



Photoelectric sensors
W100 Laser, Photoelectric retro-reflective
sensor, Standard optics

WL100L-E2231



Model Name > [WL100L-E2231](#)
Part No. > [6030713](#)



Illustration may differ

At a glance

- Standard miniature housing with M3 threaded mounting holes
- Laser emitter LED, class 1
- Standard optics
- Light/dark switching via rotary switch
- Switching frequency of 2000 Hz
- Polarizing filter used

Your benefits

- Laser light spot combined with 2 kHz switching frequency ensures reliable detection of small objects, even at fast detection speeds
- Less contamination due to high optical operating reserve
- M3 threaded mounting holes provide easy installation
- Polarization filter and consequently reliable detection of objects with shiny surfaces and prevents false switching



Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
Dimensions (W x H x D):	11 mm x 31 mm x 20 mm
Housing design (light emission):	Rectangular, Slim
Sensing range max.:	0.08 m ... 12 m ¹⁾
Sensing range:	0.08 m ... 10 m ²⁾
Type of light:	Visible red light
Light source:	Laser ³⁾
Laser class:	1
Wave length:	650 nm
Light spot diameter (distance):	Ø 12 mm (10 m)
Focus adjustable:	-

^{1) 2)} P250F ³⁾ Average service life 50,000 h at T_A = +25 °C

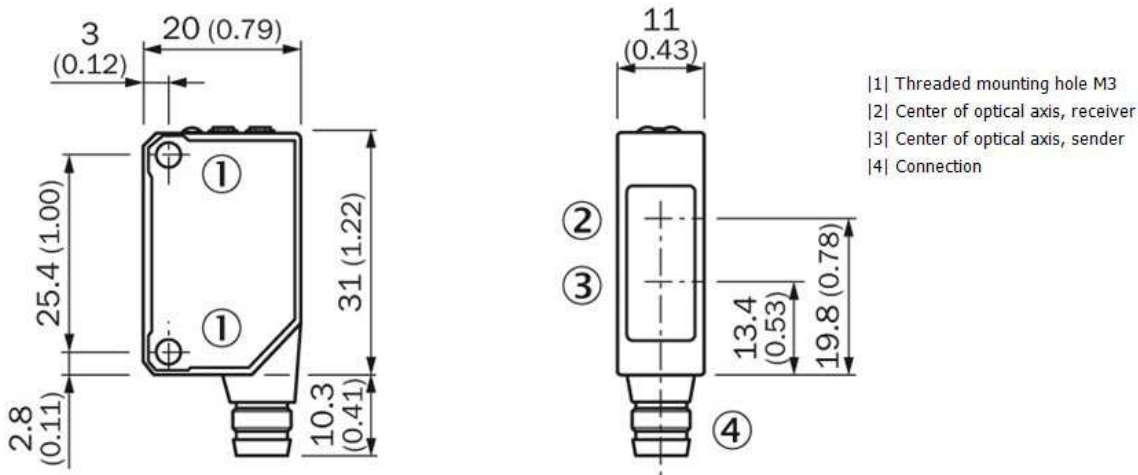
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Residual ripple:	± 10 % ²⁾
Power consumption:	≤ 30 mA ³⁾
Output type:	NPN, Light/dark-switching, manually selectable, open collector

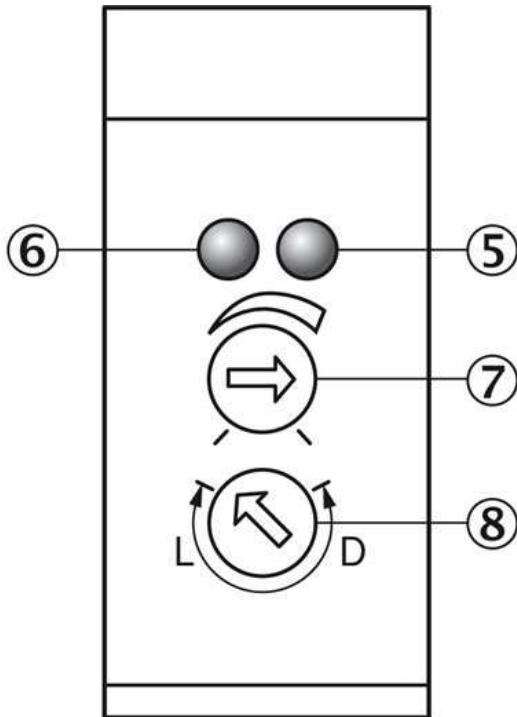
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 1.8 \text{ V}$
Output current $I_{max.}$:	100
Response time:	$< 0.25 \text{ ms}$ ⁴⁾
Switching frequency:	2,000 ⁵⁾
Electrical connection:	Connector M8, 4-pin
Circuit protection:::	A, B, D ^{6) 7) 8)}
Weight:	10 g
Polarisation filter:	✓
Housing material:	ABS/PC
Optics material:	PMMA
Enclosure rating:	IP 65
Items supplied:	Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250F
Ambient temperature operation:	-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

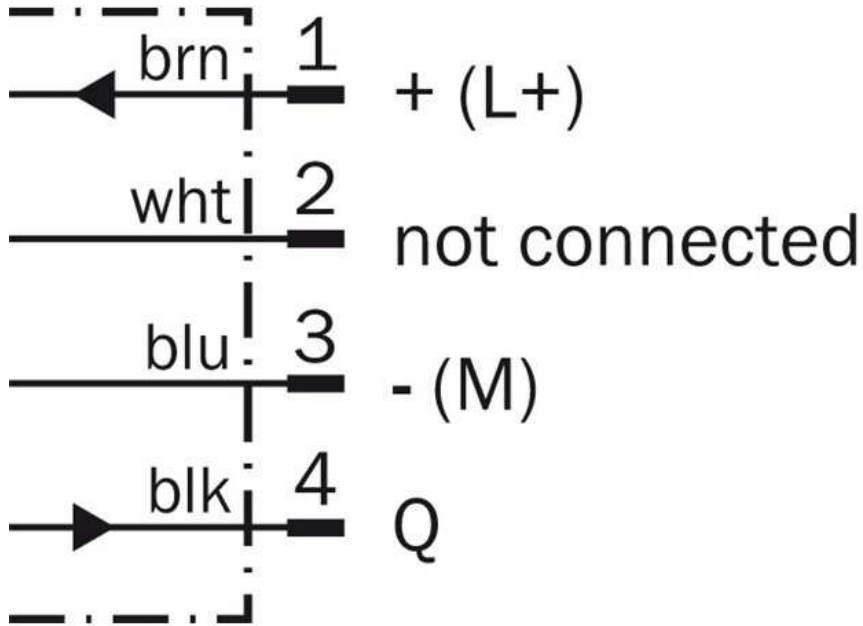


Adjustments possible

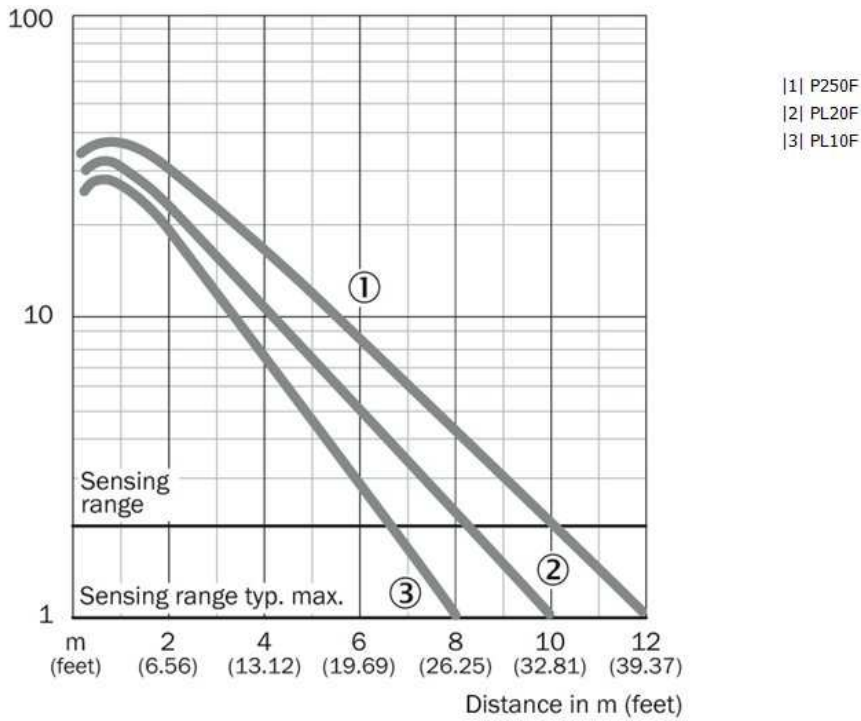


- |5| Orange LED indicator : switching output active
- |6| LED signal strength indicator green:power on
- |7| Sensing range adjustment: potentiometer, 5 turns
- |8| Light/ dark rotary switch L =
light switching, D = dark switching

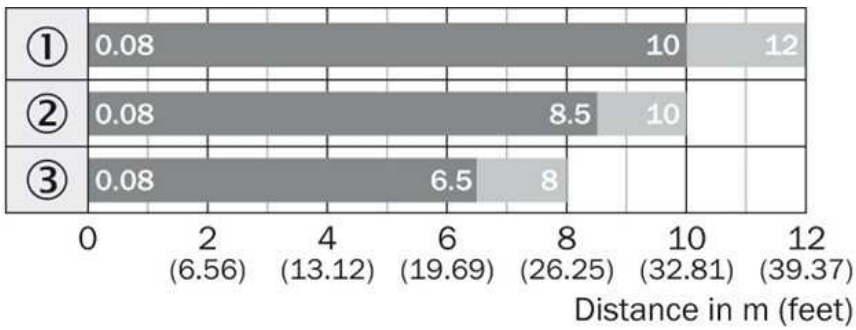
Connection diagram



Characteristic curve



Sensing range diagram

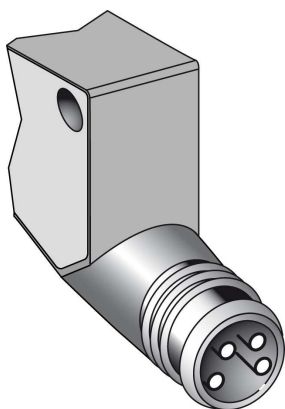


■ Sensing range ■ Sensing range typ. max.

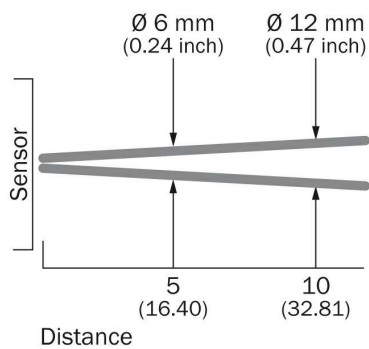
Reflector type

- ① P250F
- ② PL20F
- ③ PL10F

Connection type



Light spot size



All dimensions in m (feet)

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