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Product data sheet



WL250-2R1631

W250-2

COMPACT PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

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WL250-2R1631 | W250-2

COMPACT PHOTOELECTRIC SENSORS



Illustration may differ

Ordering information

Type	Part no.
WL250-2R1631	6044701

Included in delivery: BEF-W250 (1), P250 (1)

Other models and accessories → www.sick.com/W250-2

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Dual lens
Dimensions (W x H x D)	20 mm x 60 mm x 43.9 mm
Housing design (light emission)	Rectangular
Sensing range max.	0.01 m ... 15 m [1] 0.01 m ... 12 m [2]
Sensing range	0.01 m ... 13 m [1] 0.01 m ... 11 m [2]
Focus	Approx. 2°
Type of light	Visible red light
Light source	LED [3]
Light spot size (distance)	Ø 260 mm (8 m)
Angle of dispersion	Approx. 2°
Adjustment	Potentiometer, 2 turns [4]

[1] Reflector PL80A.
[2] Reflector P250.
[3] Average service life: 100,000 h at T_U = +25 °C.
[4] With position indicator.

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Mechanics/electronics

Supply voltage U_B	24 V DC ... 240 V DC [1] 24 V AC/DC ... 240 V AC/DC [1]
Power consumption	≤ 5 VA
Switching output	Relay, electrically isolated [2]
Output function	Change-over contacts
Switching mode	Light switching [2]
Switching current (switching voltage)	3 A (240 V AC) 3 A (30 V DC)
Response time	≤ 15 ms
Switching frequency	33 Hz [3]
Connection type	Cable, 5-wire, 5 m [4]
Cable material	PVC
Conductor cross section	0.76 mm²
Cable diameter	Ø 6.4 mm
Circuit protection	A [5] C [6]
Protection class	II [7]
Overvoltage category	2
Weight	330 g
Polarisation filter	✓
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	Reflector P250, BEF-W250 mounting bracket
Electromagnetic compatibility (EMC)	EN 60947-5-2 [8]
Ambient operating temperature	–25 °C ... +55 °C
Ambient temperature, storage	–40 °C ... +70 °C
UL File No.	NRKH2.E300503 & NRKH8.E300503

[1] +- 10%.
[2] Provide suitable spark suppression for inductive or capacitive loads.
[3] With light/dark ratio 1:1.
[4] Do not bend below 0 °C.
[5] A = V_S connections reverse-polarity protected.
[6] C = interference suppression.
[7] Reference voltage: 250 V AC.
[8] The AC/DC devices comply with the Radio Safety Requirements for the industrial sector (Radio Safety Class A). They may cause radio interference if used in a residential area.

Safety-related parameters

$MTTF_D$	1,541 years
DC_{avg}	0 %

[1] Only for devices containing electro-mechanical components. In this case, the $MTTF_D$ value of the entire device must be calculated from the given B_{10D} value, the number of switching cycles and the given $MTTF_D$ value.

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B_{10d}	68,000 Switching cycles [1]

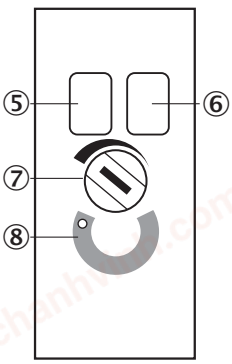
[1] Only for devices containing electro-mechanical components. In this case, the $MTTF_D$ value of the entire device must be calculated from the given B_{10D} value, the number of switching cycles and the given $MTTF_D$ value.

Classifications

eCl@ss 5.0	27270902
eCl@ss 5.1.4	27270902
eCl@ss 6.0	27270902
eCl@ss 6.2	27270902
eCl@ss 7.0	27270902
eCl@ss 8.0	27270902
eCl@ss 8.1	27270902
eCl@ss 9.0	27270902
eCl@ss 10.0	27270902
eCl@ss 11.0	27270902
eCl@ss 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Adjustments

WL250-2

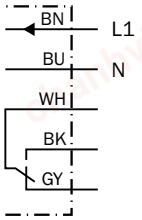


⑤ LED indicator green: Stability indicator
⑥ LED indicator yellow: Status of received light beam
⑦ Sensitivity control: potentiometer
⑧ Position indicator for sensitivity setting (270°)

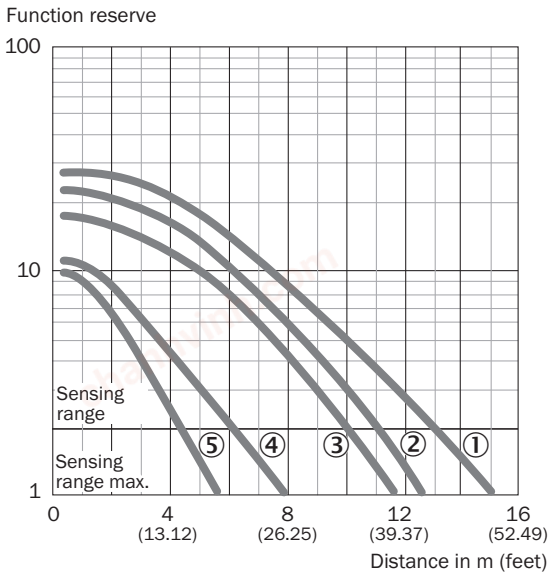
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Connection diagram

Cd-229

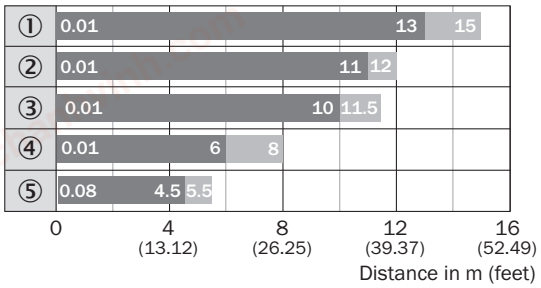


Characteristic curve



① Reflector PL80A, C110A
② Reflector P250
③ Reflector PL50A, PL40A, PL30A, PL31A
④ Reflector PL20A
⑤ Diamond Grade reflective tape, 100 mm x 100 mm

Sensing range diagram

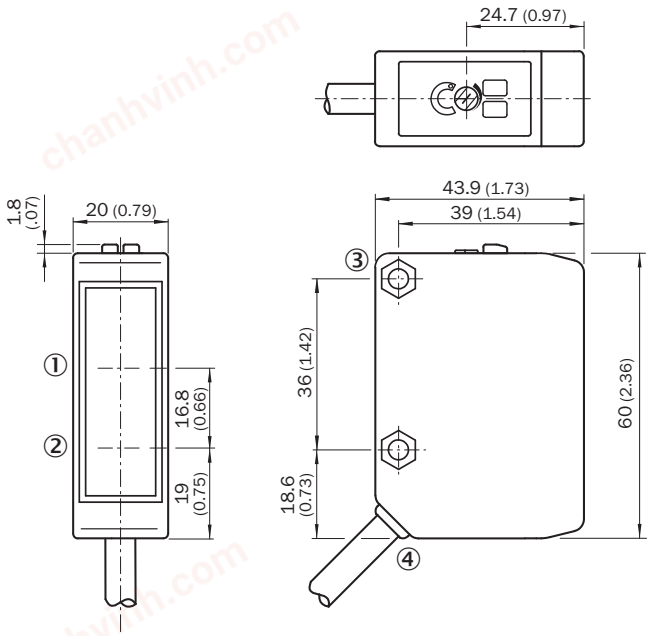


Sensing range Sensing range max.

① Reflector PL80A, C110A
② Reflector P250
③ Reflector PL50A, PL40A, PL30A, PL31A
④ Reflector PL20A
⑤ Diamond Grade reflective tape, 100 mm x 100 mm

Dimensional drawing (Dimensions in mm (inch))

WL250-2, AC/DC, cable



① Reception axis
② Axis of sender
③ Mounting hole ø 4.2 mm, for M4 hexagon nuts on both sides
④ Connection cable

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Recommended accessories

Other models and accessories ➜ www.sick.com/W250-2

	Brief description	Type	Part no.
Mounting brackets and plates			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
Plug connectors and cables			
	Head A: male connector, M12, 5-pin, straight Cable: unshielded For field bus technology	STE-1205-G	6022083
Reflectors			
	Rectangular, screw connection, 51 mm x 61 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250	5304812

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SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

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