



Photoelectric sensors  
W8, Photoelectric retro-reflective sensor,  
autocollimation

WL8-P2231S05



**Model Name** > [WL8-P2231S05](#)  
**Part No.** > [6048890](#)



*Illustration may differ*

**Your benefits**

- Reliable object detection even at the shortest distances (no blind spot) or through narrow gaps
- Highly visible light spot makes alignment quick and easy
- Autocollimation combined with 2 kHz switching frequency ensures reliable detection of small objects, even at fast detection speeds
- M3 threaded holes provide quick installation
- Polarization filters prevent false readings on glossy objects
- All necessary accessories (bracket and reflector) are included with delivery, reducing installation and procurement costs



**Features**

Sensor/detection principle:	Photoelectric retro-reflective sensor, autocollimation
Dimensions (W x H x D):	11 mm x 31 mm x 20 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0 m ... 4 m <sup>1)</sup>
Sensing range:	0 m ... 3 m <sup>2)</sup>
Type of light:	Visible red light
Light source:	LED <sup>3)</sup>
Wave length:	650 nm
Alarm output:	-
Focus adjustable:	-
Special features:	Mounting hole Ø 3.2mm without thread, distance between mounting holes 23mm
Adjustment:	Potentiometer, 270 °
Light spot size (distance):	Ø 30 mm (1 m)

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

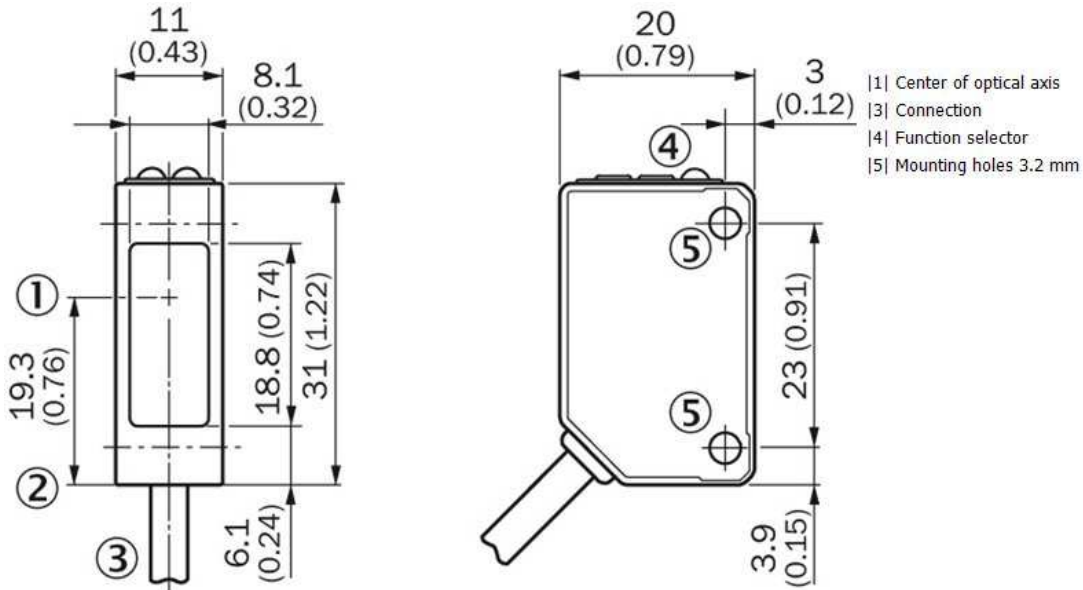
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Residual ripple:	± 10 % <sup>2)</sup>
Power consumption:	≤ 30 mA <sup>3)</sup>
Output type:	PNP, open collector
Switching mode:	Light/dark switching
Switching mode selector:	Manually selectable
Signal voltage PNP HIGH/LOW:	Approx. VS - 1.8 V / 0 V

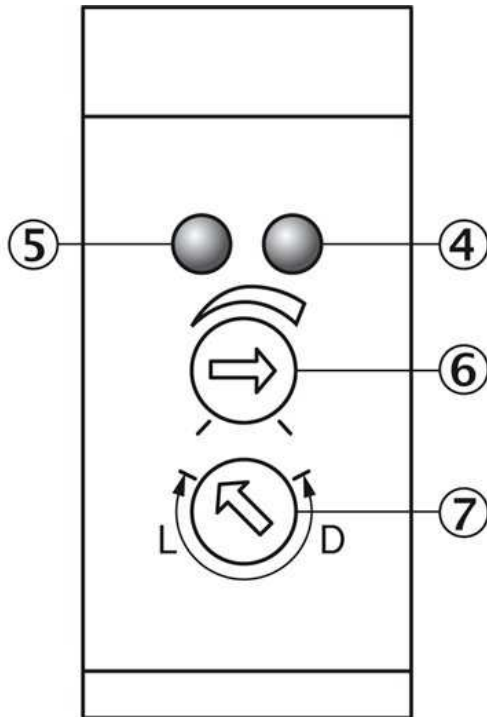
Output current I <sub>max</sub> :	≤ 100 mA
Response time:	≤ 25 ms <sup>4)</sup>
Switching frequency:	2,000 Hz <sup>5)</sup>
Electrical connection:	Connector M8, 4-pin
Circuit protection:::	A, B, D <sup>6)</sup> <sup>7)</sup> <sup>8)</sup>
Weight:	10 g
Polarisation filter:	✓
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Reflector P250 and oblong washer for mounting
Ambient temperature operation:	-25 °C ... 55 °C
Ambient storage temperature:	-40 °C ... 70 °C

1) Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> 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> A = V<sub>S</sub> connections reverse-polarity protected <sup>7)</sup> B = inputs and output reverse-polarity protected <sup>8)</sup> D = outputs overcurrent and short-circuit protected

### Dimensional drawing



## Adjustments possible

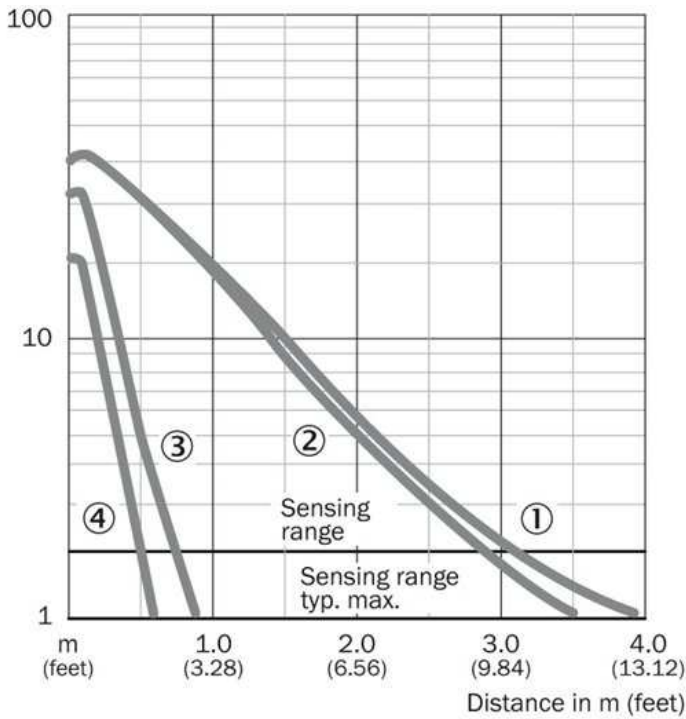


- |4| Orange LED indicator : switching output active
- |5| LED indicator green: stability indicator
- |6| Sensitivity adjustment
- |7| Light/ dark rotary switch L = light switching, D = dark switching

## Connection diagram

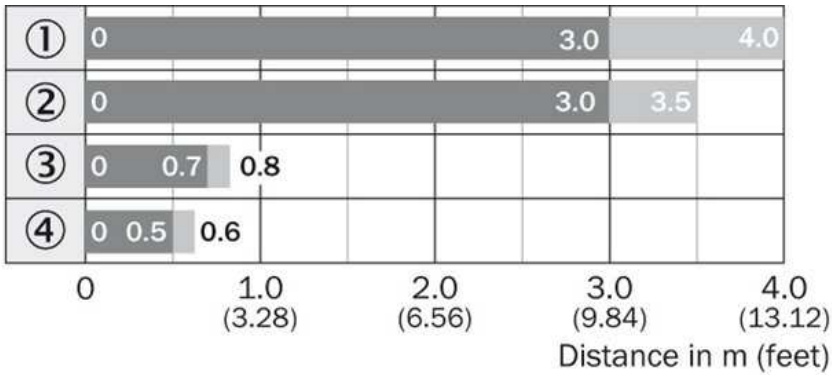


## Characteristic curve



- |1| PL80A
- |2| P250
- |3| P45
- |4| Reflective tape Diamond Grade

## Sensing range diagram



- |1| PL80A
- |2| P250
- |3| P45
- |4| Reflective tape Diamond Grade

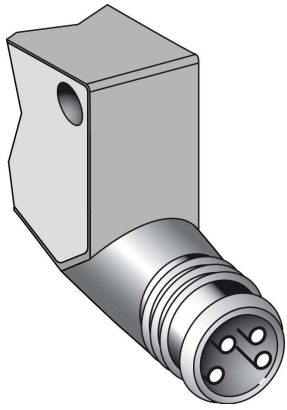
■ Sensing range      ■ Sensing range typ. max.

## Reflector type

- ① PL80A
- ② P250
- ③ P45
- ④ Diamond Grade

Connection type

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