



# OD2-P250W150I0

OD Value

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	Part no.
OD2-P250W150IO	6036645

Other models and accessories → [www.sick.com/OD\\_Value](http://www.sick.com/OD_Value)

## Detailed technical data

### Mechanics/electronics

<b>Supply voltage <math>V_s</math></b>	DC 12 V ... 24 V
<b>Power consumption</b>	$\leq 2.88 \text{ W}^{1)}$
<b>Warm-up time</b>	$\leq 30 \text{ min}$
<b>Housing material</b>	PBT
<b>Window material</b>	PMMA
<b>Connection type</b>	Male connector, M12, 8-pin, swivel connector unit
<b>Indication</b>	Distance bar graph, up to 8 status LEDs
<b>Weight</b>	70 g
<b>Enclosure rating</b>	IP67
<b>Protection class</b>	III

<sup>1)</sup> Without load, with current output.

### Performance

<b>Measuring range</b>	100 mm ... 400 mm <sup>1)</sup>
<b>Target</b>	Natural objects
<b>Repeatability</b>	75 $\mu\text{m}^{1) 2) 3)}$
<b>Linearity</b>	$\pm 750 \mu\text{m}^{2) 4) 5)}$
<b>Response time</b>	$\geq 1 \text{ ms}$
<b>Measuring frequency</b>	$\leq 1.33 \text{ kHz}^{1)}$

<sup>1)</sup> 6 % ... 90 % remission.

<sup>2)</sup> At averaging function medium.

<sup>3)</sup> Constant ambient conditions.

<sup>4)</sup> Measurement on 90 % remission (ceramic, white).

<sup>5)</sup> When calibrated in the application regularly.

<sup>6)</sup> Wavelength: 655 nm, max. output: 1 mW.

<b>Output time</b>	≥ 0.75 ms
<b>Light source</b>	Laser, red
<b>Laser class</b>	2 (IEC 60825-1:2014, EN 60825-1:2014) <sup>6)</sup>
<b>Typ. light spot size (distance)</b>	1.8 mm x 3.5 mm (250 mm)
<b>Additional function</b>	Mean-value setting 1 ... 64x, automatic sensitivity adjustment, Analog outputs can be taught in, Invertable analog output, Teach-in of digital output, Invertable switching output, multifunctional input: laser-off / external teach-in / trigger, switching mode: distance to object (DtO), switching mode: window (Wnd)

- 1) 6 % ... 90 % remission.  
 2) At averaging function medium.  
 3) Constant ambient conditions.  
 4) Measurement on 90 % remission (ceramic, white).  
 5) When calibrated in the application regularly.  
 6) Wavelength: 655 nm, max. output: 1 mW.

### Interfaces

<b>Digital output</b>	Number	2 <sup>1)</sup>
	Type	PNP
	Maximum output current I <sub>A</sub>	≤ 100 mA
<b>Analog output</b>	Number	1
	Type	Power output
	Current	4 mA ... 20 mA, ≤ 300 Ω
	Resolution	16 bit
<b>Multifunctional input (MF)</b>		1 x MF <sup>2)</sup>

- 1) PNP: HIGH = V<sub>S</sub> - (< 2 V) / LOW = < 2 V; NPN: HIGH = < 2 V / LOW = V<sub>S</sub>.  
 2) MF can be used as laser-off, trigger, external teach-in, or deactivated; response time ≤ 3 ms.

### Ambient data

<b>Ambient temperature operation</b>	-10 °C ... +40 °C
<b>Ambient storage temperature</b>	-20 °C ... +60 °C
<b>Relative air humidity (non-condensing)</b>	35 % ... 95 %
<b>Temperature drift</b>	± 0.08 % FS/K (FS = Full Scale = Measuring range of sensor)
<b>Typ. Ambient light immunity</b>	Artificial light: ≤ 3,000 lx Sunlight: ≤ 10,000 lx
<b>Vibration resistance</b>	10 Hz ... 55 Hz (amplitude 1.5 mm, x-, y-, z-axis 2 hours each)
<b>Shock resistance</b>	50 G (x, y, z axis 3 times each)

### Classifications

<b>ECl@ss 5.0</b>	27270801
<b>ECl@ss 5.1.4</b>	27270801
<b>ECl@ss 6.0</b>	27270801
<b>ECl@ss 6.2</b>	27270801
<b>ECl@ss 7.0</b>	27270801
<b>ECl@ss 8.0</b>	27270801
<b>ECl@ss 8.1</b>	27270801

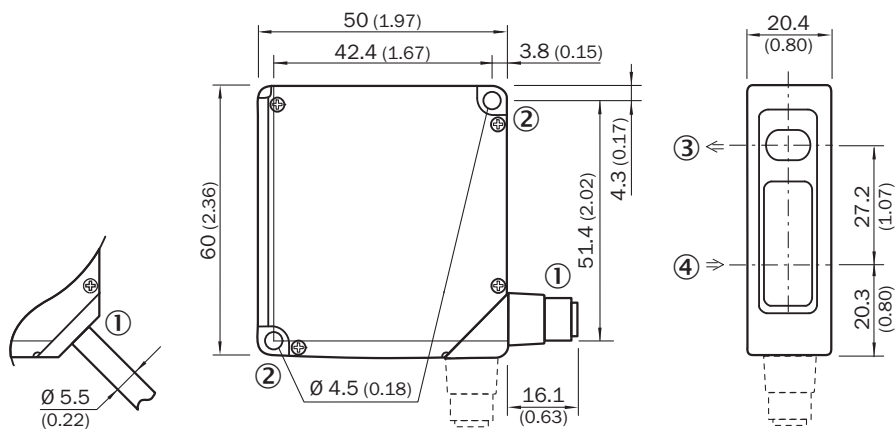
# OD2-P250W150I0 | OD Value

## DISPLACEMENT MEASUREMENT SENSORS

<b>ECl@ss 9.0</b>	27270801
<b>ETIM 5.0</b>	EC001825
<b>ETIM 6.0</b>	EC001825
<b>UNSPSC 16.0901</b>	41111613

### Dimensional drawing (Dimensions in mm (inch))

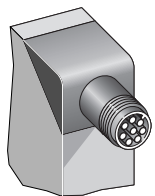
OD2-x250W150xx



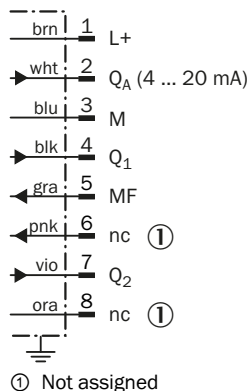
- ① 2 m cable or M12 connector; 90° rotatable
- ② Mounting hole, Ø 4.5 mm
- ③ Optical axis, sender
- ④ Optical axis, receiver

### Connection type

OD2-xxxxxA0 OD2-xxxxxC0 OD2-xxxxxI0 OD2-xxxxxU0 connector M12, 8-pin

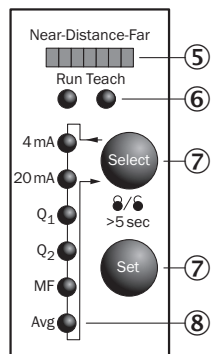


### Connection diagram



### Adjustment possible

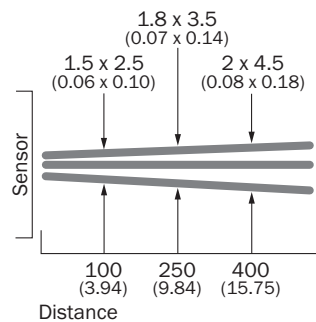
OD2-xxxxxxIx



- ⑤ Distance indicator
- ⑥ Mode indicator (Run/Teach)
- ⑦ Operating elements
- ⑧ Status indicator in- and outputs (Run-mode)/menu indicator (Teach-mode)

### Light spot size

OD2-x250W150xx

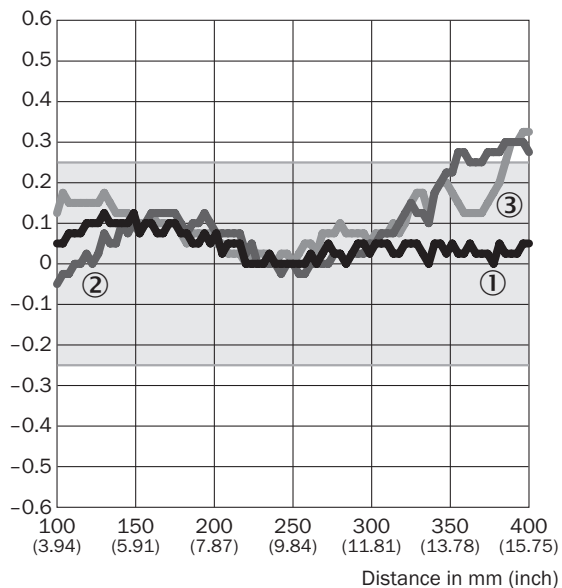


All dimensions in mm (inch)

## Linearity

OD2-x250xxxx




Linearity [%FS]



- ① White ceramic
- ② Black paper
- ③ Stainless steel

## Recommended accessories

Other models and accessories → [www.sick.com/OD\\_Value](http://www.sick.com/OD_Value)

	Brief description	Type	Part no.
<b>Mounting brackets and plates</b>			
	Stainless-steel mounting bracket, stainless steel	BEF-WN-OD1000	4089813
<b>Terminal and alignment brackets</b>			
	Galvanized steel alignment bracket with mounting accessories, steel, zinc coated, mounting hardware for the sensor included	BEF-AH-OD1000	2087355
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: special color code, PVC, shielded, 2 m	DOL-1208-G02MF	6020663
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: special color code, PVC, shielded, 5 m	DOL-1208-G05MF	6020664

## SICK AT A GLANCE

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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)