



# OD1-B150F0AQ14

OD Mini

DISPLACEMENT SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type           | part no. |
|----------------|----------|
| OD1-B150FOAQ14 | 6052326  |

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

Detailed technical data

Features

|                                 |                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measuring range                 | 50 mm ... 250 mm                                                                                                                                                                                                                                                                                                                                 |
| Repeatability                   | 200 µm <sup>1) 2) 3)</sup>                                                                                                                                                                                                                                                                                                                       |
| Response time                   | ≥ 2 ms <sup>4)</sup>                                                                                                                                                                                                                                                                                                                             |
| Measuring frequency             | ≤ 2 kHz                                                                                                                                                                                                                                                                                                                                          |
| Output time                     | ≥ 0.5 ms                                                                                                                                                                                                                                                                                                                                         |
| Emitted beam                    |                                                                                                                                                                                                                                                                                                                                                  |
| Light source                    | Laser, red                                                                                                                                                                                                                                                                                                                                       |
| Typ. light spot size (distance) | 2 mm x 1.3 mm (150 mm)                                                                                                                                                                                                                                                                                                                           |
| Key laser figures               |                                                                                                                                                                                                                                                                                                                                                  |
| Normative reference             | IEC 60825-1:2014, EN 60825-1:2014                                                                                                                                                                                                                                                                                                                |
| Laser class                     | 2 <sup>5)</sup>                                                                                                                                                                                                                                                                                                                                  |
| Additional function             | Averaging 1 ... 512x<br>Automatic or manual sensitivity adjustment<br>Digital outputs can be taught in<br>Invertable digital output<br>Switching mode: window (Wnd)<br>Switching mode: distance to object (DtO)<br>Switching mode: object between sensor and background (ObSB)<br>Multifunctional input: laser-off / external teach-in / trigger |
| General notes                   |                                                                                                                                                                                                                                                                                                                                                  |
| Note                            | Not free of paint wetting impairment substances.                                                                                                                                                                                                                                                                                                 |

1) Averaging function set to: 512.  
2) Constant ambient conditions.  
3) Hysteresis 0.8 mm.  
4) 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.  
5) Wavelength: 655 nm, max. output: 390 µW (laser class 1) / < 1 mW (laser class 2).

|                           |                   |           |
|---------------------------|-------------------|-----------|
| Safety-related parameters |                   |           |
|                           | MTTF <sub>D</sub> | 101 years |
|                           | DC <sub>avg</sub> | 0%        |

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

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

<sup>3)</sup> Hysteresis 0.8 mm.

<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

|                            |        |                     |
|----------------------------|--------|---------------------|
| Digital output             | Number | 1                   |
|                            | Type   | PNP/NPN, selectable |
| Multifunctional input (MF) |        | 1 x <sup>1)</sup>   |

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

## Electronics

|                               |                                                            |
|-------------------------------|------------------------------------------------------------|
| Supply voltage U <sub>B</sub> | DC 12 V (–5 %) ... DC 24 V (+10 %)                         |
| Power consumption             | ≤ 1.92 W <sup>1)</sup>                                     |
| Warm-up time                  | ≤ 5 min                                                    |
| Display                       | 4-digit 7-segment display (plus 4 LEDs for status display) |
| Enclosure rating              | IP67                                                       |
| Protection class              | III                                                        |
| Connection type               | Male connector                                             |

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

## Mechanics

|                        |                           |
|------------------------|---------------------------|
| Dimensions (W x H x D) | 17.8 mm x 44.4 mm x 31 mm |
| Control elements       | 4 buttons                 |
| Housing material       | Metal (Aluminum)          |
| Window material        | Plastic (PPSU)            |
| Weight                 | 40 g                      |

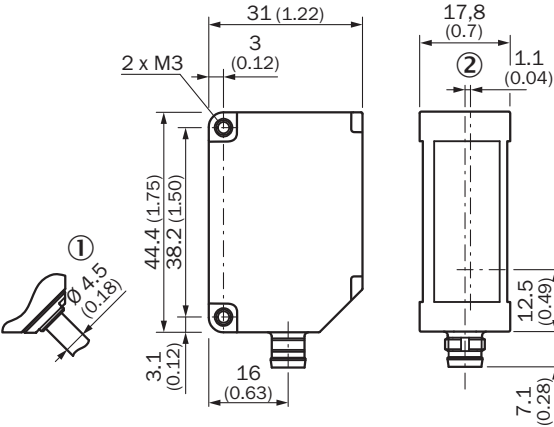
## Ambient data

|                                     |                                                                 |
|-------------------------------------|-----------------------------------------------------------------|
| Ambient temperature, operation      | –10 °C ... +50 °C                                               |
| Ambient temperature, storage        | –20 °C ... +60 °C                                               |
| Min. rel. humidity (not condensing) | 35 %                                                            |
| Max. rel. humidity (not condensing) | 95 %                                                            |
| Temperature drift                   | ± 0.08 % FS/K (FS = Full Scale = Measuring range of sensor)     |
| Typ. Ambient light immunity         | Artificial light: ≤ 3,000 lx<br>Sunlight: ≤ 10,000 lx           |
| Vibration resistance                | 10 Hz ... 55 Hz (amplitude 1.5 mm, x-, y-, z-axis 2 hours each) |
| Shock resistance                    | 50 G (x, y, z axis 3 times each)                                |

Classifications

|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.0</b>     | 27270801 |
| <b>ECLASS 5.1.4</b>   | 27270801 |
| <b>ECLASS 6.0</b>     | 27270801 |
| <b>ECLASS 6.2</b>     | 27270801 |
| <b>ECLASS 7.0</b>     | 27270801 |
| <b>ECLASS 8.0</b>     | 27270801 |
| <b>ECLASS 8.1</b>     | 27270801 |
| <b>ECLASS 9.0</b>     | 27270801 |
| <b>ECLASS 10.0</b>    | 27270801 |
| <b>ECLASS 11.0</b>    | 27270801 |
| <b>ECLASS 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> | 41111613 |

Dimensional drawing Aluminum housing

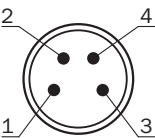


Dimensions in mm (inch)

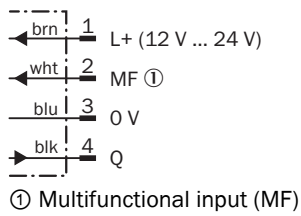
① variant with 30 cm cable with M12, 5-pin connector

② Optical axis

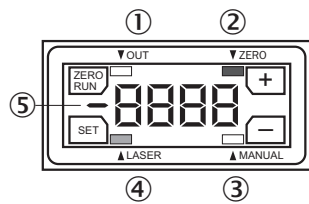
Connection type



## Connection diagram OD1-BxxxxxQ14

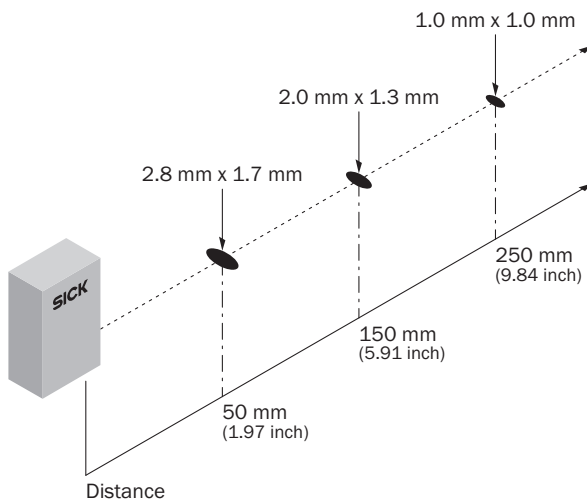


## Adjustments










- 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 Core50 mm ... 250 mm



### Recommended accessories

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

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Type               | part no.   |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |            |
|                                                                                     | Strich                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    | On request |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M8, 4-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Untaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF8U14-020UA3M8U14 | 2096347    |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Untaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                 | YF8U14-020UA3XLEAX | 2094791    |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Untaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                   | YG8U14-020UA3XLEAX | 2095589    |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Untaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                               | YF8U14-C60UA3XLEAX | 2145825    |
|   | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 1 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Untaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                 | YF8U14-010UA3XLEAX | 2145826    |
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |            |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket, no alignment bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel</li> </ul>                                                                                                                                                                                                                                                                                                          | BEF-OD1-B          | 5328344    |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket, for wall installation, no alignment bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel</li> </ul>                                                                                                                                                                                                                                                                                   | BEF-OD1-A          | 5328343    |

## 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)