



# OD1-B015H05U25

OD Mini

**DISPLACEMENT SENSORS**

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
OD1-B015H05U25	6050498

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>Repeatability</b>	1 $\mu\text{m}$ <sup>1) 2)</sup>
<b>Linearity</b>	$\pm 10 \mu\text{m}$ <sup>3)</sup>
<b>Response time</b>	$\geq 2 \text{ ms}$ <sup>4)</sup>
<b>Measuring frequency</b>	$\leq 2 \text{ kHz}$
<b>Output time</b>	$\geq 0.5 \text{ ms}$
<b>Emitted beam</b>	
Light source	Laser, red
Typ. light spot size (distance)	700 $\mu\text{m}$ x 500 $\mu\text{m}$ (15 mm)
<b>Key laser figures</b>	
Normative reference	IEC 60825-1:2014, EN 60825-1:2014
Laser class	1 <sup>5)</sup> 6)
<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)

<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).

<sup>6)</sup> Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

		Multifunctional input: laser-off / external teach-in / trigger
<b>General notes</b>	Note	Not free of paint wetting impairment substances.
<b>Safety-related parameters</b>	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).

6) Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

## Interfaces

<b>Digital output</b>	Number	1
	Type	PNP/NPN, selectable
<b>Analog output</b>	Number	1
	Type	Voltage output
	Voltage	0 V ... 10 V, > 10,000 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.

## 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>Display</b>	4-digit 7-segment display (plus 4 LEDs for status display)
<b>Enclosure rating</b>	IP67
<b>Protection class</b>	III
<b>Connection type</b>	Cable with male connector, 30 cm

<sup>1)</sup> 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

## Ambient data

<b>Ambient temperature, operation</b>	-10 °C ... +50 °C
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<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 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)

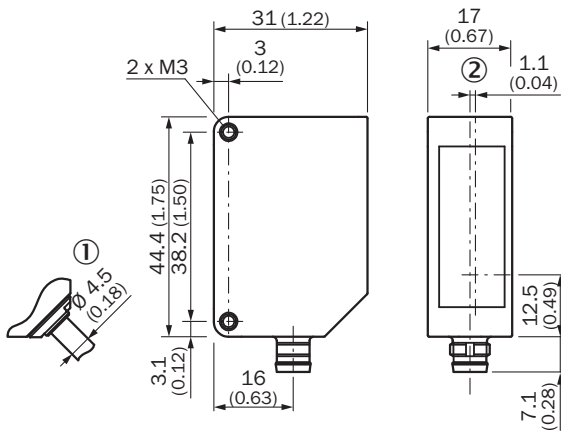
### Classifications

<b>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

### 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>	✓

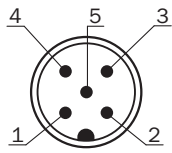
### Dimensional drawing Stainless steel housing



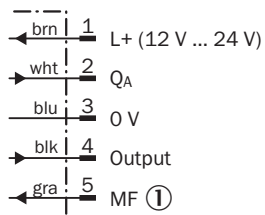
Dimensions in mm (inch)

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

### Connection type

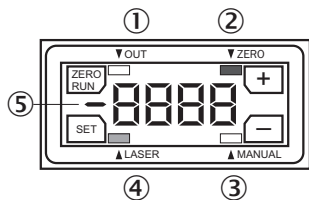


### connection diagram



- ① Multifunctional input (MF)

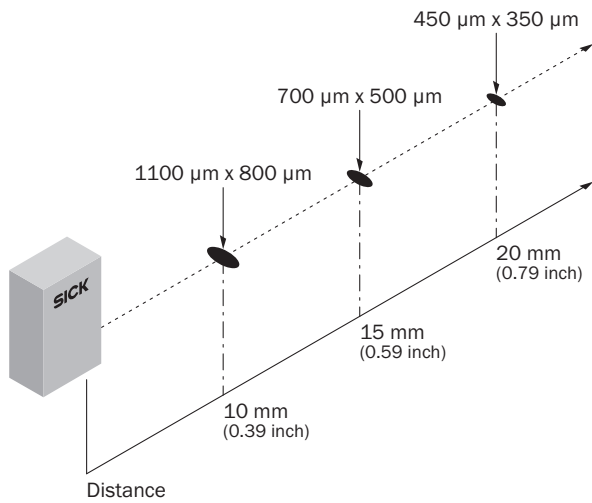
### Adjustments



- ① digital output status indicator
- ② Zero offset status indicator
- ③ Teach mode status indicator
- ④ Laser status indicator

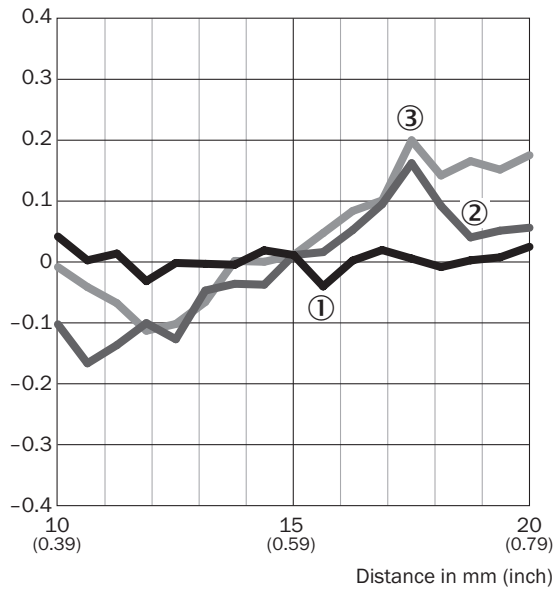
⑤ Minus sign for measured value indicator

### Light spot size OD Mini Prime 10 mm ... 20 mm



### Linearity






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.
connectors and cables			
	<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> Drag chain operation, 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> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A15-020UB5XLEAX	2095617
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)