



Photoelectric sensors
W8 Laser, Photoelectric proximity sensor,
Background suppression

WTB8L-N2231



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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, Slim
Sensing range max.:	30 mm ... 300 mm ¹⁾
Sensing range:	40 mm ... 300 mm
Type of light:	Visible red light
Light source:	Laser ²⁾
Laser class:	I
Wave length:	650 nm
Alarm output:	-
Focus adjustable:	-
Adjustment:	Potentiometer, 4-turn
Light spot size (distance):	Ø 1.5 mm (300 mm)

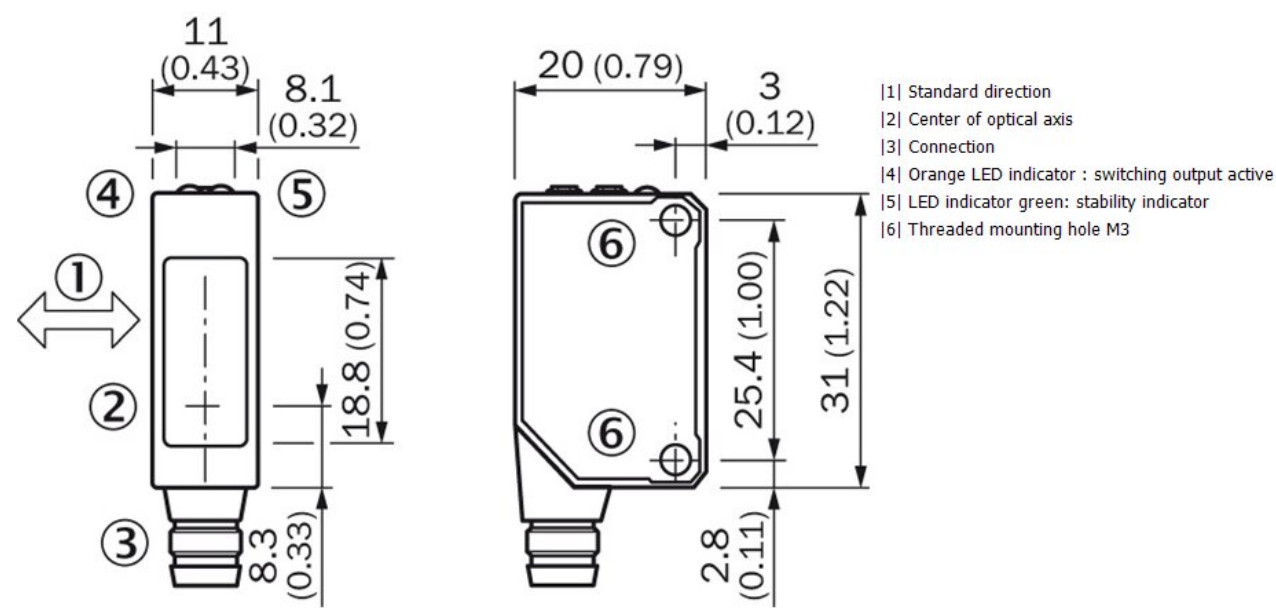
¹⁾ PL80A ²⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

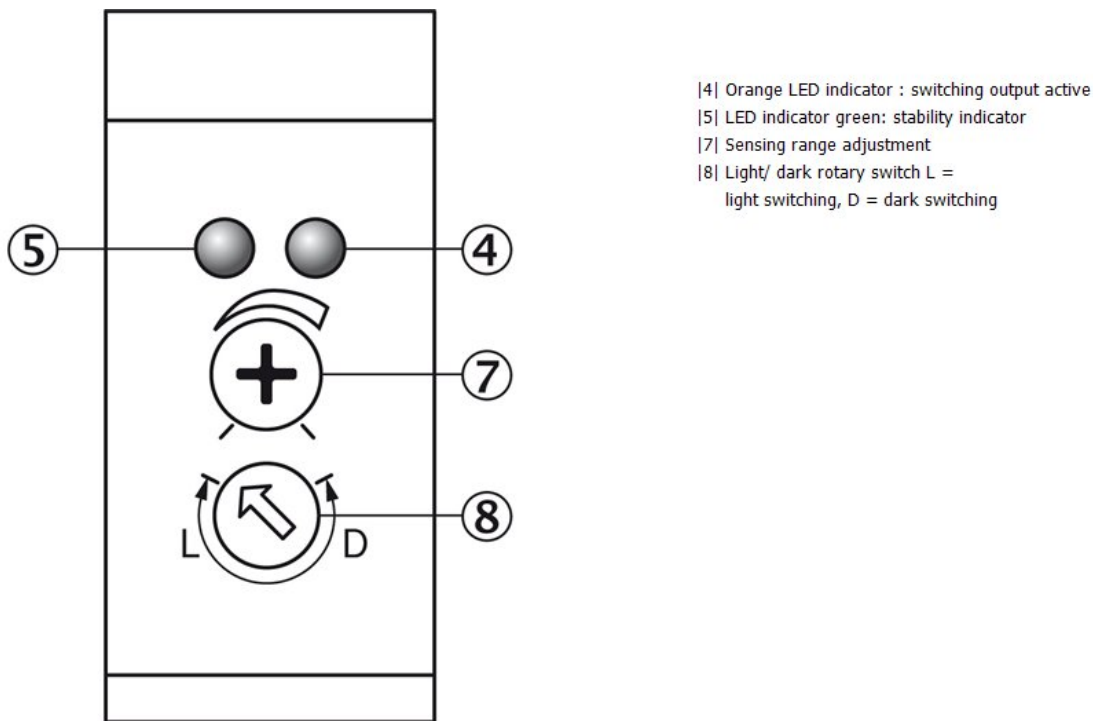
Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	$\pm 10\%$ ²⁾
Power consumption:	$\leq 30\text{ mA}$ ³⁾
Output type:	NPN
Switching mode:	Light/dark-switching
Output characteristic:	Open collector
Switching mode selector:	Manually selectable
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 1.8\text{ V}$
Output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

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⁾ B = inputs and output reverse-polarity protected ⁸⁾ D = outputs overcurrent and short-circuit protected

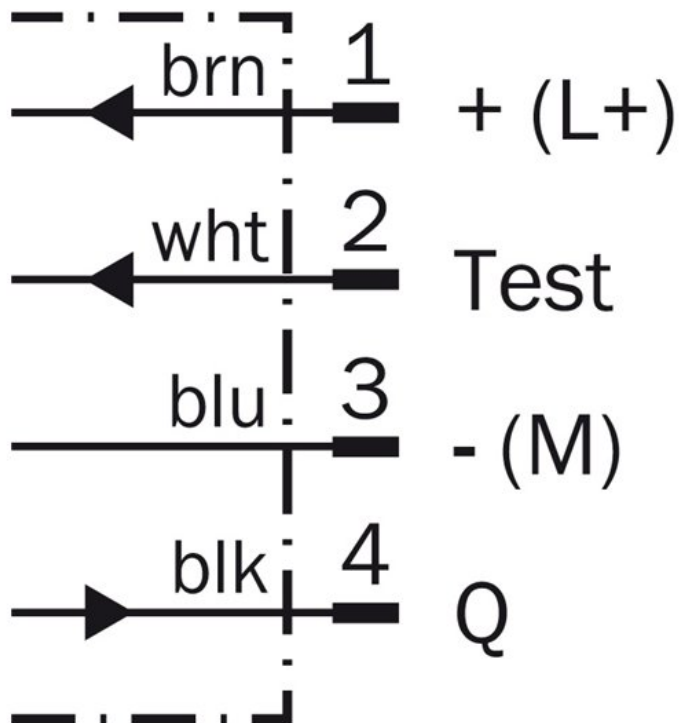
Dimensional drawing



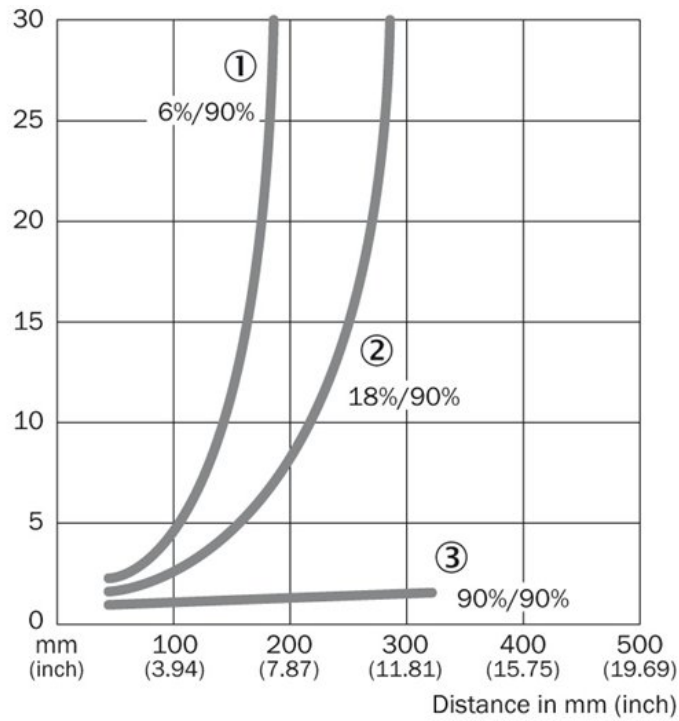
Adjustments possible



Connection diagram

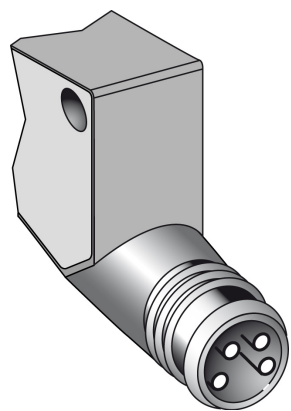


Characteristic curve

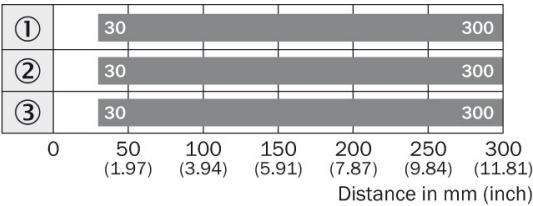


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on grey, 18 % remission
- |3| Sensing range on white, 90 % remission

Connection type



Sensing range diagram



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

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