



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

WL24-2V230



**Model Name** > [WL24-2V230](#)  
**Part No.** > [1017880](#)



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 <sup>1)</sup>
Sensing range:	0 m ... 15 m <sup>2)</sup>
Type of light:	Visible red light
Light source:	LED <sup>3)</sup>
Alarm output:	✓
Adjustment:	Sensitivity adjustment
Light spot size (distance):	Ø 250 mm (15 m)

<sup>1) 2)</sup> PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

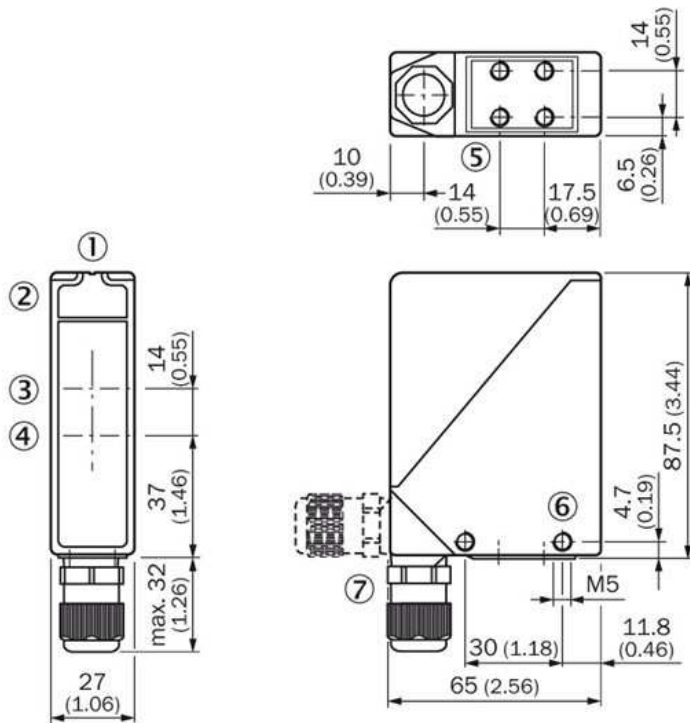
## Mechanics/electronics

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Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	< 5 Vpp <sup>2)</sup>
Current consumption:	≤ 50 mA <sup>3)</sup>
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 <sub>max.</sub> :	≤ 100 mA <sup>4)</sup>
Response time:	≤ 500 μs <sup>4)</sup>
Switching frequency:	1,000 Hz <sup>5)</sup>
Connection type:	Terminal connection with M16 gland <sup>6)</sup>
Circuit protection:::	A, C, D <sup>7) 8) 9)</sup>
Protection class:	II <sup>10)</sup>
Weight:	330 g
Polarisation filter:	✓
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

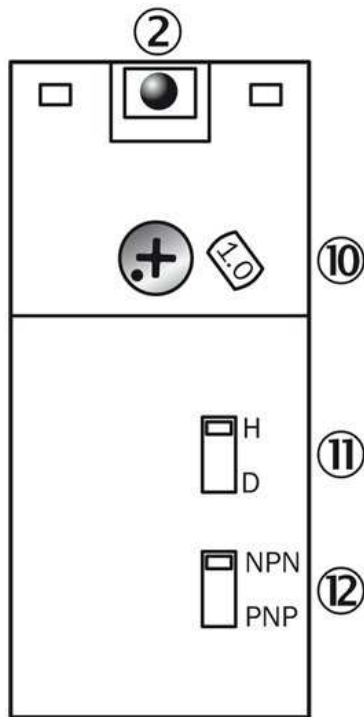
<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> Connection rotatable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

**Dimensional drawing**



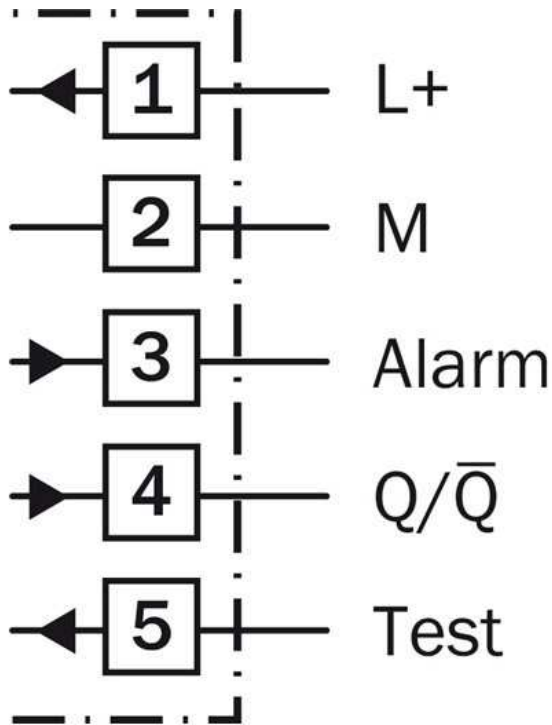
- |1| Alignment sight
- |2| LED signal strength indicator
- |3| Center of optical axis, sender
- |4| Center of optical axis, receiver
- |5| M5 threaded mounting hole, 6 mm deep
- |6| M5 threaded mounting hole, through-hole
- |7| M16 screw fixing and plug rotatable by 90°

**Adjustments possible**

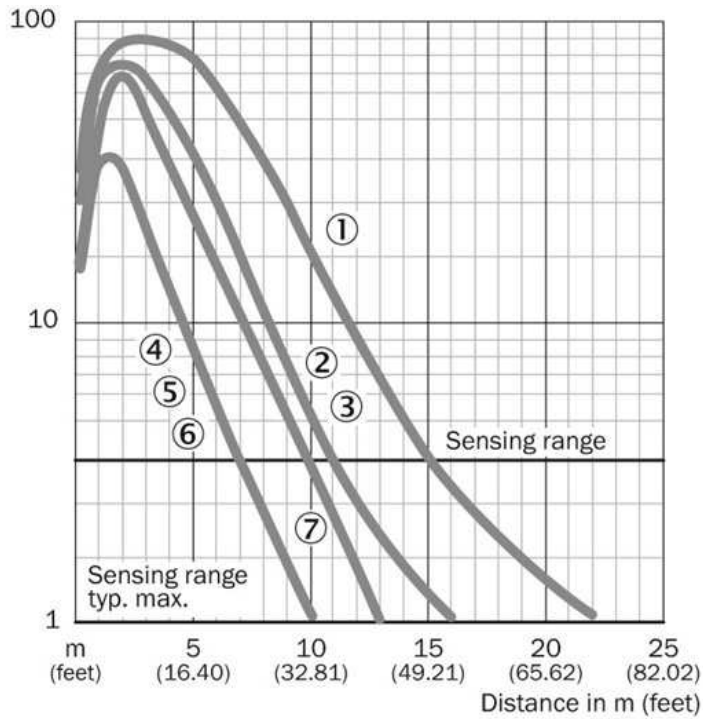


- |2| LED signal strength indicator
- |10| Adjustment sensing range (WT) / sensitivity (WL, WS/WE)
- |11| Light/dark selector
- |12| NPN/ PNP selector

Connection diagram

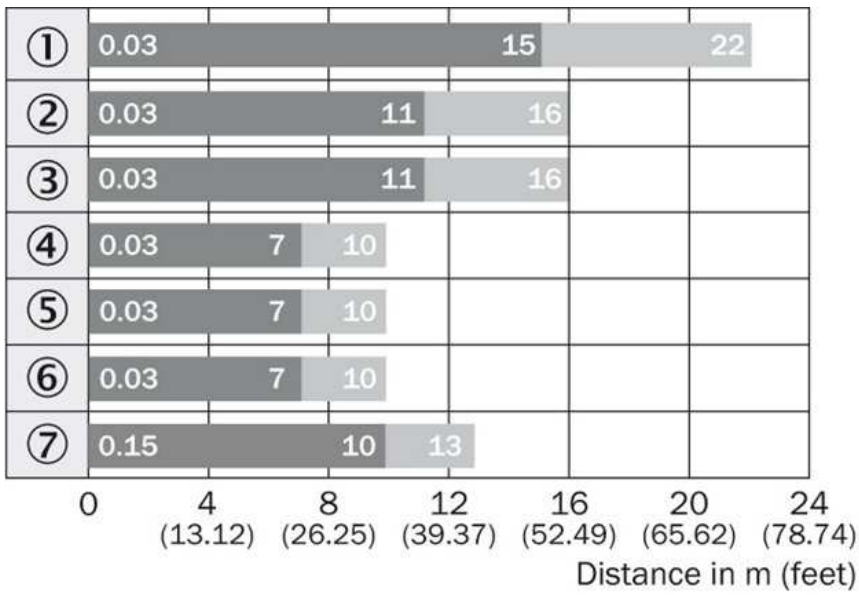


Characteristic curve



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

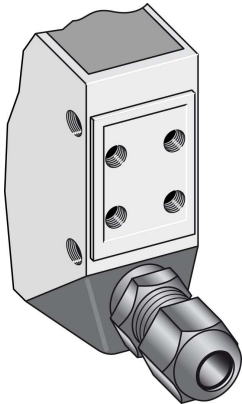
### Sensing range diagram



- |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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