



# OD1-B100C50I25

OD Mini

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type           | Part no. |
|----------------|----------|
| OD1-B100C50I25 | 6050528  |

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

## Detailed technical data

### 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>                | Metal (Aluminum)   |
| <b>Window material</b>                 | Plastic (PPSU)   |
| <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>Control elements</b>                | 4 buttons  |
| <b>Weight</b>                          | 40 g   |
| <b>Dimensions (W x H x D)</b>          | 17.8 mm x 44.4 mm x 31 mm                                  |
| <b>Enclosure rating</b>                | IP67   |
| <b>Protection class</b>                | III  |

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

### Performance

|                        |                            |
|------------------------|----------------------------|
| <b>Measuring range</b> | 50 mm ... 150 mm           |
| <b>Target</b>          | Natural objects            |
| <b>Repeatability</b>   | $20 \mu\text{m}^{1) 2)}$   |
| <b>Linearity</b>       | $\pm 100 \mu\text{m}^{3)}$ |

<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> With fixed sensitivity adjustment and averaging setting = 1. With automatic sensitivity and measuring rate 500  $\mu\text{s}$ : 2 ... 7.5 ms response time/measuring rate 1,000  $\mu\text{s}$ : 4 ... 15 ms response time.

<sup>5)</sup> Wavelength: 655 nm, max. output: 390  $\mu\text{W}$  (laser class 1) / < 1 mW (laser class 2).

|  |   |
|--|---|
| <b>Response time</b>                   | ≥ 2 ms <sup>4)</sup>  |
| <b>Measuring frequency</b>             | ≤ 2 kHz   |
| <b>Output time</b>                     | ≥ 0.5 ms  |
| <b>Light source</b>                    | Laser, red<br>visible red light   |
| <b>Laser class</b>                     | 1 (IEC 60825-1:2014, EN 60825-1:2014) <sup>5)</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, digital outputs can be taught in, invertable digital 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> 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>5)</sup> Wavelength: 655 nm, max. output: 390 μW (laser class 1) / < 1 mW (laser class 2).

## Interfaces

|                                   |            |                         |
|-----------------------------------|------------|-------------------------|
| <b>Digital output</b>             | Number     | 1                       |
|                                   | Type       | PNP/NPN, selectable     |
| <b>Analog output</b>              | Number     | 1                       |
|                                   | Type       | Current output          |
|                                   | Current    | 4 mA ... 20 mA, ≤ 300 Ω |
|                                   | Resolution | 13.4 bit                |
| <b>Multifunctional input (MF)</b> |            | 1 x <sup>1)</sup>       |

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

## Ambient data

|  |   |
|--|---|
| <b>Ambient temperature, operation</b>      | -10 °C ... +50 °C   |
| <b>Ambient temperature, storage</b>        | -20 °C ... +60 °C   |
| <b>Min. rel. humidity (not condensing)</b> | 35 %  |
| <b>Max. rel. humidity (not condensing)</b> | 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<br>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)                                |

## General notes

|             |  |
|-------------|--|
| <b>Note</b> | Not free of paint wetting impairment substances. |
|-------------|--|

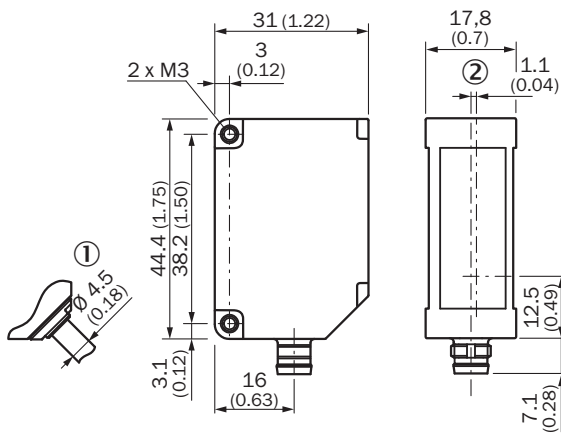
## Classifications

|                     |          |
|---------------------|----------|
| <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  |
| <b>eCl@ss 9.0</b>     | 27270801  |
| <b>eCl@ss 10.0</b>    | 27270801  |
| <b>eCl@ss 11.0</b>    | 27270801  |
| <b>eCl@ss 12.0</b>    | 27270916  |
| <b>ETIM 5.0</b>       | EC001825  |
| <b>ETIM 6.0</b>       | EC001825  |
| <b>ETIM 7.0</b>       | EC001825  |
| <b>ETIM 8.0</b>       | EC001825  |
| <b>UNSPSC 16.0901</b> | 411111613 |

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

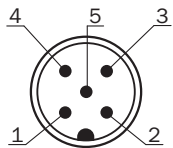
Aluminum housing



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

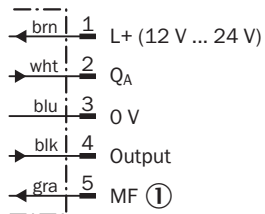
**Connection type**

Connection type



## Connection diagram

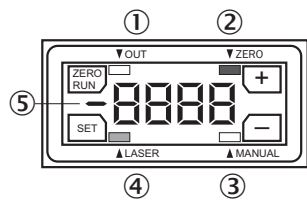
Connection diagram



① Multifunctional input (MF)

## Adjustment possible

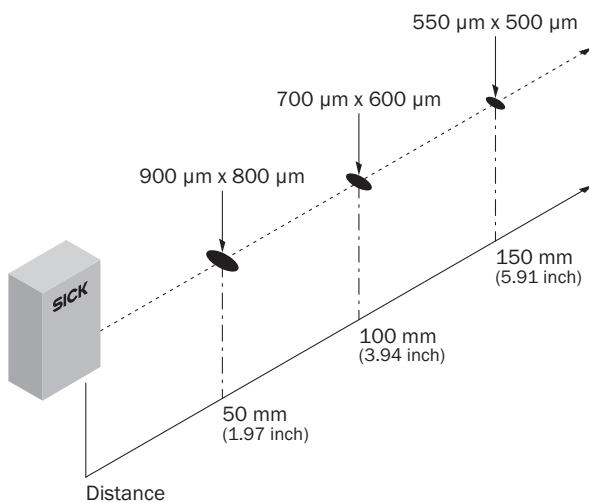
Adjustments



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

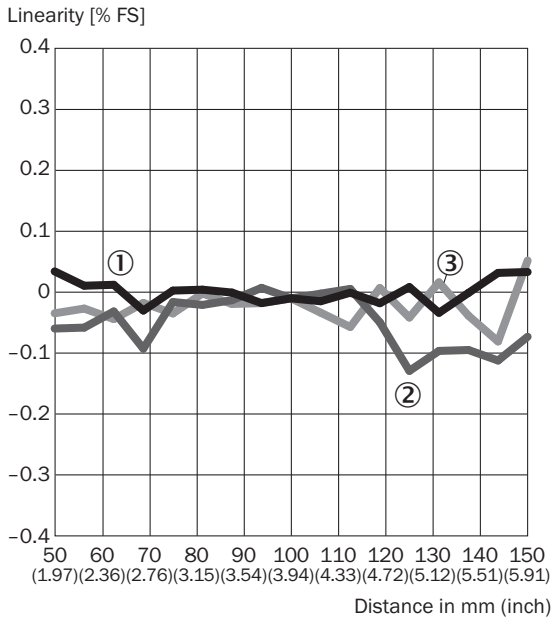
## Light spot size

OD Mini Prime 50 mm ... 150 mm



**Linearity**






Linearity



- 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)

|   | <b>Brief description</b>  | <b>Type</b>        | <b>Part no.</b> |
|---|---|--------------------|-----------------|
| <b>Mounting brackets and plates</b>   |   |                    |                 |
|  | Mounting bracket, for wall installation, no alignment bracket, stainless steel  | BEF-OD1-A          | 5328343         |
|  | Mounting bracket, no alignment bracket, stainless steel   | BEF-OD1-B          | 5328344         |
| <b>Plug connectors and cables</b>   |   |                    |                 |
|  | Head A: female connector, M12, 5-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m                                 | YF2A15-020UB5XLEAX | 2095617         |
|  | Head A: female connector, M12, 4-pin, straight<br>Head B: male connector, M8, 4-pin<br>Cable: Highly flexible, PUR, 2 m   | DSL-2804-G02MB     | 6059743         |
|  | Head A: female connector, M12, 4-pin, straight, A-coded<br>Head B: male connector, M8, 4-pin, straight, A-coded<br>Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m | YF2A14-020UA3M8U14 | 2096112         |

## Recommended services

Additional services → [www.sick.com/OD\\_Mini](http://www.sick.com/OD_Mini)

|  | Type   | Part no. |
|--|--|----------|
| <b>Warranty extensions</b>   |  |          |
| <ul style="list-style-type: none"> <li>• <b>Product area:</b> Identification solutions, machine vision, Distance sensors, Detection and ranging solutions</li> <li>• <b>Range of services:</b> The services correspond to the scope of the statutory manufacturer warranty (SICK general terms and conditions of purchase)</li> <li>• <b>Duration:</b> Five-year warranty from delivery date.</li> </ul>   | Extended warranty for a total of five years from delivery date | 1680671  |
| <b>Commissioning</b>   |  |          |
| <ul style="list-style-type: none"> <li>• <b>Product area:</b> Displacement measurement sensors</li> <li>• <b>Range of services:</b> Inspection of connection and mounting, optimization of parameters of SICK product as well as tests, set-up of previously defined functions of the scaling of the analog measuring range, switching point position, hysteresis, measuring frequency, measured value filter, signal quality, evaluation function, or communication interface</li> <li>• <b>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li> <li>• <b>Duration:</b> Additional work will be invoiced separately</li> </ul> | DT20 Hi/OD/OL commissioning                                    | 1612241  |

## 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)