



Photoelectric sensors  
W12G, Photoelectric retro-reflective sensor,  
autocollimation

WL12G-3B2531S52



**Model Name** > [WL12G-3B2531S52](#)  
**Part No.** > [1044116](#)



*Illustration may differ*

**At a glance**

- Reliable detection of transparent objects
- Optional Continuous Threshold Adaption (CTA)
- Sensing range is adjustable via potentiometer or teach-in pushbutton
- Rugged housing for industrial use
- Highly visible red light spot for versatile detection of objects
- Quality monitoring thanks to IO-Link
- Key lock function, remote teach
- Diagnostics messages (contamination and short-circuit)

**Your benefits**

Reliable detection of transparent objects, including PET bottles and transparent film  
PinPoint LED technology provides a bright, small and precise light spot that enables quick and easy sensor alignment

Precise switching characteristics and high-performance object detection provides increased productivity

High immunity to optical interference reduces false readings

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

Quick and easy threshold adjustment (depending on type)

Simple monitoring of detection quality

Key lock function and parameter download prevent incorrect setting



**Features**

Sensor/detection principle:	Photoelectric retro-reflective sensor, autocollimation
Dimensions (W x H x D):	15.6 mm x 48.5 mm x 42 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0 mm ... 500 mm <sup>1)</sup>
Type of light:	Visible red light
Light source:	LED <sup>2)</sup>
Wave length:	640 nm
Time type:	Off delay
Off delay:	2 ms
Adjustment:	Potentiometer, 11 turns

Continuous threshold adaption: -

1) PL20F 2) Average service life of 100,000 h at  $T_A = +25\text{ °C}$

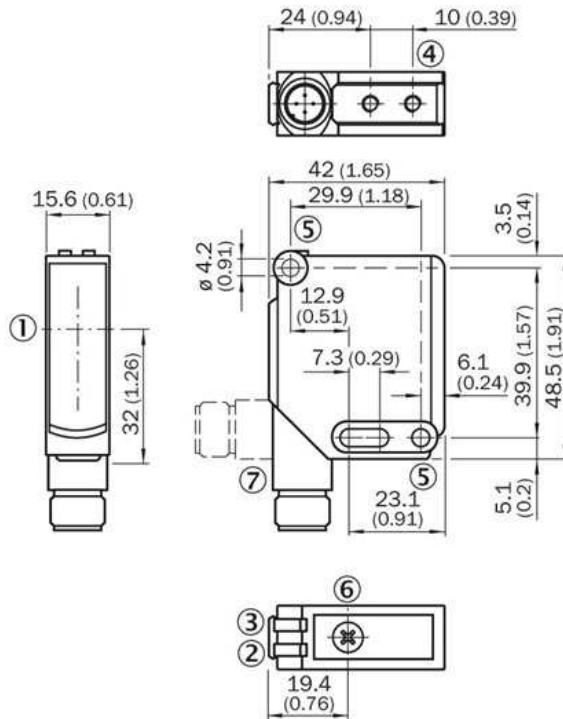
## Mechanics/electronics

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Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	$\leq 5\text{ Vpp}$ <sup>2)</sup>
Power consumption:	$\leq 30\text{ mA}$ <sup>3)</sup>
Output type:	NPN, PNP
Switching mode:	Light/dark switching
Switching mode selector:	Selectable via L/D control wire
Output current I <sub>max.</sub> :	100 mA
Response time:	$\leq 100\text{ }\mu\text{s}$ <sup>4)</sup>
Switching frequency:	5,000 Hz <sup>5)</sup>
Connection type:	Connector M12, 5-pin
Circuit protection:::	A, C, D <sup>6) 7) 8)</sup>
Protection class:	II
Weight:	120 g
Polarisation filter:	✓
Special device:	✓
Enclosure rating:	IP 67
Special feature:	Detection of transparent objects
Ambient operating temperature:	-40 °C ... +60 °C
Ambient storage temperature:	-40 °C ... +75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493
Housing material:	Metal

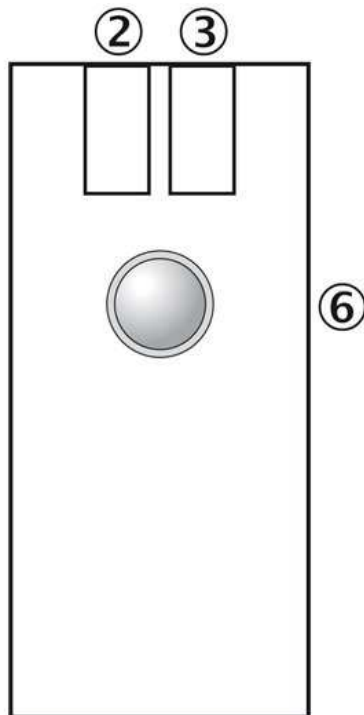
1) Limit values, operation in short-circuit protected network max. 8 A 2) May not exceed or fall short of  $V_S$  tolerances 3) Without load 4) Signal transit time with resistive load 5) With light/dark ratio 1:1 6) A =  $V_S$  connections reverse-polarity protected 7) C = interference suppression 8)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

## Dimensional drawing



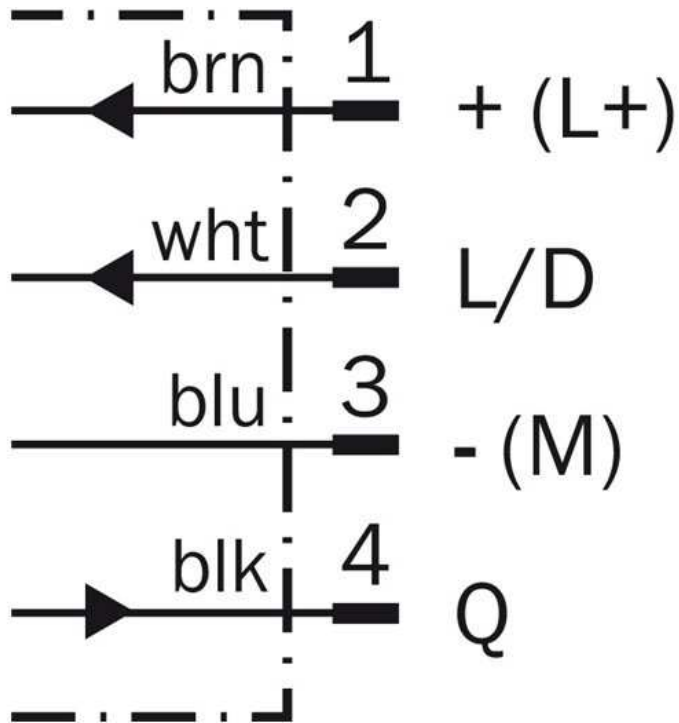
- |1| Optical axis
- |2| Status indicator LED,  
yellow: Status of received light beam
- |3| Status indicator LED green: supply voltage on
- |4| M4 threaded mounting hole, 4 mm deep
- |5| Mounting hole,  $\varnothing 4.2$  mm
- |6| Sensitivity adjustment: poti
- |7| Connection

## Adjustments possible

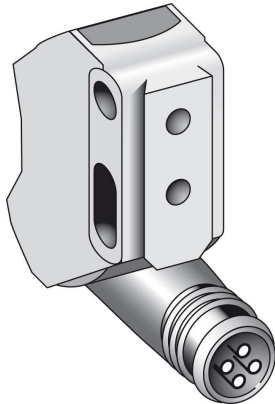


- |2| Status indicator LED,  
yellow: Status of received light beam
- |3| LED indicator, green: power on,  
teach-in mode I, LED indicator, blue: teach-in mode II
- |6| Single teach-in button, function  
1: teach-in sensitivity on reflector  
, function 2: change operation/teach-in mode

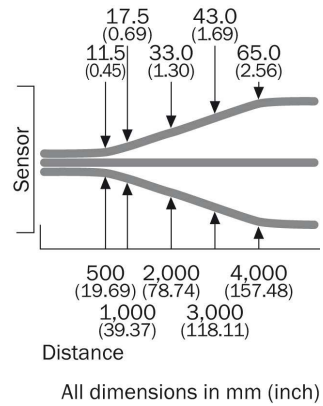
Connection diagram



Connection type



Light spot size



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