



Photoelectric sensors  
W8 Laser, Photoelectric proximity sensor,  
Background suppression

WTB8L-N2231



**Model Name** > [WTB8L-N2231](#)  
**Part No.** > [6033220](#)



*Illustration may differ*

**At a glance**

- Laser class 1
- Background suppression
- Standard miniature housing with M3 threaded mounting holes
- Switching frequency up to 2 kHz
- Light/dark switching via rotary switch
- Mounting bracket BEF-W100-A is included with delivery

**Your benefits**

- Highly flexible design and operational capabilities due to precise background suppression
- Reliable detection of small objects, regardless of color or surface qualities
- Rapid switching frequency reliably detects objects travelling at high speeds which allows to optimize the production processes
- Highly visible laser light spot simplifies alignment
- All necessary accessories are included with delivery, reducing installation and procurement costs



**Features**

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	11 mm x 31 mm x 20 mm
Housing design (light emission):	Rectangular
Sensing range max.:	30 mm ... 300 mm <sup>1)</sup>
Sensing range:	40 mm ... 300 mm <sup>2)</sup>
Type of light:	Visible red light
Light source:	Laser <sup>3)</sup>
Laser class:	I
Wave length:	650 nm
Alarm output:	-
Focus adjustable:	-
Adjustment:	Potentiometer, 4 turns
Light spot size (distance):	Ø 1.5 mm (300 mm)

<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

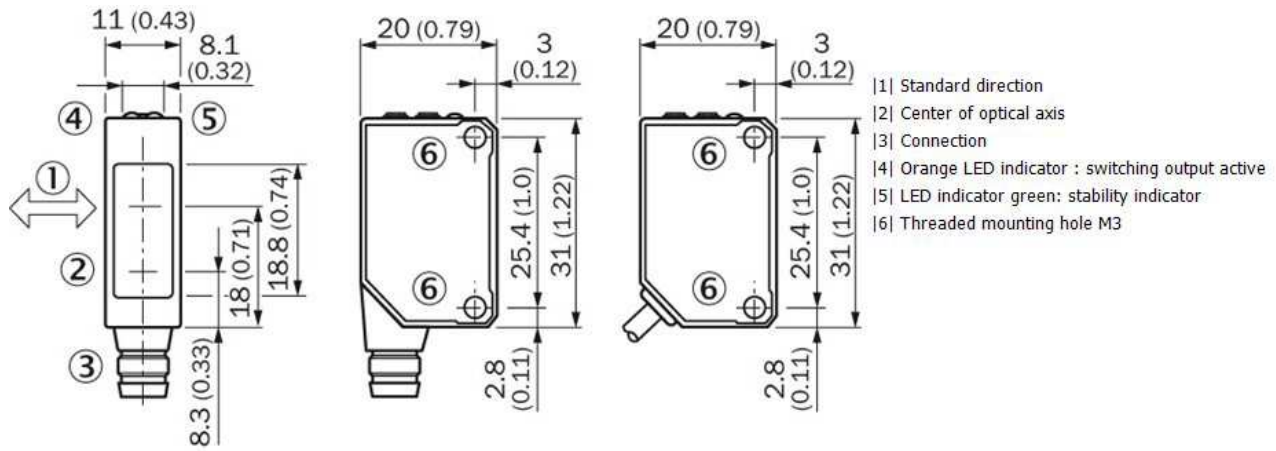
## Mechanics/electronics

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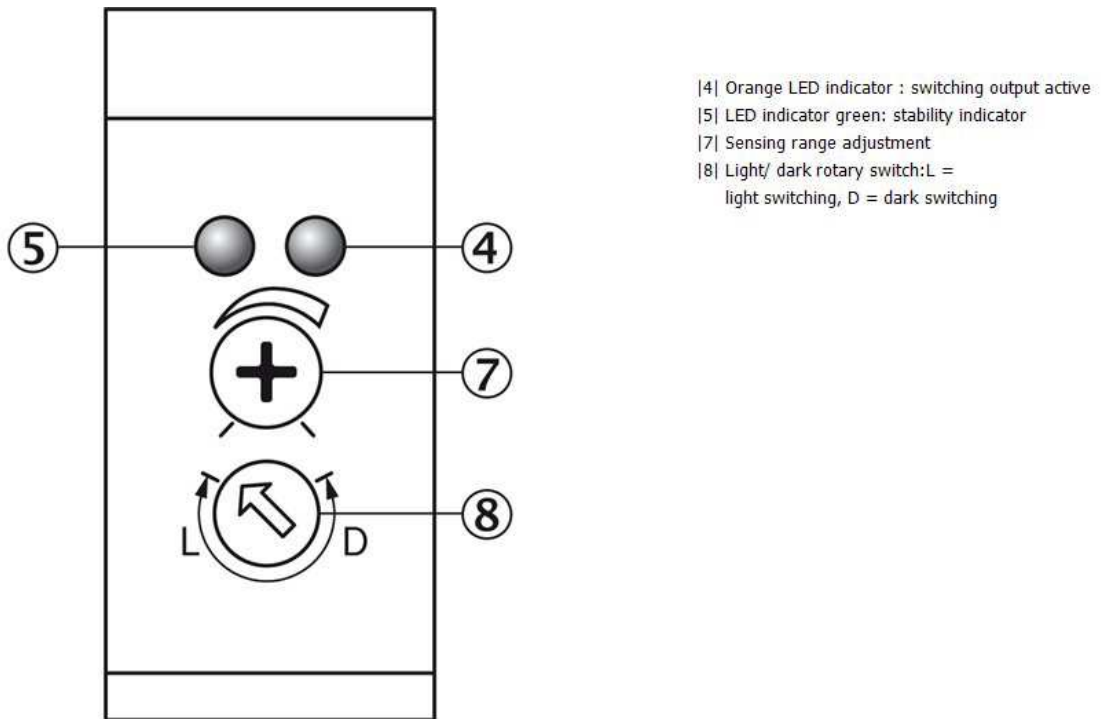
Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Residual ripple:	$\pm 10\%$ <sup>2)</sup>
Power consumption:	$\leq 30\text{ mA}$ <sup>3)</sup>
Output type:	NPN, open collector
Switching mode:	Light/dark switching
Switching mode selector:	Manually selectable
Output current I <sub>max.</sub> :	$\leq 100\text{ mA}$
Response time:	$\leq 0.25\text{ ms}$ <sup>4)</sup>
Switching frequency:	2,000 Hz <sup>5)</sup>
Electrical connection:	Connector M8, 4-pin
Circuit protection:::	A, B, D <sup>6) 7) 8)</sup>
Weight:	10 g
Polarisation filter:	-
Front screen heating:	-
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Stainless steel mounting bracket (1.4301/304) BEF-W100-A
Ambient temperature operation:	-10 °C ... +50 °C
Ambient storage temperature:	-40 °C ... +70 °C
UL File No.:	242368, CDRH-conform
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 1.8\text{ V}$
Housing material:	ABS, Plastic

<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> A =  $V_S$  connections reverse-polarity protected <sup>7)</sup> B = inputs and output reverse-polarity protected <sup>8)</sup> D = outputs overcurrent and short-circuit protected

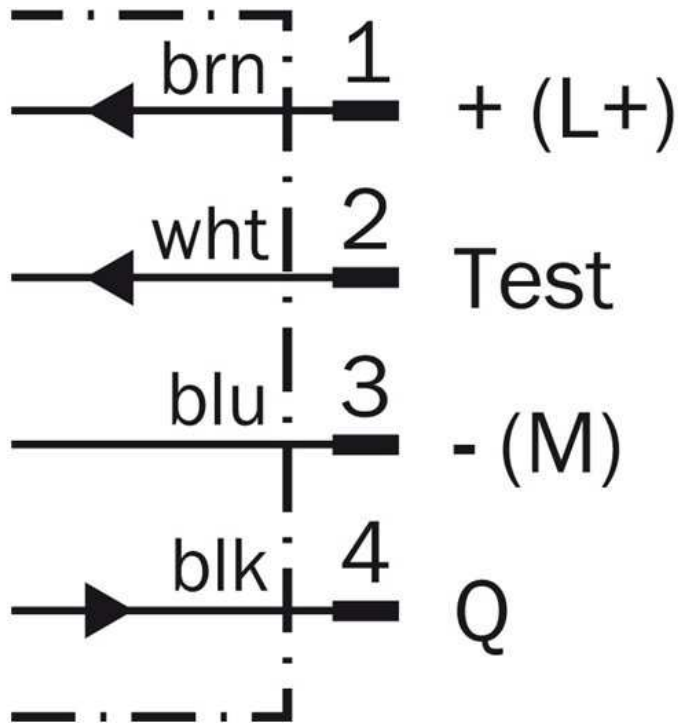
## Dimensional drawing



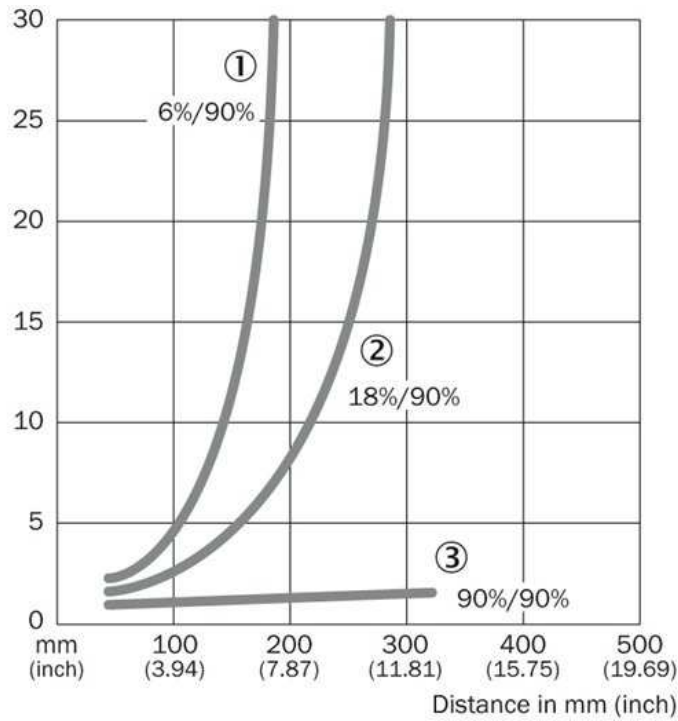
## Adjustments possible



Connection diagram

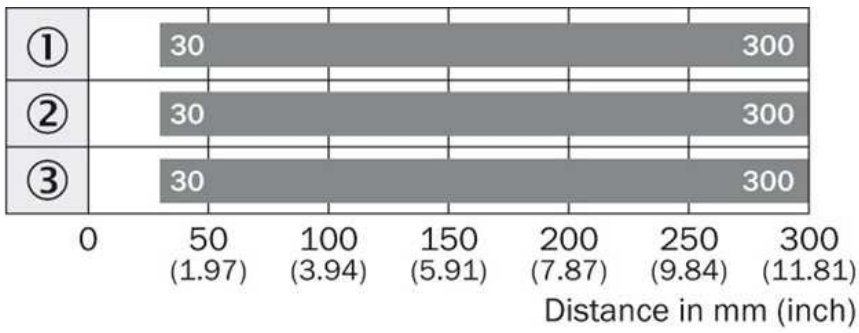


Characteristic curve



- |1| Sensing range on black, 6 % remission
- |2| Sensing range on gray, 18 % remission
- |3| Sensing range on white, 90 % remission

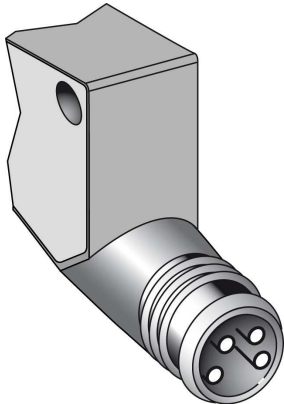
## Sensing range diagram



- |1| Sensing range on black, 6 % remission
- |2| Sensing range on gray, 18 % remission
- |3| Sensing range on white, 90 % remission

■ Sensing range

## Connection type



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