



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

WL24-2B440



Model Name > [WL24-2B440](#)
Part No. > [1017879](#)



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)

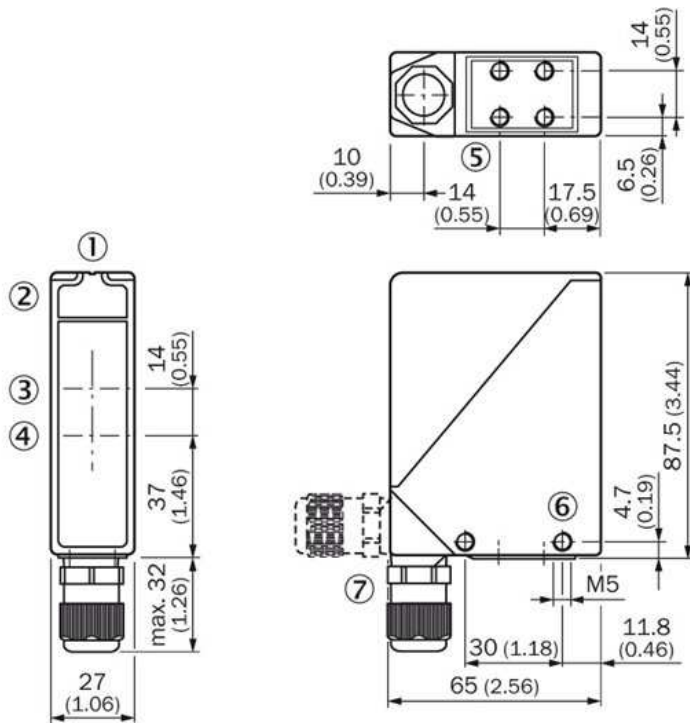
1) 2) PL80A 3) Average service life of 100,000 h at $T_A = +25\text{ °C}$

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, 4-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

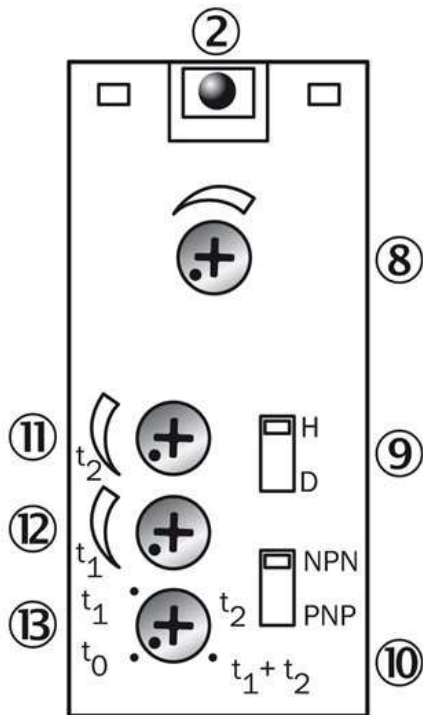
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ Connection rotatable by 90° ⁷⁾ A = V_S connections reverse-polarity protected ⁸⁾ C = interference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

Dimensional drawing



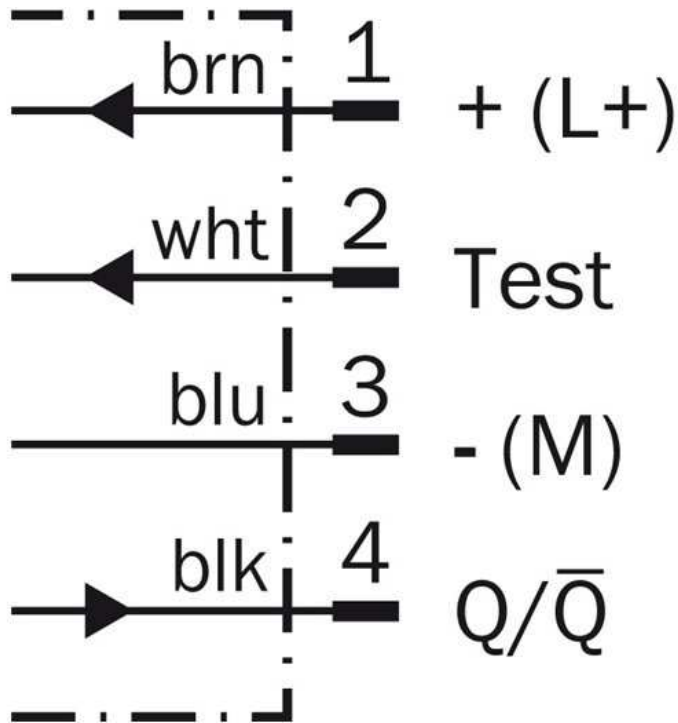
- |1| Alignment sight
- |2| LED signal strength indicator
- |3| Center of optical axis, sender
- |4| Center of optical axis, receiver
- |5| M5 threaded mounting hole, 6 mm deep
- |6| M5 threaded mounting hole, through-hole
- |7| M16 screw fixing and plug rotatable by 90°

Adjustments possible

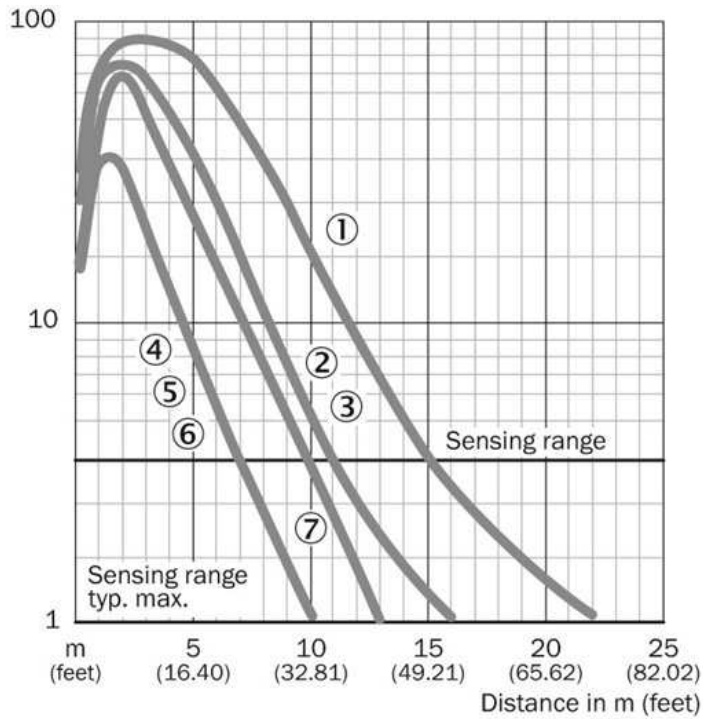


- |2| LED signal strength indicator
- |8| Sensitivity adjustment
- |9| Light/dark selector
- |10| NPN/ PNP selector
- |11| Time control t₂=OFF-delay
- |12| Time control t₁=ON-delay
- |13| time delay selector switch

Connection diagram

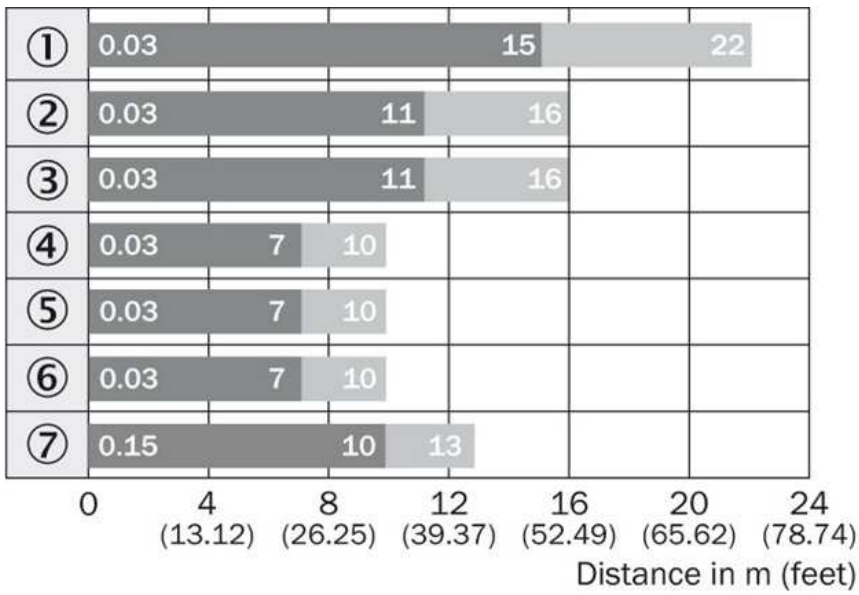


Characteristic curve



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

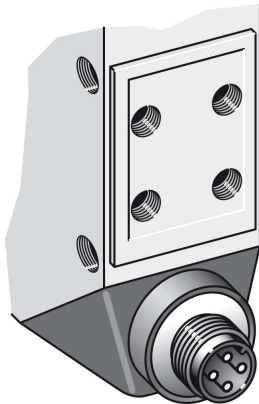
Sensing range diagram



- |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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