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DATA SHEET

WL100L-F2231

W100 Laser
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

WL100L-F2231

ORDERING INFORMATION

Type	part no.
WL100L-F2231	6030710

Further device versions and accessories at www.sick.com/W100_Laser

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	With minimum distance to reflector (dual lens system)
Dimensions (W x H x D)	11 mm x 31 mm x 20 mm
Housing design (light emission)	Rectangular
Sensing range max.	0.08 m ... 12 m [1]
Sensing range	0.08 m ... 10 m [1]
Type of light	Visible red light
Light source	Laser [2]
Wave length	650 nm
Laser class	1 [3]
Adjustment	Potentiometer, 270°
Special applications	Detecting small objects, Detection of objects moving at high speeds

[1] Reflector P250F.

[2] Average service life: 50,000 h at T_U = +25 °C.

[3] Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

MECHANICS/ELECTRONICS

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	± 10 % [2]
Current consumption	30 mA [3]
Switching output	PNP
Switching mode	Light/dark switching
Switching mode selector	Selectable via light/dark rotary switch
Signal voltage PNP HIGH/LOW	U_V - 1,8 V / ca. 0 V
Output current $I_{max.}$	≤ 100 mA
Response time	< 0.25 ms [4]
Switching frequency	2,000 Hz [5]
Connection type	Male connector M8, 4-pin
Circuit protection	A [6] B [7] D [8]
Weight	10 g
Polarizing filter	✓
Housing material	Plastic, ABS/PC
Optics material	Plastic, PMMA
Enclosure rating	IP65
Items supplied	Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250F
Ambient operating temperature	–10 °C ... +50 °C
Ambient temperature, storage	–40 °C ... +70 °C

[1] Limit values when operated in short-circuit protected network: max. 8 A.

[2] May not fall below or exceed U_V 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.

SAFETY-RELATED PARAMETERS

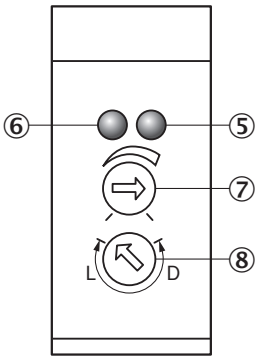
$MTTF_D$	438 years
DC_{avg}	0%

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) ex-empt	✓
cRUus certificate	✓

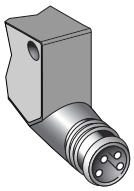
Laser safety (IEC 60825-1) certificate	✓

ADJUSTMENTS WT100L, WL100L

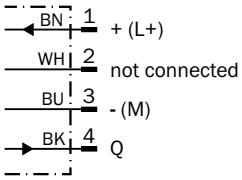


⑤ Orange LED indicator : switching output active
⑥ LED indicator green: power on
⑦ Sensing range (WT) / sensitivity (WL) adjustment: potentiometer, 270°
⑧ Light/ dark rotary switch: L = light switching, D = dark switching

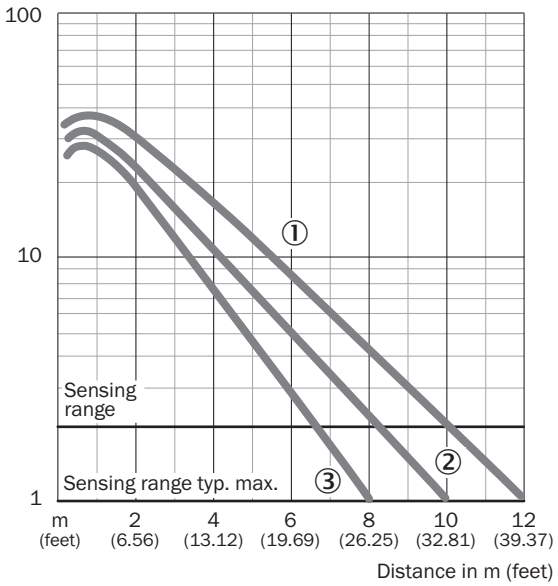
CONNECTION TYPE



CONNECTION DIAGRAM CD-066

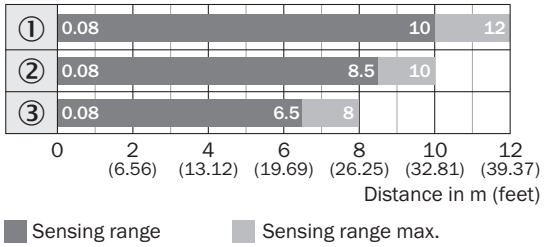


CHARACTERISTIC CURVE WL100L



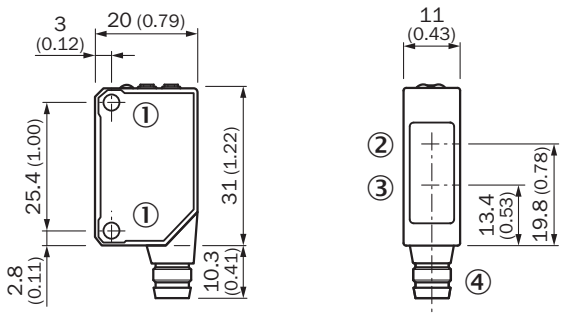
① Reflector P250F
② Reflector PL20F
③ PL10F reflector

SENSING RANGE DIAGRAM WL100L



① Reflector P250F
② Reflector PL20F
③ PL10F reflector

DIMENSIONAL DRAWING WT100L, WL100L



Dimensions in mm (inch)
① Threaded mounting hole M3
② Center of optical axis, receiver
③ Center of optical axis, sender
④ Connection

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6030710

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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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