Photoelectric sensors
W250-2, Photoelectric retro-reflective sensor, Standard optics

WL250-2R1631

SICK
Sensor Intelligence.

Model Name	> WL250-2R1631
Part No.	> 6044701

At a glance

- Versions for 10 - 30 V DC or 24 - 240 V DC/ 24 – 240 V AC voltage supply in compact design
- Mounting bracket and P250 reflector included in delivery
- Visible red Bright Light LED
- Potentiometer sensitivity adjustment with indicator
- Operating mode (light/dark) selectable via control wire
- Cable or rotatable M12 connector

Your benefits

- Visible red Bright Light LED for simpler alignment of the sensors
- Universal AC/DC voltage variants provide high performance and increased flexibility in environments with limited space
- Mounting kit reduces installation time
- Simple power control for individual application adjustments via potentiometer
- Operating mode (light/dark) is selectable via a control cable to reduce the number of device variants
- Mounting compatibility - DC devices and DC/AC devices available in same design
- Polarizing filter ensures reliable detection, even with shiny targets

Illustration may differ

CE

Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
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]
Sensing range:	0.01 m ... 13 m [2]
Type of light:	Visible red light
Light source:	BrightLight LED [3]
Angle of dispersion:	Ca. 2 °
Adjustment:	Potentiometer, 2-turn [4]
Light spot size (distance):	Ø 260 mm (8 m)

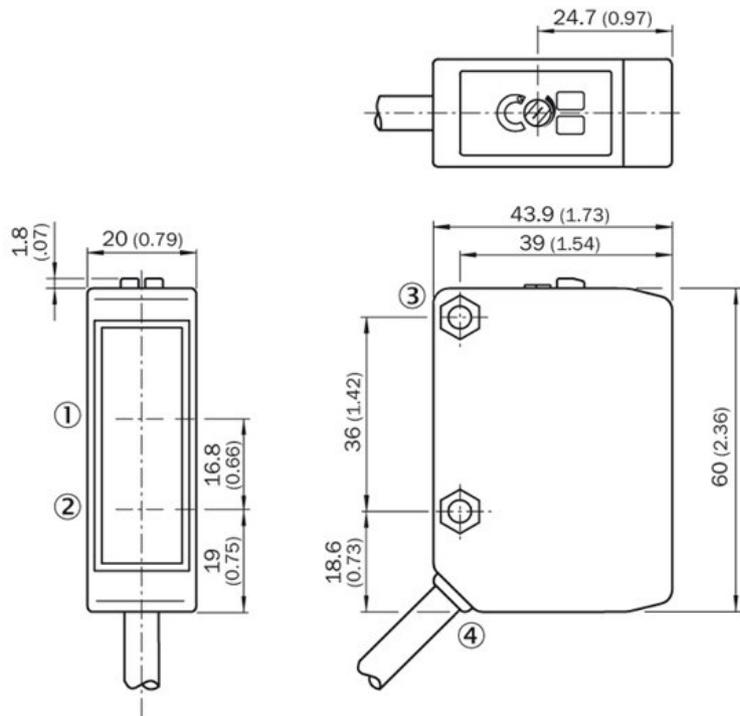[1] [2] PL80A [3] Average service life of 100,000 h at T_A = +25 °C [4] With position indicator

Mechanics/electronics

Supply voltage::	24 V AC/DC ... 240 V AC/DC, 24 V DC ... 240 V DC [1] [2]
Power consumption:	≤ 5 VA

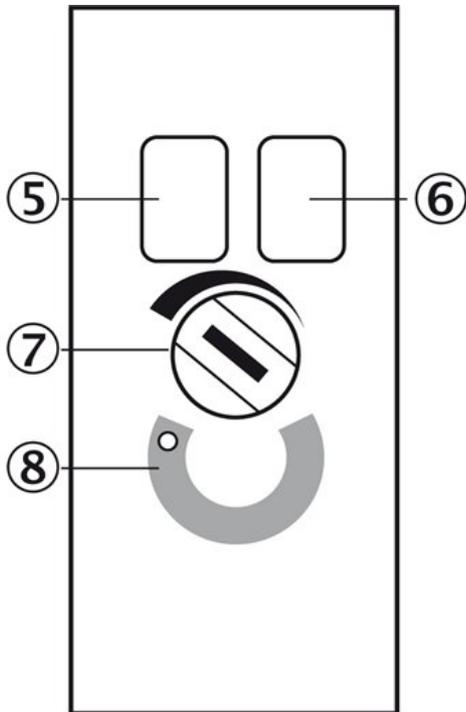|	
Output type:	Relay [3]
Output function:	Change-over contacts
Switching mode:	Light switching [4]
Output characteristic:	Electrically isolated
Switching current (switching voltage):	3 A (240 V AC), 3 A (30 V DC)
Response time:	≤ 15 ms
Switching frequency:	33 Hz [5]
Connection type:	Cable, 5-wire, 5 m [6]
Cable material:	PVC
Conductor cross-section:	0.76 mm²
Cable diameter:	Ø 6.4 mm
Circuit protection::	A, C [7] [8]
Protection class:	II [9]
Overvoltage category:	222
Weight:	330 g
Polarisation filter:	✓
Special device:	-
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	BEF-W250 mounting bracket, Reflector P250
Usage category:	AC-15, DC-13, According to EN 60947-1
EMC:	EN 60947-5-2 [10]
Ambient operating temperature:	-25 °C ... 55 °C
Ambient storage temperature:	-40 °C ... 70 °C

[1] [2] ±10 % [3] [4] Provide suitable spark supression for inductive or capacitive loads [5] With light/dark ratio 1:1 [6] Do not bend below 0 °C [7] A = V_S connections reverse-polarity protected [8] C = interference suppression [9] Reference voltage 250 V AC [10] The AC/DC devices meet the interference suppression requirements for industrial use (interference suppression class A). When used in residential areas it can cause interference.
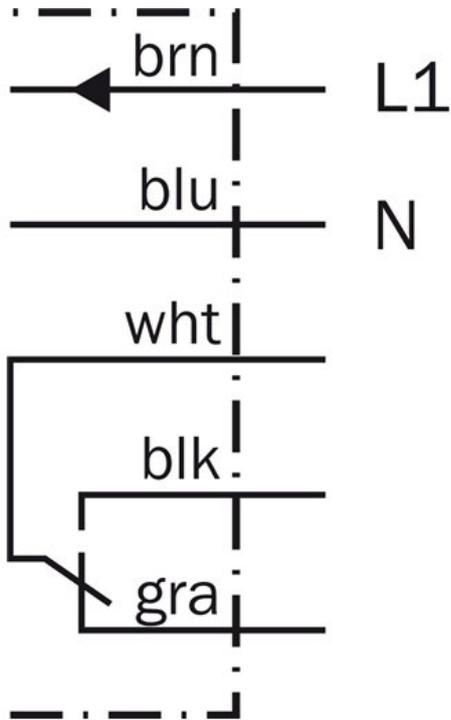
Dimensional drawing

24.7 (0.97)

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

1.8 (.07)
20 (0.79)
16.8 (0.66)
19 (0.75)

43.9 (1.73)
39 (1.54)
36 (1.42)
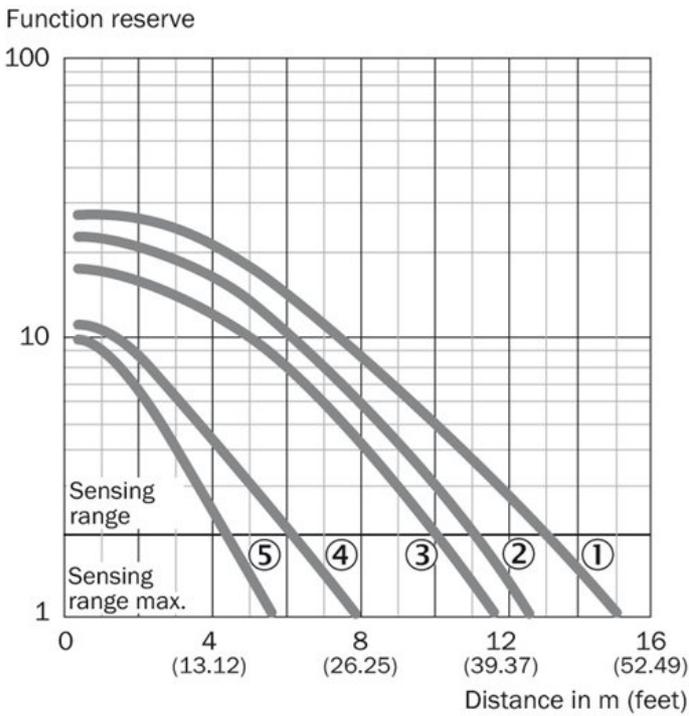18.6 (0.73)
60 (2.36)

① ② ③ ④

Adjustments possible

⑤ ⑥ ⑦ ⑧

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

Connection diagram

brn → L1

blu — N

wht

blk

gra

Characteristic curve

Function reserve
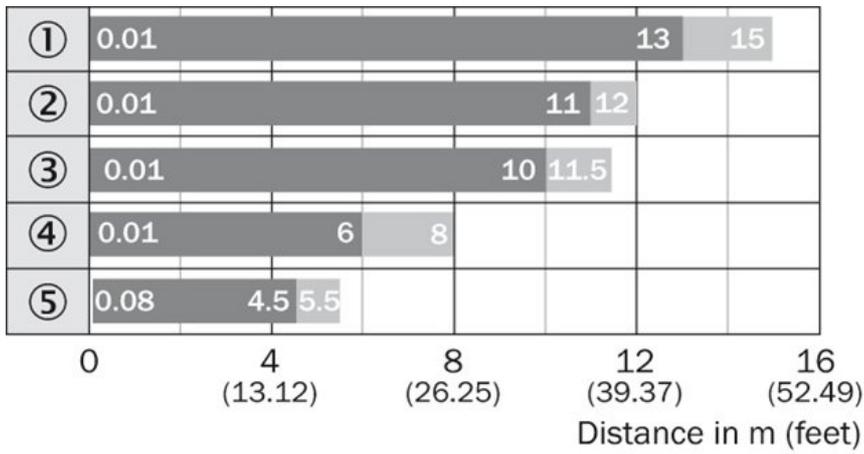

|1| Reflector type PL80A, C110A
|2| Reflector type P205
|3| Reflector type PL50A, PL40A, PL30A, PL31A
|4| Reflector type PL20A
|5| Reflective tape Diamond Grade
   (100 mm x 100 mm/3.94 inch x 3.94 inch)

Sensing range diagram

①	0.01			13	15
②	0.01		11	12	
③	0.01		10	11.5	
④	0.01	6	8		
⑤	0.08	4.5 5.5			

0   4   (13.12)   8   (26.25)   12   (39.37)   16   (52.49)

Distance in m (feet)

■ Sensing range   ■ Sensing range max.

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