



Photoelectric sensors  
W12-2 Laser, Through-beam photoelectric sensor

WS/WE12L-2P431



**Model Name** > [WS/WE12L-2P431](#)  
**Part No.** > [1047960](#)



*Illustration may differ*

**At a glance**

- Laser protection class 1 or 2
- Large sensing range and high levels of operating reserve
- Rugged sensors for industrial use
- Highly visible laser light spot for varying object detection
- Rugged die-cast zinc housing with optional Teflon® coating
- Versatile mounting options due to dovetail mounting - mounting holes and oblong holes
- Highly visible status LEDs
- Adjustable sensing range

**Your benefits**

High immunity to optical interference provides reliable object detection, large sensing ranges and high reserve levels

Highly visible laser light spot enables quick sensor alignment, excellent switching characteristics and high-quality detection

Rugged metal housing (optional Teflon® coating available) requires less maintenance due to its resistance to high-pressure cleaning environments

Highly visible status LEDs simplify commissioning and reduce installation time

Laser protection class 1 or 2 for eye safety

Easy installation using SICK accessories



**Features**

Sensor/detection principle:	Through-beam photoelectric sensor
Dimensions (W x H x D):	15 mm x 49 mm x 41.5 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0 m ... 80 m
Type of light:	Visible red light
Light source:	Laser <sup>1)</sup>
Laser class:	I
Special features:	Laser protection class 1
Light spot size (distance):	Ø 150 mm (60 m)

<sup>1)</sup> Average service life 50,000 h at T<sub>A</sub> = +25 °C

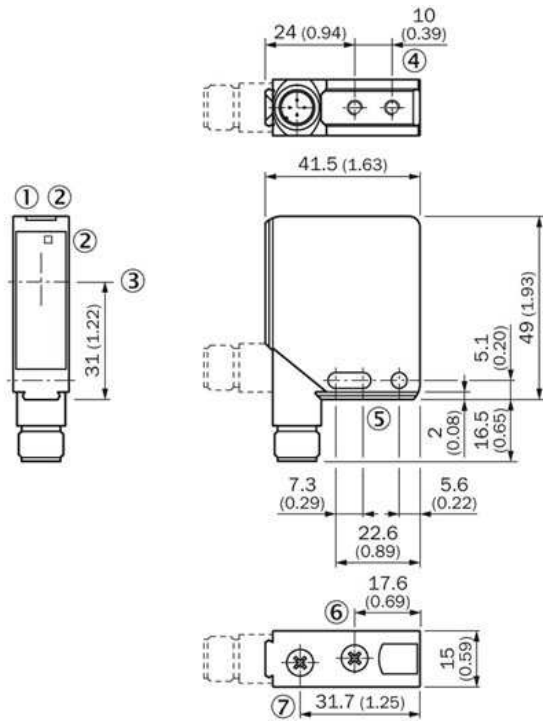
## Mechanics/electronics

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Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	≤ 5 Vpp <sup>2)</sup>
Power consumption, sender:	≤ 45 mA <sup>3)</sup>
Power consumption, receiver:	≤ 15 mA <sup>4)</sup>
Output type:	PNP
Output current I <sub>max.</sub> :	100 mA <sup>5)</sup>
Response time:	≤ 500 μs <sup>6)</sup>
Switching frequency:	± 1,000 Hz <sup>6)</sup>
Connection type:	Connector M12, 4-pin
Circuit protection:::	A, C, D <sup>7)</sup> <sup>8)</sup> <sup>9)</sup>
Protection class:	II
Weight:	260 g
Housing material:	Metal
Enclosure rating:	IP 67 IP 69K
Ambient operating temperature:	-10 °C ... +50 °C
Ambient storage temperature:	-25 °C ... +75 °C
Part number of individual components:	Receiver, WE12L-2P431, 2051074, Sender, WS12L-2D431, 2051073
UL File No.:	NRKH.E181493 & NRKH7.E181493

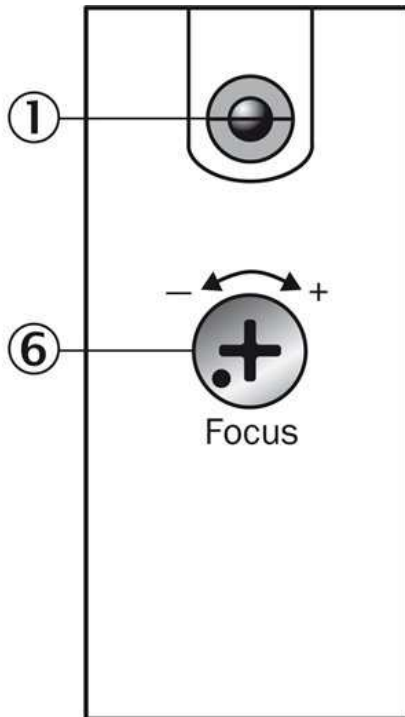
<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> <sup>4)</sup> Without load <sup>5)</sup> Signal transit time with resistive load <sup>6)</sup> With light/dark ratio 1:1 <sup>7)</sup> A = 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

## Dimensional drawing



- |1| Operating indicator, green
- |2| LED reception indicator, yellow
- |3| Center of optical axis
- |5| Mounting hole,  $\varnothing$  4.2 mm
- |6| Focal adjustment
- |7| Sensitivity adjustment

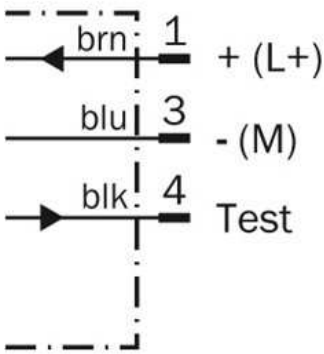
## Adjustments possible



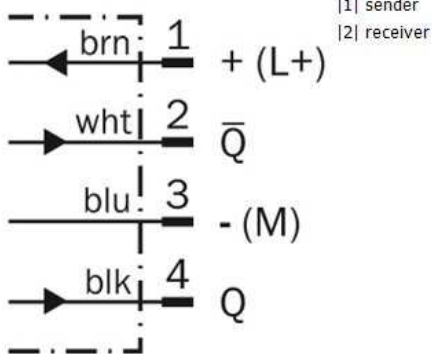
- |1| Operating indicator (WS above only)
- |6| Focal adjustment (WS)

Connection diagram

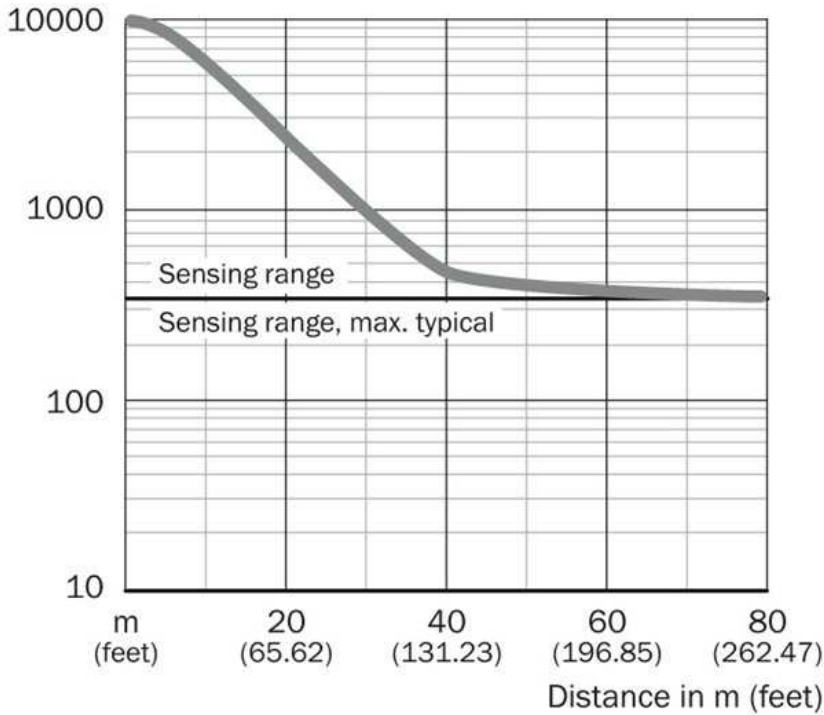
①



②

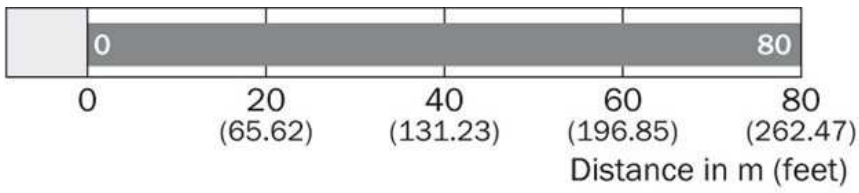


Characteristic curve



**Sensing range diagram**

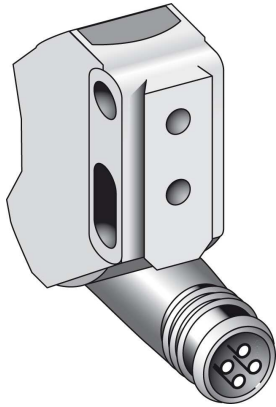
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■ Sensing range/sensing range typ. max.

**Connection type**

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