: 0.5 ... 10 s |
| Alarm output: | ✓ |
| Adjustment: | Sensitivity adjustment |
| Light spot size (distance): | Ø 250 mm (15 m) |

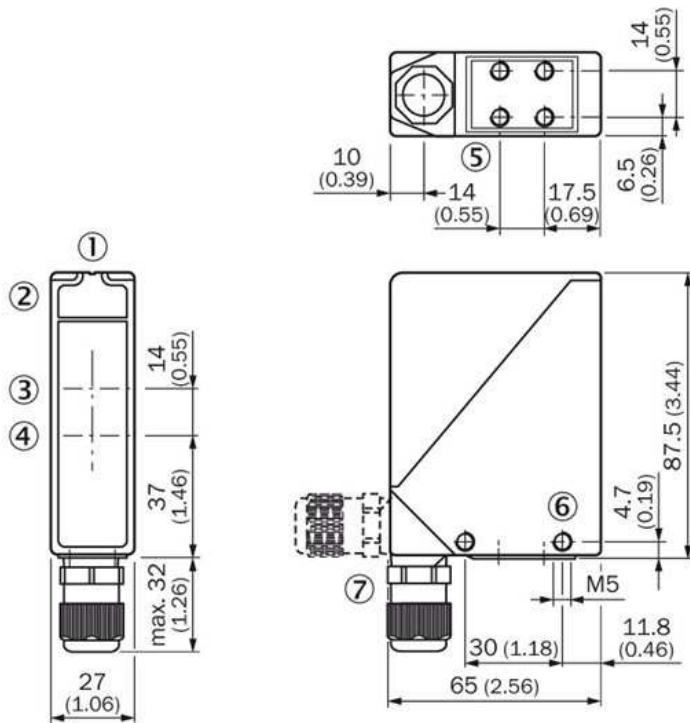
1) 2) PL80A 3) Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

| | |
|------------------------------------|---|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Ripple: | < 5 Vpp ²⁾ |
| Current consumption: | ≤ 150 mA ³⁾ |
| 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 ⁴⁾ |
| Switching frequency: | 1,000 Hz ⁵⁾ |
| Connection type: | Connector M12, 5-pin ⁶⁾ |
| Circuit protection::: | A, C, D ^{7) 8) 9)} |
| Protection class: | II ¹⁰⁾ |
| Weight: | 330 g |
| Polarisation filter: | ✓ |
| Front screen heating: | ✓ |
| Housing material: | Metal, Zinc diecast |
| Optics material: | PMMA |
| Enclosure rating: | IP 69K |
| Test input sender off: | TE to 0 V |
| Ambient operating temperature: | -40 °C ... +60 °C |
| Ambient storage temperature: | -40 °C ... +75 °C |
| UL File No.: | NRKH.E181493 & NRKH7.E181493 |

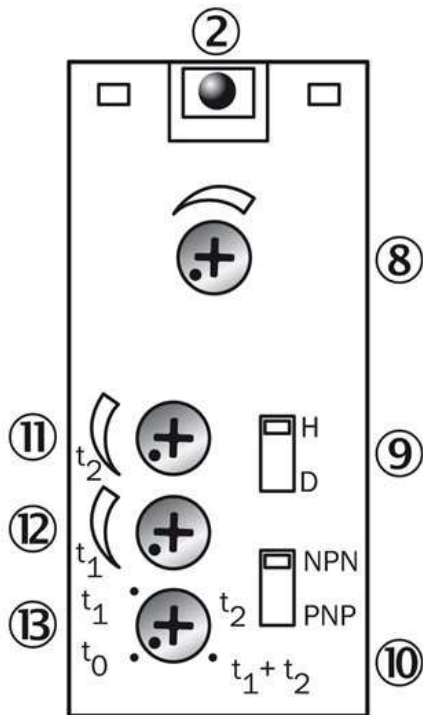
1) Limit values, operation in short-circuit protected network max. 8 A 2) May not exceed or fall short of V_S tolerances 3) Without load 4) Signal transit time with resistive load 5) With light/dark ratio 1:1 6) Connection rotatable by 90° 7) $A = V_S$ connections reverse-polarity protected 8) C = interference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

Dimensional drawing



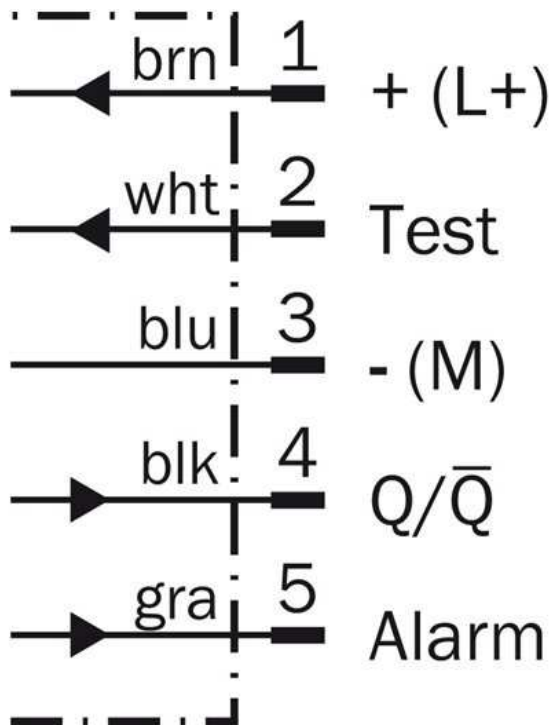
- |1| Alignment sight
- |2| LED signal strength indicator
- |3| Center of optical axis, sender
- |4| Center of optical axis, receiver
- |5| M5 threaded mounting hole, 6 mm deep
- |6| M5 threaded mounting hole, through-hole
- |7| M16 screw fixing and plug rotatable by 90°

Adjustments possible

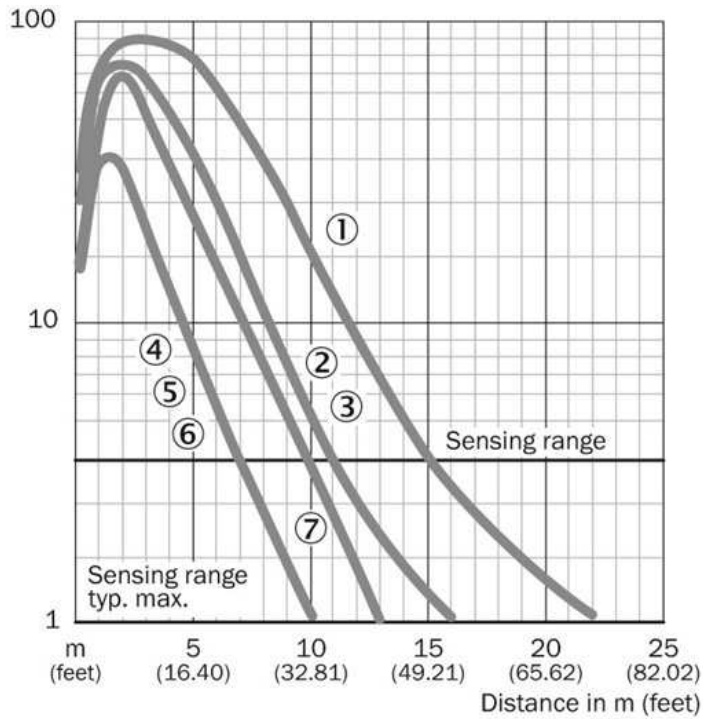


- |2| LED signal strength indicator
- |8| Sensitivity adjustment
- |9| Light/dark selector
- |10| NPN/ PNP selector
- |11| Time control t2=OFF-delay
- |12| Time control t1=ON-delay
- |13| time delay selector switch

Connection diagram

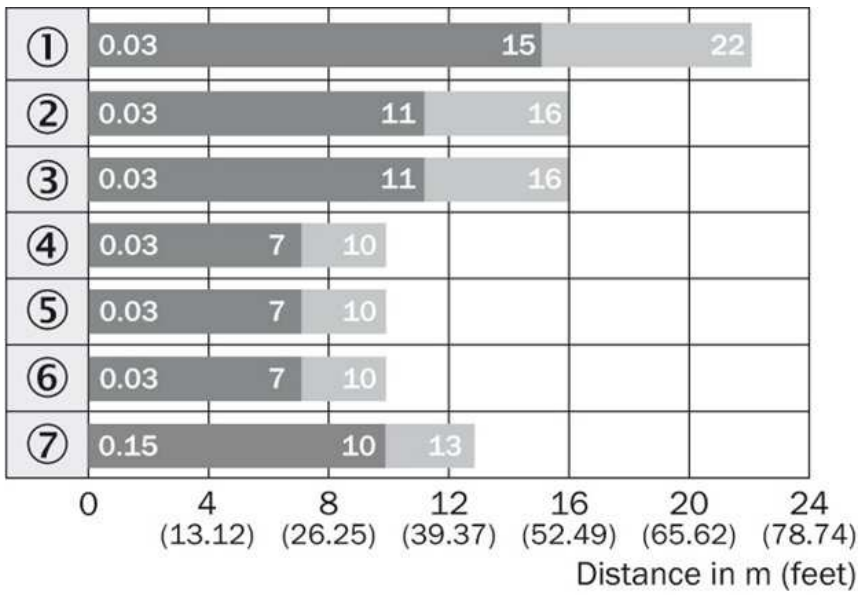


Characteristic curve



- [1] PL80A
- [2] PL50A
- [3] PL40A
- [4] PL30A
- [5] PL20A
- [6] Reflective tape Diamond Grade
- [7] C110A

Sensing range diagram



- |1| PL80A
- |2| PL50A
- |3| PL40A
- |4| PL30A
- |5| PL20A
- |6| Reflective tape Diamond Grade
- |7| C110A

■ Sensing range ■ Sensing range max.

Connection type



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