



# OD1-B100H50I25

OD Mini

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
OD1-B100H50I25	6050512

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



### Detailed technical data

#### Performance

<b>Measuring range</b>	50 mm ... 150 mm
<b>Resolution</b>	20 µm <sup>1)</sup>
<b>Repeatability</b>	30 µm <sup>1) 2)</sup>
<b>Linearity</b>	± 100 µm <sup>3) 4)</sup>
<b>Response time</b>	2 ms / 4 ms / 8 ms / 16 ms / auto <sup>5)</sup>
<b>Measuring frequency</b>	2 kHz / 1 kHz / 500 Hz / 250 Hz / automatic
<b>Light source</b>	Laser, red
<b>Laser class</b>	1 (EN 60825-1) <sup>6)</sup>
<b>Typ. light spot size (distance)</b>	700 µm x 600 µm (100 mm)
<b>Additional function</b>	Averaging 1 ... 512x, automatic or manual sensitivity adjustment, Analog outputs can be taught in, Switching outputs can be taught in, Invertable switching output, switching mode: window (Wnd), switching mode: distance to object (DtO), switching mode: object between sensor and background (ObSB), multifunctional input: laser-off / external teach-in / trigger

<sup>1)</sup> Averaging function set to: 512.

<sup>2)</sup> Constant ambient conditions.

<sup>3)</sup> Measurement on 90 % remission (ceramic, white)

<sup>4)</sup> For best performance consider warm up time ≤ 5 minutes.

<sup>5)</sup> With fixed sensitivity adjustment and averaging setting = 1. With automatic sensitivity and measuring rate 500 µs: 2 ... 7.5 ms response time/measuring rate  
1,000 µs: 4 ... 15 ms response time.

<sup>6)</sup> Wavelength: 655 nm, max. output: 390 µW (laser class 1) / < 1 mW (laser class 2)

#### Interfaces

<b>Switching output</b>	1 x PNP/NPN, selectable
<b>Multifunctional input (MF)</b>	1 x <sup>1)</sup>
<b>Data interface</b>	1 x 4 mA ... 20 mA (< 300 Ω)

<sup>1)</sup> MF can be used as laser-off, trigger, external teach-in or deactivated.

Mechanics/electronics

<b>Supply voltage <math>V_s</math></b>	DC 12 V (-5 %) ... DC 24 V (+10 %)
<b>Power consumption</b>	$\leq 1.92 \text{ W}^{1)}$
<b>Warm-up time</b>	$\leq 5 \text{ min}$
<b>Housing material</b>	Stainless steel housing with PPSU lens
<b>Connection type</b>	Cable with male connector, M12, 5-pin, 30 cm
<b>Indication</b>	4-digit 7-segment display (plus 4 LEDs for status display)
<b>Operating elements</b>	4 buttons
<b>Weight</b>	70 g
<b>Dimensions</b>	44.4 mm x 31 mm x 17 mm

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

Ambient data

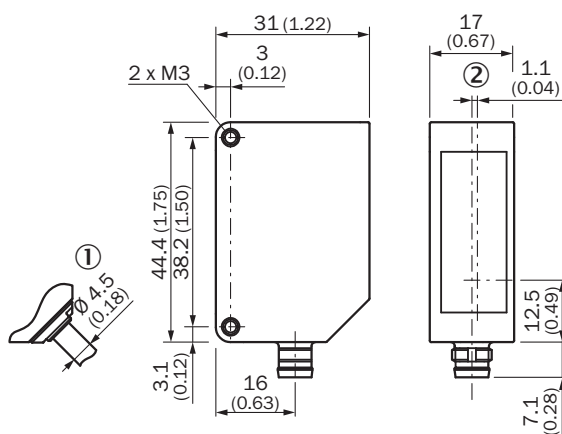
<b>Enclosure rating</b>	IP 67
<b>Protection class</b>	III
<b>Ambient temperature</b>	Operation: $-10 \text{ }^\circ\text{C} \dots +40 \text{ }^\circ\text{C}$ Storage: $-20 \text{ }^\circ\text{C} \dots +60 \text{ }^\circ\text{C}$
<b>Min. rel. humidity (not condensing)</b>	35 %
<b>Max. rel. humidity (not condensing)</b>	95 %
<b>Temperature drift</b>	$\pm 0.08 \text{ } \% \text{ FS/K}$ (FS = Full Scale = Measuring range of sensor)
<b>Typ. Ambient light immunity</b>	Artificial light: $\leq 3,000 \text{ lx}$ Sunlight: $\leq 10,000 \text{ lx}$
<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)

General notes

<b>Note</b>	Not free of paint wetting impairment substances.
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**Dimensional drawing** (Dimensions in mm (inch))

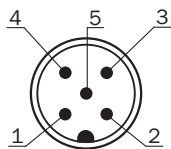
Stainless steel housing



- ① Variant with 30 cm cable with M12, 5-pin connector
- ② Optical axis

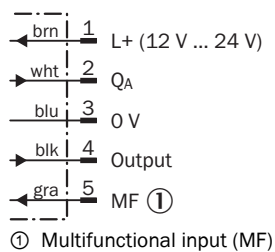
### Connection type

OD1-BxxxxxI25 OD1-BxxxxxU25 cable with 5-pin, M12 male connector



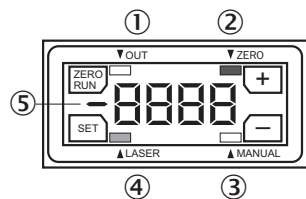
### Connection diagram

OD1-BxxxxxI25 OD1-BxxxxxU25 cable with 5-pin, M12 male connector



### Adjustment possible

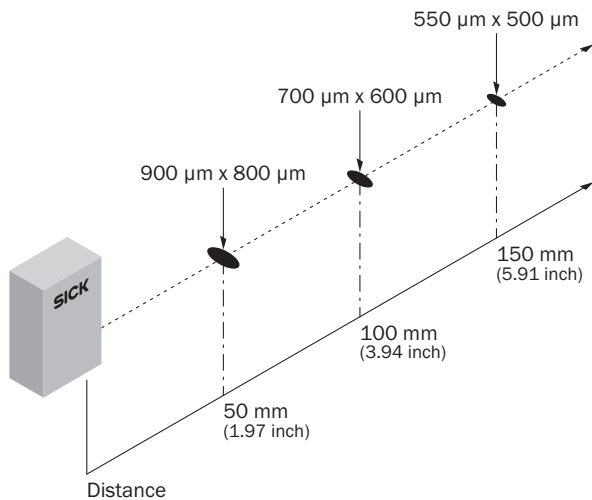
Adjustments



- ① Switching output status indicator
- ② Zero offset status indicator
- ③ Teach mode status indicator
- ④ Laser status indicator
- ⑤ Minus sign for measured value indicator

### Light spot size

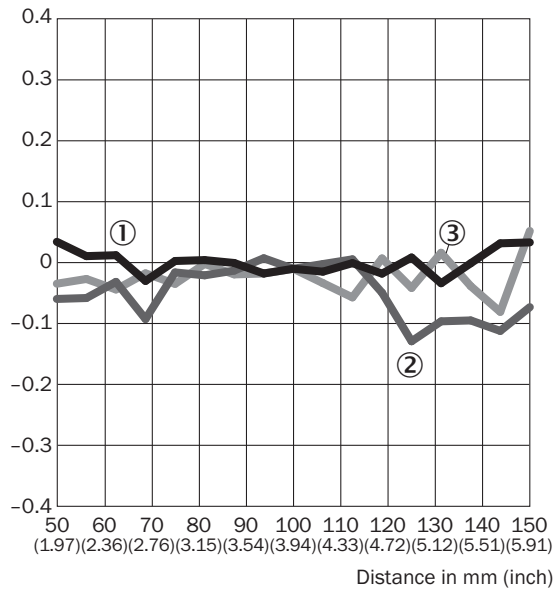
OD Mini Prime 50 mm ... 150 mm



### Linearity

OD Mini Prime 50 mm ... 150 mm



Linearity [% FS]



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

Recommended accessories

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

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded, 2 m	DOL-1205-G02M	6008899
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 2 m	DOL-1205-G02MC	6025906

## 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.”

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