



# OD1-B015H05A15

OD Mini

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type           | part no. |
|----------------|----------|
| OD1-B015H05A15 | 6054082  |

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



### Detailed technical data

#### Features

|  |   |
|--|---|
| <b>Measuring range</b>                 | 10 mm ... 20 mm   |
| <b>Target</b>                          | Natural objects   |
| <b>Repeatability</b>                   | 1 μm <sup>1) 2)</sup>   |
| <b>Linearity</b>                       | ± 10 μm <sup>3)</sup>   |
| <b>Response time</b>                   | ≥ 2 ms <sup>4)</sup>  |
| <b>Output time</b>                     | ≥ 0.5 ms  |
| <b>Light source</b>                    | Laser, red<br>visible red light   |
| <b>Type of light</b>                   | 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 500 μm (15 mm)   |
| <b>Additional function</b>             | Averaging 1 ... 512x<br>Automatic or manual sensitivity adjustment<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 |
| <b>General notes</b>                   |   |
| Note on use                            | The sensor head can be used with evaluation unit AOD1 or stand-alone via RS-485   |
| Note                                   | Not free of paint wetting impairment substances.  |
| <b>Safety-related parameters</b>       |   |

<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).

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

- 1) Averaging function set to: 512.  
 2) Constant ambient conditions.  
 3) Measurement on 90 % remission (ceramic, white).  
 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).

## Interfaces

|                              |  |
|------------------------------|--|
| <b>Serial</b>                | ✓ , RS-485   |
| <b>PROFIBUS DP</b>           | ✓  |
| Type of fieldbus integration | Optional, over external evaluation unit AOD1 and Gateway WI180C-PB |
| <b>Digital output</b>        |  |
| Number                       | 1 ... 3 <sup>1)</sup>  |
| Type                         | PNP/NPN, selectable  |
| <b>Analog output</b>         |  |
| Number                       | 1 <sup>1)</sup>  |
| Type                         | Current output   |
| Current                      | 4 mA ... 20 mA, ≤ 300 Ω  |

- 1) Optional over evaluation unit AOD1.

## Electronics

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

- 1) Without load, with current output.

## Mechanics

|                               |  |
|-------------------------------|--|
| <b>Dimensions (W x H x D)</b> | 17.8 mm x 44.4 mm x 31 mm                    |
| <b>Control elements</b>       | 4 buttons                                    |
| <b>Housing material</b>       | Stainless steel                              |
| <b>Window material</b>        | Plastic (PPSU)                               |
| <b>Weight</b>                 | 70 g   |
| <b>Connection type</b>        | Cable with male connector, M12, 5-pin, 30 cm |

## 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)                                |

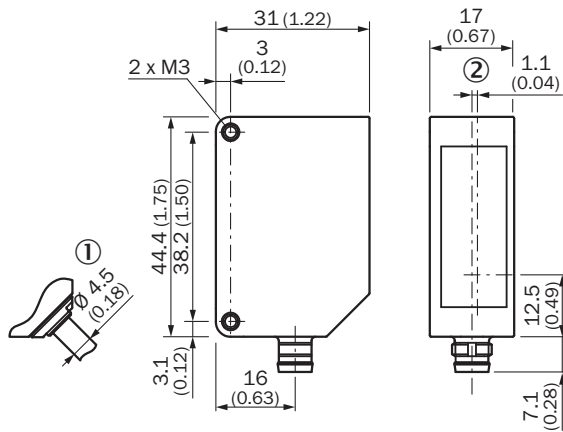
Certificates

|  |   |
|--|---|
| <b>EU declaration of conformity</b>  | ✓ |
| <b>UK declaration of conformity</b>  | ✓ |
| <b>ACMA declaration of conformity</b>  | ✓ |
| <b>Moroccan declaration of conformity</b>                                    | ✓ |
| <b>China RoHS</b>  | ✓ |
| <b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b> | ✓ |

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 |

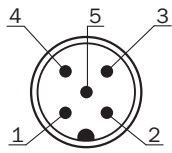
### Dimensional drawing Stainless steel housing



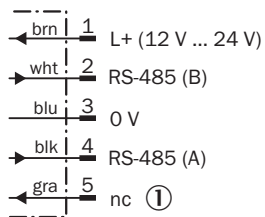
Dimensions in mm (inch)

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

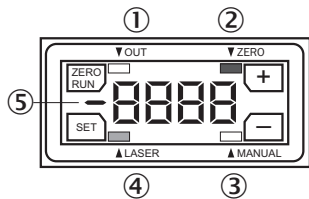
### Connection type



### Connection diagram

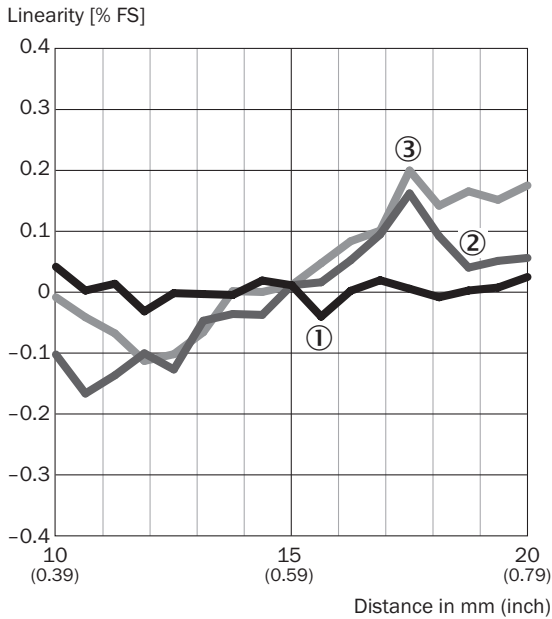


### Adjustments



- 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




**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>connectors and cables</b>  |  |                    |                 |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight</li> <li>• <b>Connection type head B:</b> Male connector, M8, 4-pin</li> <li>• <b>Cable:</b> 2 m, PUR</li> <li>• <b>Description:</b> Highly flexible</li> </ul>   | DSL-2804-G02MB     | 6059743         |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 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> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A14-020UA3M8U14 | 2096112         |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-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, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                 | YF2A15-020UB5XLEAX | 2095617         |

|   | Brief description  | Type        | part no. |
|---|--|-------------|----------|
| <b>Mounting systems</b>   |  |             |          |
|    | <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  |
| <b>integration modules and adapters</b>   |  |             |          |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> OD Mini evaluation unit, master, 1 x Q, M8 male connector, 4-pin</li> </ul>   | AOD1-MR24Q1 | 6054270  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> OD Mini evaluation unit, slave, 1 x Q, M8 male connector, 4-pin</li> </ul>  | AOD1-SR24Q1 | 6054271  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> OD Mini evaluation unit, master, 2 x Q, M12 male connector, 5-pin</li> </ul>  | AOD1-MR25Q2 | 6054272  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> OD Mini evaluation unit, slave, 2 x Q, M12 male connector, 5-pin</li> </ul>   | AOD1-SR25Q2 | 6054273  |
|   | <ul style="list-style-type: none"> <li><b>Description:</b> OD Mini evaluation unit, OD5000 and OL1, master, 3 x Q, 1 x analog, open end cable, 2 m</li> </ul>  | AOD1-MR27C4 | 6058195  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> OD Mini evaluation unit, OD5000 and OL1, slave, 3 x Q, 1 x analog, open end cable, 2 m</li> </ul>   | AOD1-SR27C4 | 6058196  |

## SICK AT A GLANCE

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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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