



Photoelectric sensors
W8 Laser, Photoelectric proximity sensor,
Background suppression

WTB8L-P2231



Model Name > [WTB8L-P2231](#)
Part No. > [6033221](#)



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

Dimensions (W x H x D):	11 mm x 31 mm x 20 mm
Sensing range max.:	30 mm ... 300 mm ¹⁾
Sensing range:	40 mm ... 300 mm
Housing desig (light emission):	Cuboid, Slim
Light source:	Laser ²⁾
Type of light:	visible red light
Wave length:	650 nm
Sensitivity adjustment:	Potentiometer, 4-turn
Laser class:	I
Sensor/detection principle:	Photoelectric proximity sensor, Background suppression

Light spot (distance): 1.5 mm (300 mm)

Alarm output: -

1) PL80A 2) Average service life of 100,000 h at $T_A = +25\text{ °C}$

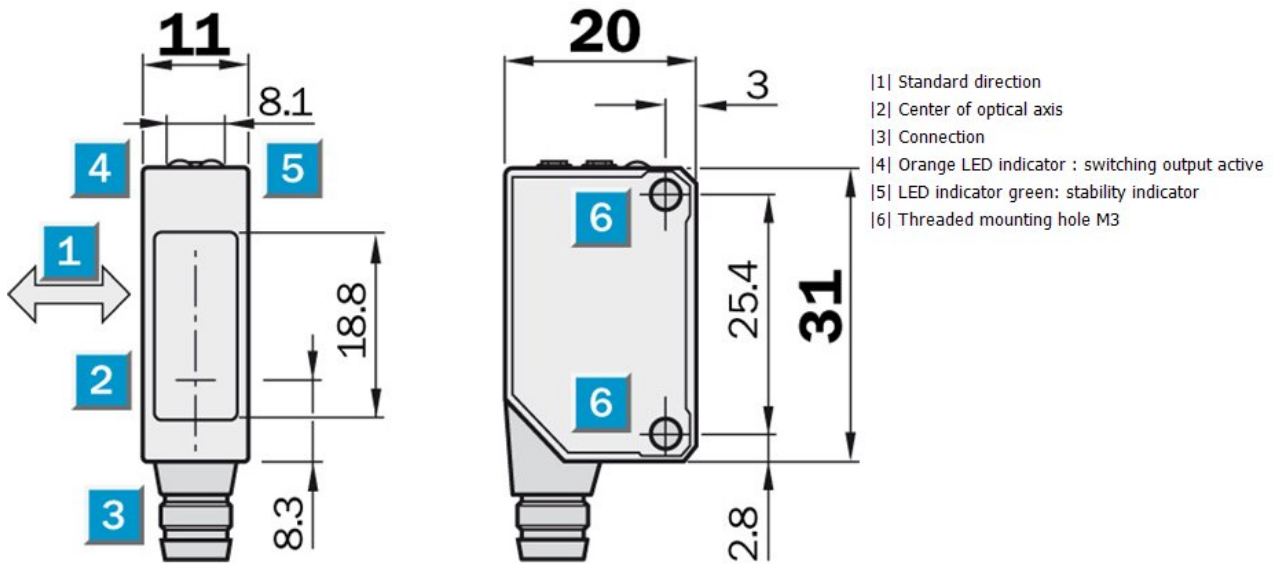
Mechanics/electronics

Enclosure rating: IP 67
Supply voltage: 10 V DC ... 30 V DC ¹⁾
Residual ripple: $\pm 10\%$ ²⁾
Power consumption: $\leq 30\text{ mA}$ ³⁾
Switching output: PNP, light/dark-switching, manually selectable, open collector
Output current I_{max.}: 100
Response time: $\leq 25\text{ ms}$ ⁴⁾
Switching frequency: 2,000 ⁵⁾
Connection type: Connector M8, 4-pin
Circuit protection:::
A
B 6) 7) 8)
D
Weight: 10 g
Housing material: ABS
Optics material: PMMA
Ambient temperature, operation: -10 °C ... 50 °C
Ambient temperature, storage: -40 °C ... 70 °C
Polarisation filter: -
Items supplied: Stainless steel mounting bracket (1.4301/304) BEF-W100-A
Focus adjustable: -
Voltage supply-LED: -
Output state-LED: -
Signal voltage PNP HIGH/LOW: approx. $V_S - 1.8\text{ V}/0\text{ V}$
Front screen heating: -
AS-Interface-Chip: -
Anti-interference: 0
UL File-No.: CDRH-conform

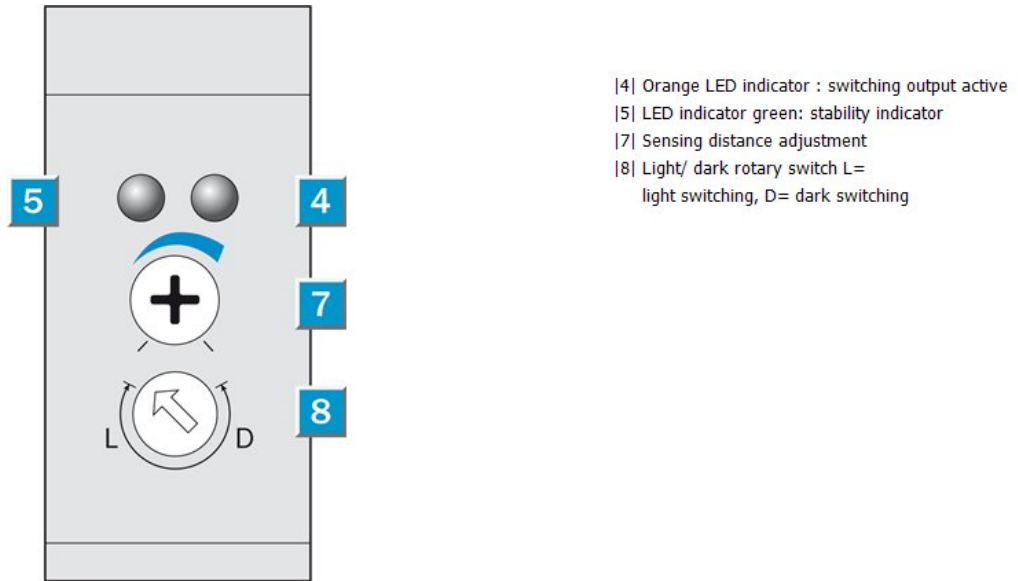
1) Limit values, operation in short-circuit protected network max. 8 A 2) May not exceed or fall short of V_S ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾

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

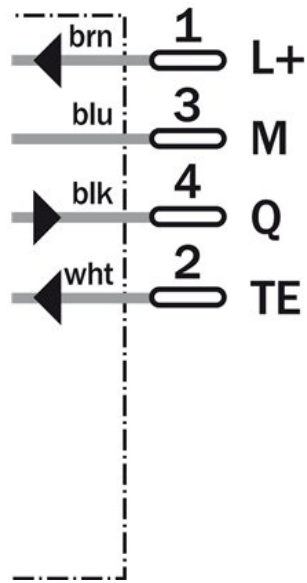
Dimensional drawing



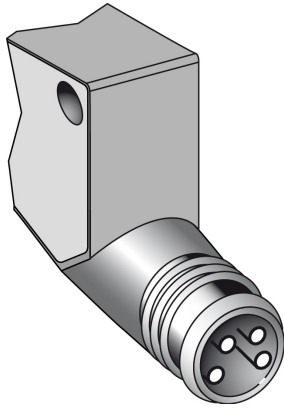
Einstell-Möglichkeiten



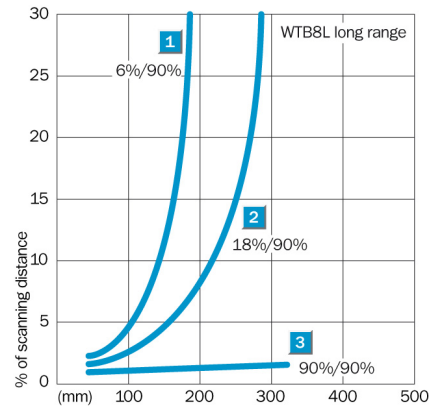
Connection diagram



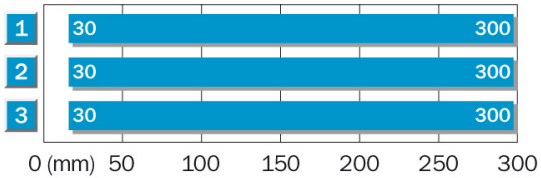
Connection type



Characteristic curve



Sensing range diagram



- 1 Scanning distance on black, 6 % remission
- 2 Scanning distance on grey, 18 % remission
- 3 Scanning distance on white, 90 % remission

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